

FINAL REPORT

Virginia Energy Efficiency Potential Study 2024 to 2033

Virginia Electric and Power Company (Dominion Energy Virginia)

Prepared by DNV Energy Insights (DNV)

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Glossary

Achievable potential: The amount of savings that would occur in response to specific program funding and measure incentive levels. Savings associated with program potential are savings that are projected beyond those that would occur naturally in the absence of any market intervention.

Applicability factor: The percentage of the building stock that has a particular type of equipment or for which an efficiency measure applies. For example, the applicability factor for a tankless electric water heater (compared to a base standard electric water heater) is the percentage of homes with electric water heaters. The applicability factor for high-efficiency clothes washers as an electric water heating measure is the percentage of homes with electric water heating that also have a clothes washer. For base measures, this is sometimes referred to as the equipment saturation.

Business-as-usual (BAU): Represents a continuation of current activities or trends. For utility programs, it denotes a scenario in which program marketing and administrative budgets are kept constant in real terms, and incentive levels are kept constant as a percentage of incremental costs.

Base+: Denotes an achievable potential scenario where budgets are maintained as in the BAU scenario, but unlike the BAU scenario all measures that passed the economic screening are included in the analysis, not just measures currently in programs. Added measures receive an incentive level comparable to existing program measures.

Baseline analysis: Characterizes how energy consumption breaks down by sector, building type, and end use.

Base measure: The equipment against which an efficiency measure is compared.

C&I: Commercial and industrial.

CBECS: US Energy Information Agency (EIA) Commercial Buildings Energy Consumption Survey

CFL: Compact fluorescent lamp.

CDA: Conditional Demand Analysis. This type of statistical analysis matches the survey data for a sample of customers with their utility billing data and, factoring in weather data, estimates the amount of energy used by various end uses or equipment types.

Coincidence factor: Utility coincidence factors are the ratio of actual demand at utility peak to the average demand, as calculated from the load shape. These factors vary by market segment or building type, end use, and by time-of-use period.

Cumulative annual: Savings occurring in a particular year that are due to cumulative program activities over time. For example, if a program installs one high-efficiency widget in year 1 of the program, two in year 2, and five in year 3, the cumulative annual savings in year three would be the savings accruing on all eight surviving units in place in year 3, regardless of what year they were installed. Cumulative annual savings does account for equipment retirement. In the example above, widgets are assumed to have an effective useful life of more than three years. If the equipment in the above example were doohickeys, which only have a two-year effective useful life, the year 1 doohickey would have retired at the end of year 2, so only the units sold in years 2 and 3 would contribute to year 3 cumulative annual savings.

Demand-side management (DSM): An electric system must balance the supply of electricity with the demand for electricity. Demand-side management (DSM) programs focus on managing the demand side of this balance through energy-efficiency and load management.

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DOE: U.S. Department of Energy.

Economic potential: The technical potential of those energy conservation measures that are cost-effective when compared to supply-side alternatives.

Effective useful life (EUL): A measure of the typical lifetime of an efficiency measure. Technically, it is the age at which half of the units have failed and half survive. In DNV's ASSYST™ model, all measures are assumed to remain in place until the end of their effective useful lives and then retire.

End-use energy intensity (EUI): Energy use per unit of building stock having a specific end use. For example, the EUI for commercial electric heating is the amount of electricity used for heating divided by the number of square feet of floor space that are electrically heated. EUI differs from EI in that it accounts for the equipment type's saturation. If the saturation of the equipment type is low, the EUI will be much higher than the EI.

Energy intensity (EI): Energy use per unit of building stock. For example, the EI for commercial electric heating is the amount of electricity used for heating divided by the total square feet. EI differs from EUI in that it does not account for the saturation of the equipment. If the saturation for the equipment type is low, EI will be much lower than the EUI.

EUI adjustment factor: Because equipment efficiencies can change over time independent of program activities, due to either naturally occurring technological changes or external intervention, such as appliance standards, the efficiency of new equipment may differ from the typical efficiency of the equipment stock. The EUI adjustment factor is the ratio of new standard efficiency equipment's energy use to the average energy use of units in the equipment stock.

Feasibility factor: The fraction of the applicable floor space, or households, that is technically feasible to convert to a DSM technology, from an engineering perspective.

Free rider: A program participant who would have invested in an energy efficiency measure even without the intervention of the program. Free riders add to program costs but do not contribute to net energy savings.

Free-rider energy savings: The subset of naturally occurring energy savings for which the utility pays incentives or provides other program benefits. These savings are included in gross program savings but not in net program savings.

Gross program savings: The total savings for all measures installed under the program, including those that would have been installed even without program intervention (free riders). Gross savings do not include savings that the program did not pay for (spillover).

HP: Horsepower. A metric for the power of a motor.

HVAC: Heating, ventilation, and air conditioning. These space-conditioning measures are often discussed as a group and are referred to by the abbreviation HVAC, usually pronounced H-vac.

Incomplete factor: The fraction of the applicable floor space, or households, that has not yet been converted to the particular energy-efficiency technology.

Incremental cost: The additional cost required to purchase an efficiency measure compared to base equipment.

kW: kilowatts, 1,000 watts. A measure of electric power or electricity demand.



kWh: kilowatt-hour. A measure of electrical energy.

LED: light-emitting diode. LEDs are semiconductor light sources. They have been in use for decades as indicator lights; they are increasingly being used for general-purpose lighting. They are highly efficient compared to incandescent lamps.

Line losses: When electricity is transmitted over the transmission and distribution system, some of the electricity is dissipated as heat due to resistance in the transmission lines or inefficiencies in transformers in the distribution system. As a result, the amount of electricity delivered to consumers is less than the amount produced at the generator. These are referred to as line losses or transmission and distribution losses.

MW: Megawatt, one million watts. A measure of electric power or electricity demand.

MWh: Megawatt-hour, equal to 1,000 kWh. A measure of electrical energy.

NAICS: The North American Industry Classification System is the standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy.

Naturally occurring energy savings: The amount of savings estimated to occur as a result of normal market forces, that is, in the absence of any utility or governmental intervention.

Net program savings: Program savings above and beyond naturally occurring levels. Net savings exclude free-rider energy savings.

Net-to-gross: The ratio of net program savings to gross program savings.

Program potential: This term is used interchangeably with achievable potential.

REUS: Residential Energy Use Survey.

RECS: EIA Residential Energy Consumption Survey.

Replace on burnout (ROB): A measure that is installed when the previous equipment reaches the end of its useful life. ROB measures penetrate the market gradually as the existing stock of equipment turns over due to equipment age and eventual failure.

Retrofit: A measure that is installed to achieve energy savings independent of the condition of the existing equipment. This includes measures that affect the energy use of other equipment, such as insulation to reduce heating costs. It also includes replacing equipment with higher efficiency equipment before the end of existing equipment's useful life, for example replacing T12 fluorescent lighting in an office with higher efficiency T8s. Retrofits can be done at any time and therefore have the potential to penetrate the market more quickly than ROB measures.

Technical potential: The savings that would result from complete penetration of all analyzed measures in applications where they were deemed technically feasible, from an engineering perspective.

Technology saturation: A factor that relates the cost units used in the model for a measure to its savings units. For example, the cost of a chiller may be expressed in dollars per ton, though the savings are in kWh per square foot. The technology saturation then represents the number of tons of cooling per square foot.

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Time-of-use (TOU) period: The Assyst model can analyze energy use by up to six time-of-use periods. These periods are used to characterize the relationship between energy and peak demand, which varies over both season and time of day, and to capture differences in avoided costs and rates over different time periods. TOU periods usually capture differences between summer/winter and peak/off-peak but can also capture shoulder season, mid-peak, or super peak demand, depending on the needs of a utility.

Total resource cost test (TRC): A benefit-cost test that compares the value of avoided energy production and power plant construction to the costs of energy efficiency measures and the program activities necessary to deliver them. The values of both energy savings and peak-demand reductions are incorporated in the TRC test.

UEC: Unit energy consumption.



1 EXECUTIVE SUMMARY

The Dominion Energy Efficiency Potential Study (2024-2033) assessed the potential for electric energy (kWh) and demand (kW) savings from company-sponsored demand side management (DSM) programs over 10 years starting in 2024 for Dominion Energy's Virginia service territory. The assessment produced:

- Estimates of technical potential, economic potential, and achievable savings potential under two program scenarios:
 One offering incentives of at least 50% of incremental measure cost and another offering 75% incentives. Both achievable scenarios increase marketing budgets by 10% over 2023 levels.
- Estimates of the magnitude of potential savings on an annual basis
- Estimates of the costs associated with achieving those savings
- Calculation of the cost-effectiveness of the programs based on the estimates above

DNV used our proprietary model, DSM ASSYST™, to produce these outputs.

DNV based our forecasts on building characteristic data collected in 2023 using mail surveys of residential and commercial customers. Data development included a residential conditional demand analysis and review, interpretation, and analysis of data provided to DNV by Dominion Energy staff.

1.1 Key findings

1.1.1 Energy savings potential

Figure 1-1 below presents the electric energy savings potential found by the study. These savings reflect cumulative annual savings potential over a 10-year period, which is the annual savings potential in 2033 of all installations from 2024 through 2033. The estimates do not include 1) persistent savings for measures installed in prior years, 2) savings for opt-out customers, or 3) savings from voltage optimization. We add these three savings components to our potential estimates for purposes of comparing our results to savings targets under the Virginia Clean Economy Act of 2020, but otherwise reported potential is only for energy-efficiency program activity from 2024 onward.

Technical energy savings potential is estimated at 28,926 GWh by 2033 and economic potential is estimated at 16,283 GWh.

Achievable program potential is 1,882 GWh in the 50%+ incentive scenario and 2,647 GWh in the 75%+ incentive scenario.

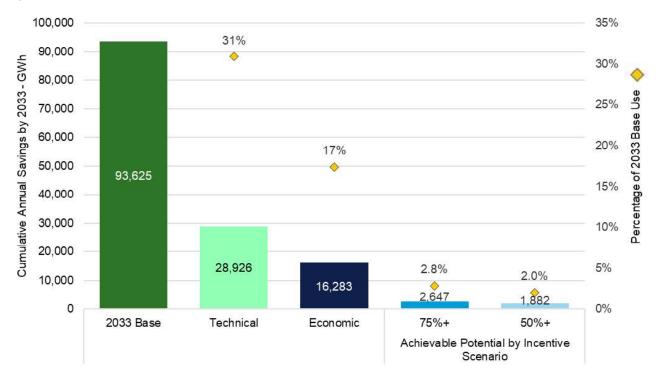
Economic potential for peak demand savings is estimated to be 17% of base 2033 projected energy use.

Achievable potentials are 2.0% of base energy consumption in the 50%+ scenario and 2.8% of base energy consumption in the 75%+ scenario.

All results include line losses.



Figure 1-1. Estimated base consumption and net electric energy savings potential from customer energy efficiency programs, 2024-2033



Note: Excludes Virginial non-jurisdictional, federal, opt-out customers, voltage optimization, and persistent savings from program years prior to 2024.

1.1.2 Demand savings potential from energy efficiency programs

Dominion Energy's Virginia service territory's winter peak usage has been trending upward with the increased use of heat pumps for heating. Recent years' annual peaks have occurred in summer or winter with roughly equal probability, but the trend indicates that winter peaks are more likely in the future. As a result, we report peak demand reductions assuming a winter peak. Figure 1-2 shows cumulative 10-year winter peak demand savings potential estimates. The study estimated peak demand potential from the installation of energy efficiency measures only and did not assess demand savings from demand response technologies such as direct load control or dynamic pricing.



Technical potential for demand savings is estimated at 3,914 MW and economic potential is estimated at 1,784 MW.

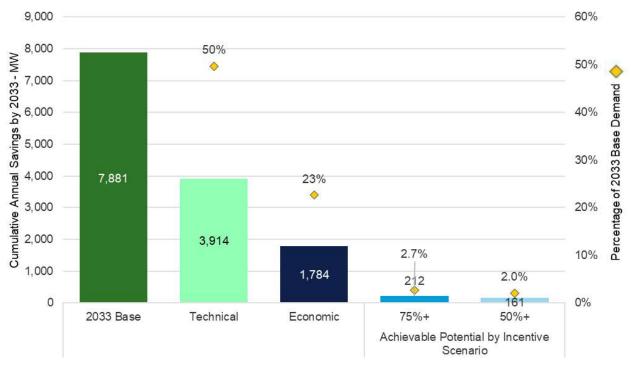
Achievable program potential is 173 MW in the 50%+ incentive scenario and 229 MW in the 75%+ incentive scenario.

Economic potential for peak demand savings is estimated to be 23% of base 2033 peak demand.

Achievable potentials are 2.0% of base peak demand in the 50%+ scenario and 2.7% of base peak demand in the 75%+ scenario.

All results include line losses.

Figure 1-2. Estimated base demand and net winter peak demand savings potential from customer energy efficiency programs, 2024-2033



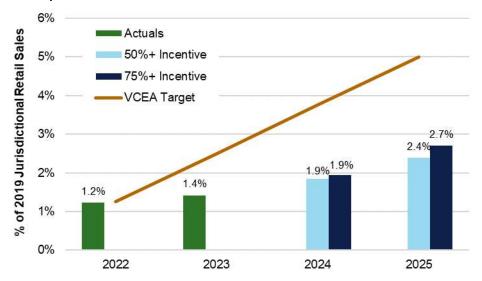
Note: Excludes Virginia non-jurisdictional, federal, and opt-out customers, voltage optimization, and persistent savings from program years prior to 2024.

Figure 1-3 combines achievable potential found in this study with persistent impacts from previous program years, opt-out savings, and projected savings from voltage optimization, and compares the total savings against 2022 – 2025 savings targets set under the Virginia Clean Economy Act of 2020 (VCEA). The estimated achievable potential, which takes into account the Company's expanded program offerings and increased marketing efforts, under the 50%+ and 75%+ scenarios is below the 2024 and 2025 VCEA targets. Despite these estimates of potential, the Company remains committed to maximize savings from its programs in an effort to meet the VCEA savings targets.



Note that the VCEA targets are set as a percentage of 2019 base consumption (excluding non-jurisdictional and federal customers); the achievable potentials are expressed relative to this base for this chart only. Elsewhere, achievable potentials are presented as a percentage of projected base consumption in 2033, excluding non-jurisdictional, federal, and opt-out customers.

Figure 1-3. Projected savings compared to VCEA targets by scenario through 2025, including persistent savings from previous program years, opt-out savings and voltage optimization savings, as a percentage of 2019 base consumption*



*Note that the base consumption for the VCEA targets (2019 jurisdictional sales without federal customers) differs from the base consumption used elsewhere in the report (projected 2033 no-energy-efficiency jurisdictional retail sales excluding federal customers and opt-out customers.) Achievable savings are net savings.

1.1.3 Cost-effectiveness

The TRC benefit-cost ratios for Dominion Energy's Virginia service territory are 0.93 under the 50%+ scenario and 1.00 under the 75%+ scenario. TRCs less than 1.00 indicate that the costs of the program exceed the benefits as measured by energy and demand avoided costs. This test does not consider the societal cost of carbon and other greenhouse gases, nor non-energy impacts (benefits or cost) accruing from the program. There are two factors causing the low program TRC. The first is that the overall results include costs and savings for income and age qualifying (IAQ) programs, which are not required to be cost-effective. This is, in part, an acknowledgement that such programs have non-energy benefits not captured by the TRC. Second, program marketing and administrative costs can make a modeled program cost-ineffective even when individual measures are cost-effective. The achievable potential analysis for non-IAQ segment includes only measures that are individually cost-effective, but when combined with IAQ programs and with the addition of program costs, the portfolio's costs exceed (or in the case of the 75%+ scenario, just equal) its avoided cost benefits.

Key results of our efficiency scenario forecasts from 2024 to 2033 are summarized in Table 1-1.



Table 1-1. Summary of achievable potential results—2024-2033 *†

December of the contract of th	Program	scenario	
Result - programs	50% Incentives	75% Incentives	
Total Market Energy Savings - GWh (year 10 annual)	2,263	3,028	
Total Market Peak Demand Savings - MW (year 10 annual)	491	643	
Program Energy Savings - GWh (year 10 annual)	1,882	2,647	
Program Peak Demand Savings - MW (year 10 annual)	396	547	
Program Costs - Real, \$ Million			
Administration (10-year total)	\$270	\$339	
Marketing (10-year total)	\$222	\$220	
Incentives (10-year total)	\$589	\$941	
Total Program Costs (10-year total)	\$1,081	\$1,501	
PV Avoided Costs (PV 10-year cost)	\$925	\$1,304	
PV Annual Program Costs (Adm/Mkt) (PV 10-year cost)	\$403	\$464	
PV Net Measure Costs (PV 10-year cost)	\$589	\$841	
Net Benefits (PV 10-year cost)	-\$67	-\$1	
TRC Ratio‡	0.93	1.00	

^{*}PV (present value) of benefits and costs is calculated over the measure life for 2020-2029 program years, customer discount rate = 7.307%, utility discount rate = 6.307%, inflation rate = 1.98%; GWh and MW savings are cumulative through 2029.

1.2 General observations and conclusions

Other takeaways from this study include:

- This Dominion Energy potential study shows a lower range of program savings potential (achievable potential) as a percentage of base load than other potential studies conducted by DNV. This is mainly driven by Dominion Energy's low avoided costs. Low avoided costs create a challenging environment for DSM programs and measures to demonstrate cost-effectiveness in terms of the TRC. Low avoided costs also lead to low customer retail rates, which means less cost-effectiveness in terms of the participant test and a less compelling value proposition for customer adoption.
- Compared to the 2020 Dominion Energy potential study conducted by DNV, technical and economic potential are higher as a proportion of the base; however, achievable potential for both the 50%+ and 75%+ incentive scenarios is lower than in 2020. The lower achievable results reflect a 99% drop in residential lighting potential due to market transformation and lighting standards. Other factors that reduced achievable potential include Dominion Energy's program experience with its residential behavioral programs that tempered expectations for future savings, the impacts of codes and standards (with some impactful changes happening in 2028 and 2029), as well as evaluation findings on net-to-gross ratios that were factored in when calibrating the models to recent program performance.

[†]Excludes Virginia non-jurisdictional, federal, and opt-out customers as well as voltage optimization and persistent savings from program activities prior to 2024 ‡TRCs less than one indicate that the program, with the added burden of marketing and administrative costs, is not cost-effective, even though the individual measures in the program are cost-effective based on measure costs and savings alone.



- Among residential measures targeting existing buildings, the largest share of savings come from measures that reduce heating and cooling use in homes with electric heating, accounting for about 70% of savings in both scenarios. These measures include heat pumps, shell measures, and weatherization. Water heating ranks second, representing 11 to 12% of potential. Refrigerators and pool pumps each contribute 5 to 6% of potential. Lighting potential has fallen compared to 2020, reflecting the transformation of the lighting market to LEDs, and makes up less than 2% of residential potential.
- Because fluorescent and high-intensity discharge lighting have lagged behind screw-based incandescent and CFL lighting in being displaced by LEDs, indoor and outdoor lighting remain a significant share of commercial potential for existing buildings, representing about 32% of commercial potential in both the 50%+ and 75%+ scenarios. Compressed air, not included in previous DNV potential studies for Dominion Energy, accounts for 23% of commercial potential in the 50%+ scenario and 18% in the 75%+ scenario. Refrigeration and cooling are also key areas of potential energy savings in the commercial sector.
- Commercial new construction potential exceeds the potential for existing buildings, making up just over half of total commercial potential in the 53% scenario and 58% in the 75% scenario.

A key challenge for any potential study is modeling future measure adoption in ways that reflect the realities of a given market. A best practice applied in this study is to calibrate the adoption parameters of the achievable potential model to historic programs, including marketing budgets, incentive budgets, net and gross energy savings, and net and gross demand savings. Once the adoption parameters are calibrated to reflect the customer base's willingness to adopt at different levels of cost-effectiveness (participant cost test), we use the calibrated model with new budgets, measures, and incentive levels to create new program scenarios. In the case of this study, the scenarios assumed higher marketing activity driving greater customer awareness than has been true historically. The assumed marketing increase is higher than that being undertaken by Dominion Energy, so that the potential effect of these increases is not constrained by the current plans. The scenarios also include some recently launched programs that do not have historical adoption for calibration; for these programs, the calibration assumes that the filed plans are achieved for all future years. Key uncertainties for the historic calibration are:

- Program years (PY) 2020 and 2021 were substantially affected by the pandemic. As a result, only PY2023 was available as a basis for empirical calibration.
- The Customer Engagement program (a residential behavioral program) faced major launch challenges in PY2021-2023 resulting in substantial underachievement relative to plan. The calibration assumes that the current program forecasts—which factor in the past underperformance—will be met going forward, starting in 2024. However, achievement is declining across the country for programs of this type. Given that this program represents almost 7% of the estimated achievable potential, the lack of a Dominion-specific basis for calibrating this program represents an important uncertainty in the overall estimate. The addition of two more behavioral programs (for low income and small business customers) brings the total behavioral share of potential to 8.2%.



2 INTRODUCTION

Dominion Energy retained DNV to conduct a demand-side management (DSM) market potential study based on existing and proposed customer end-use energy efficiency measures and programs. This study provides estimates of potential electricity and peak demand savings from energy efficiency measures in Dominion Energy's Virginia service territory, including technical, economic, and achievable program potential. The analysis also presents the technical and economic potential associated with opt-out and non-jurisdictional customers in Dominion Energy's service territory. These customers were not included in the estimation of program achievable potential as they do not participate in Dominion Energy-sponsored programs. The study does not address natural gas equipment usage or savings.

2.1 Overview

The scope of this study includes new and existing residential and non-residential commercial buildings and covers a 10-year period spanning 2024-2033. Given the near- to mid-term focus, the base potential analysis was restricted to DSM measures that are presently commercially available, and only included codes and standards that are currently in place or will be effective within the next year. We did not predict the impact of future codes and standards.

Data for the study came from a number of different sources including the commercial saturation, residential saturation, and residential conditional demand studies all conducted by DNV in 2023, internal Dominion Energy data, DNV's extensive energy efficiency database, and a variety of information from third-party sources.

2.2 Study approach

DNV calculated the energy efficiency potential elements of this study after first identifying and developing baseline end-use and measure data, then developing estimates of future energy efficiency impacts under varying levels of program effort.

DNV performed a baseline characterization to identify the types and approximate sizes of the various market segments that are the most likely sources of DSM potential in Dominion Energy's service territory. These characteristics served as inputs to a modeling process that incorporated Dominion Energy's energy-cost parameters and specific energy efficiency measure characteristics (such as costs, savings, and existing penetration estimates) to provide more detailed potential estimates.

We used DNV's DSM ASSYST model to aid in the analysis. This model provides a thorough, clear, transparent documentation database and an extremely efficient data processing system for estimating technical, economic, and achievable potential. We estimated technical, economic, and achievable program potential for the residential and non-residential sectors, with a focus on energy efficiency impacts through 2033.

2.3 Organization of the report

Section 3 provides an overview of the data collection conducted for this study. Additional, detailed results are provided in the attached appendices. The remainder of the report is structured as follows:

- Section 3 reviews and summarizes the data collection and development process.
- Section 4 discusses the methodology and concepts used to develop the technical, economic, and achievable potential
 estimates
- Section 5.1 provides baseline results developed for the study.
- Sections 5.2 and 5.3 discuss the results of the electric energy efficiency potential analysis by sector and over time, including technical and economic potential, as well as achievable or program results.

The report includes the following appendices:

· Appendix A, Detailed methodology and model description



- Appendix B, Measure descriptions
- Appendix C, Economic inputs
- Appendix D, Building and time-of-use factor inputs
- Appendix E, Measure inputs
- Appendix F, Non-additive measure level results (not adjusted to remove double counting)
- Appendix G, Supply curve data
- Appendix H, Measure level rankings by economic savings potential
- Appendix I, Achievable program potential by sector



3 DATA COLLECTION AND DEVELOPMENT

This section describes how DNV developed data inputs for this potential study. The main sources of this data were the residential and commercial saturation surveys, the residential conditional demand analysis (CDA), data provided by Dominion Energy staff, and secondary data sources.

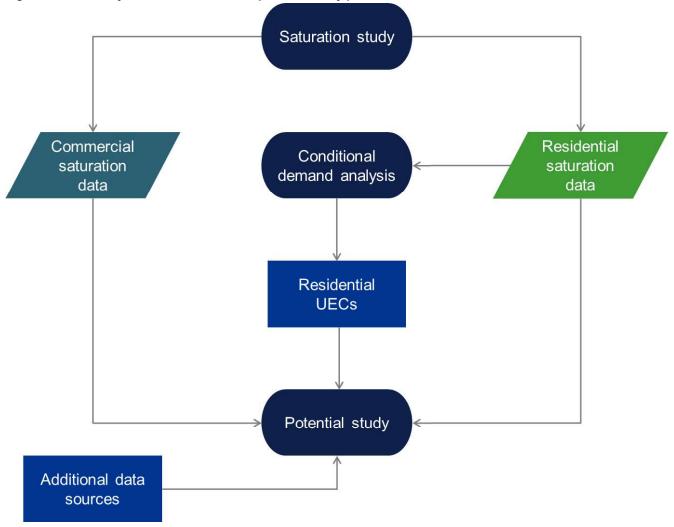
3.1 Dominion Energy-specific data collection efforts

Dominion Energy engaged DNV to collect end-use saturation and consumption data from residential and non-residential customers. Data developed from the resulting studies were used as direct inputs for the DSM Potential Study. The residential and commercial customer saturation surveys used for these efforts collected information on building characteristics, occupant characteristics, and the penetration and usage of various end uses throughout Dominion Energy's service territory. The residential saturation survey data was then fed into the residential CDA model, which produced estimates of annual electricity consumption for many end-use categories. The CDA estimates, along with data from the saturation studies, were then used as inputs in the DSM ASSYSTTM model. These data were combined with other data from Dominion Energy and secondary data sources to fully populate the data inputs required for the modeling effort.

Figure 3-1 illustrates the relationship between the saturation studies, conditional demand analysis, additional data sources, and the DSM potential study.



Figure 3-1. Summary flow chart for the DSM potential study process



3.1.1 Residential and commercial energy use surveys

This 2024 study used the results of the 2023 DNV Residential Home Energy Use Survey and 2023 DNV Commercial Energy Use Survey, and also considered or benchmarked against prior study versions that were previously completed by DNV. The goal of these studies was to estimate the saturation of end uses of electricity associated with appliances, HVAC, and electronics, as well as the usage patterns and related household and building characteristics. DNV also used the data gathered from the residential saturation study in a conditional demand analysis, which provided unit energy consumption (UEC) estimates for a range of electric end uses and market segments for the DSM Potential Study.

The sections below describe the sample selection, data collection and response rates for the residential and commercial saturation studies.



3.1.1.1 Residential Home Energy Use Survey

Sample selection

DNV obtained a billing data file from Dominion Energy at the design phase of this project which served as the sample frame for the study. The billing data file represented a complete census of all active accounts from October 1, 2021, to December 1, 2022. The initial sample was selected from among those accounts on the sample frame with an email address and annualized usage greater than 1,200 kWh/year. Any accounts that were flagged as "do not contact" were removed. Using a minimum annualized usage greater than 1,200 kWh/year ensures that premises such as well-houses and partially vacant residences are excluded.

DNV stratified the sample frame according to 7 regions defined by Dominion Energy, and annualized usage (3 levels). The usage levels are assigned based on the distribution of annualized consumption within each region. The 2023 regional assignments are consistent with regional assignments used in the 2020 and 2016 residential studies. Once stratification was applied to the sample frame, a sample was randomly selected from within each stratum.

The 7 regions are:

- Northern Virginia
- Shenandoah Valley / Western Piedmont
- Richmond / Tri-Cities
- Southside
- Gloucester / Northern Neck
- Southeastern
- North Carolina

The 3 annual usage levels are:

- Low consumption (below 33rd percentile)
- Medium consumption (33rd 65th percentile)
- High consumption (66th percentile and above)

Data collection and response rates

The survey was open for two weeks from September 14–28, 2023. The majority of popular email service providers use a constantly evolving variety of techniques to detect spam. DNV collaborated with Dominion Energy's information technology (IT) team to register the "from" email address with the online survey platform to reduce the likelihood that emails would be identified as spam. DNV also:

- Followed the "CAN-SPAM" anti-spam laws compliance guide
- Carefully crafted the email message content and subject line
- Used a proven domain name for the email campaign

As a general rule, the data collection team avoided distribution on Friday through Monday afternoons with the thought that email received over the weekend could become buried deep in a recipient's inbox with a lower likelihood of response.

A total of 7,008 households responded to the survey. A total of 196 respondents were considered ineligible for not passing the two screener questions signalling 1) an active account, and 2) residential occupancy. Data from the remaining 6,812 eligible respondents was used in the analysis to develop final study estimates. Table 3-1 below presents the survey count metrics.



Table 3-1. Survey count metrics

Households emailed	156,437
Total responses	7,008
Failed screener questions	196
Completed survey	5,712
Partially completed survey	1,100
Total number of eligible respondents	6,812
Response rate	4.4%

3.1.1.2 Commercial Energy Use Survey

DNV used data from our 2023 Commercial Energy Use Survey to provide data for this study's commercial sector analysis.

Sample selection

The study sample design featured a two-dimensional stratification based on the Dominion Energy operating region and customer annualized consumption. The first dimension included 6 mutually exclusive operating regions within the Company's service territory. This dimension was used to control for the geographic influences that may exist throughout the Dominion Energy service territory. The second dimension was based on customer annualized electric energy usage. Dominion Energy's commercial sector is diverse, spanning customers with an extensive range of annual electric energy usage. The annual usage dimension was used to control for differences in types and magnitude of end uses, and the variation of firmographic characteristics.

During the project's development, a target sample size of 1,500 completes was qualitatively set to meet budget constraints and to be consistent with the 2020 study. On a simple random sampling basis, this sample size would provide a ±2.5% confidence interval at the 95% confidence level for saturations of 50%.

The first step in the sample design was to define the population frame. Dominion Energy provided DNV with a billing file that included 248,941 customer premises in 6 regions with 35 different rate codes. DNV examined these customers for data completeness. Customers with inactive accounts, low annualized usage (less than 1,200 kWh/year), or an insufficient number of bills to estimate annualized usage (less than 270 billing days during the last 365 days) were excluded from the final sampling frame. The sampling frame based on these criteria resulted in a population of 213,437 customers.

Next, DNV examined the distribution of annualized energy usage. The largest customer used 567,846 times more energy than the smallest customer in the dataset. To control for this large variability, the top 341 customers by annualized energy usages (greater than 90 GWh/year) were placed in a "certainty stratum," i.e., a stratum where every customer is included in the sample. The remaining 213,102 customers were allocated into 4 strata. The boundaries of the usage strata were qualitatively set.

The 1,500-target sample, less the 341 customers in the certainty stratum (1,159), was equally distributed among the 4 non-certainty usage strata in each geographic region (24 strata). The final sample consisted of over 78,000 customers.

Finally, DNV calculated the expected precision by usage stratum and region stratum. Stratification and the inclusion of certainty strata help reduce the overall expected variability. Ultimately the expected confidence interval at a 95% confidence level for a saturation of 50% would be ±2% at the region level and ±1% for the population.



Data collection and response rates

The survey launched on October 23, 2023, with a wave of 15,103 mailed letters followed by approximately 2,262 emails. As a rule, the data collection team avoided distributing emails on Friday through Monday afternoon with the thought that email could become buried deep in a recipient's inbox with a lower likelihood of response. In November, a second wave of 16,554 letters was distributed followed by a third and final wave of 44,139 letters. The combined email and print mail outreach resulted in a total of 1,990 respondents. Data from these customers was used in the analysis. Table 2-1 shows the breakdown of survey responses by mode of delivery.

Table 2-1. Survey response rate

	Email	Print	Total
Surveys distributed	2,262	75,796	78,058
Completed survey	93	1,577	1,670
Partially completed survey	44	276	320
Total number of respondents	137	1,853	1,990
Response rate	6.1%	2.4%	2.5%

3.1.2 Residential Conditional Demand Analysis

The objective of a conditional demand analysis is to estimate a breakdown of energy consumption into different end-use categories, such as water heaters or refrigerators, accounting for weather and a number of customer and end-use attributes such as square footage of the home and vintage of the electrical end-use device.

The key data sources for CDA models are:

- Customer survey data This study utilized the RASS conducted by DNV in 2023.
- Customer billing data The study used monthly electricity consumption data from recent years specific to each RASS respondent from Dominion Energy's customer billing database.
- Weather data Hourly interval temperature data from the National Oceanic and Atmospheric Administration (NOAA)
 was matched to the closest WBAN1 station for each Home Energy Use Survey respondent. Data from a total of 10
 weather stations was used.

DNV used the billing data and weather data to estimate normalized annual consumptions (NAC) for each respondent. DNV combined the NAC with the survey responses to develop statistical relationships between these data, through regression models.

Properly specified CDA models can account for major classes of end uses by residential customers, which include space heating, space cooling, and water heating, among other major end uses. Importantly, properly specified CDA models can also produce statistically significant data for end-use combinations. However, there are some limiting factors for this CDA model that warrants further discussion, as noted below:

CDA limiting factors:

Near-saturation of the end-use across households (e.g., refrigerators or lighting)

¹ WBAN is a five-digit station identifier used for digital data storage and general station identification purposes.



- Collinearity among certain end uses across households (i.e., groups of two or more types of end uses which are found in those groups more often than individually); for example, set top boxes and TVs together, as opposed to TVs alone
- Consumption that is not discernible in monthly billing consumption data among usage behavior variation across households (e.g., printers or toasters)
- Low saturation of the relatively newer end-use across households (e.g., LED tubes)

If some important end-use categories are not typically meaningful to estimate through a CDA alone, they are typically combined with relevant secondary source studies (e.g., refrigerators). CDA-based estimates on their own can give valuable insight into end-use consumption distributions across groups of customers, as is shown in several figures in this report.

3.2 Additional data sources

In addition to the saturation studies and CDA described above, DNV used additional data sources to inform certain inputs of the potential study model that could not be ascertained through the data collection efforts. This section outlines those sources and how they were used in the modeling process. Sources marked with an asterisk (*) in the following section are specific to Dominion Energy's service territory.

3.2.1 Measure data

Several secondary data sources provided insight on measure-level energy usage and savings potential, measure costs and lifetimes, and the current penetration of various efficiency measures. DNV reviewed a variety of data sources for this information seeking data that was specific to Dominion Energy's service territory or geographic location as much as possible. The sources listed below provided information for these inputs:

- Dominion Energy Standard Tracking Engineering Protocols (STEP) Manual*
- U.S. Energy Information Administration (EIA) Commercial Buildings Energy Consumption Survey (CBECS)
- EIA Residential Energy Consumption Survey (RECS)
- ENERGY STAR Calculators
- EIA Data for Mid-Atlantic
- Mid-Atlantic Technical Reference Manual (TRM)
- Professional judgment of DNV engineers with experience in Dominion Energy's service territory*
- Dominion's EM&V results*

3.2.2 Economic data

Economic inputs from Dominion's service territory were used to provide a more accurate picture of the monetary cost and benefits associated with energy efficiency. Dominion provided data to support the following model requirements:

- Customer discount rate
- Inflation rate
- Utility discount rate
- Avoided cost and retail rate forecasts for low, base, and high avoided cost scenarios
- Line-loss estimates

3.2.3 Building data

Dominion Energy provided information pertaining to customers as well as system load data:

- Billing data to identify consumption residential and commercial customers
- System load data
- EIA data for Virginia Electric & Power Co., Virginia to determine number of customers



3.2.4 Program budgets

As part of the potential modeling process, past and projected program budgets were used to as a starting point for the achievable potential analysis, which estimates the market penetration of measures as a function of marketing, incentive levels, and other factors.² Dominion Energy provided past and planned program budgets and savings that we used to help calibrate the achievable modeling efforts. Specifically, marketing and administrative dollars were two inputs into the model that were derived from the indicator tables DNV compiled for Dominion Energy.

 $^{^{2}}$ The methodology of calculation measure penetration is described in more detail in Section 4 and Appendix A



4 METHODOLOGY

4.1 Energy efficiency potential methods

This section provides a brief overview of the concepts, methods, and scenarios used to conduct this study. Additional methodological details are provided in Appendix A.

4.1.1 Characterizing the energy efficiency resource

Energy efficiency has long been characterized as an alternative to energy supply options, such as conventional power plants that produce electricity from fossil or nuclear fuels. In the early 1980s, researchers developed and popularized the use of a conservation supply-curve paradigm to characterize the potential costs and benefits of energy conservation and efficiency. Under this framework, technologies or practices that reduced energy use through efficiency were characterized as making the energy saved available to meet other demands, and could therefore be thought of as a resource and plotted on an energy supply curve. The energy efficiency resource paradigm argued simply that the more energy efficiency or "negawatts" produced, the fewer new plants would be needed to meet end-users' power demands.

4.1.2 Defining energy efficiency potential

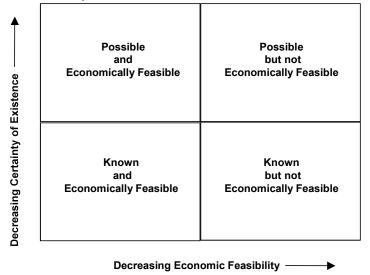
Energy efficiency potential studies became popular throughout the utility industry from the late 1980s through the mid-1990s. This period coincided with the advent of what was called least-cost or integrated resource planning (IRP). Energy efficiency potential studies became one of the primary means of characterizing the resource availability and value of energy efficiency within the overall resource planning process.

There are several ways in which the energy efficiency resource can be estimated and characterized. Definitions of energy efficiency potential are similar to definitions of potential developed for finite fossil fuel resources like coal, oil, or natural gas. For example, fossil fuel resources are typically characterized along two primary dimensions: the degree of geological certainty with which resources may be found, and the likelihood that extraction of the resource will be economical. This relationship is conceptualized in Figure 4-1.

³ Term coined by environmental scientist Amory Lovins in 1989.



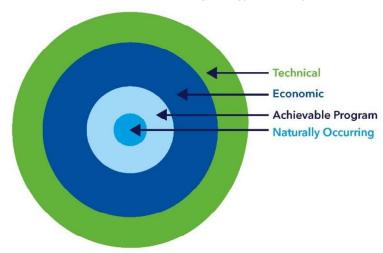
Figure 4-1. Conceptual framework for estimates of fossil fuel resources



Somewhat analogously, this energy efficiency potential study defines several different *types* of energy efficiency *potential*, namely technical, economic, achievable program, and naturally occurring. These types of potential are conceptualized in Figure 4-2 and described below:

- Technical potential is defined in this study as the complete penetration of all measures analyzed in applications where they were deemed technically feasible from an engineering perspective.
- Economic potential refers to the technical potential of those energy conservation measures that are cost-effective when compared to supply-side alternatives.
- Achievable program potential refers to the amount of savings that would occur in response to specific program funding
 and measure incentive levels. Savings associated with program potential are savings that are projected beyond those
 that would occur naturally in the absence of any market intervention.
- Naturally occurring potential refers to the amount of savings estimated to occur as a result of normal market forces; that is, in the absence of any utility or governmental intervention.

Figure 4-2. Conceptual relationship among energy efficiency potential definitions





One metric of savings potential that we use is "cumulative annual savings." These are savings that occur in a year due to program activities from previous years that are still generating energy savings, demonstrated below in a hypothetical example in Table 4-1. In this example, the Widget Installation Program begins in 2024 and installs energy-saving widgets with a 5-year effective useful life. The following conditions make up the entire scenario:

- In 2024 (Year 1), widgets with total annual savings of 1.00 GWh are installed. There are no previous year program savings, so cumulative annual savings are equal to 2024 savings, or 1.00 GWh.
- In 2025 (Year 2), widgets with total annual savings of 1.50 GWh are installed. Widgets from 2024 are still installed, cumulative annual savings are 2024 and 2025 annual savings, or 2.50 GWh.
- In 2026 (Year 3), widgets with total annual savings of 1.75 GWh are installed. Widgets from 2024 and 2025 are still installed, cumulative annual savings are 2026, 2025, and 2024 annual savings, or 4.25 GWh.
- In 2029 (Year 6), widgets with total annual savings of 1.75 GWh are installed. Widgets from previous years are still
 installed. However, in Year 6 the widgets from Year 1 have passed their 5-year effective useful life and are no longer
 generating energy savings. Cumulative annual savings include savings from widgets installed in 2029, 2028, 2027,
 2026, and 2025, but not those installed in 2024.

Cumulative annual savings accounting for equipment retirement is a performance metric and not an accounting metric. In the example, widgets are assumed to have an effective useful life of five years; 2029 savings include those measures generating savings in 2029 and do not include 2024 installations that have passed their effective useful life.

Table 4-1. Example of cumulative annual savings for widget installation program

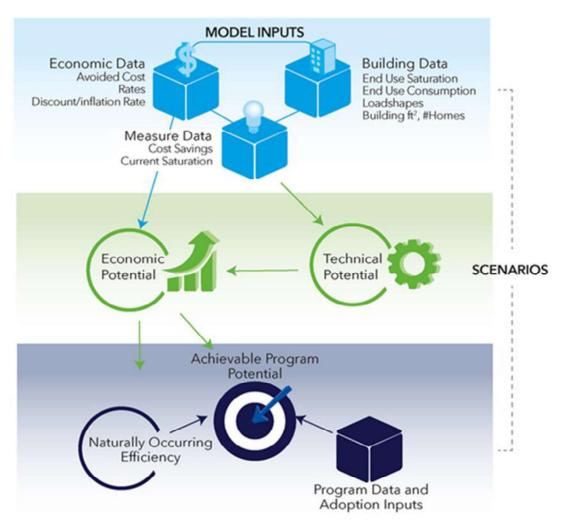
	Energy savings year (GWh)									
Installation year	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
2024	1.00	1.00	1.00	1.00	1.00					
2025		1.50	1.50	1.50	1.50	1.50				
2026			1.75	1.75	1.75	1.75	1.75			
2027				1.75	1.75	1.75	1.75	1.75		
2028					1.75	1.75	1.75	1.75	1.75	
2029						1.75	1.75	1.75	1.75	1.75
2030							1.50	1.50	1.50	1.50
2031								1.25	1.25	1.25
2032									1.00	1.00
2033										0.50
Cumulative Annual Savings (GWh)		2.50	4.25	6.00	7.75	8.50	8.5	7.00	7.25	6.00
Total Accounting Savings (GWh)	1.00	3.50	7.75	13.75	21.50	30.00	38.50	45.50	52.75	58.75



4.1.3 Summary of analytical steps used to calculate energy efficiency potential

The crux of this study involves carrying out several basic analytical steps to produce estimates of the energy efficiency potentials introduced above. The basic analytical steps for this study are shown in relation to one another in Figure 4-3. The bulk of the analytical process for this study was carried out in a model developed by DNV for conducting energy efficiency potential studies. Details on the steps employed and analyses conducted are described in Appendix A. The model used DSM ASSYST, a Microsoft® Excel-based model that integrates technology-specific engineering and customer behavior data with utility market saturation data, load shapes, rate projections, and marginal costs into an easily updated data management system.

Figure 4-3. Conceptual overview of study process





The key steps implemented in this study are:

1. Develop Initial Input Data

- a) Develop a list of energy efficiency measure opportunities to include in scope. In this step, an initial draft measure list was developed and provided to Dominion Energy. The final measure list was developed after incorporating comments.
- b) Gather and develop technical data (costs and savings) on efficient measure opportunities. Data on measures were gathered from a variety of sources. Measure descriptions are provided in Appendix B and detail on measure inputs is provided in Appendix E.
- c) Gather, analyze, and develop information on building characteristics, including total square footage or total number of households, energy consumption and intensity by end use, end-use consumption load patterns by time of day and year (i.e., load shapes), market shares of key electric consuming equipment, and market shares of energy efficiency technologies and practices. Section 5.1 of this report describes the baseline data developed for this study.
- d) Collect data on economic parameters: avoided costs, electricity rates, discount rates, and inflation rate. These inputs are provided in Appendix C of this report.

2. Estimate Technical Potential and Develop Supply Curves

a) Match and integrate data on efficient measures to data on existing building characteristics to produce estimates of technical potential and energy efficiency supply curves.

3. Estimate Economic Potential

- a) Match and integrate measure and building data with economic assumptions to produce indicators of costs from different viewpoints (e.g., societal and consumer).
- b) Estimate total economic potential. (Note that at this stage of the analysis, program-related costs are not factored into the cost-effectiveness screening. Thus, the results reflect the theoretical estimate of the measure impacts, while disregarding the mode of delivery.)

4. Estimate Achievable Program and Naturally Occurring Potentials

- a) Screen initial measures for inclusion in the program analysis. This screening may take into account factors such as cost-effectiveness, potential market size, non-energy benefits, market barriers, and potentially adverse effects associated with a measure. For this study, measures were screened using the total-resource-cost test, with the exclusion of program costs and while considering only electric avoided-cost benefits.
- b) Gather and develop estimates of program costs (e.g., for administration and marketing) and historic program savings.
- c) Develop estimates of customer adoption of energy efficiency measures as a function of the economic attractiveness of the measures, barriers to their adoption, and the effects of program intervention.
- d) Estimate achievable program and naturally occurring potentials and associated program costs.

5. Scenario Analyses

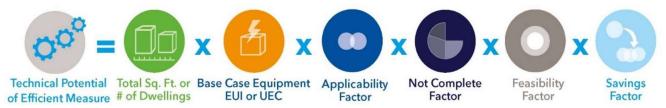
a) Recalculate potentials under alternate program scenarios.



4.2 Technical potential

In our bottom-up modeling approach, DNV first estimates technical potential for energy savings by integrating key measure and market segment parameters using Equation 1:

Equation 1. Technical potential of an efficient measure



Where:

- Square feet is the total floor space for all buildings in the market segment. For the residential analysis, the number of
 dwelling units is substituted for square feet.
- Base case equipment energy use intensity (EUI) is the energy used per square foot by each base case technology in
 each market segment. This is the consumption of the energy-using equipment that the efficient technology replaces or
 affects. For example, if the efficient measure were a CFL, the base EUI would be the annual kWh per square foot of an
 equivalent incandescent lamp. For the residential analysis, unit energy consumption (UECs), energy used per dwelling,
 are substituted for EUIs and were developed as part of the Conditional Demand Analysis.
- Applicability factor is the fraction of the floor space (or dwelling units) that is applicable for the efficient technology in a
 given market segment; for the example above, the percentage of floor space lit by incandescent bulbs. This input was
 developed through results of the 2013 residential and commercial energy use surveys and the Conditional Demand
 Analysis and Baseline Analysis.
- Not complete factor is the fraction of applicable floor space (or dwelling units) that has not yet been converted to the
 efficient measure; that is, one minus the fraction of floor space that already has the energy efficiency measure installed.
 DNV relied on the results of Dominion Energy's energy use surveys to estimate this value when possible and utilized
 other recent energy use surveys and internal databases for other measures not included in the energy use surveys.
- Feasibility factor is the fraction of the applicable floor space (or dwelling units) that is technically feasible for
 conversion to the efficient technology from an engineering perspective. DNV engineers familiar with Dominion Energy's
 service territory reviewed these values to ensure they were consistent with Dominion Energy's building stock.
- Savings factor is the reduction in energy consumption resulting from application of the efficient technology. DNV estimated energy savings through the use of sources including the STEP manual, LBNL Home Energy Savers Model, and other engineering calculations.

Technical potential for peak demand reduction is calculated analogously.

4.3 Economic potential

Economic potential is then assessed by first developing a supply-curve analysis. This analysis eliminates double counting of measure savings. On a market segment and end-use/technology basis, measures are stacked in order of cost-effectiveness, and the energy consumption of the system being affected by the efficiency measures reduces as each measure is applied. As a result, the savings attributable to each subsequent measure decrease if the measures are interactive. After eliminating double counting of savings, the benefits and costs associated with a given measure and market segment are compared using the Total Resource Cost (TRC) test or other cost-relevant cost-effectiveness test. Measures with a TRC ratio greater than 1.0 will be passed on to our achievable potential analysis.



5 RESULTS

5.1 Energy efficiency baseline analysis

This section presents a baseline analysis of energy use in Dominion Energy's Virginia service territory. The purpose of this analysis is to break out energy use by sector, building type, and end use to provide a foundation for estimating DSM or energy efficiency potential.

DNV completed a conditional demand analysis of the residential sector using the energy use survey results and billing data to develop energy consumption values for various end uses. That data was incorporated into this analysis.

The non-residential analysis was based on engineering calculations calibrated to Dominion Energy's non-residential energy consumption (there was no non-residential conditional demand analysis) and used the best data available to inform those calculations. However, in some cases we used regional data, such as South Atlantic Census Division data from the U.S. Department of Energy (DOE) Commercial Buildings Energy Consumption Survey (CBECS), rather than those specific to Dominion Energy's service territory. It was necessary to rely on such sources for inputs that could not be determined from the Commercial Energy Use Survey data or other Dominion Energy data sources.

5.1.1 Summary of baseline energy use by sector

Energy usage by sector and business type was developed from the data reported by the EIA. These data are presented in Table 5-1.

Table 5-1. Summary of Dominion Energy MWh and customers by sector

Sector	MWh	# of Customers		
Residential	29,753,922	2,332,881		
Commercial	49,327,301	266,167		
Industrial	5,312,012	540		
Total	84,393,235	2,599,588		

Note that these values include non-jurisdictional, exempt, and opt-out customers. Exempt and opt-out customers will be broken out later.

5.1.2 Residential baseline

We used the population weights from the applicable Dominion Energy Residential Energy Use Survey to divide residential customers into single-family, multifamily, and manufactured home households—the three residential segments being examined in this study. Table 5-2 shows the results.



Table 5-2. Number of residential customers by building type

Building type	# of Customers	Percentage of Households
Single Family	1,110,428	48%
Single Family LI	787,740	34%
Multifamily	195,645	8%
Multifamily LI	182,454	8%
Manufactured Home	43,493	2%
Manufactured Home LI	13,121	1%
Total	2,332,881	100%

5.1.2.1 Residential end-use saturations

DNV calculated the equipment saturations (percentage of households having an end use) from the results of the residential energy use surveys. These results are shown in Table 5-3. For lighting, the equipment saturations interact with the number of lamps per home by usage and type.

Table 5-3. Residential end-use saturations by base measure

End-use Saturations	SF	MF	МН	SF LI	MF LI	MH LI
Base Central AC,				/		
SEER2 14.3 (non-electric heat)	37.9%	23.6%	7.2%	38%	24%	7%
Base Room AC, CEER 10.9 (non-electric heat)	1.5%	1.9%	5.5%	2%	2%	6%
Base Dehumidifier	1.570	1.970	3.570	2 /0	2 /0	0 70
(40 pints/day, 1.5 liters/kWh)	18.8%	3.9%	9.5%	19%	4%	10%
Base Air Cleaner,						
PM 2.5 CADR = 200, CADR/Watt 1.9	22.5%	22.5%	22.5%	23%	23%	23%
Base Furnace Fan –	00.40/	05 50/	40.00/	000/	050/	400/
Furnace & CAC	39.4%	25.5%	12.8%	39%	25%	13%
Base Air-Source Heat Pump, SEER2 14.3/HSPF2 7.5 w/Aux Strip Heat	40.4%	45.8%	37.6%	40%	46%	38%
Base Geothermal Heat Pump,	40.470	43.070	37.070	40 /0	40 /0	30 70
EER 15.0 / COP 3.1	1.0%	0.0%	0.0%	1%	0%	0%
Base Electric Furnace +						
Central AC (SEER 13.0)	9.2%	17.0%	22.6%	9%	17%	23%
Base Electric Furnace +	0.40/	0.00/	0.40/	00/	00/	00/
Room AC (EER 9.7)	0.1%	0.0%	8.1%	0%	0%	8%
Base Electric Baseboard Heating + Central AC (SEER 13.0)	0.7%	1.9%	1.0%	1%	2%	1%
Base Electric Baseboard Heating +	0.1 70	1.070	1.070	170	270	170
Room AC (EER 9.7)	2.0%	3.2%	9.2%	2%	3%	9%
Base Electric Central Furnace,						
no cooling	0.1%	0.3%	1.4%	0%	0%	1%
Base Interior Fluorescent Fixture 1.8 hrs/day	23.1%	14.0%	9.0%	23%	14%	9%
Base Interior Lighting 9 Watt	23.170	14.0%	9.0%	2370	14 70	970
LED, 0.5 hrs/day	100%	100%	100%	100%	100%	100%



End-use Saturations	SF	MF	МН	SF LI	MF LI	MH LI
Base Interior Lighting 9 Watt LED,						
2.5 hrs/day	100%	100%	100%	100%	100%	100%
Base Interior Lighting 9 Watt LED,						
6 hrs/day	100%	100%	100%	100%	100%	100%
Base Exterior Lighting 9 Watt LED,	00.40/	05 40/	FF 40/	000/	050/	FF0/
6 hrs/day	62.1%	25.4%	55.4%	62%	25%	55%
Base Refrigerator, Standard 2014	99.9%	100.0%	100.0%	100%	100%	100%
Base Refrigerator, Standard 2029						
Base Second Refrigerator, Standard 2014	43.2%	4.9%	16.4%	43%	5%	16%
Base Freezer, Standard 2014	36.4%	11.0%	35.6%	36%	11%	36%
Base Freezer, Standard 2019	JU. 4 /0	11.070	00.070	JU /0	1170	30 /0
Base Second Freezer, Standard 2014	2.9%	0.7%	6.6%	3%	1%	7%
Base Clothes Washer, 2018 Standard	2.570	0.770	0.070	070	170	1 70
Front Load (IMEF 1.84 / IWF 4.7)	97.0%	77.8%	93.9%	97%	78%	94%
Base Clothes Dryer, CEF 3.73	88.5%	68.5%	83.0%	89%	69%	83%
Base Dishwasher,						
Standard 2013 (<= 307 kWh)	80.8%	88.2%	41.3%	81%	88%	41%
Base 2-speed Pool Pump (ROB)	7.8%	0.0%	2.5%	8%	0%	2%
Base Exhaust fan, 3.1 CFM/W,	·		• • • •	.	- 10 <i>'</i>	·
<2.0 sones (quiet),ASHRAE 62.2	91%	91%	91%	91%	91%	91%
Base LED TV	58.5%	48.1%	37.0%	58%	48%	37%
Base LCD TV	23.9%	17.0%	14.8%	24%	17%	15%
Base Other TV	13.8%	12.9%	14.5%	14%	13%	15%
Base Set-Top Box	85.8%	74.3%	76.0%	86%	74%	76%
Base Desktop PC	39.8%	25.2%	27.4%	40%	25%	27%
Base Laptop PC	77.4%	71.7%	53.6%	77%	72%	54%
Base Monitor/Display	27.0%	17.1%	13.8%	27%	17%	14%
Base Water Heater (40 gal), Federal Standard EF 0.95	63.7%	65.9%	88.7%	64%	66%	89%
	1.5%	0.0%	0.5%	1%	0%	1%
Base Electric Vehicle Level 1 Charger Base Electric Vehicle Level 2 Charger	2.7%	0.0%	0.5%	3%	0%	0%
Base House Use	100%	100%	100%	100%	100%	100%
					100%	100%
Base Miscellaneous	100%	100%	100%	100%	100%	100%

5.1.2.2 Residential end-use energy intensities

Table 5-4 shows the end-use energy intensities for the residential sector by base measure. End-use energy intensities represent the energy use per household for households that have that end-use. Most of these energy intensity values were derived from the conditional demand analysis, with lighting estimates supplemented by engineering calculations to support the usage bin breakouts. The rest were derived or calculated from a variety of sources, including:

- DOE's Home Energy Saver model
- The US Environmental Protection Agency (EPA) ENERGY STAR calculators

Note that the results shown below are presented on a per-household basis.

Table 5-4. Residential end-use energy intensities (kWh/household with end-use)

kWh/household	SF	MF	МН	SF LI	MF LI	MH LI
Base Central AC, SEER2 14.3 (non-electric heat)	2,513	1,504	2,204	2,513	1,504	2,204
Base Room AC, CEER 10.9	1,145	875	1,382	1,145	875	1,382

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kWh/household	SF	MF	МН	SF LI	MF LI	MH LI
(non-electric heat)						
Base Dehumidifier						
(40 pints/day, 1.5 liters/kWh)	2,404	1,180	1,404	2,404	1,180	1,404
Base Air Cleaner, PM 2.5 CADR = 200, CADR/Watt 1.9	407	300	407	407	300	407
Base Furnace Fan - Furnace & CAC	521	436	3,962	521	436	3,962
Base Air-Source Heat Pump,						
SEER2 14.3/HSPF2 7.5 w/Aux Strip Heat Base Geothermal Heat Pump,	5,574	3,366	6,624	5,574	3,366	6,624
EER 15.0 / COP 3.1	5,638	0	0	5,638	0	0
Base Electric Furnace + Central AC (SEER 13.0)	6,652	3,172	11,297	6,652	3,172	11,297
Base Electric Furnace + Room AC (EER 9.7)	5,284	2,543	10,475	5,284	2,543	10,475
Base Electric Baseboard Heating +	3,204	2,343	10,473	3,204	2,545	10,473
Central AC (SEER 13.0)	3,503	4,471	6,578	3,503	4,471	6,578
Base Electric Baseboard Heating + Room AC (EER 9.7)	2,135	3,842	5,756	2,135	3,842	5,756
Base Electric Central Furnace,	2,100	0,012	5,700	2,100	0,012	5,100
no cooling	4,139	1,667	9,093	4,139	1,667	9,093
Base Interior Fluorescent Fixture 1.8 hrs/day	273	325	570	273	325	570
Base Interior Lighting 9 Watt LED, 0.5 hrs/day	288	178	157	288	178	157
Base Interior Lighting 9 Watt LED,						
2.5 hrs/day	476	260	253	476	260	253
Base Interior Lighting 9 Watt LED, 6 hrs/day	735	337	352	735	337	352
Base Exterior Lighting 9 Watt LED, 6 hrs/day	64	8	57	64	8	57
Base Refrigerator, Standard 2014	1,778	1,691	1,722	1,778	1,691	1,722
Base Refrigerator, Standard 2029						
Base Second Refrigerator,	4 470	000	007	4 470	000	007
Standard 2014	1,179	890	967	1,179	890	967
Base Freezer, Standard 2014 Base Freezer, Standard 2029	1,156	1,156	1,156	1,156	1,156	1,156
Base Second Freezer,						
Standard 2014	1,475	1,476	1,475	1,475	1,476	1,475
Base Clothes Washer, 2018 Standard Front Load (IMEF 1.84 / IWF 4.7)	436	436	436	436	436	436
Base Clothes Dryer, CEF 3.73	122	122	122	122	122	122
Base Dishwasher, Standard 2013	122	122	122	122	122	122
(<= 307 kWh)	260	260	260	260	260	260
Base 2-speed Pool Pump (ROB)	1,908	0	1,672	1,908	0	1,672
Base Exhaust fan, 3.1 CFM/W, <2.0 sones (quiet),ASHRAE 62.2	122	122	122	122	122	122
Base LED TV	372	248	362	372	248	362
Base LCD TV	206	143	194	206	143	194
Base Other TV	609	548	624	609	548	624
Base Set-Top Box	338	215	253	338	215	253
Base Desktop PC	267	234	223	267	234	223
Base Laptop PC	183	153	129	183	153	129
Base Monitor/Display Base Water Heater (40 gal),	227	208	191	227	208	191
Federal Standard EF 0.95	2,952	1,132	2,228	2,952	1,132	2,228



kWh/household	SF	MF	МН	SF LI	MF LI	MH LI
Base Electric Vehicle Level 1 Charger	851	0	1,514	851	0	1,514
Base Electric Vehicle Level 2 Charger	1,151	0	0	1,151	0	0
Base House Use	14,280	7,587	16,671	14,280	7,587	16,671
Base Miscellaneous	819	143	1,500	576	100	1,500

5.1.2.3 Residential energy use

Residential energy use was calculated as the product of the number of households, equipment saturation, and end-use energy intensity. Energy use by building type and end use is shown in Table 5-5.

Table 5-5. Residential energy use by building type and end use

Table 5-5. Residential energy use by building type and end use								
MWh	SF	MF	МН	SF LI	MF LI	MH LI		
Base Central AC, SEER2 14.3 (non-electric								
heat)	1,057,136	69,383	2,096	749,934	64,706	6,949		
Base Room AC, CEER 10.9 (non-electric								
heat)	19,632	3,218	998	13,927	3,001	3,307		
Base Dehumidifier (40 pints/day, 1.5 liters/kWh)	501,030	9,004	1,750	355,432	8,397	5,801		
Base Air Cleaner, PM 2.5 CADR = 200,								
CADR/Watt 1.9	101,603	13,206	1,201	72,077	12,316	3,980		
Base Furnace Fan - Furnace & CAC	228,150	21,688	6,629	161,850	20,226	21,973		
Base Air-Source Heat Pump, SEER2								
14.3/HSPF2 7.5 w/Aux Strip Heat	2,499,398	301,817	32,638	1,773,077	281,468	108,189		
Base Geothermal Heat Pump, EER 15.0 /	00.404	0	0	44.007	0	0		
COP 3.1 Base Electric Furnace + Central AC (SEER	63,161	0	0	44,807	0	0		
13.0)	681,092	105,543	33,489	483,168	98,427	111,009		
Base Electric Furnace + Room AC (EER								
9.7)	4,416	0	11,107	3,133	0	36,817		
Base Electric Baseboard Heating + Central AC (SEER 13.0)	26,173	16,192	896	18,567	15,100	2,969		
Base Electric Baseboard Heating + Room								
AC (EER 9.7)	46,413	24,162	6,937	32,925	22,533	22,995		
Base Electric Central Furnace, no cooling	4,749	894	1,718	3,369	834	5,694		
Base Interior Fluorescent Fixture 1.8	70.057	0.047	070	40.000	0.040	0.007		
hrs/day	70,057	8,917	672	49,698	8,316	2,227		
Base Interior Lighting 9 Watt LED, 0.5	210 451	24 900	2.066	226 640	22 520	6 0 4 7		
hrs/day Base Interior Lighting 9 Watt LED, 2.5	319,451	34,890	2,066	226,619	32,538	6,847		
hrs/day	528,895	50,896	3,320	375,199	47,465	11,005		
Base Interior Lighting 9 Watt LED, 6	020,000	55,555	0,020	070,100	17,700	11,000		
hrs/day	815,691	65,885	4,616	578,653	61,443	15,300		
Base Exterior Lighting 9 Watt LED, 6		.,		-,	, ,	,		
hrs/day	44,097	409	414	31,282	381	1,372		
Base Refrigerator, Standard 2014	1,972,107	330,804	22,599	1,399,016	308,501	74,912		
Base Refrigerator, Standard 2029								
Base Second Refrigerator, Standard 2014	566,124	8,476	2,077	401,609	7,904	6,885		
Base Freezer, Standard 2014	466,821	24,847	5,409	331,163	23,172	17,930		
Base Freezer, Standard 2029								
Base Second Freezer, Standard 2014	47,887	1,968	1,270	33,971	1,835	4,209		
Base Clothes Washer, 2018 Standard	,	,			,	,		
Front Load (IMEF 1.84 / IWF 4.7)	468,982	66,305	5,370	332,697	61,834	17,799		
Base Clothes Dryer, CEF 3.73	120,059	16,376	1,331	85,170	15,272	4,411		



MWh	SF	MF	МН	SF LI	MF LI	MH LI
Base Dishwasher, Standard 2013 (<= 307 kWh)	233,423	44,865	1,410	165,590	41,841	4,675
Base 2-speed Pool Pump (ROB)	165,427	0	548	117,354	0	1,816
Base Exhaust fan, 3.1 CFM/W, <2.0 sones						
(quiet),ASHRAE 62.2	123,092	21,687	1,454	87,322	20,225	4,821
Base LED TV	241,879	23,286	1,756	171,589	21,716	5,821
Base LCD TV	54,652	4,735	377	38,771	4,416	1,249
Base Other TV	93,609	13,793	1,190	66,407	12,863	3,944
Base Set-Top Box	321,714	31,199	2,522	228,224	29,096	8,360
Base Desktop PC	117,846	11,574	804	83,600	10,794	2,665
Base Laptop PC	157,038	21,510	909	111,403	20,060	3,012
Base Monitor/Display	67,983	6,950	345	48,227	6,482	1,145
Base Water Heater (40 gal), Federal						
Standard EF 0.95	2,087,470	145,982	25,921	1,480,855	136,140	85,924
Base Electric Vehicle Level 1 Charger	13,994	0	102	9,927	0	339
Base Electric Vehicle Level 2 Charger	35,026	0	0	24,848	0	0
Base House Use	15,856,590	1,484,409	218,745	11,248,692	1,384,329	725,094
Base Miscellaneous	909,384	27,905	19,681	453,625	18,299	65,240
Total	15,275,660	1,528,366	205,621	10,645,086	1,417,598	681,591

Figure 5-1 and Figure 5-2 show the breakout of residential energy use by building type and end use, respectively. Single family non-low income homes make up more than half of homes, and with low income single family homes make up 87% of the building stock. Refrigeration and cooling were the largest end uses in terms of total consumption.

Figure 5-1. Residential energy use by building type

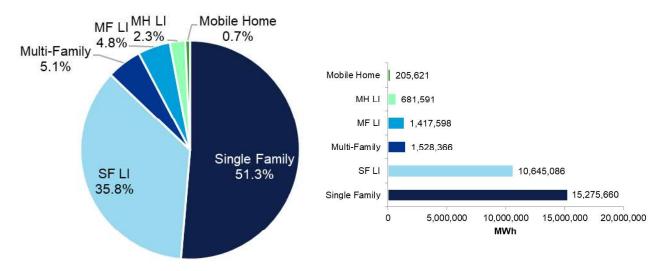
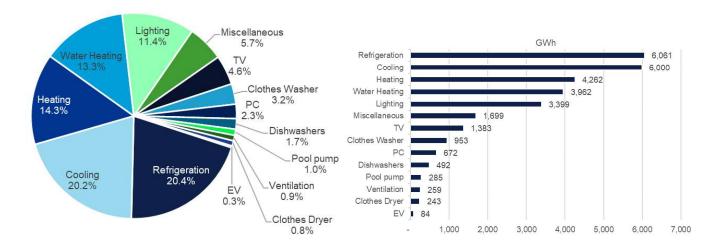




Figure 5-2. Residential energy use by end use



5.1.3 Non-Residential baseline

For this potential study, opt-out customers were split apart from the non-opt-out customers. These groups were broken down into building types, listed below, with non-jurisdictional customers additionally split out from the non-exempt customers:

- Office
- Restaurant
- Retail
- Grocery
- Warehouse
- Education
- Health
- Lodging
- Data center
- Non-jurisdictional
- Religious worship
- Other
- Industrial
- Agricultural

While DNV performed baseline analyses for both opt-out customers and non-opt-out customers, opt-out customers do not contribute to program potential.

5.1.3.1 Non-residential equipment saturations

The equipment saturations (percent of commercial square feet having an end use) were calculated primarily from the results of the commercial energy use surveys. For a few measures, such as motors, data from internal DNV databases (gleaned from previous potential studies and on-site data collection) were used. The resulting saturations are shown in Table 5-6.



Table 5-6. Non-Residential sector equipment saturations

End Use	Base Linear Lighting, Fluorescent Fixture, 2L4'T12 6%	Base Linear Lighting, Fluorescent Fixture, 2L4'T12, integrated market 6%	Base Linear Lighting, Fluorescent Fixture, 2L4′T8, 1 EB	Base Linear Lighting, Fluorescent Fixture, 2L4′T8, 1 EB, integrated market	Base Linear Lighting, LED Tube, 2 lamp fixture	ighting, LED Tube, integrated market	Base General Service Screw-in, CFL	Base General Service Screw-in, 2% Incandescent/halogen	Base General Service Screw-in, LED bulb	Lighting (low bay)	Base High Bay Lighting, Fluorescent T5	Base High Bay Lighting, Fluorescent T5, integrated market 2%	Base High Bay Lighting, HID lighting	Base High Bay Lighting, LED lighting	Base CFL Exit Sign 100%	Base Area Lighting, Outdoor HID 16%	Base General Service Screw-in, Outdoor CFL
Restaurant	4%	4 %	4 %	4%	%9	%9	4 %	2%	52%	%0	1%	1%	1%	3%	100%	11%	4%
lis19A	%9	%9	2%	2%	16%	16%	4%	%2	23%	%0	4%	4%	1%	%0	100%	%6	4 %
Сгосегу	2%	2%	2%	2%	35%	35%	1%	2%	17%	%0	1%	1%	1%	%8	100%	%0	%0
Warehouse	3%	3%	11%	11%	15%	15%	%0	2%	18%	%0	4 %	4%	%6	%0	100%	14%	%0
Education	%9	%9	%2	%2	2%	2%	1%	2%	28%	%0	1%	1%	%0	2%	100%	3%	%0
Health	%9	%9	11%	11%	12%	12%	2%	2%	34%	%0	1%	1%	%0	%0	100%	8%	1%
Buigbod	2%	2%	4%	4%	%9	%9	%9	1%	62%	%0	%0	%0	2%	3%	100%	10%	2%
Data Center	%0	%0	8%	8%	8%	8%	%0	%0	28%	29%	%0	%0	%6	%0	100%	4%	%0
Non- Jurisdictional	4%	4 %	2%	2%	10%	10%	%9	3%	45%	%0	1%	1%	1%	3%	100%	15%	2%
Religious Worship	4%	4 %	8%	8%	20%	20%	3%	2%	20%	%0	1%	1%	4%	10%	100%	24%	%2
Other	2%	2%	3%	3%	4 %	14%	11%	2%	41%	%0	1%	1%	1%	2%	100%	24%	2%
lsinteubnl	2%	2%	%2	%2	24%	24%	2%	2%	21%	%0	%0	%0	4%	12%	100%	29%	1%
Agriculture	3%	3%	%0	%0	3%	3%	1%	31%	52%	%0	1%	1%	1%	15%	100%	%95	1%

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End Use	Office	Restaurant	list9A	утөэолд	Warehouse	Education	dilsəH	Lodging	Data Center	-noM Isnotictional	Religious Worship	Other	lsirteubnl	Agriculture
Base General Service Screw-in, Outdoor Incandescent/Halogen	13%	15%	14%	%0	%2	14%	22%	%9	%52	15%	%6	17%	3%	3%
Base General Service Screw-in, Outdoor LED bulb	62%	48%	45%	%0	%99	82%	%59	62%	12%	28%	21%	39%	25%	41%
Base Linear Lighting, Outdoor Fluorescent Tube	2%	8%	22%	%0	1%	1%	1%	4%	%0	1%	%0	1%	%0	%0
Base Linear Lighting, Outdoor LED Tube	3%	%2	%9	%0	12%	%0	3%	%6	10%	%2	2%	13%	11%	%0
Base Water-Cooled Centrifugal Chiller, 0.58 kW/ton, 500 tons	23%	2%	1%	%0	1%	%2	%6	28%	%0	10%	11%	%6	3%	%0
Base DX Packaged System, EER=10.3, 10 tons	35%	%09	47%	37%	23%	%02	34%	23%	88%	45%	34%	28%	35%	%0
Base Heat Pump cooling (14 SEER, 8.2 HSPF)	23%	17%	15%	2%	%6	4%	21%	%9	1%	10%	28%	11%	%6	4%
Base Split-System AC, SEER 14.5, <5.4 tons	%8	4 %	%6	10%	%2	2%	16%	15%	2%	16%	15%	27%	%2	4%
Base PTAC cooling, EER=10.2, 1 ton	2%	1%	1%	%0	%0	2%	4%	17%	1%	%4	1%	2%	%0	%0
Base Room AC, CEER 10.9	%0	1%	2%	19%	1%	2%	12%	2%	%0	2%	3%	2%	1%	%0
Base Ductless Mini-Split Heat Pump, SEER 15.0/HSPF 8.8	2%	4 %	2%	%8	3%	2%	2%	3%	%0	3%	2%	2%	2%	1%
Base Open refrigerated/ freezer cases	4 %	12%	4%	29%	%0	%0	%2	21%	%0	1%	2%	%0	%0	%0
Base Closed refrigerated/ freezer cases	%2	38%	10%	53%	%0	16%	14%	20%	%0	%8	31%	2%	4%	28%
Base Walk-in refrigeration/ freezer units	25%	85%	%2	%89	2%	13%	30%	53%	%0	11%	2%	%9	2%	3%
Base Large Cold Storage Area	%0	2%	2%	27%	%8	%0	4%	10%	%0	%0	4%	%0	4%	2%
Base Reach-in Refrigerator/Freezer, Federal Standard	3%	12%	2%	53%	%0	16%	%8	1%	%0	%2	31%	2%	4%	28%
Base Glass Door Reach-in Refrigerator/Freezer, Federal Standard	3%	25%	8%	%0	%0	%0	%9	19%	%0	1%	%0	1%	%0	%0
Base Ice Maker, Federal Standard	17%	%02	%2	41%	%8	26%	21%	81%	%0	13%	%09	3%	15%	%9

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Base Registration From Expension Formation	End Use	Office	Restaurant	Retail	угооого	Warehouse	Education	Health	gnigbo⊿	Data Center	Mon- Jurisdictional	Religious Worship	Other	Isirtsubnl	Agriculture
39% 15% 31% 8% 26% 14% 47% 56% 0% 15% 15% 15% 39% 14% 47% 56% 0% 14% 47% 69% 81% 100% 37% 73% 73% 87% 87% 91% 56% 77% 80% 42% 98% 90% 21% 67% 90% 77% 90% 77% 93% 85% 85% 96% 44% 86% 47% 90% 77% 93% 85% 96% 77% 90% 77% 93% 85% 96% 77% 90% 77% 93% 85% 96% 77% 90% 77% 90% 77% 90% 77% 90% 87% 90% 77% 90% 77% 90% 77% 90% 77% 90% 77% 90% 77% 90% 77% 90% 77% 90% 77% 90% 90% 77% 90% 77%	idential-Type :or/Freezer, Federal	75%	38%	%09	23%	62%	%98	29%	%89	%86	81%	%02	78%	83%	20%
q1% 55% 49% 51% 80% 31% 69% 81% 100% 37% 73% 32% 87% 91% 56% 78% 56% 90% 42% 98% 90% 21% 67% 90% 37% 78% 93% 90% 62% 78% 88% 37% 96% 74% 86% 78% 38% 90% 78% 38% 43% 66% 74% 86% 74% 88% 35% 88% 78% 38% 44% 86% 74% 88% 47% 96% 74% 88% 47% 88% 47% 88% 47% 96% 74% 88% 47% 88% 47% 96% 74% 88% 47% 47% 96% 47% 88% 47% 88% 47% 88% 47% 88% 47% 88% 47% 47% 88% 47% 47% 88% 47% 47% 47% 47%	pact Refrigerator, andard	39%	15%	31%	%8	26%	14%	47%	26%	%0	15%	15%	10%	26%	%9
91% 56% 78% 56% 78% 56% 78% 65% 78% 65% 78% 88% 37% 78% 88% 44% 98% 90% 21% 67% 90% 78% 88% 48% 37% 78% 88% 44% 68% 45% 21% 88% 37% 78% 88% 44% 86% 44% 47% 88% 47% 88% 47% 88% 47% 88% 47% 88% 47% 88% 47% 88% 47% 88% 47% 88% 47% 88% 47% 88% 47% 88% 47% 88% 47% 88% 41% 76% 88% 47% 88% 41% 76% 88% 41% 76% 88% 41% 76% 88% 41% 76% 88% 41% 76% 88% 41% 76% 88% 41% 76% 88% 41% 76% 88% 41% 76% <th>puter Network Server</th> <td>71%</td> <td>22%</td> <td>49%</td> <td>51%</td> <td>%08</td> <td>31%</td> <td>%69</td> <td>81%</td> <td>100%</td> <td>37%</td> <td>73%</td> <td>32%</td> <td>87%</td> <td>%/</td>	puter Network Server	71%	22%	49%	51%	%08	31%	%69	81%	100%	37%	73%	32%	87%	%/
90% 49% 45% 21% 88% 37% 78% 83% 96% 44% 86% 35% 86% 36% 44% 86% 35% 86% 87% 96% 44% 86% 35% 86% 96% 44% 86% 35% 86% 36% 86% 36% 86% 36% 36% 86% 76% <th>top PC</th> <td>91%</td> <td>%99</td> <td>%82</td> <td>22%</td> <td>%06</td> <td>45%</td> <td>%86</td> <td>%06</td> <td>21%</td> <td>%29</td> <td>%06</td> <td>%82</td> <td>93%</td> <td>73%</td>	top PC	91%	%99	%82	22%	%06	45%	%86	%06	21%	%29	%06	%82	93%	73%
90% 62% 76% 64% 79% 95% 87% 96% 71% 88% 47% 88% sge 43% 61% 53% 65% 39% 90% 81% 100% 52% 91% 51% 75% sge 41% 53% 65% 39% 90% 81% 100% 52% 91% 75%	op PC	%06	49%	45%	21%	88%	37%	78%	83%	%96	44%	%98	35%	85%	41%
95% 43% 61% 53% 65% 39% 90% 81% 100% 52% 91% 51% 75% 96 81% 50% 82% 51% 82% 76% 75% 38% 91% 60% 51% 75% 26% 81% 11% 24% 38% 18% 21% 33% 0% 16% 75% 41% 76% 76% 20% 88% 11% 24% 38% 18% 21% 33% 0% 16% 17% 76% 18% 21% 38% 47% 0% 16% 17% 76% 18% 21% 38% 47% 0% 13% 28% 19% 20%	itor, LCD	%06	62%	%9/	64%	%62	95%	85%	81%	%96	71%	%88	47%	%88	36%
ige 81% 50% 82% 51% 82% 76% 75% 38% 91% 60% 58% 41% 76% 26% 8% 11% 24% 38% 18% 21% 33% 0% 16% 17% 19% 50% 32% 16% 17% 24% 38% 18% 21% 0% 16% 17% 19% 65% 20% 28% 17% 21% 38% 47% 0% 12% 20% 65% 20% 28% 10% 59% 9% 47% 0% 13% 28% 19% 65% 20% 10% 50% 19% 65% 20% 10% 20% 40% 10% 20% 40% 10% 20% 40% 10% 20% 40% 0% 12% 40% 0% 10% 20% 10% 20% 10% 20% 10% 20% 10% 20% 10% 20	jing	85%	43%	%19	53%	%59	39%	%06	81%	100%	52%	91%	21%	75%	16%
26% 8% 11% 24% 38% 18% 21% 33% 0% 16% 27% 13% 50% 32% 16% 17% 27% 42% 21% 38% 47% 0% 22% 31% 19% 65% 20% 28% 4% 25% 2% 10% 20% 30% 13% 28% 12% 20% 4% 54% 10% 25% 20% 57% 28 51% 38% 39% 19% 65% 7% 10% 25% 20% 40% 0% 12% 12% 20% 7% 10% 25% 25% 29% 40% 0% 14% 12% 6% 9% 15% 20% 14% 14% 14% 12% 14% 10% 14% 10% 14% 10% 14% 10% 10% 10% 10% 10% 10% 11% 10% 10%	andard Standby Wattage	81%	20%	85%	21%	82%	%92	%92	38%	91%	%09	28%	41%	%92	84%
32% 16% 17% 27% 42% 21% 38% 47% 0% 22% 31% 19% 65% 20% 28% 4% 25% 2% 10% 20% 30% 0% 13% 28% 12% 20% 4% 54% 4% 25% 2% 10% 20% 30% 0% 12% 20% 12% 20% 7% 10% 2% 10% 23% 57% 2% 12% 13% 14% 28% 19% 19% 20% 7% 10% 13% 14% 23% 0% 14% 12% 19% 19% 19% 19% 19% 19% 19% 19% 19% 19% 19% 10% 10% 10% 10% 10% 10% 13% 14% 10% 10% 10% 10% 10% 10% 10% 10% 10% 10% 10% 10% 10% 10% <th>Federal Standard</th> <td>26%</td> <td>8%</td> <td>11%</td> <td>24%</td> <td>38%</td> <td>18%</td> <td>21%</td> <td>33%</td> <td>%0</td> <td>16%</td> <td>27%</td> <td>13%</td> <td>20%</td> <td>%9</td>	Federal Standard	26%	8%	11%	24%	38%	18%	21%	33%	%0	16%	27%	13%	20%	%9
20% 28% 4% 25% 2% 10% 20% 30% 0% 13% 28% 12% 20% 4% 54% 10% 59% 9% 87% 23% 57% 2% 51% 38% 39% 19% 2 7% 19% 2% 16% 1% 7% 11% 15% 2% 4% 12% 19% 3 7% 10% 2% 16% 1% 7% 11% 15% 6% 4% 12% 4% 12% 6% 9% 42% 3% 68% 0% 25% 29% 40% 0% 11% 7% 14% 2% 4% 12% 6% 9% 42% 2% 10% 12% 40% 0% 14% 12% 14% 12% 14% 10% 14% 10% 14% 10% 14% 10% 14% 10% 14% 10% 14%	igerated Vending Federal Standard	32%	16%	17%	27%	42%	21%	38%	47%	%0	22%	31%	19%	%59	%2
4% 54% 10% 59% 9% 87% 23% 57% 2% 51% 38% 39% 19% 7 7% 19% 2% 16% 1% 7% 11% 15% 0% 9% 4% 12% 6% 7% 10% 2% 7% 10% 23% 0% 11% 8% 11% 8% 0% 42% 3% 58% 0% 25% 29% 40% 0% 11% 0% 9% 15% 2% 11% 0% 7% 14% 2% 4% 2% 6% 9% 15% 29% 40% 0% 12% 4% 2% 9% 9% 9% 4% 2% 9% 9% 9% 4% 2% 9% 9% 9% 4% 2% 9% 9% 9% 9% 9% 9% 9% 9% 9% 9% 9% 9%	ıbi Oven	20%	28%	4 %	72%	2%	10%	20%	30%	%0	13%	28%	12%	20%	%0
7% 19% 2% 16% 1% 7% 11% 15% 0% 9% 4% 12% 6% 7% 10% 2% 7% 0% 13% 14% 23% 0% 11% 8% 11% 8% 0% 42% 3% 58% 0% 25% 29% 40% 0% 12% 41% 7% 0% 9% 15% 2% 40% 0% 6% 2% 4% 2% 9% 15% 0.04 0.01 0.01 0.08 0.19 0.08 0.08 4% 2% 4% 2% 0.12 0.04 0.01 0.01 0.08 0.19 0.08 0.08 0.09 0.04 0.04 0.00 0.04 0.00 0.01 0.00 0.08 0.0 0.01 0.04 0.00 0.01 0.00 0.01 0.00 0.01 0.00 0.01 0.00 0.01 0.00	vection Oven	4 %	24%	10%	29%	%6	81%	23%	21%	2%	21%	38%	39%	19%	%97
7% 10% 2% 7% 0% 13% 14% 23% 0% 11% 8% 11% 8% 0% 42% 3% 58% 0% 25% 29% 40% 0% 41% 7% 0% 9% 15% 2% 11% 0% 7% 15% 9% 0% 2% 4% 2% 9% 15% 2% 11% 0% 6% 2% 4% 2% 0.12 0.04 0.04 0.0 0.08 0.19 0.18 0.00 0.11 0.02 % % % % % % % % % % % % % 1% 1% 1% 1% 0% 1% 0% 1% 0% 1% 0% 1% 0% 1% 0% 1% 0% 1% 0% 1% 0% 1% 0% 1% 0% 1% <th>_</th> <td>%2</td> <td>19%</td> <td>2%</td> <td>16%</td> <td>1%</td> <td>%2</td> <td>11%</td> <td>15%</td> <td>%0</td> <td>%6</td> <td>4%</td> <td>12%</td> <td>%9</td> <td>%0</td>	_	%2	19%	2%	16%	1%	%2	11%	15%	%0	%6	4 %	12%	%9	%0
0% 42% 3% 58% 0% 25% 29% 40% 0% 12% 41% 7% 0% 9% 15% 2% 11% 0% 7% 15% 9% 0% 6% 2% 4% 2% 9% 15% 9% 0.19 0.18 0.00 0.11 0.02 1 % % % % % % % % % % 1% 1% 0.01 0.01 0.01 0.01 0.01 0.02 1 %	dle	%2	10%	2%	%2	%0	13%	14%	23%	%0	11%	%8	11%	8%	%0
9% 15% 2% 11% 0% 7% 15% 9% 0% 6% 2% 4% 2% 0.12 0.04 0.01 0.00 0.08 0.19 0.18 0.00 0.11 0.18 0.04 % <t< td=""><th>ood Holding Cabinet</th><td>%0</td><td>45%</td><td>3%</td><td>28%</td><td>%0</td><td>72%</td><td>78%</td><td>40%</td><td>%0</td><td>12%</td><td>41%</td><td>%2</td><td>%0</td><td>%0</td></t<>	ood Holding Cabinet	%0	45%	3%	28%	%0	72%	78%	40%	%0	12%	41%	%2	%0	%0
0.12 0.04 0.01 0.00 0.18 0.19 0.18 0.00 0.11 0.18 0.14 0.02 1 1% %	mer	%6	15%	2%	11%	%0	%2	15%	%6	%0	%9	2%	4 %	2%	%0
1% 1% 0% 1% 0% 1% 0% 1% 0% 1% 0% 0% 1% 0% <td< td=""><th>tric Boiler, Federal</th><td>0.12</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.00</td><td>0.08 %</td><td>0.19</td><td>0.18</td><td>0.00</td><td>0.11</td><td>0.18</td><td>0.14</td><td>0.02</td><td>0.00</td></td<>	tric Boiler, Federal	0.12	0.0	0.0	0.0	0.00	0.08 %	0.19	0.18	0.00	0.11	0.18	0.14	0.02	0.00
saf 23% 14% 16% 25% 9% 55% 29% 24% 3% 17% 14% 12% st 19% 13% 3% 5% 1% 17% 3% 73% 8% 4% 9% 4% sat 3% 3% 5% 3% 1% 2% 5% 0% 2% 5% 3% 89% 83% 71% 52% 41% 86% 79% 71% 95% 81% 88% 75% 53%	tric Furnace, Federal	1%	; %	2 %0	1%	\$ %	2 %0	° %	%0	%0	; %	°° 0	2%	%0	%0
19% 13% 3% 1% 17% 3% 73% 8% 4% 9% 4% 3% 3% 3% 1% 2% 5% 0% 2% 5% 3% 89% 83% 71% 52% 41% 86% 79% 71% 95% 81% 88% 75% 53%	ting Air-Source Heat ER 15.0/HSPF 8.8 ip Heat	23%	14%	16%	25%	%6	25%	29%	24%	3%	30%	17%	14%	12%	8%
3% 3% 5% 3% 1% 2% 5% 0% 2% 5% 2% 3% 89% 83% 71% 52% 41% 86% 79% 71% 95% 81% 88% 75% 53%	ting Packaged Heat ER 13.9/COP 3.4 R heating), 10 tons	19%	13%	3%	2%	3%	1%	17%	3%	73%	%8	4 %	%6	4 %	%0
89% 83% 71% 52% 41% 86% 79% 71% 95% 81% 88% 75% 53%	tless Mini-Split Heat ER 15.0/HSPF 8.8	3%	3%	3%	2%	3%	1%	2%	2%	%0	2%	2%	2%	3%	84
	tilation	%68	83%	71%	25%	41%	%98	%62	71%	%56	81%	%88	%52	23%	8%

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5.1.3.2 Non-residential end-use energy intensities

Table 5-7 shows the end-use energy intensities (EUIs) for the Virginia non-residential sector by base measure. EUIs represent the energy use per square foot for businesses that have that end-use (for example, chiller annual kWh for commercial square feet with chillers). EUIs were developed from a variety of sources. At the base measure level, lighting and HVAC EUIs were developed from engineering calculations based on wattage or baseline efficiency and hours of use from the STEP Manual. For products covered by the ENERGY STAR program, the EPA's calculators were used.

At the end-use level, EUIs were obtained for the South Atlantic Census Division from the DOE's 2012 CBECS.⁴ This provided concrete, survey-based, regionally appropriate values to use to calibrate the base measure-level EUIs. The resulting EUIs, when combined with the saturation data, produce intensities at the building type level.

⁴ Consumption data for the 2018 CBECS were not yet available at the time of the analysis.



Table 5-7. Non-residential end-use energy intensities (kWh per end-use square foot)

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	өэіТО	Restaurant	listeR	Сгосегу	Warehouse	Education	hilsəH	Puigbod	Data Center	Mon- Jurisdictional	Religious Worship	Other	Industrial	Agriculture
	0.3	0.2	0.2	0.4	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2
Base General Service Screw-in, Outdoor Incandescent/Halogen	6.0	0.7	0.6	7	0.2	0.5	0.6	0.3	0.5	0.7	0.5	0.7	0.7	0.7
Base General Service Screw-in, Outdoor LED bulb	0.2	0.1	0.1	0.2	0.0	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.2
Base Linear Lighting, Outdoor Fluorescent Tube	9.0	4.0	4.0	0.7	0.1	0.3	0.3	0.2	0.3	0.4	0.3	0.4	0.4	0.4
	0.4	0.2	0.2	4.0	0.1	0.2	0.2	0.1	0.2	0.3	0.2	0.3	0.3	0.3
Base Water-Cooled Centrifugal Chiller, 0.58 kW/ton, 500 tons	<u>+</u>	6.	6.	1.5	<u></u>	1.0	6.	4	31.3	-	0.5	0.7	0.6	0.6
Base DX Packaged System, EER=10.3, 10 tons	2.6	2.9	3.5	2.7	5.4	1.5	3.0	8.3	62.4	2.5	9.0	1.5	1.	7:
	2.4	2.7	3.2	2.4	6.4	<u>1</u> .	2.8	7.6	28.6	2.3	9.0	4.	1.0	1.0
	1.911	2.094	2.514	1.926	3.879	1.096	2.183	5.975	22.526	1.780	0.457	1.099	0.799	0.799
	2.6	2.9	3.5	2.6	6.4	1.2	3.0	5.5	30.9	2.4	9.0	4.	1.0	1.0
Base Room AC, CEER 10.9	1.049	1.150	1.380	1.292	3.195	0.712	1.438	2.812	12.367	0.977	0.376	0.905	0.658	0.658
Base Ductless Mini-Split Heat Pump, SEER 15.0/HSPF 8.8	1.672	1.833	2.200	1.685	3.395	0.959	1.910	5.228	39.420	1.557	0.400	0.962	0.699	0.699
	0.0	<u> </u>	0.0	5.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.1	5.4	9.0	89	0.1	0.3	0.1	4.0	0.0	0.1	0.1	0.1	0.0	0.0
Base Walk-in refrigeration/ freezer units	0.0	30.5	0.3	40.9	1.	0.0	0.0	0.2	0.0	0.1	0.0	0.2	0.0	9.0
Base Large Cold Storage Area	0.0	10.2	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.4
Base Reach-in Refrigerator /Freezer, Federal Standard	0.2	4.5	6.8	9.1	0.3	0.5	1.0	9.0	0.2	0.4	0.4	0.3	0.0	0.0
Base Glass Door Reach-in Refrigerator/Freezer, Federal Standard	0.2	5.9	2.1	10.7	0.2	0.4	0.4	0.5	4.0	0.3	0.4	0.3	0.0	0.0

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End Use	eoiitO	Restaurant	lis19 A	Сгосегу	Warehouse	Education	Health	Lodging	Data Center	-noM Isnoitctional	Religious Worship	Other	Industrial	Agriculture
Base Ice Maker, Federal Standard	0.0	1.8	0.0	0.3	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.2	0.1	0.0
Base Residential-Type Refrigerator/ Freezer, Federal Standard	0.3	0.5	0.1	0.6	0.1	0.1	0.1	0.4	0.0	0.7	0.1	<u>+</u>	0.7	0.1
Base Compact Refrigerator, Federal Standard	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.2	0.0
Base Computer Network Server	0.5	0.3	0.1	0.2	0.1	5.7	0.3	0.0	49.4	0.7	0.03	0.8	0.1	0.8
Base Desktop PC	0.3	0.1	0.1	0.1	0.1	0.3	0.2	0.0	0.0	0.0	90.0	0.1	0.1	0.1
Base Laptop PC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	00.00	0.0	0.0	0.0
Base Monitor, LCD	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.0	0.0	0.0
Base Imaging	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	00.00	0.0	0.0	0.0
Base Water Heater, Resistance Heater, Standard Standby Wattage	0.2	4.2	0.6	0.2	0.1	0.7	0.4	2.2	0.2	0.5	0.1	0.1	0.2	0.2
Base Non-Refrigerated Vending Machines, Federal Standard	0.002	0.001	0.000	0.003	0.002	0.001	0.001	0.001	0.002	0.001	0.00	0.001	0.001	0.001
Base Refrigerated Vending Machines, Federal Standard	0.024	0.015	0.015	0.081	0.015	0.015	0.021	0.030	0.005	0.030	0.009	0.014	0.014	0.014
Base Combi Oven	0.140	4.044	0.790	2.598	0.026	0.340	3.195	0.976	1.359	0.107	0.484	0.151	0.000	0.000
Base Convection Oven	0.708	2.133	0.573	0.680	0.128	0.452	2.155	0.115	0.573	0.414	0.203	0.203	0.203	0.203
Base Fryer	0.658	2.527	0.344	1.194	0.232	0.193	4.370	0.186	0.344	0.411	0.438	0.438	0.438	0.438
Base Griddle	0.101	2.906	0.568	1.867	0.019	0.244	2.296	0.701	0.487	0.077	0.348	0.109	0.000	0.000
Base Hot Food Holding Cabinet	0.182	2.049	0.650	1.440	0.014	0.053	0.882	0.548	0.251	0.091	0.203	0.063	0.000	0.000
Base Steamer	1.823	2.142	0.935	0.746	0.140	0.139	1.179	0.128	0.935	0.575	0.169	0.169	0.169	0.169
Base Electric Boiler, Federal Standard	3.2	11.4	6.4	5.9	3.9	5.5	4.6	25.4	92.4	4.	0.9	3.3	3.3	3.3
Base Electric Furnace, Federal Standard	3.2	4.11	6.4	5.9	3.9	5.5	4.6	25.4	92.4	4.1	0.9	3.3	3.3	3.3
Base Heating Air-Source Heat Pump,	1.3	4.8	2.7	2.4	1.6	2.3	1.9	10.6	38.5	1.7	0.4	4.	4.	4.

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Agriculture	60		10.3 0.5	2.6 1.0	2.8 3.1	5.2 0.0	5.5 0.0	1.0 0.0	18.8 10.6	1.7 3.0
nediO	o.		Ì		0.0			0.0	2.906 18	1.7
Religious Worship	60	6.0	0.7	0.0	0.0	0.0	0.0	0.0	3.710	1.7
-noM Isnoitciional	2	1.7	1.7	0.0	0.0	0.0	0.0	0.0	6.099	1.379
Data Center	4.95	38.5	2.0	0.0	0.0	0.0	0.0	0.0	58.003	2.0
BuigboJ	2.2	10.6	3.8	0.0	0.0	0.0	0.0	0.0	0.000	4.
Health	, r	1.9	10.3	0.0	0.0	0.0	0.0	0.0	7.306	0.9
Education	ر ش	2.3	0.7	0.0	0.0	0.0	0.0	0.0	1.373	9.0
Warehouse	-	1.6	0.9	0.0	0.0	0.0	0.0	0.0	0.622	0.9
Сгосегу	1.7	2.4	2.9	0.0	0.0	0.0	0.0	0.0	0.000	2.4
Retail	ر ش	2.7	5.2	0.0	0.0	0.0	0.0	0.0	64.40 3	2.2
Restaurant	, c	4. 8.4	6.6	0.0	0.0	0.0	0.0	0.0	2.608	2.6
өэіНО	o C	1.3	6.3	0.0	0.0	0.0	0.0	0.0	23.257	2.2
End Use	SEER 15.0/HSPF 8.8 w/Aux Strip Heat Base Heating Packaged Heat Pump, IEER 13.9/COP 3.4 (w/ non-ER heating),	Base Ductless Mini-Split Heat Pump, SEER 15.0/HSPF 8.8	Base Ventilation	Base Compressed Air	Base Process Heat	Base Process Cooling	Base Electrochemical process	Base Process Other	Base Motors	Base Miscellaneous

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5.1.3.3 Non-residential building stock and energy use

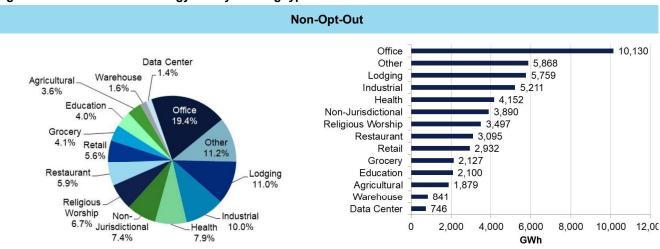
CBECS data from the South Atlantic Census Division was used to estimate the proportion of customers and the average floor space by building type. Energy use was then calculated as the product of the commercial floor space, equipment saturation, and the end-use energy intensity.

Figure 5-3 and Figure 5-4 show the breakout of energy use by building type and by end-use, respectively. Ventilation, miscellaneous, motors, and cooling end uses represent the largest shares of energy use. The results also include break-out summaries for opt-out customers, because that category captures most of Virginia's data center energy use, as well as some industrial and education (college/university) energy use. These data provide helpful context for understanding the distribution of the opt-out customers. For non-opt-out customers, office buildings represent the largest share of energy use followed by miscellaneous (other). Data centers represent by far the largest share of energy use among opt-out customers.

⁵ Miscellaneous buildings include churches, public safety, services, community centers, recreation, entertainment, etc.



Figure 5-3. Non-residential energy use by building type



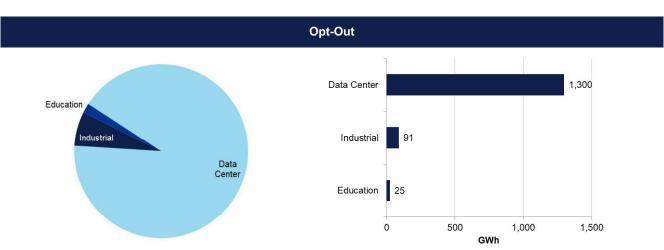




Figure 5-4. Non-residential energy use by end use

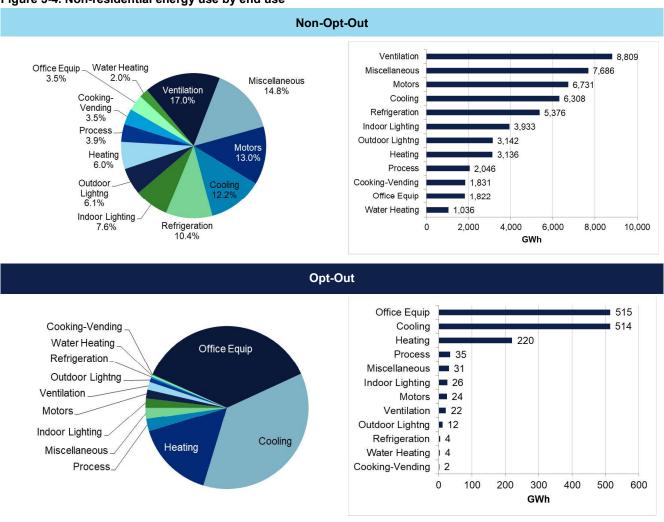


Table 5-8 on the next page shows commercial floor space by building type and resulting energy use by building type and equipment type.



Table 5-8. Non-residential sector floor space (1,000 sf) and energy use (MWh) by end use and building type

	7 -		_	_	_	_	C	C	m	_	m		22	ıc	es.	C
lstoT	3,979,7 61		294,31 3	294,31 3	395,21 5	395,21 5	442,70	442,70	148,38 9	396,71 9	748,63 4	6,474	106,65	106,65	94,008	60,800
enultucirgA	247,43 1		11,580	11,580	419	419	6,016	6,016	2,040	128,58 7	48,677	0	1,780	1,780	1,627	8,306
lsirisubnl	136,90 1		10,431	10,431	13,573	13,573	25,496	25,496	1,225	4,485	10,715	0	210	210	4,164	3,921
Other	809,00 5		26,718	26,718	35,709	35,709	86,423	86,423	52,754	65,403	125,16 5	0	2,498	2,498	8,181	8,758
Religious	553,90 5		53,597	53,597	85,882	85,882	110,21	110,21	10,853	56,411	54,227	0	4,666	4,666	19,603	15,718
Mon- Jurisdictional	409,55 7		25,469	25,469	30,687	30,687	29,668	29,668	18,757	27,428	86,675	0	2,409	2,409	3,021	3,684
Data Center	5,891		0	0	773	773	391	391	0	0	2,522	6,474	0	0	347	0
Podging	360,07 0		16,112	16,112	25,275	25,275	20,249	20,249	27,582	8,258	191,51 3	0	2,406	2,406	13,586	8,639
Health	168,65 8	End use	36,557	36,557	61,920	61,920	34,928	34,928	2,704	9,084	32,674	0	13,472	13,472	2,000	2,110
Education	268,94 1	MWh by End use	22,911	22,911	24,148	24,148	8,361	8,361	63	248	2,109	0	3,043	3,043	288	2,384
Warehouse	178,57 5		9,329	9,329	28,587	28,587	21,318	21,318	0	0	0	0	6,908	806'9	19,985	0
Сгосегу	42,981		1,899	1,899	1,458	1,458	15,060	15,060	92	862	1,858	0	1,235	1,235	1,833	3,284
Retail	204,91 7		34,481	34,481	23,143	23,143	42,979	42,979	9,169	47,154	37,669	0	57,168	57,168	13,419	0
Restaurant	56,901		5,198	5,198	4,310	4,310	3,452	3,452	1,121	3,735	9,326	0	25	25	29	21
eoiffO	536,02 7		40,032	40,032	59,330	59,330	38,150	38,150	22,030	45,064	145,50 5	0	10,830	10,830	5,926	3,975
	Floor Space (1,000 sf)		Base Linear Lighting, Fluorescent Fixture, 2L4'T12	Base Linear Lighting, Fluorescent Fixture, 2L4T12, integrated market	Base Linear Lighting, Fluorescent Fixture, 2L4T8, 1 EB	Base Linear Lighting, Fluorescent Fixture, 2L4T8, 1 EB, integrated market	Base Linear Lighting, LED Tube, 2 lamp fixture	Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market	base General Service Screw-in, CFL	Base General Service Screw-in, Incandescent/halogen	base General Service Screw-in, LED bulb	Base HID Lighting (low bay)	Base High Bay Lighting, Fluorescent T5	Base High Bay Lighting, Fluorescent T5, integrated market	Base Hign Bay Lignting, HID lighting	Base High Bay Lighting,

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IstoT		98,474	2,403,7 41	24,750	315,96 5	303,00	33,363	60,831	722,69 8	3,632,7 34	1,107,7 29	998,61 6	518,09 8	101,03	187,52 9	81,382	400,05 9
Agriculture		4,473	475,65 4	310	5,403	16,545	0	0	0	78	9,841	7,695	0	682	1,969	0	0
IsirJeubnI		2,475	137,13	180	3,107	12,473	155	4,236	2,095	52,829	12,076	7,298	155	525	1,824	0	0
Other		14,627	677,46 7	4,263	98,526	51,495	2,569	29,473	45,949	350,31 3	122,48 5	241,05 8	61,144	14,709	18,563	~	2,566
Religious		10,014	317,85 0	7,149	24,940	36,348	673	2,468	27,954	120,43	91,164	37,220	2,832	6,507	10,397	0	24,209
Non- Isnoitoibainut		9,403	212,23	1,794	44,371	38,132	1,646	7,823	43,991	449,31 6	92,945	119,82 2	37,071	6,773	20,264	∞	3,398
Data Center		251	525	0	2,386	83	0	115	0	324,70 3	2,212	6,717	2,388	0	0	0	0
Lodging		12,070	60,061	923	7,643	17,733	3,097	4,026	409,18 2	679,74 9	166,20 2	315,48	347,97 8	15,924	926'09	360	25,241
dilsəH		9,894	36,901	196	21,379	14,032	329	1,096	26,771	172,22	96,516	58,761	20,579	28,003	5,533	0	3,279
Education		3,818	16,730	. 86	17,370	22,961	627	83	19,518	287,47	13,772	15,693	5,942	3,474	12,449	2	11,331
Warehouse		733	21,092		2,236	4,832	132	1,459	2,378	222,26	76,728	51,594	0	6,401	20,985	0	43
Сгосегу		390	0	0	0	0	0	0	254	42,115	4,818	8,635	0	10,393	5,508	73,549	199,40 7
Retail		4,098	53,709	1,537	18,490	13,246	16,733	2,912	4,452	332,41 3	96,459	43,958	4,370	5,095	9,046	327	12,730
Restaurant		3,384	18,888	456	5,517	4,013	1,706	950	1,896	980'66	26,210	4,754	1,434	625	3,738	7,112	115,27 4
90iffO		22,843	375,49 7	7,812	64,598	71,110	5,695	6,189	138,25	499,77 4	296,30 0	79,930	34,206	1,920	16,276	22	2,582
	LED lighting	Base CFL Exit Sign	Base Area Lighting, Outdoor HID	Base General Service Screw-in, Outdoor CFL	Base General Service Screw-in, Outdoor Incandescent/Halogen	Base General Service Screw-in, Outdoor LED bulb	Base Linear Lighting, Outdoor Fluorescent Tube	Base Linear Lighting, Outdoor LED Tube	Base Water-Cooled Centrifugal Chiller, 0.58 kW/ton, 500 tons	Base DX Packaged System, EER=10.3, 10 tons	Base Heat Pump cooling (14 SEER, 8.2 HSPF)	Base Split-System AC, SEER 14.5, <5.4 tons	Base PTAC cooling, EER=10.2, 1 ton	Base Room AC, CEER 10.9	Base Ductless Mini-Split Heat Pump, SEER 15.0/HSPF 8.8	base Open rerrigerated/ freezer cases	base Closed rerrigerated/ freezer cases

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lstoT	2,740,6	53,940	384,71 7	166,33 7	139,13 5	1,371,5	38,619	1,382,5 94	354,68 8	10,651	66,814	7,553	1,030,7	959	21,700	433,71 6	531,87	228,49	180,02 4
Agriculture	4,435	2,388	0	0	541	7,273	52	13,212	13,082	374	783	85	45,504	12	236	0	12,992	0	0
lsirteubul	11	137	0	0	1,442	78,014	6,539	6,393	6,570	314	1,074	222	22,813	55	1,247	0	5,195	3,530	0
Other	8,722	134	4,376	1,443	6,149	709,55 3	1,752	208,36 8	45,923	1,042	4,570	878	21,434	81	2,132	15,024	63,412	40,889	9,793
Religious	828	292	67,328	0	13,941	31,537	153	10,881	29,434	2,041	4,997	1,787	17,351	45	1,502	75,643	43,064	10,239	15,865
-noM Jurisdictional	4,340	25	11,992	1,054	7,080	240,78 8	1,875	103,21 6	8,952	1,561	9,116	625	125,70 9	89	2,675	5,513	86,042	15,666	3,521
Data Center	0	0	0	0	0	287	0	291,30 9	29	56	44	10	820	0	0	0	29	0	0
Buigbo⊿	33,712	47	1,852	37,475	24,122	101,41	11,211	9,433	14,878	599	2,237	404	302,58 4	160	5,015	105,10	23,520	10,327	57,831
Health	1,747	13	13,863	3,878	1,835	12,068	3,792	31,591	38,246	431	5,094	513	57,113	20	1,321	110,02	82,027	80,883	55,214
noiវsɔnb∃	920	0	20,954	0	2,643	25,891	842	474,54	29,351	388	10,216	186	146,77	14	842	8,749	105,82 7	3,639	8,290
Warehouse	10,190	386	129	0	806	5,886	942	7,652	8,314	425	1,248	158	7,635	115	1,101	86	2,163	281	10
Сгосегу	1,189,1 39	21,174	207,28 0	0	6,004	6,335	190	3,914	2,065	80	436	128	3,703	34	943	27,428	17,203	7,993	5,538
Retail	4,271	129	21,238	35,089	495	6,428	2,790	8,943	11,002	323	1,753	261	93,500	7	521	5,962	11,470	1,104	2,685
Restaurant	1,479,7	29,205	31,606	84,626	71,586	11,466	755	8,188	2,064	341	529	178	119,34 3	က	144	64,811	65,541	27,890	17,251
eoiffO	2,582	10	4,099	2,772	2,388	134,63 2	7,726	204,95 4	144,77 7	2,706	24,717	2,117	66,495	289	4,021	15,365	13,349	26,058	4,026
	Base Walk-in refrigeration/ freezer units	Base Large Cold Storage Area	Base Reach-in Refrigerator / Freezer, Federal Standard	Base Glass Door Reach-in Refrigerator/Freezer, Federal Standard	Base Ice Maker, Federal Standard	Base Residential-Type Refrigerator/Freezer, Federal Standard	Base Compact Refrigerator, Federal Standard	Base Computer Network Server	Base Desktop PC	Base Laptop PC	Base Monitor, LCD	Base Imaging	Base Water Heater, Resistance Heater, Standard Standby Wattage Base Non-Refrigerated Vending	Machines, Federal Standard	Base Refrigerated Vending Machines, Federal Standard	Base Combi Oven	Base Convection Oven	Base Fryer	Base Griddle

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	eoiffO	Restaurant	listeA	Сгосегу	Warehouse	Education	Health	Podging	Data Center	Mon- lsnotioiteinul	Religious	Other	lsirteubul	enutluoirgA	lstoT
Base Hot Food Holding Cabinet	412	48,490	3,497	35,634	0	3,603	43,151	79,755	0	4,631	45,732	3,470	0	0	268,37 6
Base Steamer	83,445	17,962	3,841	3,464	0	2,638	29,325	4,202	0	13,373	1,932	5,215	392	0	165,79 0
Base Electric Boiler, Federal Standard	2,052	253	105	18	32	1,170	1,516	15,983	0	1,875	948	3,582	84	0	27,619
Base Electric Furnace, Federal Standard	14,447	5,083	4,201	1,604	4,557	418	8,172	28,796	1,378	17,759	1,754	50,171	1,675	0	140,01 4
Base Heating Air-Source Heat Pump, SEER 15.0/HSPF 8.8 w/Aux Strip Heat	166,87 2	37,400	85,379	26,009	25,893	340,14 4	93,623	904,30 8	6,276	210,54	36,696	158,80 2	22,836	27,999	2,142,7 82
Base Heating Packaged Heat Pump, IEER 13.9/COP 3.4 (W/ non-ER heating),10 tons	91,432	23,378	12,853	3,745	6,246	6,195	36,995	966'69	114,28 5	37,282	5,885	70,081	5,097	0	483,47
base Ductiess Mini-Split Heat Pump, SEER 15.0/HSPF 8.8	18,648	7,182	18,557	5,719	8,263	7,573	7,123	172,15 4	0	12,091	11,075	20,553	5,378	12,184	306,49 9
Base Ventilation	3,001,9 94	469,29 3	762,64 5	64,940	67,219	162,04 7	1,375,5 30	982,16 2	11,318	550,63 7	331,62 4	274,97 1	745,27 1	8,787	8,808,7 97
Base Compressed Air	0	0	0	0	0	0	0	0	0	0	0	0	356,27 0	15,554	371,82 4
Base Process Heat	0	0	0	0	0	0	0	0	0	0	0	0	383,20 7	50,668	433,87 5
Base Process Cooling	0	0	0	0	0	0	0	0	0	0	0	0	715,80 3	0	715,80 3
Base Electrochemical process	0	0	0	0	0	0	0	0	0	0	0	0	755,56 9	0	755,56 9
Base Process Other	0	0	0	0	0	0	0	0	0	0	0	0	140,99 1	0	140,99 1
Base Motors	2,903,1 55	4,279	403,68 5	0	6,863	63,788	259,24 7	0	0	540,33 6	445,81 3	571,30 1	1,361,7 17	171,09 7	6,731,2 82
Base Miscellaneous	1,179,2 60 10,266,	147,94 4 3,111,7	450,81 8 2,996,0	103,15 4 2,136,1	160,71 7 890,97	161,36 4 2,142,3	1,011,9 47 4,204,1	504,09 9 6,007,6	11,783 788,68	564,90 8 3,988,2	941,63 8 3,535,7	1,375,3 09 5,977,2	232,73 2 5,221,0	742,29 2 1,881,0	7,587,9 66 53,148,
	866	29	84	9/	0	93	47	86	_	77	1	96	74	25	247

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5.2 Technical and economic potential results

This section summarizes findings from the analysis of technical and economic savings potential of electric energy efficiency efforts in Dominion Energy's service territory. Technical potential is defined as the complete penetration of all measures analyzed in applications where they were deemed technically feasible from an engineering perspective. Economic potential is defined as the technical potential of those energy conservation measures that are cost-effective when compared to supply-side alternatives. All measures with a total resource cost (TRC) greater than 1 are considered to have economic potential.

5.2.1 Overall technical and economic potential

Figure 5-5 presents our overall estimates of total technical and economic potential for electrical energy and peak demand savings for Dominion Energy's service territory. These results exclude non-jurisdictional, federal, and opt-out customers.

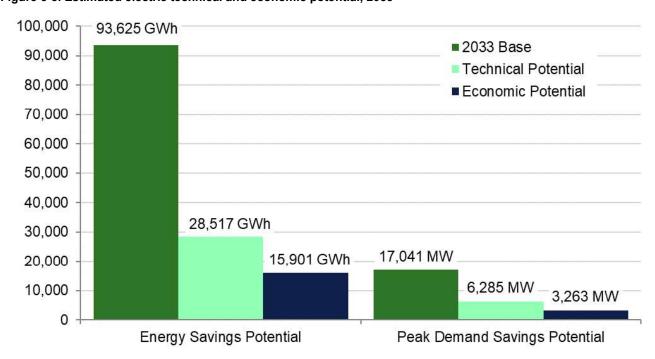


Figure 5-5. Estimated electric technical and economic potential, 2033*

*Excludes Virginia non-jurisdictional, federal, and opt-out customers as well as voltage optimization and persistent savings from program activities prior to 2024

5.2.2 Base-case technical and economic potential

This section summarizes the identified technical and economic potential in more detail for the base avoided cost case, and further describes potentials by sector, state, building type, and by end use.

5.2.3 Potential by sector

Figure 5-6 and Figure 5-7 show the breakdown of technical and economic potential by sector, compared to the total base consumption and demand in 2033. The residential sector represents 43% of technical energy savings and 33% of economic energy savings. The residential sector has 61% of technical demand potential and 53% of the corresponding economic potential.



Figure 5-6. Technical and economic energy savings by sector, GWh

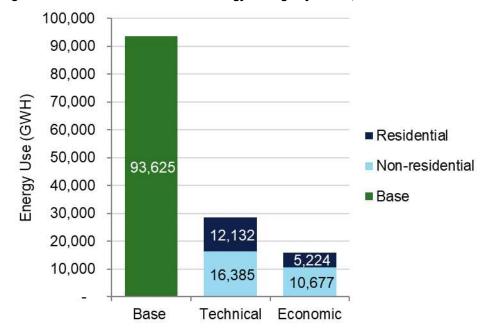
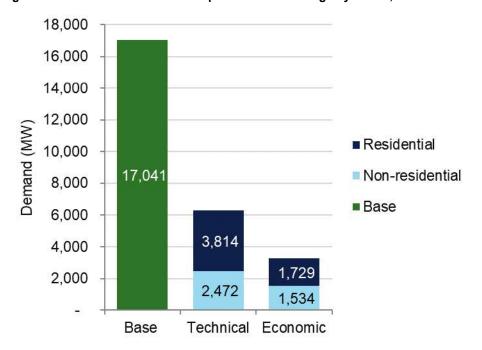


Figure 5-7. Technical and economic peak demand savings by sector, MW





5.2.4 Potential by building type

This section presents technical and economic potential by residential and non-residential building type to provide more detail about where potential savings exist in Dominion Energy's service territory.

5.2.4.1 Residential

Figure 5-8 shows potential in the residential sector by building type. We have included behavioral savings on the charts separately, without a breakout, because we analyzed behavioral programs by consumption rather than by building type. Single-family homes (including low- and moderate-income customers) account for 83% of the economic potential for energy and 80% for demand. Across all building types, low- and moderate-income customers account for 42% of economic energy potential (43% for demand).

Figure 5-8. Energy savings potential (GWh) by residential building type

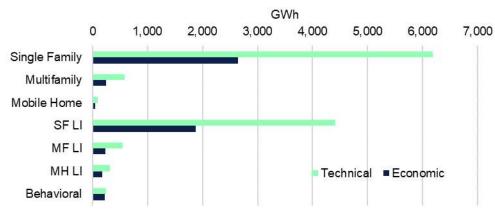
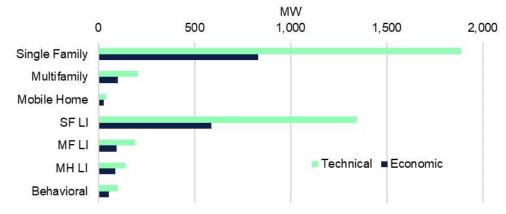


Figure 5-9. Demand savings potential (MW) by residential building type





5.2.4.2 Non-residential

Figure 5-10 and Figure 5-11 show the building type breakdown for non-residential building energy and demand potential, respectively. Offices make up 21% of economic energy potential, followed by restaurants, retail, and grocery. The top four rankings are the same for demand potential.

Figure 5-10. Energy savings potential by non-residential building type

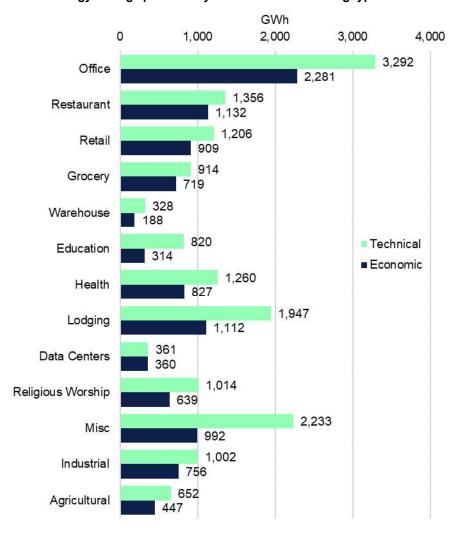
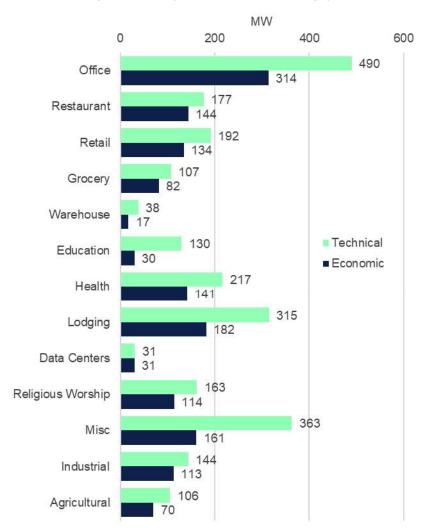




Figure 5-11. Demand savings potential by non-residential building type



The "miscellaneous" building type encompasses all the customer accounts that were left over after the other building types were broken out. Although we refer to it as a building type in the study, it includes not only buildings not explicitly categorized but also all non-residential energy use not associated with a building (for example, cell towers, area lighting in a park or surface parking lot, or irrigation pumping not associated with a building account). The category also captures a broad range of less common building types, including sports arenas, community centers, fitness centers, gas stations (without quick marts), parking garages, etc.

5.2.5 Potentials by Building Type

5.2.5.1 Residential

Figure 5-12 and Figure 5-13 show the end-use breakdown of residential energy and demand potential, respectively. Cooling and heating make up 31% of technical energy savings potential, followed by water heating at 27%. Cooling and heating make up the largest share of economic energy potential at 44%, followed by refrigeration and space cooling. On the demand side, cooling and heating (based on a winter peak) make up 59% of technical potential and 79% of economic potential.



Figure 5-12. Energy savings potential by residential end use

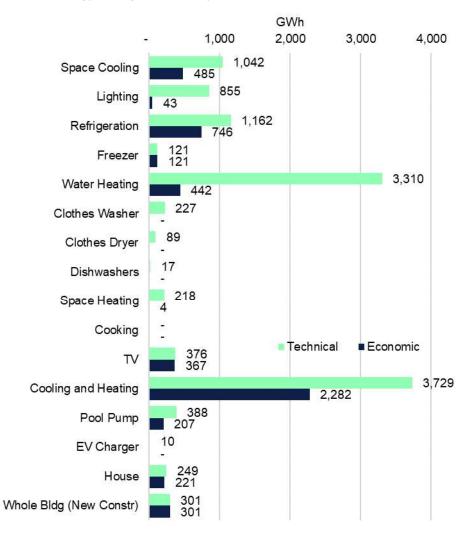
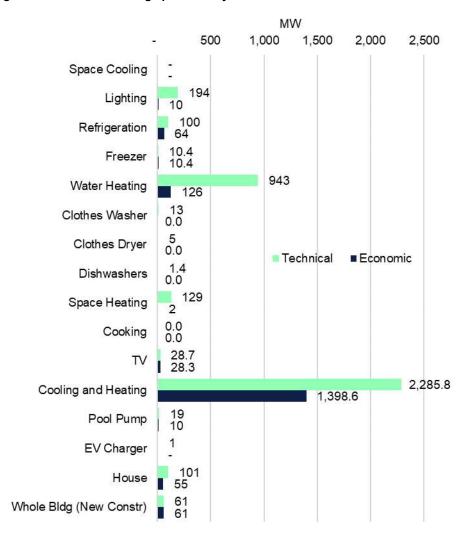




Figure 5-13. Demand savings potential by residential end use

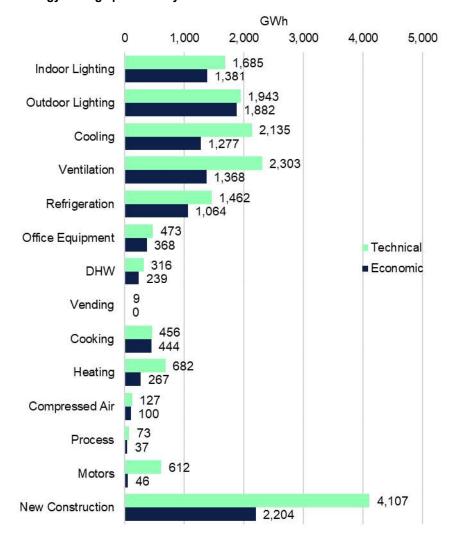




5.2.5.2 Non-Residential

Figure 5-14 and Figure 5-15 show energy and demand savings by commercial end use. New construction makes up the largest share of economic potential at 21% for energy and 23% for demand. It is followed in energy use by outdoor lighting, indoor lighting, ventilation, and cooling; and in demand by indoor lighting, outdoor lighting, and ventilation.

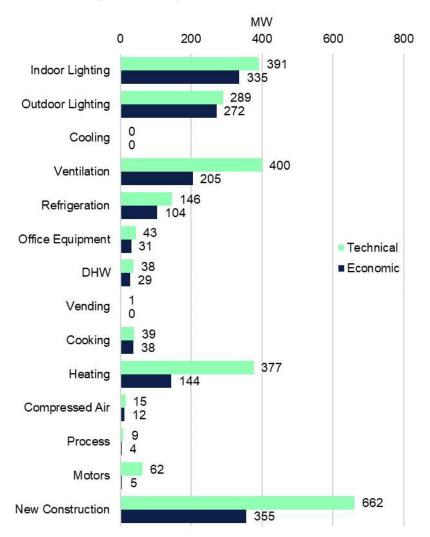
Figure 5-14. Energy savings potential by non-residential end use



^{*} Excludes Virginia non-jurisdictional, federal, and opt-out customers as well as voltage optimization and persistent savings from program activities prior to 2024.



Figure 5-15. Demand savings potential by non-residential end use



^{*} Excludes Virginia non-jurisdictional, federal, and opt-out customers as well as voltage optimization and persistent savings from program activities prior to 2024.

5.2.6 Top 20 savings measures

Table 5-9 through Table 5-16 show the top 20 measures for energy and demand savings potential in the residential and non-residential sectors. For each section, the first table shows the top 20 measures as ranked by technical potential savings. The following table then shows the top 20 measures ranked by economic savings. All measures with a TRC less than one are not considered as part of the economic potential and thus were not carried over to the top 20 economic measures tables.

5.2.6.1 Residential

Table 5-9 through Table 5-12 show the top 20 measures by technical energy potential, economic energy potential, technical demand potential, and economic demand potential, respectively, for Dominion Energy's residential sector in Virginia.



Table 5-9. Top 20 measures contributing to residential technical energy savings potential

Base	Measure Number	Measure Name	Building Type	Technical GWh	Measure TRC	Economic GWh
7000	7002	Heat Pump Water Heater - Energy Star	Single Family	830.7	0.6	0.0
7000	7002	Heat Pump Water Heater -		000.7	0.0	0.0
7000	7002	Energy Star	SF LI	589.3	0.6	0.0
4200	4201	2nd Refrigerator Recycling	Single Family	447.3	2.4	447.3
7000	7003	Solar Domestic Water Heating	Single Family	420.4	0.1	0.0
7000	7010	Drain Water Heat Recovery (GFX)	Single Family	415.1	0.3	0.0
1700	1701	Heat pump (16 SEER, 9.2 HSPF) (eFAF + CAC)	Single Family	327.7	5.2	327.7
4200	4201	2nd Refrigerator Recycling	SF LI	317.3	2.4	317.3
7000	7003	Solar Domestic Water Heating	SF LI	298.2	0.1	0.0
7000	7010	Drain Water Heat Recovery (GFX)	SF LI	294.5	0.3	0.0
1500	1502	Heat pump upgrade to (18 SEER, 10 HSPF) (HP heat/cool)	Single Family	282.4	1.5	282.4
4000	4002	Refrigerator (CEE Tier 2)	Single Family	256.8	1.4	256.8
1500	1521	Smart Thermostat (HP heat/cool)	Single Family	254.5	2.6	254.5
1700	1701	Heat pump (16 SEER, 9.2 HSPF) (eFAF + CAC)	SF LI	232.5	5.2	232.5
3030	3033	Dimmer Switch (base interior LED, 6 hrs/day)	Single Family	221.7	0.3	0.0
1500	1502	Heat pump upgrade to (18 SEER, 10 HSPF) (HP heat/cool)	SF LI	200.4	1.5	200.4
1700	1702	Heat pump (18 SEER, 10 HSPF) (eFAF + CAC)	Single Family	198.0	12.6	198.0
1500	1514	Crawlspace insulation (HP heat/cool)	Single Family	194.9	3.9	194.9
4000	4002	Refrigerator (CEE Tier 2)	SF LI	182.1	1.4	182.1
1500	1521	Smart Thermostat (HP heat/cool)	SF LI	180.6	2.6	180.6
1000	1003	18 SEER Split-System Air Conditioner (CAC)	Single Family	177.6	1.1	177.6
3030	3033	Dimmer Switch (base interior LED, 6 hrs/day)	SF LI	175.6	0.2	0.0

Table 5-10. Top 20 measures contributing to residential economic energy savings potential

Base	Measure Number	Measure Name	Building Type	Measure TRC	Economic GWh
4200	4201	2nd Refrigerator Recycling	Single Family	2.4	447.3
1700	1701	Heat pump (16 SEER, 9.2 HSPF) (eFAF + CAC)	Single Family	5.2	327.7
4200	4201	2nd Refrigerator Recycling	SF LI	2.4	317.3
1500	1502	Heat pump upgrade to (18 SEER, 10 HSPF) (HP heat/cool)	Single Family	1.5	282.4
4000	4002	Refrigerator (CEE Tier 2)	Single Family	1.4	256.8
1500	1521	Smart Thermostat (HP heat/cool)	Single Family	2.6	254.5
1700	1701	Heat pump (16 SEER, 9.2 HSPF) (eFAF + CAC)	SF LI	5.2	232.5



Base	Measure Number	Measure Name	Building Type	Measure TRC	Economic GWh
1500	1502	Heat pump upgrade to (18 SEER, 10 HSPF) (HP heat/cool)	SF LI	1.5	200.4
1700	1702	Heat pump (18 SEER, 10 HSPF) (eFAF + CAC)	Single Family	12.6	198.0
1500	1514	Crawlspace insulation (HP heat/cool)	Single Family	3.9	194.9
4000	4002	Refrigerator (CEE Tier 2)	SF LI	1.4	182.1
1500	1521	Smart Thermostat (HP heat/cool)	SF LI	2.6	180.6
1000	1003	18 SEER Split-System Air Conditioner (CAC)	Single Family	1.1	177.6
6000	6001	Energy Star LED TV	Single Family	5.4	148.4
1700	1702	Heat pump (18 SEER, 10 HSPF) (eFAF + CAC)	SF LI	12.6	140.4
1500	1514	Crawlspace insulation (HP heat/cool)	SF LI	3.9	138.2
1500	1501	Heat pump upgrade to (16 SEER, 9.2 HSPF) (HP heat/cool)	Single Family	2.3	136.1
7000	7013	Faucet Aerators	Single Family	2.9	127.1
1000	1003	18 SEER Split-System Air Conditioner (CAC)	SF LI	1.1	126.0
6000	6001	Energy Star LED TV	SF LI	5.4	105.3
1500	1501	Heat pump upgrade to (16 SEER, 9.2 HSPF) (HP heat/cool)	SF LI	2.3	96.5

Table 5-11. Top 20 measures contributing to residential technical demand savings potential

Base	Measure Number	Measure Name	Building Type	Technical MW	Measure TRC	Economic MW
7000	7002	Heat Pump Water Heater - Energy Star	Single Family	236.5	0.6	0.0
1700	1701	Heat pump (16 SEER, 9.2 HSPF) (eFAF + CAC)	Single Family	200.9	5.2	200.9
1500	1502	Heat pump upgrade to (18 SEER, 10 HSPF) (HP heat/cool)	Single Family	173.1	1.5	173.1
7000	7002	Heat Pump Water Heater - Energy Star	SF LI	167.8	0.6	0.0
1500	1521	Smart Thermostat (HP heat/cool)	Single Family	156.0	2.6	156.0
1700	1701	Heat pump (16 SEER, 9.2 HSPF) (eFAF + CAC)	SF LI	142.5	5.2	142.5
1500	1502	Heat pump upgrade to (18 SEER, 10 HSPF) (HP heat/cool)	SF LI	122.8	1.5	122.8
1700	1702	Heat pump (18 SEER, 10 HSPF) (eFAF + CAC)	Single Family	121.3	12.6	121.3
7000	7003	Solar Domestic Water Heating	Single Family	119.7	0.1	0.0
1500	1514	Crawlspace insulation (HP heat/cool)	Single Family	119.5	3.9	119.5
7000	7010	Drain Water Heat Recovery (GFX)	Single Family	118.2	0.3	0.0
1500	1521	Smart Thermostat (HP heat/cool)	SF LI	110.7	2.6	110.7
1700	1702	Heat pump (18 SEER, 10 HSPF) (eFAF + CAC)	SF LI	86.1	12.6	86.1
7000	7003	Solar Domestic Water Heating	SF LI	84.9	0.1	0.0
1500	1514	Crawlspace insulation (HP heat/cool)	SF LI	84.7	3.9	84.7
7000	7010	Drain Water Heat Recovery (GFX)	SF LI	83.8	0.3	0.0



Base	Measure Number	Measure Name	Building Type	Technical MW	Measure TRC	Economic MW
1500	1501	Heat pump upgrade to (16 SEER, 9.2 HSPF) (HP heat/cool)	Single Family	83.4	2.3	83.4
1400	1401	ECM Furnace Fan (variable speed motor)	Single Family	63.3	0.1	0.0
1500	1501	Heat pump upgrade to (16 SEER, 9.2 HSPF) (HP heat/cool)	SF LI	59.2	2.3	59.2
1500	1518	Cool Roof (HP heat/cool)	Single Family	57.4	0.4	0.0
3030	3033	Dimmer Switch (base interior LED, 6 hrs/day)	Single Family	50.3	0.3	0.0

In very cold weather, air-source heat pumps revert to electric resistance heating. In the past, that threshold was in the range of 25°F to 30°Fahrenheit. Heat pump technology has made strides in recent years in improving cold-weather performance, expanding the range of temperatures where air-source heat pumps can save energy. Under a winter peak, it will be important for Dominion Energy's program to focus on cold weather performance in addition to SEER and HSPF. The peak demand calculations for air source heat pumps and heat pump water heaters do not include any degradation in efficiency for winter peak, which may overstate the peak demand savings potential in severe winters, even assuming cold-climate heat pumps.

Table 5-12. Top 20 Measures contributing to residential economic demand savings potential

Base	Measure Number	Measure Name	Building Type	Measure TRC	Economic MW
1700	1701	Heat pump (16 SEER, 9.2 HSPF) (eFAF + CAC)	Single Family	5.2	200.9
1700	1701	Heat pump upgrade to (18 SEER, 10 HSPF)	Single Family	5.2	200.9
1500	1502	(HP heat/cool)	Single Family	1.5	173.1
1500	1521	Smart Thermostat (HP heat/cool)	Single Family	2.6	156.0
1700	1701	Heat pump (16 SEER, 9.2 HSPF) (eFAF + CAC)	SF LI	5.2	142.5
1500	1502	Heat pump upgrade to (18 SEER, 10 HSPF) (HP heat/cool)	SF LI	1.5	122.8
1700	1702	Heat pump (18 SEER, 10 HSPF) (eFAF + CAC)	Single Family	12.6	121.3
1500	1514	Crawlspace insulation (HP heat/cool)	Single Family	3.9	119.5
1500	1521	Smart Thermostat (HP heat/cool)	SF LI	2.6	110.7
1700	1702	Heat pump (18 SEER, 10 HSPF) (eFAF + CAC)	SF LI	12.6	86.1
1500	1514	Crawlspace insulation (HP heat/cool)	SF LI	3.9	84.7
1500	1501	Heat pump upgrade to (16 SEER, 9.2 HSPF) (HP heat/cool)	Single Family	2.3	83.4
1500	1501	Heat pump upgrade to (16 SEER, 9.2 HSPF) (HP heat/cool)	SF LI	2.3	59.2
4200	4201	2nd Refrigerator Recycling	Single Family	2.4	38.5
7000	7013	Faucet Aerators	Single Family	2.9	36.2
1700	1701	Heat pump (16 SEER, 9.2 HSPF) (eFAF + CAC)	MH LI	15.0	34.3
1700	1701	Heat pump (16 SEER, 9.2 HSPF) (eFAF + CAC)	Multi-Family	5.2	32.4
1700	1701	Heat pump (16 SEER, 9.2 HSPF) (eFAF + CAC)	MF LI	5.2	30.2
4200	4201	2nd Refrigerator Recycling	SF LI	2.4	27.3
7000	7013	Faucet Aerators	SF LI	2.9	25.7



Base	Measure Number	Measure Name	Building Type	Measure TRC	Economic MW
4000	4002	Refrigerator (CEE Tier 2)	Single Family	1.4	22.1
1500	1524	Door Weatherization (HP heat/cool)	Single Family	1.5	21.1

5.2.6.2 Non-Residential

Table 5-13 through Table 5-16 show the top 20 non-residential measures by technical energy potential, economic energy potential, technical demand potential, and economic demand potential, respectively, for non-opt-out customers.

Table 5-13. Top 20 measures contributing to non-residential technical energy savings potential

Base Number Mossure Name Technical GWh LED outdoor lighting with bi-level controls (Base Outdoor HID) 1847.2 3.5 1847.2 7800 7804 HP 1308.1 0.8 450.4 1200 2102 10 tons 2102 10 tons 2102		Measure				
LED outdoor lighting with bi-level controls (Base Outdoor HID) 1847.2 3.5 1847.2	Base		Measure Name	Technical GWh	Measure TRC	Economic GWh
1650						
Demand Controlled Ventilation, 15 HP 1308.1 0.8 450.4	1650	1652		1847.2	3.5	1847.2
T800 T804 HP						
2100 2102 10 tons	7800	7804		1308.1	0.8	450.4
2100 2102 10 tons			DX Packaged System, EER=13.4,			
9300 9302 base motors 592.8 0.5 16.1 7800 7803 Air Handler Optimization, 15 HP 554.8 4.9 512.5 Energy Recovery Ventilation 200.0 1.2 327.1 7800 7805 (ERV) 402.9 1.2 327.1 4000 4001 Energy Star server 398.1 5.7 398.1 LED screw-in replacement (base 1350 1351 incandescent/halogen) 390.5 -28.3 390.5 3300 3314 ins 310.2 1.4 310.2 LED screw-in replacement (base 1750 1752 Outdoor Incandescent) 214.6 5.6 214.6 6200 6201 Electric Combination Oven 207.6 8.4 207.6 Smart Thermostat (Base Heat 205.9 0.8 106.9 Variable Speed Drive Control, 205.9 0.8 106.9 Variable Speed Drive Control, 200.6 1.5 182.4 Air-Source Heat Pump, SEER 16.0/HSPF 9.2 ENERGY STAR, <5.4 tons (base air-source heat 16.0/HSPF 9.2 ENERGY STAR, <5.4 tons (base air-source heat 1200 1201 Tube) 184.4 1.2 101.4 3300 3303 Compressor VSD retrofit, walk-ins 182.6 2.7 182.6 Energy Star hot food holding 2302 Residential Split-System) 178.6 0.9 78.5 2300 2302 Residential Split-System) 178.6 0.9 78.5 2100 2111 Economizer Repair - DX 173.0 2.3 166.7	2100	2102		602.5	3.8	577.8
7800 Air Handler Optimization, 15 HP 554.8 4.9 512.5 7800 7805 (ERV) 402.9 1.2 327.1 4000 4001 Energy Star server 398.1 5.7 398.1 1350 1351 incandescent/Halogen) 390.5 -28.3 390.5 3300 3314 ins 310.2 1.4 310.2 1750 1752 Outdoor Incandescent) 214.6 5.6 214.6 6200 6201 Electric Combination Oven 207.6 8.4 207.6 6200 6201 Electric Combination Oven 207.6 8.4 207.6 8.4 207.6 8.4 207.6 8.4 207.6 8.0 Smart Thermostat (Base Heat 201.2 3.9 201.2 8.7 Variable Speed Drive Control, 205.9 0.8 106.9 9 Variable Speed Drive Control, 201.2 3.9 201.2 1050 1051 integrated) 200.6 1.5 </th <th></th> <th></th> <th>Variable Speed Drive Control,</th> <th></th> <th></th> <th></th>			Variable Speed Drive Control,			
Energy Recovery Ventilation (ERV)	9300		base motors	592.8		
7800 7805 (ERV) 402.9 1.2 327.1 4000 4001 Energy Star server 398.1 5.7 398.1 1350 1351 incandescent/halogen) 390.5 -28.3 390.5 3300 3314 ins 310.2 1.4 310.2 1750 1752 Outdoor Incandescent) 214.6 5.6 214.6 6200 6201 Electric Combination Oven 207.6 8.4 207.6 Smart Thermostat (Base Heat 205.9 0.8 106.9 7200 7204 Pump Heating) 205.9 0.8 106.9 7800 7802 base motors 201.2 3.9 201.2 RET Occ & Daylight Integral Sensor LED troffer (base T12 200.6 1.5 182.4 Air-Source Heat Pump, SEER 16.0/HSPF 9.2 ENERGY STAR, < 5.4 tons (base air-source heat 7200 7201 pump heating) 184.9 1.4 92.0 1200 1201 Tube) 184.4 1.2<	7800	7803	Air Handler Optimization, 15 HP	554.8	4.9	512.5
4000			Energy Recovery Ventilation			
LED screw-in replacement (base incandescent/halogen) 390.5 -28.3 390.5						
1350	4000	4001		398.1	5.7	398.1
Refrigeration Coil Čleaning, walk- ins						
3300 3314 ins	1350	1351		390.5	-28.3	390.5
LED screw-in replacement (base 214.6 5.6 214.6 6200 6201 Electric Combination Oven 207.6 8.4 207.6 Smart Thermostat (Base Heat 7200 7204 Pump Heating) 205.9 0.8 106.9 7800 7802 base motors 201.2 3.9 201.2 RET Occ & Daylight Integral Sensor LED troffer (base T12 1050 1051 integrated) 200.6 1.5 182.4 Air-Source Heat Pump, SEER 16.0/HSPF 9.2 ENERGY STAR, <5.4 tons (base air-source heat pump heating) 184.9 1.4 92.0 1200 1201 Tube) 184.4 1.2 101.4 13300 3303 Compressor VSD retrofit, walk-ins 182.6 2.7 182.6 Energy Star hot food holding 6600 6601 cabinet 180.9 2.4 180.9 2300 2302 Residential Split-System) 178.6 0.9 78.5 2100 2111 Economizer Repair - DX 173.0 2.3 166.7 160.0						
1750 1752 Outdoor Incandescent) 214.6 5.6 214.6 6200 6201 Electric Combination Oven 207.6 8.4 207.6 Smart Thermostat (Base Heat 205.9 0.8 106.9 7200 7204 Pump Heating) 205.9 0.8 106.9 7800 7802 base motors 201.2 3.9 201.2 RET Occ & Daylight Integral Sensor LED troffer (base T12 integrated) 200.6 1.5 182.4 Air-Source Heat Pump, SEER 16.0/HSPF 9.2 ENERGY STAR, <5.4 tons (base air-source heat 18.0/HSPF 9.2 ENERGY STAR, <5.4 tons (base air-source heat 18.0/HSPF 9.2 ENERGY STAR, <5.4 tons (base air-source heat 18.0/HSPF 9.2 ENERGY STAR, 	3300	3314	1	310.2	1.4	310.2
6200 6201 Electric Combination Öven Smart Thermostat (Base Heat Smart Thermostat (Base Heat Pump Heating) 207.6 8.4 207.6 7200 7204 Pump Heating) 205.9 0.8 106.9 7800 7802 base motors base motors 201.2 3.9 201.2 RET Occ & Daylight Integral Sensor LED troffer (base T12 integrated) 200.6 1.5 182.4 1050 1051 integrated) 200.6 1.5 182.4 Air-Source Heat Pump, SEER 16.0/HSPF 9.2 ENERGY STAR, <5.4 tons (base air-source heat pump heating) 184.9 1.4 92.0 7200 7201 pump heating) 184.9 1.4 92.0 1200 1201 Tube) 184.4 1.2 101.4 3300 3303 Compressor VSD retrofit, walk-ins 182.6 2.7 182.6 Energy Star hot food holding cabinet 180.9 2.4 180.9 6600 6601 cabinet 180.9 2.4 180.9 2300 2302 Residential Split-System) 178.6 0.9 78.5 2100 2111 Economizer Repair - DX						2442
Smart Thermostat (Base Heat Pump Heating) 205.9 0.8 106.9						
7200 7204 Pump Heating) 205.9 0.8 106.9 7800 7802 base motors 201.2 3.9 201.2 RET Occ & Daylight Integral Sensor LED troffer (base T12 integrated) 200.6 1.5 182.4 Air-Source Heat Pump, SEER 16.0/HSPF 9.2 ENERGY STAR, <5.4 tons (base air-source heat pump heating) 184.9 1.4 92.0 T200 7201 pump heating) 184.9 1.4 92.0 High Performance Lighting R/R - Combined Strategies (Base LED 1200 1201 Tube) 184.4 1.2 101.4 3300 3303 Compressor VSD retrofit, walk-ins lenergy Star hot food holding cabinet 180.9 2.4 180.9 Ductless Mini-Split SEER lenergy Star hot food holding cabinet 180.9 2.4 180.9 2300 2302 Residential Split-System) 178.6 0.9 78.5 2100 2111 Economizer Repair - DX 173.0 2.3 166.7	6200	6201		207.6	8.4	207.6
Variable Speed Drive Control, base motors 7800 7802 base motors 201.2 3.9 201.2 RET Occ & Daylight Integral Sensor LED troffer (base T12) 1050 1051 integrated) 200.6 1.5 182.4 Air-Source Heat Pump, SEER 16.0/HSPF 9.2 ENERGY STAR, 	7000	7004		005.0	0.0	400.0
7800 7802 base motors 201.2 3.9 201.2 RET Occ & Daylight Integral Sensor LED troffer (base T12) 200.6 1.5 182.4 1050 1051 integrated) 200.6 1.5 182.4 Air-Source Heat Pump, SEER 16.0/HSPF 9.2 ENERGY STAR, 	7200	7204		205.9	0.8	106.9
RET Occ & Daylight Integral Sensor LED troffer (base T12 1050 1051 integrated) Air-Source Heat Pump, SEER 16.0/HSPF 9.2 ENERGY STAR, <5.4 tons (base air-source heat 7200 7201 pump heating) High Performance Lighting R/R - Combined Strategies (Base LED 1200 1201 Tube) 184.4 1.2 101.4 3300 3303 Compressor VSD retrofit, walk-ins Energy Star hot food holding 6600 6601 Cabinet Ductless Mini-Split SEER 18.0/HSPF 10.0 CEE Tier 1 (Base 2300 2302 Residential Split-System) 178.6 0.9 78.5 2100 2111 Economizer Repair - DX 173.0 223 182.6 182.6 182.6 182.6 182.6 182.6 183.9 184.9 184.4 1.2 184.4 1.2 184.4 1.2 184.4 1.2 184.4 1.2 184.4 1.2 184.6 184.6 2.7 184.6 2.7 185.6 2.7 186.6 2.7 186.7	7900	7000		201.2	2.0	201.2
Sensor LED troffer (base T12 integrated) 200.6 1.5 182.4	7000	7002		201.2	3.9	201.2
1050 1051 integrated) 200.6 1.5 182.4 Air-Source Heat Pump, SEER 16.0/HSPF 9.2 ENERGY STAR, <5.4 tons (base air-source heat 7200 7201 pump heating) 184.9 1.4 92.0 High Performance Lighting R/R - Combined Strategies (Base LED 1200 1201 Tube) 184.4 1.2 101.4 3300 3303 Compressor VSD retrofit, walk-ins 182.6 2.7 182.6 Energy Star hot food holding Energy Star hot food holding 180.9 2.4 180.9 6600 6601 cabinet 180.9 2.4 180.9 Ductless Mini-Split SEER 18.0/HSPF 10.0 CEE Tier 1 (Base 178.6 0.9 78.5 2300 2302 Residential Split-System) 173.0 2.3 166.7						
Air-Source Heat Pump, SEER 16.0/HSPF 9.2 ENERGY STAR, <5.4 tons (base air-source heat pump heating) High Performance Lighting R/R - Combined Strategies (Base LED 1200 1201 Tube) 184.4 1.2 101.4 3300 3303 Compressor VSD retrofit, walk-ins Energy Star hot food holding 6600 6601 cabinet 180.9 2.4 180.9 Ductless Mini-Split SEER 18.0/HSPF 10.0 CEE Tier 1 (Base 2300 2302 Residential Split-System) 178.6 0.9 78.5 2100 2111 Economizer Repair - DX 173.0 2.3 166.7	1050	1051		200.6	1.5	182 /
16.0/HSPF 9.2 ENERGY STAR,	1030	1001		200.0	1.0	102.4
7200 7201 pump heating) 184.9 1.4 92.0 High Performance Lighting R/R - Combined Strategies (Base LED 1200 1201 Tube) 184.4 1.2 101.4 3300 3303 Compressor VSD retrofit, walk-ins 182.6 2.7 182.6 Energy Star hot food holding Energy Star hot food holding 180.9 2.4 180.9 6600 6601 cabinet 180.9 2.4 180.9 Ductless Mini-Split SEER 18.0/HSPF 10.0 CEE Tier 1 (Base 178.6 0.9 78.5 2300 2302 Residential Split-System) 173.0 2.3 166.7 2100 2111 Economizer Repair - DX 173.0 2.3 166.7						
7200 7201 pump heating) 184.9 1.4 92.0 High Performance Lighting R/R - Combined Strategies (Base LED) 1200 1201 Tube) 184.4 1.2 101.4 3300 3303 Compressor VSD retrofit, walk-ins 182.6 2.7 182.6 Energy Star hot food holding 6600 6601 cabinet 180.9 2.4 180.9 Ductless Mini-Split SEER 18.0/HSPF 10.0 CEE Tier 1 (Base) 2300 2302 Residential Split-System) 178.6 0.9 78.5 2100 2111 Economizer Repair - DX 173.0 2.3 166.7			· ·			
High Performance Lighting R/R - Combined Strategies (Base LED 1200 1201 Tube) 184.4 1.2 101.4 3300 3303 Compressor VSD retrofit, walk-ins 182.6 2.7 182.6 Energy Star hot food holding 6600 6601 cabinet 180.9 2.4 180.9 Ductless Mini-Split SEER 18.0/HSPF 10.0 CEE Tier 1 (Base 2300 2302 Residential Split-System) 178.6 0.9 78.5 2100 2111 Economizer Repair - DX 173.0 2.3 166.7	7200	7201		184.9	1.4	92.0
Combined Strategies (Base LED 1200 1201 Tube) 184.4 1.2 101.4 3300 3303 Compressor VSD retrofit, walk-ins 182.6 2.7 182.6 Energy Star hot food holding 6600 6601 cabinet 180.9 2.4 180.9 Ductless Mini-Split SEER 18.0/HSPF 10.0 CEE Tier 1 (Base 2300 2302 Residential Split-System) 178.6 0.9 78.5 2100 2111 Economizer Repair - DX 173.0 2.3 166.7	1 _ 2 2					
1200 1201 Tube) 184.4 1.2 101.4 3300 3303 Compressor VSD retrofit, walk-ins 182.6 2.7 182.6 Energy Star hot food holding 6600 6601 cabinet 180.9 2.4 180.9 Ductless Mini-Split SEER 18.0/HSPF 10.0 CEE Tier 1 (Base 2300 2302 Residential Split-System) 178.6 0.9 78.5 2100 2111 Economizer Repair - DX 173.0 2.3 166.7						
Energy Star hot food holding 6600 6601 cabinet 180.9 2.4 180.9 Ductless Mini-Split SEER 18.0/HSPF 10.0 CEE Tier 1 (Base 2300 2302 Residential Split-System) 178.6 0.9 78.5 2100 2111 Economizer Repair - DX 173.0 2.3 166.7	1200	1201		184.4	1.2	101.4
6600 cabinet 180.9 2.4 180.9 Ductless Mini-Split SEER 18.0/HSPF 10.0 CEE Tier 1 (Base 0.9 78.5 2300 2302 Residential Split-System) 178.6 0.9 78.5 2100 2111 Economizer Repair - DX 173.0 2.3 166.7	3300	3303	Compressor VSD retrofit, walk-ins	182.6	2.7	182.6
Ductless Mini-Split SEER 18.0/HSPF 10.0 CEE Tier 1 (Base 2300 2302 Residential Split-System) 178.6 0.9 78.5 2100 2111 Economizer Repair - DX 173.0 2.3 166.7			Energy Star hot food holding			
18.0/HSPF 10.0 CEE Tier 1 (Base 2300 2302 Residential Split-System) 178.6 0.9 78.5 2100 2111 Economizer Repair - DX 173.0 2.3 166.7	6600	6601		180.9	2.4	180.9
2300 2302 Residential Split-System) 178.6 0.9 78.5 2100 2111 Economizer Repair - DX 173.0 2.3 166.7						
2100 2111 Economizer Repair - DX 173.0 2.3 166.7						
2100 2114 Smart Thermostat - DX 168.9 0.3 0.0						
	2100	2114	Smart Thermostat - DX	168.9	0.3	0.0



Table 5-14. Top 20 measures contributing to non-residential economic energy savings potential

	Measure			
Base	Number	Measure Name	Measure TRC	Economic GWh
1650	1652	LED outdoor lighting with bi-level controls (Base Outdoor HID)	3.5	1847.2
2100	2102	DX Packaged System, EER=13.4, 10 tons	3.8	577.8
7800	7803	Air Handler Optimization, 15 HP	4.9	512.5
7800	7804	Demand Controlled Ventilation, 15 HP	0.8	450.4
4000	4001	Energy Star server	5.7	398.1
1350	1351	LED screw-in replacement (base incandescent/halogen)	-28.3	390.5
7800	7805	Energy Recovery Ventilation (ERV)	1.2	327.1
3300	3314	Refrigeration Coil Cleaning, walk-ins	1.4	310.2
1750	1752	LED screw-in replacement (base Outdoor Incandescent)	5.6	214.6
6200	6201	Electric Combination Oven	8.4	207.6
7800	7802	Variable Speed Drive Control, base motors	3.9	201.2
3300	3303	Compressor VSD retrofit, walk-ins	2.7	182.6
1050	1051	RET Occ & Daylight Integral Sensor LED troffer (base T12 integrated)	1.5	182.4
6600	6601	Energy Star hot food holding cabinet	2.4	180.9
2100	2111	Economizer Repair - DX	2.3	166.7
1150	1151	RET Occ & Daylight Integral Sensor LED troffer (base T8 integrated)	1.3	163.7
3300	3306	Electronically commutated evaporator fan motor, walk-ins	2.8	151.0
5000	5006	Heat Recovery Unit	3.7	140.9
3300	3310	High-efficiency fan motors, walk-ins	2.7	132.4
1100	1101	High Performance Lighting R/R - Combined Strategies (Base T8)	3.7	124.0
7200	7204	Smart Thermostat (Base Heat Pump Heating)	0.8	106.9



Table 5-15. Top 20 measures contributing to non-residential technical demand savings potential

	Measure		Technical	Measure	Economic
Base	Number	Measure Name	MW	TRC	MW
7800	7804	Demand Controlled Ventilation, 15 HP	296.8	0.8	102.2
7000	7004	LED outdoor lighting with bi-level controls	290.0	0.0	102.2
1650	1652	(Base Outdoor HID)	267.1	3.5	267.1
		Air-Source Heat Pump, SEER 16.0/HSPF 9.2 ENERGY STAR, <5.4 tons			
7200	7201	(base air-source heat pump heating)	119.3	1.4	59.4
1350	1351	LED screw-in replacement (base incandescent/halogen)	117.8	-28.3	117.8
7300	7301	Packaged Heat Pump, heating, IEER 13.9/COP 3.4 (w/ non-ER heating), 10 tons	91.9	0.2	0.0
7200	7204	Smart Thermostat (Base Heat Pump Heating)	82.8	0.8	43.0
7800	7803	Air Handler Optimization, 15 HP	67.3	4.9	62.2
9300	9302	Variable Speed Drive Control, base motors	58.5	0.5	1.6
7800	7805	Energy Recovery Ventilation (ERV)	48.9	1.2	39.7
7100	7101	Heat Pump, SEER 16.0/HSPF 9.2 ENERGY STAR, <5.4 tons, heating	46.0	11.0	46.0
1050	1051	RET Occ & Daylight Integral Sensor LED troffer (base T12 integrated)	37.2	1.5	33.8
1200	1201	High Performance Lighting R/R - Combined Strategies (Base LED Tube)	37.0	1.2	20.3
3300	3314	Refrigeration Coil Cleaning, walk-ins	33.4	1.4	33.4
4000	4001	Energy Star server	33.1	5.7	33.1
1750	1752	LED screw-in replacement (base Outdoor Incandescent)	31.0	5.6	31.0
1150	1151	RET Occ & Daylight Integral Sensor LED troffer (base T8 integrated)	30.4	1.3	30.4
1100	1101	High Performance Lighting R/R - Combined Strategies (Base T8)	24.9	3.7	24.9
7200	7203	Duct/Pipe Insulation (base air-source heat pump heating)	20.8	0.2	0.0
7800	7802	Variable Speed Drive Control, base motors	19.9	3.9	19.9
5000	5006	Heat Recovery Unit	17.9	3.7	16.9
6200	6201	Electric Combination Oven	17.7	8.4	17.7



Table 5-16. Top 20 measures contributing to non-residential economic demand savings potential

Base	Measure Number	Measure Name	Measure TRC	Economic MW
1650	1652	LED outdoor lighting with bi-level controls (Base Outdoor HID)	3.5	267.1
1350	1351	LED screw-in replacement (base incandescent/halogen)	-28.3	117.8
7800	7804	Demand Controlled Ventilation, 15 HP	0.8	102.2
7800	7803	Air Handler Optimization, 15 HP	4.9	62.2
7200	7201	Air-Source Heat Pump, SEER 16.0/HSPF 9.2 ENERGY STAR, <5.4 tons (base air-source heat pump heating) Heat Pump, SEER 16.0/HSPF 9.2 ENERGY STAR,	1.4	59.4
7100	7101	<5.4 tons, heating	11.0	46.0
7200	7204	Smart Thermostat (Base Heat Pump Heating)	0.8	43.0
7800	7805	Energy Recovery Ventilation (ERV)	1.2	39.7
1050	1051	RET Occ & Daylight Integral Sensor LED troffer (base T12 integrated)	1.5	33.8
3300	3314	Refrigeration Coil Cleaning, walk-ins	1.4	33.4
4000	4001	Energy Star server	5.7	33.1
1750	1752	LED screw-in replacement (base Outdoor Incandescent)	5.6	31.0
1150	1151	RET Occ & Daylight Integral Sensor LED troffer (base T8 integrated) High Performance Lighting R/R - Combined Strategies	1.3	30.4
1100	1101	(Base T8)	3.7	24.9
1200	1201	High Performance Lighting R/R - Combined Strategies (Base LED Tube)	1.2	20.3
7800	7802	Variable Speed Drive Control, base motors	3.9	19.9
6200	6201	Electric Combination Oven	8.4	17.7
5000	5006	Heat Recovery Unit	3.7	16.9
3300	3303	Compressor VSD retrofit, walk-ins	2.7	16.7
6600	6601	Energy Star hot food holding cabinet	2.4	15.4
1100	1102	ROB 2L4' LED Tube (Base T8)	3.7	14.9

5.2.7 Trends in technical and economic potential

In this section, we compare the results of the current study to the 2020, 2017, and 2014 Dominion Energy potential studies. The current study is based on residential and commercial saturation data collected in 2023. Data for the 2020 study was collected in 2019 and 2020, while the 2017 study used residential saturation data collected in 2016, and the 2017 non-residential analysis and both 2014 analyses used data from 2013 surveys. Dominion Energy's customer base has grown, and the mix of residential and commercial customers has shifted. Its avoided costs have changed, affecting which measures are cost-effective under the TRC test. The market penetration of many measures increased. Dramatic changes occurred in the lighting market. In 2014 LEDs were still relatively expensive and not cost-effective in many applications, and first phase of the lighting standards of the Energy Independence and Security Act (EISA) of 2007 had rolled out between 2012 and 2014. With phase 2 of the EISA standards, the market for general service screw-based lighting has shifted to LEDs, though some CFLs and incandescent lamps remain in the building stock and hoarded in customer's closets. LEDs have substantial market penetration with other lamp types as well, and additional new lighting standards for fluorescent tubes, scheduled for 2029, are expected to further limit opportunities for non-residential lighting programs.

Dominion Energy's system peak has also shifted: Where the 2014 and 2017 studies assigned all avoided capacity costs to summer peak demand reductions, the 2020 study and the current study assigned avoided generation capacity costs to summer peak demand reductions, avoided transmission costs to winter peak demand reductions, and split distribution



avoided costs evenly across summer and winter. These avoided costs are in line with how Dominion Energy currently incurs costs for these three types of capacity.

For each of the 10-year potential studies, we used base energy consumption at the end of the forecast period for savings comparisons: 2023 for the 2014 study, and 2027 for the 2017 study (the forecast started in 2018), 2029 for the 2020 study, and 2033 for the current study. We accounted for the accumulated effects of new construction over those 10 years in both potentials and base consumption. The difference in years accounts for a small portion of the change in the study results, as the number of customers, and corresponding base consumption, are expected to grow by 2033. The reader should keep this difference in mind during the discussion below.

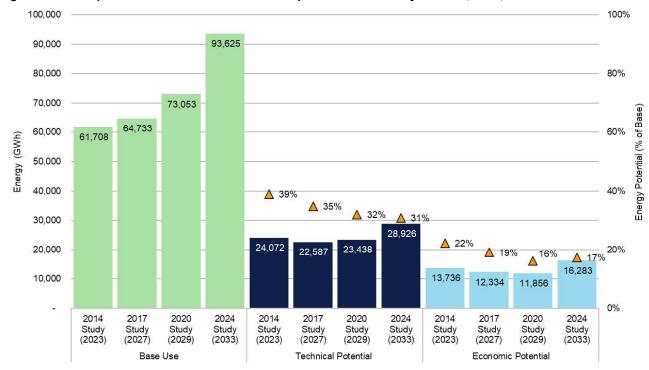
Figure 5-16 compares the results of the 2014, 2017, and 2020 potential studies to the current study. All four studies exclude non-jurisdictional, federal, and actual opt-out customers, but the rules regarding opt-out eligibility have changed over time. In 2014 and 2017, all customers over 1 MW average demand were automatically exempt and customers over 500 kW demand were eligible to opt out. For the 2020 and 2024 studies, new rules eliminated the exempt classification and the threshold for opt-out eligibility has increased to 1 MW. Base energy consumption, technical potential, and economic potential are all shown (plotted on the left axis). The yellow triangles indicate the percentage of base energy consumption represented by the potential estimates (plotted on the right axis).

Base electricity consumption increased by 5% from the 2014 to the 2017 study, 13% from the 2017 to 2020 study, and then jumped 28% from 2020 to 2024. The large increase between the 2020 and 2024 studies is due to the inclusion of large industrial customers in the analysis for the first time. The exempt/opt-out rules in place in 2014 and 2017 put most large industrial customers out of reach of programs at that time, and the potential study focused only on the commercial sector. In 2020, we broke out small industrial and agricultural customer, but still excluded large industrial (based on Dominion Energy data reported to the EIA). With current opt-out rules and rates and aggressive savings targets, Dominion Energy is considering programs that could target large commercial customers (such as a non-residential custom program), so this study included all non-residential customers for the first time. This boosted base consumption, technical potential, and economic potential in absolute terms, but had modest impacts on savings as a percent of base use. Other factors influencing the changes from study to study include both changes to raw sector consumption, the size of opt-out consumption excluded, and changes to the growth forecast (since base consumption is projected 10 years to the end of the forecast horizon and accounts for growth/decay in the building stock). The 2024 study incorporated anticipated strong growth in data centers, for example.

Technical energy savings potential as a percentage of base consumption has declined across all three studies. Economic potential was slightly higher in the 2024 study than in the 2020 study, but still lower than in the 2014 and 2017 studies. We discuss the results in more detail below.



Figure 5-16. Comparison of technical and economic potential: 2024 study vs. 2020, 2017, and 2014 studies*



^{*}All results exclude non-jurisdictional, federal, and opt-out customers, as well as voltage optimization and persistent savings from previous program years.

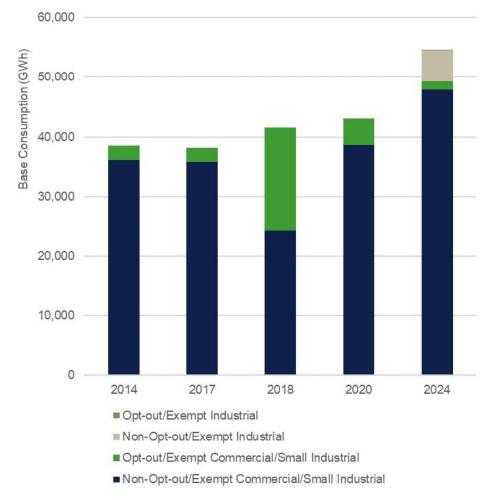
Comparisons of the non-residential sector between 2020 and the earlier studies are confounded by multiple factors.

- Inclusion of industrial customers. The 2024 non-residential base includes the entire non-residential sector including large industrial; the 2020 non-residential base included both commercial and small industrial and agricultural customers, while the 2017 and 2014 studies included only the commercial sector.
- Opt-out/exempt customers definition. The legal definition of exempt and opt-out customers has changed multiple times over the past decade. Prior to 2018, customers with demand 10 MW and above were automatically exempt, while customers between 500 kW and 10 MW had the opportunity to opt out. In 2018, the law was changed to eliminate the opt out process and all customers with demand 500 kW or higher became automatically exempt. In 2020, with the passage of the Virginia Clean Economy Act, the law once again changed, stating that all customers over 1 MW can opt out (there is no longer an auto-exempt category).

Figure 5-17 shows the non-residential base consumption used for each of the studies, broken out by opt-out/exempt status by large commercial.



Figure 5-17. Non-residential base consumption by opt-out/exempt status and commercial/industrial: 2024 study vs 2020, 2017, and 2014 studies

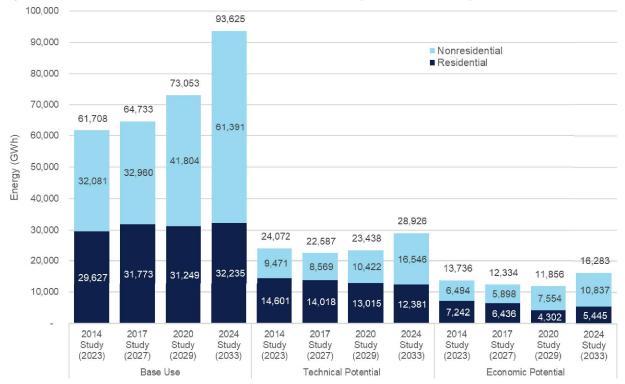


^{*}All results exclude non-jurisdictional, federal, and opt-out customers, as well as voltage optimization and persistent savings from previous program years.

Figure 5-18 shows base consumption and technical and economic potential broken out by sector. Between the 2014 and 2017 studies, non-residential technical potential declined 10%, followed by an increase of 22% from the 2017 to the 2020 study. With the addition of large industrial and correspondingly higher base use, technical potential increased by 59% in the 2024 study. Residential technical potential declined 4% from 2014 to 2017, 7% between the 2017 and 2020 studies, and another 5% between the 2020 and 2024 studies. In the non-residential sector, economic potential declined 9% from 2014 to 2017, then jumped 28% from 2017 to 2020, and 43% from the 2020 study to the 2024 study. Residential sector economic potential declined from 2014 to 2020 (with declines of 11% and 33% between the studies), but increased between the 2020 and 2024 studies, though was still below what was found in the 2017 study.



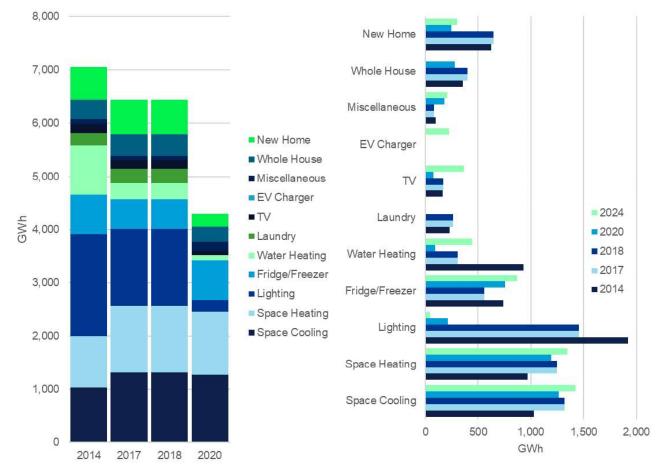
Figure 5-18. Comparison of technical and economic potential by sector: 2024 study vs 2020, 2017, and 2014 studies



*All results exclude non-jurisdictional, federal, and opt-out customers, as well as voltage optimization and persistent savings from previous program years. Figure 5-19 shows the breakout of residential economic energy potential by end use across the 2014, 2017, 2020, and 2024 studies. Both lighting and whole-house (behavioral) measures declined (an 80% drop for lighting and 20% for whole-house measures) between the 2020 study and the 2024 study. Lighting potential declined due to the transformation of the lighting market, while reductions in behavioral programs reflect lower expectations for perhousehold savings Potential for other end uses increased or remained flat.



Figure 5-19. Comparison of residential economic potential by end use: 2024 study vs 2020, 2017, and 2014 studies



Note: The residential miscellaneous category includes air purifiers and home office equipment, and plug-load controls.

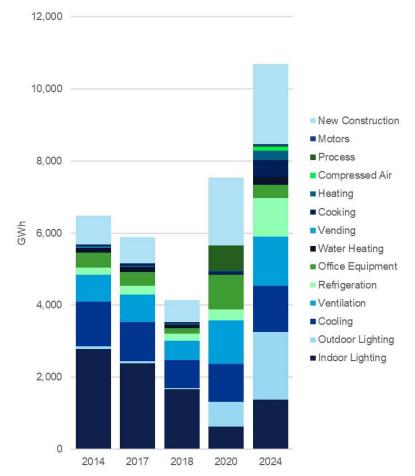
Figure 5-20 and Figure 5-21 show the end-use breakouts for the non-residential sector. There was a non-residential potential study update in 2018 corresponding with the change in legislation regarding opt-out and exempt customers (eliminating the opt-out provision and exempting all customers over 500 kW demand).

Our estimates of outdoor lighting potential both increased between the 2020 study and the 2024 study. This is due to higher saturations for HID lighting based on the saturation survey, which increased our overall estimate of base lighting energy use. This probably does not represent a trend toward HID (the trend has been toward LEDs for at least the last decade), but rather normal uncertainty in survey results. We also revised costs for LED bi-level outdoor lighting, resulting in the measure being cost-effective in more applications. In combination, those changes increased outdoor lighting savings significantly compared to the 2020 study. Other end uses with large savings were indoor lighting and refrigeration. Compared to 2020, the 2024 study found more lighting measures (primarily LED lamps or fixtures) cost-effective in more building types, roughly doubling the energy savings potential. Our estimate of baseline refrigeration energy use was higher for this study than for the 2024 study, and more measures were cost-effective, though only in grocery and restaurants (as was the case in 2020).

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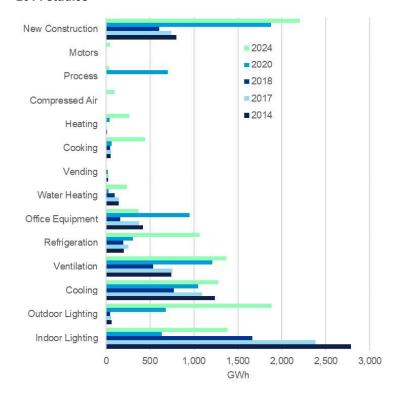
Figure 5-20. Non-residential economic potential broken down by end use: 2024 study vs 2020, 2018, 2017, and 2014 studies



^{*}All results exclude non-jurisdictional, federal, and opt-out customers, as well as voltage optimization and persistent savings from previous program years.



Figure 5-21. Comparison of non-residential economic potential by end use: 2024 study vs 2020, 2018, 2017, and 2014 studies



^{*}All results exclude non-jurisdictional, federal, and opt-out customers, as well as voltage optimization and persistent savings from previous program years.

We have cited Dominion Energy's low avoided costs in explaining its low energy-efficiency potential compared to other utilities. Avoided cost trends are also a key factor in explaining the trends in Dominion Energy's potential over time, since lower avoided costs reduce the benefits of energy efficiency and can tip the TRC of some measures from passing to failing. Figure 5-22 and Figure 5-23 show the energy avoided costs used for the 2014, 2017, 2020, and 2024 studies for peak time-of-use period and off-peak time-of-use, respectively. Energy avoided costs generally decreased across the four studies. While the drop from 2014 to 2017 is the most dramatic, especially in later years of the forecast, the change from 2017 to 2020 is large (20% for on-peak in 2020), as is the change from 2020 to 2024 for on-peak. Costs shown are in nominal USD; if the avoided costs used in the 2014, 2017, and 2020 studies were adjusted for inflation, the gaps would be even wider.

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Figure 5-22. Energy avoided costs, peak period: 2024 study vs 2020, 2017, and 2014 studies (nominal USD)

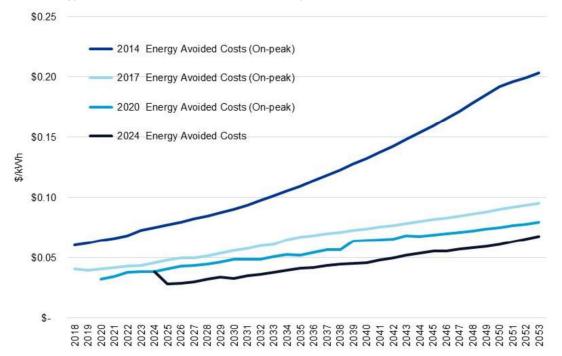


Figure 5-23. Energy avoided costs, off-peak period: 2024 study vs 2020, 2017, and 2014 studies (Nominal USD)

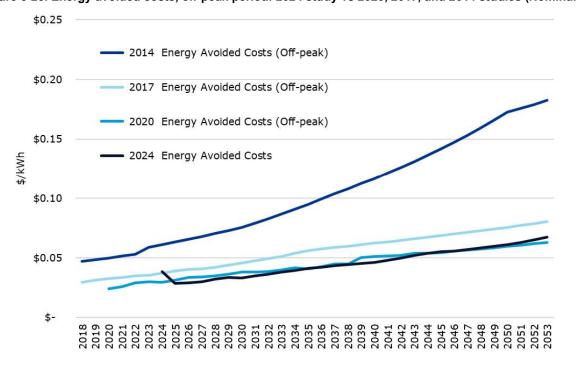
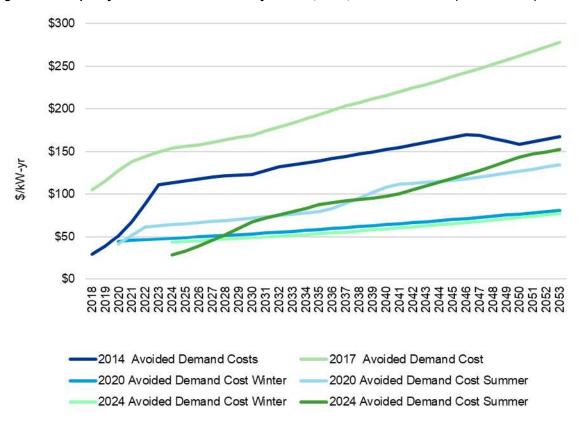




Figure 5-24 shows capacity avoided costs used for the four studies. The picture here is more complicated due to differing treatment of generation capacity avoided costs, transmission capacity avoided costs, and distribution capacity avoided costs. While Dominion Energy continues to pay for generation capacity based on its contribution to summer peak within the Pennsylvania, New Jersey, and Maryland (PJM) Interconnection power pool, it pays PJM for transmission costs based on the PJM Dominion Energy zone peak load, which is forecast to peak in the winter over the time frame of this potential study. Whereas in the 2014 and 2017 studies, all generation capacity and transmission and distribution (T&D) benefits accrued to summer demand reduction, this study and the 2020 study assigned generation capacity avoided cost benefits to summer, transmission avoided costs to winter, and split distribution avoided costs evenly across summer and winter. Comparisons are further complicated by the omission of T&D capacity avoided costs from the 2014 study (an omission that was not recognized until we compared the results of the 2017 study to those of the 2014 study for the 2017 report). The increase in capacity avoided costs from 2014 to 2017 reflects the addition of T&D avoided cost in addition to changes in capacity costs of generation. The omission of T&D in 2014, however, makes the 2014 avoided cost directly comparable to the 2020 and 2024 summer avoided costs, as all three reflect only the avoided cost of generation. And that cost dropped substantially from 2014 to 2020. The 2024 and 2020 winter avoided costs are very similar. Summer avoided costs start lower in the 2024 study but increase more rapidly through 2029; the forecasts are similar from 2030 through 2045.

Figure 5-24. Capacity avoided costs: 2024 study vs 2020, 2017, and 2014 studies (Nominal USD)



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5.3 Achievable (program) potential results

This section provides a high-level summary of the achievable potential analysis, based on the results of the technical and economic potential analyses. This achievable analysis excludes savings for opt-out customers, non-jurisdictional customers, voltage optimization, and persistent savings from program activity before 2024.

In contrast to the technical and economic potential estimates that are based on measure-level costs and savings, the achievable analysis bundles measures into defined programs with specified marketing budgets, administrative budgets, and incentive levels. The program budgets are used in the TRC and other cost-effectiveness tests at the program and portfolio level (measure-level TRCs calculated when calculating technical and economic potential excluded program costs). Rates of adoption over time consider market and other factors that affect the adoption of efficiency measures. As further described in Section 4 and Appendix A of this report, our method of estimating measure adoption considers market barriers and program incentives and reflects actual consumer and business implicit discount rates. The discount rate assumptions can be found in Appendix C of the report, while annual budget assumptions can be found in Appendix I of the report.

In this analysis, achievable potential refers to the amount of savings that would occur in response to one or more specific program interventions. Gross or total market savings shown in this section include net savings and savings attributable to program free-riders—those customers who would have installed the measure in the absence of the program. Net or program savings associated with program potential are savings that are projected beyond those that would occur naturally in the absence of any market intervention.

The achievable analysis began by calibrating model parameters based on current program budgets and savings. This process anchors the model's parameters that represent customers' receptiveness to programs and response to specific incentives to concrete program data, and provides a solid foundation for projection changes to measure adoption in response to program changes. The model parameters adjusted in this process represent such things as the cost to reach a customer through program marketing, the maximum annual uptake for each measure, and how accepting or resistant the market is to a particular measure (market barriers). DNV set the input marketing and administrative budgets to match Dominion Energy's current programs, then calibrated these model parameters until the energy savings and incentive expenditures output by the model also aligned with current programs. The resulting calibrations closely represent recent Dominion Energy's program experience.

After the calibration was complete, all cost-effective measures from the technical and economic analysis were added to the model, using existing measures as a guideline for setting measure-specific parameters for the new measures. Administrative and marketing budgets were increased to account for the additional measures.

Because achievable potential depends on the type and degree of intervention applied, we developed potential estimates under alternative funding scenarios: 50%+ incentives and 75%+ incentives. We estimated program energy and peak demand savings under each scenario for the 2024-2033 period.

- 50%+ incentives: Assumes customer incentives are set at least 50% of incremental costs. If current incentives exceed 50%, for example in IAQ programs, incentives are maintained at the level currently offered.
- 75%+ incentives: Assumes customer incentives are offered at 75% of incremental costs. As with the 50%+ scenario, incentives that are already above 75% are retained at current levels.

Table 5-17 shows the results of the achievable analysis as compared to base consumption, technical potential, and economic potential, for Dominion Energy's Virginia service territory. By 2033, cumulative net energy savings are projected to be 1,882 GWh under the 50%+ scenario and 2,647 GWh under the 75% +incentive scenario.



As a percentage of base consumption, the Dominion Energy results are lower than results seen in other jurisdictions, largely due to Dominion Energy's low avoided costs and rates. Low avoided costs result in fewer measures passing the cost-effectiveness screening, while low rates reduce the customer's benefits from adopting a measure, resulting in lower measure penetrations.

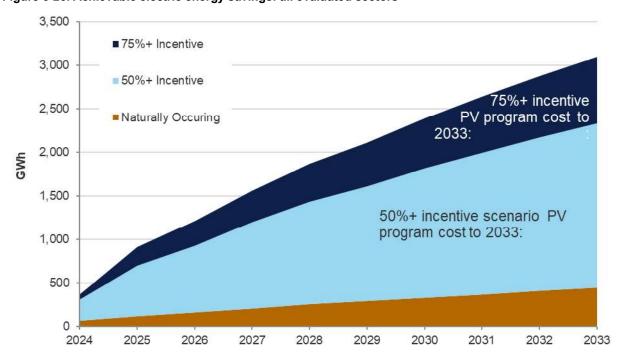
Table 5-17. Ten-year cumulative potential - GWh

			10-Year Cumulative Potential - GWh					
Sect or	2033 Base Energy Use (GWh)		Technical Potential	Econor Potent		75% Achievable (Program)		
Reside		32,235	12,381	5,445	441	595		
Savi Base	ngs % of		38%	17%	1.4%	1.8%		
Non-R	esidential	61,391	16,546	10,837	1,442	4,052		
Savi Base	ngs % of		27%	18%	2.3%	3.3%		
Total		93,625	28,926	16,283	1,882	2,647		
Savi Base	ngs % of		31%	17%	2.0%	2.8%		

5.3.1 Achievable (program) potential - overall results

Figure 5-25 shows our estimates of achievable potential savings over time for Virginia. In each scenario, savings increase over time. The figure includes the present value of program cost over the 10-year forecast (including marketing, administrative, and incentive costs) associated with each scenario.

Figure 5-25. Achievable electric energy savings: all evaluated sectors*



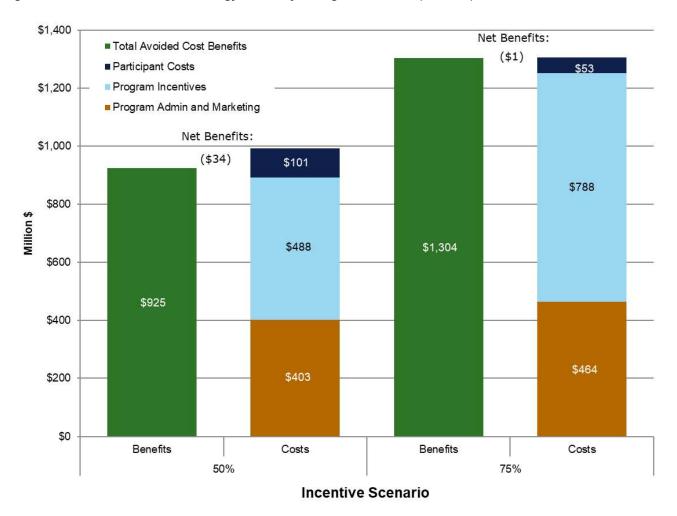
^{*}Excludes Virginia non-jurisdictional, federal, and opt-out customers as well as voltage optimization and persistent savings from program activity prior to 2024.



As incentive levels increase between program scenarios, the costs to administer and market the program also increase from additional programmatic activity. Increased incentives also affect participant costs as the incremental cost participants must pay per measure has decreased as a result of the higher incentives. It is also important to note that although the level of naturally occurring savings does not change between scenarios, program free riders receive the same incentive payments as program participants.

Figure 5-26 depicts the estimated costs and benefits under each funding scenario from 2024 to 2033 for Virginia. In Virginia, the total costs (program incentives, program administrative and marketing costs, and net participant costs) exceed the net benefits for the 50%+ and 75%+ incentive scenarios. In the 50%+ scenario costs exceed benefits by \$34 million. In the 75%+ incentive scenario, costs exceed benefits by only \$1 million, which is less than 0.1% of total costs.

Figure 5-26. Benefits and costs of energy efficiency savings* 2024-2033† (Million \$)



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Additional key results of the efficiency scenario forecasts from 2024 to 2033 are summarized in Table 5-18.

Table 5-18. Summary of achievable potential results, 2024-2033

	Program	Scenario:
Result - Programs	50% Incentives	75% Incentives
Total Market Energy Savings - GWh (year 10 annual)	2,263	3,028
Total Market Peak Demand Savings - MW (year 10 annual)	491	643
Program Energy Savings - GWh (year 10 annual)	1,882	2,647
Program Peak Demand Savings - MW (year 10 annual)	396	547
Program Costs - Real, \$ Million		
Administration (10-year total)	\$270	\$339
Marketing (10-year total)	\$222	\$220
Incentives (10-year total)	\$589	\$941
Total Program Costs (10-year total)	\$1,081	\$1,501
PV Avoided Costs (PV 10-year cost)	\$925	\$1,304
PV Annual Program Costs (Adm/Mkt) (PV 10-year cost)	\$403	\$464
PV Net Measure Costs (PV 10-year cost)	\$589	\$841
Net Benefits (PV 10-year cost)	-\$67	-\$1
TRC Ratio	0.93	1.00

The threshold for cost-effectiveness is a TRC of 1, meaning that the avoided cost benefits and participant benefits exceed the measure and program costs. Measures are included in the achievable analysis based on measure economics alone, without the added hurdle of program marketing and administrative costs. The two program scenarios modeled have negative net benefits when all costs are included in the analysis, but in the 75%+ scenario the shortfall is so small in the context of total costs and benefits that the TRC ratio rounds to 1.00.

The Dominion Energy zone within PJM is now winter peaking, but Dominion Energy has historically had a summer peak and continues to pay for generation capacity based on its contribution to PJM's summer peak. However, it now pays for transmission based on PJM's Dominion Energy zone winter peak. The avoided costs used in this analysis reflect this split and put a lower value on summer peak reductions and a greater value on winter peak reductions compared to the 2014 and 2017 DNV potential studies.

To calibrate the model, DNV grouped measures and assigned budgets to match Dominion Energy's current programs—programs that were developed and initiated when facing a summer peak. As a result, DNV included measures in the analysis that as of 2023 were offered in programs but are not cost-effective under the modeled avoided cost structure.

This had little impact on the non-residential analysis, but for residential, it meant that our business-as-usual analysis (in which we modeled continuing current programs) contained a large number of such measures. The net savings from the cost-effective measures were not enough to offset the net costs of these measures, and with the added layer of administrative and marketing expenditures, the portfolio was not cost-effective.

It is also important to understand what the TRCs reported in Figure 5-26 and Table 5-18 represent. They are averages over the 10-year forecast. Retrofit programs tend to become less cost-effective over time as measures saturate the market, so a program that is cost-effective in the early years of the forecast may still have an average 10-year TRC that is below one. In



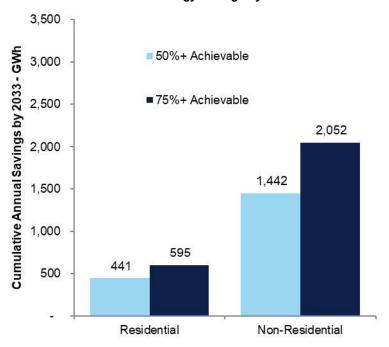
our model, we did not terminate programs or measures as their cost-effectiveness dropped but modeled them as running through the full 10-year forecast.

5.3.2 Breakdown of achievable potential by sector

Cumulative net achievable potential estimates by sector for the period of 2024-2033 are presented in Figure 5-27. These figures compare the residential and non-residential sector results for each funding scenario.

Under the program assumptions developed for this study, achievable energy under the 50%+ and 75%+ scenarios is highest for the non-residential sector.⁶ Achievable peak demand savings is more balanced across the two sectors in Virginia.

Figure 5-27. 2033 Net achievable energy savings by sector



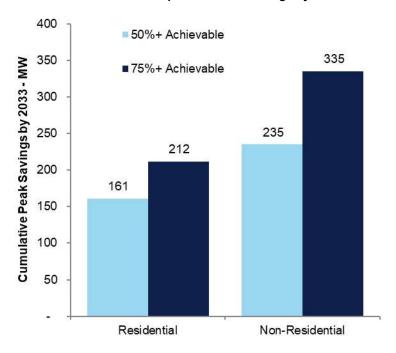
*Excludes Virginia non-jurisdictional, federal, and opt-out customers as well as voltage optimization and persistent savings from program activities prior to 2024.

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⁶ The estimates of peak demand savings are from the installation of energy efficiency measures and do not include demand savings from demand response technologies such as direct load control or dynamic pricing.



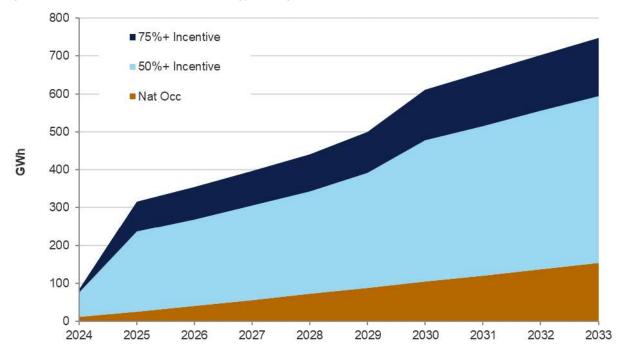
Figure 5-28. 2033 Net achievable peak-demand savings by sector



^{*}Excludes Virginia non-jurisdictional, federal, and opt-out customers as well as voltage optimization and persistent savings from program activities prior to 2024.

Figure 5-29 shows cumulative net achievable program savings for the total residential sector by program scenario. By 2033, net energy savings are 441 GWh under the 50%+ scenario and 595 GWh in the 75%+ incentive scenario.

Figure 5-29. 2024 to 2033 achievable energy savings: residential sector



*Excludes Virginia non-jurisdictional, federal, and opt-out customers as well as voltage optimization and persistent savings from program activities prior to 2024.



Figure 5-30 shows cumulative net achievable program savings by non-residential program scenario. By 2033, net energy savings in Virginia are projected to reach 1,442 GWh under the 50%+ scenario, and 2,052 GWh under the 75%+ incentive scenario.

2,500 ■ 75%+ Incentive ■ 50%+ Incentive 2,000 ■ Nat Occ 1,500 G₩h 1,000 500 0 2025 2026 2027 2028 2029 2030 2031 2032 2033 2024

Figure 5-30. 2024 to 2033 achievable energy savings: non-residential sector

5.3.3 Cross-study comparison of achievable results

In this section, we compare the results of the current study to prior Dominion Energy Potential study results, and other studies completed outside of Dominion Energy by DNV.

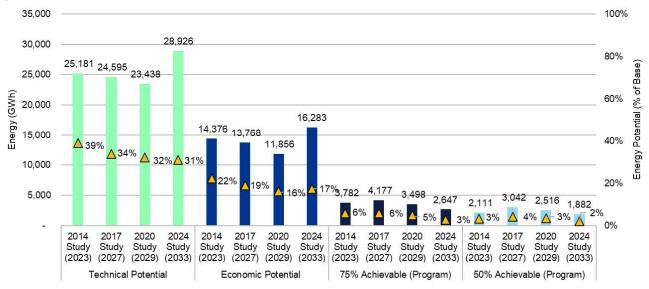
Figure 5-31 compares the results of the 2014, 2017, and 2020 potential studies to the current study, including technical potential, economic potential, and achievable potential for the 75% and 50% scenarios (plotted on left axis). The yellow triangles indicate the percentage of base energy consumption represented by the potential estimates (plotted on right axis). Achievable potentials for the two incentive scenarios declined in absolute terms and on a percentage basis from the 2020 study to the 2024 study. For example, achievable potential dropped from 3,498 GWh (4.8%) for the 75% scenario in the 2020 study to 2,647 GWh (2.8%) in the 2024 study. A similar drop was observed for the 50% achievable scenario, from 2,516 GWh (3.4%) in 2020 to 1,882 GWh (2.0%) in 2024.

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^{*}Excludes Virginia non-jurisdictional, federal, and opt-out customers as well as voltage optimization and persistent savings from program activities prior to 2024.



Figure 5-31. Comparison of technical, economic, and achievable potential: 2024, 2020, 2017, and 2014 studies



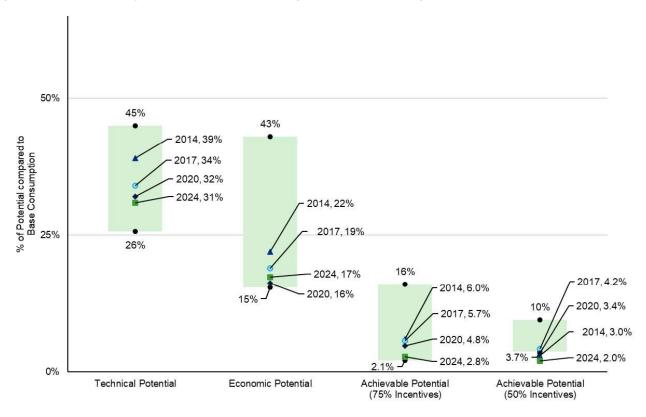
*2014 and 2017 studies exclude non-jurisdictional and actual opt-out/exempt customers. 2020 study excludes non-jurisdictional and 33% of opt-out-eligible customers. The 2024 study excludes Virginia non-jurisdictional, federal, and opt-out customers as well as voltage optimization and persistent savings from program activities prior to 2024.

Figure 5-32 compares the results of the Dominion Energy 2014, 2017, and 2020 potential studies and the current study to historical ranges of potential savings from other DNV studies. The blue bars indicate the range of potential from other DNV studies for technical, economic, 75% and 50% achievable scenarios. Dominion Energy's technical potential is in the midrange when compared to other studies. However, the economic and achievable potential is on the lower end of the spectrum, largely due to Dominion Energy's low avoided costs and rates. As discussed above, low avoided costs result in fewer measures passing the cost-effectiveness screening, while low rates reduce the customer's benefits from adopting a measure, resulting in lower measure penetrations.

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Figure 5-32. Current study compared to historical ranges of potential savings





About DNV

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APPENDICES

Virginia Energy Efficiency Potential Study 2024 to 2033

Virginia Electric and Power Company (Dominion Energy Virginia)

Prepared by DNV Energy Insights (DNV)

June 12, 2024





Appendices

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A DETAILED METHODOLOGY AND MODEL DESCRIPTION

In this appendix we present and discuss our basic methodology for conducting market potential studies. We also present an overview of DSM ASSYSTTM, our model used to develop market potential estimates. Information presented here has been extracted from several recent energy efficiency potential reports.

A.1 Overview of DSM Forecasting Method

The crux of any DSM forecasting process involves carrying out a number of systematic analytical steps that are necessary to produce accurate estimates of energy efficiency (EE) effects on system load. A simplified overview of these basic analytical steps is shown in Figure A-1.

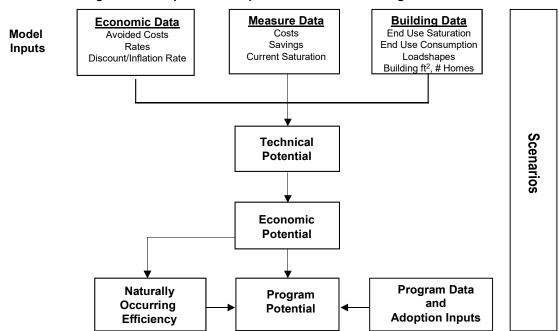


Figure A-1. Simplified Conceptual Overview of Modeling Process

Developing a DSM forecast is viewed by DNV as a five-step process. The steps include:

Step 1: Develop Initial Input Data

- Develop list of EE measure opportunities to include in scope
- Gather and develop technical data (costs and savings) on efficient measure opportunities
- Gather, analyze, and develop information on building characteristics, including total square footage and
 households, electricity consumption and intensity by end use, end-use consumption load patterns by time of day
 and year (i.e., load shapes), market shares of key electric consuming equipment, and market shares of EE
 technologies and practices.

Step 2: Estimate Technical Potential and Develop Supply Curves

Match and integrate data on efficient measures to data on existing building characteristics to produce estimates
of technical potential and EE supply curves.

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Step 3: Estimate Economic Potential

- Gather economic input data such as current and forecasted retail electric prices and current and forecasted costs
 of electricity generation, along with estimates of other potential benefits of reducing supply, such as the value of
 reducing environmental impacts associated with electricity production
- Match and integrate measure and building data with economic assumptions to produce indicators of costs from different viewpoints (e.g., utility, societal, and consumer)
- Estimate total economic potential using supply curve approach

Step 4: Estimate Achievable Program and Naturally Occurring Potentials

- Gather and develop estimates of program costs (e.g., for administration and marketing) and historic program savings
- Develop estimates of customer adoption of EE measures as a function of the economic attractiveness of the measures, barriers to their adoption, and the effects of program intervention
- Estimate achievable program and naturally occurring potentials; calibrate achievable and naturally occurring
 potential to recent program and market data
- Develop alternative economic estimates associated with alternative future scenarios

Step 5: Scenario Analyses and Resource Planning Inputs

 Recalculate potentials under alternate economic scenarios and deliver data in format required for resource planning.

Provided below is additional discussion of DNV's modeling approaches for technical, economic, and achievable DSM forecasts.

A.1.1 Estimate Technical Potential and Develop Energy-Efficiency Supply Curves

Technical potential refers to the amount of energy savings or peak demand reduction that would occur with the *complete* penetration of all measures analyzed in applications where they were deemed *technically* feasible from an *engineering* perspective. Total technical potential is developed from estimates of the technical potential of individual measures as they are applied to discrete market segments (commercial building types, residential dwelling types, etc.).

A.1.1.1 Core Equation

The core equation used to calculate the energy technical potential for each individual efficiency measure, by market segment, is shown below (using a commercial example):¹

Technical		Total		Base Case				Not				
Potential of	=	Square		Equipment	×	Applicability	×	Complete	×	Feasibility	×	Savings
Efficient		Feet	×	EUI		Factor		Factor		Factor		Factor
Measure												

Note that stock turnover is not accounted for in our estimates of technical and economic potential, stock turnover is accounted for in our estimates of achievable potential. Our definition of technical potential assumes instantaneous replacement of standard-efficiency with high-efficiency measures.



where:

Square feet is the total floor space for all buildings in the market segment. For the residential analysis, the **number of dwelling units** is substituted for square feet.

Base-case equipment EUI is the energy used per square foot by each base-case technology in each market segment. This is the consumption of the energy-using equipment that the efficient technology replaces or affects. For example, if the efficient measure were a CFL, the base EUI would be the annual kWh per square foot of an equivalent incandescent lamp. For the residential analysis, unit energy consumption (UECs), energy used per dwelling, are substituted for EUIs.

Applicability factor is the fraction of the floor space (or dwelling units) that is applicable for the efficient technology in a given market segment; for the example above, the percentage of floor space lit by incandescent bulbs.

Not complete factor is the fraction of applicable floor space (or dwelling units) that has not yet been converted to the efficient measure; that is, (1 minus the fraction of floor space that already has the EE measure installed).

Feasibility factor is the fraction of the applicable floor space (or dwelling units) that is technically feasible for conversion to the efficient technology from an *engineering* perspective.

Savings factor is the percent reduction in energy consumption resulting from application of the efficient technology.

Technical potential for peak demand reduction is calculated analogously.

An example of the core equation is shown in Equation A-1 for the case of a prototypical 4-lamp 4-foot standard T-8 lighting fixture, which is replaced by a 4-lamp 4-foot premium T-8 fixture in the office segment of a large utility service territory.

Equation A-1. Example of Technical Potential Calculation—Replace 4-Lamp 4-Foot Standard T-8s with 4-Lamp 4-Foot Premium T-8s in the Office Segment of a Utility Service Territory (Note: Data are illustrative only)

Technical Potential of Efficient Measure	=	Total square feet	×	Base Case Equipment UEC	×	Applicability Factor	×	Not Complete Factor	×	Feasibility Factor	×	Savings Factor
57 million kWh		195 million		5.74		0.34		0.95		1.00		0.16

Technical EE potential is calculated in two steps. In the first step, all measures are treated independently; that is, the savings of each measure are not marginalized or otherwise adjusted for overlap between competing or synergistic measures. By treating measures independently, their relative economics are analyzed without making assumptions about the order or combinations in which they might be implemented in customer buildings. However, the total technical potential across measures cannot be estimated by summing the individual measure potentials directly. The cumulative savings cannot be estimated by adding the savings from the individual savings estimates because some savings would be double counted. For example, the savings from a measure that reduces heat gain into a building, such as window film, are partially dependent on other measures that affect the efficiency of the system being used to

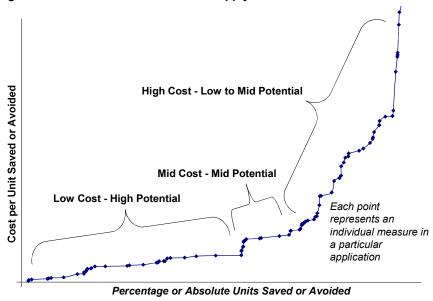


cool the building, such as a high-efficiency chiller; the more efficient the chiller, the less energy saved from the application of the window film.

A.1.1.2 Use of Supply Curves

In the second step, cumulative technical potential is estimated using an EE supply curve approach.² This method eliminates the double-counting problem. In Figure A-2, we present a generic example of a supply curve. As shown in the figure, a supply curve typically consists of two axes—one that captures the cost per unit of saving a resource or mitigating an impact (e.g., \$/kWh saved or \$/ton of carbon avoided) and the other that shows the amount of savings or mitigation that could be achieved at each level of cost. The curve is typically built up across individual measures that are applied to specific base-case practices or technologies by market segment. Savings or mitigation measures are sorted on a least-cost basis, and total savings or impacts mitigated are calculated incrementally with respect to measures that precede them. Supply curves typically, but not always, end up reflecting diminishing returns, i.e., as costs increase rapidly and savings decrease significantly at the end of the curve.

Figure A-2. Generic Illustration of EE Supply Curve



As noted above, the cost dimension of most EE supply curves is usually represented in dollars per unit of energy savings. Costs are usually annualized (often referred to as "levelized") in supply curves. For example, EE supply curves usually present levelized costs per kWh or kW saved by multiplying the initial investment in an efficient technology or program by the "capital recovery rate" (CRR):

$$CRR = \frac{d}{1 - (1+d)^{-n}}$$

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² This section describes conservation supply curves as they have been defined and implemented in numerous studies. Readers should note that Stoft 1995 describes several technical errors in the definition and implementation of conservation supply curves in the original and subsequent conservation supply curve studies. Stoft concludes that conservation supply curves are not "true" supply curves in the standard economic sense but can still be useful (albeit with his recommended improvements) for their intended purpose (demonstration of cost-effective conservation opportunities).



where d is the real discount rate and n is the number of years over which the investment is written off (i.e., amortized).

Thus,

Levelized Cost per kWh Saved = Initial Cost x CRR/Annual Energy Savings

Levelized Cost per kW Saved = Initial Cost x CRR/Peak Demand Savings

The levelized cost per kWh and kW saved are useful because they allow simple comparison of the characteristics of EE with the characteristics of energy supply technologies. However, the levelized cost per kW saved is a biased indicator of cost-effectiveness because all of the efficiency measure costs are arbitrarily allocated to peak savings.

Returning to the issue of EE supply curves, Table A-1 shows a simplified numeric example of a supply curve calculation for several EE measures applied to commercial lighting for a hypothetical population of buildings. What is important to note is that in an EE supply curve, the measures are sorted by relative cost—from least to most expensive. In addition, the energy consumption of the system being affected by the efficiency measures goes down as each measure is applied. As a result, the savings attributable to each subsequent measure decrease if the measures are interactive. For example, the occupancy sensor measure shown in Table A-1 would save more at less cost per unit saved if it were applied to the base-case consumption before the T8 lamp and electronic ballast combination. Because the T8 electronic ballast combination is more cost-effective, however, it is applied first, reducing the energy savings potential for the occupancy sensor. Thus, in a typical EE supply curve, the base-case end-use consumption is reduced with each unit of EE that is acquired. Notice in Table A-1 that the total end-use GWh consumption is recalculated after each measure is implemented, thus reducing the base energy available to be saved by the next measure.

Table A-1 shows an example that would represent measures for one base-case technology in one market segment. These calculations are performed for all of the base-case technologies, market segments, and measure combinations in the scope of a study. The results are then ordered by levelized cost and the individual measure savings are summed to produce the EE potential for the entire sector.

In the next subsection, we discuss how economic potential is estimated as a subset of the technical potential.

Table A-1. Sample Technical Potential Supply Curve Calculation for Commercial Lighting (Note: Data are illustrative only)

Measure	Total End Use Consumption of Population (GWh)	Applicable, Not Complete and Feasible (1000s of ft²)	kWh/ft² of	_	GWh Savings	Levelized Cost (\$/kWh saved)
Base Case: T12 lamps with Magnetic Ballast	425	100,000	4.3	N/A	N/A	N/A
1. T8 w. Elec. Ballast	: 425	100,000	4.3	21%	89	\$0.04



Measure	Total End Use Consumptio of Population (GWh)	n Applicable, Not Complete and Feasible (1000s of ft²)	kWh/ft² of	_	GWh Savings	Levelized Cost (\$/kWh saved)
2. Occupancy Sensors	336	40,000	3.4	10%	13	\$0.11
3. Perimeter Dimming	322	10,000	3.2	45%	14	\$0.25
With all measures	309		3.1	27%	116	

A.1.2 Estimation of Economic Potential

Economic potential is typically used to refer to the technical potential of those energy conservation measures that are cost effective when compared to either supply-side alternatives or the price of energy. Economic potential takes into account the fact that many EE measures cost more to purchase initially than do their standard-efficiency counterparts. The incremental costs of each efficiency measure are compared to the savings delivered by the measure to produce estimates of energy savings per unit of additional cost. These estimates of EE resource costs can then be compared to estimates of other resources such as building and operating new power plants.

A.1.2.1 Cost Effectiveness Tests

To estimate economic potential, it is necessary to develop a method by which it can be determined that a measure or program is economic. There is a large body of literature that debates the merits of different approaches to calculating whether a public purpose investment in EE is cost effective (Chamberlin and Herman 1993, RER 2000, Ruff 1988, Stoft 1995, and Sutherland 2000). We usually utilize the total resource cost (TRC) test to assess cost effectiveness. The TRC is a form of societal benefit-cost test. Other tests that have been used in analyses of program cost-effectiveness by EE analysts include the utility cost, ratepayer impact measure (RIM), and participant tests. These tests are discussed in detail the California Standard Practice Manual (CASPM).

Before discussing the TRC test and how it is often used in our DSM forecasts, we present below a brief introduction to the basic tests as described in the CASPM:³

• Total Resource Cost Test—The TRC test measures the net costs of a demand-side management program as a resource option based on the total costs of the program, including both the participants' and the utility's costs. The test is applicable to conservation, load management, and fuel substitution programs. For fuel substitution programs, the test measures the net effect of the impacts from the fuel not chosen versus the impacts from the fuel that is chosen as a result of the program. TRC test results for fuel substitution programs should be viewed as a measure of the economic efficiency implications of the total energy supply system (gas and electric). A variant on the TRC test is the societal test. The societal test differs from the TRC test in that it includes the effects of

 $^{^{3}}$ These definitions are direct excerpts from the California Standard Practice Manual, October 2001.



externalities (e.g. environmental, national security), excludes tax credit benefits, and uses a different (societal) discount rate.

- Participant Test—The participant test is the measure of the quantifiable benefits and costs to the customer due
 to participation in a program. Since many customers do not base their decision to participate in a program
 entirely on quantifiable variables, this test cannot be a complete measure of the benefits and costs of a program
 to a customer.
- Utility (Program Administrator) Test—The program administrator cost test measures the net costs of a
 demand-side management program as a resource option based on the costs incurred by the program
 administrator (including incentive costs) and excluding any net costs incurred by the participant. The benefits are
 similar to the TRC benefits. Costs are defined more narrowly.
- Ratepayer Impact Measure Test—The ratepayer impact measure (RIM) test measures what happens to
 customer bills or rates due to changes in utility revenues and operating costs caused by the program. Rates will
 go down if the change in revenues from the program is greater than the change in utility costs. Conversely, rates
 or bills will go up if revenues collected after program implementation are less than the total costs incurred by the
 utility in implementing the program. This test indicates the direction and magnitude of the expected change in
 customer bills or rate levels.

The key benefits and costs of the various cost-effectiveness tests are summarized in Table A-2.

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Table A-2. Summary of Benefits and Costs of California Standard Practice Manual Tests

Test	Benefits	Costs
TRC Test	Generation, transmission and distribution savings Participants avoided equipment costs (fuel switching only)	Generation costs Program costs paid by the administrator Net participant measure costs
Participant Test	Bill reductions Incentives Participants avoided equipment costs (fuel switching only)	Bill increases Participant measure costs
Utility (Program Administrator) Test	Generation, transmission and distribution savings	Generation costs Program costs paid by the administrator Incentives
Ratepayer Impact Measure Test	Generation, transmission and distribution savings Revenue gain	Generation costs Revenue loss Program costs paid by the administrator Incentives

Generation, transmission and distribution savings (hereafter, energy benefits) are defined as the economic value of the energy and demand savings stimulated by the interventions being assessed. These benefits are typically measured as induced changes in energy consumption, valued using some mix of avoided costs. Electricity benefits are valued using three types of avoided electricity costs: avoided distribution costs, avoided transmission costs, and avoided electricity generation costs.

Participant costs are comprised primarily of incremental measure costs. Incremental measure costs are essentially the costs of obtaining EE. In the case of an add-on device (say, an adjustable-speed drive or ceiling insulation), the incremental cost is simply the installed cost of the measure itself. In the case of equipment that is available in various levels of efficiency (e.g., a central air conditioner), the incremental cost is the excess of the cost of the high-efficiency unit over the cost of the base (reference) unit.

Administrative costs encompass the real resource costs of program administration, including the costs of administrative personnel, program promotions, overhead, measurement and evaluation, and shareholder incentives. In this context, administrative costs are not defined to include the costs of various incentives (e.g., customer rebates and salesperson incentives) that may be offered to encourage certain types of behavior. The exclusion of these incentive costs reflects the fact that they are essentially transfer payments. That is, from a societal perspective they involve offsetting costs (to the program administrator) and benefits (to the recipient).

A.1.2.2 Use of the Total Resource Cost to Estimate Economic Potential

We often use the TRC test in two ways in our model. First, we develop an estimate of economic potential by calculating the TRC of individual measures and applying the methodology described below. Second, we develop estimates of whether different program scenarios are cost effective.

Economic potential can be defined either inclusively or exclusively of the costs of programs that are designed to increase the adoption rate of EE measures. In many of our projects, we define economic potential to exclude program



costs. We do so primarily because program costs are dependent on a number of factors that vary significantly as a function of program delivery strategy. There is no single estimate of program costs that would accurately represent such costs across the wide range of program types and funding levels possible. Once an assumption is made about program costs, one must also link those assumptions to expectations about market response to the types of interventions assumed. Because of this, we believe it is more appropriate to factor program costs into our analysis of program potential. Thus, our definition of economic potential is that portion of the technical potential that passes our economic screening test (described below) exclusive of program costs. Economic potential, like technical potential, is a theoretical quantity that will exceed the amount of potential we estimate to be achievable through current or more aggressive program activities.

As implied in Table A-2 and defined in the CASPM 2001, the TRC focuses on resource savings and counts benefits as utility-avoided supply costs and costs as participant costs and utility program costs. It ignores any impact on rates. It also treats financial incentives and rebates as transfer payments; i.e., the TRC is not affected by incentives. The somewhat simplified benefit and cost formulas for the TRC are presented in Equations A-2 and A-3 below.

Equation A-2

Benefits =
$$\sum_{t=1}^{N} \frac{\text{Avoided Costs of Supply}_{p,t}}{(1+d)^{t-1}}$$

Equation A-3

$$Costs = \sum_{t=1}^{N} \frac{Program Cost_{t} + Participant Cost_{t}}{(1+d)^{t-1}}$$

Where:

d = the discount rate
p = the costing period
t = time (in years)
n = 20 years

A nominal discount rate is typically used in the analysis, as inflation is taken into account separately.

The avoided costs of supply are calculated by multiplying measure energy savings and peak demand impacts by perunit avoided costs by costing period. Energy savings are allocated to costing periods and peak impacts estimated using load shape factors.

As noted previously, in the measure-level TRC calculation used to estimate economic potential, program costs are excluded from Equation A-3. Using the supply curve methodology discussed previously, measures are ordered by TRC (highest to lowest) and then the economic potential is calculated by summing the energy savings for all of the technologies for which the marginal TRC test is greater than 1.0. In the example in Table A-3, the economic potential would include the savings for measures 1 and 2, but exclude saving for measure 3 because the TRC is less than 1.0 for measure 3. The supply curve methodology, when combined with estimates of the TRC for individual measures, produces estimates of the economic potential of efficiency improvements. By definition and intent, this estimate of economic potential is a theoretical quantity that will exceed the amount of potential we estimate to be achievable through program activities in the final steps of our analyses.



Table A-3. Sample Use of Supply Curve Framework to Estimate Economic Potential

(Note: Data are illustrative only)

	Consumption of Population	Applicable, Not Complete and Feasible sq ft (1,000s)	Average kWh/ft² of population	Savings %	GWh Savings	Total Resource Cost Test	Savings Included in Economic Potential?
Base Case: T12 lamps with Magnetic Ballast	425	100,000	4.3	N/A	N/A	N/A	N/A
1. T8 w. Elec. Ballast	425	100,000	4.3	21%	89	2.5	Yes
2. Occupancy Sensors	336	40,000	3.4	10%	13	1.3	Yes
3. Perimeter Dimming	322	10,000	3.2	45%	14	0.8	No
Technical Potential wit	•	27%	116		•		
Economic Potential wi	24%	102	1				

A.1.3 Estimation of Program and Naturally Occurring Potentials

In this section we present the method we employ to estimate the fraction of the market that adopts each EE measure in the presence and absence of EE programs. We define:

- Program potential as the amount of savings that would occur in response to one or more specific market interventions
- Naturally occurring potential as the amount of savings estimated to occur as a result of normal market forces, that is, in the absence of any utility or governmental intervention.

Our estimates of program potential are typically the most important results of the modeling process. Estimating technical and economic potentials are necessary steps in the process from which important information can be obtained; however, the end goal of the process is better understanding how much of the remaining potential can be captured in programs, whether it would be cost-effective to increase program spending, and how program costs may be expected to change in response to measure adoption over time.

A.1.3.1 Adoption Method Overview

We use a method of estimating adoption of EE measures that applies equally to be our program and naturally occurring analyses. Whether as a result of natural market forces or aided by a program intervention, the rate at which measures are adopted is modeled in our method as a function of the following factors:

- The availability of the adoption opportunity as a function of capital equipment turnover rates and changes in building stock over time
- Customer awareness of the efficiency measure
- The cost-effectiveness of the efficiency measure
- Market barriers associated with the efficiency measure

The method we employ is executed in the measure penetration module of DNV's DSM ASSYST™ model.



In many of our projects, only measures that pass the measure-level TRC test are put into the penetration module for estimation of customer adoption.

A.1.3.2 Availability

A crucial part of the model is a stock accounting algorithm that handles capital turnover and stock decay over a period of up to 20 years. In the first step of our achievable potential method, we calculate the number of customers for whom each measure will apply. The input to this calculation is the total floor space available for the measure from the technical potential analysis, i.e., the total floor space multiplied by the applicability, not complete, and feasibility factors described previously. We call this the eligible stock. The stock algorithm keeps track of the amount of floor space available for each efficiency measure in each year based on the total eligible stock and whether the application is new construction, retrofit, or replace-on-burnout.⁴

Retrofit measures are available for implementation by the entire eligible stock. The eligible stock is reduced over time as a function of adoptions⁵ and building decay.⁶ Replace-on-burnout measures are available only on an annual basis, approximated as equal to the inverse of the service life.⁷ The annual portion of the eligible market that does not accept the replace-on-burnout measure does not have an opportunity again until the end of the service life.

New construction applications are available for implementation in the first year. Those customers that do not accept the measure are given subsequent opportunities corresponding to whether the measure is a replacement or retrofittype measure.

A.1.3.3 Awareness

In our modeling framework, customers cannot adopt an efficient measure merely because there is stock available for conversion. Before they can make the adoption choice, they must be aware and informed about the efficiency measure. Thus, in the second stage of the process, the model calculates the portion of the available market that is informed. An initial user-specified parameter sets the initial level of awareness for all measures. Incremental awareness occurs in the model as a function of the amount of money spent on awareness/information building and how costly it is to reach each customer.

The model also controls for information retention. An information decay parameter in the model is used to control for the percentage of customers that will retain program information from one year to the next. Information retention is based on the characteristics of the target audience and the temporal effectiveness of the marketing techniques employed.

A.1.3.4 Adoption

The portion of the total market this is available and informed can now face the choice of whether or not to adopt a particular measure. Only those customers for whom a measure is available for implementation (stage 1) and, of those customers, only those who have been informed about the program/measure (stage 2), are in a position to make the implementation decision.

⁴ Replace-on-burnout measures are defined as the efficiency opportunities that are available only when the base equipment turns over at the end of its service life. For example, a high-efficiency chiller measure is usually only considered at the end of the life of an existing chiller. By contrast, retrofit measures are defined to be constantly available, for example, application of a window film to existing glazing.

⁵ That is, each square foot that adopts the retrofit measure is removed from the eligible stock for retrofit in the subsequent year, and remains out of the eligible stock until the end of the measure's useful life.

⁶ Buildings do not last forever. An input to the model is the rate of decay of the existing floor space. Floor space typically decays at a very slow rate.

⁷ For example, a base-case technology with a service life of 15 years is only available for replacement to a high-efficiency alternative each year at the rate of 1/15 times the total eligible stock. For example, the fraction of the market that does not adopt the high-efficiency measure in year *t* will not be available to adopt the efficient alternative again until year *t* + 15.



In the third stage of our penetration process, the model calculates the fraction of the market that adopts each efficiency measure as a function of the participant test. The participant test is a benefit-cost ratio that is generally calculated as follows:

Equation A-4

Benefits =
$$\sum_{t=1}^{N} \frac{\text{Customer Bill Savings (\$)}_{t}}{(1+d)^{t-1}}$$

Equation A-5

$$Costs = \sum_{t=1}^{N} \frac{Participant Costs (\$)_{t}}{(1+d)^{t-1}}$$

Where:

d = the discount rate
t = time (in years)
N = measure lifetime

The bill reductions are calculated by multiplying measure energy savings and customer peak demand impacts by retail energy and demand rates.

The model uses measure implementation curves to estimate the percentage of the informed market that will accept each measure based on the participant's benefit-cost ratio. The model provides enough flexibility so that each measure in each market segment can have a separate implementation rate curve. The functional form used for the implementation curves is:

$$y = \frac{a}{\left(1 + e^{-\ln\frac{x}{4}}\right) \times \left(1 + e^{-c\ln(bx)}\right)}$$

where:

y = the fraction of the market that installs a measure in a given year from the pool of informed applicable customers;

x = the customer's benefit-cost ratio for the measure;

a = the maximum annual acceptance rate for the technology;

b = the inflection point of the curve. It is generally 1 over the benefit-cost ratio that will give a value of 1/2 the maximum value; and

c = the parameter that determines the general shape (slope) of the curve.

The primary curves utilized in our model are shown in Figure A-3. These curves produce base year program results that are calibrated to actual measure implementation results associated with major IOU commercial efficiency programs over the past several years. Different curves are used to reflect different levels of market barriers for

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different efficiency measures. A list of market barriers is shown in Table A-4. It is the existence of these barriers that necessitates program interventions to increase the adoption of EE measures.

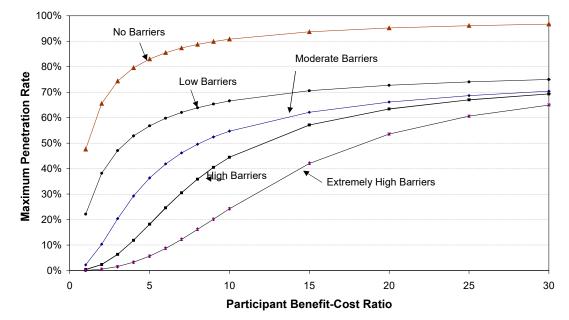


Figure A-3. Primary Measure Implementation Curves Used in Adoption Model

Note that for the moderate, high barrier, and extremely high curves, the participant benefit-cost ratios have to be very high before significant adoption occurs. This is because the participant benefit-cost ratios are based on a 15-percent discount rate. This discount rate reflects likely adoption if there were no market barriers or market failures, as reflected in the no-barriers curve in the figure. Experience has shown, however, that actual adoption behavior correlates with implicit discount rates several times those that would be expected in a perfect market.⁸

Table A-4. Summary Description of Market Barriers from Eto, Prahl, Schlegel 1997

Barrier	Description
Information or Search Costs	The costs of identifying energy-efficient products or services or of learning about energy-efficient practices, including the value of time spent finding out about or locating a product or service or hiring someone else to do so.
Performance Uncertainties	The difficulties consumers face in evaluating claims about future benefits. Closely related to high search costs, in that acquiring the information needed to evaluate claims regarding future performance is rarely costless.
Asymmetric Information and Opportunism	The tendency of sellers of energy-efficient products or services to have more and better information about their offerings than do consumers, which, combined with potential incentives to mislead, can lead to sub-optimal purchasing behavior.

⁸ For some, it is easier to consider adoption as a function of simple payback. However, the relationship between payback and the participant benefit-cost ratio varies depending on measure life and discount rate. For a long-lived measure of 15 years with a 15-percent discount rate, the equivalent payback at which half of the market would adopt a measure is roughly 6 months, based on the high barrier curve in Figure 2-3. At a 1-year payback, one-quarter of the market would adopt the measure. Adoption reaches near its maximum at a 3-month payback. The curves reflect the real-world observation that implicit discount rates can average up to 100 percent.



Barrier	Description
Hassle or Transaction Costs	The indirect costs of acquiring EE, including the time, materials and labor involved in obtaining or contracting for an energy-efficient product or service. (Distinct from search costs in that it refers to what happens once a product has been located.)
Hidden Costs	Unexpected costs associated with reliance on or operation of energy-efficient products or services - for example, extra operating and maintenance costs.
Access to Financing	The difficulties associated with the lending industry's historic inability to account for the unique features of loans for energy savings products (i.e., that future reductions in utility bills increase the borrower's ability to repay a loan) in underwriting procedures.
Bounded Rationality	The behavior of an individual during the decision-making process that either seems or actually is inconsistent with the individual's goals.
Organization Practices or Customs	Organizational behavior or systems of practice that discourage or inhibit cost-effective EE decisions, for example, procurement rules that make it difficult to act on EE decisions based on economic merit.
Misplaced or Split incentives	Cases in which the incentives of an agent charged with purchasing EE are not aligned with those of the persons who would benefit from the purchase.
Product or Service Unavailability	The failure of manufacturers, distributors or vendors to make a product or service available in a given area or market. May result from collusion, bounded rationality, or supply constraints.
Externalities	Costs that are associated with transactions, but which are not reflected in the price paid in the transaction.
Non-externality Pricing	Factors other than externalities that move prices away from marginal cost. An example arises when utility commodity prices are set using ratemaking practices based on average (rather than marginal) costs.
Inseparability of Product Features	The difficulties consumers sometimes face in acquiring desirable EE features in products without also acquiring (and paying for) additional undesired features that increase the total cost of the product beyond what the consumer is willing to pay.
Irreversibility	The difficulty of reversing a purchase decision in light of new information that may become available, which may deter the initial purchase, for example, if energy prices decline, one cannot resell insulation that has been blown into a wall.

The model estimates adoption under both naturally occurring and program intervention situations. There are only two differences between the naturally occurring and program analyses. First, in any program intervention case in which measure incentives are provided, the participant benefit-cost ratios are adjusted based on the incentives. Thus, if an incentive that pays 50 percent of the incremental measure cost is applied in the program analysis, the participant benefit-cost ratio for that measure will double (since the costs have been halved). The effect on the amount of adoption estimated will depend on where the pre- and post-incentive benefit-cost ratios fall on the curve. This effect is illustrated in Figure A-4.



80% 70% 60% Maximum Penetration Rate 50% 40% B-C Ratio: With 50% incentive 30% Net increase in adoption 20% Initial B-C Ratio: No incentive 10% 0% 5 0 10 15 20 25 30 Participant Benefit-Cost Ratio

Figure A-4. Illustration of Effect of Incentives on Adoption Level as Characterized in Implementation Curves

In many of our projects achievable potential EE forecasts are developed for several scenarios, ranging from base levels of program intervention, through moderate levels, up to an aggressive EE acquisition scenario. Uncertainty in rates and avoided costs are often characterized in alternate scenarios. The final results produced are annual streams of achievable program impacts (energy and demand by time-of-use period) and all societal and participant costs (program costs plus end-user costs).

A.1.4 Scenario Analyses

Achievable potential forecasts can be developed for multiple scenarios. For example, program savings can be modeled under low levels of program intervention, through moderate levels, up to an aggressive DSM acquisition scenario. Uncertainty in rates and avoided costs can be characterized in alternate scenarios as well. The final results produced will be annual streams of achievable DSM program impacts (energy and demand by time-of-use period) and all societal and participant costs. An example of the types of outputs that have been produced for similar studies in the past is shown in Table A-5 and Figure A-5.

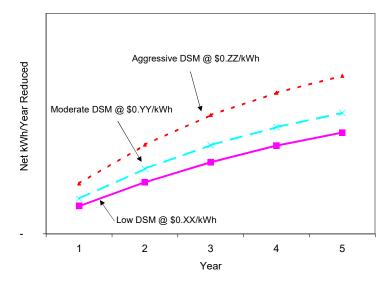
Table A-5. Example Format of DSM ASSYST Achievable Potential Outputs

DSM ASSYST Program Output	2006	2007	2008	etc.
Annual Energy Savings (kWh)				
Summer Period Energy Savings (kWh)				
Non Summer Period Energy Savings (kWh)				
Net Annual Energy Savings (kWh)			'	



DSM ASSYST Program Output	2006	2007	2008	etc.
Summer Period Net Energy Savings (kWh)				
Non Summer Period Net Energy Savings (kWh)				
Peak Demand Savings (kW)				
Net Peak Demand Savings (kW)				
Annual Program Costs				
Supplemental Customer Costs				

Figure A-5. Example of DSM Scenario Outputs



A.1.5 Measure "Bundles" for Complex End Uses

Although potential can be estimated through measure-specific analyses for many sectors and end uses, there are some cases where the measure-specific approach becomes problematic because of the complexity or heterogeneity of the base-case energy systems being addressed. Two key examples are industrial processes and some aspects of residential and commercial new construction.

In the industrial case, there may be dozens or even hundreds of individual measures that can be applied to industrial processes throughout the population of industrial facilities in a service territory; however, analyzing each of these opportunities, though possible, is impractical within a resource and time-constrained study such as this one.

In the case of new construction, the problem is sometimes that an equipment substitution paradigm does not fit the real-world circumstances in which efficiency levels are improved. For example, in commercial lighting, virtually all new buildings tend to have electronic ballasts and T-8 lamps, as well as CFLs, and other high-efficiency components. However, the overall lighting system efficiency can often be increased by using these same components in smarter designs configurations or by combining with other features such as daylighting.



For both of these situations, our approach on recent related work has been to bundle multiple individual efficiency measures into somewhat simplified efficiency levels. For example, lighting levels for commercial new construction might be set at 10- and 20-percent improvement over those required by building codes. Similarly, for industrial compressed air systems, we have bundled savings opportunities into three levels where both savings and costs increase with each level. We then estimate an incremental cost for achieving each of the efficiency levels. An example of these results developed in a recent study for industrial motors, compressed air, and processes in California is shown in Table A-6.

Once the levels of efficiency are specified in terms of costs and savings, they are run through the modeling system as if they were individual measures. Thus, cost-effectiveness indicators are calculated for each level, those that pass the TRC are included in the achievable potential forecasting, and adoption is modeled using the same process as described above. Although we recommend using this approach for complex end uses because it creates a manageable forecasting process, care must be taken in developing the levels and recognizing that this approach results in some aggregation bias.

A.2 DSM ASSYST™ Model Description

DSM ASSYSTTM (Demand-Side Management Technology Assessment System) is a tool developed to assess the technical, economic and market potential of DSM technologies in the residential, commercial and industrial sectors. Based on user-specified information about base technologies, conservation technologies, load shapes, utility avoided costs, utility service rates, and economic parameters, DSM ASSYST yields numeric data for a variety of criteria. The user can then evaluate and compare technologies. DSM ASSYST allows the user to analyze each DSM technology in multiple combinations of building types, market segments, end uses, and vintages both individually and compared to other DSM technology options.

Table A-6. Example of Industrial Efficiency Levels Developed for a Recent California Potential Study

DSM ASSYST ADD		<u> </u>		2011	na i otonti		
End Use	Measure Number	Vintage: Existing Sector: Industrial Scenario: Base Measure	GWH Savings	MW Savings	Levelized Cost per KWh Saved \$/kWH	Levelized Cost per KW Saved \$/kW	Total Resource Cost Test TRC
Motors	101	Replace 1-5 HP Motor	248.7	34.1	\$0.10	\$698	0.8
Motors	102	Add 1-5 HP VSD	447.1	61.3	\$0.14	\$1,019	0.6
Motors	103	Motor Practices Level 1	607.0	83.2	\$0.06	\$440	1.3
Motors	104	Motor Practices Level 2	539.1	73.9	\$0.24	\$1,764	0.3
Motors	121	Replace 21-50 HP Motor	78.1	10.7	\$0.09	\$661	0.9
Motors	122	Add 21-50 HP VSD	319.0	43.7	\$0.04	\$278	2.1
Motors	123	Motor Practices Level 1	404.3	55.4	\$0.03	\$211	2.7
Motors	124	Motor Practices Level 2	361.9	49.6	\$0.12	\$840	0.7
Motors	151	Replace 201-500 HP Motor	143.5	19.7	\$0.03	\$201	2.8
Motors	152	Add 201-500 HP VSD	516.6	70.8	\$0.01	\$106	5.4
Motors	153	Motor Practices Level 1	598.6	82.0	\$0.02	\$152	3.7
Motors	154	Motor Practices Level 2	554.9	76.0	\$0.08	\$586	1.0
Compressed Air	202	CAS Level 1	433.9	59.5	\$0.02	\$168	3.4
Compressed Air	203	CAS Level 2	453.6	62.2	\$0.05	\$362	1.6
Compressed Air	204	CAS Level 3	325.5	44.6	\$0.13	\$936	0.6
Other Process	301	Process Level 1	1,031.8	141.4	\$0.03	\$190	3.0
Other Process	302	Process Level 2	1,219.7	167.1	\$0.05	\$345	1.7
Other Process	303	Process Level 3	767.3	105.1	\$0.25	\$1,831	0.3

The current version of DSM ASSYST uses a combination of Microsoft Excel spreadsheets and Visual Basic (VB) programming software. All input and output data are stored in spreadsheets. The VB modules read input data from various spreadsheets, perform the various analyses, and store output results into spreadsheets.



There are three major VB analysis modules: Basic, Supply, and Penetration. Figure A-6 provides an overview of the model process and key inputs. Each module is briefly described below.

A.2.1 Basic Module

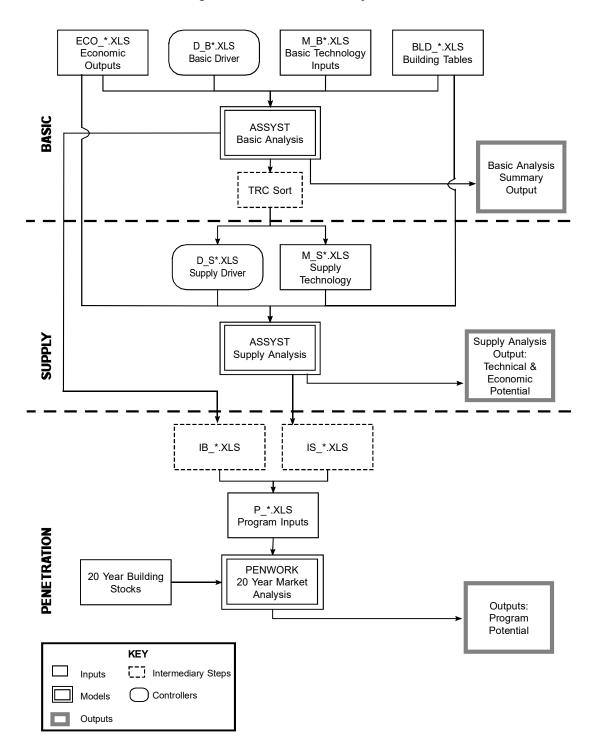
In the Basic module, each technology is assessed individually by comparing it to a base case. Comparisons are made at a high degree of segmentation. The segmentation may include, but is not limited to sector, building type, end use, vintage and geographic area.

The Basic module reads four types of information, contained within four spreadsheet files. These files include:

- Economic: containing utility rates paid by customers, discount rates, avoided costs, and other utility-specific economic parameters
- Building: containing square footage or number of households and load shape data
- Measure: containing technology based inputs for the Basic Analysis
- Driver: containing information that drives the analysis process.



Figure A-6. DSM ASSYST Analytic Flow





The output files produced by the Basic module include a Summary Basic Output file that contains an assessment of how much energy and demand each technology will save relative to the base case within each segment. In addition, the summary contains cost data, savings fractions, before and after EUIs or UECs, service life, the levelized costs of implementing the technology, and results of economic tests including the TRC test, participant test, and customer payback.

This module also produces a second file that contains all the measures that were assessed in the Basic Analysis sorted in the highest to lowest TRC order within each market segment and end use. This file serves as an input file for the Supply module.

A.2.2 Supply Module

In the Supply Module each technology, within each market segment, is stacked, or implemented, such that all energy savings are realized from preceding technologies prior to the implementation of all subsequent technologies. The stacking order generally follows the TRC sort order, highest to lowest, resulting from the Basic module.

The Supply module requires two input files: a Driver file and a modified output file from the Basic module. As in the Basic module, the Driver file contains instructions for the analysis process. The output file from the basic analysis must be modified in Excel to address overlapping measures, such as different SEER levels or measures that are direct substitutes for each other.

Output from the Supply module contains the technical and economic potential plus energy and demand supply curves. The Supply module produces measure-level information that can be incorporated into the input file for the Penetration module.

A.2.3 Penetration Module

The Penetration (or Program Potential) module of ASSYST is designed to calculate the costs and net energy and demand savings from DSM programs under a variety of marketing scenarios. This module estimates the net impact and cost of a program over time by forecasting the naturally occurring penetration of each measure as well as the penetration of each measure given the program activities (i.e., incentives and awareness building).

Using a stock accounting algorithm over a period of 20 years, this module first calculates the number of customers for whom the measure will apply. Second, the model calculates the number of informed customers based on the amount of money spent on advertising. Third, the model calculates the number of customers who will implement the technology based on their benefit/cost ratio. Finally, the model compares the number of customers that implement the technology due to the program with those who would take the technology anyway (naturally occurring). Per-unit energy and demand savings are applied to the net number of customers (total minus naturally occurring) over the 20-year period. After completing the analysis, the results are automatically summed across measures to provide program-level costs and savings for 20 years, and formatted for input into Integrated Resource Planning models.

A program input file is used to define a program and provide the building stock forecast. The program characterization variables include:

- Incentive Levels
- Incentive Budget Constraints
- Yearly Incentive Adjuster
- Technology Acceptance Curve Parameters
- Administration Budgets
- Advertising Budgets
- Awareness Decay Rate
- Advertising Effective Ratio.



B. MEASURE DESCRIPTIONS

This appendix describes the energy efficiency measures used in the study.

B.1 Residential Measures

This subsection provides brief descriptions of the residential electric measures included in this study. Measures are grouped by end use.

B.1.1 HVAC Equipment

Central air conditioner upgrade: Air conditioner equipment includes a compressor, an air-cooled or evaporatively-cooled condenser (located outdoors), an expansion valve, and an evaporator coil (located in the supply air duct near the supply fan). Cooling efficiencies vary based on the quality of the materials used, the size of equipment, the condenser type, and the configuration of the system. Central air conditioners may be of the unitary variety (all components housed in a factory-built assembly) or be a split system (an outdoor condenser section and an indoor evaporator section connected by refrigerant lines and with the compressor at either the outdoor or indoor location). Efficient air conditioner measures involve the upgrade of a standard efficiency unit (14 SEER) to a higher efficiency unit (15 SEER or higher), assuming quality installation.

Central air conditioner early replacement: For this measure we assume replacement of an older central air conditioner (11.5 SEER) with a new high-efficiency unit (15 SEER). Energy savings are diminished to account for the fact that a fraction of the associated energy savings would have been realized at the end of the older unit's useful life, when a minimum EER unit would have been purchased as a replacement.

Heat pump upgrade: Air-source heat pumps transfer heat from the outside air to the inside of a building or vice versa, providing both heating and cooling. We consider a 15 SEER/8.2 HSPF replacement and a 16 SEER/8.7 HSPF replacement of a base 14 SEER/8.2 HSPF unit. We consider both a replace-on-burnout measure and an early replacement measure.

AC maintenance: The efficiency of a central air conditioner can be reduced if the unit is not properly maintained. This group of measures includes both indoor and outdoor coil cleaning, as well as other standard efficiency practices such as filter replacement.

Proper refrigerant charging and air flow: This measure involves diagnostic and repair services for existing central air conditioners to improve their efficiency. Inspection and services of AC systems involves checking the refrigerant level, cleaning the coils, cleaning the blower, cleaning or replacing filters, and making sure air is flowing properly through the system.

High efficiency room air conditioner: Window (or wall) mounted room air conditioners are designed to cool individual rooms or spaces. This type of unit incorporates a complete air-cooled refrigeration and air-handling system in an individual package. Cooled air is discharged in response to thermostatic control to meet room requirements. Each unit has a self-contained, air-cooled direct expansion (DX) cooling system and associated controls. Room air conditioners are rated by energy efficiency ratio (EER), which is cooling output divided by power consumption. The efficient room air conditioner measure involves the upgrade of a standard efficiency unit (10.6 EER) to a higher efficiency unit (EER 10.8 or 11.3).

Room air conditioner early replacement: For this measure we assume replacement of an older room air conditioner (EER 9.7) with a new high-efficiency unit (EER 11.3). Energy savings are diminished to account for the fact that a fraction of the associated energy savings would have been realized at the end of the older unit's useful life, when a minimum EER unit would have been purchased as a replacement.



High-efficiency dehumidifier: ENERGY STAR® qualified dehumidifiers use less energy to remove moisture from the air on account of more efficient refrigeration coils, fans, and compressors. Savings are compared to a unit meeting the minimum federal standard.

Ceiling fans: ENERGY STAR® Ceiling Fans save energy through improved motors and blade designs. Ceiling fans save energy from space conditioning in the summer by creating a wind chill, and during the winter by distributing hot air evenly throughout the room.

Variable speed furnace/AC fans: Air handler models with the lowest electrical use ratings employ electronically commutated motors (ECMs). ECMs, also known as brushless DC motors or variable speed blower motors, have two principal advantages over the typical permanent-magnet split capacitor (PSC) blower motors found in the majority of air handlers. First, ECMs are claimed to be 20% to 30% more efficient than standard blower motors. Second, the typical ECM blower can produce a much wider range of airflow than a PSC blower, which typically has only three or four set speeds over a fairly narrow range. Because power consumption by an air handler rises with the cube of airflow, the ability to reduce airflow when appropriate can dramatically reduce the electrical power draw by the air handler.

Proper sizing and quality install: Most HVAC systems are typically over-sized by contractors for a variety of reasons: as a precaution against peak day temperatures or future problems from duct leaks, improper flow across the coils, and improper charge, or because they replace older systems with the same size (or larger) unit – even though the house may have been made more energy efficient since it was originally constructed (through home improvements, window replacements, insulation, caulking, and so on). Oversized air conditioners will be more expensive and tend to cycle, rather than run continuously, during both typical and peak cooling periods. This more frequent cycling reduces overall operating efficiency and also results in more variable indoor humidity levels. This measure assumes the contractor performs an Air Conditioning Contractors of America (ACCA) Manual J calculation to size the HVAC system and an ACCA Manual D calculation to size the ducts. These calculations take into account climate, house and site characteristics and orientation, air exchange rates, occupancy, and heat-emitting appliances. Since our central air conditioner upgrade measure includes quality installation, this measure applies only to the installation of standard efficiency equipment.

Smart thermostat: Smart thermostats are wi-fi connected and can be used with home automation systems and can be remotely controlled by the user. They feature occupancy sensors that can save energy compared to the pre-set schedule of a conventional programmable thermostat.

B.1.2 Building Envelope

Duct repair: An ideal duct system would be free of leaks, especially when the ducts are outside the conditioned space. Leakage in unsealed ducts varies considerably with the fabricating machinery used, the methods for assembly, installation workmanship, and age of the ductwork. To seal ducts, a wide variety of sealing methods and products exist. Care should be taken to tape or otherwise seal all joints to minimize leakage in all duct systems and the sealing material should have a projected life of 20 to 30 years. Current duct sealing methods include use of computer-controlled aerosol and pre- and post-sealing duct pressurization testing.

Duct insulation: Insulation material inhibits the transfer of heat through the air-supply duct. Several types of ducts and duct insulation are available, including flexible duct, pre-insulated flexible duct, duct board, duct wrap, tacked or glued rigid insulation, and water proof hard shell materials for exterior ducts. Duct insulation for existing construction involves wrapping un-insulated ducts with an R-4 insulating material.

ENERGY STAR® windows: Windows which meet the ENERGY STAR® requirements have U-value and solar heat gain coefficients (SHGC) specified by climate zone, and are certified by the National Fenestration Rating Council (NFRC). These



are modeled as a replace on burnout measure, so the costs are not the full cost of the window and installation, but rather the cost compared to installing a new non-ENERGY STAR® window.

Comprehensive shell air sealing - infiltration reduction: Professional installation of weather stripping, caulking, and expanding foam insulation aided by a blower door test. These measures reduce energy consumption by improving the tightness of the building shell and limiting heat gain and loss.

Self-install weatherization: Installation of weather stripping, caulking, and expanding foam insulation from a spray can to fix easily found leaks and reduce air infiltration, completed by the homeowner.

Ceiling and floor insulation: Thermal insulation is material or combinations of materials that are used to inhibit the flow of heat energy by conductive, convective, and radiative transfer modes. By inhibiting the flow of heat energy, thermal insulation can conserve energy by reducing heat loss or gain of a structure. An important characteristic of insulating materials is the thermal resistivity, or R-value. The R-value of a material is the reciprocal of the time rate of heat flow through a unit of this material in a direction perpendicular to two areas of different temperatures.

Basement insulation: Basement walls are typically insulated by constructing a stud wall inside the house foundation, and insulating it as any interior wall. This increases the cost of basement insulation compared to crawlspace insulation (in addition to the taller wall height to be insulated). The cost-effectiveness of basement insulation depends on whether the basement will be conditioned. Basement insulation includes rim joist insulation.

Wall insulation: For existing construction, this measure involves adding R-13 insulation to un-insulated walls. This is usually accomplished by drilling holes into the building's siding or interior walls and blowing in insulation material.

B.1.3 Lighting

LED general purpose lighting: A light emitting diode (LED) is a solid state lighting (SSL) technology that produces light by passing electrons through a semiconductor material, which is mounted on a heat sink and encased in a lens. Each LED is 7 mm to 9 mm on a side, and typically mounted in arrays on a circuit board, which is in turn mounted on another heat sink and encased in a fixture or bulb. This technology is revolutionizing the field in terms of light quality, energy efficiency, and design. ENERGY STAR® provides rigorous standards to certify quality LED lighting fixtures, which are commercially available and currently rebated in numerous energy efficiency programs, and has recently completed an LED bulb specification around which products are being rapidly developed. LED general purpose lighting is applied as a measure to both high efficiency incandescent lighting and to base CFLs.

Super T-8 lamps with electronic ballasts: T-8 lamps are a smaller diameter fluorescent lamp than T-12 lamps. When paired with specially designed electronic ballasts, T-8 lamps provide more lumens per watt, resulting in energy savings. Electronic ballasts replace the standard core and coil technology in magnetic ballasts with solid-state components. This technology allows for more consistent control over ballast output and converts power to higher frequencies, causing the fluorescent lamps to operate more efficiently. For existing first-generation T-8 systems, this measure is specified as an upgrade to efficiency levels associated with optimal Super T-8 lamp-ballast combinations on a replace-on-burnout basis.

Smart LED bulbs: Smart bulbs are wi-fi connected LED lamps than can be controlled via a hub or smart phone app. While these bulbs offer built-in controls such as dimming capability and color-tuning, their connected nature means that they draw a small amount of power continuously. They will save energy as a replacement for an incandescent or CFL lamp due to the LED technology, but savings from the control technologies will be marginal.

Motion/Occupancy sensor: Motion sensors turn lamps on when movement is sensed and off again after a specified period of no movement. They are used frequently to control outdoor security lighting, but can be used indoors as well to ensure that



lights aren't left on in spaces used only intermittently. They can be convenient in spaces when light is needed for only brief periods.

Photocell/time clock (outdoor lighting): Photocells automatically turn off lights when the sensor detects enough ambient light. Used on outdoor fixtures, photocells ensure that the lamp is turned off during daylight hours. Photocells can be combined with other lighting controls, such as motion sensors or time clocks. Time clocks are devices that can be programmed to turn lights on and off according to a set schedule.

B.1.4 Water Heat

Heat pump water heater: Air-to-water heat pump water heaters extract low-grade heat from the air then transfer this heat to the water by means of an immersion coil. This is the most commonly utilized residential heat pump water heater. The air-to-water heat pump unit includes a compressor, air-to-refrigerant evaporator coil, evaporator fan, water circulating pump, refrigerant-to-water condenser coil, expansion valve, and controls. Residential heat pump water heaters replace base electric units with the same tank capacities.

Early replacement water heater to heat pump water heater: For this measure we assume replacement of an older water heater with a heat pump water heater as a retrofit measure. Energy savings are diminished to account for the fact that a fraction of the associated energy savings would have been realized at the end of the older unit's useful life, when a new unit meeting current standards would have been purchased.

High efficiency water heater: Higher efficiency water heaters have greater insulation to reduce standby heat loss.

Solar water heater: Heat transfer technology that uses the sun's energy to warm water. Solar water heaters preheat water supplied to a conventional domestic hot water heating system. The energy savings for the system depend on solar radiation, air temperatures, water temperatures at the site, and the hot water use pattern.

Tankless water heater: Also known as "instant" or "on-demand" water heaters, tankless units function only when a hot water faucet is turned on. There is no energy required to maintain the temperature of the water in a tank, eliminating standby losses.

Drain water heat recovery (GFX): Gravity film exchange (GFX) drain-water heat recovery systems consist of a copper pipe for incoming cold water coiled tightly around a copper drain-water pipe. When water goes down the drain, it doesn't drop straight down as though poured from a spout, but rather falls against the side of the pipe. This phenomenon allows the GFX unit to easily re-capture some of this energy, as heat is transferred through the copper pipes to the incoming water supply going to the water heater.

Hot water temperatures turndown: Many residential water heaters are set well above the recommended 120 degrees Fahrenheit. Turning down the setpoint will save energy, and, depending on the original temperature, may also improve resident safety.

Low-flow showerhead: Many households are still equipped with showerheads using 3+ gallons per minute. Low flow showerheads can significantly reduce water heating energy for a nominal cost. Typical low-flow showerheads use 1.0-2.5 gallons per minute compared to conventional flow rate of 3.5-6.0 gallons per minute. The reduction in shower water use can substantially lower water heating energy use since showering accounts for about one-fourth of total domestic hot water energy use.



Pipe wrap: Thermal insulation is material or combinations of materials that are used to inhibit the flow of heat energy by conductive, convective, and radiative transfer modes. By inhibiting the flow of heat energy, thermal insulation can conserve energy by reducing heat loss or gain.

Faucet aerators: Water faucet aerators are threaded screens that attach to existing faucets. They reduce the volume of water coming out of faucets while introducing air into the water stream. A standard non-conserving faucet aerator has a typical flow rate of 3-5 gallons per minute. A water-saving aerator can reduce the flow to 1-2 gallons per minute. The reduction in the flow rate will lower hot water use and save energy (kitchen and bathroom sinks utilize approximately 7 percent of total domestic hot water energy use).

B.1.5 Appliances

High efficiency refrigerator: We model both an ENERGY STAR® and a CEE Tier 2 refrigerator. ENERGY STAR® refrigerators must exceed the stringent July 1, 2001 minimum federal standards for refrigerator energy consumption by at least 10%. As specified for this study, the average efficiency improvement is 20% for ENERGY STAR® and 25% for CEE Tier II. An energy efficient refrigerator/freezer is designed by improving the various components of the cabinet and refrigeration system. These component improvements include cabinet insulation, compressor efficiency, evaporator fan efficiency, defrost controls, mullion heaters, oversized condenser coils, and improved door seals.

Early replacement refrigerator: We model an ENERGY STAR® refrigerator as an early replacement measure. Energy savings are diminished to account for the fact that a fraction of the associated energy savings would have been realized at the end of the older unit's useful life, when a minimum efficiency unit would have been purchased as a replacement.

Refrigerator/freezer recycling: This measure removes and recycles an old, working refrigerator. When households replace a working refrigerator, the old unit is often retained as a secondary unit. Often relegated to a garage these older units can consume much more energy than even standard new units, and are often underutilized for storage.

High efficiency freezer: Stand-alone freezers include either upright or chest models. Efficient freezers should exceed standard efficiencies by 10 percent or more. As specified for this study, the average efficiency improvement is 15 percent.

Early replacement freezer: We also model an ENERGY STAR® freezer as an early replacement measure. Energy savings are diminished to account for the fact that a fraction of the associated energy savings would have been realized at the end of the older unit's useful life, when a minimum efficiency unit would have been purchased as a replacement.

ENERGY STAR® dishwasher: ENERGY STAR® labeled dishwashers save by using both improved technology for the primary wash cycle, and by using less hot water to clean. They include more effective washing action, energy efficient motors and other advanced technology such as sensors that determine the length of the wash cycle and the temperature of the water necessary to clean the dishes.

High efficiency clothes washer: A standard clothes washer uses various temperatures, water levels, and cycle durations to wash clothes depending on the clothing type and size of the laundry load. A high-efficiency vertical-axis clothes washer, which eliminates the warm rinse option and utilizes a spray technology to rinse clothes, can significantly reduce washer-related energy. Such machines also utilize a spin cycle that eliminates more water from the clothes than conventional clothes washers and are generally driven by more efficient motors. A horizontal axis clothes washer utilizes a cylinder that rotates horizontally to wash, rinse, and spin the clothes. These types of washing machines can be top loading or front loading, and utilize significantly less water (hot and cold) than the standard vertical axis machines. A vertical axis machine generally fills the tub until all of the clothes are immersed in water. In contrast, the horizontal axis machine only requires



about one third of the tub to be full, since the rotation of the drum around its axis forces the clothes into the water and thus can drastically reduce the total energy use for washing. These machines are also easier on clothes and use less detergent.

High efficiency clothes dryer: High efficiency clothes dryers incorporate moisture sensors and prevent the frequency and magnitude of over-drying compared to clothes dryers without moisture sensors. The Federal minimum Combined Energy Factor (pounds of clothing per kilowatt hour) is 3.73 for standard units, and does not vary widely between models currently on the market.

Heat pump clothes dryer: These clothes dryers are sometimes referred to as "ventless" dryers because the warm, moist process air is passed in a closed-loop cycle from the tumbler through a heat pump. The refrigerant first takes energy out of the process air sufficient to cool it to the ambient dew point in order to condense any water vapor, which is then drained. Then the cycle transfers heat back into the dehumidified process air, which is passed into the clothes tumbler, and the cycle repeats.

B.1.6 Home Electronics

ENERGY STAR® home electronics (televisions, set-top boxes, DVD players, laptop and desktop computers):

ENERGY STAR® qualified home electronics have off-mode power draws of 1 watt or less. Some home electronic devices spend the vast majority of their time in off-mode but often continue to draw a small "trickle charge" to maintain clock or other memory functions. Reductions in off-mode power draws can thus produce significant reductions in total energy consumption without changing on-mode power consumption characteristics. In addition, some products, such as TVs and computers, have active mode power requirements. Savings from ENERGY STAR® home electronics considered in this study were estimated based data from the Environmental Protection Agency.

Smart power strip: These power strips use a variety of controls to reduce standby power consumption of home electronics, including timers, occupancy sensors, and secondary outlets which automatically turn off in tandem with a pre-specified outlet.

B.1.7 Whole House Measures

Behavioral conservation: Indirect feedback approaches utilize energy information report mailers that motivate customers to use less, while direct feedback interventions use in-home energy-use monitors.

Residential new construction: We model seven new construction measures, all framed as a percent reduction in energy use compared to code, ranging from 10% above code to 45% above code.

B.1.8 Other End Uses

Variable-speed pool pump: This measure saves energy much in the same way as two-speed pool pumps, with the exception that variable-speed pumps are able to further optimize pump operation and pool water flows to match the specific needs and requirements of individual owners.

Electric vehicle chargers: ENERGY STAR® level 1 and level 2 chargers and smart (networked) electric vehicle level 1 and level 2 chargers are modelled in the analysis.

B.2 Commercial Measures

This subsection provides brief descriptions of the commercial measures included in this study.



B.1.1 Lighting

Super T-8 lamps with electronic ballast: T-8 lamps are a smaller diameter fluorescent lamp than T-12 lamps. When paired with specially designed electronic ballasts, T-8 lamps provide more lumens per watt, resulting in energy savings. Electronic ballasts replace the standard core and coil technology in magnetic ballasts with solid-state components. This technology allows for more consistent control over ballast output and converts power to higher frequencies, causing the fluorescent lamps to operate more efficiently. For existing first generation T-8 systems, this measure is specified as an upgrade to efficiency levels associated with optimal Super T-8 lamp-ballast combinations on a replace-on-burnout basis.

T-5 high-output lighting with electronic ballast: Like T8 lamps, straight tube T5 lamps are available in nominal 2', 3', 4', and 5' lengths. Standard T-5 lamps have light output and efficiency comparable to T-8/electronic ballast systems. High output T-5 lamps have considerably higher light output: a 1-lamp high output T-5 cross-section can replace a 2-lamp T-8 cross-section. The 5/8" bulb diameter of the T-5 lamp lends itself to low profile luminaires well-suited for cove lighting and display case lighting. Its smaller scale allows for sleeker fluorescent indirect and direct/indirect pendants and shallower profile recessed troffer type luminaires. Because of variances in actual lamp lengths and a different socket design, the T-5 lamp cannot easily be retrofitted in existing T-12 and T-8 luminaires. Consequently, use the T-5 lamp to its best advantage in specially designed luminaires.

Induction lamps: The primary difference between induction lighting and conventional fluorescent lamps is that induction lighting does not have an electrical connection going inside the glass bulb (electrodeless). Instead, energy is transferred wirelessly into the glass envelope via electromagnetic induction. Induction lamps typically take the place of HID lamps. Their advantage is both long life and quick start, which unlike HID lamps, allows them to be turned off and on with the demand. Although induction lamps have a longer service life than other lamp technology they are also more expensive. They are most often used in places where the lamps are difficult to reach and replace. Induction lamps have very long lifetimes (100,000 hours), excellent color rendering, and perform well in a wide temperature range. They have better lumen maintenance than HID lamps. Our study looks at two applications for induction lighting--high bay lighting and streetlighting.

Pulse-start metal halide lamps: Pulse start lamps have a greater light output than standard metal halide, provide a white light and require special ballasts and fixtures for each specific lamp. The pulse start metal halide combined with new, more efficient low current crest factor ballasts using high voltage igniters provides higher light levels initially (20% more) and significantly more maintained light over time (40% more) than today's standard metal halide.

Compact fluorescent lighting (CFLs): Compact fluorescent lamps are designed to replace standard incandescent lamps. They are approximately four times more efficacious than incandescent light sources. Screw-in modular lamps have reusable ballasts that typically last for four lamp lives.

Lighting control tune-up: This involves various measures to optimize the customer's current lighting control systems, with measures such as: relocating/tuning occupancy sensors, relocating photocells, optimizing sweep timers, repairing lighting timers, and adjust lighting schedules.

Occupancy sensors: Occupancy sensors (infrared or ultrasonic motion detection devices) turn lights on upon entry of a person into a room, and then turn the lights off from ½ minute to 20 minutes after they have left. Occupancy sensors require proper installation and calibration. Their savings depend on the mounting type.

Outdoor lighting controls (photocells and timeclocks): Photocells can be used to automatically control both outdoor lamps and indoor lamps adjacent to skylights and windows. When lights do not need to be on all night, a photocell in series with a time clock provides maximum savings and eliminates the need for manual operation and seasonal time clock adjustments. Time clocks enable users to turn on and off electrical equipment at specific times during the day or week.



LED lighting: A light emitting diode (LEDs) is a semiconductor light source. They have been use for many years in niche application (such as indicator lights), but it was not until the late 1990's that high-output white LEDs became feasible. Over the last decade, LEDs have begun appearing in a variety of illumination applications. LEDs have the potential to be more efficient than fluorescent lighting, although efficacy varies widely between products (but in general continues to improve). They have long lifetimes (about 50,000 hours), are shock resistant and dimmable, can be cycled rapidly, and they perform well in low temperatures. The light from LEDs is highly directional, creating challenges for luminaire design, which is reflected in highly variable luminaire performance. This study considers LED lighting as a measure for indoor lighting, outdoor lighting, and streetlighting

LED technology, both in the LEDs themselves and in luminaire design, continues to change rapidly. In certain applications (architectural lighting, undercabinet lighting, streetlighting), highly effective LED products are available and competitive on a life-cycle-cost basis with incandescent and fluorescent technologies. LED products are rapidly becoming competitive in other applications.

LED exit sign: Exit signs were an early application of LED technology. Since exit signs are typically red or green, colored LEDs could be used directly, without the colored filter necessary when using a white light source. LED exit signs require significantly less maintenance than incandescent or CFL exit sign. Even a CFL would need to be replaced every year or two, while an LED sign could go without maintenance for up to 10 years. Because exit signs are operated continuously, the energy savings are significant.

Bi-level outdoor lighting controls: Bi-level lighting is designed to operate at a minimum level of light output until occupancy is detected (e.g. through a motion sensor), then temporarily increase to a higher level of illumination.

High performance lighting retrofit/replacement: Because of the interaction between lighting measures (daylighting, controls, etc.), the costs and benefits may not be additive. We allocate a percent of the applicable stock to comprehensive lighting retrofits, at a 25 percent savings level.

B.2.2 Space Cooling

DX packaged system efficiency upgrade: A single-package A/C unit consists of a single package (or cabinet housing) containing a condensing unit, a compressor, and an indoor fan/coil. An additional benefit of package units is that there is no need for field-installed refrigerant piping, thus minimizing labor costs and the possibility of contaminating the system with dirt, metal, oxides or non-condensing gases. We look at two efficiency levels, EERs of 1 10.9 and an EER 13.4, compared to a base case unit with EER=10.3.

Tune up/advanced diagnostics: The assumed tune-up includes cleaning the condenser and evaporator coils, establishing optimal refrigerant levels, and purging refrigerant loops of entrained air. The qualifying relative performance range for a tune-up is between 60 and 85 percent of the rated efficiency of the unit. This measure includes fresh air economizer controls providing demand control ventilation and consisting of a logic module, enthalpy sensor(s), and CO2 sensors in appropriate applications.

Chiller efficiency upgrade: Centrifugal chillers are used in building types which normally use water-based cooling systems and have cooling requirements greater than 200 tons. Centrifugal chillers reject heat through a water-cooled condenser or cooling tower. In general, efficiency levels for centrifugal chillers start at 0.80 kW/ton (for older units) and may go as high as 0.4 kW/ton. This measure involves installation of a high-efficiency chiller (0.51 kW per ton) versus a standard unit (0.58 kW per ton). This measure also serves in the potential analysis as a proxy for other non-centrifugal chiller systems.



High-efficiency chiller motors: This measure involves replacement of standard efficiency motors that power compressor systems on chillers. High-efficiency chiller motors typically have efficiencies exceeding 90% and are typically electronically commutated motors, which produce higher average operating efficiencies at partial loads compared to standard efficiency, brushed DC compressor motors.

VSD – cooling circulation pumps: Variable speed drives installed on chilled water pumps can reduce energy use by varying the pump speed according to the building's demand for cooling. There is also a reduction in piping losses associated with this measure, which can have a major impact on the heating loads and energy use for a building. Pump speeds, however, can generally only be reduced to a minimum specified rate, because chillers and the control valves may require a minimum flow rate to operate.

VSD – cooling tower fans: Energy usage in cooling tower fans can be reduced by installing electronic variable speed drives (VSDs). VSDs are a far more efficient method of regulating speed or torque than other control mechanisms. Energy required to operate a fan motor can be reduced significantly during reduced load conditions by installing a VSD.

Chiller tune-up/diagnostics: In addition to some of the activities conducted in a DX tune-up, an optimization of the chilled water plant can include activities such as: optimizing CW/CHW set points, improving chiller staging, trimming pump impellers, resetting chilled water supply temperature, and staging cooling tower fan operation.

Energy management system: The term Energy Management System (EMS) refers to a complete building control system which usually can include controls for both lighting and HVAC systems. The HVAC control system may include on\off scheduling and warm-up routines. The complete lighting and HVAC control systems are generally integrated using a personal computer and control system software.

Cool roof: The color and material of a building structure surface will determine the amount of solar radiation absorbed by that surface. By using an appropriate reflective material to coat the roof, the roof will absorb less solar radiation and consequently reduce the cooling load.

Window film: Reflective window film is an effective way to reduce solar energy gains, thus reducing mechanical cooling energy consumption. Windows affect building energy use through thermal heat transfer (U-value), solar heat gains (shading coefficient), daylighting (visible light transmittance), and air leakage.

Smart thermostat: Smart thermostats are wi-fi connected and can be used with home automation systems and can be remotely controlled by the user. They feature occupancy sensors that can save energy compared to the pre-set schedule of a conventional programmable thermostat.

Roof / ceiling insulation: Thermal insulation is material or combinations of materials that are used to inhibit the flow of heat energy by conductive, convective, and radiative transfer modes. By inhibiting the flow of heat energy, thermal insulation can conserve energy by reducing heat loss or gain of a structure. An important characteristic of insulating materials is the thermal resistance, or R-value. The R-value of a material is the reciprocal of the time rate of heat flow through a unit of this material in a direction perpendicular to two areas of different temperatures.

Installation of air-side economizers: Air-side economizers reduce the energy consumption associated with cooling by providing access to outside air – when temperatures permit – in lieu of using mechanical cooling of recirculated indoor air. We specifically consider a dual-enthalpy economizer replacing a dry-bulb economizer.

Duct insulation: Insulation material inhibits the transfer of heat through air supply ducts or hot water pipes. Several types of ducts and duct insulation are available, including flexible duct, pre-insulated flexible duct, duct board, duct wrap, tacked or glued rigid insulation, and waterproof hard-shell materials for exterior ducts.



Duct repair and sealing: An ideal duct system would be free of leaks, especially when the ducts are outside the conditioned space. Leakage in unsealed ducts varies considerably with the fabricating machinery used, the methods for assembly, installation workmanship, and age of the ductwork. To seal ducts, a wide variety of sealing methods and products exist. Care should be taken to tape or otherwise seal all joints to minimize leakage in all duct systems and the sealing material should have a projected life of 20-30 years. Current duct sealing methods include use of computer-controlled aerosol and pre- and post-sealing duct pressurization testing.

Heat pump upgrade: Air-source heat pumps transfer heat from the outside air to the inside of a building or vice versa, providing both heating and cooling. We consider a 15 SEER, 8.2 HSPF heat pump.

Geothermal heat pump: A geothermal, or ground-source, heat pump operates on the same principle as more common air-source heat pumps. But unlike air-source heat pumps, which transfers heat to or from the outside air, geothermal heat pumps exchange heat with the ground. Underground temperatures maintain a relatively constant temperature throughout the year, especially compared to air temperatures, which increases the system efficiency compared to an air-source heat pump. Because the system relies on extensive subterranean piping for heat exchange, geothermal heat pumps are expensive to install, and installation opportunities in existing buildings are limited.

High-efficiency packaged terminal air conditioner: A packaged terminal air conditioner (PTAC) is a self-contained heating and air conditioning system commonly found in hotels. High efficiency units are available, offering significant energy savings in the lodging industry.

High-efficiency mini-split heat pump: Also know as a ductless heat pump, mini-split heat pumps consist of an indoor air handler unit and an outdoor compressor/condensing unit connected by refrigerant lines. An outdoor unit can connect to multiple indoor units allowing for zone heating and cooling, which can result in efficiency gain. The have not duct with their associated losses.

Hotel room controllers: Large amounts of energy are wasted in the lodging industry heating, cooling, and lighting unoccupied hotel room. Hotel guest room energy management control systems use occupancy sensors to determine whether anyone is present in the room, and adjusts the HVAC settings for energy savings when the room is empty.

B.2.3 Ventilation

Motor efficiency upgrade: Premium-efficiency motors use additional copper to reduce electrical losses and better magnetic materials to reduce core losses, and are generally built to more precise tolerances. Consequently, such motors are more reliable, resulting in reduced downtime and replacement costs. Premium-efficiency motors may also carry longer manufacturer's warranties.

VFD on motor installation: Energy usage in HVAC systems can be reduced by installing electronic variable frequency drives (VFDs) on ventilation fans. VFDs are a far more efficient method of regulating speed or torque than throttling valves, inlet vanes and fan dampers. Energy required to operate a fan motor can be reduced as much as 85% during reduced load conditions by installing a VFD.

Installation of demand-controlled ventilation (via occupancy sensors, CO2 sensors, etc.): Often, usage of a building's ventilation control goes beyond what is necessary to maintain a healthy and comfortable environment. A variety of controls can save energy by limiting the use of the ventilation system to minimum amount necessary. Sensors that detect critical contaminants activate ventilations systems only when necessary. Occupancy sensors limit the operation ventilation systems to periods when the building is in use.



Air handler optimization: Optimization of a building's air-handling system is concerned principally with the proper sizing and configuration of its HVAC units. Energy savings can result from a variety of improvements, including reduced equipment loads and better functionality of existing equipment.

Electronically commutated motors (ECM) on air-handler unit: Air handler models with the lowest electrical use ratings employ ECMs. ECMs, also known as brushless DC motors or variable speed blower motors, have two principal advantages over the typical permanent magnet split capacitor (PSC) blower motors found in the majority of air handlers. First, ECMs are claimed to be 20% to 30% more efficient than standard blower motors. Second, the typical ECM blower can produce a much wider range of airflow than a PSC blower, which typically has only three or four set speeds over a narrow range. Because power consumption by an air handler rises with the cube of airflow, the ability to reduce airflow when appropriate can dramatically reduce the electrical power draw by the air handler.

Energy recovery ventilation: These systems provide a controlled way of ventilating a building while minimizing energy loss. Heating energy requirements are reduced during the winter season by transferring heat from the warm inside air being exhausted to the fresh (but cold) supply air. Similarly, in the summer, the inside air being exhausted cools the warmer supply air and reduces cooling energy requirements.

Separate makeup air/exhaust hoods: Ventilation requirements in restaurants and grocery stores are driven both by occupancy and by the need to exhaust fumes from food preparation activities. Standard ventilation and exhaust systems operate at constant speeds that are most often matched to maximum ventilation requirements. Systems that modulate both exhaust and make-up air flow rates in response to measurements of "smoke" and temperature in the exhaust hood reduce exhaust and make-up air flow rates when full exhaust capacity is not required, and can thereby produce significant reduction in fan power and space conditioning energy use.

B.2.4 Refrigeration

Motor efficiency upgrade for fans and compressors: In addition to saving energy, premium-efficiency motors are more reliable, resulting in reduced downtime and replacement costs.

Strip curtains: Installing strip curtains on doorways to walk-in boxes and refrigerated warehouses can produce energy savings due to decreased infiltration of outside air into the refrigerated space. Although refrigerated spaces have doors, these doors are often left open, for example during product delivery and store stocking activities.

Night covers: Installing film or blanket type night covers on display cases can significantly reduce the infiltration of warm ambient air into the refrigerated space. This reduction in display case loads in turn reduces the electric use of the central plant, including compressors and condensers, thus saving energy. The target market for this measure is small, independently owned grocery stores and other stores that are typically closed at night and restock their shelves during the day. The target cases are vertical displays, with a single- or double-air curtain, and tub (coffin) type cases.

Auto door closers for walk-ins and reach-ins: Auto door closers minimize air infiltrations in walk-in and reach-in refrigerators and freezers.

Variable speed compressor retrofit: A variable speed compressor is a screw or reciprocating compressor whose current is modulated by a frequency inverter. A controller senses the compressor suction pressure and modulates the current and therefore the motor speed in response to changes in this pressure. When low load conditions exist, the current to the compressor motor is decreased, decreasing the compressor work done on the refrigerant.

Floating head pressure controls: Floating head pressure controls allow a refrigeration system to operate under lower condensing temperature and pressure settings, where compressor operation is most efficient, working against a relatively



low head pressure. The condensing temperature is allowed to float below the design set point of, say, 95 deg. F under lower outdoor temperatures, which in-turn lowers the condensate pressure. In a conventional system a higher fixed condensing temperature set point is used which results in a lowered capacity for the system, requires extra power, and may overload the compressor motor. Energy savings can be realized if the refrigeration system head pressure is allowed to float during periods of low ambient temperature, when the condensing temperature can be dramatically reduced.

Refrigeration commissioning: Refrigeration commissioning refers to a process whereby refrigeration systems are subject to inspection on a variety of criteria to ensure efficiency. The commissioning process can involve tests that cover a system's controls for humidity and temperature, anti-condensation, and heat recovery, among others.

Demand defrost: Defrost of a refrigeration system is critical to its efficient operation. Demand defrost uses a pressure-sensing device to activate the defrost cycle when it detects a significant drop in pressure of the air across the refrigeration coil. Because load during defrost can be three times that of normal operation, defrosting on demand only – not when an individual operator deems it necessary – can save energy by minimizing the amount of time spent on defrosting.

Humidistat controls: A humidistat control is a control device to turn refrigeration display case anti-sweat heaters off when ambient relative humidity is low enough that sweating will not occur. Anti-sweat heaters evaporate moisture by heating the door rails, case frame and glass of display cases. Savings result from reducing the operating hours of the anti-sweat heaters, which without a humidistat control generally run continuously. There are various types of control strategies including cycling on a fixed schedule.

LED display lighting: This measure involves the replacement of standard fluorescent tube lighting fixtures within medium and low-temperature display cases with LED fixtures. The higher luminous efficacy of LED lamps compared to T-8 and T-5 fluorescent lamps delivers significant energy savings and also results in lower heat gains inside refrigerator and freezer cases, which in turn reduces the effective load served by the compressor. LED fixtures also exhibit much longer service lives compared to T-8 or T-5 fixtures and very little maintenance requirements.

High R-value glass doors: This measure involves the replacement of standard glass doors on refrigerated display cases with advanced glass doors that incorporate heat-reflective treated glass and/or low-conductivity gas fills between panes to produce high R-values. The greater insulation properties of the insulated glass doors reduce condensation buildup and reduce or eliminate the need for anti-sweat heaters.

Multiplex compressor systems: Multiplex refrigeration systems involve the use of multiple compressors in parallel, rather than single compressors, to serve specific refrigeration loads. Multiplex systems are designed so that compressors can be selectively selected and cycled in order to better match changes in refrigeration load dynamically and increase the overall operational efficiency of the compressors.

Oversized air-cooled condenser: The use of oversized condensers can provide additional "natural sub-cooling" of the condensed refrigerant, which results in lower-temperature refrigerant liquid in the system, lower evaporator temperatures, and reduced load on the compressor.

Freezer/cooler replacement gaskets: Worn out freezer/cooler door gaskets can result in significant leakage and increased cooling energy consumption. Regular replacement of worn door gaskets reduces unnecessary air leaks and can lead to significant refrigeration energy savings.

ENERGY STAR® refrigeration: The Environmental Protection Agency's ENERGY STAR® program labels high-efficiency commercial refrigerators, freezers, and ice machines. High efficiency units are designed with components such as ECM



evaporator and condenser fan motors, hot gas anti-sweat heaters, or high-efficiency compressors, which significantly reduce energy consumption.

Compared to standard models, ENERGY STAR labeled commercial refrigerators and freezers can lead to energy savings of as much as 35 percent with a 1.3 year payback.

B.2.5 Office Equipment

Power management enabling: Most PCs, monitors, printers and copiers have the capability of entering a low-power "sleep" mode when idle. However devices may come with this feature disabled or users may disable it for a variety of reasons. Enabling power management reduces energy use when devices are left idle during the day, or when a device is left on overnight. Most savings occur off-peak. This measure can be applied to PCs, PC monitors, printers and copiers.

ENERGY STAR® or better office equipment: For many years, virtually all PCs and monitors met the ENERGY STAR® efficiency requirements, which required only that devices be capable of entering a low-power "sleep" mode after a period of inactivity. The Environmental Protection Agency (EPA) has tightened its requirements, adding active-mode power requirements to the specifications. Choosing ENERGY STAR® servers, computers, monitors, and imaging equipment can reduce energy use both in all power modes.

B.2.6 Water Heating

High efficiency water heater: Higher efficiency water heater have greater insulation to reduce standby heat loss. For this study, efficiency of the base unit (measured as the Energy Factor) is specified as 0.88, whereas the efficiency of the high efficiency electric water heater is specified as 0.93.

Heat pump water heater: Air-to-water heat pump water heaters extract low-grade heat from the air then transfer this heat to the water by means of an immersion coil. This is the most commonly utilized residential heat pump water heater. The air-to-water heat pump unit includes a compressor, air-to-refrigerant evaporator coil, evaporator fan, water circulating pump, refrigerant-to-water condenser coil, expansion valve, and controls. Residential heat pump water heaters replace base electric units with the same tank capacities. For this study, efficiency of the base unit (measured as the Energy Factor) is specified as 0.88, whereas the efficiency of the heat pump water heater is specified as 2.9.

Solar water heater: Heat transfer technology that uses the sun's energy to warm water. Solar water heaters preheat water supplied to a conventional domestic hot water heating system. The energy savings for the system depend on solar radiation, air temperatures, water temperatures at the site, and the hot water use pattern.

Demand-controlled circulating systems: Hot water circulation systems are designed to maintain water in hot water pipes at a pre-determined temperature and prevent excess water demand (and associated water heating energy) from waiting for hot water to arrive from the water heater. Demand-controlled circulating systems provide additional savings by optimizing pumping energy requirements to only specific moments of hot water demand. This is achieved through the integration of an electronic controller on the circulation pump that is triggered by a switch engaged by the consumer at the point of hot water demand.

Heat recovery units: This measure is heat transfer strategy that uses the heat rejected during the refrigerant cycle on air conditioning units to heat water.

Pipe wrap: Thermal insulation is material or combinations of materials that are used to inhibit the flow of heat energy by conductive, convective, and radiative transfer modes. By inhibiting the flow of heat energy, thermal insulation can conserve energy by reducing heat loss or gain.



Heat trap: Heat traps are valves or loops of pipe, which allow water to flow into the water heater tank but prevent unwanted hot-water flow out of the tank that would otherwise occur due to convection.

Tankless water heater: Tankless water heaters eliminate the standby tank (and associated losses) of a standard water heater. The water is heated instantaneously by a high energy heat source that can be either gas or electric.

B.2.7 Cooking

Convection oven: Convection ovens use a small fan to circulate hot air within the oven cavity. Circulating air can heat food more efficiently than the still air found in conventional ovens. The hot air in the oven can be heated by gas or electricity. In general, a convection oven will save 30% of the energy used by an oven. These savings result from burners cycling off for a longer period.

ENERGY STAR® fryer: Fryers cook foods by submerging them in hot animal or vegetable oils, and utilize a range of different burner types. In order to qualify as ENERGY STAR, electric fryers must meet a minimum cooking efficiency 80 percent while also meeting a maximum idle energy rate of 1,000 watts. Energy efficient fryers offer shorter cook times and higher production rates through advanced burner and heat exchanger designs. Fry pot insulation reduces standby losses resulting in a lower idle energy rate.

ENERGY STAR® steamer: Commercial steam cookers are versatile appliances which can be used to quickly prepare any foods that do not require a crust. Steamers come in a variety of configurations but generally resemble an oven, with between one and four gasketed and windowless compartments. The stacked compartments typically accommodate a standard 12 by 20-inch hotel pan. Pressure steamers have an external boiler that produces potable steam under pressure, and atmospheric steamers have a steam generator located directly below the compartments. Both require a water line and drain hookup. In contrast, the connectionless steamer is a closed loop system with a reservoir that is periodically drained and refilled. Significant improvements in water- and energy- efficiency are achieved because no steam is allowed to escape down the condensate drain.

Vending misers: The Vending Miser is an after-market energy control technology for refrigerated vending machines. It incorporates an occupancy sensor, thermostat, and timer to power down the vending machine for extended period, while periodically repowering refrigerated devices to ensure that the product stays cold.

B.2.7 Industrial

Efficient industrial process equipment: This study did not break out industrial energy use into specific industries. Across the industrial sector as a whole we analyzed four categories of efficient industrial process equipment: process heating, process cooling and refrigeration, electrochemical processes, and other process. With the industrial end use so broadly defined, our measures were correspondingly broad.

Industrial process improved operations: This measure broadly captures process improvements such as planning and scheduling and waste reduction. As with efficient industrial process equipment, we looked at improved operations across process heating, process cooling and refrigeration, electrochemical processes, and other processes.

High efficiency motors: Motors make up a large share of industrial energy use. Minimum efficiency standards have improved new motor efficiency in recent decades, but the industrial sectors had a large stock of older motors. Retrofitting these old motors with new, efficient motors would result in significant savings.

Variable speed drive control: A variable speed drive (VSD) or variable frequency drive (VFD) is used to control motor speed and torque by varying motor input frequency and voltage. Adjusting the motor speed as the load on the motor changes yields large energy savings, especially in fan and pump applications.



B.2.8 Compressed Air

Cold Air Intake: Common compressors take in air at ambient air pressures raise the pressure by reducing a volume of air by a fixed amount. The amount of air compressed depends the density of the air entering the compressor, and cold air is denser than warm air. Because air compressors can only intake a fixed volume of air, higher density (colder intake air) means more air in the system. The output of the air compressor is proportional to the density of the incoming air. Compressor motors produce heat, so pulling air from nearby results in worse performance than directing the intake inlet to a source of cooler ambient air. This can often be done very cost-effectively with a longer intake tube for the air filter.

End Use Optimization: The design of a compressed air system design should take into account the devices on the system and variability in demand. Different patterns of air usage may require different choices in the number and type of compressor or may benefit from the addition of compressed air storage. The design of the distribution system (e.g. narrow lines and sharp bends) can limit pressure at the point of use. Incorporating heat recovery can improve system energy efficiency as well. A wide variety of controls are available for compressed air systems, including pressure controls, flow controls, automation products, and controllers for specific compressor types.

Equipment Upgrade: Efficient air compressors may incorporate features such as built-in variable speed drives, high efficiency motors, adjustable air delivery, or automatic shut-off.

Maintenance and Leak Reduction: In a compressed air system, air is energy, and a leaky system results in the compressor cycling more frequently to maintain pressure. Leaks can be detected using an ultrasonic acoustic detector or through less high-tech means. Repairing leaks may involve nothing more than tightening connections or may involve replacing various system components.

Low Pressure Drop Filters: Filters in the air distribution center reduce air pressure to end device, and the pressure at the compressor end of the system must increase to compensate. Low pressure drop filters minimize the pressure drop and increase system efficiency.

Zero-Loss Condensate Drain: Condensate accumulates in a compressed air system and must be removed. Zero-Loss Drains are designed to drain condensate without any loss of compressed air.



C. ECONOMIC INPUTS



APPENDIX C - ECONOMIC INPUTS

Residential Electricity

UTILITY NAME Dominion SECTOR Res BATCH# 1 7.03% UTILITY DISCOUNT RATE CUSTOMER DISCOUNT RATE 6.25% GENERAL INFLATION RATE (N 1.98% BASE YEAR 2024 START YEAR 2024 UTILITY LINE LOSS RATE 5.09%

ENERGY COSTS AND RATES

RATE TYPE Residential ENERGY UNITS \$/kWh DEMAND UNITS \$/kW

Rate/Time F	1	2	3	4	
	Winter On-	Summer On-	Summer	Winter Off-	
Name	Peak	Peak	Off-Peak	Peak	
Abbreviation	WON	SON	SOFF	WOFF	TOTAL
Hours	876	318	3354	4212	8760
1					

	AVOIDED E	ENERGY COS	TS BY TIME	PERIOD	AVOIDED D	EMAND CO	STS BY TIME	PERIOD
Year	WON \$/kWh	SON \$/kWh	SOFF \$/kWh	WOFF \$/kWh	WON \$/kW	SON \$/kW	SOFF \$/kW	WOFF \$/kW
2024	0.038	0.038	0.038	0.038	43.402	28.143	0.000	0.000
2025	0.028	0.028	0.028	0.028	44.234	32.403	0.000	0.000
2026	0.029	0.029	0.029	0.029	45.063	38.894	0.000	0.000
2027	0.030	0.030	0.030	0.030	45.937	45.609	0.000	0.000
2028	0.032	0.032	0.032	0.032	46.847	52.536	0.000	0.000
2029	0.034	0.034	0.034	0.034	47.793	59.698	0.000	0.000
2030	0.033	0.033	0.033	0.033	48.719	67.004	0.000	0.000
2031	0.035	0.035	0.035	0.035	49.649	72.196	0.000	0.000
2032	0.036	0.036	0.036	0.036	50.575	75.861	0.000	0.000
2033	0.038	0.038	0.038	0.038	51.521	79.627	0.000	0.000
2034	0.040	0.040	0.040	0.040	52.502	83.504	0.000	0.000
2035	0.041	0.041	0.041	0.041	53.529	87.520	0.000	0.000
2036	0.042	0.042	0.042	0.042	54.594	90.230	0.000	0.000
2037	0.044	0.044	0.044	0.044	55.690	91.960	0.000	0.000
2038	0.044	0.044	0.044	0.044	56.822	93.741	0.000	0.000
2039	0.045	0.045	0.045	0.045	57.993	95.572	0.000	0.000
2040	0.046	0.046	0.046	0.046	59.196	97.445	0.000	0.000
2041	0.048	0.048	0.048	0.048	60.403	100.640	0.000	0.000
2042	0.050	0.050	0.050	0.050	61.631	104.855	0.000	0.000
2043	0.052	0.052	0.052	0.052	62.884	109.195	0.000	0.000
2044	0.054	0.054	0.054	0.054	64.167	113.668	0.000	0.000
2045	0.055	0.055	0.055	0.055	65.477	118.262	0.000	0.000
2046	0.055	0.055	0.055	0.055	66.797	122.974	0.000	0.000
2047	0.057	0.057	0.057	0.057	68.146	127.815	0.000	0.000
2048	0.058	0.058	0.058	0.058	69.540	132.795	0.000	0.000
2049	0.060	0.060	0.060	0.060	70.969	137.918	0.000	0.000
2050	0.061	0.061	0.061	0.061	72.426	143.179	0.000	0.000
2051	0.063	0.063	0.063	0.063	73.907	146.999	0.000	0.000
2052	0.065	0.065	0.065	0.065	75.415	149.757	0.000	0.000
2053	0.067	0.067	0.067	0.067	76.953	152.567	0.000	0.000
2054	0.070	0.070	0.070	0.070	78.522	155.430	0.000	0.000
2055	0.072	0.072	0.072	0.072	80.123	158.347	0.000	0.000
2056	0.075	0.075	0.075	0.075	81.758	161.318	0.000	0.000
2057	0.077	0.077	0.077	0.077	83.425	164.345	0.000	0.000
2058	0.080	0.080	0.080	0.080	85.126	167.429	0.000	0.000
2059	0.082	0.082	0.082	0.082	86.862	170.571	0.000	0.000
2060	0.085	0.085	0.085	0.085	88.634	173.771	0.000	0.000
2061	0.085	0.085	0.085	0.085	90.441	174.171	0.000	0.000
2062	0.085	0.085	0.085	0.085	92.286	174.579	0.000	0.000
2063	0.085	0.085	0.085	0.085	94.168	174.995	0.000	0.000



Residential Electricity

	VIRGIN	IA RESIDENTIA	J FNFRGY RA	TES
	7	, (TESIDEITI)		
	WON	SON	SOFF	WOFF
Year	\$/kWh	\$/kWh	\$/kWh	\$/kWh
2024	0.132	0.132	0.132	0.132
2025	0.135	0.135	0.135	0.135
2026	0.138	0.138	0.138	0.138
2027	0.140	0.140	0.140	0.140
2028	0.143	0.143	0.143	0.143
2029	0.145	0.145	0.145	0.145
2030	0.148	0.148	0.148	0.148
2031	0.151	0.151	0.151	0.151
2032	0.154	0.154	0.154	0.154
2033	0.156	0.156	0.156	0.156
2034	0.159	0.159	0.159	0.159
2035	0.162	0.162	0.162	0.162
2036	0.165	0.165	0.165	0.165
2037	0.169	0.169	0.169	0.169
2038	0.172	0.172	0.172	0.172
2039	0.175	0.175	0.175	0.175
2040	0.179	0.179	0.179	0.179
2041	0.182	0.182	0.182	0.182
2042	0.186	0.186	0.186	0.186
2043	0.189	0.189	0.189	0.189
2044	0.193	0.193	0.193	0.193
2045	0.196	0.196	0.196	0.196
2046	0.200	0.200	0.200	0.200
2047	0.204	0.204	0.204	0.204
2048	0.208	0.208	0.208	0.208
2049	0.212	0.212	0.212	0.212
2050	0.217	0.217	0.217	0.217
2051	0.221	0.221	0.221	0.221
2052	0.226	0.226	0.226	0.226
2053	0.230	0.230	0.230	0.230
2054	0.235	0.235	0.235	0.235
2055	0.240	0.240	0.240	0.240
2056	0.245	0.245	0.245	0.245
2057	0.250	0.250	0.250	0.250
2058	0.255	0.255	0.255	0.255
2059	0.260	0.260	0.260	0.260
2060	0.265	0.265	0.265	0.265
2061	0.271	0.271	0.271	0.271
2062	0.276	0.276	0.276	0.276
2063	0.282	0.282	0.282	0.282



APPENDIX C - ECONOMIC INPUTS

Commercial Electricity

ENERGY COSTS AND RATES

Commercial \$/kWh RATE TYPE ENERGY UNITS DEMAND UNITS

TOTAL 8760 4 Winter Off-Peak WOFF 4212 3 Summer Off-Peak SOFF 3354 Rate/Time Per 1 2
Winter On- Summer On- Si
Name Peak Peak
Abbreviation WON SON
Hours 876 318

	0.00		TANT VO OFOC	DEBIOD	משמוטעע	DEMAND COS	AVOIDED DEMAND COSTS BY TIME PERIOD	טטום:
	AVOIDED E	AVOIDED ENERGY COSTS BY TIME PERIOD	JSIS BY LIME	-	2 2 1 1			2
	WOW	SON	SOFF	WOFF	MOM	SON	SOFF	WOFF
Year	\$/kWh	\$/kWh	\$/kWh	\$/kWh	\$/kW	\$/kW	\$/kW	\$/kW
2024	0.038	0.038	0.038	0.038	43.402	28.143	0.000	000'0
2025	0.028	0.028	0.028	0.028	44.234	32.403	0.000	0.000
2026	0.029	0.029	0.029	0.029	45.063	38.894	0.000	0.000
2027	0:030	0.030	0.030	0.030	45.937	45.609	0.000	0.000
2028	0.032	0.032	0.032	0.032	46.847	52.536	0.000	0.000
2029	0.034	0.034	0.034	0.034	47.793	59.698	0.000	0.000
2030	0.033	0.033	0.033	0.033	48.719	67.004	0.000	0.000
2031	0.035	0.035	0.035	0.035	49.649	72.196	0.000	0.000
2032	0.036	0.036	0.036	0.036	50.575	75.861	0.000	0.000
2033	0.038	0.038	0.038	0.038	51.521	79.627	0.000	0.000
2034	0.040	0.040	0.040	0.040	52.502	83.504	0.000	0.000
2035	0.041	0.041	0.041	0.041	53.529	87.520	0.000	0.000
2036	0.042	0.042	0.042	0.042	54.594	90.230	0.000	0.000
2037	0.044	0.044	0.044	0.044	25.690	91.960	0.000	0.000
2038	0.044	0.044	0.044	0.044	56.822	93.741	0.000	0.000
2039	0.045	0.045	0.045	0.045	57.993	95.572	0.000	0.000
2040	0.046	0.046	0.046	0.046	59.196	97.445	0.000	0.000
2041	0.048	0.048	0.048	0.048	60.403	100.640	0.000	0.000
2042	0.050	0.050	0.050	0.050	61.631	104.855	0.000	0.000
2043	0.052	0.052	0.052	0.052	62.884	109.195	0.000	0.000
2044	0.054	0.054	0.054	0.054	64.167	113.668	0.000	0.000
2045	0.055	0.055	0.055	0.055	65.477	118.262	0.000	0.000
2046	0.055	0.055	0.055	0.055	66.797	122.974	0.000	0.000
2047	0.057	0.057	0.057	0.057	68.146	127.815	0.000	000.0
2048	0.058	0.058	0.058	0.058	69.540	132.795	0.000	0.000
2049	090:0	090.0	090.0	090.0	696.02	137.918	0.000	0.000
2050	0.061	0.061	0.061	0.061	72.426	143.179	0.000	0.000
2051	0.063	0.063	0.063	0.063	73.907	146.999	0.000	0.000
2052	0.065	0.065	0.065	0.065	75.415	149.757	0.000	0.000
2053	0.067	0.067	0.067	0.067	76.953	152.567	0.000	0.000
2054	0.070	0.070	0.070	0.070	78.522	155.430	0.000	0.000
2055	0.072	0.072	0.072	0.072	80.123	158.347	0.000	0.000
2056	0.075	0.075	0.075	0.075	81.758	161.318	0.000	0.000
2057	0.077	0.077	0.077	0.077	83.425	164.345	0.000	0.000
2058	080.0	0.080	0.080	0.080	85.126	167.429	0.000	0.000
2059	0.082	0.082	0.082	0.082	86.862	170.571	0.000	0.000
2060	0.085	0.085	0.085	0.085	88.634	173.771	0.000	0.000
2061	0.085	0.085	0.085	0.085	90.441	174.171	0.000	0.000
2062	0.085	0.085	0.085	0.085	92.286	174.579	0.000	0.000
2063	0.085	0.085	0.085	0.085	94.168	174.995	0.000	0.00

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Commercial Electricity

	VIDCINII	A COMMERCIA	AL ENERGY F	DATES.
	VIRGINIA	A COMMERCIA	AL ENERGY F	KATES
	WON	SON	SOFF	WOFF
Year	\$/kWh	\$/kWh	\$/kWh	\$/kWh
2024	0.085	0.085	0.085	0.085
2025	0.086	0.086	0.086	0.086
2026	0.088	0.088	0.088	0.088
2027	0.090	0.090	0.090	0.090
2028	0.091	0.091	0.091	0.091
2029	0.093	0.093	0.093	0.093
2030	0.095	0.095	0.095	0.095
2031	0.096	0.096	0.096	0.096
2032	0.098	0.098	0.098	0.098
2033	0.100	0.100	0.100	0.100
2034	0.102	0.102	0.102	0.102
2035	0.104	0.104	0.104	0.104
2036	0.106	0.106	0.106	0.106
2037	0.108	0.108	0.108	0.108
2038	0.110	0.110	0.110	0.110
2039	0.112	0.112	0.112	0.112
2040	0.114	0.114	0.114	0.114
2041	0.116	0.116	0.116	0.116
2042	0.119	0.119	0.119	0.119
2043	0.121	0.121	0.121	0.121
2044	0.123	0.123	0.123	0.123
2045	0.126	0.126	0.126	0.126
2046	0.128	0.128	0.128	0.128
2047	0.130	0.130	0.130	0.130
2048	0.133	0.133	0.133	0.133
2049	0.136	0.136	0.136	0.136
2050	0.138	0.138	0.138	0.138
2051	0.141	0.141	0.141	0.141
2052	0.144	0.144	0.144	0.144
2053	0.147	0.147	0.147	0.147
2054	0.150	0.150	0.150	0.150
2055	0.153	0.153	0.153	0.153
2056	0.156	0.156	0.156	0.156
2057	0.160	0.160	0.160	0.160
2058	0.163	0.163	0.163	0.163
2059	0.166	0.166	0.166	0.166
2060	0.169	0.169	0.169	0.169
2061	0.173	0.173	0.173	0.173
2062	0.176	0.176	0.176	0.176
2063	0.180	0.180	0.180	0.180



D. BUILDING AND TIME-OF-USE FACTOR INPUTS

BUILDING INPUTS



Number of Lon			
Namper of nomes	ies		
Sir	ngle Family	Single Family Multi-Family Mobile Home	Mobile Home
Bu	uilding Type	Suilding Type Building Type Building Type	Building Type
Segment	1	2	3
VA Existing 1	1,110,428	195,645	13,121
Opt-Outs	0	0	0
VA New	10,717	1,888	127

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Residential Electric End Use Load Shape Table (Fraction of annual energy)

(rraction of annual energy)	annuai er	(KBL)																		
	End L	End Use 1 - Space Cooling	pace Coo	ling	En	d Use 2	End Use 2 - Lighting	g	End L	Jse 3 - R	End Use 3 - Refrigeration	ion	甲	าd Use 4	End Use 4 - Freezer		End Use 5 - Water Heating	5 - Water	Heating	
Building Type WON SON SOFF WOFF WON SON SOFF	MOM	SON	SOFF	WOFF	MON	SON	SOFF	WOFF	WOFF WON SON SOFF WOFF WON SON SOFF WOFF WON SON SOFF WOFF	SON	SOFF	WOFF	MON	SON	SOFF	WOFF	MON	SON	SOFF	WOFF
1	0.0102	0.0102 0.1644 0.7782 0.0473 0.1335 0.0321 0.3401 0.4943 0.0999 0.0413 0.4071 0.4517 0.0999 0.0413 0.4517 0.0999 0.0413 0.0997 0.04517 0.0999 0.0413 0.4517 0.0999 0.0413 0.4517 0.4517	0.7782	0.0473	0.1335	0.0321	0.3401	0.4943	0.0999	0.0413	0.4071	0.4517	0.0999	0.0413	0.4071	0.4517	0.1633	0.0277	0.3547	0.4544
2	0.0102	0.0102 0.1644 0.7782 0.0473 0.1335 0.0321 0.3401 0.4943 0.0999 0.0413 0.4071 0.4517 0.0999 0.0413 0.4071 0.4517 0.1633 0.0277 0.3547 0.4544	0.7782 (0.0473	0.1335	0.0321	0.3401	0.4943	0.0999	0.0413	0.4071	0.4517	0.0999	0.0413	0.4071	0.4517	0.1633	0.0277	0.3547	0.4544
ĸ	0.0102	0.0102 0.1644 0.7782 0.0473 0.1335 0.0321 0.3401 0.4943 0.0999 0.0413 0.4071 0.4517 0.0999 0.0413 0.4071 0.4517 0.0999 0.0413 0.4071 0.4517 0.1633 0.0277 0.3547 0.4544	0.7782 (0.0473	0.1335	0.0321	0.3401	0.4943	0.0999	0.0413	0.4071	0.4517	0.0999	0.0413	0.4071	0.4517	0.1633	0.0277	0.3547	0.4544
4	0.0102	0.0102 0.1644 0.7782 0.0473 0.1335 0.0321 0.3401 0.4943 0.0999 0.0413 0.4071 0.4517 0.0999 0.0413 0.4071 0.4517 0.1633 0.0277 0.3547 0.4544	0.7782 (0.0473	0.1335	0.0321	0.3401	0.4943	0.0999	0.0413	0.4071	0.4517	0.0999	0.0413	0.4071	0.4517	0.1633	0.0277	0.3547	0.4544
2	0.0102	0.0102 0.1644 0.7782 0.0473 0.1335 0.0321 0.3401 0.4943 0.0999 0.0413 0.4071 0.4517 0.0999 0.0413 0.4071 0.4517 0.1633 0.0277 0.3547 0.4544	0.7782 (0.0473	0.1335	0.0321	0.3401	0.4943	0.0999	0.0413	0.4071	0.4517	0.0999	0.0413	0.4071	0.4517	0.1633	0.0277	0.3547	0.4544
ď	0.010	0.0102 0.1644 0.7282 0.0473 0.1335 0.0321 0.3401 0.4043 0.0413 0.4071 0.4517 0.0999 0.0413 0.4071 0.4517 0.1633	0 7787 (0473	0 1335	0.0321	0 3401	0 4943	00000	0.0413	0.4071	0.4517	0000	0.0413	0.4071	0.4517	0 1633	77700	0 3547	0.4544

Residential Electric End Use Load Shape Table - Continued

(Fraction of annual energy)

		1977																	
	End Use	6 - Clot	End Use 6 - Clothes Washer End Use 7 - Clothes Dryer	End	Use 7 - (Clothes E	Jryer	End	Use 8 - I	End Use 8 - Dishwasher	ier	End U	se 9 - S ₁	End Use 9 - Space Heating	ting	Enc	End Use 10 - Cooking	- Cooking	
Building Type WON SON SOFF WOFF WON SON SOFF	MOM	SON S	OFF WOF	MON =	SON	SOFF	WOFF	WOFF WON	SON	SOFF	WOFF	SON SOFF WOFF WON SON SOFF WOFF	SON	SOFF	WOFF	F WON	SON	SOFF	WOFF
1	0.1248 0.	.0389 0	0.1248 0.0389 0.3379 0.4984 0.1248 0.0389 0.3379	4 0.1248	0.0389	0.3379	0.4984	0.1200	0.0413	0.3649	0.4738	0.1833 (0.0017	0.0223	0.7927	0.4984 0.1200 0.0413 0.3649 0.4738 0.1833 0.0017 0.0223 0.7927 0.1857 0.0945 0.2593 0.4604	0.0945	0.2593	0.4604
2	0.1248 0.	.0389 0	0.1248 0.0389 0.3379 0.4984 0.1248 0.0389 0.3379	4 0.1248	0.0389	0.3379	0.4984	0.1200	0.0413	0.3649	0.4738	0.1833 (0.0017	0.0223	0.7927	0.4984 0.1200 0.0413 0.3649 0.4738 0.1833 0.0017 0.0223 0.7927 0.1857 0.0945 0.2593 0.4604	0.0945	0.2593	0.4604
ĸ	0.1248 0.	.0389 0	0.1248 0.0389 0.3379 0.4984 0.1248 0.0389 0.3379	4 0.1248	0.0389	0.3379	0.4984	0.1200 (0.0413	0.3649	0.4738	0.1833 (0.0017	0.0223	0.7927	0.4984 0.1200 0.0413 0.3649 0.4738 0.1833 0.0017 0.0223 0.7927 0.1857 0.0945 0.2593 0.4604	0.0945	0.2593	0.4604
4	0.1248 0.	.0389 0	0.1248 0.0389 0.3379 0.4984 0.1248 0.0389 0.3379	4 0.1248	0.0389	0.3379	0.4984	0.4984 0.1200 0.0413 0.3649 0.4738 0.1833 0.0017 0.0223 0.7927 0.1857	0.0413	0.3649	0.4738	0.1833 (0.0017	0.0223	0.7927	0.1857	0.0945 0.2593 0.4604	0.2593	0.4604
2	0.1248 0.	.0389 0	0.1248 0.0389 0.3379 0.4984 0.1248 0.0389 0.3379	4 0.1248	0.0389	0.3379	0.4984	0.4984 0.1200 0.0413 0.3649 0.4738 0.1833 0.0017 0.0223 0.7927 0.1857	0.0413	0.3649	0.4738	0.1833 (0.0017	0.0223	0.7927		0.0945 0.2593 0.4604	0.2593	0.4604
9	0.1248 0.	.0389 0	0.1248 0.0389 0.3379 0.4984 0.1248 0.0389 0.3379	4 0.1248	0.0389	0.3379	0.4984	0.1200	0.0413	0.3649	0.4738	0.1833 (0.0017	0.0223	0.7927	0.4984 0.1200 0.0413 0.3649 0.4738 0.1833 0.0017 0.0223 0.7927 0.1857 0.0945 0.2593 0.4604	0.0945	0.2593	0.4604

Residential Electric End Use Load Shape Table - Continued (Fraction of annual energy)

		(20)																		
		End Use 11 - TV	11 - TV		End Use	12- Cool	ling and	Heating	End Use 12- Cooling and Heating End Use 13 - Pool Pump	Use 13 -	· Pool Pu		End Use 14 - EV Charger	Use 14 -	EV Char	ger	End U	se 15 - N	End Use 15 - Miscellaneous	sno
Building Type WON SON SOFF WOFF WON SON SOFF	MON	SON	SOFF	WOFF	MON	SON	SOFF	WOFF	WOFF WON	SON	SOFF	WOFF	WOFF WON SON SOFF WOFF	SON	SOFF	WOFF	F WON	SON	SOFF	WOFF
1	0.1189	0.0472	0.1189 0.0472 0.3447 0.4892 0.1571 0.0275 0.1858	0.4892	0.1571	0.0275	0.1858	0.6297	0.6297 0.0775 0.0555 0.4873 0.3797 0.0941 0.0403 0.3386 0.5270 0.1200 0.0413 0.3649 0.4738	0.0555	0.4873	0.3797	0.0941	0.0403	0.3386	0.5270	0.1200	0.0413	0.3649	0.4738
2	0.1189	0.0472	0.1189 0.0472 0.3447 0.4892 0.1571 0.0275 0.1858	0.4892	0.1571	0.0275	0.1858	0.6297	0.6297 0.0775 0.0555 0.4873 0.3797 0.0941 0.0403 0.3386 0.5270 0.1200 0.0413 0.3649 0.4738	0.0555	0.4873	0.3797	0.0941	0.0403	0.3386	0.5270	0.1200	0.0413	0.3649	0.4738
ĸ	0.1189	0.0472	0.1189 0.0472 0.3447 0.4892 0.1571 0.0275 0.1858	0.4892	0.1571	0.0275	0.1858	0.6297	0.6297 0.0775	0.0555	0.4873	0.3797	0.0941	0.0403	0.3386	0.5270	0.0555 0.4873 0.3797 0.0941 0.0403 0.3386 0.5270 0.1200 0.0413 0.3649 0.4738	0.0413	0.3649	0.4738
4	0.1189	0.0472	0.1189 0.0472 0.3447 0.4892 0.1571 0.0275 0.1858	0.4892	0.1571	0.0275	0.1858	0.6297	0.6297 0.0775	0.0555	0.4873	0.3797	0.0941	0.0403	0.3386	0.0555 0.4873 0.3797 0.0941 0.0403 0.3386 0.5270 0.1200	0.1200	0.0413 0.3649	0.3649	0.4738
2	0.1189	0.0472	0.1189 0.0472 0.3447 0.4892 0.1571 0.0275 0.1858	0.4892	0.1571	0.0275	0.1858	0.6297	0.6297 0.0775 0.0555 0.4873 0.3797 0.0941 0.0403 0.3386 0.5270 0.1200	0.0555	0.4873	0.3797	0.0941	0.0403	0.3386	0.5270	0.1200	0.0413 0.3649		0.4738
9	0.1189	0.0472	0.1189 0.0472 0.3447 0.4892 0.1571 0.0275 0.1858	0.4892	0.1571	0.0275	0.1858	0.6297	0.6297 0.0775 0.0555 0.4873 0.3797 0.0941 0.0403 0.3386 0.5270 0.1200 0.0413 0.3649 0.4738	0.0555	0.4873	0.3797	0.0941	0.0403	0.3386	0.5270	0.1200	0.0413	0.3649	0.4738

Residential Electric End Use Load Shape Table - Continued (Fraction of annual energy)

	3	End Use 16 - House	snoH - 9	e	End	End Use 17 - New Home	- New Ho	ome
Building Type WON	MON	SON	SOFF	SOFF WOFF	WON	SON	SOFF	WOFF
1	0.1068	0.1068 0.0519 0.3934 0.4478 0.1068 0.0519 0.3934 0.4478	0.3934	0.4478	0.1068	0.0519	0.3934	0.4478
2	0.1068	0.1068 0.0519 0.3934 0.4478 0.1068 0.0519 0.3934 0.4478	0.3934	0.4478	0.1068	0.0519	0.3934	0.4478
ĸ	0.1068	0.1068 0.0519 0.3934 0.4478 0.1068 0.0519 0.3934 0.4478	0.3934	0.4478	0.1068	0.0519	0.3934	0.4478
4	0.1068	0.1068 0.0519 0.3934 0.4478 0.1068 0.0519 0.3934 0.4478	0.3934	0.4478	0.1068	0.0519	0.3934	0.4478
2	0.1068	0.1068 0.0519 0.3934 0.4478 0.1068 0.0519 0.3934 0.4478	0.3934	0.4478	0.1068	0.0519	0.3934	0.4478
9	0.1068	0.1068 0.0519 0.3934 0.4478 0.1068 0.0519 0.3934 0.4478	0.3934	0.4478	0.1068	0.0519	0.3934	0.4478

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Residential Electric Peak To Energy Relationship Table (Utility Coincidence) (Ratio of peak kW to average kW)

(Ratio of peak kw to average kw)	KW TO B	verage	KW)																	
	End Use 1 - Space Cooling	se 1 - S	pace Coc	ling	En	d Use 2	End Use 2 - Lighting	lg	End (Use 3 - F	End Use 3 - Refrigeration	ion	山山	าd Use 4	End Use 4 - Freezer	_	End (Jse 5 - W	End Use 5 - Water Heating	ing
Building Type WON SON SOFF WOFF WON SON SOFF	MON	SON	SOFF	WOFF	MON	SON	SOFF	WOFF	WON	SON	SOFF	WOFF	WON	SON	SOFF	WOFF	MON	SON	SOFF	WOFF
1	0.0000 2.2706 4.7860 0.0000 1.4880 1.1368 1.6834 1.8988 0.7542 1.0853 1.2661 0.7777 0.7542 1.0853 1.2661 0.7777 1.5679 1.0804 1.0518 2.4931	.2706	4.7860	0.000.0	1.4880	1.1368	1.6834	1.8988	0.7542	1.0853	1.2661	0.7777	0.7542	1.0853	1.2661	0.7777	1.5279	1.0804	1.0518	2.4931
2	0.0000 2.2706 4.7860 0.0000 1.4880 1.1368 1.6834 1.8988 0.7542 1.0853 1.2661 0.7777 0.7542 1.0853 1.2661 0.7777 1.5279 1.0804	.2706	4.7860	0.000.0	1.4880	1.1368	1.6834	1.8988	0.7542	1.0853	1.2661	0.7777	0.7542	1.0853	1.2661	0.7777	1.5279	1.0804	1.0518 2.4931	2.4931
ю	0.0000 2.2706 4.7860 0.0000 1.4880 1.1368 1.6834 1.8988 0.7542 1.0853 1.2661 0.7777 0.7542 1.0853 1.2661 0.7777 1.5279	.2706	4.7860	0.000.0	1.4880	1.1368	1.6834	1.8988	0.7542	1.0853	1.2661	0.7777	0.7542	1.0853	1.2661	0.7777	1.5279	1.0804	1.0518 2.4931	2.4931
4	0.0000 2.2706 4.7860 0.0000 1.4880 1.1368 1.6834 1.8988 0.7542 1.0853 1.2661 0.7777 0.7542 1.0853 1.2661 0.7777 1.5279	.2706	4.7860	0.000.0	1.4880	1.1368	1.6834	1.8988	0.7542	1.0853	1.2661	0.7777	0.7542	1.0853	1.2661	0.7777	1.5279	1.0804	1.051	3 2.4931
2	0.0000 2.2706 4.7860 0.0000 1.4880 1.1368 1.6834	.2706	4.7860	0.000.0	1.4880	1.1368	1.6834	1.8988	1.8988 0.7542 1.0853 1.2661 0.7777 0.7542 1.0853 1.2661 0.777 1.5279	1.0853	1.2661	0.7777	0.7542	1.0853	1.2661	0.7777	1.5279	1.0804	1.0518	2.4931
9	0.0000 2.2706 4.7860 0.0000 1.4880 1.1368 1.6834 1.8988 0.7542 1.0853 1.2661 0.7777 0.7542 1.0853 1.2661 0.7777 1.5279 1.0804 1.0518 2.4931	.2706	4.7860	0.000.0	1.4880	1.1368	1.6834	1.8988	0.7542	1.0853	1.2661	0.7777	0.7542	1.0853	1.2661	0.7777	1.5279	1.0804	1.0518	2.4931

Residential Electric Peak To Energy Relationship Table (Utility Coincidence) - Continued (Ratio of peak kW to average kW)

Liverio of boar was to ascillage was	2	ı		ŀ												ľ				
End Use 6 - Clothes Washer End Use 7 - Clothes Dryer	te 6 - Clothes Washer End Use 7 -	thes Washer End Use 7 -	sher End Use 7 -	End Use 7 -	lse 7 -	O	lothes Dr	ryer	End	Use 8 -	End Use 8 - Dishwasher		End (Jse 9 - S	End Use 9 - Space Heating	ating	ᇤ	End Use 10 - Cooking	- Cookin	б
Building Type WON SON SOFF WOFF WON SON SOFF	SON SOFF WOFF WON SON	SOFF WOFF WON SON	WOFF WON SON	WON SON	SON			WOFF WON		SON	SOFF	WOFF	MON	SON	SOFF WOFF WON SON SOFF WOFF		WON	SON	SOFF WOFF	WOFF
0.4146 1.1049 0.9458 0.2909 0.4146 1.1049 0.9458 0.2909 0.6068 0.9546 1.4503 0.6954 2.8296 0.0000 0.0000 3.0404 0.9270 0.9365 3.5622 4.2695	1.1049 0.9458 0.2909 0.4146 1.104	7.9458 0.2909 0.4146 1.104	0.2909 0.4146 1.104	0.4146 1.104	1.104	6	0.9458	0.2909	0.6068	0.9546	1.4503	0.6954	2.8296	0.000.0	0.000.0	3.0404	0.9270	0.9365	3.5622	4.2695
$0.4146 \ \ 1.1049 \ \ \ 0.9458 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$	1.1049 0.9458 0.2909 0.4146 1.1049).9458 0.2909 0.4146 1.1049	3.2909 0.4146 1.1049	0.4146 1.1049	1.1049	_	0.9458	0.2909	0.6068	0.9546	1.4503	0.6954	2.8296	0.0000	0.0000	3.0404	0.9270	0.9365	3.5622	4.2695
0.4146 1.1049 0.9458 0.2909 0.4146 1.1049 0.9458 0.2909 0.6068 0.9546 1.4503 0.6954 2.8296 0.0000 0.0000 3.0404 0.9270 0.9365 3.5622	1.1049 0.9458 0.2909 0.4146 1.1049).9458 0.2909 0.4146 1.1049	3.2909 0.4146 1.1049	0.4146 1.1049	1.1049	_	0.9458	0.2909	0.6068	0.9546	1.4503	0.6954	2.8296	0.000.0	0.0000	3.0404	0.9270	0.9365	3.5622	4.2695
0.4146 1.1049 0.9458 0.2909 0.4146 1.1049 0.9458 0.2909 0.6068 0.9546 1.4503 0.6954 2.8296 0.0000 0.0000 3.0404 0.9270	1.1049 0.9458 0.2909 0.4146 1.1049).9458 0.2909 0.4146 1.1049	3.2909 0.4146 1.1049	0.4146 1.1049	1.1049	_	0.9458	0.2909	0.6068	0.9546	1.4503	0.6954	2.8296	0.000.0	0.0000	3.0404	0.9270	0.9365	3.5622	4.2695
0.4146 1.1049 0.9458 0.2909 0.4146 1.1049 0.9458 0.2909 0.6068 0.9546 1.4503 0.6954 2.8296 0.0000 0.0000 3.0404 0.9270 0.9365	1.1049 0.9458 0.2909 0.4146 1.1049	7.9458 0.2909 0.4146 1.1049	0.2909 0.4146 1.1049	0.4146 1.1049	1.104	0	0.9458	0.2909	0.6068	0.9546	1.4503	0.6954	2.8296	0.000.0	0.0000	3.0404	0.9270	0.9365	3.5622 4.2695	4.2695
0.4146 1.1049 0.9458 0.2909 0.4146 1.1049 0.9458 0.2909 0.6068 0.9546 1.4503 0.6954 2.8296 0.0000 3.0404 0.9270 0.9365 3.5622 4.2695	1.1049 0.9458 0.2909 0.4146 1.104	0.9458 0.2909 0.4146 1.104	0.2909 0.4146 1.104	0.4146 1.104	1.104	6	0.9458	0.2909	0.6068	0.9546	1.4503	0.6954	2.8296	0.000	0.000	3.0404	0.9270	0.9365	3.5622	4.2695

Residential Electric Peak To Energy Relationship Table (Utility Coincidence) - Continued (Ratio of peak kW to average kW)

(Senie in an initial in airmin)			/																	
		End Use 11 - TV	11 - TV		End Use 12 - Cooling and Heating	12 - Coo	ling and	Heating	End	Use 13	- Pool Pu	dm	End L	Jse 14 -	End Use 14 - EV Charger	ger	End U	End Use 15 - Miscellaneous	iscellane	snc
Building Type WON SON SOFF WOFF WON SON SOFF	MON	SON	SOFF	WOFF	MON	SON	SOFF	WOFF	MON	SON	SOFF	WOFF	WOFF WON SON SOFF WOFF WON SON SOFF WOFF	SON	SOFF	WOFF	WON SON	SON	SOFF	WOFF
1	0.5673	0.5673 0.8817 1.4350 0.5736 3.4180 1.9516 2.3816	1.4350	0.5736	3.4180	1.9516		3.9706	0.5673	1.1665	0.9130	0.3401	3.9706 0.5673 1.1665 0.9130 0.3401 0.6571 0.1432 1.1202 0.5422 0.6068 0.9546 1.4503 0.6954	0.1432	1.1202	0.5422	0.6068	0.9546	1.4503	0.6954
2	0.5673	0.5673 0.8817 1.4350 0.5736 3.4180 1.9516 2.3816	1.4350	0.5736	3.4180	1.9516		3.9706	0.5673	1.1665	0.9130	0.3401	3.9706 0.5673 1.1665 0.9130 0.3401 0.6571 0.1432 1.1202 0.5422 0.6068 0.9546 1.4503 0.6954	0.1432	1.1202	0.5422	0.6068	0.9546	1.4503	0.6954
٣	0.5673	0.5673 0.8817 1.4350 0.5736 3.4180 1.9516 2.3816	1.4350	0.5736	3.4180	1.9516		3.9706	0.5673	1.1665	0.9130	0.3401	3.9706 0.5673 1.1665 0.9130 0.3401 0.6571 0.1432 1.1202 0.5422 0.6068	0.1432	1.1202	0.5422	0.6068	0.9546 1.4503 0.6954	1.4503	0.6954
4	0.5673	0.5673 0.8817 1.4350 0.5736 3.4180 1.9516 2.3816	1.4350	0.5736	3.4180	1.9516		3.9706	0.5673	1.1665	0.9130	0.3401	3.9706 0.5673 1.1665 0.9130 0.3401 0.6571 0.1432 1.1202 0.5422 0.6068	0.1432	1.1202	0.5422	0.6068	0.9546 1.4503 0.6954	1.4503	0.6954
2	0.5673	0.5673 0.8817 1.4350 0.5736 3.4180 1.9516 2.3816	1.4350	0.5736	3.4180	1.9516		3.9706	0.5673	1.1665	0.9130	0.3401	3.9706 0.5673 1.1665 0.9130 0.3401 0.6571 0.1432 1.1202 0.5422 0.6068	0.1432	1.1202	0.5422	0.6068	0.9546 1.4503 0.6954	1.4503	0.6954
ď	0 5673	0 5673 0 8817 1 4350 0 5736 3 4180 1 9516 2 3816	1 4350	0 5736	3 4180	1 0516		3 9706	0 5673	1 1665	0 0130	0 3401	3 0706 0 5673 11665 0 0130 0 3401 0 6571 0 1432 11202 0 5422 0 0646 1 4503 0 6054	1432	1 1 2 0 2	0.5422	0 6068	0.0546	1 4503	0 6954

Residential Electric Peak To Energy Relationship Table (Utility Coincidence) - Continued

(Ratio of peak kW to average kW)

	ΨĪ	End Use 16 - House	e - Hous	a)	End	End Use 17 - New Home	- New Ho	ome
Building Type	MON	SON	SOFF	WOFF	MON	SON	SOFF	WOFF
П	1,6626	1.6626 1.5904 2.1955 1.8433 1.6626 1.5904 2.1955 1.8433	2,1955	1.8433	1,6626	1.5904	2,1955	1.8433

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			-				
1.6626 1.5904 2.1955 1.8433 1.6626 1.5904 2.1955	.5904	2.1955	1.8433	1.6626	1.5904	2.1955	1.8433
1.6626 1.5904 2.1955 1.8433 1.6626 1.5904 2.1955	.5904	2.1955	1.8433	1.6626	1.5904	2.1955	1.8433
1.6626 1.5904 2.1955 1.8433 1.6626 1.5904 2.1955	5904	2.1955	1.8433	1.6626	1.5904	2.1955	1.8433
1.6626 1.5904 2.1955 1.8433 1.6626 1.5904 2.1955	5904	2.1955	1.8433	1.6626	1.5904	2.1955	1.8433
1.6626 1.5904 2.1955 1.8433 1.6626 1.5904 2.1955 1.8433	5904	2.1955	1.8433	1.6626	1.5904	2.1955	1.8433

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Commercial Electric Building Stock Table Square Feet

										0.00				
										Non-	Religious			
	Office	Restaurant	Retail	Grocery	Warehouse	Education	Health	Lodging	Data Centers .	Jurisdictional	Worship	Misc	Industrial	Agricultural
	Building Type	uilding Type Building Type Bu	Building Type		Building Type		Building Type Building Type Building Type Bu	Building Type	Building Type	Building Type	Building Type B	Building Type	Building Type	Building Type Building Type Building Type
Segment		2	m	Building Type 4	2	Building Type 6	7	8	6	10	11	12	13	14
VA Existing	536,027,192	56,901,365	204,917,278	536,027,192 56,901,365 204,917,278 42,980,968 178,574,784 268,940,637 168,657,870 360,070,390	178,574,784	268,940,637	168,657,870	360,070,390	5,891,485	5,891,485 409,556,726	553,904,824 809,005,414 136,901,213 247,430,755	809,005,414	136,901,213	247,430,755
Opt-Outs	0	0	0	0	0	3,201,098	0	0	10,268,532	0	0	0	4715879.136	0
VA New	16,328,574	1,733,341	6,242,234	1,309,295	5,439,783	8,192,527	5,137,692	10,968,541	179,468	12,476,004	16,873,166	24,644,095	4,170,314	7,537,288
Opt-Out New	0	0	0	0	0	97,513	0	0	312,802	0	0	0	143,656	0



Commercial Electric End Use Load Shape Table (Fraction of annual energy)

	End L	End Use 1 - Indoor Ligl	door Ligh	ting	End Use	se 2 - Ou	ıtdoor Liç	ghting	ш	ind Use 3	- Cooling	д	End	I Use 4 -	Ventilation	u u
Building Type	MON	SON	SOFF	WOFF	MON	SON	SOFF	WOFF	WON	SON	SOFF	WOFF	WON	SON	SOFF	WOFF
Office	0.135	0.056	0.365	0.444	0.105	0.016	0.372	0.507	0.012	0.182	0.742	0.063	0.115	0.068	0.386	0.431
Restaurant	0.135	0.056	0.365	0.444	0.105	0.016	0.372	0.507	0.012	0.182	0.742	0.063	0.115	0.068	0.386	0.431
Retail	0.135	0.056	0.365	0.444	0.105	0.016	0.372	0.507	0.012	0.182	0.742	0.063	0.115	0.068	0.386	0.431
Grocery	0.135	0.056	0.365	0.444	0.105	0.016	0.372	0.507	0.012	0.182	0.742	0.063	0.115	0.068	0.386	0.431
Warehouse	0.135	0.056	0.365	0.444	0.105	0.016	0.372	0.507	0.012	0.182	0.742	0.063	0.115	0.068	0.386	0.431
Education	0.135	0.056	0.365	0.444	0.105	0.016	0.372	0.507	0.012	0.182	0.742	0.063	0.115	0.068	0.386	0.431
Health	0.135	0.056	0.365	0.444	0.105	0.016	0.372	0.507	0.012	0.182	0.742	0.063	0.115	0.068	0.386	0.431
Lodging	0.135	0.056	0.365	0.444	0.105	0.016	0.372	0.507	0.012	0.182	0.742	0.063	0.115	0.068	0.386	0.431
Data Centers	0.135	0.056	0.365	0.444	0.105	0.016	0.372	0.507	0.012	0.182	0.742	0.063	0.115	0.068	0.386	0.431
Non-Jurisdictiona	0.135	0.056	0.365	0.444	0.105	0.016	0.372	0.507	0.012	0.182	0.742	0.063	0.115	0.068	0.386	0.431
Religious Worship	0.135	0.056	0.365	0.444	0.105	0.016	0.372	0.507	0.012	0.182	0.742	0.063	0.115	0.068	0.386	0.431
Misc	0.135	0.056	0.365	0.444	0.105	0.016	0.372	0.507	0.012	0.182	0.742	0.063	0.115	0.068	0.386	0.431
Industrial	0.135	0.056	0.365	0.444	0.105	0.016	0.372	0.507	0.012	0.182	0.742	0.063	0.115	0.068	0.386	0.431
Agricultural	0.135	0.056	0.365	0.444	0.105	0.016	0.372	0.507	0.012	0.182	0.742	0.063	0.115	0.068	0.386	0.431

Commercial Electric End Use Load Shape Table - Continued (Fraction of annual energy)

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ng	WOFF	0.462	0.462	0.462	0.462	0.462	0.462	0.462	0.462	0.462	0.462	0.462	0.462	0.462	0.462
- Vending	SOFF	0.373	0.373	0.373	0.373	0.373	0.373	0.373	0.373	0.373	0.373	0.373	0.373	0.373	0.373
End Use 8 - 1	SON	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046
3	MON	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120
ating	WOFF	0.484	0.484	0.484	0.484	0.484	0.484	0.484	0.484	0.484	0.484	0.484	0.484	0.484	0.484
End Use 7 - Water Heating	SOFF	0.350	0.350	0.350	0.350	0.350	0.350	0.350	0.350	0.350	0.350	0.350	0.350	0.350	0.350
Use 7 - V	SON	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
End	MON	0.122	0.122	0.122	0.122	0.122	0.122	0.122	0.122	0.122	0.122	0.122	0.122	0.122	0.122
pment	WOFF	0.470	0.470	0.470	0.470	0.470	0.470	0.470	0.470	0.470	0.470	0.470	0.470	0.470	0.470
	SOFF	0.380	0.380	0.380	0.380	0.380	0.380	0.380	0.380	0.380	0.380	0.380	0.380	0.380	0.380
End Use 6 - Office Equ	SON	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040
End U	MON	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110
ion	WOFF	0.468	0.468	0.468	0.468	0.468	0.468	0.468	0.468	0.468	0.468	0.468	0.468	0.468	0.468
efrigerat	SOFF	0.392	0.392	0.392	0.392	0.392	0.392	0.392	0.392	0.392	0.392	0.392	0.392	0.392	0.392
End Use 5 - Refrigeration	SON	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040
End	MON	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100
	Building Type	Office	Restaurant	Retail	Grocery	Warehouse	Education	Health	Lodging	Data Centers	Non-Jurisdictiona	Religious Worship	Misc	Industrial	Agricultural

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Commercial Electric End Use Load Shape Table - Continued (Fraction of annual energy)

	Ш	- 6 əs∩ p	- Cooking	6	En	d Use 10	- Heatir	gu	End Use 1	se 11 - C	ompress	ed Air	E	End Use 12	: - Proces	55
Ilding Type	MON	SON	SOFF	WOFF	MON	SON	SOFF	WOFF	MON	SON	SOFF	WOFF	MON	SON	SOFF	WOFF
9.	0.123	0.057	0.363	0.457	0.234	0.002	0.022	0.742	0.117	0.044	0.374	0.465	0.117	0.044	0.374	0.465
aurant	0.123	0.057	0.363	0.457	0.234	0.002	0.022	0.742	0.117	0.044	0.374	0.465	0.117	0.044	0.374	0.465
ie.	0.123	0.057	0.363	0.457	0.234	0.002	0.022	0.742	0.117	0.044	0.374	0.465	0.117	0.044	0.374	0.465
Grocery	0.123	0.057	0.363	0.457	0.234	0.002	0.022	0.742	0.117	0.044	0.374	0.465	0.117	0.044	0.374	0.465
/arehouse	0.123	0.057	0.363	0.457	0.234	0.002	0.022	0.742	0.117	0.044	0.374	0.465	0.117	0.044	0.374	0.465
Education	0.123	0.057	0.363	0.457	0.234	0.002	0.022	0.742	0.117	0.044	0.374	0.465	0.117	0.044	0.374	0.465
Ith	0.123	0.057	0.363	0.457	0.234	0.002	0.022	0.742	0.117	0.044	0.374	0.465	0.117	0.044	0.374	0.465
ging	0.123	0.057	0.363	0.457	0.234	0.002	0.022	0.742	0.117	0.044	0.374	0.465	0.117	0.044	0.374	0.465
ata Centers	0.123	0.057	0.363	0.457	0.234	0.002	0.022	0.742	0.117	0.044	0.374	0.465	0.117	0.044	0.374	0.465
-Jurisdictiona	0.123	0.057	0.363	0.457	0.234	0.002	0.022	0.742	0.117	0.044	0.374	0.465	0.117	0.044	0.374	0.465
gious Worship	0.123	0.057	0.363	0.457	0.234	0.002	0.022	0.742	0.117	0.044	0.374	0.465	0.117	0.044	0.374	0.465
lisc	0.123	0.057	0.363	0.457	0.234	0.002	0.022	0.742	0.117	0.044	0.374	0.465	0.117	0.044	0.374	0.465
ıstrial	0.123	0.057	0.363	0.457	0.234	0.002	0.022	0.742	0.117	0.044	0.374	0.465	0.117	0.044	0.374	0.465
icultural	0.123	0.057	0.363	0.457	0.234	0.002	0.022	0.742	0.117	0.044	0.374	0.465	0.117	0.044	0.374	0.465

Commercial Electric End Use Load Shape Table - Continued (Fraction of annual energy)

		, מאלי														
	Ē	End Use 13 - Motors	3 - Motor	S	End L	End Use 14 - I	Miscellaneous	snoar	End U	End Use 15 -Whole Buil	/hole Bui	lding	End Use	e 16 -New	_	Construction
Building Type	MON	SON	SOFF	WOFF	MON	SON	SOFF	WOFF	MON	SON	SOFF	WOFF	MON	SON	SOFF	WOFF
Office	0.122	0.046	0.380	0.452	0.120	0.046	0.373	0.462	0.104	0.051	0.385	0.460	0.104	0.051	0.385	0.460
Restaurant	0.122	0.046	0.380	0.452	0.120	0.046	0.373	0.462	0.104	0.051	0.385	0.460	0.104	0.051	0.385	0.460
Retail	0.122	0.046	0.380	0.452	0.120	0.046	0.373	0.462	0.104	0.051	0.385	0.460	0.104	0.051	0.385	0.460
Grocery	0.122	0.046	0.380	0.452	0.120	0.046	0.373	0.462	0.104	0.051	0.385	0.460	0.104	0.051	0.385	0.460
Warehouse	0.122	0.046	0.380	0.452	0.120	0.046	0.373	0.462	0.104	0.051	0.385	0.460	0.104	0.051	0.385	0.460
Education	0.122	0.046	0.380	0.452	0.120	0.046	0.373	0.462	0.104	0.051	0.385	0.460	0.104	0.051	0.385	0.460
Health	0.122	0.046	0.380	0.452	0.120	0.046	0.373	0.462	0.104	0.051	0.385	0.460	0.104	0.051	0.385	0.460
Lodging	0.122	0.046	0.380	0.452	0.120	0.046	0.373	0.462	0.104	0.051	0.385	0.460	0.104	0.051	0.385	0.460
Data Centers	0.122	0.046	0.380	0.452	0.120	0.046	0.373	0.462	0.104	0.051	0.385	0.460	0.104	0.051	0.385	0.460
Non-Jurisdictiona	0.122	0.046	0.380	0.452	0.120	0.046	0.373	0.462	0.104	0.051	0.385	0.460	0.104	0.051	0.385	0.460
Religious Worship	0.122	0.046	0.380	0.452	0.120	0.046	0.373	0.462	0.104	0.051	0.385	0.460	0.104	0.051	0.385	0.460
Misc	0.122	0.046	0.380	0.452	0.120	0.046	0.373	0.462	0.104	0.051	0.385	0.460	0.104	0.051	0.385	0.460
Industrial	0.122	0.046	0.380	0.452	0.120	0.046	0.373	0.462	0.104	0.051	0.385	0.460	0.104	0.051	0.385	0.460
Agricultural	0.122	0.046	0.380	0.452	0.120	0.046	0.373	0.462	0.104	0.051	0.385	0.460	0.104	0.051	0.385	0.460

Commercial Electric Peak To Energy Relationship Table (Utility Coincidence)



(Ratio of peak kW to average kW)

	End Use		1 - Indoor Ligh	ting	End U	Jse 2 - Ou	Itdoor Lig	ghting	Ш	End Use 3	- Cooling	g	End	End Use 4 - \	Ventilation	uo
Building Type	WON	SON	SOFF	WOFF	MON	SON	SOFF	WOFF	MON	SON	SOFF	WOFF	MON	SON	SOFF	WOFF
Office	1.724	1.263	2.566	2.662	1.211	1.000	1.117	1.559	000'0	2.227	1.517	0.000	0.926	1.294	1.135	1.043
Restaurant	1.724	1.263	2.566	2.662	1.211	1.000	1.117	1.559	0.000	2.227	1.517	0.000	0.926	1.294	1.135	1.043
Retail	1.724	1.263	2.566	2.662	1.211	1.000	1.117	1.559	0.000	2.227	1.517	0.000	0.926	1.294	1.135	1.043
Grocery	1.724	1.263	2.566	2.662	1.211	1.000	1.117	1.559	0.000	2.227	1.517	0.000	0.926	1.294	1.135	1.043
Warehouse	1.724	1.263	2.566	2.662	1.211	1.000	1.117	1.559	0.000	2.227	1.517	0.000	0.926	1.294	1.135	1.043
Education	1.724	1.263	2.566	2.662	1.211	1.000	1.117	1.559	0.000	2.227	1.517	0.000	0.926	1.294	1.135	1.043
Health	1.724	1.263	2.566	2.662	1.211	1.000	1.117	1.559	0.000	2.227	1.517	0.000	0.926	1.294	1.135	1.043
Lodging	1.724	1.263	2.566	2.662	1.211	1.000	1.117	1.559	0.000	2.227	1.517	0.000	0.926	1.294	1.135	1.043
Data Centers	1.724	1.263	2.566	2.662	1.211	1.000	1.117	1.559	0.000	2.227	1.517	0.000	0.926	1.294	1.135	1.043
Non-Jurisdictiona	1.724	1.263	2.566	2.662	1.211	1.000	1.117	1.559	0.000	2.227	1.517	0.000	0.926	1.294	1.135	1.043
Religious Worship	1.724	1.263	2.566	2,662	1.211	1.000	1.117	1.559	0.000	2.227	1.517	0.000	0.926	1.294	1.135	1.043
Misc	1.724	1.263	2.566	2.662	1.211	1.000	1.117	1.559	0.000	2.227	1.517	0.000	0.926	1.294	1.135	1.043
Industrial	1.724	1.263	2.566	2,662	1.211	1.000	1.117	1.559	0.000	2.227	1.517	0.000	0.926	1.294	1.135	1.043
Agricultural	1.724	1.263	2.566	2.662	1.211	1.000	1.117	1.559	0.000	2.227	1.517	0.000	0.926	1.294	1.135	1.043

Commercial Electric Peak To Energy Relationship Table (Utility Coincidence) - Continued (Ratio of peak kW to average kW)

(Ratio of peak kw to average kw	K KW LL	מאבום	ye kw													
	End	End Use 5 - Refrigeration	Refrigerat	ion:	End Us	se 6 - Ofi	End Use 6 - Office Equipment	oment	End (Use 7 - Water Heating	Vater Hea	ating	Ē	End Use 8 - Vending	- Vendin	6
Building Type	WON	SON	SOFF	WOFF	WON	SON	SOFF	WOFF	MON	SON	SOFF	WOFF	WON	SON	SOFF	WOFF
Office	0.947	1.026	1.043	0.950	0.970	1.145	0.848	806.0	0.858	1.076	966.0	0.807	0.845	1.113	1.023	0.810
Restaurant	0.947	1.026	1.043	0.950	0.970	1.145	0.848	806.0	0.858	1.076	966.0	0.807	0.845	1.113	1.023	0.810
Retail	0.947	1.026	1.043	0.950	0.970	1.145	0.848	0.908	0.858	1.076	966.0	0.807	0.845	1.113	1.023	0.810
Grocery	0.947	1.026	1.043	0.950	0.970	1.145	0.848	0.908	0.858	1.076	966.0	0.807	0.845	1.113	1.023	0.810
Warehouse	0.947	1.026	1.043	0.950	0.970	1.145	0.848	0.908	0.858	1.076	966.0	0.807	0.845	1.113	1.023	0.810
Education	0.947	1.026	1.043	0.950	0.970	1.145	0.848	806.0	0.858	1.076	966.0	0.807	0.845	1.113	1.023	0.810
Health	0.947	1.026	1.043	0.950	0.970	1.145	0.848	806.0	0.858	1.076	966.0	0.807	0.845	1.113	1.023	0.810
Lodging	0.947	1.026	1.043	0.950	0.970	1.145	0.848	0.908	0.858	1.076	966.0	0.807	0.845	1.113	1.023	0.810
Data Centers	0.947	1.026	1.043	0.950	0.970	1.145	0.848	806.0	0.858	1.076	966.0	0.807	0.845	1.113	1.023	0.810
Non-Jurisdictiona	0.947	1.026	1.043	0.950	0.970	1.145	0.848	806.0	0.858	1.076	966.0	0.807	0.845	1.113	1.023	0.810
Religious Worship	0.947	1.026	1.043	0.950	0.970	1.145	0.848	0.908	0.858	1.076	966.0	0.807	0.845	1.113	1.023	0.810
Misc	0.947	1.026	1.043	0.950	0.970	1.145	0.848	806'0	0.858	1.076	966.0	0.807	0.845	1.113	1.023	0.810
Industrial	0.947	1.026	1.043	0.950	0.970	1.145	0.848	806.0	0.858	1.076	966.0	0.807	0.845	1.113	1.023	0.810
Agricultural	0.947	1.026	1.043	0.950	0.970	1.145	0.848	0.908	0.858	1.076	966.0	0.807	0.845	1.113	1.023	0.810

Commercial Electric Peak To Energy Relationship Table (Utility Coincidence) - Continued (Ratio of peak kW to average kW)

		End Use 9	- Cooking	g	Б	d Use 10	۱ - Heatir) Bu	End Us	ie 11 - C	ompress	ed Air	E	d Use 12	2 - Proce	SS
Building Typ	WON	SON	SOFF	WOFF	MON	SON	SOFF	WOFF	MON	SON	SOFF	WOFF	MON	SON	SOFF	WOFF
Office	909'0	0.975	1.571	0.559	2.411	0.000	0.000	2.868	0.882	1.084	1.075	0.932	0.882	1.084	1.075	0.932
lestaurant	0.606	0.975	1.571	0.559	2.411	0.000	0.000	2.868	0.882	1.084	1.075	0.932	0.882	1.084	1.075	0.932

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	909.0	0.975	1.571	0.559	2.411	0.000	0.000	2.868	0.882	1.084	1.075	0.932	0.882	1.084	1.075	0.932
	909.0	0.975	1.571	0.559	2.411	0.000	0.000	2.868	0.882	1.084	1.075	0.932	0.882	1.084	1.075	0.932
	909.0	0.975	1.571	0.559	2.411	0.000	0.000	2.868	0.882	1.084	1.075	0.932	0.882	1.084	1.075	0.932
	909.0	0.975	1.571	0.559	2.411	0.000	0.000	2.868	0.882	1.084	1.075	0.932	0.882	1.084	1.075	0.932
	909.0	0.975	1.571	0.559	2.411	0.000	0.000	2.868	0.882	1.084	1.075	0.932	0.882	1.084	1.075	0.932
	909.0	0.975	1.571	0.559	2.411	0.000	0.000	2.868	0.882	1.084	1.075	0.932	0.882	1.084	1.075	0.932
Oata Centers	909.0	0.975	1.571	0.559	2.411	0.000	0.000	2.868	0.882	1.084	1.075	0.932	0.882	1.084	1.075	0.932
ictiona	909.0	0.975	1.571	0.559	2.411	0.000	0.000	2.868	0.882	1.084	1.075	0.932	0.882	1.084	1.075	0.932
Vorship	909.0	0.975	1.571	0.559	2.411	0.000	0.000	2.868	0.882	1.084	1.075	0.932	0.882	1.084	1.075	0.932
	909.0	0.975	1.571	0.559	2.411	0.000	0.000	2.868	0.882	1.084	1.075	0.932	0.882	1.084	1.075	0.932
	909.0	0.975	1.571	0.559	2.411	0.000	0.000	2.868	0.882	1.084	1.075	0.932	0.882	1.084	1.075	0.932
_	909.0	0.975	1.571	0.559	2.411	0.000	0.000	2.868	0.882	1.084	1.075	0.932	0.882	1.084	1.075	0.932

Commercial Electric Peak To Energy Relationship Table (Utility Coincidence) (Ratio of peak kW to average kW)

(Katio or pea	peak kw to average kw	מאפוס	ye Kw,													
	E	End Use 13	13 - Motors	2	End L	End Use 14 -	Miscellaneous	snoar	End U	End Use 15 - V	Whole Bui	ilding	End Use	_	15 - New Construction	ruction.
Building Type	MON	SON	SOFF	WOFF	WON	SON	SOFF	WOFF	WON	SON	SOFF	WOFF	WON	SON	SOFF	WOFF
Office	0.881	1.149	0.953	0.835	0.845	1.113	1.023	0.810	1.363	1.342	1.533	1.441	1.363	1.342	1.533	1.441
Restaurant	0.881	1.149	0.953	0.835	0.845	1.113	1.023	0.810	1.363	1.342	1.533	1.441	1.363	1.342	1.533	1.441
Retail	0.881	1.149	0.953	0.835	0.845	1.113	1.023	0.810	1.363	1.342	1.533	1.441	1.363	1.342	1.533	1.441
Grocery	0.881	1.149	0.953	0.835	0.845	1.113	1.023	0.810	1.363	1.342	1.533	1.441	1.363	1.342	1.533	1.441
Warehouse	0.881	1.149	0.953	0.835	0.845	1.113	1.023	0.810	1.363	1.342	1.533	1.441	1.363	1.342	1.533	1.441
School	0.881	1.149	0.953	0.835	0.845	1.113	1.023	0.810	1.363	1.342	1.533	1.441	1.363	1.342	1.533	1.441
Health	0.881	1.149	0.953	0.835	0.845	1.113	1.023	0.810	1.363	1.342	1.533	1.441	1.363	1.342	1.533	1.441
Lodging	0.881	1.149	0.953	0.835	0.845	1.113	1.023	0.810	1.363	1.342	1.533	1.441	1.363	1.342	1.533	1.441
Data Centers	0.881	1.149	0.953	0.835	0.845	1.113	1.023	0.810	1.363	1.342	1.533	1.441	1.363	1.342	1.533	1.441
Non-Jurisdictiona	0.881	1.149	0.953	0.835	0.845	1.113	1.023	0.810	1.363	1.342	1.533	1.441	1.363	1.342	1.533	1.441
Religious Worship	0.881	1.149	0.953	0.835	0.845	1.113	1.023	0.810	1.363	1.342	1.533	1.441	1.363	1.342	1.533	1.441
Misc	0.881	1.149	0.953	0.835	0.845	1.113	1.023	0.810	1.363	1.342	1.533	1.441	1.363	1.342	1.533	1.441
Industrial	0.881	1.149	0.953	0.835	0.845	1.113	1.023	0.810	1.363	1.342	1.533	1.441	1.363	1.342	1.533	1.441
Agricultural	0.881	1.149	0.953	0.835	0.845	1.113	1.023	0.810	1.363	1.342	1.533	1.441	1.363	1.342	1.533	1.441

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E. MEASURE INPUTS

APPENDIX E



Commercial Elec	Commercial Electric Measure Inputs	BASE TECHNOLOGY EUI	LOGY EUIS										
		dnar	rant	ii	ery	esnou	ation	£	ing Data	enters	sdictional	Worship	Misc
Segment	Measure Description	Building Typiui	e ini	Ξ.		ing Type uilding	-1	Ĥ		Ţ,	ng Type 10 Building	Type 1	ig Type 1
VA Existing	1000 Base Linear Lighting, Fluorescent Fixture, 2L41112	5. 5	2.2	% c	2.2.5	1.7	 	 	2.7	ر ت ت	ر: دن م	2.2	7.7
VA Existing	1000 base Linear Lighting Fluctescent Fixture, 2L4 F12, integrated market 1100 Rase Linear Lichting Fluctescent Fixture 214T8 1 FR	. t	- 6	2.0 2.4		. t	. t	о с о п	- 6	. L	C. 4	2.2	. .
VA Existing		1.2	6.1	2.4		<u> </u>	1.2	3 3	6.1	1.7	4.	2:0	<u>t</u>
VA Existing	1200 Base Linear Lighting, LED Tube, 2 lamp fixture	9.0	1.0	1.3		0.8	9.0	1.8		6.0	0.7	1.0	0.8
VA Existing	1225 Base Linear Lighting, LED Tube, 2 lamp fixture, 2028 Standard	9.0	1.0	1.3	1.0	8.0	9.0	1.8	1.0	6.0	0.7	1.0	8.0
VA Existing	Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market	9.0	1.0	5.7	1.0	0.8	9.0	∞.	0.5	6.0	0.7	1.0	0.8
VA Existing		9.0	0.5	 	0.0	80. C	9.0	 ∞. α	0.6	9. C	0.7	0.1	8. G
VA Existing	1350 Date General Service Screw-in, CFL	บ. 4	0.5	7 : 6	4. C	0.0	0.0	S . C	ب. د. د	2.3	0.7	0.7	9.5
VA Existing		0.4	t C	0.00	0.3	0.0	0.0	0.6	0 0	. 1.	0.5	0.5	0.4
VA Existing		1.0	0.3	0.8	0.3	0.0	0.0	9:0	0.9	5.5	0.5	0.5	0.4
VA Existing		2.6	4.3	5.8	4.4	3.5	2.7	7.8	4.2	3.8	3.1	4.4	3.4
VA Existing	1500 Base High Bay Lighting, Fluorescent T5	1.2	0.0	6.3	2.6	1.0	1.3	7.2	2.1	9.0	0.7	0.8	9.0
VA Existing	1525 Base High Bay Lighting, Fluorescent T5, integrated market	1.2	0.0	6.3	2.6	1.0	1.3	7.2	2.1	9.0	0.7	8.0	9.0
VA Existing	1550 Base High Bay Lighting, HID lighting	4.1	0.0	7.2	3.0	1.2	1.6	8.3	2.5	0.7	8.0	6.0	0.7
VA Existing		0.5	0.0	2.5	1.0	0.4	0.5	2.8	8.0	0.2	0.3	0.3	0.2
VA Existing	1600 Base CFL Exit Sign	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0:0	0.0	0.0
VA Existing		4.5 0.0	3.1	3.0	5.1	6.0	2.2	2.7	9.1	2.5	3.4	2.4	4.6
VA Existing	1750 Boog Coneral Service Screw-in, Outdoor CFL	5.0	7.0	7.0	4. +	- c	7.0	0.7	- 6	7.0	0.7	0.7	7.0
VA Existing		0.0		9.0		V C		9.0	5.0	c	0.0	c	
VA Existing	1850 Base Linear Lighting. Outdoor Fluorescent Tube	0.6	0.4	- 6	0.7	0.0	0.3	0.3	0.2	0.3	0.4	- 6	0.4 4.0
VA Existing		0.4	0.2	0.2	0.4	0.1	0.2	0.5	0.1	0.2	0.3	0.2	0.3
VA Existing		1.1	1.8	1.8	1.5	1.1	1.0	1.8	4.1	31.3	1.1	0.5	0.7
VA Existing		2.6	2.9	3.5	2.7	5.4	1.5	3.0	8.3	62.4	2.5	9.0	1.5
VA Existing		2.6	2.9	3.5	2.7	5.4	1.5	3.0	8.3	62.4	2.5	9.0	1.5
VA Existing		2.4	2.7	3.2	4.2.4	6.4 0.0	4. 4	2.8	7.6	28.6	2.3	9.0	4.
VA Existing	2300 Base Split-System AC, SEER 14.5, <5.4 tons	1.9	2.1	2.5	1.9	0. v	- ;	2.2	0.0	22.5	8. .	0.5	Ξ,
VA Existing	2400 base PTAC cooling, EEK=10.2, 1 ton 2500 Base Boom AC CEEB 10.0	7.0 0.0	2.9	3.5 4.5	2.b 1.3	4. ა ა ი	7. 0	0.5	ດິດ	30.9	4.2	0. C	- C
VA Existing		2. 1	- ~	, c	5 7	5. 6.	9 -	<u> </u>	2 2	39.4	5 6	. 4	5 -
VA Existing		0.0	-	0.0	. 22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
VA Existing		0.1	5.4	9.0	8.8	0.1	0.3	0.1	0.4	0.0	0.1	0.1	0.1
VA Existing		0.0	30.5	0.3	40.9	1.1	0.0	0.0	0.2	0.0	0.1	0.0	0.2
VA Existing	Base	0.0	10.2	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
VA Existing		0.2	4.5	8.9	9.1	0.3	0.5	1.0	9.0	0.2	0.4	0.4	0.3
VA Existing		0.2	5.9	2.1	10.7	0.2	0.4	0.4	0.5	9.4	0.3	0.4	0.3
VA Existing	Base	0.0	α ∞ ι	0.0	0.3	0.1	0.0	1.0	0.1	0.0	0.1	0.1	0.5
VA Existing	3800 Base Residential-Type Refrigerator/Freezer, Federal Standard	5.0	0.5	- c	9.6	- o	- o	- 6	4. 5	0.0	0.0	- c	- 6
VA Existing		0.0	0.3	0.0	- 0	0.0	2.5	0.0	- 0	49.4	0.0	0 0	0 8
VA Existing		0.3	0.1	0.1	0.1	0.1	0.3	0.2	0.0	0.0	0:0	0.1	0.1
VA Existing		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
VA Existing		0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
VA Existing	4400 Base Imaging 5000 Base Water Heater Besistance Heater Standard Standby Mattane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 8	0.0	0.0
VA Existing		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	- 0	0.0
VA Existing		0.0	0:0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
VA Existing		0.1	4.0	0.8	5.6	0.0	0.3	3.2	1.0	4.	0.1	0.5	0.2
VA Existing		0.7	2.1	9.0	0.7	0.1	0.5	2.2	0.1	9.0	4.0	0.5	0.5
VA Existing	6400 Base Flyer	0.7	2.5 0.0	0.3	2. 6	2.0	0.7	4. c	7.0	0 ر ج ر	4	0. C 4 %	4.0
VA Existing		0.2	2.0	0.7	5. 1 .	0.0	0.1	0.9	0.5	0.3	0.0	0.2	.0
VA Existing		1.8	2.1	0.9	0.7	0.1	0.1	1.2	0.1	6.0	9.0	0.2	0.2
VA Existing	7000 Base Electric Boiler, Federal Standard	3.2	T :	6.4	0.0	න ල	5.5	4.6	25.4	92.4	1.4	6.0	
VA EXISCIIIG		3.5	<u>†</u>				0.0	4 0	43.4	4.76	-	n Ö	0.0

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Tugan Sa	9	Maserro # Maserro Dacrrittion	First	Last Savings	Cost	Unit Unit Equipment Labor		Lifetime Implementation Type Incr. = 0 OR M Cost RETOr Initial One Fartor POR Coet	= 0 ial Replace Service	Cull Cult	ergy Reduction Factors	Factors SON	11	75 CV
VA Existing	Indoor Lighting	1000 Base Linear Lighting, Fluorescent Fixture, 2L4T12 1001 High Bafformanne Lighting BIB - Combined Strategies (Base T12)	2024	2028 sqft	fixture	ı		0 ROB	1 1 18	18 0	1.1	1.1	0.939	0.939
VA Existing	Indoor Lighting	1002 ROB 2L4' LED Tube (Base T12)	2024	2028 sqft	fixture	50.	7-	20 ROB	1 1 500		1.1	1.1	0.939	0.939
VA Existing	Indoor Lighting	1003 LED Troffer (Base T12)	2024	2028 sqft	fixture		15 -7.4269	90 RET	1 500		Ξ;	Ξ;	0.939	0.939
VA Existing	Indoor Lighting	1004 LED Honel with lamp lemoval (1.1z) 1005 Lighting Control Tuneup (Base T12)	2024	2028 sqft	saft		0.0144	0.0144 RET		6 0.0144	0.5	0.5	1.307	1.307
VA Existing	Indoor Lighting	1006 Network Lighting Controls (Base T12)	2024	2028 sqft	soft	1.8225	0	1.8225 RET			0.5	0.5	1.307	1.307
VA Existing	Indoor Lighting Indoor Lighting	1007 Occupancy Sensor (Base 112) 1050 Base Linear Lighting Fluorescent Fixture, 2L4T12, integraled market	2024	2028 sqft	sqrt	0.3227		0.3227 REI 0 ROB			0.25	0.25	1.46	1.46
VA Existing	Indoor Lighting	1051 RET Occ & Daylight Integral Sensor LED troffer (base T12 integrated)	2024	2028 sqft	fixture	100		100 RET		100	0.75	0.75	1.153	1.153
VA Existing	Indoor Lighting	1100 Base Linear Lighting, Fluorescent Fixture, 2L4T8, 1 EB 1101 High Performance Lighting R/R - Combined Strategies (Base T8)	2024	2028 sqft 2028 sqft	fixture	0.0		0 ROB			- 80	- 80	1.123	1.123
VA Existing	Indoor Lighting	1102 ROB 2L4 LED Tube (Base T8)	2024	2028 sqft	fixture	20	-7	20 ROB	1 1 500		; -	; -	0.939	0.939
VA Existing	Indoor Lighting	1103 LED Troffer (Base T8)	2024	2028 sqft	fixture		15 -7.4269	90 RET	1 1 500		= =	= =	0.939	0.939
VA Existing	Indoor Lighting	1105 Lighting Control Tuneup (Base T8)	2024	2028 sqft	sqft		0.0144	0.0144 RET			0.5	0.5	1.307	1.307
VA Existing	Indoor Lighting	1106 Network Lighting Controls (Base T8)	2024	2028 sqft	sqft	1.8225	0	1.8225 RET		9 1.8225	0.5	0.5	1.307	1.307
VA Existing	Indoor Lighting	1107 Occupancy Sensor (Base 18) 1150 Base Linear Lighting, Fluorescent Fixture, 2L4T8, 1 EB, integrated market	2024	2028 sqft	Sqrt	0.3227		0.3227 REI 0 ROB		10 0.322/ 18 0	67.0	57.0	0. 1.46	1.46
VA Existing	Indoor Lighting	1151 RET Occ & Daylight Integral Sensor LED troffer (base T8 integrated)	2024		fixture	100		100 RET		18 100	0.75	0.75	1.153	1.153
VA Existing	Indoor Lighting	1200 Base Linear Lighting, LED Tube, 2 lamp fixture	2024	2028 sqft	fixture	00		0 ROB		18	- α	- α	1 123	1 123
VA Existing	Indoor Lighting	1202 Lighting Control Tuneup (Base LED Tube)	2024		soft s		0.0144	0.0144 RET		6 0.0144	0.5	0.5	1.307	1.307
VA Existing	Indoor Lighting	1203 Network Lighting Controls (Base LED Tube)	2024		sqft	1.8225	0	1.8225 RET		9 1.8225	0.5	0.5	1.307	1.307
VA Existing	Indoor Lighting	1204 Occupancy Sensor (Base LED tube) 1225 Base Linear Lighting LED Tube 2 Jamp fixture, 2028 Standard	2024		sqft fixture	0.3227		0.3227 RET		10 0.3227	0.25	0.25	1.46	1.46
VA Existing	Indoor Lighting	1226 High Performance Lighting R/R - Combined Strategies (Base LED Tube)	2029		soft	0.2		0.2 ROB		15 0.2	0.8	0.8	1.123	1.123
VA Existing	Indoor Lighting	1227 Lighting Control Tuneup (Base LED Tube)	2029	2063 sqft	sqft		0.0144	0.0144 RET		0.0144	0.5	0.5	1.307	1.307
VA Existing	Indoor Lighting	1229 Occupancy Sensor (Base LED tube)	2029		saft	0.3227	>	0.3227 RET			0.25	0.25	1.46	1.46
VA Existing	Indoor Lighting	1250 Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market	2024		fixture			0 ROB	-		-	-	-	-
VA Existing	Indoor Lighting	1251 RET Occ & Daylight Integral Sensor LED troffer (base linear LED integrated) 1275 Base Linear Lighting LED Tube 2 Jamp februs integrated market 2028 Standard	2024	2028 sqft	fixture	100		100 RET		18 100	0.75	0.75	1.153	1.153
VA Existing	Indoor Lighting	1275 Dass Linear Lighting, LED 1005, 2 family incured, incorporation mands, 2020 Standard 1276 RET Occ & Daylight Integral Sensor LED troffer (base linear LED integrated)	2029		fixture	100				18 100	0.75	0.75	1.153	1.153
VA Existing	Indoor Lighting	1300 Base General Service Screw-in, CFL	2024		lamp	c	F	0 ROB	58	000	- ;	- ;	- 600	- 600
VA Existing	Indoor Lighting	130 LED screw-in replacement (base CFL) 1350 Base General Service Screw-in, Incandescent/halogen	2024	2028 sqft	amb	ν	3.// 0	5.// REI	1 1 250		= -	= -	0.939	0.939
VA Existing	Indoor Lighting	1351 LED screw-in replacement (base incandescent/halogen)	2024	2028 sqft	lamp	2	3.77 0	5.77 RET	1 1 250	5.77	Ξ.	Ξ.	0.939	0.939
VA Existing	Indoor Lighting	1400 Base General Service Screw-in, LED bulb 1401 LED screw-in replacement (base LED)	2024	2028 sqft 2028 sqft	amp	0	377 0	0 ROB 5 77 RFT	1 250		- =	- =	0.939	0.939
VA Existing	Indoor Lighting	1425 Base General Service Screw-in, LED bulb, 2028 Standard	2029		lamp	4		0 ROB	1 1 250		-	-	-	-
VA Existing	Indoor Lighting	1426 LED screw-in replacement (base LED)	2029		lamp	2	3.77 0	5.77 RET	1 25000		Ξ.	Ξ.	0.939	0.939
VA Existing	Indoor Lighting	1451 LED fixture (base Low bay HID)	2024		fixture	75	15	90 RET	1 1 500	06 00	Ξ.	Ξ	0.939	0.939
VA Existing	Indoor Lighting	1452 High Performance Lighting R/R - Combined Strategies (base low bay HID)	2024		saft	0.2		0.2 ROB			0.8	8.0	1.123	1.123
VA Existing	Indoor Lighting	1500 Dase right Day Lighting R. P. Combined Strategies (Base T5)	2024		saft	0.2		0.2 ROB			- 8.0	- 8:0	1.123	1.123
VA Existing	Indoor Lighting	1502 ROB 2L4' LED Tube (Base T5)	2024	2063 sqft	fixture	20	0 -7.4269	20 ROB	1 200		Ξ;	Ξ;	0.939	0.939
VA Existing	Indoor Lighting	1503 High bay LED Ironer (base 15) 1504 Lighting Control Tuneup (Base T5)	2024	2063 sqft	saft	0.0	7	90 REI 0.0144 RET	1 - 500		0.5	0.5	1.307	1.307
VA Existing	Indoor Lighting	1505 Network Lighting Controls (Base T5)	2024	2063 sqft	saft	1.8225	0	1.8225 RET		9 1.8225	0.5	0.5	1.307	1.307
VA Existing	Indoor Lighting Indoor Lighting	1506 Occupancy Sensor (Base 15) 1525 Base High Bay Lighting, Fluorescent T5, integrated market	2024	2063 sqft	sqrt	0.3227		0.3227 REI 0 ROB			0.25	0.25	1.46	1.46
VA Existing	Indoor Lighting	1526 High Bay Bi-Level Programmed LED Fixture	2024	2063 sqft	fixture	60 1	11.25	71.25 ROB	1 1 75000	71.25	0.8	0.8	1.123	1.123
VA Existing	Indoor Lighting	1550 Base High Bay Lighting, HID lighting 1551 High Bay Bi-Level Programmed LED Fixture	2024	2063 sqft	fixture	60 1	11.25	0 ROB 71.25 ROB	1 1 750	00 71.25	- 8.0	- 8:0	1.123	1.123
VA Existing	Indoor Lighting	1552 High Performance Lighting R/R - Combined Strategies (base high bay HID)	2024	2063 sqft	sqft	0.2		0.2 ROB			8.0	8.0	1.123	1.123
VA Existing	Indoor Lighting	1575 Dease right bay Lighting, LED lighting 1576 Network Lighting Controls (Base high bay LED)	2024	2063 sqft	saft	1.8225	0			9 1.8225	0.5	0.5	1.307	1.307
VA Existing	Indoor Lighting	1577 Occupancy Sensor (Base high bay LED)	2024	2063 sqft	sqft	0.3227		0.3227 RET			0.25	0.25	1.46	1.46
VA Existing	Indoor Lighting	1601 LED Exit Sign	2024	2063 sqft	rijt.	26.01		26.01 RET						
VA Existing	Outdoor Lighting	1650 Base Area Lighting, Outdoor HID	2024	2063 sqft	fixture	G	_	0 ROB						
VA Existing	Outdoor Lighting	1851 LED Outdoor Area Ligning (Base Outdoor HID) 1652 LED outdoor lighting with bi-level controls (Base Outdoor HID)	2024	2063 sqft	fixture	9 6	57 -56.4644	147 RET	1 - 600	100 100.5356				
VA Existing	Outdoor Lighting	1653 Outdoor Lighting Controls (Base Outdoor HID)	2024	2063 sqft	fixture	51	_	108 RET			3.305	3.305	0.1	9.0
VA Existing	Outdoor Lighting	1701 LED outdoor lighting with bi-level controls (Base Outdoor CFL)	2024	2063 sqft	fixture	100	57 -56.4644	157 RET	1 1 60000					
VA Existing VA Existing	Outdoor Lighting Outdoor Lighting	1702 LED screw-in replacement (base Outdoor CFL) 1703 Outdoor Lighting Controls (Base Outdoor CFL)	2024	2063 sqft 2063 sqft	lamp fixture	2 5	3.77 0		1 1 250	100 5.77	3.305	3.305	- 1	1 0
VA Existing	Outdoor Lighting	1750 Base General Service Screw-in, Outdoor Incandescent/Halogen	2024	2063 sqft	fixture			0 ROB	-		-	-	-	-
VA Existing VA Existing	Outdoor Lighting Outdoor Lighting	1751 LED outdoor lighting with bi-level controls (Base Outdoor Incandescent) 1752 LED screw-in replacement (base Outdoor Incandescent)	2024 2024	2063 sqft 2063 saft	fixture lamp	100 2	57 -56.4644 3.77 0	157 RET 5.77 RET	1 1 600	100 100.5356 100 5.77				
VA Existing	Outdoor Lighting	1753 Outdoor Lighting Controls (Base Outdoor Incandescent)	2024	2063 sqft	fixture	51	22				3.305	3.305	0.1	0.6
VA Existing	Outdoor Lighting	1800 Base General Service Screw-In, Outdoor LED builb 1801 Outdoor Lighting Controls (Base Outdoor LED)	2024	2063 sqft	fixture	51	22			15 0	3.305	3.305	0.1	9.0
VA Existing	Outdoor Lighting	1850 Base Linear Lighting, Outdoor Fluorescent Tube	2024	2063 sqft	fixture	CC								
VA Existing	Outdoor Lighting	1852 LED outdoor lighting with bi-level controls (Base Outdoor Fluorescent)	2024	2063 sqft	fixture	100	57 -56.4644	157 RET	1 60000	100 100.5356			:	
VA Existing	Outdoor Lighting	1853 Outdoor Lighting Controls (Base Outdoor Fluorescent)	2024	2063 sqft	fixture	LG.	2/		-		3.305	3.305	L.0	9.0

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MEASIIBE COSTS	2								molementati Full = 1							
200	2		First	Last Savings	Cost	Unit Equipment	Unit L Labor	Lifetime Implementation O & M Cost	Type Incr. = 0 RET or Initial	Replace Service	Full	ergy Reduction Factors	ction Facto	S		
Segment VA Evicting	End Use	Measure # Measure Description 1000 Base Linear Lighting Outdoor LED Tube	Year	900	Units			Factor	ROB	Cost Life	Cost	WON	SON	SOFF	WOF	<u>ц</u> -
VA Existing	Outdoor Lighting	1901 Outdoor Lighting Controls (Base Outdoor LED Tube)	2024	2063 sqft	fixture	51	22		RET		10,	3.305	3.306	- 2	- - . ·	9.6
VA Existing	Cooling	2000 Base Water-Cooled Centrifugal Chiller, 0.58 kW/ton, 500 tons	2024	2063 sqft	ton	ŭ		0.7	ROB	1 1						
VA Existing	Cooling	2001 Centinggal Chiller, 0.34 KW/Col, 500 Chils 2002 Chiller Tune Up/Diagnostics	2024	2063 sqft	to to	17		1 4			5 12	- 0.0	0	1.28	32 1.28	- 82
VA Existing	Cooling	2003 High Efficiency Chilled Water & Condenser Water Pump Motors	2024	2028 sqft	ton	19.4914		19.4914 R	ET 1	1 20	19.4914	-	_	_	_	-
VA Existing	Cooling	2004 VSD for Chiller Pumps and Towers	2024	2063 sqft	ton	32	9	42 R			. 4	2 0.9	0	1.28	32 1.28	- 82
VA Existing	Cooling	2005 Cellingroof insulation - Chiller 2006 Cool Roof - Chiller	2024	2063 saft	sf-celling sf-roof	0.25		0.25 R		- 1	0.25					
VA Existing	Cooling	2007 Duct Testing/Sealing - Chiller	2024	2063 sqft	ton	106.9		106.9 R	<u>т</u>		3 106.9	9 1.388	3 0.07	5 1.38	38 1.388	88
VA Existing	Cooling	2008 Duct/Pipe Insulation - Chiller	2024	2063 sqft	sqft-insulation	3.0756	8	3.0756 R	<u>т</u> ,	- 1	3.0756			,		- 5
VA Existing	Cooling	2009 EMS Optimization - Chiller 2010 Dual Enthalov Economizer Replaces Dry Bulb Economizer - Chiller	2024	2063 sqft	sqrt	126.76	0.02	0 0.02 K 126.76 R			126.76	5.1.		1.45		.459
VA Existing	Cooling	2011 New Economizer - Chiller	2024	2063 sqft	ton	126.76	43.34	170.1 R	<u>т</u>	-	170.1	1.25				29
VA Existing	Cooling	2012 Window Film (Standard) - Chiller	2024	2063 sqft	sf-window	2.6	c	2.6 R	F		2.6	8	~ ·	5 1.073	~ .	.073
VA Existing	Cooling	2013 High Efficiency Windows - Chiller 2100 Base DX Packaged System, EER=10.3, 10 tons	2024	2028 soft	st-window ton	1.7863	0	0 1./863 R	000		1,786	8		۰.	~ _	5 -
VA Existing	Cooling	2101 DX Packaged System, EER=10.9, 10 tons	2024		ton	54.78	0	54.78 R	1 1		54.78		_			-
VA Existing	Cooling	2102 DX Packaged System, EER=13.4, 10 tons	2024		ton	74.2968	0	74.2968 R	108	T :	74.2968			_	_	-
VA Existing	Cooling	2103 Geothermal Heat Pump, EER=13, 10 tons - DX 2104 DX Time Hb/ Advanced Disconstites	2024	2028 sqft	ton to	800	8	800 R			800		_ ~	1 28.	1 28.	- 6
VA Existing	Cooling	2105 Refrigerant Charge Adjustment - DX	2024		ton	150	5	150 R			. 35			. –		7 -
VA Existing	Cooling	2106 Ceiling/roof Insulation - DX	2024		sf-ceiling	1.5		1.5 R	ET 1	1 20	1,	10.	_	_	<u>.</u>	-
VA Existing	Cooling	2107 Cool Roof - DX	2024		sf-roof	0.25		0.25 R			0.25	1 30 1	. 60		_ ^	- 0
VA Existing	Cooling	2108 Duct Testing Sealing - DA 2109 Duct/Pipe Insulation - DX	2024	2028 soft	soft-insulation	3.0756		3.0756 RI			3.0756	0	_	^ -	1.38	0 -
VA Existing	Cooling	2110 Dual Enthalpy Economizer Replaces Dry Bulb Economizer - DX	2024		mit	400	0	400 R	ET 1	-	400	1.25		0 1.45	6	-29
VA Existing	Cooling	2111 Economizer Repair - DX	2024		i iii	800	,	800 R	- ·		900	0.595	- -		2.5	.595
VA Existing	Cooling	2113 Ontimize Controls - DX	2024	2028 soft	soft	120.70	25.5	0.02 R			0.00	_				5 5
VA Existing	Cooling	2114 Smart Thermostat - DX	2024		ton	28.88	67	95.88 RI	. L		95.88	8.0	0.25	1.43		1.435
VA Existing	Cooling	2115 Window Film (Standard) - DX	2024		sf-window	2.6	•	2.6 R	ET .		2.6		·			73
VA Existing	Cooling	2115 High Efficiency Windows - DX 2150 Rase DX Packaged System 2029 Standard	2024	2028 sqft	sr-window fon	1.78531187	0	0 1.785311872 R	200		1.7863118					
VA Existing	Cooling	2.152 DX Packaged System, EER=13.4, 10 tons	2029		ton	74.2968	0	74.2968 R	08		74.2968					
VA Existing	Cooling	2153 Geothermal Heat Pump, EER=13, 10 tons - DX	2029		ton	800	į	800 R	ET 1		900	_				-
VA Existing	Cooling	2154 DX Tune Up/ Advanced Diagnostics	2029	2063 sqft	ton	9	ਲੋ	34 8			, j	0.9	0.0	1.282	32 1.282	82
VA Existing	Cooling	2155 Reingerant Grange Augustinent - DX 2156 Ceiling/roof Insulation - DX	2029		sf-ceiling	1.5		7.5.L		- 1-	3 ===					
VA Existing	Cooling	2157 Cool Roof - DX	2029		sf-roof	0.25		0.25 R	ET 1	1	0.25				_	-
VA Existing	Cooling	2158 Duct Testing/Sealing - DX	2029	2063 sqft 2063 sqft	ton coff-inculation	3 0756		106.9 R			3,0756	9 1.388	0.075	1.388	388 1.388	88 -
VA Existing	Cooling	2160 Dual Enthalpy Economizer Replaces Dry Bulb Economizer - DX	2029		unit	400	0	400 R			400			1.45	- 6	- 29
VA Existing	Cooling	2161 Economizer Repair - DX	2029		nit.	800		800 R	<u>г</u>		900	0.595	- -	٠,	2. 0.5	0.595
VA Existing	Cooling	z loż New Economizer - DX 2163 Optimize Controls - DX	2029	2063 soft	saft	120.70	0.02	0 0.02 R			0.00	_				5 5
VA Existing	Cooling	2164 Smart Thermostat - DX	2029	2063 sqft	ton	28.88	29	95.88 R	ET 1	-	3 95.88	8.0.8	3 0.25	5 1.435		1.435
VA Existing	Cooling	2165 Window Film (Standard) - DX	2029		sf-window	2.6	c	2.6 RI	ET		2.6	3. 1.8	~ -		· 	73
VA Existing	Cooling	2.100 Inight Emidency Williatows - DA 2200 Base Heat Pump cooling (14.3 SEER, 8.2 HSPF)	2024	2063 saft	ton	1.70031107	>	0 1.700311072 17	000	- 1	. 7005					
VA Existing	Cooling	2201 Heat Pump Upgrade (18 SEER, 8.2 HSPF), cooling	2024	2063 sqft	ton	133.6632		133.6632 R	108	1	133.6632	2		_	_	_
VA Existing	Cooling	2202 Mini-Split Heat Pump (Base Heat Pump Cooling) 2203 Calinatrant Insulation (Base Heat Pump Cooling)	2024	2063 sqft 2063 sqft	ton	267		267 R	08 FT	1	5,7					
VA Existing	Cooling	2204 Duct/Pipe Insulation (Base Heat Pump Cooling)	2024		sqft-insulation	3.0756		3.0756 RI	. L		3.0756					-
VA Existing	Cooling	2205 Smart Thermostat (Base Heat Pump Cooling)	2024	2063 sqft	ton	28.88	29	95.88 R	<u>т</u> ,		38:38	8.0.8	3 0.25	1.435	35 1.435	32
VA Existing	Cooling	2207 High Efficiency Windows (Base Heat Pump Cooling)	2024	2063 saft	sf-window sf-window	1.78631187	0	2.5 K 0 1.786311872 R	 08	- 1	1.7863119					<u> </u>
VA Existing	Cooling	2300 Base Split-System AC, SEER 14.5, <5.4 tons	2024	2063 sqft	ton	0		0 1	108				_		. .	
VA Existing	Cooling	2301 Spirt System Air Conditioner, SEEK 16.0 ENEKGY STAK, <5.4 tons 2302 Ductiese Mini-Spiit SEER 18 0/HSPF 10 0 CEE Tier 1 (Base Residential Spiit-System)	2024	2063 sqft	ton to	232.5		232.5 FR	HOB HOB		232.5					
VA Existing	Cooling	2303 Celling/roof Insulation (Base Residential Spiti-System)	2024	2063 sqft	sf-ceiling	1.5		1.5 RET	ET 1	1 20	1,1	. 10	_	-	-	-
VA Existing	Cooling	2304 Duct/Pipe Insulation (Base Residential Split-System) 2305 Smort Thermostet (Base Besidential Split-System)	2024	2063 sqft	sqft-insulation	3.0756	79	3.0756 Ri 95.88 Pi			3.0756					- ½
VA Existing	Cooling	2305 Smart memoskat (pase Residential Split-System) 2306 Window Film (Standard) (Base Residential Split-System)	2024	2063 sqft	sf-window	2.6	6	2.6 R			2.6	5.00	0.5	1.073	73 1.073	73
VA Existing	Cooling	2400 Base PTAC cooling, EER=10.2, 1 ton	2024	2063 sqft	ton	ļ		0 !	108				_			
VA Existing	Cooling	2401 HE PLAC, EER=9.5, 1 ton, cooling 2402 Ceiling/roof Insulation (Base PTAC)	2024	2063 sqft 2063 sqft	ton sf-ceiling	11,5		117 ROB 1,5 RET				- 10				
VA Existing	Cooling	2404 Occupancy Sensor (hotels)	2024	2063 sqft	ton	280		280 RI	ET -	-	780				_	-
VA Existing	Cooling	2405 Window Film (Standard) (Base PTAC)	2024	2063 sqft	sf-window	2.6		2.6 RET	ET		5.6	3. 1.8	3.0	1.07	73 1.073	173
VA Existing	Cooling	2501 Room AC, CEER 12.0 ENERGY STAR	2024	2063 sqft	ton	232.5		232.5 Ri	ROB 1		232.5		_			-
VA Existing	Cooling	2502 Ductless Mini-Split SEER 18.0/HSPF 10.0 CEE Tier 1 (Base Room AC)	2024		ton	267		267 R	ROB	1 5	267					
VA Existing	Cooling	2505 Window Film (Standard) (Base Room AC)	2024	2063 sqft	sf-window	2.6		2.6 R	RET		2.6	. 8.1	3 0.5	5 1.073		1.073
VA Existing	Cooling	2506 High Efficiency Windows (Base Room AC) 2600 Base Duetless Mini Solit Host Brown SEED 15 0/HSDE 8.8	2024	2063 sqft	sf-window	1.7863	0	0 1.7863 ROB	OB	- 1	1.7863	3. 1.8	۰ 0			73
VA Existing	Cooling	2000 base Ductess Mini-Split hear Purity, SEEN 13,0/1377 0.0 2601 Ceiling/roof Insulation (Base Ductess Mini-split)	2024	2063 sqft	sf-ceiling	1.5		1.5 R	. т		, =:					
VA Existing	Cooling	2603 Window Film (Standard) (Base Ductless Mini-split)	2024	2063 sqft	sf-window	1 7863	c	2.6 Ri	RET 1		17863	5 2. 2.	3 0.5	5 1.073		1.073
VA Existing	Refrigeration	3100 Base Open refrigerated/freezer cases	2024	2063 sqft	unit	200	•	0	08			5	·			2 -

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Segment VA Existing	,							inplementation Tva	ne Incr. = 0		ű	-		tors		
VA Existing	1	Monorine # Manual Paradiation	First	ast Savings	Cost	Equipment	Labor 0 8	O & M Cost RET or	or Initial	Replace	Service Ur	Unit ergy Re	ergy Reduction Factors		0.44	ų.
VA Existing VA Existing VA Existing VA Existing VA Existing VA Existing	Refrigeration		2024	2063 sqft				43 ROB	1	1	15	43	1	1	1	-
VA Existing VA Existing VA Existing VA Existing VA Existing	Refrigeration		2024	2063 sqft	lin ft display case	45.5	0 ;	45.5 RET			∞ ç	45.5	- 6	- 5		- 5
VA Existing VA Existing VA Existing	Refrigeration	3103 Compressor VSD retroft, open cases 3104 Demand Defrost Flootric open cases	2024	2063 sqft	ì i	214 686 3426	5	385 KEI 686 3426 DET			13	385	9. F	C.F	1.106	g -
VA Existing VA Existing	Refrigeration	3105 Demand Hot Gas Defrost, open cases	2024		rii,	517.2437	0	517.2437 RET	-	-	10 517				_	-
VA Existing	Refrigeration	3106 Electronically commutated evaporator fan motor, open cases	2024		motor	220.0773	•	220.0773 RET	-,	- ,	15 220		0.65 0	0.65 1.133	33 1.130	33
VA Existing	Refrigeration	3107 high-emiclency ran motors, open cases 3108 hisulated suction lines, open cases	2024	2063 soft	ft of suction line	220.07/3	0 0	220.07/3 REI			11 220	5//0.				
VA Existing	Refrigeration	3109 LED Display Lighting, open cases	2024	,	lin ft display case	36	0	36 RET	-	-	· ∞	36	_	-	-	-
VA Existing	Refrigeration	3110 Multiplex Compressor System, open cases	2024	2063 sqft	tons	1750	000	1750 RET			4	1750	- 0		1 20	- %
VA Existing	Refrigeration	3111 Inight covers for display cases, open cases 3112 Oversized Air Cooled Condenser, open cases	2024	2063 soft	tons	350	; - 0		- ,-		. 16 . 32	350	o - -	- -	00 T	۶. ب
VA Existing	Refrigeration	3113 Refrigeration Coil Cleaning, open cases	2024		Chit		346.358	0 346.3581 RET	-	-	5 346	346.3581	-	.	.	-
VA Existing	Refrigeration	3114 Refrigeration Commissioning, open cases	2024	2063 sqft	Ton of Load	113	0	113 RET			w é	113				
VA Existing	Refrigeration	3201 Efficient commessor motor, base closed cases	2024	2063 sqft	<u> </u>	43		43 ROB			5 12	o 84				
VA Existing	Refrigeration		2024		rii,	328	0	328 ROB	-	-	12	328	-	-	-	-
VA Existing	Refrigeration	3203 Anti-sweat (humidistat) controls, base closed cases	2024	•	40,000 sqft store	6500	0	6500 RET	-	-	12	6500	_	-	_	-
VA Existing	Refrigeration	3204 Bi-level LED Case Lighting (self-contained units), base closed cases	2024	**	lin ft glass doors	45.5	۽ ٥	45.5 RET			∞ ç		- 6	1 100	- 90	- 8
VA Existing	Refrigeration	3206 Demand Defrost Electric hase closed cases	2024	2063 sqft	£ Ē	686.3426	_ <	385 REI 686 3426 RFT			10 686				_	g -
VA Existing	Refrigeration	3207 Demand Hot Gas Defrost, base closed cases	2024	-	riit	517.2437	0	517.2437 RET	-	-		_			-	-
VA Existing	Refrigeration	3208 Electronically commutated evaporator fan motor, base closed cases	2024		motor	220.0773	c	220.0773 RET			15 220	220.0773 0	0.65	0.65 1.133	33 1.1;	33
VA Existing	Refrigeration	3210 High R.Value Glace Doore has a cheed cases	2024	2063 sqft	lin ft doors	100 28	o c	100 28 RET			4 5	100 28				
VA Existing	Refrigeration	3211 High-efficiency fan motors, base closed cases	2024		motor	220.0773	0	220.0773 RET			22	220.0773				
VA Existing	Refrigeration	3212 Insulated suction lines, base closed cases	2024		ft. of suction line	9	0	6 RET	-	-	Ξ	9	-	-	-	-
VA Existing	Refrigeration	3213 LED Display Lighting, base closed cases	2024		lin ft glass doors	36	0 0	36 RET			ω ç	36				
VA Existing	Refrigeration	3215 Multiplex Compressor System hase closed cases	2024	2063 sqft	Sqrt Tilm tons	2.0083	0 0	2.5583 REI 1750 RET			0 4	2.5583				
VA Existing	Refrigeration	3216 Oversized Air Cooled Condenser, base closed cases	2024		tons	350	0	350 RET	-	-	16	350				-
VA Existing	Refrigeration	3217 Refrigeration Coil Cleaning, base closed cases	2024	2063 sqft	Unit		346.358	0 346.3581 RET	-	-	5 346	346.3581	-	-	-	-
VA Existing	Refrigeration	3218 Refrigeration Commissioning, base closed cases	2024		Ton of Load	113	0	113 RET	- 1		en (113			. .	- ,
VA Existing	Refrigeration	3300 Base Walk-in refrigeration/freezer units	2024	2063 sqft	ŧ g	6		0 ROB			5 7	o ç				
VA Existing	Refrigeration	3302 Auto-closer on main door to walk-in freezer	2024	, ,,	ŧ į	163.1555		163.1555 RET		-	8 163	. 1555				
VA Existing	Refrigeration	3303 Compressor VSD retrofit, walk-ins	2024		£	214	171	385 RET	-	-			6.0	0.5 1.106	06 1.106	901
VA Existing	Refrigeration	3304 Demand Defrost Electric, walk-ins	2024	٠,	rait Tight	686.3426	0 1	686.3426 RET	-		10 686	686.3426				
VA Existing	Refrigeration	3305 Demand Hot Gas Defrost, walk-ins	2024	٠, ،	unit	517.2437	0	220 0772 BET			10 51/		- 13 0	14	1 1 2 2 1 1 2	ے ۔
VA Existing	Refrigeration	3307 Evanorator fan controller for MT walk-ins	2024	2063 sqft	controller	1050	c	1050 RET			16 220	1050			_	3 -
VA Existing	Refrigeration	3308 Floating head pressure controls, walk-ins	2024	, ,,	circuit	432.6943	0	432.6943 RET	-	-		432.6943				
VA Existing	Refrigeration	3309 Freezer-Cooler Replacement Gaskets, walk-ins	2024	٠,	lin ft doors	00	0	8 RET	-	-	4	00	-	_	_	-
VA Existing	Refrigeration	3310 High-efficiency fan motors, walk-ins	2024		motor	220.0773	0 0	220.0773 RET			15 220	220.0773				
VA Existing	Refrigeration	3312 Multiplex Compressor System, walk-ins	2024	2063 soft	tons	1750	0 0	1750 RET			- 4	1750				
VA Existing	Refrigeration	3313 Oversized Air Cooled Condenser, walk-ins	2024	2063 sqft	tons		0		-	-	16	700	-	-	-	-
VA Existing	Refrigeration	3314 Refrigeration Coil Cleaning, walk-ins	2024		tons		212.25	0 1212.2535 RET	-	-	5 1212	1212.2535	-	_	_	-
VA Existing	Refrigeration	3315 Refrigeration Commissioning, walk-ins	2024	2063 sqft	Ton of Load	113	0 0	113 RET			e 4	113				
VA Existing	Refrigeration	3400 Base Large Cold Storage Area	2024	2063 soft			0	100.2134 REI	- ,-		16	10				
VA Existing	Refrigeration	3401 Efficient compressor motor, base large cold storage	2024	,	£	43		43 ROB	-	-	15	43	-	-		-
VA Existing	Refrigeration	3402 Auto-closer on main door to walk-in freezer, base large cold storage	2024	2063 sqft	t i	163,1555	į	163.1555 RET	-		8 163	163.1555				- 5
VA Existing	Refrigeration	3403 Compressor VSD retront, base large cold storage 3404 Elactronically communicated associator fan motor, base large cold storage	2024	2063 sqft	Į d	214	5	385 KEI			15 220		0.9	C.5 C.5	1.106 1.106	33 6
VA Existing	Refrigeration		2024		controller	1050	0	1050 RET			16	_				3
VA Existing	Refrigeration	3406 High-efficiency fan motors, base large cold storage	2024	2063 sqft	motor	220.0773	0 (220.0773 RET	-		15 220	220.0773		.	.	
VA Existing	Refrigeration	3407 insulated suction lines, base large cold storage 3408 Multiplex Compressor System, base large cold storage	2024	2063 sqft	tr. of suction line	1750	00	1750 RET			- 4	1750				
VA Existing	Refrigeration		2024		tons		0	350 RET	-	-	16	350	-	-	-	-
VA Existing	Refrigeration	3410 Refrigeration Coil Cleaning, base large cold storage	2024		tons	0 ;	909.19	0 909.1901 RET	- ,		2 30	1901		. ,		
VA Existing	Refrigeration	3411 Retrigeration Commissioning, base large cold storage 3412 Strip curtains for walk-ins, base large cold storage	2024	2063 sqft	Ion of Load	100.2134	00	100.2134 RET			s 4 100	113				
VA Existing	Refrigeration	3500 Base Reach-in Refrigerator/Freezer, Federal Standard	2024		i ii		•	0 ROB	-	-	15	0				
VA Existing	Refrigeration	3501 Energy Star solid door reach-in refrigerator/freezer	2024		nuit			50 ROB	-	-	15	20	-	.	.	-
VA Existing	Refrigeration	3502 Freezer-Cooler Replacement Gaskets, base reach⊣in 3503 Refrineration Coil Cleaning base base reach-in	2024	2063 sqft 2063 sqft	lin ft doors	∞ C	0 43 2948	8 RET 0 43.2948 RET			4 12	8 43 2948				
VA Existing	Refrigeration	3600 Base Glass Door Reach-in Refrigerator/Freezer, Federal Standard	2024		riit.		!	0 ROB	-	-	15	0	-	-	-	-
VA Existing	Refrigeration	3601 Energy Star glass door reach-in refrigerator/freezer	2024		unit	100	0 0	100 RET			ن و	9 1				
VA Existing	Refrigeration	3603 Freezer-Cooler Replacement Gaskets, base glass-door reach-in	2024	2063 sqft	lin ft doors		00	45.5 RET			0 4	0. 00				
VA Existing	Refrigeration	3604 Refrigeration Coil Cleaning, base glass-door reach-in	2024		unit	0	43.2948	0 43.2948 RET	-	-	5 43	43.2948	—	.	-	-
VA Existing	Refrigeration	3700 Base Ice Maker, Federal Standard	2024	2063 sqft	ij	000	c	0 ROB			2 9	0 0				
VA Existing	Refrigeration	3702 Refrigeration Coil Cleaning, base ice maker	2024	2063 sqft	i i		43.2948	200 KET 0 43.2948 RET			5 43	43.2948				
VA Existing	Refrigeration	3800 Base Residential-Type Refrigerator/Freezer, Federal Standard	2024		nit				-		8 9	0 9		.	. ,	
VA Existing	Refrigeration	3802 Refrigeration Coil Cleaning, residential-type refrigerator	2024	2063 sqft	i ii	€ 0 4	43.2948	79 ROB 0 43.2948 RET			5 2	43.2948				
VA Existing	Refrigeration		2024		nnit			0 ROB	-	-	4	0	_	.	_	-
VA Existing	Refrigeration	3901 Energy Star Compact Refrigerator	2024		mit	18		18 ROB	-	-	4	92	-	-	-	-

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MEASURE COSTS	STS							Z	VPV of	Implementat	ntati Full =	= 1							
							Unit	Unit	ifetime Impler	Implementation Type	e Incr. =	0 =		Fell					
			First	Last	Savings	Cost	Equipment	Labor	0 & M	Cost RET or		Initial Replace	ace Service	Se Unit		ergy Reduction Factors	tors		
Segment	End Use	Measure # Measure Description	Year	Year	Units	Units	Cost	Cost	Cost Fa	actor ROB	B Cost	st Cost	st Life	Cost	WOW	NOS	SOFF	= WOFF	£
VA Existing	Refrigeration	3902 Refrigeration Coil Cleaning, compact refrigerator	2024	2063	un gbs	Ħ	0 4	3.2948	0	13.2948 RET		-	1	5 43.294	948	-	-	-	-
VA Existing	Office Equipment	4000 Base Computer Network Server	2024	2063	sqft PC	0				0 ROB		-	-	4	0	-	-	-	-
VA Existing	Office Equipment	4001 Energy Star server	2024	2063	sqft PC	0	20	0		20 ROB		-	-	4	20 0	.75	0.5	. 19	1.15
VA Existing	Office Equipment	4002 Server Power Management Enabling	2024	2063	sqft PC	0	0	8		20 RET		-	-	4	20	-	-	-	-
VA Existing	Office Equipment	4100 Base Desktop PC	2024	2063	sqft PC	0				0 ROB		-	-	4	0	-	-	-	-
VA Existing	Office Equipment	4101 Energy Star or Better PC	2024	2063	sqft PC	2	10	0		10 ROB		-	-	4	10	-	-	-	-
VA Existing	Office Equipment	4102 PC Network Power Management Enabling	2024		sqft PC	0	0	8		20 RET		-	-	4	20 0	0.75	0.5	1.19	1.15
VA Existing	Office Equipment	4200 Base Laptop PC	2024		sqft PC	0				0 ROB		-	-	4	0	-	-	-	-
VA Existing	Office Equipment	4201 Energy Star or Better Laptop	2024	2063	sqft PC	0	2	0		2 ROB		-	-	4	2	-	-	-	-
VA Existing	Office Equipment	4202 Laptop Network Power Management Enabling	2024	2063	sdft	0	0	8		20 RET		-	-	4	20 0	0.75	0.5	. 19	1.15
VA Existing	Office Equipment	4300 Base Monitor, LCD	2024	2063	saft	Monitor				0 ROB		-	-	4	0	-	-	-	-
VA Existing	Office Equipment	4301 Energy Star or Better Monitor - LCD	2024	2063	sqft	onitor	-	0		1 ROB		-	-	4	-	-	-	-	-
VA Existing	Office Equipment	4302 Monitor Power Management Enabling - LCD	2024	2063	sqft Mc	onitor	0	∞		8 RET		-	-	4	8	0.75	0.5	. 19	1.15
VA Existing	Office Equipment	4303 Plug-load controls - Commercial Smart Strip (base monitor LCD)	2024	2063	sdft un	=	15			15 RET		-	-	10	15	0.5 0	.25 1.3	.276 1.	276
VA Existing	Office Equipment	4400 Base Imaging	2024	2063	sdft un	=				0 ROB		-	-	9	0	-	-	-	-



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0.00 0.00			Office Restaurar	Restaurant	Retail	ery	Warehouse E	Education	Health Lo	ing	Data Centers No	Non-Jurisdictional	ship .	Misc
Column C	=	_	%9	Bullaing Type 25ul	ng,	Ing 1 ype 'sulla	Ing I ype;ulic	Ing I ypesulid 6%	=		g lype: B	alliging Lype 10		aniaing
10.00 Extraction Extracti			2%	2%	%	7 7 %	%	%%	% %	%	%0	7 %	5%	
10 10 10 10 10 10 10 10	. Bu		2%	2%	2%	1%	1%	2%	2%	2%	%0	1%	2%	
10, 00, 00, 00, 00, 00, 00, 00, 00, 00,	ng	1003 LED Troffer (Base T12)	1%	1%	1%	%0	%0	1%	1%	1%	%0	1%	1%	
100 courts of Sent Court (17) 17 may 2477 section and 17 may 247 section 20 may 247 s	bu	1004 LED Troffer with lamp removal (712)	1%	1%	%	%0	%;	% ?	7%	% 3%	% 0	7%	1%	
100 Discourage (Earth Circle) Discourage (Earth Circ	5	1003 Eighinig Control Lumeup (Base 112) 1006 Network Linkfing Controls (Base 112)	0,20	9%	% 9	2%	3%	%9	% 9 % 9	7%	% %	%4	7%	
100 December Communication Communicati	i 0	1007 Occupancy Sensor (Base T12)	%9	4%	%9	2%	%8	%9	%9	4%	%0	4%	4%	
10 10 10 10 10 10 10 10	Đ.		%9	4%	%9	2%	3%	%9	%9	%0	%0	4%	4%	
11 11 10 10 potential was and was and the control of the control o	DL.		%9	4%	%9	2%	3%	%9	%9	%0	%0	4%	4%	
10 CD Total Part The part	Đ.		10%	4%	2%	2%	11%	15%	13%	%6	% à	2%	16%	
10 10 Total without To	<u>و</u> ر .		3%	%"	% %	% %	% *	%2	% *	%6	% % %	%2	%9	
11 State of the control of the c	5 0	1102 FOUR ZET FED TUDE (Dase 16)	7%	%	% *	%	% %	%%	* c	% ~	° 4	7%	%%	
11 12 12 12 12 13 13 13	. p	1104 LED Troffer with lamp removal (T8)	1%	1%	- 1	%0	2 %	2 %	2 %	%	. 4	1%	2%	
100 State Laber July Control of State Library (100 State Laber July Control of State	. Er	1105 Lighting Control Tuneup (Base T8)	%9	%0	2%	2%	4%	3%	3%	4%	%8	2%	%9	
11 10 Comparing Secretary Secr	- E	1106 Network Lighting Controls (Base T8)	10%	4%	2%	2%	11%	15%	11%	2%	%8	2%	16%	
10 10 10 10 10 10 10 10	Đ(1107 Occupancy Sensor (Base T8)	10%	4%	2%	2%	11%	15%	11%	%2	8%	2%	16%	
1011 FIGURE CASE CASE CASE CASE CASE CASE CASE CAS	gr.	1150 Base Linear Lighting, Fluorescent Fixture, 2L4T8, 1 EB, integrated market	10%	4%	2%	2%	11%	%0	11%	%0	8%	2%	%0	
To Size before the first place of the first place o	Đ(1151 RET Occ & Daylight Integral Sensor LED troffer (base T8 integrated)	10%	4%	2%	2%	11%	%0	11%	%0	%8	2%	%0	
100 Monoto Lighting Concept (1985 FIRE Control Standards Base LED Table) 175 175 175 175 175 175 175 175 175 175	Đ(12%	%9	16%	35%	15%	2%	12%	%9	%8	10%	20%	
100 Courage State Courag	Ð.		12%	%9	16%	35%	15%	2%	12%	%9	%8	10%	20%	
2002 Bernard Color	Đ(1202 Lighting Control Tuneup (Base LED Tube)	%2	1%	2%	35%	%9	%	%*	3%	%	10%	%2	
Table Holy Service Library Service (1985 1984) 1207 (All Performance Lights (1987 - Care Street) 1207 (All	бı	1203 Network Lighting Controls (Base LED Tube)	12%	%9 ***	16%	35%	15%	2%	12%	%9	% 8	10%	20%	
2.22 March	Đ(1204 Occupancy Sensor (Base LED tube)	12%	%9 ,	16%	35%	15%	2%	12%	%9	% ;	10%	20%	
122 District Control Line (Biller LED Thean) 122 District Control LED Thean (Biller LED Thean)	<u>ور</u> :	1225 Base Linear Lighting, LED Tube, ZTamp fixture, 2028 Standard	78%	14%	%9Z	38%	%6Z		%85 50 80 80 80 80 80 80 80 80 80 80 80 80 80	18%	15%	%0% 50%	40%	
The control of the	ם ק	1220 High reflormlative Uppining VN - Complete Strategies (base LED Tube)	769/	470	0,00	20%	73.70	20.70	0,00	0,00	20.4	20%	40%	
120 Control	D S	122/ Lighting Control Tuneup (Base LED Tube)	%QI	14%	% 50 60	38%	%1.	% %	8 8	%6	%01	20%	%GI	
1787 REF Control C	ב ק	1226 Network Eighting Controls (Base LED Tube)	0,000	14%	%97 %96	200%	%82	% 92 % 92 % 92 % 92 % 92 % 92 % 92 % 92	% o %	10%	10%	%0% %0%	40%	
Table 10 Cas Abulgation Strong Circle (1976) 1576 1576 1576 1576 1576 1576 1576 1576	בי ק	1229 Occupatity Seriou (base LED must) 1260 Bood Inpart intina 1ED Tuko Slamp fishing intography markst	12%	%9	76%	36%	759.70	20 % E %	12%	%9	%0	70%	40%	
7.77 Base Live Land Living Class Control Class Service Class Control Education Class Class Control Class Class Control Class Con	ם ק	120 Dase Lilleat Lighting), LED Tube, 2 lainty Tikuley, lillegt area flashed	1270	0,0	10%	02020	0,01	0,0	0,70	0,0	° 6	0.00	20%	
100 Bean General Review Strawful, Clark (base linear IED heagraded) 25% 45% 15% 25% 11% 25% 25% 11% 25% 25% 11% 25% 25% 11% 25% 25% 11% 25% 25% 25% 11% 25% 25% 25% 25% 25% 25% 25% 25% 25% 25	ב ק	1231 REL OCC & Daylight megical Serisor LED Toller (base integrated)	0/2/0	149%	%9C	200%	%000	0 7	%200	0,0	0 4	%00	20%	
130 Dials of Control (Care Control C	2 5	1279 Dase Lilieal Egitilig, LED Tube, ZTarrip Tikule, miegrateu Irlanet, 2020 Startuaru 1976 DET Occ & Davlinkt Internal Sensor LED troffer (base linear LED internated)	28%	14%	%9c	38%	%87 20%	11%	28%	%9	15% 15%	%0Z	24%	
135 Experiment of the product of	n 5	1300 Race General Service Screwin CFI	%8	4%	4%	1%	%0	%	%0	%9	%	%9	3%	
131 Elba control (State El	2 5	1301 I ED screw-in replacement (hase CEL)	%%	4%	4 4	1%	%	%	% %	%9	%	%9	%8	
1351 ED Secretari registeration (lases in condecorated langewith) 275 1715 1815 2715 2	n 2	1350 Base General Service Screw-in Incandescent/halogen	%	%2	%/_	%	%	%	%	% ~	%	3%	2%	
1400 Base General Service Service, ILED but	, p	1351 LED screw-in replacement (base incandescent/halogen)	5%	11%	%6	2%	3%	5%	%8	2%	%0	%8	%6	
140 LED extravel replacement (base LED) 150 See Februal Expropries (base Cennel Branch Control Research Character) 150 See Februal Expropries (base Cennel Branch Character) 150 See Februal Expropries (base Character) 150 See	, p	1400 Base General Service Screw-in, LED bulb	26%	92%	23%	17%	18%	28%	34%	62%	28%	45%	20%	
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1501 High Performance Update Rase TS 150 High Rase TS	. פ	1452 High Performance Lighting R/R - Combined Strategies (base low bay HID)	%0	%0	%0	%0	%0	%0	%0	%0	22%	%0	%0	
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2 198 2 117 2 117 2 117 2 117 2 117 2 117 2 118	35% 29% 29% 35% 35% 35% 35%	60% 41% 41% 41%	47% 46% 46% 0%	37%	23% 15% 15%	20%	34%	23%	%88		34%
2 11 5 2 11 10 2 11 11 2 2 11 12 2 11 15 2 15 2	29% 29% 36% 36% 36% 36%	41% 41% 41%	46% 0%	36%	15% 15%			23%	%88	45%	2
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2.155 2.156 2.156 2.157 2.157 2.157 2.157 2.167	35%	%09	47%	37%	23%	%0,	% 45 6	23%	%88	45%	% 4%
2.156 2.156 2.156 2.159 2.159 2.160	35%	%09	41%	37%	23%	%0/	% 55	73%	%88	45%	% 4%
2.155 2.156 2.157 2.158 2.160 2.161 2.162 2.162 2.163	35%	%09	41%	37%	23%	%0/	% 4%	23%	%88	45%	%4%
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2159 2160 2161 2161 2162 2163 2165 2166 2166 2166 2166 2166	35%	%09	47%	37%	23%	%02	34%	23%	%88	45%	34%
2160 2161 2162 2163 2166 2166 2166 2166 2166	35%	%09	47%	37%	23%	%02	34%	23%	%88	45%	34%
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2162 2163 2164 2164 2165 2200	29%	41%	46%	36%	15%	19%	16%	2%	72%	19%	5%
2163 2164 2165 2166 2200	%2	19%	%0	1%	8%	52%	18%	17%	16%	25%	33%
2164 2165 2166 2200 2200	35%	%09	47%	37%	23%	%02	34%	23%	88%	45%	34%
2165 2166 2200	35%	%09	47%	37%	23%	%02	34%	23%	%0	45%	34%
2166	35%	%09	47%	37%	23%	%02	34%	23%	%0	45%	34%
2200	35%	%09	47%	37%	23%	%02	34%	23%	%0	45%	34%
1000	23%	17%	15%	%	%6	4%	21%	%9	. *	10%	28%
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2202	23%	17%	15%	2%	%0	4%	21%	%9	%- 1-%	70%	28%
2203	23%	17%	15%	2%	%6	%4	2.5%	%9	%0	10%	28%
2204	23%	17%	15%	26	%	% 4	2.2%	%9	%	10%	28%
2205	33%	17%	15%	200	%0	7%	21%	%9	%- 0	%0.	%80
2203	2370	17.0	0,01	0,00	% 60	% 6	21%	%0	% 0	0.%	0,000 0,000
2206	23%	%/L	15%	%0	% 6	%4%	%LZ	%0	%0	%OL	78%
2207		17%	15%	2%	%6	%4%	21%	%9	%0	10%	28%
2300		4%	%6	10%	%2	2%	16%	15%	2%	16%	15%
Existing 2301 Split System Air Conditioner, SEER 16.0 ENERGY STAR, <5.4 tons		4%	%6	10%	4%	2%	16%	15%	2%	16%	15%
2302	ntial Split-System)	4%	%6	10%	2%	2%	16%	15%	2%	16%	15%
2303		4%	%6	10%	2%	%2	16%	15%	%0	16%	15%
2304	800	40%	%0	10%	2	, v	16%	15%	u		15%

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Commercial Elec Measure Inputs	asure Inputs	APPLICABILITY FACTOR	FACTOR										
d			Restaurant	Retail	Grocery		Education		Lodging Da	,n \	Non-Jurisdictional	۵	Misc
VA Existing	Measure # Measure Description 2305 Smart Thermostat (Base Residential Split-System)	Ma adki bululid i Mbe pu	DUIIUIII J 1996 ZBUIIUIII J 1996 ZBUIIUII J 1996 ZBUIIUI J 1	nc, adv i gillu	10%		5% 18% 18% 18%	'I -	15% 0%		Duilding 1 ype 10 16%	Duilding Type 11	27%
VA Existing	2306 Window Film (Standard) (Base Residential Split-System)	%8 8	4%	%6	10%	2%	2%	16%	15%	%0	16%	15%	27%
VA Existing		2%	1%	1%	%0	%0	2%	4%	17%	1%	4%	1%	%9
VA Existing		2%	1%	1%	%0	%0	5%	4%	17%	1%	4%	1%	2%
VA Existing	240Z Celling/roor Insulation (Base PTAC)	%%	1%	% %	% %	%0	% 6	4 4 % 7 %	17%	° 6	4 % % A	% %	2%
VA Existing		2%	- 4-	- 4-	%%	%0	2%	4 4 %	17%	%0	4 4 %	1%	2%
VA Existing		%0	1%	2%	19%	1%	2%	12%	2%	%0	2%	3%	2%
VA Existing		%0	1%	2%	19%	1%	2%	12%	2%	%0	2%	3%	2%
VA Existing	2502 Ductless Mini-Split SEER 18.0/HSPF 10.0 CEE Tier 1 (Base Room AC)	%0	4 %	2%	19%	% 7	2%	12%	2%	% %	2%	3%	2%
VA Existing	2505 Celinighton Instruction (Dase Noom AC)	%0	1%	% %	19%	. 4	% %	12%	2%	%0	% % % % % % % % % % % % % % % % % % % %	%6	% %
VA Existing		%0	1%	2 %	19%	1%	2%	12%	2%	%0	2%	3%	2%
VA Existing		2%	4%	2%	8%	3%	2%	2%	3%	%0	3%	2%	2%
VA Existing		2%	4%	2%	8%	3%	2%	2%	3%	%0	3%	2%	2%
VA Existing		2%	4%	5%	%80	%8	2%	5%	3%	% 6	3%	2%	2%
VA Existing		2%	%4.	%%	%8	%6	%6	%2	3%	%0	3%	%°	%%
VA Existing	3100 base Open remgerated/reezer cases	4%	12%	4%	%67	%0	% %	7%/	21%	%0	% %	9% 10%	% 0
VA Existing		% 4 % %	12%	4 4 %	%62	%0	%%	%/	21%	%0	- 1- %	%5	%%
VA Existing		4%	12%	4%	29%	%0	%0	2%	21%	%0	1%	2%	%0
VA Existing		4%	12%	4%	29%	%0	%0	4.2	21%	%0	1%	2%	%0
VA Existing		4%	12%	4%	29%	%0	%0	%4	21%	%0	1%	2%	%0
VA Existing		4%	12%	4 *	29%	%0	%0	%4	21%	% 6	7 7%	2%	%0
VA Existing	3107 high-encency ran motors, open cases 3108 histilated surdion lines, open cases	%4 4 %	12%	4 4 % %	%67 %67	%0	% % O O	% / /	21%	% %	% %	2%	%0
VA Existing	3109 LED Display Lighting open cases	***	12%	4 4 %	29%	%0	%0	%_	21%	%0	1%	2%	%0
VA Existing		4%	12%	4%	29%	%0	%0	%.2	21%	%0	1%	2%	%0
VA Existing		4%	12%	4%	29%	%0	%0	%4	21%	%0	1%	2%	%0
VA Existing		4%	12%	4%	29%	%0	%0	%.2	21%	%0	1%	2%	%0
VA Existing		4%	12%	4%	29%	%0	%0	%2	21%	%0	1%	2%	%0
VA Existing		4%	12%	%4%	29%	%0	%0,	%/,	21%	%0	1%	24%	%0
VA Existing	3200 base Closed remgerated/freezer cases	%/	38%	30%	53%	%0	16%	14%	%0Z	%000	%0	31%	2%
VA Existing		%/	38%	10%	53%	%0	16%	14%	20%	%0	%0	31%	2%
VA Existing		%2	38%	10%	23%	%0	16%	14%	20%	%0	% %	31%	2%2
VA Existing		%2	38%	10%	53%	%0	16%	14%	20%	%0	8%	31%	2%
VA Existing		%2	38%	10%	23%	%0	16%	14%	20%	%0	8%	31%	2%
VA Existing	3206 Demand Defrost Electric, base closed cases	%	38%	10%	23%	%0	16%	14%	20%	%0	%80	31%	2%
VA Existing	520/ Demard Hot Gas Defrost, base closed cases	%Z	20%	10%	02%	%0	10%	14%	20%	%000	%0	01%	2%
VA Existing	3209 Freezer-Cooler Replacement Gaskets, base closed cases	%	38%	10%	23%	%0	16%	14%	20%	%	% % &	31%	2%
VA Existing	3210 High R-Value Glass Doors, base closed cases	%2	38%	10%	23%	%0	16%	14%	20%	%0	8%	31%	2%
VA Existing	3211 High-efficiency fan motors, base closed cases	%2	38%	10%	23%	%0	16%	14%	20%	%0	8%	31%	2%
VA Existing	3212 Insulated suction lines, base closed cases	%4	38%	10%	23%	%0	16%	14%	20%	%0	%8	31%	2%
VA Existing	3213 LED Display Lighting, base closed cases	%2	38%	10%	23%	%0	16%	14%	20%	%0	%80	31%	2%
VA Existing	3214 Low or Antr-Sweat Door Film, base closed cases	%/	38%	%01 %07	53%	%0	16%	14%	%0Z	%000	%8	31%	%2%
VA Existing	3216 Oversized Air Conled Condenser hase closed cases	%/_	38%	10%	23%	%0	16%	14%	20%	%0	% %	31%	%2
VA Existing	3217 Refrigeration Coil Cleaning, base closed cases	%	38%	10%	53%	%0	16%	14%	20%	%0	8%	31%	2%
VA Existing		%2	38%	10%	23%	%0	16%	14%	20%	%0	8%	31%	2%
VA Existing		25%	85%	%2	%89	2%	13%	30%	23%	%0	11%	2%	%9
VA Existing		25%	85%	%/	%89	%2	13%	30%	23%	%0 0	11%	2%	%9
VA Existing	3303 Compressor VSD retroff walk-in freezer	25%	85%	%	%89 98%	2 %	13%	%0% 30%	53%	% %	4 1 2 %	2%	%9 %9
VA Existing		25%	85%	%/	%89	2 %	13%	30%	53%	%0	11%	2%	%9
VA Existing	3305 Demand Hot Gas Defrost, walk-ins	25%	85%	%/	%89	2%	13%	30%	23%	%0	11%	2%	%9
VA Existing		25%	85%	%.2	%89	2%	13%	30%	23%	%0	11%	2%	%9
VA Existing		25%	85%	%2	%89	2%	13%	30%	23%	%0	11%	2%	%9
VA Existing		25%	85%	%_	%89	2%	13%	30%	53%	%0	11%	2%	%9
VA Existing	3309 Freezer-Cooler Replacement Gaskets, walk-ins	25%	85%	%/	%89 %89	22%	13%	30%	53%	%0	% 7	2%	%9 %9
VA Existing		25%	85%	%/	%89 98%	2%	13%	30%	53%	% %	17%	2%	%9
VA Existing		25%	82%	%/	%89	22%	13%	30%	53%	%0	11%	2%	%9
VA Existing		25%	85%	2%	%89	2%	13%	30%	53%	%0	11%	2%	%9
VA Existing		25%	85%	7%	%89	28%	13%	30%	23%	%0	11%	2%	%9
VA Existing		25%	85%	%.2	%89	2%	13%	30%	23%	%0	11%	2%	%9
VA Existing		25%	85%	4.2	%89	2%	13%	30%	53%	%0	11%	2%	%9
VA Existing		%0 ***	2%	2%	27%	%8	%0	4%	10%	%0	%0	4%	%0
VA Existing	3401 Efficient compressor motor, base large cold storage	%°	2%	2%	27%	% & &	%0	%**	10%	%0	%0	4%	%0
VA EXISTING	3402 Auto-closer on main door to walk-in freezer, base large cold storage	0.70	0.70	07.2	07.17	0/.0	0.70	4,00	10.70	0,	2 0	5,1	07.0

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Commercial Elec Measure Inputs	e Inputs	APPLICABILITY FACTOR	FACTOR										
		(percent)	Doctouront	Dotol	Crosser	Morehouse	Totion	4	Londinia Data Contara Non Indiadiotic	order order	lonoitoitoiri	Dollaious Morehin	N.
Seament	Measure # Measure Description	oc	Building Type 23uilding Type (3uilding Type 43uilding Type (uilding Type 3uilding Type	dina Type (3u	Idina Type 43u	ilding Type fui	dina Type3uil		uilding TypeBuilding Type (Type (Buil	Building Type 10		Suilding Type 1
	3403 Compressor VSD retrofit, base large cold storage		2%	2%	27%	8%	%0		10%	ı	%0	100	%0
VA Existing	3404 Electronically commutated evaporator fan motor, base large cold storage	%0	2%	2%	27%	8%	%0	4%	10%	%0	%0	4%	%0
VA Existing	3405 Evaporator fan controller for MT walk-ins, base large cold storage	%0	2%	2%	27%	8%	%0	4%	10%	%0	%0	4%	%0
VA Existing	3406 High-efficiency fan motors, base large cold storage	%0	2%	2%	27%	8%	%0	4%	10%	%0	%0	4%	%0
VA Existing	3407 Insulated suction lines, base large cold storage	%0	2%	2%	27%	8%	%0	4%	10%	%0	%0	4%	%0
VA Existing	3408 Multiplex Compressor System, base large cold storage	%0	2%	2%	27%	8%	%0	4%	10%	%0	%0	4%	%0
VA Existing	3409 Oversized Air Cooled Condenser, base large cold storage	%0	2%	2%	27%	8%	%0	4%	10%	%0	%0	4%	%0
VA Existing	3410 Refrigeration Coll Cleaning, base large cold storage	%0	2%	2%	27%	8%	%0	4%	10%	%0	%0	4%	%0
VA Existing	3411 Refrigeration Commissioning, base large cold storage	%0	2%	2%	27%	8%	%0	4%	10%	%0	%0	4%	%0
VA Existing	3412 Strip curtains for walk-ins, base large cold storage	%0	2%	2%	27%	8%	%0	4%	10%	%0	%0	4%	%0
VA Existing	3500 Base Reach-in Refrigerator/Freezer, Federal Standard	3%	12%	2%	23%	%0	16%	8%	1%	%0	%2	31%	2%
VA Existing	3501 Energy Star solid door reach-in refrigerator/freezer	3%	12%	2%	23%	%0	16%	8%	1%	%0	%2	31%	2%
VA Existing	3502 Freezer-Cooler Replacement Gaskets, base reach-in	3%	12%	2%	23%	%0	16%	8%	1%	%0	%.2	31%	2%
VA Existing	3503 Refrigeration Coll Cleaning, base base reach-in	3%	12%	2%	23%	%0	16%	8%	1%	%0	%.2	31%	2%
VA Existing	3600 Base Glass Door Reach-in Refrigerator/Freezer, Federal Standard	3%	25%	8%	%0	%0	%0	%9	19%	%0	1%	%0	1%
VA Existing	3601 Energy Star glass door reach-in refrigerator/freezer	3%	25%	8%	%0	%0	%0	%9	19%	%0	1%	%0	1%
VA Existing	3602 Bi-level LED Case Lighting, base glass-door reach-in	3%	25%	8%	%0	%0	%0	%9	19%	%0	1%	%0	1%
VA Existing	3603 Freezer-Cooler Replacement Gaskets, base glass-door reach-in	3%	25%	8%	%0	%0	%0	%9	19%	%0	1%	%0	1%
VA Existing	3604 Refrigeration Coil Cleaning, base glass-door reach-in	3%	25%	8%	%0	%0	%0	%9	19%	%0	1%	%0	1%
VA Existing	3700 Base Ice Maker, Federal Standard	17%	%02	4.2	41%	8%	26%	21%	81%	%0	13%	20%	3%
VA Existing	3701 Energy Star Ice Machines	17%	%02	%2	41%	8%	26%	21%	81%	%0	13%	20%	3%
VA Existing	3702 Refrigeration Coll Cleaning, base ice maker	17%	%02	4.2	41%	8%	26%	21%	81%	%0	13%	20%	3%
VA Existing	3800 Base Residential-Type Refrigerator/Freezer, Federal Standard	75%	38%	%09	23%	62%	%98	%69	%89	%86	81%	%02	78%
VA Existing	3801 Energy Star refrigerator/freezer	75%	38%	%09	23%	%29	%98	%69	%89	%86	81%	%02	78%
VA Existing		75%	38%	%09	23%	62%	%98	%69	%89	%86	81%	%02	78%
VA Existing	3900 Base Compact Refrigerator, Federal Standard	39%	15%	31%	%8	76%	14%	41%	26%	%0	15%	15%	10%
VA Existing		39%	15%	31%	8%	76%	14%	47%	26%	%0	15%	15%	10%
VA Existing	3902 Refrigeration Coil Cleaning, compact refrigerator	39%	15%	31%	%8	26%	14%	47%	26%	%0	15%	15%	10%
VA Existing		71%	22%	49%	21%	80%	31%	%69	81%	100%	37%	73%	32%
VA Existing	4001 Energy Star server	71%	22%	49%	21%	80%	31%	%69	81%	100%	37%	73%	32%
VA Existing		71%	22%	49%	21%	%08	31%	%69	81%	100%	37%	73%	32%
VA Existing		91%	26%	%82	22%	%06	45%	%86	%06	21%	%29	%06	78%
VA Existing		91%	26%	%82	22%	%06	45%	%86	%06	21%	%29	%06	78%
VA Existing	4102 PC Network Power Management Enabling	91%	26%	%82	22%	%06	45%	%86	%06	21%	%29	%06	78%
VA Existing		%06	49%	45%	21%	88%	37%	78%	83%	%96	44%	%98	35%
VA Existing	4201 Energy Star or Better Laptop	%06	49%	45%	21%	88%	37%	78%	83%	%96	44%	%98	32%
VA Existing	4202 Laptop Network Power Management Enabling	%06	49%	45%	21%	88%	37%	%82	83%	%96	44%	%98	32%
VA Existing	4300 Base Monitor, LCD	%06	62%	%9/	64%	%62	%26	82%	87%	%96	71%	%88	47%
VA Existing		%06	62%	%92	64%	%62	%26	82%	87%	%96	71%	%88	47%
VA Existing	4302 Monitor Power Management Enabling - LCD	%06	62%	%92	64%	%62	%56	82%	87%	%96	71%	%88	47%
VA Existing	4303 Plug-load controls - Commercial Smart Strip (base monitor LCD)	%06	62%	%92	64%	%62	82%	82%	87%	%96	71%	%88	47%
VA Existing	4400 Base Imaging	85%	43%	%19	23%	%59	39%	%06	81%	100%	25%	91%	21%



Commercial Elec Measure Inputs	Measure Inputs	ENERGY SAVINGS										
Segment	Maseura # Maseura Dasminitin	(percent) Office Res	Restaurant Retail Grocery	Grocery Building Tyr	cery Warehouse	Education Health	Health	Lodging Iding Type	Data Centers	Non-Jurisdictional	Religious Worship	Misc milding Type 1
ш	1000 Base Linear Lighting, Fluorescent Fixture, 2L4T12			%0	%(%0 80		%0	%0	%0	%0
VA Existing		%22	77%	77%	%22 42%	%22 %2	%44	77%	%22	%12	77%	77%
VA Existing	100Z ROB ZL4 LED Tube (base 112) 1003 IED Troffer (Base T12)	91% 93%		%-%			%1° %2%	% 69%	%1% 63%	%1% 83%		91% 63%
VA Existing		81%		1%			81%	81%	81%	81%		81%
VA Existing		2%		2%			2%	2%	2%	2%		2%
VA Existing	1006 Network Lighting Controls (Base T12)	38%		% %			38%	38%	38%	38%		38%
VA Existing		%0 7		%0			%07	%07	%07	%07		%07
VA Existing		2002		%0			%02	20%	20%	%02		20%
VA Existing		%0		%0			%0	%0	%0	%0		%0
VA Existing		71%		1%			71%	71%	71%	71%		71%
VA Existing		38%		%8			38%	38%	38%	38%		38%
VA Existing		54%		% 4 %			54% 14%	54%	24%	. 55 % E		54%
VA Existing	1104 LED Troller With lamp removal (16)	%27		% 2%			%//	% 2	200	%11		%1,
VA Existing		%8E		2 %			38.8	38%	38%	38%		38%
VA Existing		50%		. %			20%	20%	20%	20%		20%
VA Existing		%0		%0			%0	%0	%0	%0		%0
VA Existing		93%		3%			%89	63%	9%	%89		63%
VA Existing		%0		%0			%0	%0	%0	%0		%0
VA Existing		40%		%6		-	40%	40%	40%	40%		40%
VA Existing	120Z Lighting Control Luneup (base LED Tube) 1203 Network Lighting Controls (Base LED Tube)	%8°.		%6			%°C	%c.	%°C	38%		38%
VA Existing		20%		%0			20%	20%	20%	20%		20%
VA Existing		%0		%0			%0	%0	%0	%0		%0
VA Existing		40%		%0			40%	40%	40%	40%		40%
VA Existing		2%		2%			2%	2%	2%	2%		2%
VA Existing		38%		3%			38%	38%	38%	38%		38%
VA Existing		20%		%6			20%	20%	20%	20%		20%
VA Existing		%°°		%			%000	%0%	%0°	%000		%000
VA Existing	1231 RELI OCC & Dayight megral bensor LED trong (base intear LED megrated) 1275 Rose Linear Lichting LED Tube. 2 Janua fixture interrated market. 2028 Standard	%0X		%0			%07	%07	%07	%07		%0 <i>7</i>
VA Existing		20%		%0			20%	20%	20%	20%		20%
VA Existing	1300 Base General Service Screw-in, CFL	%0		%0			%0	%0	%0	%0		%0
VA Existing	1301 LED screw-in replacement (base CFL)	30%		%0			30%	30%	30%	30%		30%
VA Existing		%0		%0			%0	%0	%0	%0		%0
VA Existing	1351 LED screw-in replacement (base incandescent/halogen)	75%		2%			75%	75%	75%	75%		75%
VA Existing	1400 Base General Service Screw-in, LED bulb	%0		%0			%0	%0	%0	%0		%0
VA Existing	1401 LED screw-in replacement (base LED)	10%		%0			10%	10%	10%	10%		10%
VA Existing		%0		%0			%0	%0	%0	%0		%0
VA Existing		2%		5%			5%	5%	2%	2%		2%
VA Existing		%0		%C			%0	%0	%0	%0		%0
VA Existing		49%		%6			49%	46%	46%	46%		49%
VA Existing	1452 High Performance Lighting R/R - Combined Strategies (base low bay HID)	%89 9		%6			%89 %89	%89 9	%89	%89		%89 %89
VA Existing	1900 base rign bay Lignting, Fluorescent 13 4504 High Darformanna Linkting B/D - Ormbinad Stratagies (Base TS)	%0 %0		%6			%0 889	%0%	%0	%0 88		%0 88%
VA Existing		40%		2 %			40%	40%	40%	40%		40%
VA Existing		49%		2 %			49%	49%	49%	49%		49%
VA Existing		2%		%2			2%	2%	2%	2%		2%
VA Existing		38%		3%			38%	38%	38%	38%		38%
VA Existing		20%		%0			20%	20%	20%	20%		20%
VA Existing	1525 base High bay Lighting, Fluorescent 15, Integrated market	%0 809		%			%04	% O 2	%0	%0		%0
VA Existing		%0°		%0			%0	%0	%0°	%0 %0		%60
VA Existing		%69		%6			26%	26%	26%	26%		26%
VA Existing	1552 High Performance Lighting R/R - Combined Strategies (base high bay HID)	%89		3%			%89	%89	%89	%89		%89
VA Existing		%0		%0			%0	%0	%0	%0		%0
VA Existing		38%		%8			38%	38%	38%	38%		38%
VA Existing	15/7 Occupancy Sensor (Base high bay LED)	%07		%0			%0Z	%0Z	50%	%0Z		%0Z
VA Existing		%° '		8 %			25%	75%	25%	55%		55%
VA Existing		%0°		%0			%0	%6	%0	%0		%0
VA Existing		%89		3%			%89	%89	%89	%89		%89
VA Existing		%08		%0			%08	80%	80%	80%		80%
VA Existing	1653 Outdoor Lighting Controls (Base Outdoor HID)	22%		5%			22%	22%	22%	22%		22%
VA Existing		%0 %0		2%			0%	%0	%0	%0		%0
VA Existing	1701 LED outdoor lighting with brievel controls (base Outdoor CFL)	%)c		% %			%/6	%/6	30%	30%		30%
VA Existing	1703 Outdoor Lighting Controls (Base Outdoor CEL)	22%		%			22%	25%	22%	22%		25%
								į	İ	I		j

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Commercial Elec Measure Inputs	Veasure Inputs	ENERGY SAVINGS										
			Restaurant Retail		Warehouse	Education	Health	Lodging Da	Data Centers	Non-Jurisdictional	۵	Misc
Segment		Building Type Building T	ype 3uilding	Building Type	Building Type Sui	3uilding Type 3uilding Type	:- I.,	Iding Typ Building Type	Iding Type 9	Building Type 10		uilding Type 1
VA Existing	1730 Dase dellerar del vice didev-in, Outdoor incandescentrangen 1751 I ED outdoor lighting with billayer controls (Base Outdoor Incandescent)	%0°%			%58 85%	85% 85%	%2% 82%	85%	0.% 85%	0.0 85%	85%	85%
		75%			75%	75%	75%	75%	75%	75%	75%	75%
VA Existing		22%			22%	22%	22%	25%	22%	22%	22%	22%
VA Existing		%0			%0	%0	%0	%0	%0	%0	%0	%0
VA Existing		22%			22%	22%	%55%	22%	22%	22%	22%	22%
VA Existing	1850 Base Linear Lighting, Outdoor Fluorescent Lube 1851 ROB 2L4' LED Tube (base outdoor fluorescent)	40%			40%	40%	40%	40%	40%	40%	40%	40%
VA Existing		63%			63%	63%	63%	63%	63%	63%	93%	63%
VA Existing		22%			22%	22%	22%	22%	22%	22%	22%	22%
VA Existing		%0 %0			%0°	%0	%0	%0	%0	%0 0	%0	%0
VA Existing	1901 Outdoor Lighting Controls (base Outdoor LED Tube)	75%			%77	%22	% % % % % % % % % % % % % % % % % % % %	%77	%77	%77	%77	%27
VA Existing		12%			12%	12%	12%	12%	12%	12%	12%	12%
VA Existing		8%			%8	8%	88	8%	8%	%8	8%	8%
VA Existing		3%			3%	3%	3%	3%	3%	3%	3%	3%
VA Existing		10%			10%	10%	40%	10%	10%	10%	10%	10%
VA Existing	2005 Celling/roof Insulation - Chiller	12%			12%	12%	% :	12%	12%	12%	12%	12%
VA Existing		%1			%%	% 8	%-7%	% ?	%0	%7.00	7%	%2.4
VA Existing	2007 Duct Tesung/Seaning - Chiller	26%			%6	%%	%6	2%	%C	%07	%6	2%
VA Existing		22%			2,78	2,42	2, %	2 %	2,4	25.8	2%	22%
VA Existing		8%			%2	%2	11%	3%	88	%9	4%	4%
VA Existing		4%			2%	%9	%9	3%	4%	4%	3%	3%
VA Existing		16%			%	%6	%6	4%	%0	13%	%6	%6
VA Existing		26%			%	11%	44% %00	13%	%6	19%	11%	11%
VA Existing	2100 Base DX Packaged System; EEK=10.3, 10 tons	%0 %0			%0 0 8	%°	%%	%0	%0	%°	%0	%0
VA Existing	2101 DA Fackaged System, EER=10.9, 10 tons 2102 DX Packaged System FER=13.4 10 tons	23%			23%	23%	23%	23%	23%	23%	23%	23%
VA Existing	2103 Geothermal Heat Pump, EER=13, 10 tons - DX	21%			21%	21%	21%	21%	21%	21%	21%	21%
VA Existing	2104 DX Tune Up/ Advanced Diagnostics	2%			2%	2%	2%	2%	2%	2%	2%	2%
VA Existing	2105 Refrigerant Charge Adjustment - DX	10%			10%	10%	10%	10%	10%	10%	10%	10%
VA Existing	2106 Ceiling/roof Insulation - DX	12%			12%	12%	12%	12%	4,5	12%	12%	12%
VA Existing	210/ Cool Roof - DX	70%			18%	% 6	% 7	% 6	% 2	% 7	0%	%0
VA Existing		%60			%6	%6	%6	%6	%6	%6	%6	%6
VA Existing		%i €			3%	88	%0	1%	3%	2%	%0	%
VA Existing		28%			%0	2%	%0	4%	28%	14%	%0	%0
VA Existing		%0			%0	%0	%0	%0	%0	%0	%0	%
VA Existing	2113 Optimize Controls - DX	0 0 7			20%	20%	° ° °	2%	%26	%°°°	20%	20%
VA Existing		%6			12%	8 4 8	2 %	%2	8	8 %	2%	1%
VA Existing		26%			1%	11%	14%	13%	%0	19%	11%	11%
VA Existing		%0			%0	%0	%0	%0	%0	%0	%0	%0
VA Existing	2152 DX Packaged System, EER=13.4, 10 tons	14%			14%	14%	74%	14%	14%	44%	14%	14%
VA Existing	2153 Geothermal Heat Pump, EEK=13, 10 tons - DX	12%			12%	12%	12%	12%	12%	12%	12%	12%
VA Existing		10%			10%	,00	10%	10%	10%	10%	10%	10%
VA Existing		12%			12%	12%	12%	12%	1%	12%	12%	12%
VA Existing		2%			18%	4%	1%	%0	5%	1%	%0	%0
VA Existing		19%			19%	19%	19%	19%	19%	19%	19%	19%
VA Existing		2%			5%	5%	5%	5%	5%	2%	2%	2%
VA Existing	2160 Dual Enthalpy Economizer Replaces Dry Bulb Economizer - DX	3%			% è	%8°	%%	% 4	%8	2%	%°°	%0
VA Existing	2.101 Ecolomizer - DA 2.482 Naw Economizer - DX	%87			%0	%C	%0	4 °	%07 0%	% <u>4</u>	%0 *0	%0
VA Existing	2163 Optimize Controls - DX	2%			20%	2%	2%	2%	5%	2%	2%	2%
VA Existing		10%			10%	10%	10%	10%	10%	10%	10%	10%
VA Existing		%6			12%	4%	%	%/	%6	2%	1%	4%
VA Existing		26%			%**	11%	14%	13%	%0	19%	11%	11%
VA Existing	2200 base neat Pump cooling (14.3 offer, 9.2 floor)	14%	14% 14%	14%	14%	14%	14%	14%	14%	.0	14%	14%
VA Existing		10%			10%	10%	10%	10%	10%	10%	10%	10%
VA Existing		12%			12%	12%	12%	12%	1%	12%	12%	12%
VA Existing		2%			2%	2%	2%	5%	2%	2%	2%	2%
VA Existing		10%			10%	10%	10%	10%	10%	10%	10%	10%
VA Existing		%6			12%	%4%	% 4	% 4	%6 6	25%	7 7%	%,
VA Existing	2207 High Efficiency Windows (Base Heat Pump Cooling)	%QZ			%-°	%11	.4%	اع% 0%	% &	% <u>6</u>	%LL %C	%LL
VA Existing		% % %			0 0	,00	10%	10%	%0,	10%	10%	10%
VA Existing		%0c			%00	%00	%02	20%	%0'	%00	%00	%02
n		:				:	:	!	i	;	:	l

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Commercial Flor Messure Inpute	aceura Innute	ENEDGY SAVING	u										
	מספת ב וולתנס	(percent)	,										
Segment	Maasure # Measure Description	Office Re- Building Type Buildi	staurant ing Type Stuil	Retail ding Type Bui	Grocery V	Warehouse	Education	Health L	Lodging Dat	a Centers N	Non-Jurisdictional Building Type 10	Religious Worship Building Type 11	Misc Idina Tyne 1
ш	2303 Ceiling/roof Insulation (Base Residential Split-System)	12%	12%	12%	12%	12%	12%	1%	12%	12%	12%	12%	12%
VA Existing	2304 Duct/Pipe Insulation (Base Residential Split-System)	7%	5%	2%	5%	2%	2%	5%	5%	2%	2%	2%	2%
VA Existing		10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
VA Existing		16%	10%	13%	% 3%	% 7%	%6 6	% o	% 6	%0	13%	%6 6	% 60 60
VA Existing	2400 base PTAC cooling, bert=10.2, 1 ton	0%	7%	% %	4%%	74%	74%	14%	14%	%0	74%	14%	4%
VA Existing		12%	12%	12%	12%	12%	12%	12%	12%	<u>+</u> %	12%	12%	12%
VA Existing	2404 Occupancy Sensor (hotels)	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%
VA Existing	2405 Window Film (Standard) (Base PTAC)	%6	10%	2%	%6	12%	4%	1%	%/	%6	2%	1%	1%
VA Existing		%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0
VA Existing		5%	2%	2%	5%	5%	5%	5%	2%	2%	2%	2%	5%
VA Existing		30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
VA Existing		12%	12%	12%	12%	12%	12%	4%	12%	12%	12%	12%	12%
VA Existing		16%	10%	13%	% 3%	% 7%	%6 6	% o	% 6	%0	13%	%6 **	%6 6
VA Existing	Solve figure frictions with a first solve from the	%1.1	%6	%0	%	%0	% 6	%0	%0	%0	% 0	%40	%4%
VA Existing		12%	12%	42%	12%	12%	12%	% %	2%	12%	12%	12%	12%
VA Existing		16%	10%	13%	1%	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	%6	%-	4%	%0	13%	%5	%6
VA Existing		26%	14%	14%	%	1%	11%	14%	13%	%0	19%	11%	11%
VA Existing		%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0
VA Existing		12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%
VA Existing		11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%
VA Existing		%9	%9	%9	%9	%9	%9	%9	%9	%9	%9	%9	%9
VA Existing		%8	%8	8%	%8	8%	%8	%8	%8	%8	%8	8%	%8
VA Existing		3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
VA Existing		722%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%
VA Existing		4%	4%	4%	4%	4%	4%	4%	% ;	4%	4%	4%	4%
VA Existing	3108 Insulated suction lines, open cases	%° 2	%6	%6	%6	%0	%6	%6	% %	%6	%0	%0	%° 0
VA Existing	3109 LED Display Lighting, open cases	14%	74%	14%	7 1/8	14%	74%	14%	4 %	14%	7.6	1.4%	7 %
VA Existing	3.110 intuitible Collip eason System, Open cases 3.111 Night covers for display cases, open cases	% <u>+</u> 6	<u>*</u> 6	% <u>+</u> o	% ± %	% <u>+</u>	%6	% + *	2 % ± 6	% <u>+</u> 6	% 1	% % ± 6	% <u>+</u> 6
VA Existing	3112 Oversized Air Cooled Condenser, open cases	%	%	%	%	%	%	%	%	%	% %	%	%
VA Existing		23%	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%
VA Existing		3%	3%	%8	3%	3%	3%	3%	3%	3%	3%	3%	3%
VA Existing		%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0
VA Existing		%6	%6	%6	%6	%6	%6	%6	%6	%6	%6	%6	%6
VA Existing		40%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
VA Existing		2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
VA Existing		11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%
VA Existing	3205 Doming Defend Electric has a closed cases	%9 %9	%0	% 0 0	%0	%0	%0	%0	%0	%000	% o	%0	%0
VA Existing		3%	%	8 % o m	%	% % %	%	%8	% %	S %	8 %	%%	% % %
VA Existing		22%	22%	22%	22%	22%	22%	22%	22%	22%	22%	22%	22%
VA Existing		%2	%2	4.2	%2	4.2	4.2	4.2	%/	7%	%2	%2	4.2
		7%	5%	2%	5%	2%	2%	2%	5%	2%	2%	2%	2%
		4%	4%	% 4 %	4%	4%	4%	4%	%*	4%	4%	4%	4%
	3212 Insulated suction lines, base closed cases	%0	%0	%%	%6	%0	%6	%0	%6	%6	%0	%0	%0
VA Existing	3213 LED Display Egittui g, base dosed cases 3214 Low or Anti-Sweat Door Film base closed cases	2%	22%	% %	2%	2%	2%	2%	% %	2.8	2%	%2	2%
		14%	14%	14%	14%	14%	14%	14%	14%	14%	14%	14%	14%
VA Existing		%8	8%	8%	%8	%8	%8	8%	%8	8%	8%	8%	8%
VA Existing		23%	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%
VA Existing		2%	2%	2%	2%	2%	2%	%	2%	2%	2%	2%	2%
VA Existing	3300 base Wark-in retrigeration/rifeeZer units 3301 Efficient compressor motor walk-ins	%°	% 6	% % • °	% 6	%	% 0	% 0 0	% %	%	% % > 6	% 6	%
VA Existing		7%	%	7%	1%	1%	1%	7 %	%	1%	1%	1%	1%
VA Existing		%9	%9	%9	%9	%9	%9	%9	%9	%9	%9	%9	%9
VA Existing		%8	8%	%8	%8	%8	8%	8%	%8	%8	%8	8%	8%
VA Existing	3305 Demand Hot Gas Defrost, walk-ins	3%	%	%6	3%	3%	3%	3%	%%	3%	3%	3%	3%
VA Existing	3300 Electronically confinated evaporator far motor, wark-ins 3307 Evaporator fan controllar for MT walk-ins	45%	42%	18%	42%	42%	42%	%1%	1%	1%	42%	1%	45%
VA Existing		%- 2	%-2	%-	%-2	%-	%-2	%-	%-	%-	%2	%2	%-2
VA Existing		1%	. %	- 2%	1%	1%	1%	4.	%	4.%	1%	1%	1%
VA Existing		%9	%9	%9	%9	%9	%9	%9	%9	%9	%9	%9	%9
VA Existing	3311 Insulated suction lines, walk-ins	%0	%0	%;	%	%0	%0	%0	%	%	%0	%0	%0
VA Existing	3312 Multiplex Compressor System, walk-ins 3243 Overeized Air Cooled Condensor walk ins	14% 8%	14% 8%	4. %%	74% %a	74% %a	14%	74% %a	14% 8%	44% %a	%4L %a	14%	14%
VA Existing	3314 Refrigeration Coil Cleaning, walk-ins	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%



Commercial Elec Measure Inputs	re Inputs	ENERGY SAVINGS	S										
							1				1		N.
Segment	Measure # Measure Description	Building Type Buil	Restaurant	Iding Type B	Grocery Building Type 4B	Warehouse	Education Ilding Type 3ui	Health Jing Type ild	Loaging Da	Data Centers	Non-Jurisdictional	Religious Worship	ilding Tyne 1
	3315 Refrigeration Commissioning walk-ins	3%	3%		-1	3%	3%	3%	3%	3%	2	2	3%
VA Existing	3316 Strip curtains for walk-ins	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
VA Existing	3400 Base Large Cold Storage Area	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0
VA Existing	3401 Efficient compressor motor, base large cold storage	%6	%6	%6	%6	%6	%6	%6	%6	%6	%6	%6	%6
VA Existing	3402 Auto-closer on main door to walk-in freezer, base large cold storage	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
VA Existing		%9	%9	%9	%9	%9	%9	%9	%9	%9	%9	%9	%9
VA Existing	3404 Electronically commutated evaporator fan motor, base large cold storage	22%	22%	22%	25%	22%	22%	22%	25%	22%	22%	22%	25%
VA Existing	3405 Evaporator fan controller for MT walk-ins, base large cold storage	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
VA Existing	3406 High-efficiency fan motors, base large cold storage	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
VA Existing	3407 Insulated suction lines, base large cold storage	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0
VA Existing	3408 Multiplex Compressor System, base large cold storage	14%	14%	14%	14%	14%	14%	14%	14%	14%	14%	14%	14%
VA Existing	3409 Oversized Air Cooled Condenser, base large cold storage	8%	8%	8%	8%	8%	8%	8%	8%	%8	8%	%8	8%
VA Existing	3410 Refrigeration Coil Cleaning, base large cold storage	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%
VA Existing		2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
VA Existing	3412 Strip curtains for walk-ins, base large cold storage	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
VA Existing	3500 Base Reach-in Refrigerator/Freezer, Federal Standard	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0
VA Existing	3501 Energy Star solid door reach-in refrigerator/freezer	4.2	4%	%2	%2	%2	%2	%2	%/	4%	%2	%2	%2
VA Existing	3502 Freezer-Cooler Replacement Gaskets, base reach-in	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
VA Existing		5%	5%	2%	2%	2%	5%	2%	5%	5%	2%	2%	2%
VA Existing	3600 Base Glass Door Reach-in Refrigerator/Freezer, Federal Standard	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0
VA Existing	3601 Energy Star glass door reach-in refrigerator/freezer	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%	12%
VA Existing		11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%
VA Existing		3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
VA Existing		5%	5%	2%	5%	5%	2%	2%	5%	5%	2%	2%	5%
VA Existing		%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0
VA Existing		10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
VA Existing		10%	5%	10%	5%	5%	10%	10%	10%	10%	10%	10%	10%
VA Existing		%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0
VA Existing		10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
VA Existing		10%	2%	10%	2%	2%	10%	10%	10%	10%	10%	10%	10%
VA Existing	3900 Base Compact Refrigerator, Federal Standard	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0
VA Existing	3901 Energy Star Compact Refrigerator	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
VA Existing	3902 Refrigeration Coil Cleaning, compact refrigerator	10%	5%	10%	2%	2%	10%	10%	10%	10%	10%	10%	10%
VA Existing		%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0
VA Existing		30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
VA Existing		%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0
VA Existing		%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0
VA Existing		33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
VA Existing		%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0
VA Existing		%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0
VA Existing		30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
VA Existing		%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0
VA Existing		%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0
VA Existing		21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%
VA Existing		%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0
VA Existing		10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
VA EXISTING	4400 base imaging	%n	% 0	0,0	0,40	0% 0	0,00	% 0	% O	0%0	% D	0%0	0%0



	(percent)										
Moseure # Moseure Decription	Office Restaurant	rant Retail	Grocery Grocery	Warehouse	ation	Health L	ging	Data Centers Non-	-Jurisdictional Religio	Worship	Misc Milding Type 1
	100%	00% 100°		%96	00%	100%	%96	100%	100%	% 00 00	100%
					84%	84%	84%	84%	84%	84%	84%
					84%	84%	84%	84%	84%	84%	84%
1003 LED Traffer with lamp removel (T12)					84%	84% 84%	84%	84%	84%	84%	84% %7%
1005 Lighting Control Tuneup (Base 712)					84%	84%	84%	84%	84%	84%	84%
1006 Network Lighting Controls (Base T12)					84%	84%	84%	84%	84%	84%	84%
					84%	84%	84%	84%	84%	84%	84%
					100%	100%	100%	100%	100%	100%	100%
					84% 100%	100%	100%	100%	100%	84%	100%
					91%	91%	91%	91%	91%	91%	91%
					91%	91%	91%	91%	91%	91%	91%
					91%	91%	91%	91%	91%	91%	91%
					91%	91%	91%	91%	91%	91%	91%
					91%	91%	91%	91%	91%	91%	91%
					91%	91%	91%	91%	91%	91%	91%
Occupancy Sensor (Base T8)					91%	91%	91%	91%	91%	91%	91%
Base Linear Lighting, Fluorescent Fixture, 2L4*18, 1 EB, integrated					100%	100%	100%	100%	100%	100%	100%
					100%	100%	100%	100%	100%	91%	9T% 100%
High Performance Lighting R/R - Combined Strategies (Base LED Tu					100%	100%	100%	100%	100%	100%	100%
Lighting Control Tuneup (Base LED Tube)					100%	100%	100%	100%	100%	100%	100%
					100%	100%	100%	100%	100%	100%	100%
					100%	100%	100%	100%	100%	100%	100%
Base Linear Lighting, LED Tube, 2 lamp fixture, 2028 Standard					888%	88%	88%	%88 88%	88%	88%	%88 %88
High Performance Lighting K/K - Combined Strategles (Base LED TU-					%88 888 888	% 88% 88%	% % % % % %	% 88% 88%	88%	88%	% 8 8 8 8 8
1228 Network Lighting Controls (Base LED Tube)					88%	88%	%88	%88	88%	88%	%88
1229 Occupancy Sensor (Base LED tube)					88%	%88	88%	88%	88%	%88	%88
1250 Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market					100%	100%	100%	100%	100%	100%	100%
1251 RET Occ & Daylight Integral Sensor LED troffer (base linear LED integrated)					100%	100%	100%	100%	100%	100%	100%
					88%	88%	88%	%88	88%	%88	88%
					88%	88%	88%	88%	88%	%88%	%88
					100%	100%	100%	100%	100%	100% 100%	100%
1350 Base General Service Screw-in, Incandescent/halogen					100%	100%	100%	100%	100%	100%	100%
1351 LED screw-in replacement (base incandescent/halogen)					100%	100%	100%	100%	100%	100%	100%
1400 Base General Service Screw-in, LED bulb					100%	100%	100%	100%	100%	100%	100%
					100%	100%	100%	100%	100%	100%	100%
					82%	85%	85%	85%	85%	85%	82%
1426 LED screw-in replacement (base LED)					85%	85%	85%	85%	85%	85%	85%
					100%	100%	100%	100%	100%	100%	100%
LED fixture (base Low bay HID)					100%	100%	100%	100%	100%	100%	100%
nign Periormance Lignung K/K - Combined Strategies (base low bay Race High Ray Lighting Fluorescent TS					100%	100%	100%	100%	100%	700% 100%	100%
					100%	100%	100%	100%	100%	100%	100%
					100%	100%	100%	100%	100%	100%	100%
					100%	100%	100%	100%	100%	100%	100%
1504 Lighting Control Tuneup (Base T5)					100%	100%	100%	100%	100%	100%	100%
1505 Network Lighting Controls (Base 15)					100%	100%	100%	100%	100%	100%	100%
					100%	100%	100%	100%	100%	100% 100%	100%
					100%	100%	100%	100%	100%	100%	100%
					100%	100%	100%	100%	100%	100%	100%
High Bay Bi-Level Programmed LED Fixture					100%	100%	100%	100%	100%	100%	100%
Hign Performance Lighting K/R - Combined Strategies (base high bay Base High Bay Lighting 1FD lighting					100%	100%	100%	100%	100%	100% 100%	100%
					100%	100%	100%	100%	100%	100%	100%
					100%	100%	100%	100%	100%	100%	100%
					100%	100%	100%	100%	100%	100%	100%
					100%	100%	100%	100%	100%	100%	100%
1650 Base Area Lighting, Outdoor HID	_				100%	100%	100%	100%	100%	100%	100%
1652 LED Outdoor Area Lighting (Base Outdoor MID) 1652 LED outdoor lighting with hi-level controls (Base Outdoor HTD)					100%	100%	100%	100%	100%	100%	100%
		Base Linear Lighting, Fluorescent Fixture, 214*T12 Rob 24. LED Tube (Bases T12) Retend (Barker with lamp removal (T12) Retended (Bases T12) Retended (Bases T13) Lighting Control Tuneuro (Bases T13) Retended (Bases T13) Retended (Bases T13) Retended (Bases T13) Retended (Bases T13) Lighting Control Tuneuro (Bases T13) Retended (Bases T13) Lighting Control (Bases LED Tube) Base (Linear Lighting, LED Tube, 2 lamp fixture, integrated market, 2028 Standard Ret Tock & Davight Integral Sancor LED troffer (Base IED Tube) Base (Linear Lighting, LED Tube, 2 lamp fixture, integrated market, 2028 Standard Ret Tock & Baylight Integral Sancor LED troffer (Base IED Tube) Base (Linear Lighting, LED Tube, 2 lamp fixture, integrated market, 2028 Standard LED Screw-in replacement (Base IED) Base (Linear Lighting, LED Tube, 2 lamp fixture, integrated market, 2028 Standard LED Screw-in replacement (Base IED) Base (Linear Lighting, Linear Screw-in, LED bulb, 2028 Standard LED Screw-in replacement (Base IED)	Base Linear Lighting, Fluorescent Fixture, 214*T12 Rob 24. LED Tube (Bases T12) RED Troffer (With lamp removal (T12) Ret Coc. & Daylight Integral Sensor (Base T12) Ret Coc. & Daylight Integral Sensor LED troffer (base T8) Rob 24. LED Tube (Bases T8) Ret Coc. & Daylight Integral Sensor LED troffer (base T8) Rob 24. LED Tube (Bases T8) Lighting Control Tuneup (Bases T8) Rese Linear Lighting, LED Tube, 2 lamp fixture RET Coc. & Daylight Integral Sensor LED troffer (base T8) Lighting Control Tuneup (Bases T8) Rese Linear Lighting, LED Tube, 2 lamp fixture Lighting Control Tuneup (Bases T8) Rese Linear Lighting, LED Tube, 2 lamp fixture High Performance Lighting RR. Combined Strategies (Base LED Tube) High Performance Lighting RR. Combined Strategies (Base LED Tube) High Performance Lighting RR. Combined Strategies (Base LED Tube) Metwork Lighting Controls (Base LED Tube) Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market RET Coc. & Daylight Integral Sensor LED troffer (base Inear LED Integrated market RET Coc. & Baylight Integral Sensor LED troffer (base Inear LED Integrated market RET Coc. & Raylight Integral Sensor LED troffer (base Inear LED Integrated market RET Coc. & Baylight Integral Sensor LED troffer (base Inear Lighting, LED Tube, 2 lamp fixture, integrated market RET Coc. & Baylight Integral Sensor LED troffer (base Inear Lighting, LED Tube, 2 lamp fixture, integrated market RET Coc. & Baylight Integral Sensor LED troffer (base Inear Lighting, LED Tube, 2 lamp fixture, integrated market RET Coc. & Baylight Integral Sensor LED troffer (base IED) Base Linear Lighting, Linear Senvice Screw-in, LED bub,	Colore C	Beat Limbor Lighting, Rich Comband Strategies (Base 112) 1979	The first control behalf of Res 12 100	The first control below of Key Combined Strangelse (Base 112)	Book Linear (Libration Review) Libration R	Book Linear (Libration Review) Libration R		The formation (plany) Processive Name, 2 (1) Processive Name, 2 (

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nt Measur	Measure Description Outdoor Lighting Controls (Race Outdoor HID)		ilding Type uildi 100% 100%	≒			ij	=	ding Typuildi 100%	Į į	ursdettonal Religion of Typeildin 100% 100%	s Worship J Type3uildi	ITIISC NO TVDP
		uilding Type und	100% 100%	,000		1000		100%	100%	3	100%		1 1 P
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	L LED outdoor lighting with bi-level controls (Base Outdoor CFL)	100%	100%	100%	100%	100%	100%	100%	100%		100%	100%	100%
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		100%	100%	100%	100%	100%	100%	100%	100%		100%	100%	100
		32%	35%	35%	35%	35%	35%	35%	35%		35%	35%	35
		35%	35%	35%	35%	35%	35%	35%	35%		32%	35%	35
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		100%	100%	100%	100%	100%	100%	100%	100%		100%	100%	Ď,
	J. Dasse Lilledr Ligninig, Outgoor Fluorescent Tube	01%	01%	01%	100%	91%	01%	01%	010%		010%	01%	3 0
		9170	91%	91.70	010%	010	91%	91.70	91%		91%	91%	n a
Evicting 1853		91%	91%	91%	91%	91%	91%	91%	91%		9170	91%	ח מ
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		8,001	100%	100%	100%	100%	100%	100%	100%		100%	100%	i -
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		100%	100%	100%	100%	100%	100%	100%	100%		100%	100%	Ξ:
		100%	100%	100%	100%	100%	100%	100%	100%		100%	100%	Ħ
) Dual Enthalpy Economizer Replaces Dry Bulb Economizer - Chiller	73%	100%	%62	100%	100%	85%	100%	100%		%98	100%	∺
Existing 2011		100%	100%	100%	100%	100%	100%	100%	100%		100%	100%	∺
Existing 2012	2 Window Film (Standard) - Chiller	100%	100%	100%	100%	100%	100%	100%	100%		100%	100%	Ħ
Existing 2013	3 High Efficiency Windows - Chiller	100%	100%	100%	100%	100%	100%	100%	100%		100%	100%	∺
Existing 2100		88%	%88	88%	88%	88%	88%	88%	88%		%88	%88	ω
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		888	88%	88%	88%	88%	88%	88%	88%		88%	88%	~
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		%88	%88	%88	%88	%88	%88	%88	%88		%88	%88	
Existing 2152		%62	%62	%62	%62	%62	%62	%62	%62		%62	%62	
Existing 2153		%62	%62	%62	%62	%62	%62	%62	%62		%62	%62	-
Existing 2154	1 DX Tune Up/ Advanced Diagnostics	88%	%88	88%	88%	88%	88%	88%	88%		%88	%88	~
Existing 2155		%88	88%	88%	88%	88%	88%	88%	88%		88%	88%	
		88%	88%	88%	88%	88%	88%	88%	88%		%88	88%	~
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		%88 %88	%88 88%	%00 0/00 0/00	%000	%00 0/.00 0/.00	%88 8	% 0 0 0 0 0 0 0 0	%88		0/00	%88	Ju
		8000	0,00	0,00	200	0000	000	000	000		0,00	000	0 0
		0000	0,000	0000	0000	0,000	0000	0000	0,000		1000	100%	0 5
	High Efficiency Windows - DX	100%	88%	100%	88%	88%	100%	100%	88%		100%	100%	2
Existing 220	2200 Base Heat Pump cooling (14.3 SEER, 8.2 HSPF)	%98	%98	%98	%98	%98	%98	%98	%98		%98	%98	ω
Existing 220	L Heat Pump Upgrade (18 SEER, 8.2 HSPF), cooling	%98	%98	%98	%98	%98	%98	%98	%98		%98	%98	

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Commercial Ele	Commercial Elec Measure Inputs	si c	justment F	actor			:		:				
Seament	Measure # Measure Description	Office Re	e Restaurant	Retail Groc	ery Tyne i	ry Warehouse Educa	탈	Health Lodging Type Ilding Ty	_ c	Data Centers Non-Juri	Tvnei	Worship Tynpski ildir	Misc Type 1
VA Existing	02	-100		- ∞	- ∞	- ∞	86%	w	%98 86%	m		w	86%
VA Existing		%98	%98	%98	%98	%98	%98	%98	%98	%98	%98	%98	%98
VA Existing	2204 Duct/Pipe Insulation (Base Heat Pump Cooling)	%98 %98	86% 86%	%98	86%	%98 %98	86% 86%	%98 %98	%98 %98	%98 %98	%98	%98	86%
VA Existing		86%	%98 86%	86%	%98 86%	86%	%98 86%	86%	%98	%98 86%	%98	86%	86%
VA Existing		%98	%98	%98	%98	%98	%98	%98	%98	%98	%98	%98	%98
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	700%	100%
VA Existing	2301 Split System Air Conditioner, SEER 16.0 ENEKGY STAK, <5.4 tons	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100% 100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	%001	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100% 050%	100%
VA Existing	2400 Base PTAC cooling, EER=10.2, 1 ton	95%	95%	95%	95%	95%	95%	95%	95%	95%	95%	95%	95%
VA Existing	Z401 NE PLAC, CER=3.6, 1 (01), COUING 2402 Ceiling/roof Insulation (Base PTAC)	%26 65%	92% 92%	90.60 97%	95%	92%	92%	%c6	92%	92% 97%	95%	%2% 95%	95% 95%
VA Existing		92%	92%	95%	92%	92%	92%	92%	92%	92%	92%	95%	92%
VA Existing		%56	95%	92%	92%	95%	92%	92%	%56	%56	95%	%56	95%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	700%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	700%	100%
VA Existing	2502 Ductiess Mini-Split SEER 18.0/HSPF 10.0 CEE Tier 1 (Base Room AC)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	2303 Cellillg/root illsulation (base Room AC) 2505 Window Film (Standard) (Base Room AC)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	%001	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	%001	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	001	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	2604 High Efficiency Windows (Base Ductiess Mini-split)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	Juo pase Open enlaga ared/inexer cases 3101 Ffficient compressor motor onen cases	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	%001	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	0001	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	001	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	001	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100% 100%	100%
VA Existing	3100 Electronically commutated evaporator fan motor, open cases 3107 High-efficiency fan motors, open cases	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	700% 100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	700%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	001	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	700%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	700%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	3113 Retrigeration Coll Cleaning, open cases 3114 Defriveration Commissioning, open cases	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	700% 100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	,00% 100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	007	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	%001	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	700%	100%
VA Existing	3204 Bi-level LED Case Lighting (self-contained units), base closed cases	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	001	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	%001	100%
VA Existing	3209 Freezer-Cooler Replacement Gaskets, base closed cases	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	3210 High K-Value Glass Doors, base closed cases	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	%00T	100%
VA Existing	3213 LED Display Lighting, base closed cases	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	007	100%
VA Existing	3214 Low or Anti-Sweat Door Film, base closed cases	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	%001	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100% 100%	100%
VA Existing	3216 Uversized Air Cooled Condenser, base closed cases ממחלים האיזים רבוב	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100% 100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	700% 100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	001	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	700%	100%
VA Existing	3302 Auto-closer on main door to walk-in freezer	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100% 100%	100%
VA Existing	33U3 Compressor VSD retront, walk-ins	100%	TOD‰	0%.OOT	TOO.%	T 00.70	TOU %	TOD.%	100%	MONT.	100%	100%	0,00T

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Commercial Ele	Commercial Elec Measure Inputs	Standards Adjustment Factor (percent)	djustment F	actor									
Compost	Maseura # Maseura Dacreintion	Office F	Restaurant	Retail	Grocery V	Warehouse F	Education Impani	Health L	odging Da	Lodging Data Centers Non-Jurisdictional	n-Jurisdictional Relig	Religious Worship	Misc
VA Existing	Measure # Measure Description	Under 100% 100% 100% 100% 100% 100% 100% 100	100%	100%	100%	1 00%	100%	100%	100%	100%	100%	10% 100% 100% 100% 100%	100%
VA Existing	3305 Demand Hot Gas Defrost, walk-ins	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	3306 Electronically commutated evaporator fan motor, walk-ins	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	3310 High-efficiency fan motors, walk-ins 2211 Tagulated guetien lines walk-ins	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	340.4 Complexed VSD retroit, base large cold storage	100%	1000	100%	1000	100%	100%	1000	100%	1000	100%	100%	100%
VA Existing	3404 Electronically commutated evaporator ran motor, base large cold storage	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	3502 Freezer-Cooler Keplacement Gaskets, base reach-in 3503 Definaration Coil Cleaning hase hase reach-in	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	3/02 Retrigeration Coil Cleaning, base ice maker	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	3800 base Kesidential-Type Keirigerator/Freezer, rederal Standard 3801 Engrov Star rafringrator/freezer	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	4000 Base Computer Network Server	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	4201 Energy Star or Better Laptop	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	4400 Base Imaging	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

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Commercial El	Commercial Elec Measure Inputs	FEASIBILITY FACTOR	ACTOR										
ć		e .	Restaurant	Retail	ery	Warehouse Education	-	Health L	Lodging par	Data Centers Non-	Non-Jurisdictional Relig	us Worship	Misc
VA Existing	Measure # Measure Description	unding Type fullo	Ing Type iu	iding Type sur	uliding lype iu	uliding lype ill	aing Typeaile	Ing lypelld	ing Lypildi	ng lypildir	1000%	g lypesulid	uliding Type 1.
VA Existing	1001 High Performance Lighting R/R - Combined Strategies (Base T12)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1002 ROB 2L4' LED Tube (Base T12)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1003 LED Troffer (Base T12)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1004 LED Troffer with lamp removal (T12)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		28%	7%	7%	7%	14%	35%	35%	14%	28%	21%	14%	14%
VA Existing	1007 Occupancy Sensor (Base T12)	28%	%/	%/	%2	14%	35%	35%	14%	28%	21%	14%	14%
VA Existing	1050 base Linear Lighting, Fluorescent Fixture, ZL41112, Integrated market	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	1000	100%	100%	100%	100%	100%	1000	100%	1000%	100%	100%
	1100 base Linear Lighting P. Filorescent Fixture, 2L4 16, 1 Eb	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1101 Fign Performance Lighting R/R - Combined Strategles (base 18)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	1103 LED Hoffer with Jamp removal (78)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1105 Lighting Control Tipelin (Base T8)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1106 Network Lighting Controls (Base T8)	28%	%201	2007	%2	14%	35%	35%	14%	28%	21%	14%	14%
		28%	2/%	2%	2%	14%	35%	35%	14%	28%	21%	14%	14%
		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1151 RET Occ & Daylight Integral Sensor LED troffer (base T8 integrated)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1200 Base Linear Lighting, LED Tube, 2 lamp fixture	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1201 High Performance Lighting R/R - Combined Strategies (Base LED Tube)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
		78%	7%	2%	%/	14%	35%	35%	14%	78%	21%	14%	14%
VA Existing		78%	7%	7%	7%	14%	32%	32%	14%	28%	21%	14%	14%
VA Existing	1225 Base Linear Lighting, LED Tube, 2 lamp fixture, 2028 Standard	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1227 Lighting Control Tuneup (Base LED Tube)	%00I	30%	30,7	30°	100%	100%	100%	100%	300%	100%	100%	100%
VA Existing	1220 Occurs Lighting Controls (Base LED Tube)	7000	% / 20%	%/	%/	14%	35%	35%	14%	7000	21%	14%	14%
VA Existing	1229 Occupancy Sensor (base LED tube)	78%	%/000	%/	%/	1000	35%	35%	1000	70007	7000	1000	1000
VA Existing	1250 base Linear Lighting, LED Tube, ZTamp inxture, integrated market 1251 DET Oct & Davilabt Tatograf Spacer LED troffer (base linear LED integrated)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1276 RET Occ & Davight Integral Sensor LED troffer (base linear LED integrated)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1350 Base General Service Screw-in, Incandescent/halogen	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	1351 LED screw-in replacement (base incandescent/halogen)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1400 Base General Service Screw-in, LED bulb	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1401 LED screw-in replacement (base LED)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1425 Base General Service Screw-in, LED bulb, 2028 Standard	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1450 LED Screw-III JeplaceIIIeii(Jase LED.) 1450 Base HTD Lighting (low hay.)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1451 LED fixture (base Low bay HID)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1452 High Performance Lighting R/R - Combined Strategies (base low bay HID)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1500 Base High Bay Lighting, Fluorescent T5	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1501 High Performance Lighting R/R - Combined Strategies (Base T5)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1503 High Bay LED Tropper (Base 15)	000F	000T	100%	100%	100%	1000	0001	1000	100%	1000	T00%	1006
VA Existing	1504 Eiginnig Colition Talledy (Base 13) 1505 Network Lighting Controls (Base TS)	78%	%20T	%2 2%	%2 2%	14%	35%	35%	14%	28%	21%	14%	14%
VA Existing	1506 Occupancy Sensor (Base T5)	28%	%/	%/	%/	14%	35%	35%	14%	28%	28%	14%	14%
	1525 Base High Bay Lighting, Fluorescent T5, integrated market	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1550 Base High Bay Lighting, HID lighting	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1552 High Performance Lighting R/R - Combined Strategies (base high bay HID)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1575 Base High Bay Lighting, LED lighting	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1576 Network Lighting Controls (Base high bay LED)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

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Commercial E	Commercial Elec Measure Inputs	FEASIBILITY FACTOR	ACTOR										
		Office Res	Restaurant	Retail	Grocery V		ducation	Health L	odging _{Dat}	a Centers Non-J	Lodging Data Centers Non-Jurisdictional Religious Worship	ous Worship	Misc
	Measure # Measure Description	uilding Type suildi	ing Type suilc	ling Type Jui	suilding Type suilding Type suilding Type suilding Type		ilding Typesilding Typellding Typilding Typilding Type Iding Typesullding Type 1	ing Typeild	ng Typildir	ng Typildir	Type Idir	g Type3uild	ng Type 1.
VA Existing	1577 Occupancy Sensor (Base high bay LED)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1601 LED Exit Sign	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1650 Base Area Lighting, Outdoor HID	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1651 LED Outdoor Area Lighting (Base Outdoor HID)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1652 LED outdoor lighting with bi-level controls (Base Outdoor HID)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1503 Outdoor Lighting Controls (base Outdoor HID) 1700 Base General Service Screw-in Outdoor CE	90% 100%	%06 100%	90% 100%	%06 100%	30%	30%	30% 100%	30%	90% 100%	30% 100%	90% 100%	90% 100%
VA Existing	1701 LED outdoor lighting with bi-level controls (Base Outdoor CFL)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1702 LED screw-in replacement (base Outdoor CFL)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1703 Outdoor Lighting Controls (Base Outdoor CFL)	%06	%06	%06	%06	%06	%06	%06	%06	%06	%06	%06	%06
VA Existing	1750 Base General Service Screw-in, Outdoor Incandescent/Halogen	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1751 LED outdoor lighting with bi-level controls (Base Outdoor Incandescent)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1752 LED Screw-in replacement (base Outdoor Incandescent) 1753 Outdoor Lighting Controls (Base Outdoor Incandescent)	%00T	%00T	%00T	%00T	700°	%00T	%00T	%00T	%00 800	%00T	%00T	%00T
VA Existing	1800 Base General Service Screw-in. Outdoor LED bulb	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1801 Outdoor Lighting Controls (Base Outdoor LED)	%06	%06	%06	%06	%06	%06	%06	%06	%06	%06	%06	%06
VA Existing	1850 Base Linear Lighting, Outdoor Fluorescent Tube	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1851 ROB 2L4' LED Tube (base outdoor fluorescent)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1852 LED outdoor lighting with bi-level controls (Base Outdoor Fluorescent)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1853 Outdoor Lighting Controls (Base Outdoor Fluorescent)	%06	%06 ,	%06	%06	%06	%06	%06	%06	%06	%06	%06	%06
VA Existing	1900 Base Linear Lighting, Outdoor LED Tube	%00I	100%	000	300 300 300 300 300	300°	000	000	000	3000 0000	000	200%	100%
VA Existing	2000 Base Water-Cooled Centrols (base Outdoor LED Tube)	90%	90% 100%	30%	300%	%06 100%	30%	30%	30%	30%	30%	30%	30%
VA Existing	2000 base Watel Cooled Celifiliagal Cliller, 0.36 kW/kMi, 300 tolls 2001 Centrifinal Chiller. 0.54 kW/ton. 500 tons	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	2003 High Efficiency Chilled Water & Condenser Water Pump Motors	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	2004 VSD for Chiller Pumps and Towers	16%	%0	%0	100%	%0	17%	15%	4%	16%	39%	%29	62%
VA Existing	2005 Ceiling/roof Insulation - Chiller	25%	100%	43%	100%	3%	100%	100%	100%	25%	36%	46%	49%
VA Existing		20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
VA Existing	2007 Duct Testing/Sealing - Chiller	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	2008 Ducy Pipe Insulation - Chiller 2009 EMS Ontimization - Chiller	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	75%	100%
VA Existing	2010 Dual Enthalpy Economizer Replaces Dry Bulb Economizer - Chiller	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	2011 New Economizer - Chiller	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	2012 Window Film (Standard) - Chiller	75%	75%	20%	75%	75%	75%	75%	75%	75%	75%	75%	75%
VA Existing	2013 High Efficiency Windows - Chiller	75%	75%	20%	75%	75%	75%	75%	75%	75%	75%	75%	75%
VA Existing	2100 Base DX Packaged System, EER=10.3, 10 tons	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	2101 DX Packaged System, EER=10.9, 10 tons	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	2102 DA Fackaged System, EER=13.4, 10 tons 2103 Geothermal Heat Pirmo FER=13 10 tons - DX	%00T	%50T	2%	%500T	%500T	2007	%100T	%2001	2001	%507	%5°	%5001
VA Existing	2104 DX Tune Up/ Advanced Diagnostics	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	2105 Refrigerant Charge Adjustment - DX	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		22%	43%	100%	100%	100%	25%	100%	100%	25%	61%	100%	100%
VA Existing	2107 Cool Roof - DX	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	22%
VA Existing	2108 Duct Testing/Sealing - DX	32%	32% 75%	32% 75%	32% 75%	75%	32% 75%	32% 75%	32% 75%	32% 75%	32% 75%	32% 75%	32% 75%
VA Existing	2110 Dual Enthalpy Economizer Replaces Dry Bulb Economizer - DX	%5	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	%5
VA Existing	2111 Economizer Repair - DX	%08	80%	80%	80%	80%	80%	80%	80%	%08	80%	%08	%08
VA Existing	2112 New Economizer - DX	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	2113 Optimize Controls - DX	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	2114 Smart Thermostat - DX	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	2115 Window Film (Standard) - DX 2116 High Efficiency Windows - DX	75%	75%	20% 20%	75%	75%	75%	75%	75%	75%	75%	75%	75%
VA Existing	2150 Base DX Packaged System, 2029 Standard	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	2152 DX Packaged System, EER=13.4, 10 tons	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	2153 Geothermal Heat Pump, EER=13, 10 tons - DX	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
VA Existing	2154 DX Tune Up/ Advanced Diagnostics	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	2155 Refrigerant Charge Adjustment - DX	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

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Commercial El	Commercial Elec Measure Inputs	FEASIBILITY FACTOR	*ACTOR										
	*	. u	Restaurant	Retail	9	Warehouse Education	1	Health Lo	Lodging pate	a Centers Non-J	urisdictional Religi	- 1	Misc Time 1
VA Existing	Measure # measure Description	uliding lype full	11ng lype iu	ding Type suil	Iding Type iui	1000/	IIIII IYPEIIII	ng Iypellal	1000/-	nibilidali bu		ΞI	Iding Type 1.
VA Existing	2157 Cool Roof - DX	22 %	20%	20%	20%	20%	50%	20%	20%	50%		20%	20%
VA Existing	2158 Duct Testing/Sealing - DX	32%	32%	32%	32%	32%	32%	32%	32%	32%		32%	32%
VA Existing	2159 Duct/Pipe Insulation - DX	75%	75%	75%	75%	75%	75%	75%	75%	75%		75%	75%
VA Existing	2160 Dual Enthalpy Economizer Replaces Dry Bulb Economizer - DX	2%	2%	2%	2%	2%	2%	2%	2%	2%		2%	2%
		%08	%08	80%	80%	80%	%08	%08	%08	%08		%08	80%
VA Existing	2162 New Economizer - DX	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%		200%	100%
VA Existing	2165 Window Film (Standard) - DX	75%	75%	20%	75%	75%	75%	75%	75%	75%		75%	75%
		75%	75%	20%	75%	75%	75%	75%	75%	75%		75%	75%
		100%	100%	100%	100%	100%	100%	100%	100%	100%		%001	100%
VA Existing	2201 Heat Pump Upgrade (18 SEER, 8.2 HSPF), cooling	100%	100%	100%	100%	100%	100%	100%	100%	100%		001	100%
VA Existing	2202 Mini-Split Heat Pump (Base Heat Pump Cooling)	33%	33%	33%	33%	33%	33%	33%	33%	33%		33%	33%
VA Existing	2203 Ceiling/roof Insulation (Base Heat Pump Cooling)	22%	43%	100%	100%	100%	25%	100%	100%	25%		%001	100%
		75%	75%	75%	75%	75%	75%	75%	75%	75%		75%	75%
		100%	100%	100%	100%	100%	100%	100%	100%	100%		%001	100%
VA Existing		75%	75%	20%	75%	75%	75%	75%	75%	75%		75%	75%
VA Existing	2207 Fign Efficiency Windows (Base Heat Pump Cooling)	70001	1000	20%	100%	100%	1000	1000	1000	75%		/5%	1000
VA Existing	2300 Base Split-3ystell AC, SEER 14.3, <3.4 tolis 2301 Sait System Air Conditionar SEED 16 0 ENERGY STAR 75.4 tons	100%	100%	100%	100%	100%	100%	100%	100%	100%		%00T	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%		%001	100%
VA Existing		22%	43%	100%	100%	100%	52%	100%	100%	22%		100%	100%
VA Existing		75%	75%	75%	75%	75%	75%	75%	75%	75%		75%	75%
VA Existing	2305 Smart Thermostat (Base Residential Split-System)	100%	100%	100%	100%	100%	100%	100%	100%	100%		001	100%
VA Existing	2306 Window Film (Standard) (Base Residential Split-System)	75%	75%	20%	75%	75%	75%	75%	75%	75%		75%	75%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%		001	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%		100%	100%
VA Existing		75%	43%	100%	100%	100%	25%	100%	100%	75%		100%	100%
VA Existing	2404 Occupancy Sensor (notels)	%O C	000	%0°	%0 7 2 1 8	%0 7 2 1 8	%0 2 2	% 10%	75%	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		% 10%	%0.7
		100%	100%	30%	100%	100%	100%	100%	100%	100%		%67	100%
		100%	100%	100%	100%	100%	100%	100%	100%	100%		700%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%		%001	100%
VA Existing		22%	43%	100%	100%	100%	52%	100%	100%	22%		100%	100%
		75%	75%	20%	75%	75%	75%	75%	75%	75%		75%	75%
VA Existing	2506 High Efficiency Windows (Base Room AC)	75%	75%	20%	75%	75%	75%	75%	75%	75%		75%	75%
		100%	100%	100%	100%	100%	100%	100%	100%	100%		%001	100%
VA Existing		22%	43%	100%	100%	100%	52%	100%	100%	22%		100%	100%
VA Existing		75%	75%	20%	75%	75%	75%	75%	75%	75%		75%	75%
VA Existing	2504 Figh Efficiency Windows (Base Ductless Mini-Split)	100%	100%	30%	100%	100%	100%	100%	100%	100%		/5%	100%
VA Existing	3101 Efficient compressor motor open cases	100%	100%	100%	100%	100%	100%	100%	100%	100%		%001	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%		001	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%		%001	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%		%001	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%		001	100%
		100%	100%	100%	100%	100%	100%	100%	100%	100%		100%	100%
VA Existing	3109 Tagn-eridency ran motors, open cases	100%	100%	100%	100%	100%	100%	1000	100%	1000		,000 100%	100%
VA Existing	3109 LED Disnlay Linhting open cases	100%	100%	100%	100%	100%	100%	100%	100%	100%		%001 100%	100%
VA Existing	3110 Multiplex Compressor System, open cases	100%	100%	100%	100%	100%	100%	100%	100%	100%		007	100%
		100%	100%	100%	100%	100%	100%	100%	100%	100%		001	100%
		100%	100%	100%	100%	100%	100%	100%	100%	100%		001	100%
VA Existing	3113 Refrigeration Coil Cleaning, open cases	100%	100%	100%	100%	100%	100%	100%	100%	100%		700%	100%
VA Existing	3114 Refrigeration Commissioning, open cases	100%	100%	100%	100%	100%	100%	100%	100%	100%		%001	100%
VA Existing	3200 Base Closed refrigerated/freezer cases	100%	100%	100%	100%	100%	100%	100%	100%	100%		%001	100%
	3201 Efficient compressor motor, base closed cases	100%	100%	100%	100%	100%	100%	100%	100%	100%		%001	100%
VA Existing	3202 Energy-Star Refrigerator/Freezer, base closed cases	100%	100%	100%	100%	100%	100%	100%	100%	100%		%001	100%

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Commercial Ele	Commercial Elec Measure Inputs	FEASIBILITY FACTOR	FACTOR										
		_	1	100		den de la companya de			9				, in
Segment	Measure # Measure Description	Order Restaurant rekalı aroncesi birderek Marenouse Educadon Heatin Looging Das Gerses Resulaciones Researchem Uniding Type Juiding Typ	Kestaurant Jilding Type Jui	Ketall Iding Type ³ui	Grocery Ilding Type גר	warenouse Education uilding Type Jilding Type	aucation ding Type.ilc	nealth Jing Typeildi	odging bat ng Typildir	a Centers Non-J ng Typildir	LODGING Data Centers Non-Jurisdictional Religious Worshig Iding Type Iding Type Iding Type	ous Worship q Type3uildi	MISC ng Type 1.
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	3204 Bi-level LED Case Lighting (self-contained units), base closed cases	100%	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%
VA Existing	3205 Compressor VSD retrofit, base closed cases	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	3207 Demand Hot Gas Defrost, base closed cases	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	3213 LED Display Lighting, base closed cases	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	3214 Low or Anti-Sweat Door Film, base closed cases	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	3215 Multiplex Compressor System, base closed cases	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	3216 Oversized Air Cooled Condenser, base closed cases	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	3217 Refrigeration Coil Cleaning, base closed cases	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	3218 Refrigeration Commissioning, base closed cases	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	3300 Base Walk-in refrigeration/freezer units	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	3301 Efficient compressor motor, walk-ins	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	3302 Auto-closer on main door to walk-in freezer	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
		100%	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%
VA Existing	3314 Kerrigeration Coil Cleaning, Walk-ins	100%	1000	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	3313 Kerngeration Commissioning, Walk-ins	100%	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%
		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	3403 Compressor VSD retrofit, base large cold storage	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Evaporator fan controller for MT walk-ins, base large cold storage	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	3406 High-efficiency fan motors, base large cold storage	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	3408 Multiplex Compressor System, base large cold storage	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	3411 Kerrigeration Commissioning, base large cold storage	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	3603 Preezer-Cooler Replacement Gaskets, base glass-door reach-in 3604 Defriceration Coil Cleaning have glass-door reach-in	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	3701 Energy Star Ice Machines	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	3702 Refrigeration Coil Cleaning, base ice maker	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	3800 Base Residential-Type Refrigerator/Freezer, Federal Standard	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

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Commercial El	Commercial Elec Measure Inputs	FEASIBILITY FACTOR	/ FACTOR										
		(percent)											
		Office	Restaurant	Retail	Grocery \	Warehouse Education	ducation	Health L	odging pa	ata Centers Non-	Lodging Data Centers Non-Jurisdictional Religious Worship	lous Worship	Misc
Segment	Measure # Measure Description	uilding Type	ilding Type suilding Type suilding Type suilding Type	ding Type 3ui	Iding Type Iu	uilding Type Lilding Type Iding Typeilding Typilding Typilding Type Iding Type Juliding Type	ding Typeail	ding Typeild	ing Typildi	ing Typildir	ng Type Idir	ig Type3uildi	ng Type 1.
VA Existing	3801 Energy Star refrigerator/freezer	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	3802 Refrigeration Coil Cleaning, residential-type refrigerator	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	3900 Base Compact Refrigerator, Federal Standard	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	3901 Energy Star Compact Refrigerator	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	3902 Refrigeration Coil Cleaning, compact refrigerator	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	4000 Base Computer Network Server	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	4001 Energy Star server	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	4002 Server Power Management Enabling	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
VA Existing	4100 Base Desktop PC	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	4101 Energy Star or Better PC	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	4102 PC Network Power Management Enabling	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
VA Existing	4200 Base Laptop PC	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	4201 Energy Star or Better Laptop	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	4202 Laptop Network Power Management Enabling	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	4300 Base Monitor, LCD	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	4301 Energy Star or Better Monitor - LCD	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	4302 Monitor Power Management Enabling - LCD	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
VA Existing	4303 Plug-load controls - Commercial Smart Strip (base monitor LCD)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	4400 Base Imaging	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%



Commercial Ele	Commercial Elec Measure Inputs	INCOMPLETE FACTOR	E FACTOR										
		Office	Restaurant	Retail	Grocery	Warehouse Education	ducation	Health	Lodging Data Centers	Data Centers №	Non-Jurisdictional Re	Religious Worship	Misc
Segment	Measure # Measure Description	uilding Type uilding Type uilding Type	Ilding Typeu	Iding Type u	uilding Type uilding Type ilding Typuilding Typulding Typilding Typelding Typelding Type	Iding Type II	ding Typell	ding Type	ding Typilk	ding Typild	ing Typeldi	1 ypeuldi	1 ype
VA Existing	1001 High Performance Lighting R/R - Combined Strategies (Base T12)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1002 ROB 2L4' LED Tube (Base T12)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1003 LED Troffer (Base T12)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1004 LED Troffer with lamp removal (T12)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1005 Lighting Control Tuneup (Base T12)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1007 Occupancy Sepson (Base 112)	62%	%66 %86	92% 85%	100%	75%	%8% 8%%	86%	86%	%76	100%	%8% 88%	97%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1051 RET Occ & Daylight Integral Sensor LED troffer (base T12 integrated)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1100 Base Linear Lighting, Fluorescent Fixture, 2L4'T8, 1 EB	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1101 High Performance Lighting R/R - Combined Strategies (Base T8)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1103 LED Troffer (Base T8)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1104 LED Troffer with lamp removal (T8)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1105 Lighting Control Luneup (Base 18)	100%	100%	300°	100%	100%	100%	100%	02%	100%	100%	100% 0007	100% 07%
VA Existing	1105 Network Lighting Controls (base 18)	62%	%66 %66	92% 85%	100%	75%	%86	%66 6	%/8	%76	100%	%8A	97%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1151 RET Occ & Daylight Integral Sensor LED troffer (base T8 integrated)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1200 Base Linear Lighting, LED Tube, 2 lamp fixture	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1201 High Performance Lighting R/R - Combined Strategies (Base LED Tube)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1202 Lighting Control Tuneup (Base LED Tube)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		64%	%66	95%	100%	100%	%86	%66	87%	95%	100%	%86	%26
VA Existing	1204 Occupancy Sensor (Base LED tube)	62%	%86	85%	100%	75%	%96	86%	%98	%09	100%	%88	91%
VA Existing	1225 Base Linear Lighting, LED Tube, 2 Tamp Tixture, 2028 Standard 1336 Bish Bufformasson Lighting B/B - Combined Strategies (Base Leo Tube)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1228 Fight Performance Eightnig R/R - Commission Strategies (base LED Tube) 1327 Triabting Control Tingerin (Base LED Triba)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		64%	%66 %00T	%26	100%	100%	%86	%66	87%	%26 65%	100%	%86	%26 62%
VA Existing	1229 Occupancy Sensor (Base LED tube)	62%	%86	85%	100%	75%	%96 6	86%	%98	%09	100%	88%	91%
VA Existing	1250 Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1251 RET Occ & Daylight Integral Sensor LED troffer (base linear LED integrated)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1275 Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market, 2028 Standard	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1276 RET Occ & Daylight Integral Sensor LED troffer (base linear LED integrated)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1350 Base General Service Screw-in Incandecent/halonen	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1351 LED screw-in replacement (base incandescent/halogen)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1400 Base General Service Screw-in, LED bulb	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1401 LED screw-in replacement (base LED)	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
VA Existing	1425 Base General Service Screw-in, LED bulb, 2028 Standard	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1450 Base HID Lighting (low bax)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1451 LED fixture (base Low bay HID)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1452 High Performance Lighting R/R - Combined Strategies (base low bay HID)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1500 Base High Bay Lighting, Fluorescent T5	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1502 ROB 2L4' LED Tube (Base T5)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1503 highing Control Timeum (Base 15)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1505 Network Lighting Controls (Base T5)	64%	%66	95%	100%	100%	%86	%66	87%	95%	100%	%86	%26
VA Existing	1506 Occupancy Sensor (Base T5)	97	%86	85%	100%	75%	%96	%98	%98	%09	100%	%88	91%
VA Existing	1525 Base High Bay Lighting, Fluorescent T5, integrated market	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1526 High Bay Bi-Level Programmed LED Fixture	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1550 Base High Bay Lighting, HID lighting	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing		%66	%66	%66	%66	%66	%66	%66	%66	%66	%66	%66	%66
VA Existing	1552 High Performance Lighting R/R - Combined Strategies (base high bay HID)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA EXISUNG	1373 base nign bay Lignung, LED lignung	TOO 10	100%	100%	100%	100 %	100%	100 %	100%	100 %	100%	100%	T00.70

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NEGATION CONTRING CONTRING NUMBER OF STATES CONTRING CONT	Commercial El	Commercial Elec Measure Inputs	INCOMPLETE FACTOR	E FACTOR										
12.12 Contain Lepton Control (new orbit bir LEL) 12.12 Contain Lepton Control (new orbit control (new orbit bir Let) 12.12 Contain Lepton Control (new orbit control (new orbit bir Let) 12.12 C			Office	Restaurant			Warehouse	Education		Lodging D	ata Centers M	n-Jurisdictional Re	gious Worship	Misc
1000 Big 21, Lice Series (New Yorks) 100 Big 21, Lice Series (New	Segment	Measure # Measure Description	uilding Type u	ilding Type ui	Iding Type u	Ilding Type u	ilding Type i	ding Type	ding Type	ding Typilc	ling Typild	ng Typeld	Dirypeaild	Type:
160 100	VA Existing	1576 Network Lighting Controls (Base nigh bay LED)	62%	%66 %80	92% 85%	100%	75%	%86	%66 80 80 80 80 80 80 80 80 80 80 80 80 80	%/8	%76	100%	% % % % % % %	97%
18th	VA Existing	1600 Base CFL Exit Sign	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
1855 1856	VA Existing	1601 LED Exit Sign	35%	64%	28%	1%	100%	26%	%9	35%	35%	37%	39%	39%
State Lib Outcome state Lib Outcome	VA Existing	1650 Base Area Lighting, Outdoor HID	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Sign Solder updated comes (Second State Comes) (Sec	VA Existing	1651 LED Outdoor Area Lighting (Base Outdoor HID)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
The Control Purple of the Control Co	VA Existing	1652 LED outdoor lighting with bi-level controls (Base Outdoor HID)	100%	3001	100%	100%	100%	100%	100%	100%	100%	100%	100%	326
The control of the	VA Existing	1700 Bang Comming Comming Controls (base Outdoor RID)	34%	08%	37%	49%	1000	42%	30%	30%	1000	1000	4000	32%
1775 1700 cover a register (1 to so control CT) 1704 1705	VA Existing	1701 LED outdoor lighting with bi-level controls (Base Outdoor CEI)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
1793 Other Cyling State (1997)	VA Existing	1702 LED screw-in replacement (base Outdoor CFL)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
1710 Base devined several extensional processes of the part of the	VA Existing		54%	%89	37%	49%	16%	45%	35%	36%		27%	%9	32%
Type Experimental Control Cont	VA Existing	1750 Base General Service Screw-in, Outdoor Incandescent/Halogen	100%	100%	100%	100%	100%	100%	100%	100%		100%	100%	100%
132 Discrete the protect (part of the part) 100% 110	VA Existing	1751 LED outdoor lighting with bi-level controls (Base Outdoor Incandescent)	100%	100%	100%	100%	100%	100%	100%	100%		100%	100%	100%
3150 Author University Control (East Outforn Friendscort) 54% 68% 12% 10% 10% 10% 10% 10% 10% 10% 10% 10% 10	VA Existing	1752 LED screw-in replacement (base Outdoor Incandescent)	100%	100%	100%	100%	100%	100%	100%	100%		100%	100%	100%
1800 backgoorlighting former's Servival Control ED builds 100% 100	VA Existing	1753 Outdoor Lighting Controls (Base Outdoor Incandescent)	24%	%89	37%	49%	16%	45%	35%	36%		27%	%9	35%
March Marc	VA Existing	1800 Base General Service Screw-in, Outdoor LED bulb	100%	100%	100%	100%	100%	100%	100%	100%		100%	100%	100%
13.00 10.0	VA Existing	1801 Outdoor Lighting Controls (Base Outdoor LED)	54%	%89	37%	49%	16%	42%	35%	36%		27%	%9	32%
18.25 Order of Act March Experiment 10.00% 10.0	VA Existing	1850 Base Linear Lighting, Outdoor Fluorescent Tube	100%	100%	100%	100%	100%	100%	100%	100%		100%	100%	100%
1300 Seas Lose Upiny Outdoor LED Tube) 1000% 100	VA Existing		100%	100%	100%	100%	100%	100%	100%	100%		100%	100%	100%
100 100	VA Existing	1832 LED dutdoor lighting With Drievel colitions (base Outdoor Fluorescent) 1853 Outdoor Lighting Controls (Base Outdoor Fluorescent)	54%	%89 88%	37%	49%	16%	42%	35%	36%		27%	%00T	32%
100 the control title 10 th control titl	VA Existing	1900 Base Linear Lighting Controls (page Outgoon FD Tube	100 0%	100 0%	100 0%	100 0%	100 0%	100 0%	100 0%	00001		. %0 001	%0 00	100 0%
2000 Coerinque Cartering Cliente, C.S.R.Wilton, S.Ott Correct Total Control Coering Co	VA Existing	1901 Outdoor Lighting Controls (Base Outdoor LED Tube)	54%	%89	37%	49%	16%	42%	35%	36%		27%	%9	32%
2001 Gentificial Cillier Collective Collective Nation Set No. 86	VA Existing	2000 Base Water-Cooled Centrifugal Chiller, 0.58 kW/ton, 500 tons	100%	100%	100%	100%	100%	100%	100%	100%		100%	100%	100%
2002 Childre Turne by Diagnostics Charles where the py Diagnostics and the py Diagnostics Charles where the py Diagnostics and the phy Diagnostics and the py Diagnostics and the p	VA Existing	2001 Centrifugal Chiller, 0.54 kW/ton, 500 tons	%0.89	68.0%	68.0%	%0.89	68.0%	%0.89	68.0%	%0.89		%0.89	%0.89	%0.89
2005 Collegator Chilled and Condenser Water Rounds Nature Rounds 138, 96 0,0% 100% 100% 100% 100% 100% 100% 100%	VA Existing	2002 Chiller Tune Up/Diagnostics	15%	12%	10%	13%	4%	1%	2%	12%		%0	20%	13%
2005 Coal Month Purpus and Towers 2005 Coal Month Purpus Residue Coal Month Purpus Res	VA Existing	2003 High Efficiency Chilled Water & Condenser Water Pump Motors	19%	%0	%0	100%	%0	46%	22%	4%	19%	45%	62%	65%
2000 Celling/roth Insulation - Chiller Conditionary Collision Collision Collisionary Chiller Collision Collisionary Chiller Chill	VA Existing	2004 VSD for Chiller Pumps and Towers	38.5%	%0.0	0.0%	100.0%	0.0%	10.5%	13.4%	100.0%	38.5%	50.2%	61.8%	61.8%
2000 Could Established Chilled	VA Existing	2005 Ceiling/roof Insulation - Chiller	10%	76%	37%	36%	76%	16%	%6	7%	100%	13%	%6	14%
2000 DOCK Testing-Sening - Liniter 1000% 9.17% 100.0% 100.0% 10.0%	VA Existing	2006 Cool Roof - Chiller	34%	%0	%0	100%	%0	61%	%88	100%	34%	%29	100%	100%
2009 ENCYCYDE Intellectual Control Con	VA Existing	2007 Duct Testing/Sealing - Chiller	%0.00T	91.6%	%0.00I	100.0%	97.4%	3000	100.0%	%0.001	%0.001	98.0%	%0.96	96.0%
2.010 Dadie Enthality Ecconomizer - Chiller 1976, 51.0% 51.0	VA Existing	2008 Duct/Pipe Insulation - Chiller	70%	15%	15%	15%	15%	39% 15%	15%	15%	20% 15%	15%	1 50%	150%
2011 New Economizer - Chillier 1946, 92% 69% 194, 45.5% 59.3% 69% 194, 45.5% 194, 44.5%	VA Existing	2009 Ents Optimization - Chiller 2010 Dual Enthalpy Fronomizer Replaces Dry Bulh Fronomizer - Chiller	%0 £5 23 0%	73 U%	53.0%	53.0%	73 U%	73.0%	53.0%	53.0%	53.0%	53.0%	73 U%	53.0%
2012 Window Film (Standard) - Chiller 2012 Window Film (Standard) - Chiller 2012 Window Film (Standard) - Chiller 2013 Window Film (Standard) - Chiller 2013 Window Film (Standard) - Chiller 2010 Base DX Packaged System, ERE-L10.3, 10 tons 2010 Window Film (Standard) - Chiller 2010 Window Film (Standard) - DX Packaged System, ERE-L13.4, 10 tons 2010 Window Film (Standard) - DX Packaged System, ERE-L13.4, 10 tons 2010 Window Film (Standard) - DX Packaged System, ERE-L13.4, 10 tons 2010 Window Film (Standard) - DX Packaged System, ERE-L13.4, 10 tons 2010 Window Film (Standard) - DX Packaged System, ERE-L13.4, 10 tons 2010 Window Film (Standard) - DX Packaged System, ERE-L13.4, 10 tons 2010 Window Film (Standard) - DX Packaged System, ERE-L13.4, 10 tons 2010 Window Film (Standard) - DX Packaged System, ERE-L13.4, 10 tons 2010 Window Film (Standard) - DX Packaged System, ERE-L13.4, 10 tons 2010 Window Film (Standard) - DX Packaged System, ERE-L13.4, 10 tons 2010 Window Film (Standard) - DX Packaged System, ERE-L13.4, 10 tons 2010 Window Film (Standard) - DX Packaged System, ERE-L13.4, 10 tons 2010 Window Film (Standard) - DX Packaged System, ERE-L13.4, 10 tons 2010 Window Film (Standard) - DX Packaged System, ERE-L13.4, 10 tons 2010 Window Film (Standard) - DX Packaged System, ERE-L13.4, 10 tons 2010 Window Film (Standard) - DX Packaged System, ERE-L13.4, 10 tons 2010 Window Film (Standard) - DX Packaged System, ERE-L13.4, 10 tons 2010 Window Film (Standard) - DX Packaged System, ERE-L13.4, 10 tons 2010 Window Film (Standard) - DX Packaged System, ERE-L13.4, 10 tons 2010 Window Film (Standard) - DX Packaged System, ERE-L13.4, 10 tons 2010 Wind	VA Existing	2010 Data Littingly Economiser replaces Dry Daily Economiser - Crimer 2011 New Economiser - Chiller	70.55	%0.55	%0.55	3%	%0.55	74%	54%	68%	19%	57%	92.50	92.0
2010 Base DY Parkaged System, EER-103, 10 tons 100% 100% 100% 100% 100% 100% 100% 100%	VA Existing	2012 Window Film (Standard) - Chiller	%98	95%	86%	91%	95%	82%	91%	64%	100%	100%	92%	%26
2100 Base DX Packaged System, ERF=10.3, 10 tons 2100 DX Packaged System, ERF=10.9, 10 tons 2100 DX Packaged System, ERF=10.9, 10 tons 2100 DX Packaged System, ERF=10.9, 10 tons 2100 DX Packaged System, ERF=13.4, 10 tons DX 200 DX Packaged System, ERF=13.4, 10 tons DX Packaged Syste	VA Existing	2013 High Efficiency Windows - Chiller	24.4%	45.5%	59.3%	56.7%	48.3%	23.4%	34.3%	18.8%	%8.9	29.1%	40.6%	39.5%
2101 DX Packaged System, ERR=13.4, 10 tons 2102 DX Packaged System, ERR=10.9, 10 tons 2101 DX Packaged System, ERR=10.9, 10 tons 2102 DX Packaged System, ERR=10.9, 10 tons 2102 DX Packaged System, ERR=10.9, 10 tons 2102 DX Packaged System, ERR=10.9, 10 tons 2103 Geothermal Heat Pump, ERR=13.4, 10 tons 2104 DX Tune Up), Advanced Diagnostics 2105 DX Tune Up), Advanced Diagnostics 2105 DX Tune Up), Advanced Diagnostics 2105 DX Tune Up), Advanced Diagnostics 2106 Celling/roof Insulation 2107 Cool Roof - DX 2107 Cool Roof - DX 2108 Duct/Plep Insulation 2108 Duct/Plep Insulation 2109 Duct/Plep Insulation 2100	VA Existing	2100 Base DX Packaged System, EER=10.3, 10 tons	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
2102 DX Packaged System, FIRE 13.1, 10 tons. 2103 Cap Packaged System, FIRE 13.1, 10 tons. 2104 DX Tune Up/Advanced Diagnostics 2105 Cap Packaged System, FIRE 13.1, 10 tons. 2105 Cap Packaged System, FIRE 13.1, 10 tons. 2106 Cap Packaged System, FIRE 13.1, 10 tons. 2107 Cap Packaged System, FIRE 13.1, 10 tons. 2108 DXT Packaged System, FIRE 13.1, 10 tons. 2109 Day, 99%, 99%, 99%, 99%, 99%, 99%, 99%, 99	VA Existing	2101 DX Packaged System, EER=10.9, 10 tons	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
15% 12% 19% 19% 19% 19% 19% 19% 19% 19% 19% 19	VA Existing	2102 DX Packaged System, EER=13.4, 10 tons	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	00.001	100.0%	. %0.001	%0.00	100.0%
2.15 Refrigerant Charge Adjustment - D.X. 2.16 Refrigerant Charge Adjustment - D.X. 2.17 A. March Charge Adjustment - D.X. 2.18 A. March Charge Adjustment - D.X. 2.19 A. March Charge Adjustment - D.X. 2.10 Celling/roof Insulation - D.X. 2.10 Duct/Pipe Insulation - D.X. 2.11 Charles Repair - D.X. 2.12 Charles Controls - D.X. 2.13 Charles Controls - D.X. 2.14 Charles Controls - D.X. 2.15 New Economizer Repair - D.X. 2.16 Celling/roof Insulation - D.X. 2.17 Sharles Controls - D.X. 2.18 Sharles Sh	VA Existing	2103 Geothermal Heat Pump, EER=13, 10 tons - DX 2104 DV Tuno IIn/ Advanced Disconction	99%	99%	96.6	99%	74% 70%	92%	97.6 70.7	79.6°	% 6 7 8	% % 6 8	% % % %	120%
106 Ceiling/frod Insulation D.X. 107 Col Roof - D.X. 108	VA Existing	2104 DX Turle Op/ Advanced Diagnostics 2105 Refrioerant Charge Adjustment - DX	%U U8	12.4%	10.2%	13.3%	4 3%	1 2%	2 0%	11 7%	2 0%	%00	19.6%	13.3%
2107 Cool Roof - DX 94% 91% 66% 100% 78% 95% 100% 100% 97% 100% 90%	VA Existing	2106 Ceilina/roof Insulation - DX	10%	26%	37%	36%	26%	16%	%6	2%	100%	13%	%6	14%
2108 Duct Testing/Sealing - DX 100.0% 91.6% 100.0% 97.4% 84.7% 100.0%	VA Existing		94%	91%	%99	100%	78%	95%	100%	100%	94%	%26	100%	100%
2109 Duct/Pipe Insulation - DX 43% 41% 48% 100% 13% 73% 73% 73% 43% 42% 42% 2109 Duct/Pipe Insulation - DX 53%	VA Existing	2108 Duct Testing/Sealing - DX	100.0%	91.6%	100.0%	100.0%	97.4%	84.7%	100.0%	00.001	100.0%	%0'86	%0.96	%0.96
2110 Dual Enthalpy Economizer Replaces Dry Bulb Economizer - DX 53% <t< td=""><td>VA Existing</td><td>2109 Duct/Pipe Insulation - DX</td><td>43%</td><td>81%</td><td>48%</td><td>100%</td><td>13%</td><td>%62</td><td>73%</td><td>72%</td><td>43%</td><td>45%</td><td>45%</td><td>45%</td></t<>	VA Existing	2109 Duct/Pipe Insulation - DX	43%	81%	48%	100%	13%	%62	73%	72%	43%	45%	45%	45%
2.11 Economizer Repair - DX 66.0% 86.0% 86.0% 98.7% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0% 100.0%	VA Existing	2110 Dual Enthalpy Economizer Replaces Dry Bulb Economizer - DX	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%
211.1 New Economics Product Pr	VA Existing	2111 Economizer Repair - DX	%0.99 10%	%0.99	%0.99	66.0%	%0.99	66.0%	66.0%	%0.99	66.0%	66.0%	%0.99	%0.99
2115 Optimize Cultural Controls - D.X. 2115 Optimize Cultural Controls - D.X. 2115 Optimize Cultural Controls - D.X. 2115 Window Film (Standard) - D.X. 2116 High Efficiency Windows - D.X. 2116 High Efficiency Windows - D.X. 2120 Expecteded System, 2029 Standard 2130 D.X. 21315 D.X. Packagaed System, ERE=134, 10 tons - D.X. 2132 D.X. Packagaed System, ERE=134, 10 tons - D.X. 2133 Geothermal Heat Pump, ERE=13, 10 tons - D.X. 2134 Geothermal Heat Pump, ERE=13, 10 tons - D.X. 2135 D.X. Packagaed System, ERE=13, 10 tons - D.X. 2136 D.X. Packagaed System, ERE=13, 10 tons - D.X. 2136 D.X. Packagaed System, ERE=13, 10 tons - D.X. 2137 Geothermal Heat Pump, ERE=13, 10 tons - D.X. 2138 Geothermal Heat Pump, ERE=13, 10 tons - D.X. 2139 D.X. Packagaed System, ERE=13, 10 tons - D.X. 2140 D.X. Packagaed System, ERE=13, 10 tons - D.X. 2150 D.X. Packagaed System, ERE=13, 10 tons - D.X. 2151 D.X. Packagaed System, ERE=13, 10 tons - D.X. 2152 D.X. Packagaed System, ERE=13, 10 tons - D.X. 2153 D.X. Packagaed System, ERE=13, 10 tons - D.X. 2154 D.X. Packagaed System, ERE=13, 10 tons - D.X. 2155 D.X. Packagaed System, ERE=13, 10 tons - D.X. 2155 D.X. Packagaed System, ERE=13, 10 tons - D.X. 2155 D.X. Packagaed System, ERE=13, 10 tons - D.X. 2155 D.X. Packagaed System, ERE=13, 10 tons - D.X. 2155 D.X. Packagaed System, ERE=13, 10 tons - D.X. 2155 D.X. Packagaed System, ERE=13, 10 tons - D.X. 2156 D.X. Packagaed System, ERE=13, 10 tons - D.X. 2157 D.X. Packagaed System, ERE=13, 10 tons - D.X. 2158 D.X. Packagaed System, ERE=13, 10 tons - D.X. 2158 D.X. Packagaed System, ERE=13, 10 tons - D.X. 2158 D.X. Packagaed System, ERE=13, 10 tons - D.X. 2159 D.X. Packagaed System, ERE=13, 10 tons - D.X. 2159 D.X. Packagaed System, ERE=13, 10 tons - D.X. 2150 D.X. Packagaed System, ERE=13, 10 tons - D.X. 2150 D.X. Packagaed System, ERE=13, 10 tons - D.X. 2150 D.X. Packagaed System, ERE=13, 10 tons - D.X. 215	VA Existing	2112 New Economizer - UX	19%	%0 0 0	%0	3%	%0	74%	220	08%	19% 220%	02%	95%	95%
2115 Window Film (Standard) - DX 86% 92% 86% 91% 82% 81% 91% 64% 100% 2115 Window Film (Standard) - DX 2116 High Efficiency Windows - DX 2116 High Efficiency Windows - DX 2120 Ease DX Packaged System, 2029 Standard 100.0% 100.0% 100% 100% 100.0% 100% 100% 100% 100% 100% 100% 100	VA Existing	2113 Optimize Controls - DX 2114 Smart Thermostat - DX	%5°C6	%55 %6'69	91.3%	93.0%	81.9%	95.7%	80.9%	92.7%	98.7%	35%	33% 88.3%	77.4%
2116 High Efficiency Windows - DX 24% 46% 59% 57% 48% 23% 34% 19% 7% 29% 41% 2150 Base DX Packaged System, 2029 Standard 100.0% 100.	VA Existing	2115 Window Film (Standard) - DX	%98	%26	86%	91%	95%	82%	91%	64%	100%	100%	95%	%26
2150 Base DX Packaged System, 2029 Standard 100.0%	VA Existing	2116 High Efficiency Windows - DX	24%	46%	26%	22%	48%	23%	34%	19%	7%	29%	41%	40%
2152 DX Packaged System, EER=13.4, 10 tons 100% 1000 100% 100% 100% 100% 100% 100	VA Existing	2150 Base DX Packaged System, 2029 Standard	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	0.001	100.0%		%0.00	100.0%
2153 Geothermal Heat Pump, EER=13, 10 tons - DX	VA Existing	2152 DX Packaged System, EER=13.4, 10 tons	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	VA Existing	2153 Geothermal Heat Pump, EER=13, 10 tons - DX	%66	%66	%66	%66	%66	%66	%66	%66	%66	%66	%66	%66

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Commercial Elec Measure Inputs	Measure Inputs	INCOMPLETE FACTOR	FACTOR										
		(percent)	Restairant	Retail	Crocery \	Warehouse Education	ducation	Health	Lodaina	Data Contace	on Turkedistional D	Motor of Woodbin	Mis
Segment	Measure # Measure Description	De L	Type	8		Iding Type il	ling Typell				ing Typeld	Iding Typelding Typeailding Type	ling Type
VA Existing	2154 DX Tune Up/ Advanced Diagnostics	15%	12%	10%	13%	4%	1%		12%	2%	%0	20%	13%
VA Existing	2155 Kerrigerant Charge Adjustment - DX 2156 Colling/mof Inculation - DX	%08 10%	76%	37%	13%	4%	16%		12%	7000	13%	%07	13%
VA Existing	2150 Cernig/Tool Roof - DX	94%	91%	%99	100%	78%	95%		100%	94%	%25	100%	100%
VA Existing	2158 Duct Testing/Sealing - DX	100%	95%	100%	100%	%28 %26 %	85%	100%	100%	100%	%86	%96	%96
VA Existing	2159 Duct/Pipe Insulation - DX	43%	81%	48%	100%	13%	%62		72%	43%	45%	45%	45%
VA Existing	2160 Dual Enthalpy Economizer Replaces Dry Bulb Economizer - DX	23%	23%	53%	53%	53%	53%		53%	23%	53%	53%	23%
VA Existing	2161 Economizer Kepair - DX	%99 ***********************************	%99	%99	%99	%99	24%		%99	40%	969% 6E0%	999	%99 %90
VA Existing	2162 New Ecollonlizel - DA	33%	33%	33%	33%	33%	33%		33%	33%	33%	33%	33%
VA Existing	2163 Optimize Controls - DA 2164 Smart Thermostat - DX	%06 %06	%0Z	91%	%c6	82%	%96		93%	%66 6	100%	88%	77%
VA Existing		%98	92%	86%	91%	92%	82%		64%	100%	100%	95%	%26
VA Existing	2166 High Efficiency Windows - DX	24%	46%	26%	22%	48%	23%		19%	%/	29%	41%	40%
VA Existing	2200 Base Heat Pump cooling (14.3 SEER, 8.2 HSPF)	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%
VA Existing	2201 Heat Pump Upgrade (18 SEER, 8.2 HSPF), cooling	%26	95%	95%	95%	95%	95%		95%	95%	95%	95%	%26
VA Existing	2202 Mini-Split Heat Pump (Base Heat Pump Cooling)	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%
VA Existing		10%	79%	37%	36%	79%	16%		7%	100%	13%	%6	14%
VA Existing		43%	81%	48%	100%	13%	%62		72%	43%	45%	45%	45%
VA Existing	2205 Smart Thermostat (Base Heat Pump Cooling)	%06	%02	91%	93%	85%	%96		93%	%66	100%	88%	77%
VA Existing		%98	92%	86%	91%	95%	82%		64%	100%	100%	95%	92%
VA Existing	2207 High Efficiency Windows (Base Heat Pump Cooling)	24%	46%	25%	22%	48%	23%		19%	%/	29%	41%	40%
VA Existing	2300 base Spiir-System AC, SEEK 14.5, <5.4 tons	100%	100%	100% 040%	100%	100% 040%	100%		100%	100% 040%	100%	100%	100%
VA Existing	2301 Spirt System Air Conditioner, SEEK 15.0 ENERGY STAK, <5.4 totls 2302 Durches Mini-Snit SEED 18 0/HSDE 10 0 SEE Tior 1 (Rase Decidential Snitt-System)	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%
VA Existing	Ducciess Milli-Split SEEK 18.0/113FL 10.0 CEE 1181 1 (base Residential) Cailing/roof Inculation (Base Residential Split-System)	10%	%9C	37%	36%	26%	16%		%2001	100%	13%	%6	14%
VA Existing		43%	81%	48%	100%	13%	%62		72%	43%	42%	42%	42%
VA Existing		%06	20%	91%	93%	82%	%96		93%	%66	100%	88%	77%
VA Existing	2306 Window Film (Standard) (Base Residential Split-System)	%98	95%	%98	91%	95%	85%		64%	100%	100%	95%	%26
VA Existing	2400 Base PTAC cooling, EER=10.2, 1 ton	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%
VA Existing		100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%
VA Existing	2402 Ceiling/roof Insulation (Base PTAC)	10%	76%	37%	36%	76%	16%		7%	100%	13%	%6	14%
VA Existing	2404 Occupancy Sensor (hotels)	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%
VA Existing		%98	95%	86%	91%	%76	82%		64%	100%	100%	95%	%/6
VA Existing	250U Base Room AC, CEEK IU.9	%00T	%00T	%00T	%00T	%00T	%00T		%00T	%00T	%00T	%00T	%00T
VA Existing		100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%
VA Existing		10%	726%	37%	36%	26%	16%		2%	100%	0.1297	0.0907	0.135515
VA Existing	2505 Window Film (Standard) (Base Room AC)	%98	95%	%98	91%	95%	82%		64%	100%	100%	95%	%26
VA Existing	2506 High Efficiency Windows (Base Room AC)	24%	46%	26%	22%	48%	23%		19%	7%	73%	41%	40%
VA Existing	2600 Base Ductless Mini-Split Heat Pump, SEER 15.0/HSPF 8.8	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%
VA Existing	2601 Celling/roof Insulation (Base Ductless Mini-split)	10%	26%	37%	36%	26%	16%		2%	100%	13%	9%	14%
VA Existing	2003 Williaw Fillin (Stalidard) (Base Ductless Fillin-splin)	24%	46%	%65 %65	57%	48%	23%		19%	%2001	%60	41%	40%
VA Existing	3100 Base Open refrigerated/freezer cases	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%
VA Existing	3101 Efficient compressor motor, open cases	%0	%0	%0	3%	%0	%0		%0	%0	%0	%0	%0
VA Existing		20%	21%	40%	100%	100%	100%		41%	100%	100%	64%	%92
VA Existing	3103 Compressor VSD retrofit, open cases	28%	100%	100%	100%	%0	%92		100%	28%	%62	100%	100%
VA Existing	3104 Demand Defrost Electric, open cases	%0 0	75%	19%	75%	75%	%0		75%	%0	%0	%0	%0
VA Existing	3105 Demand Hot Gas Defrost, open cases	58%	75%	100%	75%	75%	76%		75%	28%	%62	100%	100%
VA Existing	3100 Electrofilically colliniatated evaporator fall fillotor, open cases 3107 High-efficiency fan motors, open cases	61%	100%	48%	57%	48%	100%		100%	64%	82%	100%	100%
VA Existing	3108 Insulated suction lines, open cases	20%	20%	20%	20%	20%	20%		20%	20%	50%	20%	20%
VA Existing	3109 LED Display Lighting, open cases	%29	%06	61%	%66	100%	95%		78%	100%	100%	100%	64%
VA Existing	3110 Multiplex Compressor System, open cases	%0	%0	%0	11%	%0	%0		%0	%0	%0	%0	%0
VA Existing	3111 Night covers for display cases, open cases	100%	79%	70%	100%	100%	100%		18%	100%	100%	100%	%09
VA Existing		20%	20%	20%	20%	20%	20%		20%	20%	20%	20%	20%
VA Existing	3113 Refrigeration Coil Cleaning, open cases	20%	20%	20%	20%	20%	20%		20%	20%	20%	20%	20%
VA Existing	3114 Refrigeration Commissioning, open cases	%nc	20%	20%	20%	%nç	20%		20%	20%	20%	20%	20%

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Colored Accordance (Marcolande Control of Colored Accordance Acco	Colliner	Commercial gied weasure inputs	(percent)			(, it co It L			Data Centers	Non-Jurisdictional	Religious Worship	MAioo
2000 Inchigation of protective control of the c	Č		Office	Res	Retail	Grocery	Warehouse	Education	-	H Chippin	H	H and	Harris H.	MISC
2015 Englished Companies Continued State Continued C	Segment	Measure # Measure Description	uilding Typer	₫	Ilding Type	ulding Type	uliding Type	Ilding Tyr		pelding 1y	pilding Typ	≣	ding Type	eulding Type
2015 Employed Part Part Part Part Part Part Part Part	VA Existing	3200 base closed retrigerated/treezer cases	%00T		%00T	30°	300 300 300 300	%00T		%00T %	%00I		%00T	001 0001
2020 High volume (London) controls of the control (London) co	VA Existing		0%0		64%	54%	64%	, O A		% O%	64%		64%	64%
2026 (Compared Volgo retainly collect content) 2026 (Compared Volgo retainly collect c	VA Existing		%°C		8 6	27%	%+0	% C		× × × × × × × × × × × × × × × × × × ×	860		860	òò
2006 Common of volument formation of the control of volument of volument of volument which the side of control of volument of volument between the control of volument of volument between the volument of volument	VA Existing		%05		40%	100%	100%	100%		% 41%	100%		64%	76%
2221 Command Potential Experimental Command Section (In the Command Potential Experiment) Protecting Section (In the Command Potential Experim	VA Existing		%85		100%	100%	%0	76%		100%	28%		100%	100%
2329 Demonstration of contrast	VA Existing		%0		19%	75%	75%	%0		% 75%	%0		%0	00
2008 International communication controlled control con	VA Existing		28%		100%	75%	75%	%92		% 75%	28%		100%	100%
2.210 Pignible Volume Greek Equipment Confederations (27) 67, 87, 87, 87, 87, 87, 87, 87, 87, 87, 8	VA Existing		61%		36%	27%	%0	%0		% 15%	100%		22%	20%
1211 ipplication from the colored crosses of the color of construction of the color of construction between closed crosses of the color of	VA Existing		20%		20%	20%	20%	20%		% 20%	20%		20%	20%
12.11 Includent's carbon in many controls and service controls to the control of	VA Existing	3210 High R-Value Glass Doors, base closed cases	%0		100%	92%	%0	%0		%0 %	%0		100%	100%
211 ED Delighed Lybridge, Justical Contest Cases 25th Case Case Case Case Case Case Case Case	VA Existing		64%	100%	48%	22%	48%	100%		% 100%	, 64%		100%	100%
11 12 10 10 10 10 10 10	VA Existing		20%	20%	20%	20%	20%	20%		% 20%	20%		20%	20%
211 On Comparison Com	VA Existing	3213 LED Display Lighting, base closed cases	%29	%06	61%	%66	100%	62%		% 78%	100%		100%	64%
312 Oversized Ar Contest Contested State	VA Existing		%08	80.0%	80%	80%	80%	80%		%08 %	%08		80%	80%
311 Strict recording controlled to March Controlled Con	VA Existing	3215 Multiplex Compressor System, base closed cases	%0	%0	%0	11%	%0	%0		%0 %	%0		%0	0
23.12 Refrigatement confidence in the confidence of the confi	VA Existing		20%	20%	20%	20%	20%	20%		% 20%	20%		20%	20%
23.09 STATE Bettly enterpretation Commissioning, base closed cases 50%	VA Existing		20%	20%	20%	20%	20%	20%		% 20%	20%		20%	20%
3301 Efficient compressor whork-in section in the part of the part	VA Existing		20%	20%	20%	20%	20%	20%		% 20%	20%		20%	20%
3301 Efficient connector to walk-rise and the control of the contr	VA Existing	3300 Base Walk-in refrigeration/freezer units	100%	100%	100%	100%	100%	100%		% 100%	100%		100%	100%
3303 Compressor VSO retrorify, walk-ins a 3304 Compressor VSO retrorify, base large cold stronge co	VA Existing		%0	%0	%0	3%	%0	%0		%0 %	%0		%0	0
3334 Demand Deficials (Controlled Michies) 3345 Demand Deficials (Controlled Michies) 335 Again Demand Deficials (Controlled Michies) 335 Demand Deficials (Controlled Michies) 336 Edizonal Holly Communitated exponential for Michies (Controlled Michies) 337 Edizonal Holly Communitated exponential for Michies (Controlled Michies) 337 Edizonal Holly Communitated exponential for Michies (Controlled Michies) 338 Fidality Demand Holly Communitated exponential for Michies (Controlled Michies) 339 Edizonal Holly Communitated exponential for Michies (Controlled Michies) 331 Holly Edizonal Michies (Controlled Michies) 332 Holly Edizonal Michies (Controlled Michies) 333 Holly Edizonal Michies (Controlled Michies) 334 Holly Edizonal Michies (Controlled Michies) 334 Holly Edizonal Michies (Controlled Michies) 335 Holly Edizonal Michies (Controlled Michies) 335 Holly Edizonal Michies (Controlled Michies) 334 Holly Edizonal Michies (Controlled Michies) 335 Holly Edizonal Michies (Controlled Michies) 335 Holly Edizonal Michies (Controlled Michies) 335 Holly Edizonal Michies (Controlled Michies) 336 Holly Edizonal Michies (Controlled Michies) 337 Holly Edizonal Michies (Controlled Michies) 337 Holly Edizonal Michies (Controlled Michies) 338 Holly Edizonal Michies (Controlled Michies) 338 Holly Edizonal Michies (Controlled Michies) 339 Holly Edizonal Michies (Controlled Michies) 330 Holly Edizonal Michies (Controlled Michies) 330 Holly Edizonal Michies (Controlled	VA Existing		20%	20%	20%	20%	20%	20%		% 20%	20%		20%	20%
3304 Demand lott Class Before, well-kins and Cheron Before Chord Cheron Residuel Residuel Cheron Residuel Residuel Cheron Residuel Residuel Cheron Residuel Cheron Residuel Cheron Residuel Ch	VA Existing		28%	100%	100%	100%	%0	%92		% 100%	28%		100%	100%
330 Pennard Hof Gas befrack, walk-riss and the following befrace of the proportion of motor, walk-ris and the following and the proportion of motor, walk-ris and the following betrace of the proportion of motor, walk-ris and the following betrace of the proportion of motor, walk-ris and the following betrace of the following betrace of the following walk-ris and the following betrace of storage of s	VA Existing		%0	75%	19%	75%	75%	%0		% 75%	%0		%0	0
3.00 Escriptionide for Mink-line and Conditional Mink-line And	VA Existing	3305 Demand Hot Gas Defrost, walk-ins	28%	75%	100%	75%	75%	76%		% 75%	. 58%	_	1 1	
3309 Floatign dead pressure controls, walk-ins a control for walk-in	VA Existing	3306 Electronically commutated evaporator fan motor, walk-ins	61%	25%	36%	27%	%0	%0,		% 15% % 15%	100%		55%	70%
330 Pirezarch Code Pagistach Control Marketins switchins (1974) (VA Existing		14%	37%	32%	20%	%0	NaT NaT		%/	%00T		43%	149
3.10 High-refricatory for motors, walk-rise 3.10 High-refricatory for motors walk-rise 3.10 High-refricatory for motors walk-rise 3.11 motors, walk-rise 3.11 mo	VA Existing		%0 20%	%0 20%	%O	2%02	%0 20%	S 0 L		% C C C C W	%O 0%		%0 20%	60 G
311 Insighted suction lines, walk-lines 311 Antiblated suction lines walk-lines 312 Antiblated suction lines walk-lines 313 Antiblated suction lines walk-lines 314 Refrigeration Coll Cleaning, walk-lines 315 Supe Lucy See Such See Su	VA EXISUING		50.%	100%	48%	30%	48%	100%		700 20 30 30 30 30 30 30 30 30 30 30 30 30 30	64%		100%	100%
3113 Oversized Arizonea Conference, walk-ins and the first of the conference of the	VA Existing	3311 Insulated suction lines, walk-ins	%05	20%	20%	20%	20%	20%		%05	20%		20%	20%
3313 Perfigeration Confescer, walk-ins 50% 50% 50% 50% 50% 50% 50% 50% 50% 50%	VA Existing	3312 Multiplex Compressor System, walk-ins	%0	%0	%0	11%	%0	%0		%0 %	%0		%0	0
3314 Refrigeration Coli Cleaning, walk-inst 3315 Strip curdation Commissioning, walk-inst 3316 Strip curdation Commissioning, walk-in freeze, base large cold storage 3317 Strip curdation Commissioning, base large cold storage 3318 Strip curdation Commissioning, base large cold storage 3408 Multiplex Commission System base large cold storage 3408 Multiplex Commission System base large cold storage 3409 Oversited Air Cooled Condenser, base large cold storage 3409 Strip curdation Commissioning, base large cold storage 3409 Strip curdation System Syst	VA Existing		20%	20%	20%	20%	20%	20%		% 20%	20%		20%	20%
3315 Refrigeration Commissioning, walk-ins 50% 50% 50% 50% 50% 50% 50% 50% 50% 50%	VA Existing		20%	20%	20%	20%	20%	20%		% 20%	20%		20%	20%
3400 Base Large Cold Storwalk-in Secretary Walk-in Secretary Large Cold Storwalk-in Secretary Large Large Cold Storwalk-in Secretary Large Large Cold Storwalk-in Report Large C	VA Existing		20%	20%	20%	20%	20%	20%		%05 %	20%		20%	20%
340 Efficient compressor motion, base large cold storage Area large cold storage and a sea Large Cold storage Area large cold storage and a sea Large Cold storage and a sea Large Cold storage and a sea Large Cold storage a sea Large Cold storage and a sea Large Cold s	VA Existing		11%	35%	47%	20%	3%	%0		%98 %	100%		0.3862	0.536267
404 Attacchoser on main don't to walk-in freezer Condressed motor). Base large cold storage and storag	VA Existing	3400 Base Large Cold Storage Area	100%	100%	100%	100%	100%	100%		% 100% %	100%		100%	100%
3402 50% <td>VA Existing</td> <td></td> <td>%0</td> <td>%0</td> <td>%0</td> <td>3%</td> <td>%0</td> <td>%0</td> <td></td> <td>%0 °</td> <td>%0</td> <td></td> <td>%0</td> <td>%O</td>	VA Existing		%0	%0	%0	3%	%0	%0		%0 °	%0		%0	%O
340 Electronicasily commutated acquaration, base large cold storage 340 Electronicasily commutated acquaration, base large cold storage 340 Electronicasily commutated acquaration and acquaration acquaration and acquaration acquara	VA Existing		%05 %85	20%	20%	20%	%05	50% 26%		%05 % %001 %	%0¢		20%	20%
3405 Evaporator fan controlled for MY Walk-lins, Dassel large cold storage 64% 100% 100% 18% 27% 100% 18% 18% 7% 100% 14% 100% 18% 18% 18% 18% 18% 18% 18% 18% 18% 18	VA Existing		%19	25%	36%	27%	%0	% O .		15%	100%		0.5464	0.2041126
3406 High-efficiency fan motors, base large cold storage 64% 100% 48% 57% 48% 100% 100% 64% 3406 High-efficiency fan motors, base large cold storage 50% <td>VA Existing</td> <td></td> <td>14%</td> <td>37%</td> <td>32%</td> <td>22%</td> <td>%0</td> <td>18%</td> <td></td> <td>%/ %/</td> <td>100%</td> <td></td> <td>43%</td> <td>14%</td>	VA Existing		14%	37%	32%	22%	%0	18%		%/ %/	100%		43%	14%
3407 Insulated suction lines, base large cold storage 50% <td< td=""><td>VA Existing</td><td></td><td>64%</td><td>100%</td><td>48%</td><td>21%</td><td>48%</td><td>100%</td><td></td><td>% 100%</td><td>, 64%</td><td></td><td>100%</td><td>100%</td></td<>	VA Existing		64%	100%	48%	21%	48%	100%		% 100%	, 64%		100%	100%
3408 Multiplex Compressor System, base large cold storage 0% 0% 1% 0%	VA Existing	3407 Insulated suction lines, base large cold storage	%05	20%	20%	20%	20%	20%		% 20%	20%		0.5	0
3409 Oversized Air Cooled Condenser, base large cold storage 50%	VA Existing		%0	%0	%0	11%	%0	%0		%0 %	%0 %		%0	00
34.10 Refrigeration Coil Cleaning, base large cold storage 34.11 Refrigeration Commissioning, base large cold storage 34.11 Refrigeration Commissioning, base large cold storage 34.12 Refrigeration Commissioning, base large cold storage 34.13 Refrigeration Commissioning, base large cold storage 34.14 Refrigeration Commissioning, base large cold storage 34.15 Refrigeration Commissioning, base large cold storage 35.01 Energy Star solid door reach-in refrigerate reach-in refrigeration Commissioning, base pass reach-in reach	VA Existing		20%	20%	20%	20%	20%	20%		% 20%	20%		20%	20%
11 No. 1976 Style Cardinarisolomic Data and Early Condition Collection Collec	VA Existing		%05	20%	20%	20%	20%	50%		%05.	20%		50%	50%
350 Exercise Color Reach-in Refrigerator/Freezer Federal Standard 350 Base Rade Good storage 350 Base Rade Cordanis Refrigerator/Freezer Federal Standard 350 Base Rade-in refrigerator/Freezer Federal Standard 350 Base Rade-in refrigerator/Freezer Federal Standard 350 Base Calsas Door Reach-in Refrigerator/Freezer Federal Standard 350 Base Glass Door Reach-in Refrigerator/Freezer Federal Standard 360 Base Glass Federal	VA Existing		%05 %10%	20%	20%	20%	%0°C	20%		%0c 20%	20%		20%	50%
3501 Energy Stars and Caskets, base reach-in refrigerator/freezer, Federal Standard 3500 Base Glass Book Reach-in refrigerator/freezer ach-in	VA Existing		100%	32%	100%	30% 100%	100%	100%		% 35% 100%	100%		39%	94°
3502 Freezer-Cooler Replacement Caskets, base reach-in Refrigerator/Freezer, Federal Standard 100% 100% 100% 100% 100% 100% 100% 100	VA Existing		54%	54%	54%	54%	100%	5001		% 100% % 54%	54%		54%	540,
3503 Refrigeration Coli Cleaning base base reach-in 3503 Refrigeration Coli Cleaning base base reach-in 3503 Refrigeration Coli Cleaning base base reach-in 3600 Base Glass Door Reach-in Refrigerator/Freezer, Federal Standard 100% 100% 100% 100% 100% 100% 100% 100	VA Existing		% ts	21%	20%	20%	% O.S.	% O'L		% C 2 %	24.02		30%	20.5
3600 Base Glass Door Reach-in Refrigerator/Freezer, Federal Standard 100%	VA Existing		20%	20%	50%	20 %	20%	20%		%05 %09 %09	50%		0.5	0.5
3601 Energy Star glass door readr-in refrigerator/freezer 54% 55%<	VA Existing		100%	100%	100%	100%	100%	100%		% 100%	100%		100%	100%
3602 Bi-level LED Case Lighting, base glass-door reach-in 50% 21% 40% 100% 100% 60% 41% 100% 3603 Freezer-Cooler Replacement Gaskets, base glass-door reach-in 50%	VA Existing		54%	54%	54%	54%	54%	54%		% 54%	. 54%		54%	54%
3603 Freezer-Cooler Replacement Gaskets, base glass-door reach-in 50% 50% 50% 50% 50% 50% 50% 50% 50% 50%	VA Existing		20%	21%	40%	100%	100%	100%		% 41%	100%		64%	76%
3604 Refrigeration Coil Cleaning, base glass-door reach-in 50% 50% 50% 50% 50% 50% 50% 50%	VA Existing	3603 Freezer-Cooler Replacement Gaskets, base glass-door reach-in	20%	20%	20%	20%	20%	20%		%05 %	20%		20%	20%
	VA Existing	3604 Refrigeration Coil Cleaning, base glass-door reach-in	%05	20%	20%	20%	20%	20%		%05 %	20%		20%	20%

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Commercial Ele	Commercial Elec Measure Inputs	INCOMPLETE FACTOR	ACTOR										
		(percent)											
		Office Res	Restaurant	Retail	Grocery Wa	Warehouse Education		Health	Lodging Data Centers Non-Jurisdictional Religious Worship	ta Centers Nor	n-Jurisdictional Rel	gious Worship	Misc
Segment	Measure # Measure Description	uilding Type uilding Type uilding Type uilding Type uilding Type ilding Typeilding Typeilding Typelding Typelding Typelding Type	ng Type uildi	ng Type uild	ing Type uild	ing Type ild	ing Typeild	ing Typelo	ling Typild	ing Typıldi	ng Typeldi	ng Typ€uildir	g Type
VA Existing	3700 Base Ice Maker, Federal Standard	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	3701 Energy Star Ice Machines	64%	64%	64%	64%	64%	64%	64%	64%	64%	64%	64%	64%
VA Existing	3702 Refrigeration Coil Cleaning, base ice maker	20%	20%	20%	20%	20%	20%	20%	20%	%05	20%	20%	20%
VA Existing	3800 Base Residential-Type Refrigerator/Freezer, Federal Standard	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	3801 Energy Star refrigerator/freezer	54%	54%	54%	54%	54%	24%	24%	24%	54%	24%	54%	54%
VA Existing	3802 Refrigeration Coil Cleaning, residential-type refrigerator	20%	20%	20%	%09	20%	20%	20%	20%	20%	20%	20%	20%
VA Existing	3900 Base Compact Refrigerator, Federal Standard	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	3901 Energy Star Compact Refrigerator	%08	%08	%08	%08	%08	%08	80%	%08	%08	%08	%08	%08
VA Existing	3902 Refrigeration Coil Cleaning, compact refrigerator	20%	20%	%09	%09	20%	20%	20%	20%	20%	20%	20%	20%
VA Existing	4000 Base Computer Network Server	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	4001 Energy Star server	86%	%66	51%	%86	%66	83%	94%	24%	%98	%68	95%	95%
VA Existing	4002 Server Power Management Enabling	%08	%08	%08	%08	%08	%08	%08	%08	%08	%08	%08	%08
VA Existing	4100 Base Desktop PC	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	4101 Energy Star or Better PC	%98	%66	51%	%86	%66	83%	94%	24%	%98	%68	95%	95%
VA Existing	4102 PC Network Power Management Enabling	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
VA Existing	4200 Base Laptop PC	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	4201 Energy Star or Better Laptop	54%	54%	54%	54%	54%	24%	24%	24%	24%	24%	54%	54%
VA Existing	4202 Laptop Network Power Management Enabling	73%	73%	73%	29%	78%	73%	73%	73%	78%	73%	73%	29%
VA Existing	4300 Base Monitor, LCD	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	4301 Energy Star or Better Monitor - LCD	28%	%26	62%	%86	%66	84%	94%	43%	28%	72%	85%	85%
VA Existing	4302 Monitor Power Management Enabling - LCD	46%	22%	23%	%26	2%	14%	30%	74%	46%	33%	20%	20%
VA Existing	4303 Plug-load controls - Commercial Smart Strip (base monitor LCD)	62%	%62	%59	45%	40%	%62	41%	%29	19%	100%	42%	22%
VA Existing	4400 Base Imaging	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

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		D dilo		Retail (uilding Type uild	Grocery Warehouse uilding Type juilding Type		Education	-	Ę Ż	Data Centers Non-Amisdational Religious Worship and Live Alice Two	onal Religious Worship	Miso
Segment Measure # Measure Description		٩		200				5 6 6	1			envT publin
1000	cent Fixture, 2L4'T12	0.0040		0.0080	0.0042			0.0112	0.0104 0	0.0059 0.0050	0.0095	0.0046
	1001 High Performance Lighting R/R - Combined Strategies (Base T12)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000					1.0000
	2)	0.0040	0.0060	0.0080	0.0042	0.0049	0.0064					0.0046
	Co comp	0.0040	0.0060	0.0080	0.0042	0.0049	0.0064			0 0		0.0046
Existing 1004 LED I rotter with lamp removal (112)	al (112) 5 713)	0.0040	0.0060	0.0080	0.0042	0.0049	0.0064	0.0112	0.0104 0	0.0059 0.0050	0.0095	0.0046
	se Liz.) ase T12)	1,0000	1.0000	1.0000	1,0000	1.0000	1.0000					1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000					1.0000
	1050 Base Linear Lighting, Fluorescent Fixture, 2L4'T12, integrated market	0.0040	0.0060	0.0080	0.0042	0.0049	0.0064					0.0046
	RET Occ & Daylight Integral Sensor LED troffer (base T12 integrated)	0.0040	0.0060	0.0080	0.0042	0.0049	0.0064	0.0112	0.0104 0	0.0059 0.0050	0.0095	0.0046
1100	cent Fixture, 2L4'T8, 1 EB	0.0040	0.0060	0.0080	0.0042	0.0049	0.0064		0.0104 0	0		0.0046
Existing 1101 High Performance Lighting R/I	1101 High Performance Lighting R/R - Combined Strategies (Base T8)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		1.0000 1	1.0000 1.0000	1.0000	1.0000
		0.0040	0.0060	0.0080	0.0042	0.0049	0.0064			0		0.0046
		0.0040	0.0060	0.0080	0.0042	0.0049	0.0064			0		0.0046
	al (T8)	0.0040	0.0060	0.0080	0.0042	0.0049	0.0064					0.0046
	se T8)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000					1.0000
1106	ase T8)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000					1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000			1.0000 1.0000		1.0000
	1150 Base Linear Lighting, Fluorescent Fixture, 2L4 T8, 1 EB, integrated market	0.0040	0.0060	0.0080	0.0042	0.0049	0.0064					0.0046
	1151 RET Occ & Daylight Integral Sensor LED troffer (base T8 integrated)	0.0040	0.0060	0.0080	0.0042	0.0049	0.0064					0.0046
Existing 1200 Base Linear Lighting, LED Tube, 2 Tamp Tixture	be, Z lamp fixture	0.0040	0.0060	0.0080	1,00042	0.0049	1,0000	0.0112	0.0104	0.0059 0.0050	0.0095	0.0046
	1201 High reflormative Lighting K/R - Combined Strategies (base LED Tube)	1.0000	1.0000	1.0000	1,0000	1.0000	1.0000					1.0000
1202	se LLD Tube)	1,0000	1.0000	1.0000	1.0000	1.0000	1.0000					1.0000
	use the rune)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000					1.0000
1225	be, 2 Jamp fixture, 2028 Standard	0.0040	0.0060	0.0080	0.0042	0.0049	0.0064					0.0046
1226	High Performance Lighting R/R - Combined Strategies (Base LED Tube)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000					1.0000
1227	se LED Tube)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000					1.0000
	ase LED Tube)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000				1.0000
	tube)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000			H		1.0000
1250	1250 Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market	0.0040	0.0060	0.0080	0.0042	0.0049	0.0064					0.0046
	KEI Occ & Daylight Integral Sensor LED troffer (base linear LED Integrated)	0.0040	0.0060	0.0080	0.0042	0.0049	0.0064					0.0046
	1275 Dase Linear Eighting, LED Tube, 2 Jamp Hitture, Integrated Market, 2026 Staffdard 1376 DET Oct 8 Davijakt Tatograf Consocial ED troffor (hase linear LED integrated)	0.0040	0.0060	0.0080	0.0042	0.0049	0.0064	0.0112	0.0104	0.0039 0.0030	0.0095	0.0046
Existing 1200 Base Convice Con	1270 REI OCC & Dayigir, integral selisor LED doller (base linear LED linegrated)	0.0040	0.0060	0.0080	0.0042	0.0049	0.0084					0.0046
	iii, Ci E	0.0233	0.000	0.0163	0.0036	0.000	0.000					4700.0
1350	in Incandescent/balogen	0.0235	0.0064	0.0163	0.0036	0000	0.0005					0.0074
	ase incandescent/halogen)	0.0235	0,0064	0.0163	0.0036	0.0000	0,0005					0.0074
	in, LED bulb	0.0235	0.0064	0.0163	0.0036	0.0000	0.0005					0.0074
	ase LED)	0.0235	0.0064	0.0163	0.0036	0.0000	0.0005					0.0074
1425	in, LED bulb, 2028 Standard	0.0235	0.0064	0.0163	0.0036	0.000	0.0005	0.0117	0.0308 0	0.0345 0.0112	12 0.0154	0.0074
	ase LED)	0.0235	0.0064	0.0163	0.0036	0.0000	0.0005					0.0074
		0.0040	0.0060	0.0080	0.0042	0.0049	0.0064					0.0046
1451	(D)	0.0040	0.0060	0.0080	0.0042	0.0049	0.0064					0.0046
1452	High Performance Lighting R/R - Combined Strategies (base low bay HID)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000					1.0000
Existing 1501 High Derformance Lighting R/R - Combi	1500 base nign bay Lighting / riuorescent 15 1501 High Performance Lighting R/R - Combined Strategies (Base TS)	0.0015	1 0000	2,0007	0.0020	1,0000	0.0025	0.0083	1 0000	1,000 1,0000	1 0000	1,0000
		0.0046	0.0001	0.0212	0.0059	0.0036	0.0076					0.0019
	(2.5)	0.0015	0,000	0.0071	0.0020	0.0012	0,0025					9000.0
	e T5)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000			-		1.0000
	ase T5)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000					1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		1.0000 1.0000		1.0000
	rescent T5, integrated market	0.0015	0.0000	0.0071	0.0020	0.0012	0.0025					0.0006
	ed LED Fixture	0.0015	0.0000	0.0071	0.0020	0.0012	0.0025					0.0006
	lighting	0.0015	0.0000	0.0071	0.0020	0.0012	0.0025					0.0006
	ed LED Fixture	0.0015	0.0000	0.0071	0.0020	0.0012	0.0025					0.0006
EXISTING L332 FIIGH PERFORMANCE LIGHTING K/K = CON FXISTING 1FD LIGHTING 1FD LIGHTING	1932 Aign Performance Lighting K/K - Combined Strategies (base nigh bay A1D) 1575 Base High Bay Lighting TED lighting	0.0000	1.0000	2.0000	0.0000	0.000	0.000	0.0000	1.0000	0.0000 1.0000	0 0 0013	00000
	ase high bay LED)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000					1.0000
	bay LED)	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000					1.0000

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Commercial E	Commercial Elec Measure Inputs	TECHNOLOGY SATURATION (units/square foot)	SATURATIC e foot)	NC									
Compa	Manual # Manual Decription	Office		Retail	Grocery V	Warehouse F	Education Lynn mil	Health I	Lodging Data Centers		Non-Jurisdictional Religious	Religious Worship	Misc Miding Type 1
V/A Exicting	Measure # Measure Description	o ooos o ooos			uliaing Type uliaing Type	o oooo		unaing Type naing Type			ng Typending		l ype l
VA Existing	1600 Base Crt Exit Sign	0.0003	0.0003	0.002	0.0001	0.000		0.000				0.0001	0.0001
VA Existing	1650 Base Area Lighting, Outdoor HID	0.0054	0.0037	0.0036	0.0061	0.0010	0.0026	0.0032				0.0029	0.0041
VA Existing	1651 LED Outdoor Area Lighting (Base Outdoor HID)	0.0054	0.0037	0.0036	0.0061	0.0010	0.0026	0.0032				0.0029	0.0041
VA Existing	1652 LED outdoor lighting with bi-level controls (Base Outdoor HID)	0.0054	0.0037	0.0036	0.0061	0.0010	0.0026	0.0032				0.0029	0.0041
VA Existing	1653 Outdoor Lighting Controls (Base Outdoor HID)	0.0054	0.0037	0.0036	0.0061	0.0010	0.0026	0.0032				0.0029	0.0041
VA Existing	1700 Base General Service Screw-in, Outdoor CFL	0.0054	0.0037	0.0036	0.0061	0.0010	0.0026	0.0032				0.0029	0.0041
VA Existing		0.0054	0.0037	0.0036	0.0061	0.0010	0.0026	0.0032	0.0020	0.0030	0.0040 0.0	0.0029	0.0041
VA Existing	1702 ELD SICHALII PEPURCHIENI (JOSE OUTUOU CFL)	4,000.0	0.0037	0.0036	0.0061	0.0010	0.0026	0.0032				0.0029	0.0041
VA Existing	1750 Base General Service Screw-in Outdoor Incappescent/Halogen	4500.0	0.0037	0.0030	0.0001	0.0010	0.0020	0.0032				9,0029	0.0041
VA Existing	1751 I FD outdoor lighting with hi-level controls (Base Outdoor Incandescent)	0.0034	0.0037	0.0036	0.0061	0.0010	0.0026	0.0032				0.0029	0.0041
VA Existing	1752 LED screw-in replacement (base Outdoor Incandescent)	0,0054	0,0037	0,0036	0.0061	0.0010	0.0026	0.0032				0.0029	0.0041
VA Existing		0.0054	0.0037	0.0036	0.0061	0.0010	0.0026	0.0032				0.0029	0.0041
VA Existing	1800 Base General Service Screw-in, Outdoor LED bulb	0.0054	0.0037	0.0036	0.0061	0.0010	0.0026	0.0032				0.0029	0.0041
VA Existing	1801 Outdoor Lighting Controls (Base Outdoor LED)	0.0054	0.0037	0.0036	0.0061	0.0010	0.0026	0.0032				0.0029	0.0041
VA Existing	1850 Base Linear Lighting, Outdoor Fluorescent Tube	0.0054	0.0037	0.0036	0.0061	0.0010	0.0026	0.0032				0.0029	0.0041
VA Existing	1851 ROB 2L4' LED Tube (base outdoor fluorescent)	0.0054	0.0037	0.0036	0.0061	0.0010	0.0026	0.0032				0.0029	0.0041
VA Existing	1852 LED outdoor lighting with bi-level controls (Base Outdoor Fluorescent)	0.0054	0.0037	0.0036	0.0061	0.0010	0.0026	0.0032				0.0029	0.0041
VA Existing	1853 Outdoor Lighting Controls (Base Outdoor Fluorescent)	0.0054	0.0037	0.0036	0.0061	0.0010	0.0026	0.0032				0.0029	0.0041
VA Existing	1900 Base Linear Lighting, Outdoor LED Tube	0.0054	0.0037	0.0036	0.0061	0.0010	0.0026	0.0032				0.0029	0.0041
VA Existing	1901 Outdoor Lighting Controls (Base Outdoor LED Tube)	0.0054	0.0037	0.0036	0.0061	0.0010	0.0026	0.0032	0.0020	0.0030	0.0040 0.0	0.0029	0.0041
VA Existing	2000 Dase Water-Cooled Centringal Cinier, 0:36 KW/ton, 300 tons	0.0030	0.0030	0.0030	0.0025	0.0020	0.0025	0.0025				0.0020	0.0020
VA Existing	2001 Celitrilugal Crillier, 0.34 KW/UII, 300 UIIS 3002 Chiller Tine Ha/Diagnostics	0.0030	0.0030	0.0030	0.0025	0.0020	0.0025	0.0025				0.0020	0.0020
VA Existing		0.0030	0.0030	0.0030	0.0025	0.0020	0.0025	0.0025				0.0020	0.0020
VA Existing	2005 High Enricency Chillee Water of Condenses Water Family Hotors	0.0030	0.0030	0.0030	0.0025	0.0020	0.0025	0.0025				0.0020	0.0020
VA Existing	2005 Ceiling/roof Insulation - Chiller	0.3315	0.8926	0.8973	0.9691	0.9149	0.4838	0.4936				0.5000	0.5000
VA Existing	2006 Cool Roof - Chiller	0.3315	0.8926	0.8973	0.9691	0.9149	0.4838	0.4936		0.3315 0.	0.3315 0.	0.5000	0.5000
VA Existing	2007 Duct Testing/Sealing - Chiller	0.0030	0.0030	0.0030	0.0025	0.0020	0.0025	0.0025				0.0020	0.0020
VA Existing	2008 Duct/Pipe Insulation - Chiller	0.2500	0.1000	0.2500	0.1000	0.1000	0.2500	0.1000				0.2500	0.2500
VA Existing	2009 EMS Optimization - Chiller	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000		1.0000 1.		1.0000	1.0000
VA Existing	2010 Dual Enthalpy Economizer Replaces Dry Bulb Economizer - Chiller	0.0030	0.0030	0.0030	0.0025	0.0020	0.0025	0.0025				0.0020	0.0020
VA Existing	2011 New Economizer - Chiller	0.0030	0.0030	0.0030	0.0025	0.0020	0.0025	0.0025				0.0020	0.0020
VA Existing	2012 Window Film (Standard) - Chiller 2013 Bigh Efficiency Windows - Chiller	0.0877	0.1322	0.0409	0.08/3	0.0152	0.0335	0.0601	0.0691		0.087/ 0.0	0.0284	0.0284
VA Existing	2013 High Efficiency Williams - Chillel 2100 Bace DX Parkaged System FER=10 3 10 tons	0.0807	0.1322	0.0409	0.087.5	0.000	0.0333	0.0001		0.0877		0.0284	0.0204
VA Existing	2101 DX Packaged System: EER=10.9. 10 tons	0.0030	0.0030	0.0030	0.0025	0.0030	0.0025	0.0025				0.0020	0.0020
VA Existing	2102 DX Packaged System, EER=13.4, 10 tons	0.0030	0.0030	0.0030	0.0025	0.0030	0.0025	0.0025				0.0020	0.0020
VA Existing	2103 Geothermal Heat Pump, EER=13, 10 tons - DX	0.0030	0.0030	0.0030	0.0025	0.0020	0.0025	0.0025				0.0020	0.0020
VA Existing	2104 DX Tune Up/ Advanced Diagnostics	0.0030	0.0030	0.0030	0.0025	0.0020	0.0025	0.0025				0.0020	0.0020
VA Existing	2105 Refrigerant Charge Adjustment - DX	0.0030	0.0030	0.0030	0.0025	0.0020	0.0025	0.0025				0.0020	0.0020
VA Existing	2106 Ceiling/roof Insulation - DX 3107 Cool Boof DV	0.3315	0.8926	0.8973	0.9691	0.9149	0.4838	0.4936	0.4692		0.3315 0.	0.5000	0.5000
VA Existing		0.0030	0.0030	0.0030	0.0025	0.0020	0.0025	0.0025		0.0060		0.3000	0.000
VA Existing	2109 Duct/Pipe Insulation - DX	0.2500	0.1000	0.2500	0.1000	0.1000	0.2500	0.1000				0.2500	0.2500
VA Existing	2110 Dual Enthalpy Economizer Replaces Dry Bulb Economizer - DX	0.0003	0.0015	0.0003	0.0000	0.0002	0.0003	0.0045				0.0002	0.0002
VA Existing	2111 Economizer Repair - DX	0.0003	0.0015	0.0003	0.000	0.0002	0.0003	0.0045				0.0002	0.0002
VA Existing	2112 New Economizer - DX	0.0030	0.0030	0.0030	0.0025	0.0020	0.0025	0.0025				0.0020	0.0020
VA Existing	2113 Optimize Controls - DX	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000				1.0000	1.0000
VA Existing	2114 Smart Thermostat - DX	0.0030	0.0030	0.0030	0.0025	0.0020	0.0025	0.0025				0.0020	0.0020
VA Existing	2115 Window Film (Standard) - DX	0.0877	0.1322	0.0409	0.0873	0.0152	0.0335	0.0601				0.0284	0.0284
VA Existing	2116 High Efficiency Windows - DX 2150 Bare DV Dackaged System 2020 Standard	0.0877	0.1322	0.0409	0.0873	0.0152	0.0335	0.0601	0.0091	0.08// 0.0	0.0877 0.0	0.0284	0.0284
VA Existing	2150 Base DA rackaged System, 2029 Standard 2152 DX Parkaned System FFR=13 4 10 tons	0.0030	0.0030	0.0030	0.0025	0.0020	0.0025	0.0025				0.0020	0.0020
VA Existing	2153 Geothermal Heat Pump, EER=13, 10 tons - DX	0.0030	0.0030	0.0030	0.0025	0.0020	0.0025	0.0025				0.0020	0.0020
VA Existing	2154 DX Tune Up/ Advanced Diagnostics	0.0030	0.0030	0.0030	0.0025	0.0020	0.0025	0.0025				0.0020	0.0020
VA Existing	2155 Refrigerant Charge Adjustment - DX	0.0030	0.0030	0.0030	0.0025	0.0020	0.0025	0.0025	0.0035			0.0020	0.0020
VA Existing	2156 Ceiling/roof Insulation - DX	0.3315	0.8926	0.8973	0.9691	0.9149	0.4838	0.4936				0.5000	0.5000
VA Existing	2157 Cool Roof - DX	0.3315	0.8926	0.8973	0.9691	0.9149	0.4838	0.4936	0.4692	0.3315 0.	0.3315 0.	0.5000	0.5000

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Commercial E	Commercial Elec Measure Inputs	TECHNOLOGY SATURATION	SATURATIO	z									
		Office R	Restaurant	Retail	Grocery	Warehouse	Education	Health	Lodging p	Lodging Data Centers Non-Jurisdictional Religious Worship	Aurisdictional Religio	us Worship	Misc
Segment	Measure # Measure Description	Uniding 1996 uniding 1996 uniding 1996 uniding 1996 funding 1996 uniding 1996 unidi	ing Type und	ing Type uild	ling lype ul	ding lype iui	iding Type ui	ding lype II	ding lyp lic	ding lyp dir	nig lypelidin	J ype uildii	l ype
VA Existing	2158 Duct Testing/ Sealing - DX	0.0030	0.0030	0.0030	0.0025	0.0020	0.0025	0.0025	0.0035	0.0060	0.0030	0.0020	0.0020
VA Existing	2133 Ducy ripe insulation - DA 2160 Dual Enthalov Fronomizer Replaces Dry Bulh Fronomizer - DX	0.2300	0.1000	0.2300	0.000	0.1000	0.2300	0.1000	0.1000			0.2300	0.5300
VA Existing	2161 Fronomizer Repair - DX	0.0003	0.0015	0.0003	0.000	0.0002	0.0003	0.0045	0.0005			0.0002	0.0002
VA Existing	2162 New Economizer - DX	0.0030	0.0030	0.0030	0.0025	0.0020	0.0025	0.0025	0.0035			0.0020	0.0020
VA Existing	2163 Optimize Controls - DX	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000			1.0000	1.0000
VA Existing	2164 Smart Thermostat - DX	0.0030	0.0030	0.0030	0.0025	0.0020	0.0025	0.0025	0.0035	0.0060		0.0020	0.0020
VA Existing	2165 Window Film (Standard) - DX	0.0877	0.1322	0.0409	0.0873	0.0152	0.0335	0.0601	0.0691			0.0284	0.0284
VA Existing	2166 High Efficiency Windows - DX	0.0877	0.1322	0.0409	0.0873	0.0152	0.0335	0.0601	0.0691	0.0877		0.0284	0.0284
VA Existing	2200 Base Heat Pump cooling (14.3 SEER, 8.2 HSPF)	0.0030	0.0030	0.0030	0.0025	0.0020	0.0025	0.0025	0.0035			0.0020	0.0020
VA Existing	2201 Heat Pump Upgrade (18 SEEK, 8.2 HSPF), cooling	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019		0.0019	0.0019
VA Existing		0.0030	0.0030	0.0030	0.0025	0.0020	0.0025	0.0025	0.0035			0.0020	0.0020
VA Existing		0.3315	0.8926	0.8973	0.9691	0.9149	0.4838	0.4936	0.4692	0.3315 (0.3315 (0.5000	0.5000
VA Existing		0.2500	0.1000	0.2500	0.1000	0.1000	0.2500	0.1000	0.1000			.2500	0.2500
VA Existing	2205 Smart Thermostat (Base Heat Pump Cooling)	0.0030	0.0030	0.0030	0.0025	0.0020	0.0025	0.0025	0.0035			0.0020	0.0020
VA Existing		0.0877	0.1322	0.0409	0.0873	0.0152	0.0335	0.0601	0.0691			0.0284	0.0284
VA Existing	2207 High Efficiency Windows (Base Heat Pump Cooling)	0.0877	0.1322	0.0409	0.0873	0.0152	0.0335	0.0601	0.0691			0.0284	0.0284
VA Existing	2300 Base Split-System AC, SEER 14.5, <5.4 tons	0.0030	0.0030	0.0030	0.0025	0.0020	0.0025	0.0025	0.0035			0.0020	0.0020
VA Existing	2301 Split System Air Conditioner, SEER 16.0 ENERGY STAR, <5.4 tons	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019			0.0019	0.0019
VA Existing		0.0030	0.0030	0.0030	0.0025	0.0020	0.0025	0.0025	0.0035			0.0020	0.0020
VA Existing	2303 Celling/roof Insulation (Base Residential Spirt-System)	0.3315	0.8926	0.8973	0.9691	0.9149	0.4838	0.4936	0.4692	0.3315 (0.3315	0.5000	0.5000
VA Existing	2304 Duct/Pipe Insulation (base Residential Split-System)	0.2500	0.1000	0.2500	0.1000	0.1000	0.2500	0.1000	0.1000			0.2500	0.2500
VA Existing	2300 Strart Hermoscat (base Residential Spin-System)	0.0030	0.0030	0.0030	0.0023	0.0020	0.0025	0.0023	0.0030			0.0020	0.0020
VA Existing	2500 SWIIGOW FIIIN (SERIORIDED) (DASK RESIDENTIAL SPIIII-SYSTEM)	0.0877	0.0030	0.0409	0.0873	0.0152	0.0333	0.0001	1600.0	0.000	0.000	0.0284	0.0284
VA Existing	2400 Base FIAC COOMING, EEK=10.2, 1 CM	0.0030	0.0030	0.0030	0.0025	0.0018	0.0020	0.0025	0.0024			0010	0.0018
VA Existing	2402 Ceiling/roof Insulation (Base PTAC)	0.3315	0.8926	0.8973	0.9691	0.9149	0.4838	0.4936	0.4692		0.3315 (0.5000	0.5000
VA Existing	2404 Occupancy Sensor (hotels)	0:0030	0.0030	0.0030	0.0025	0.0018	0,0020	0.0025	0.0024			0.0018	0.0018
VA Existing	2405 Window Film (Standard) (Base PTAC)	0.0877	0.1322	0.0409	0.0873	0.0152	0.0335	0.0601	0.0691	0.0877	0.0877	0.0284	0.0284
VA Existing	2500 Base Room AC, CEER 10.9	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010			0.0010	0.0010
VA Existing	2501 Room AC, CEEK 12.0 ENERGY STAR	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010		0.0010	0.0010
VA Existing	2502 Ductless Mini-Split SEER 18.0/HSPF 10.0 CEE Tier 1 (Base Room AC)	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010					0.0010	0.0010
VA Existing	2503 Ceiling/roof Insulation (Base Room AC)	0.33152	0.89262	0.89725	0.96907	0.91485	0.48378					0.50000	0.50000
VA Existing	2505 Window Film (Standard) (Base Room AC)	0.0877	0.1322	0.0409	0.0873	0.0152	0.0335	0.0601	0.0691	0.0877		0.0284	0.0284
VA Existing	2506 High Efficiency Windows (Base Room AC)	0.0877	0.1322	0.0409	0.0873	0.0152	0.0335	0.0601	0.0691			0.0284	0.0284
VA Existing	2600 Base Ductless Mini-Split Heat Pump, SEER 15.0/HSPF 8.8	0.0030	0.0030	0.0030	0.0025	0.0020	0.0025	0.0025	0.0035	0.0060	0.0030	0.0020	0.0020
VA Existing	2601 Ceiling/roof Insulation (Base Ductiess Mini-split)	0.3315	0.8926	0.8973	0.9691	0.9149	0.4838	0.4936	0.4692			.5000	0.5000
VA Existing	2603 Window Film (Standard) (Base Ductiess Mini-split)	0.0877	0.1322	0.0409	0.08/3	0.0152	0.0335	0.0601	0.0691	0.08//		0.0284	0.0284
VA Existing	2604 High Efficiency Windows (base Duccless Mini-split)	0.087/	0.1322	0.0409	0.08/3	0.0152	0.0335	0.000	0.0091		0.0877	0.0284	0.0284
VA Existing	3100 base Opeli leliigelated/lifezel cases 3101 Efficient compressor motor open cases	0.0000	0.0002	0.000	0.0010	0.000	0.0000	00000	0.000			0.000	0.000
VA Existing	3102 Bi-level LED Case Lighting (self-contained units), open cases	0.0000	0.0007	0.0000	0.0039	0.0000	0.0000	0.000	0.000			0.0000	0.000
VA Existing	3103 Compressor VSD retrofit, open cases	0.0000	0.0001	0.0000	0.0005	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000
VA Existing	3104 Demand Defrost Electric, open cases	0.0000	0.0002	0.0000	0.0010	0.0000	0.0000	0.0000	0.000.0			0.0000	0.0000
VA Existing	3105 Demand Hot Gas Defrost, open cases	0.0000	0.0002	0.000.0	0.0010	0.0000	0.0000	0.0000	0.000.0			0.0000	0.000.0
VA Existing	3106 Electronically commutated evaporator fan motor, open cases	0.0000	0.0005	0.0000	0.0029	0.0000	0.0000	0.0000	0.0000			0.000.0	0.0000
VA Existing	3107 High-efficiency fan motors, open cases	0.0000	0.0002	0.0000	0.0010	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000
VA Existing	3108 Insulated suction lines, open cases	0.0000	0.0009	0.0000	0.0050	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
VA Existing	3110 Multiplex Compressor System open cases	0.0000	0.0007	0.000	0.0039	0.0000	0.0000	0.000	0,000			0.000	0,000
VA Existing	3111 Night covers for display cases open cases	00000	0.0001	00000	0.000	00000	0.000	0,000	0.000			0.000	00000
VA Existing	3112 Oversized Air Cooled Condenser, open cases	0.0000	0.0001	0.0000	0.0005	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000
VA Existing		0.0000	0.0002	0.000.0	0.0010	0.0000	0.0000	0.0000	0.000.0			0.000.0	0.0000
VA Existing		0.0000	0.0001	0.000.0	0.0005	0.0000	0.0000	0.0000	0.0000		_	0.0000	0.000.0
VA Existing		0.0000	0.0006	0.0001	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000		0.000.0	0.0000
VA Existing	3201 Efficient compressor motor, base closed cases	0.0000	0.0015	0.0002	0.0025	0.0000	0.0001	0.0000	0.0001			0.0000	0.0000
VA Existing	3202 Energy-Star Kerrigerator/ Freezer, base closed cases 3203 Anti-ewaat (himidistat) controls hase closed cases	0.0000	0.0000	0.000	0.0010	0.0000	0.0000	0.0000	0.000	0.0000	0.000	0.000	0.000
VA Existing	3204 Bi-level LED Case Lighting (self-contained units), base closed cases	0.0000	0.0025	0.0003	0.0040	0.0000	0.0001	0.0001	0.0002			0.0001	0.0001
VA Existing	3205 Compressor VSD retrofit, base closed cases	0.0000	0.0003	0.0000	0.0005	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000
												,	

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Commercial E	Commercial Elec Measure Inputs	TECHNOLOGY SATURATION (units/square foot)	Y SATURATI e foot)	NO								
Seament	Mastire # Mastire Decription	Office Office	i i	Retail	Grocery V	Warehouse E	Education	Health L	Lodging Data Centers	Centers non-Jurisdictions	Non-Ausdettonal Religious Worship	Misc milding Type 1
VA Existing	3206 Demand Defract Electric, base closed cases	0.0000			0.0010 0.0000	0.0000	0.0000	0.0000 0.0000 0.0000	0.0000			0.000
VA Existing	3207 Demand Hot Gas Defrost, base closed cases	0.0000	0.0006	0.0001	0.0010	0.0000		0.0000	0.0000			0.0000
VA Existing	3208 Electronically commutated evaporator fan motor, base closed cases	0.0000	0.0019	0.0002	0.0030	0.0000	0.0001					0.0000
VA Existing	3209 Freezer-Cooler Replacement Gaskets, base closed cases	0.0000	0.0025	0.0003	0.0040	0.0000	0.0001					0.0001
VA Existing	3210 High R-Value Glass Doors, base closed cases	0.0000	0.0025	0.0003	0.0040	0.0000	0.0001					0.0001
VA Existing	3211 High-efficiency fan motors, base closed cases	0.0000	0.0006	0.0001	0.0010	0.0000	0.0000					0.0000
VA Existing	3Z1Z Insulated suction lines, base closed cases מארם האינה ויהואיר ויהואיר אינויין ביירואיר היירויין אוריין מאוריין האינויין אוריין האינויין אוריין אוריין האינו	0.0000	0.0031	0.0004	0.0050	0.0000	0.0002	0.0001	0.0002	0.000 0.000	0.0001	0.0001
VA Existing	3213 LED Display Elgituily, dase closed cases 3214 Low or Anti-Sweat Door Film: base closed cases	0.0000	1.2%	0.0003	0.0040	0.0000	0.0000					0.0003
VA Existing	3215 Multiplex Compressor System, base closed cases	0.0000	0.0003	0.0000	0.0005	0.0000	0.0000					0.0000
VA Existing	3216 Oversized Air Cooled Condenser, base closed cases	0.0000	0.0003	0.0000	0.0005	0.0000	0.0000	0.0000				0.0000
VA Existing	3217 Refrigeration Coil Cleaning, base closed cases	0.0000	0.0006	0.0001	0.0010	0.0000	0.0000					0.0000
VA Existing	3218 Refrigeration Commissioning, base closed cases	0.0000	0.0003	0.0000	0.0005	0.0000	0.0000		0.0000		0.0000	0.0000
VA Existing	3300 Base Walk-in refrigeration/freezer units	0.0000	0.0015	0.0000	0.0020	0.0001	0.0000	0.0000				0.000.0
VA Existing		0.0000	0.0037	0.0000	0.0049	0.0001	0.0000					0.0000
VA Existing		0.00000	0.00147	0.00001	0.00197	0.00006	0.00000					0.00001
VA Existing	3303 Compressor VSD retrofit, walk-ins	0.00000	0.00073	0.00001	0.00099	0.00003	0.0000					0.0000
VA Existing	3304 Demand Defrost Electric, walk-ins	0.00000	0.00147	0.00001	0.00197	0.00006	0.00000					0.00001
VA Existing	3306 Electronically commutated evaporator for motor well-inc	0.0000	0.00147	0.00001	0.00197	0.00006	0.0000	0.00000	0.00001	0.00000 0.00000	0.00000	0.00001
VA Existing	3307 Eventoriating controller for MT walk-ins	0.00000	0.00147	0.00001	0.00197	0.00006	0.00000				0.00000	0.00001
VA Existing		0.00000	0.00147	0.00001	0.00197	0.00006	0.00000			0.00000 0.00000	0.00000	0.00001
VA Existing	3309 Freezer-Cooler Replacement Gaskets, walk-ins	0.00000	0.00367	0.00004	0.00493	0.00014	0.00000				0.00000	0.00002
VA Existing	3310 High-efficiency fan motors, walk-ins	0.00000	0.00147	0.00001	0.00197	0.00006	0.0000		0.00001 0.			0.00001
VA Existing	3311 Insulated suction lines, walk-ins	0.00000	0.00372	0.00004	0.00500	0.00014	0.0000					0.00002
VA Existing	3312 Multiplex Compressor System, walk-ins	0.00000	0.00073	0.00001	0.00099	0.00003	0.00000					0.00000
VA Existing	3313 Oversized Air Cooled Condenser, walk-ins	0.00000	0.00073	0.00001	0.00099	0.00003	0.0000					0.0000
VA Existing		0.00000	0.00073	0.00001	0.00099	0.00003	0.00000		0.00000	0.00000 0.00000	0.00000	0.0000
VA Existing	3315 Kerrigeration Commissioning, waik-ins	0.0000	0.000/3	0.00001	0.00099	0.00003	0.0000	0.00000		0.00000 0.00000	0.00000	0.0000
VA Existing	3310 Base Large Cold Storage Area	0.00000	0.00049	0.00000	0.00009	0.00000	0.0000				0.00000	0.00000
VA Existing	3401 Efficient compressor motor, base larae cold storage	0.00000	0.00123	0.00000	0.00022	0.00000	0.00000				0.00000	0.00001
VA Existing	3402 Auto-closer on main door to walk-in freezer, base large cold storage	0.00000	0.00049	0.00000	0.0000	0.00000	0.0000				0.00000	0.0000
VA Existing	3403 Compressor VSD retrofit, base large cold storage	0.00000	0.00025	0.0000.0	0.00004	0.00000	0.0000				0.00000	0.0000.0
VA Existing		0.00000	0.00148	0.00001	0.00027	0.00000	0.00000			_	_	0.00001
VA Existing	3405 Evaporator fan controller for MT walk-ins, base large cold storage	0.0000	0.0005	0.0000	0.0001	0.0000	0.0000					0.0000
VA Existing	3406 High-efficiency fan motors, base large cold storage	0.00000	0.00049	0.00000	0.00009	0.00000	0.0000	0.00000	0.00000	0.00000 0.00000	0.00000	0.00000
VA Existing		0.00002	0.02762	0.00010	0.00300	0.00000	0.0000					0.0001
VA Existing	3409 Oversized Air Cooled Condenser, base large cold storage	000000	0.00025	0.0000	0.00004	0.0000	0.0000					000000
VA Existing	3410 Refrigeration Coil Cleaning, base large cold storage	0.00000	0.00025	0.0000.0	0.00004	0.00000	0.00000					0.00000
VA Existing		0.00000	0.00025	0.0000.0	0.00004	0.00000	0.0000.0					0.0000
VA Existing	3412 Strip curtains for walk-ins, base large cold storage	0.00000	0.00049	0.0000.0	0.00009	0.00000	0.0000.0					0.00000
VA Existing	3500 Base Keach-In Kerrigerator/Freezer, Federal Standard 3501 Engrav Char colid Apprings to English and Englishment (Federal)	0.00006	0.00117	0.00179	0.00239	0.00007	0.00013	0.00026	0.00015 U.	0.00006 0.00011	0.00010	0.0000
VA Existing		0.00024	0.00468	0.00715	0.00954	0.00026	0.00052				0.00042	0.00036
VA Existing	3503 Refrigeration Coil Cleaning, base base reach-in	0.00006	0.00117	0.00179	0.00239	0.00007	0.00013				0.00010	0.0000
VA Existing	3600 Base Glass Door Reach-in Refrigerator/Freezer, Federal Standard	0.00002	0.00085	0.00030	0.00155	0.00002	0.00005		0.00008 0.	0.00006 0.00004	0.00006	0.00004
VA Existing		0.00002	0.00085	0.00030	0.00155	0.00002	0.00005					0.00004
VA Existing		0.00009	0.00340	0.00120	0.00621	0.00010	0.00021					0.00015
VA Existing	3604 Pefeiromation Coll Chaming has a glass-door reach-in	0.00009	0.00340	0.00120	0.00621	0.00010	0.00021	0.00024 0	0.00032 0.0	0.00024 0.00018	0.00025	0.00015
VA Existing		0.0000	0.00034	0.00030	0.00006	0.00001	0.00003				0.00001	0.00004
VA Existing		0.00000	0.00034	0.00001	0.00006	0.00001	0.00001				0.00001	0.00004
VA Existing		0.00000	0.00034	0.00001	0.00006	0.00001	0.00001				0.00001	0.00004
VA Existing		0.00054	0.00086	0.0000	0.00105	0.00000	0.00018				0.00013	0.00183
VA Existing	3801 Energy Star refrigerator/freezer	0.00054	0.00086	60000.0	0.00105	0.0000	0.00018					0.00183
VA Existing	3802 Refrigeration Coil Cleaning, residential-type refrigerator	0.00054	0.00086	60000.0	0.00105	0.00000	0.00018			0.00008 0.00118		0.00183
VA Existing	3900 Base Compact Refrigerator, Federal Standard	0.00017	0.00040	0.00020	0.00025	0.00000	0.00010				0.00001	0.00010
VA Existing	39U1 Energy Star Compact Refrigerator	0.0001/	0.00040	0.00020	0.00025	0.00009	0.00010	0.00022	0.00025 0.	0.00040 0.00014	0.00001	0.00010

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Commercial E	Commercial Elec Measure Inputs	TECHNOLOGY SATURATION	SATURATIO	NC							
		(units/square foot)	e foot)								
		Office	Restaurant	Retail	Grocery V	Warehouse	Education	Health Lo	Lodging Data Centers Non-Jurisdictional Religious Worship	onal Religious Worship	Misc
Segment	Measure # Measure Description	uilding Type ui	Iding Type uil	ding Type uil	ding Type ui	Iding Type iui	ding Type uil	ding Type ildir	uilding Type wilding Type wilding Type wilding Type wilding Type wilding Type wilding Type liding Type liding Type wilding Type wilding Type	peilding Type u	ilding Type 1
VA Existing	3902 Refrigeration Coil Cleaning, compact refrigerator	0.00017	0.00040	0.00020	0.00025	0.0000	0.00010	0.00022 0.0	0.00025 0.00040 0.00014	.4 0.00001	0.00010
VA Existing	4000 Base Computer Network Server	0.00023	0.00011	0.00004	0.00008	0.00002	0.00247	0.00012 0.0	0.00001 0.02150 0.00029	100000 6	0.00035
VA Existing	4001 Energy Star server	0.00023	0.00011	0.00004	0.00008	0.00002	0.00247	0.00012 0.0	0.00001 0.02150 0.00029	1000000 6	0.00035
VA Existing	4002 Server Power Management Enabling	0.00023	0.00011	0.00004	0.00008	0.00002	0.00247	0.00012 0.0	.00001 0.02150 0.00029	1000000 6	0.00035
VA Existing	4100 Base Desktop PC	0.00184	0.00040	0.00043	0.00054	0.00032	0.00162	0.00144 0.0	.00029 0.00014 0.00020	0.00037	0.00045
VA Existing	4101 Energy Star or Better PC	0.00184	0.00040	0.00043	0.00054	0.00032	0.00162	0.00144 0.0	0.00029 0.00014 0.00020	0.00037	0.00045
VA Existing	4102 PC Network Power Management Enabling	0.00184	0.00040	0.00043	0.00054	0.00032	0.00162	0.00144 0.0	0.00029 0.00014 0.00020	0.00037	0.00045
VA Existing	4200 Base Laptop PC	0.0000	0.00020	90000.0	0.00014	0.00004	90000.0	0.000005 0.0	.00003 0.00008 0.00014	.4 0.00007	9000000
VA Existing	4201 Energy Star or Better Laptop	0.0000	0.00020	90000.0	0.00014	0.00004	90000.0	0.000005 0.0	.00003 0.00008 0.00014	.4 0.00007	9000000
VA Existing	4202 Laptop Network Power Management Enabling	0.0000	0.00020	90000.0	0.00014	0.00004	90000.0	0.000005 0.0	.00003 0.00008 0.00014	.4 0.00007	0.00006
VA Existing	4300 Base Monitor, LCD	0.00234	0.00069	0.00052	0.00072	0.00041	0.00183	0.00163 0.0	.00033 0.00035 0.00145	5 0.00047	0.00055
VA Existing	4301 Energy Star or Better Monitor - LCD	0.00234	0.00069	0.00052	0.00072	0.00041	0.00183	0.00163 0.0	.00033 0.00035 0.00145	5 0.00047	0.00055
VA Existing	4302 Monitor Power Management Enabling - LCD	0.00234	0.00069	0.00052	0.00072	0.00041	0.00183	0.00163 0.0	.00033 0.00035 0.00145	5 0.00047	0.00055
VA Existing	4303 Plug-load controls - Commercial Smart Strip (base monitor LCD)	0.00234	0.00069	0.00052	0.00072	0.00041	0.00183	0.00163 0.0	0.00033 0.00035 0.00145	5 0.00047	0.00055
VA Existing	4400 Base Imaging	0.00010	0.00015	0.00004	0.00012	0.00003	0.00004	0.00007 0.0	.00003 0.00004 0.00006	0.00007	0.00004

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Measur	e# Measure Description 1000 Base Linear Lighting, Fluorescent Fixture, 214T12 1001 ROB 2L4* LED Tube (Base T12) 1003 LED Troffer (Base T12) 1004 LED Troffer (Base T12) 1005 Lighting Control Tuneup (Base T12) 1005 Lighting Control Tuneup (Base T12) 1005 Lighting Control (Base T12) 1005 Cupanny Sensor (Base T12) 1007 Occupanny Sensor (Base T12) 1008 Base Linear Lighting, Fluorescent Fixture, 2L4*T12, integrated market 1008 Base Linear Lighting, Fluorescent Fixture, 2L4*T12, integrated market 1008 Base Linear Lighting, Fluorescent Fixture, 2L4*T12, Integrated)	(percent) Office Restaurant Retail Groce building Type 3 uiding Type 3 u	Restaurant uilding Type 3uil 4%	Retail G ding Type 3uildi	ry Ype 3u 2%	Warehouse Edilding Type 3uild 3%	Zij.	3dil	Lodging Data ding Type Buildin 2%	a Centers Noning Type uild	Ing Type Juild 4% 1% 1% 1% 1% 1% 1% 1% 1% 1% 1% 1% 1% 1%	ng Type Juild A 4% 2% 2%	Misc ng Type 1
Measur	# 000 000 000 000 000 000 000 000 000 00	Building Type 3u	ilding Type 3uil 4%	ding Type 3uild	ng Type 3uild 2%	ing Type 3uild 3%	ng Type 3uildi 6%	ng Type 3uild 6%	ng Type 3uild 4% 2%	ing Type uild 0%	ing Type 1uild 4% 1% 1% 1%	ng Type 1uild 4% 2% 2%	ng Type 1
	001 High Performance Lighting R/R - Combined Strategies (Base T12) 002 ROB 2L4 'LED Tube (Base T12) 003 LED Troffer (Base T12) 004 LED Troffer (Base T12) 005 Lighting Control Tuneup (Base T12) 006 Network Lighting Control (Base T12) 007 Occupancy Sensor (Base T12) 008 Seavent Lighting, Fluorescent Fixture, 2L4T12, integrated market 050 Base Linear Lighting, Fluorescent Fixture, 2L4T12, integrated market 051 RET Occ & Daylight Integral Sensor Lighting, 1900 Sease Linear Lighting, Fluorescent Fixture, 2L4T13, integrated)		2	%9	2				2%	200	1%	5%	20%
	002 ROB 2L4! LED Tube (Base T12) 003 LED Trafer (Base T12) 004 LED Trafer (Base T12) 005 Lighting Control Tuneup (Base T12) 006 Network Lighting Control (Base T12) 007 Occupancy Sensor (Base T12) 050 Base Linear Lighting, Fluorescent Fixture, 2L4T12, integrated market 050 Base Linear Lighting, Fluorescent Fixture, 2L4T12, integrated market 051 RET Occ & Daylight Tintegrated Sensor Lib Toffer (Base T12) Integrated) 100 Base Linear Lighting, Fluorescent Fixture, 2L4T18, 1 EB	% 6	%<	%6	1%	1%	2%	2%	2	02.11	1%	5%	1%
	003 LED Troffer (Base T12) 004 LED Troffer with lamp removed (T12) 005 Legiting Control (Indue) (Base T12) 006 Network Lighting Controls (Base T12) 006 Occupancy Sensor (Base T12) 007 Occupancy Sensor (Base T12) 008 Ses Linear Lighting, Fluorescent Fixture, 2L4T12, integrated market 005 Base Linear Lighting, Fluorescent Fixture, 2L4T12, integrated) 100 Base Linear Lighting, Fluorescent Fixture, 2L4T18, 1 FB	2 %	5%	5%	1%	1%	2%	5%	5%	%0	1%	70	1%
	004 LED Troffer with lamp removal (T12) 005 Lighting Control Tuneup (Base T12) 006 Setwork Lighting Controls (Base T12) 007 Occupancy Sensor (Base T12) 008 Base Linear Lighting, Fluorescent Fakture, 2L4 T12, integrated market 050 Base Linear Lighting, Fluorescent Fakture, 2L8 T12 integrated) 051 RET Occ. & Daylight Tinegrated] 100 Base Linear Lighting, Fluorescent Fakture, 2L8 T12 integrated)	1%	1%	1%	%0	%0	1%	1%	1%	%0	2 4	1.70	%0
	005 Lighting Control Tuneup (Base T12) 000 Network Lighting Controls (Base T12) 007 Occupancy Engor (Base T12) 007 Occupancy Sensor (Base T12) 018 Base Linear Lighting, Fluorescent Fixture, 2L4 T12, integrated market 018 TEX Tock & Daylight Integrated Sensor Lieb Toffer (Base T12) integrated) 100 Base Linear Lightine, Fluorescent Fixture, 2L4 T8, 1 EB	1%	1%	1%	%0	%0	1%	1%	1%	%0	1%	1%	%0
	obo NewWork Lighting Controls (sease 11.2) 007 Occupancy Sensor (1888 T1.2) 050 Base Unear Lighting, Fluorescent Fixture, 21.4712, integrated market 050 Base Unear Lighting, Fluorescent Fixture, 21.4712, integrated market 051 RET Occ. & Daylight Integrated Sensor Light Orfore (1888 T12 integrated) 100 Base Linear Lighting, Fluorescent Fixture, 21.478, 1 EB	3%	%0	2%	2%	1%	1%	2%	2%	%0	%4%	2%	1%
	or o cuspinor, y ensor these control of the control	1%	%000	%6	%%	% 6	%2	% 6	18%	% %	1%	1%	% 6
	051 RET Occ. & Daylight Integral Sensor LED troffer (best To integrated) 100 Base Unear Lighting, Floorescent Fixture, 2.14 T8, 1. E8	%9	4%	%9	%	%	%9	6%	%0	8 %	4%	4%	%0
	100 Base Linear Lighting, Fluorescent Fixture, 214 T8, 1 EB	%9	4%	%9	5%	3%8	%9	%9	%0	%0	4%	4%	2%
		10%	4%	2%2	5%	11%	15%	11%	2%	%8	2%	16%	3%
	1101 High Performance Lighting R/R - Combined Strategies (Base T8)	3%	1%	5%	1%	4%	2%	4%	3%	3%	2%	%9	1%
	1102 ROB 2L4' LED Tube (Base T8)	3%	1%	2%	1%	4%	2%	4%	3%	3%	2%	%9	1%
	1103 LED Troffer (Base T8)	1%	1%	1%	%0	2%	2%	2%	1%	1%	1%	2%	%0
	1104 LED Troffer with lamp removal (T8)	1%	1%	1%	%0	2%	2%	2%	1%	1%	1%	2%	%0
	1105 Lighting Control Tuneup (Base T8)	%9	%0	2%	5%	4%	3%	3%	4%	8%	2%	%9	1%
		5%	%0	%0	%0	7%	2%	4%	1%	2%	1%	2%	%0
	1107 Occupancy Sensor (Base T8)	5%	%0	%0	%0	1%	2%	3%	1%	1%	1%	5%	%0
	1150 Base Linear Lighting, Fluorescent Fixture, 2L4'T8, 1 EB, integrated market	10%	4%	2%	5%	11%	%0	11%	%0	%8	2%	%0	3%
	1151 RET Occ & Daylight Integral Sensor LED troffer (base T8 integrated)	10%	4%	2%	7%	11%	%0	11%	%0	8%	2%	%0	3%
	1200 Base Linear Lighting, LED Tube, 2 lamp fixture	12%	%9	16%	35%	15%	2%	12%	%9	8%	10%	20%	14%
	1201 High Performance Lighting R/R - Combined Strategies (Base LED Tube)	12%	%9	16%	35%	15%	2%	12%	%9	%8	10%	20%	14%
	1202 Lighting Control Tuneup (Base LED Tube)	%/	1%	2%	35%	%9	1%	4%	3%	%8	10%	7%	4%
	1203 Network Lighting Controls (Base LED Lube)	2%	%0	1%	% Z %	%7	%26	%4 6	1%	%7 7%	% Z	3%	7.00
	1204 Occupancy Sensor (Base LED tube)	2%	%0,	1%	2%	%7	%7.0	3000	1%	17%	2%	%2%	%7
	1225 Base Linear Lighting, LED Tube, 2 Tamp Tixture, 2028 Standard	28%	14%	%97 70%	38%	%67 %67	% 9.2 70.00	28%	18%	15%	20%	40%	19%
	1225 High Performance Lighting K/K - Combined Strategies (base LED Tube)	28%	14%	%97 907	38%	29%	%07	%87	78%	15%	20%	40%	19%
VA Existing	1127 Lighting Control Luneup (Base LED Tube)	15%	10%	866	38%	11%	% 6	%6	8 6	15%	20%	15%	% n
	1226 Network Eighting Controls (base LED Tube)	%C	10%	2%	30%	4%	0%0	TO %0	2%	4%	4%	0%0	0,00
	1259 Occupancy Sensor (Dase ELD rube) 1750 Bace Linear Linkting LED Tuke 2 Jamp fixture integrated market	12%	70,4	16%	35%	15%	2%	12%	2.0	% 6	10%	%00	14%
	1251 RET Occ & Davight Integral Sensor LED troffer (base linear LED integrated)	12%	%9	16%	35%	15%	22%	12%	%9	%8	10%	20%	14%
	1275 Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market, 2028 Standard	28%	14%	76%	38%	29%	11%	28%	%9	15%	20%	24%	19%
	1276 RET Occ & Daylight Integral Sensor LED troffer (base linear LED integrated)	28%	14%	76%	38%	29%	11%	28%	%9	15%	20%	24%	19%
	1300 Base General Service Screw-in, CFL	3%	4%	4%	1%	%0	1%	2%	%9	%0	%9	3%	11%
	1301 LED screw-in replacement (base CFL)	3%	4%	4%	1%	%0	1%	2%	%9	%0	%9	3%	11%
	1350 Base General Service Screw-in, Incandescent/halogen	2%	2%	2%	2%	2%	2%	2%	1%	%0	3%	2%	2%
	1351 LED screw-in replacement (base incandescent/halogen)	2%	11%	%6	5%	3%	2%	%8%	2%	%0	%8	%6	%6
	1400 Base General Service Screw-in, LED bulb	26%	52%	23%	17%	18%	58%	34%	62%	28%	45%	20%	41%
	1401 LED screw-in replacement (base LED)	13%	79%	11%	%8%	% 6	29%	30%	31%	14%	750%	10%	20%
VA Existing	1425 base defieral Service Screw-III, LED Duib, 2026 Standard	31%	21%	170%	700%	100%	906	39%	94%	14%	32%	140%	0,70
	172 LLC screw-III leptacement (base LLC)	80	%0	%0	%	%07	%00	%0	8 %	20%	000	%	00%
	1451 LED fixture (base Low bay HID)	% %	%0	%0	%	%0	%0	%0	%0	2%	%0	%0	%0
	1452 High Performance Lighting R/R - Combined Strategies (base low bay HID)	%0	%0	%0	%0	%0	%0	%0	%0	25%	%0	%0	%0
VA Existing	.500 Base High Bay Lighting, Fluorescent T5	2%	1%	4%	1%	4%	1%	1%	%0	%0	1%	1%	1%
VA Existing	.501 High Performance Lighting R/R - Combined Strategies (Base T5)	%0	1%	4%	1%	4%	1%	1%	%0	%0	1%	1%	1%
VA Existing	.502 ROB 2L4' LED Tube (Base T5)	1%	1%	4%	1%	4%	1%	1%	%0	%0	1%	1%	1%
VA Existing	.503 High Bay LED Troffer (Base T5)	1%	1%	4%	1%	4%	1%	1%	%0	%0	1%	1%	1%
VA Existing	504 Lighting Control Tuneup (Base T5)	1%	%0	1%	1%	1%	%0	%0	%0	%0	1%	%0	%0
VA Existing	.505 Occurred Controls (Base 15)	%0 0	%6	%	%0	1%	% 6	% 6	% 6	%6	% 6	%	% 6
VA Existing	.300 Occupation Serior (base 13)	%6	1%	4%	1%	4%	1%	1%	%0	%	1%	1%	1%
VA Existing	.323 base high bay bigneng, nidorescent 13, integrated high Ret. 526 High Bay Bi-Level Programmed LFD Eixture	%6	1%	4%	1%	4%	1%	1%	%0	%6	1%	1%	1%
VA Existing	1950 Base High Bay Lichting HTD lighting	1%	10%	1%	1%	2 %	0%	0%	%6	8 %	10%	4%	10%
VA Existing	1551 High Bay Bi-Level Programmed LED Fixture	%0	1%	%0	1%	%5	%	%0	1%	%4	%0	2%	1%
	1552 High Performance Lighting R/R - Combined Strategies (base high bay HID)	%0	1%	%0	1%	22%	%0	%0	1%	4%	%0	5%	1%
	1575 Base High Bay Lighting, LED lighting	5%2	3%	%0	%8	%0	2%	%0	3%	%0	3%	10%	2%
VA Existing	1576 Network Lighting Controls (Base high bay LED)	1%	3%	%0	8%	%0	2%	%0	3%	%0	3%	%6	2%
	1577 Occupancy Sensor (Base high bay LED)	1%	3%	%0	8%	%0	2%	%0	2%	%0	3%	8%	4%
VA Existing	1600 Base CFL Exit Sign	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
VA Existing	1601 LED Exit Sign	35%	64%	28%	1%	100%	26%	%9	32%	35%	37%	39%	39%
VA Existing	1650 Base Area Lighting, Outdoor HID	16%	11%	%6	%0	14%	3%	%8	10%	4%	15%	24%	24%
	1651 LED Outdoor Area Lighting (Base Outdoor HID)	16%	11%	%6 6	%0	14%	%6	%8	10%	%4%	15%	24%	24%
	1652 LED outdoor lighting with bi-level controls (Base Outdoor HID)	16%	11%	%6	%0	14%	3%	%8	10%	4%	15%	24%	24%
	1653 Outdoor Lighting Controls (Base Outdoor HID)	% i	% ?	3%	%6	% 6	1%	3%	3%	1%	% 6	1%	% ?
	1700 base defineral service screw-iii, Outdoor CFL	%6	94%	4%	% %	%0	%000	10%	2%	%6	2%	70%	2%
VA EXISTING	1701 LED outdoor lighting with bi-level controls (Base Outdoor CFL)	0%0	4%	4%	%0	%0	%0	1%	7%	%0	0%7	%/	7%

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> Z Q

Commercial Elec Measure Inputs	asure Inputs	APPLICABILITY*INCOMPLETE*FEASIBILITY	INCOMPLET	E*FEASIBIL	ΙΤΥ								
		(percent) Office Rest	Restaurant	Retail Gr		Warehouse	Education	Health	Lodging	Data Centers Nor	n-Jurisdictional Reli	gious Worship	Misc
VA Existing	Measure # Measure Description 1702 I FD ccraw-in raplacement (hace Durdoor CEL)	building Type Suildin	g Type 3uild	ng Type 3uildir 4%	ng Type 3uile	ling Type 3ui	ding Type 3ui	Iding Type 3ui	Iding Type 3t	ilding Type uild	ding Type Juild	ing Type 1uil	ding Type 1
VA Existing		2%	7%	1%	%%	%0	%0	%0	1%	%0	%0	%0	1%
VA Existing	1750 Base General Service Screw-in, Outdoor Incandescent/Halogen	13%	15%	14%	%0	7%	14%	22%	%9	75%	15%	%6	17%
VA Existing		13%	15%	14%	%0	7%	14%	22%	%9	75%	15%	%6	17%
VA Existing		13%	15%	14%	%0	7%	14%	22%	%9	75%	15%	%6	17%
VA Existing	1753 Outdoor Lighting Controls (Base Outdoor Incandescent)	%9	%6	22%	% 6	1%	22%	7%	2%	13%	4%	% [25%
VA Existing	1800 Base General Service Screen, or Gradon FLED Dulb	95%	% 200	45%	%	%60	82%	%c9	%79	12%	28%	20%	39%
VA Existing	18CO Based Linear Linthing Controls (Best Claude)	30%	%67	22%	% %	7.6 1%	31%	20%	20% 4%	%7	14%	% %	11%
VA Existing	1851 RDB 2L4 LED Tube (base outdoor fluorescent)	2%	%	22%	8 %	1%	1%	1%	. 4	%0	1%	8 %	1%
VA Existing	1852 LED outdoor lighting with bi-level controls (Base Outdoor Fluorescent)	2%	%8	22%	%0	1%	1%	1%	4%	%0	1%	%0	1%
VA Existing		1%	2%	7%	%0	%0	%0	%0	1%	%0	%0	%0	%0
VA Existing	1900 Base Linear Lighting, Outdoor LED Tube	3%	7%	%9	%0	12%	%0	3%	%6	10%	7%	2%	13%
VA Existing	1901 Outdoor Lighting Controls (Base Outdoor LED Tube)	2%	4%	5%	%0	2%	%0	1%	3%	5%	5%	%0	4%
VA Existing	2000 Base Water-Cooled Centrifugal Chiller, 0.58 kW/ton, 500 tons	23%	2%	1%	%0	1%	2%	%6	78%	%0	10%	11%	%6
VA Existing	2001 Centrifugal Chiller, 0.54 kW/ton, 500 tons	16%	1%	1%	%0	1%	2%	%9	19%	%0	2%	2%	%9
VA Existing	2002 Chiller Tune Up/Diagnostics	3%	%0	%0	%0	%0	%0	1%	3%	%0	%0	5%	1%
VA Existing	2003 High Efficiency Chilled Water & Condenser Water Pump Motors	4%	%0	%0	%0	%0	3%	2%	1%	%0	2%	2%	2%
VA Existing	2004 VSD for Chiller Pumps and Towers	1%	%0	%0	%0	%0	%0	%0	1%	%0	5%	4%	3%
VA Existing	2005 Ceiling/roof Insulation - Chiller	%0	%0	%0	%6	%0	1%	1%	1%	%0	%6	%0	1%
VA Existing		%4 %	% 6	% 6	88	% 5	%7	%40	14%	%	3%	%0,	%4 6
VA Existing	2007 Duta testing-bening - Chillier 2007 Duta testing-bening - Chillier 2008 Durakting Translation	23%	% 7 6	1% 0%	%0	%1	%0.0	% % %	78%	%0	10%	T0%	%%
VA Existing	2000 DUCKPHOISTHON - CITIET 2000 FMS Orthoisthon - Chiller	3%	%0	%0	8 8	%0	1 0%	1%	7%	%0	2%	%/	1%
VA Existing	200 - Fris Christian Crimer 2010 Dual Enthelmistation Crimer 2010 Dual Enthelmister Replaces Dry Bulb Economizer - Chiller	10%	%	%	8 %	1 %	1%	2%	2,50	%0	%2	8,8	%0
VA Existing	2011 New Economizer - Chiller	1%	%0	%0	%0	%0	4%	3%	13%	%0	3%	%6	8%
VA Existing	2012 Window Film (Standard) - Chiller	15%	1%	1%	%0	1%	4%	%9	13%	%0	%8	2%	%9
VA Existing	2013 High Efficiency Windows - Chiller	4%	1%	%0	%0	%0	1%	2%	4%	%0	2%	3%	3%
VA Existing	2100 Base DX Packaged System, EER=10.3, 10 tons	35%	%09	47%	37%	23%	%02	34%	23%	88%	45%	34%	28%
VA Existing	2101 DX Packaged System, EER=10.9, 10 tons	35%	%09	47%	37%	23%	%02	34%	23%	88%	45%	34%	28%
VA Existing	2102 DX Packaged System, EER=13.4, 10 tons	32%	%09	47%	37%	23%	%02	34%	23%	88%	45%	34%	28%
VA Existing	2103 Geothermal Heat Pump, EER=13, 10 tons - DX	2%	3%	5%	5%	1%	3%	2%	1%	4%	5%	5%	1%
VA Existing	2104 DX Tune Up/ Advanced Diagnostics	25%	7%	2%	%	1%	1%	2%	3%	2%	%0	% :	4%
VA Existing	2105 Refrigerant Charles Adjustment - DX	28%	% ?	5%	25%	1%	1%	2%	3%	5%	%6	% %	%4%
VA Existing	2.10b Celling/foot Insulation - DX 3.447 Cool in one in o	170%	%/20	17%	15%	%6	94.6	3%	11%	% 6	%4%	3%	%45
VA Existing	210	11%	18%	15%	12%	%.6 %.7	10%	11%	7%	28%	14%	11%	74%
VA Existing	Laborate results and a contract of the contrac	11%	36%	17%	28%	2%	42%	19%	12%	28%	14%	11%	%6
VA Existing	2110 Dual Enthalpy Economizer Replaces Dry Bulb Economizer - DX	1%	1%	1%	1%	%0	%0	%0	%0	5%	1%	%0	%0
VA Existing	2111 Economizer Repair - DX	15%	22%	24%	19%	8%	10%	8%	3%	38%	10%	1%	1%
VA Existing	2112 New Economizer - DX	1%	%0	%0	%0	%0	38%	10%	12%	3%	16%	31%	79%
VA Existing	2113 Optimize Controls - DX	12%	%02	15%	12%	%8	23%	11%	8%	73%	15%	11%	%6
VA Existing	2114 Smart Thermostat - DX	32%	42%	43%	34%	19%	67%	27%	21%	%0	45%	30%	22%
VA Existing	2115 Wildow Film (Standard) - DX	23%	%266	20%	150%	16% 00%	43%	23%	20%	% 6	33%	24%	71% 80%
VA Existing	2.116 Plan Emiliency Williams - DA 2.116 Race DX Parleaned System 2029 Standard	35%	×0×9	47%	37%	23%	20%	34%	23%	88%	45%	34%	28%
VA Existing	2152 DX Parkaged System. EER=13-4.10 tons	35%	%09	47%	37%	23%	20%	34%	23%	88%	45%	34%	28%
VA Existing	2153 Geothermal Heat Pump, EER=13, 10 tons - DX	2%	3%	2%	5%	1%	3%	2%	1%	4%	2%	5%	1%
VA Existing	2154 DX Tune Up/ Advanced Diagnostics	2%	7%	2%	2%	1%	1%	2%	3%	2%	%0	2%	4%
VA Existing	2155 Refrigerant Charge Adjustment - DX	28%	7%	2%	2%	1%	1%	2%	3%	5%	%0	2%	4%
VA Existing		1%	%25	17%	13%	%9	%9	3%	1%	%0	4%	3%	4%
VA Existing	2157 Cool Roof - Dox	17%	27%	15%	18%	96 6	34%	17%	11%	42%	22%	17%	14%
VA Existing	Lab Unct (esting/sealing - DX 2150 Drint-Vijoa Trecijstion - DY	11%	36%	17%	28%	% %	19%	19%	12%	78%	14%	11%	% 5 5 6 7 8 7
VA Existing	2139 Duck The Insulation Pronomizer Replaces Dry Bulb Fronomizer - DX 2160 Dual Forthalmy Fronomizer Replaces	19%	1%	17%	1%	%0	42.%	%U	0.0	26%	1%	%17	%6
VA Existing	2161 Economizer Repair - DX	15%	22%	24%	19%	8%	10%	8%	3%	38%	10%	1%	1%
VA Existing	2162 New Economizer - DX	1%	%0	%0	%0	%0	38%	10%	12%	3%	16%	31%	76%
VA Existing	2163 Optimize Controls - DX	12%	20%	15%	12%	8%	23%	11%	8%	29%	15%	11%	%6
VA Existing	2164 Smart Thermostat - DX	32%	45%	43%	34%	19%	%29	27%	21%	%0	45%	30%	22%
VA Existing	2165 Window Film (Standard) - DX	23%	42%	20%	25%	16%	43%	23%	11%	%0	33%	24%	21%
VA Existing	24bb High Efficiently Windows - U.X. 25bb High Efficient - U.X	%20%	20% 17%	15%	16%	% 0	12%	%6.	3%	0%1	10%	10%	11%
VA Existing	ZZOU Base near ruin p coming (14:5) SEEK, 6.1. n DSFT) 2201 Heat Pirm I Indrade (18 SFER 8 2 HSPF), chaling	23%	16%	13%	0,4 0,%	% % %	3%	19%	%9	1%	%6T	26%	10%
VA Existing	2202 Mini-Split Heat Pump (Base Heat Pump Cooling)	8%	%9	2%	5%	3%	1%	7%	2%	%0	3%	%6	4%
VA Existing	2203 Ceiling/roof Insulation (Base Heat Pump Cooling)	%0	7%	2%	5%	7%	%0	2%	%0	%0	1%	3%	1%
VA Existing	2204 Duct/Pipe Insulation (Base Heat Pump Cooling)	2%	11%	2%	3%	1%	7%	11%	3%	%0	3%	%6	3%
VA Existing	2205 Smart Thermostat (Base Heat Pump Cooling)	21%	12%	13%	4%	7%	4%	17%	%9	%0	10%	25%	%8
VA Existing	2206 Window Film (Standard) (Base Heat Pump Cooling)	15%	12%	%9	3%	%9	5%	14%	3%	%0	%8	20%	8%

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Column C	Commercial Elec Measure Inputs		(400000)										
18 19 19 19 19 19 19 19			(percent) Office	Restaurant	Retail	2		ation	£	ling	10	-	ο.
100 100	int	Aeasure # Measure Description	Type	Type		Type		Type 3uil	Type	Type		g Type 1uildir	-
200 column to the sign of column to the si	isting	2207 High Efficiency Windows (Base Heat Pump Cooling)	4%	9%	4%	5%	3%	1%	2%	1%	%0	5%	%65.
2000 College of the control of the control of the college of the	isting	2300 Base Spiri-System AC, SEER 14.5, <55.4 tons	0001	%4%	% 6	10%	% 0	%6	16%	15%	2%	16%	15%
200 California (interface and place separated) 201 California (interface) 201 California (int	Sung	2301 Spile System All Conditioner, SEER 10.0 ENERGY 1918, 53-54 Colls 2307 Purpless Mini Calli CEEP 10 O'LECE 10 O'CEE Trans 1 (Base Desidoatia) Calli-Cartemy	%/	2%	%/	10%	%0	4 4 70 70 70 70 70 70 70 70 70 70 70 70 70	16%	15%	4%	16%	15%
2015 Carlot for the state of th	isting	2303 Callina (roy fine dation (Bace Besidential Calls, System)	%0	8,6	%6	4%	%,	2 %	10%	8,0	8,0	1%	10%
200 Signature from the control of th	sting	2304 Unit/Dina Incilation (Base Besidantial Colle-Cyclem)	%6	%00	%	%**	1%	% %	%0	° %	%6	20%	20%
2015 Section Control of the Control of	Isting	2305 Smart Thermostar (Base Residential Split-System)	2,2	% 8	%8	10%	%9	%.	13%	14%	%0	16%	13%
2000 Experiment Experimen	stind	2306 Window Film (Gase Residential Solit-System)		30%	4%	20%	%	3%	11%	7%	%0	12%	10%
State Control Figure Control Figur	sting	2400 Base PTAC cooling. EFR=10.2.1 ton	2%	1%	1%	%0	%0	2%	4%	17%	1%	4%	1%
200 Octomery Service Process	sting	2401 HE PTAC. FER=9.5.1 ton. cooling	2%	1%	1%	%0	%0	2%2	4%	17%	1%	4%	1%
250 October Principal Control (1989 FF) 250 October Principal Contro	sting	2402 Ceiling/roof Tusulation Base PTAC)	80	%0	%0	%0	%0	%0	%0	%0	%0	%0	%0
2000 Decision for the factoristic for the fa	sting	2404 Occupancy Sensor (hotels)	%0	%0	%0	%0	%0	%0	%0	13%	%0	%0	%0
200 bloom Not Cittle Note	sting	2405 Window Film (Standard) (Base PTAC)	2%	1%	%0	%0	%0	1%	3%	%8	%0	3%	1%
2000 contract being statistic (Contract Statistic Contract Statistic	tino	2500 Base Room AC CFER 10	%U	1%	2%	19%	1%	2%	12%	2%	%0	2%	%
250 Control year between Cases and C	ting	2501 Boom AC CEEP 12 O ENERGY STAP	800	10%	2%	17%	1%	20%	10%	1%	%	20%	30%
2500 Individual files from ACT 2500 Individ	ing.	2502 Northers Mini-Split SFER 18 0/HSPF Tier 1 (Base Room AC)	%0	1%	2%	19%	1%2	2%	12%	%2	8%	2%	%
2000 (stooked first plant) 2000 (stooked first plant) 1000 (stooked first plant) <th< td=""><td>ting.</td><td>2503 Celling/woof Tre-lating (Base Doom AC)</td><td>%0</td><td>%00</td><td>10%</td><td>70%</td><td>%0</td><td>2 %</td><td>10%</td><td>800</td><td>800</td><td>2 %</td><td>2 %</td></th<>	ting.	2503 Celling/woof Tre-lating (Base Doom AC)	%0	%00	10%	70%	%0	2 %	10%	800	800	2 %	2 %
2006 legy Pitternov (morner)	ung tina	2500 Centrally 100 Intelligence (Chandrad / Chandrad /	8 80	20 1	10%	1 20%	1 0 %	10,0	700	1 20	80	2 2	2 6
2010 Claim of Control (Name Accordance) (State Official Mark 1987) (State Offic	ung tina	2505 Ush Efficiency Mindows (base boom AC)	8 80	700	10%	700	200	700	20,0	200	80	200	70,7
2001 Cloud Control Cont	film.	200 High Emiriency Williams (Base Noull AC)	860	0.00	700	0.40	8 6	8 6	8 6	6 6	86	6 6	170
2004 University of processing states which of the processing states which the processing st	gun	2000 base Ductees Mini-Spirit Heat Virthpy, batter 13:0/HSPT 8:8	2%	% 6	%7	8%	3%	%00	%7	30,0	%6	% 26	%
500 billion from the state of the	gun:		%0	%0	1%	3%	1%	%0	%0	%0	%0	% 6	8 6
1500 character contact ministration 1500 character contact ministr	gun		1%	0,67	76.	0%0	%7	3%	0.00	% 7	%6	%7	2%
1302 Complexed Color Service (15 Cent (Alphro) and Control Color Service (15 Cent (Alphro) and Color Service (15 C	gun.		%0	1%	1% 15:	3%	1%	1%	% 1	%0	%0	0,7	0.T
1000 Communication of the	ting		4%	12%	4%	29%	%0	%0	2%	21%	%0	1%	2%
1000 Comparison of Control C	ting		%0	%0	%0	1%	%0	%0	%0	%0	%0	%0	%
Transcription for the control of the	ting		2%	7%	1%	73%	%0	%0	4%	%6	%0	1%	3%
Mathematic direct state Mathematic direc	ting		2%	12%	4%	78%	%0	%0	2%	21%	%0	%0	2%
3.00 Electronic Connected Control	ting		%0	%6	1%	22%	%0	%0	2%	16%	%0	%0	%0
3100 High-recorded recorded from control deep control for motor, open cases 2% 3% 1% 6% 6% 4% 3% 1% 3100 High-record for motors of motors of the motors, upon cases 100 High-record for diagher and control for motors, upon cases 20 13%	ting	3105 Demand Hot Gas Defrost, open cases	5%	%6	4%	22%	%0	%0	2%	16%	%0	%0	2%
1100 High control	ting	3106 Electronically commutated evaporator fan motor, open cases	2%	3%	1%	8%	%0	%0	4%	3%	%0	1%	3%
1111 Project Control Contr	ting	3107 High-efficiency fan motors, open cases	3%	12%	2%	17%	%0	%0	2%	21%	%0	1%	2%
110 ED Dipply Upfly Compressor Fighting Co	ting	3108 Insulated suction lines, open cases	2.0%	2.9%	1.9%	14.7%	0.0%	%0.0	3.5%	10.5%	0.0%	%0	3%
3111 White/compressions 24 km 24	ing	3109 LED Display Lighting, open cases	2.7%	10.6%	2.3%	29.1%	0.0%	0.1%	3.2%	16.4%	0.0%	1%	2%
311 With cover for disable value (Controlled Condentes) 24th 25th 25th 25th 25th 25th 25th 25th 25	ing	3110 Multiplex Compressor System, open cases	%0	%0	%0	3%	%0	%0	%0	%0	%0	%0	%0
1312 Oversized office closes of the standard commission open cases	ing	3111 Night covers for display cases, open cases	4.0%	3.1%	0.8%	29.4%	0.0%	0.1%	%0.9	3.8%	0.0%	1%	2%
13.13 Refrigerator Commensor Concressions 20% 5.9% 1.9% 14.7% 0.0% 0.0% 3.3% 10.5% 0.0% 0.0% 0.0% 3.3% 10.5% 0.0% 0.0% 3.3% 13.18 Refrigerator Commensor Cross cross consists of the concrete Cross cr	ing	3112 Oversized Air Cooled Condenser, open cases	2.0%	2.9%	1.9%	14.7%	0.0%	%0.0	3.5%	10.5%	%0.0	%0	3%
3202 Bear Commissioning, spires closed classes 27% 67% 67% 18% 18% 19% 19% 19% 19% 10% 10% 10% 10% 10% 10% 10% 10% 10% 10	ing	3113 Refrigeration Coil Cleaning, open cases	2.0%	2.9%	1.9%	14.7%	0.0%	%0.0	3.5%	10.5%	0.0%	%0	3%
320 Efficient Compressor motor, base closed crases 320 Anti-week LDC case Lighting (efficient Compressor motor). Base Closed crases 320 Anti-week LDC case Lighting (efficient Compressor motor). Base Closed crases 320 Anti-week LDC case Lighting (efficient Compressor motor). Base Closed crases 320 Anti-week LDC case Lighting (efficient Compressor). Base Closed crases 320 Close	ing	3114 Refrigeration Commissioning, open cases	5%	%9	5%	15%	%0	%0	4%	10%	%0	%0	3%
320 Entrey/Server Lose closed classes 49, 24% 24% 6, 6% 14% 0.0% 1	ing	3200 Base Closed refrigerated/freezer cases	%8.9	37.7%	9.8%	52.9%	0.3%	15.8%	13.9%	19.9%	%0.0	8%	31%
320 Anti-vested thromise to be closed crases 320 Anti-vested thromise to be closed crases 320 Anti-vested thromise crosed crases 320 Anti-vested thromise base closed crases 320 Anti-vested thromise base closed crases 320 Anti-vested thromise closed crases 320 Anti-vested thromise base closed crases 320 Anti-vested thromise pass crosed crases 320 Anti-vested thromise closed crases 320 Anti-vested closed crases 320 Anti-vested thromise closed crases 320 Anti-vested thromise closed crases 320 Anti-vested closed crases 321 Anti-vested closed crases 322 Anti-vested closed crases 323 Anti-vested closed crases 323 Anti-vested closed crases 324 Anti-vested closed crases 325 Anti-vested closed crases 327 Anti-vested closed crases 328 Anti-vested closed crases 329 Anti-vested closed crases 320 Anti-vested closed crases 321 Anti-vested closed crases 322 Anti-vested closed crases 322 Anti-vested closed crases 323 Anti-vested closed crases 324 Anti-vested closed crases 325 Anti-vested closed crases 325 Anti-vested closed crases 326 Anti-vested closed crases 327 Anti-vested closed crases 328 Anti-vested closed crases 329 Anti-vested closed crases 320 Anti-vested closed crases 321 Anti-vested closed crases 322 Anti-vested closed crases 323 Anti-vested closed crases 324 Anti-vested closed crases 325 Anti-vested closed crases 326 Anti-vested closed crases 327 Anti-vested closed crases 328 Anti-vested closed crases 329 Anti-vested closed crases 329 Anti-vested closed crases 320 Anti-vested closed crases 320 Anti-vest	ing	3201 Efficient compressor motor, base closed cases	%0.0	0.0%	%0.0	1.4%	0.0%	%0.0	%0.0	%0.0	0.0%	%0	%0
3204 Salza Anti-verted (rimnicitate) controls, base closed closes 3 4% 19% 19% 19% 19% 19% 19% 19% 19% 19% 19	ing	3202 Energy-Star Refrigerator/Freezer, base closed cases	4%	24%	%9	34%	%0	10%	%6	13%	%0	2%	70%
3204 Guice Letter Lose Closed Cases 3204 10% 529% 10% 529% 10% 12% 14% 14% 104% 14% 104% 14% 14% 14% 14% 14% 14% 14% 14% 14% 1	ting	3203 Anti-sweat (humidistat) controls, base closed cases	0.0%	0.0%	0.0%	14.3%	0.0%	%0.0	%0.0	%0.0	%0.0	%0	%0
2.25 Comment Defroy Expectivity, base closed closes controller, the controller of th	ing	3204 Bi-level LED Case Lighting (self-contained units), base closed cases	3.4%	7.9%	3.9%	52.9%	0.3%	15.8%	8.3%	8.1%	0.0%	8%	20%
2327 Demand to the State Cheek Cases 20% 23.9% 1.9% 20% 0.0% 10.4% 14.9% 0.0%	ting	3205 Compressor VSD retrofit, base closed cases	4%	38%	10%	53%	%0	12%	14%	20%	%0	%9	31%
39% 23.3% 9.8% 33.7% 0.2% 1.0% 14.9% 0.0% 6% 20.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 0	ting	3206 Demand Defrost Electric, base closed cases	%0.0	28.3%	1.9%	39.7%	0.5%	%0.0	10.4%	14.9%	%0.0	%0	%0
320 E Rectanchally Commutated evaporation in Markins (1964) 1446 1456 1456 1456 1456 1456 1456 1456	ting	3207 Demand Hot Gas Defrost. base closed cases	%6.8	28.3%	9.8%	39.7%	0.2%	12.0%	10.4%	14.9%	0.0%	%9	31%
3.34% 18.8% 4.9% 26.5% 0.1% 7.9% 7.0% 9.9% 0.0% 4% 3.21 Indianted crasets closed crases 0.0% 0.0% 1.0% 1.0% 1.0% 0.0% 0.0% 0.0%	tina	3208 Electronically commutated evaporator fan motor, base closed cases	4%	%6	4%	14%	%0	%0	7%	3%	%0	8%	17%
310 High R-Value Glass Doorsy, base closed cases 0.0% of the part of the p	ting	3209 Freezer-Cooler Replacement Gaskets, base closed cases	3.4%	18.8%	4 9%	26.5%	0.1%	7.9%	7.0%	%6.6	%0.0	4%	15%
3211 High-efficiency fain motors, base closed cases 3,4% 18,8% 4,9% 26,5% 0.1% 16% 14% 20% 0% 6% 3212 Insultate dealer actions of cases 3,4% 18,8% 4,9% 26,5% 0.1% 7,9% 26,9% 0.1% 7,0% 6,9% 0.0% 6% 3213 LED bisplay Lighthing, base closed cases 3,4% 18,8% 4,9% 26,5% 0.1% 7,9% 6,4% 15,6% 6,0% 8,338 8,0% 6,0% 6,0% 6,0% 6,0% 6,0% 6,0% 6,0% 6	ting	3210 High R-Value Glass Doors. has a closed cases	%0.0	%0.0	%8.6	50.2%	0.0%	0.0%	0.0%	%0.0	%0.0	4%	31%
3.14% 18.8% 4.9% 26.5% 0.1% 7.9% 7.0% 9.9% 0.0% 4% 3.12 Insulated suction lines, base closed cases 4.6% 31.8% 6.0% 22.2% 0.1% 12.0% 0.1% 0.1% 0.1% 0.1% 0.1% 0.1% 0.1% 0	tina	3211 High-efficiency fan motors, base closed cases	4%	38%	2%	30%	%0	16%	14%	20%	%0	%9	31%
1213 LED bisplay Lighting, base closed cases 4.6% 33.8% 6.0% 52.3% 0.3% 15.0% 6.4% 15.6% 0.0% 8% 2124 Low or Anther-weet Dosed cases 0.0% 7.0% 0.0% 0.2% 11.6% 0.0%	tina	3212 Insulated suction lines, base closed cases	3.4%	18.8%	4.9%	26.5%	0.1%	7.9%	7.0%	%6.6	0.0%	4%	15%
3.14 Low or Anti-Sweat Door Film, base closed cases 5.4% 30.2% 7.8% 42.3% 0.2% 12.6% 0.1% 0.1% 0.0%	tina	3213 LED Display Lighting, base closed cases	4.6%	33.8%	6.0%	52.3%	0.3%	15.0%	6.4%	15.6%	0.0%	8%	31%
2121 Multiplex Compressor System, base closed cases 0.0% 0.0% 0.0% 5.7% 0.0%	tina	3214 Low or Anti-Sweat Door Film, base closed cases	5.4%	30.2%	7.8%	42.3%	0.2%	12.6%	11.1%	15.9%	0.0%	%9	24%
3.14% 18.8% 4.9% 26.5% 0.1% 7.9% 26.5% 0.1% 26.5% 0	tina	3215 Multiplex Compressor System, base closed cases	%0.0	0.0%	0.0%	5.7%	0.0%	0.0%	0.0%	%0'0	0.0%	%0	%0
317 Refrigeration Coll Cleaning, base closed cases 3.4% 18.8% 4.9% 26.5% 0.1% 7.9% 7.0% 9.9% 0.0% 4% 318 Refrigeration Commissioning, base closed cases 3.4% 18.8% 4.9% 26.5% 0.1% 7.9% 7.0% 9.9% 0.0% 4% 330 Beauthler, nerforeationing, base closed cases 3.0 18.8% 4.9% 26.5% 0.1% 7.9% 2.0% 1.0% 4% 330 Beauthler, nerforeation/freezer units 0.0%	tino	3216 Oversized Air Cooled Condenser has chosed cases	3.4%	18.8%	4 9%	26.5%	0.1%	2 6%	2 0%	%6 6	%0.0	4%	15%
3.13 Refrigeration Commissioning, base closed cases 3.4 Mode of the composition of the commission of the composition of the c	tina	3217 Refrigeration Coll Cleaning, base closed cases	3.4%	18.8%	4.9%	26.5%	0.1%	7.9%	7.0%	%6'6	0.0%	4%	15%
3300 Base Walk-in refrigeration/freezer units 25.0% 68.3% 6.8% 6.7% 5.0% 12.7% 25.0% 11.9% <td>tina</td> <td>3218 Refrigeration Commissioning, base closed cases</td> <td>3.4%</td> <td>18.8%</td> <td>4.9%</td> <td>26.5%</td> <td>0.1%</td> <td>7.9%</td> <td>7.0%</td> <td>%6'6</td> <td>0.0%</td> <td>4%</td> <td>15%</td>	tina	3218 Refrigeration Commissioning, base closed cases	3.4%	18.8%	4.9%	26.5%	0.1%	7.9%	7.0%	%6'6	0.0%	4%	15%
330 Efficient compressor motor, walk-ins 330 Auto-clocare on mail office or to walk-ins 330 Auto-clocare on the compressor of the case of the compressor of the case o	tina	3300 Base Walk-in refrigeration/freezer units	25.0%	85.3%	%8.9	67.6%	2.0%	12.7%	29.7%	52.6%	0.0%	11%	2%
3302 Auto-closer on main door to walk-in freezer and walk	tina		%0:0	0.0%	0.0%	1.8%	0.0%	%0.0	0.0%	0.0%	0.0%	%0	%0
3303 Compressor VSD retrofit, walk-ins 3003 Compressor VSD retrofit, walk-ins 3003 Compressor VSD retrofit, walk-ins 3003 Compressor VSD retrofit, walk-ins 3004 Compressor VSD retrofit, walk-ins 3005 Compressor VSD retrofit walk-ins 3005 Compressor VSD retrofi	tina		12.5%	45.6%	3.4%	33.8%	2.5%	6.3%	14.8%	26.3%	0.0%	%9	3%
3304 Demand Defrost Electric, walk-ins 3305 Demand to Perose Electric, walk-ins 3306 Demand Defrost Electric, walk-ins 145.96 64.06 61.06 61.06 21.06	ting		14 5%	85 3%	%8 9	67.6%	%0 0	%9 6	29.7%	52.6%	%U U	%6	20%
3305 Demand Hot Gas Defrost, walk-ins 3305 Demand Hot Gas Defrost Hot Gas Defr	tina		%0	64%	1%	51%	4%	%0	22%	36%	%0	%0	%0
3306 Electronically commutated evaporator fan motor, walk-ins 3306 Electronically commutated evaporator fan motor, walk-ins 3306 Electronically commutated evaporator fan motor, walk-ins 3307 Evaporator fan controller for MT walk-ins 3307 Evaporator fan controller for MT walk-ins 3308 Floating head pressure controls, walk-ins 12.9% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0	ti co		14 50%	64.0%	708 9	50 Z0%	3 70%	%9 0	22 20%	30 70%	%0 0	%0	20%
3309 Freezer-Cooler Replacement Gaskets, walk-ins 3309 Freezer-Cooler Replacement Gaskets, walk-ins	ung	2000 Cellodronically communitated accordance matter until inc	14:370	24.0.70	0.0%	10.7%	96.79	9.0.0	16.00%	0.4.60	%0.0	110%	0,00
3309 Freezer-Cooler Replacement Gaskets, walk-ins 1.5% 4.2.6% 3.4% 33.8% 2.5% 6.3% 14.8% 26.3% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0	nng 	5500 Electronically communate evaluator an motor, waik-ins	13.2%	21.4%	2.5%	16.1%	0.0%	0.0%	16.0%	0.1%	0.0%	717%	0 2 2
3308 Floating head pressure controls, walk-ins 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0	gu i		3.5%	31.5%	2.2%	15.0%	0.0%	2.2%	9.0%	3.5%	0.0%	11%	7%
3309 Freezer-Cooler Replacement Gaskets, walk-ins 0.0% 6.3% 0.0% 6% 6.3% 26.3% 0.0% 6%	ting	3308 Floating head pressure controls, walk-ins	%0.0	%0.0	0.0%	2.3%	0.0%	%0.0	%0.0	%0.0	0.0%	%0	%0
	ting	3309 Freezer-Cooler Replacement Gaskets, walk-ins	12 50%	72 G0%	200	700 00	, 0 1 1	%0c z	700	700	\o` \		

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Commercial Flec	Commercial Elec Measure Inputs	APPLICABILITY*INCOMPLETE*FEASIBILITY	Y*INCOMPLE	TE*FEASIBI	TIL								
		Office Re	Restaurant	Retail	≥	Varehouse	Education	Health		Data Centers	Non-Jurisdictional Re	Worship	Misc
Segment		building Type 3uild	uilding Type 3uild	30.	Iding Type 3ui	Iding Type	Suilding Type 3u	Ilding Type 3u	ilding Type 3	Suilding Type u	uilding Type 1uile	2	Ilding Type 1
VA Existing	3311 Insulated suction lines, walk-ins	12.5%	42.5%	3.4%	33.8%		6.3%	14.8%	26.3%	0.0%	%6	3%	2%
VA Existing	3313 Oversized Air Cooled Condenser walk-ins	10.5%	42.6%	3.4%	33.8%		6.5%	14.8%	26.3%	%0.0	%9	3%	3%
VA Existing	3314 Refrigeration Coil Cleaning, walk-ins	12.5%	42.6%	3.4%	33.8%		6.3%	14.8%	26.3%	0.0%	%9	3%	3%8
VA Existing	3315 Refrigeration Commissioning, walk-ins	12.5%	42.6%	3.4%	33.8%		6.3%	14.8%	26.3%	0.0%	%9	3%	3%
VA Existing		2.7%	27.5%	3.2%	33.8%		%0.0	11.0%	19.1%	0.0%	11%	2%	3%
VA Existing		0.3%	2.0%	1.7%	26.6%		%0:0	3.8%	10.1%	0.0%	%0	4%	%0
VA Existing		%0:0 %0:0	%0.0	%0.0	0.7%		%0.0	0.0%	0.0%	0.0%	%0	%6	%0
VA Existing	3402 Auto-closer on main door to walk-in freezer, base large cold storage	%0 0	3%	1 70%	13%		%000	%7 6	20,404	%0	% 6	2%	% 6
VA Existing		%2.0 %c.0	0.0%	1.7%	7 100		0.0%	0,0,0	1 60	%0.0	%6	\$ £	800
VA Existing	3404 Electronically communicated evaporation ran motor, base rarge cold storage 3405 Evaporator fan controller for MT walk-ins, base large cold storage	0.5%	2%	1%	%T'/		%0.0	1%	1.0%	%0.0	%0 0	2%	%0
VA Existing		0.2%	5.0%	0.8%	15.2%		0.0%	3.8%	10.1%	0.0%	%0	4%	%0
VA Existing		0.2%	2.5%	%6.0	13.3%	3.8%	0.0%	1.9%	5.0%	0.0%	%0	5%	%0
VA Existing		%0	%0	%0	3%	%0	%0	%0	%0	%0	%0	%0	%0
VA Existing		0.2%	2.5%	%6.0	13.3%	3.8%	%0.0	1.9%	2.0%	%0.0	%0	2%	%0
VA Existing		0.2%	2.5%	%6.0	13.3%	3.8%	%0.0	1.9%	2.0%	%0.0	%0	2%	%0
VA Existing		%2.0	2.5%	%6.0	13.3%	200	%0.0	1 9%	80.1	%0.0	%	20%	8 %
VA Existing		% T:0	1.5%	%8.0	13.3%	20.0	%0.0	1 4%	3 7%	%0.0	%	1%	8 %
VA Existing			12.4%	1 50%	50.0%	30%	15 80%	900 0	%000	%0.0	70,7	310%	%00
VA Existing	3501 Energy Star sollid door reach-in refrigerator/freezer	%60	7%2	1%	25.9%	%0.0	%6	2.5%	%00	%%	4%	17%	1%
VA Existing		1 7%	% 2 9	%5 0	26.5%	0.1%	7 0%	4 2%	0 4%	%000	3%	15%	1%
VA Existing	3503 Refrigeration Coll Cleaning, base hase reach in	1.7%	6.2%	%8.0	26.5%	0.1%	%6.7	4.2%	0.4%	%0.0	3%	15%	1 %
VA Existing		3.4%	25.3%	8,3%	0.0%	0.0%	0.0%	2.6%	19.0%	0.0%	1%	%0	1%
VA Existing		1.8%	13.6%	4.5%	0.0%	0.0%	0.0%	3.0%	10.3%	0.0%	%0	%0	%0
VA Existing		2%	2%	3%	%0	%0	%0	3%	8%	%0	1%	%0	1%
VA Existing		1.7%	12.6%	4.1%	0.0%	0.0%	0.0%	2.8%	9.5%	0.0%	%0	%0	%0
VA Existing	3604 Refrigeration Coil Cleaning, base glass-door reach-in	1.7%	12.6%	4.1%	0.0%	0.0%	0.0%	2.8%	9.5%	0.0%	%0	%0	%0
VA Existing	3700 Base Ice Maker, Federal Standard	17.4%	70.2%	7.4%	41.1%	7.8%	25.7%	20.5%	80.5%	0.0%	13%	20%	3%
VA Existing		11.1%	44.9%	4.7%	26.3%	5.0%	16.4%	13.1%	51.5%	0.0%	%6	32%	2%
VA Existing	3702 Refrigeration Coil Cleaning, base ice maker	8.7%	35.1%	3.7%	20.6%	3.9%	12.8%	10.3%	40.3%	0.0%	2%	25%	2%
VA Existing	3800 Base Residential-Type Refrigerator/Freezer, Federal Standard	75.3%	37.9%	29.7%	22.7%	61.6%	86.5%	58.6%	%9'.29	94.9%	81%	20%	78%
VA Existing	3801 Energy Star refrigerator/freezer	40.6%	20.5%	32.2%	12.3%	33.3%	46.7%	31.6%	36.5%	52.9%	44%	38%	45%
VA Existing	3802 Refrigeration Coil Cleaning, residential-type refrigerator	37.6%	19.0%	29.9%	11.4%	30.8%	43.2%	29.3%	33.8%	49.0%	40%	35%	39%
VA Existing	3900 Base Compact Refrigerator, Federal Standard	39.1%	15.2%	31.4%	8.1%	25.8%	13.6%	47.4%	25.9%	0.0%	15%	15%	10%
VA Existing	3901 Energy Star Compact Refrigerator	31.3%	12.2%	25.1%	6.5%	20.7%	10.9%	37.9%	44.7%	0.0%	12%	12%	8%
VA Existing		19.6%	7.6%	15.7%	4.1%	12.9%	6.8%	23.7%	27.9%	0.0%	8%	2%	2%
VA Existing		%6:02	54.7%	48.9%	20.9%	80.0%	31.1%	69.2%	80.9%	100.0%	37%	73%	35%
VA Existing		97:09	24.2%	25.1%	49.9%	79.2%	25.8%	65.3%	43.6%	85.6%	33%	9/9	7507
VA Existing		42.5%	32.8%	29.3%	30.5%	48.0%	18.5%	41.5%	48.5%	94.0%	0/27	444% 0000	19%
VA Existing	4100 base Desktop PC	91.2%	26.5%	%5.//	54.9%	90.7%	24.00%	%6.76	89.6%	21.2%	0/0	90%	72%
VA Existing	4101 Effetgy Star of Detter PC	76.1%	32%	29.6%	33.6%	59.4%	34.9%	92.3%	46.5%	120%	380%	51%	72%
VA Existing		% TC 88	48.8%	45.1%	21.4%	87.7%	37.3%	77.9%	83.3%	96.5%	44%	86%	32.%
VA Existing		48.7%	26.5%	24.5%	11.6%	47.7%	20.3%	42.4%	45.3%	52.5%	24%	47%	19%
VA Existing		26.0%	14.1%	13.1%	6.2%	25.4%	10.8%	22.6%	24.1%	28.0%	13%	25%	10%
VA Existing		90.5%	62.0%	75.7%	64.4%	78.6%	95.2%	84.8%	87.4%	96.5%	71%	88%	47%
VA Existing	4301 Energy Star or Better Monitor - LCD	52.7%	60.3%	47.2%	63.0%	77.5%	%9'62	80.0%	37.6%	56.2%	51%	75%	40%
VA Existing		31.1%	25.7%	13.2%	45.8%	4.0%	10.1%	18.8%	48.5%	33.2%	18%	14%	7%
VA Existing		56.3%	48.9%	49.1%	28.7%	31.6%	75.1%	35.0%	28.9%	18.5%	71%	37%	76%
VA Existing		84.7%	43.0%	%8.09	53.0%	64.7%	39.3%	90.0%	81.3%	100.0%	52%	91%	51%
VA Existing	440.1 Energy Star of better Imaging Equipment 5000 Base Mater Hoater Desistance Heater Standard Standby Wattana	36.2%	0.9 40.6%	39.3%	8.5%	10.3%	9.3%	75.3%	37.8%	97.8%	70% 90%	0.4%	30%
VA Existing		%8.00	17.4%	28 2%	17 7%	28.170	75.8%	26.3%	13.2%	31 7%	21%	%000	140%
VA Existing		32.3%	19.8%	32.7%	20.2%	32.9%	30.4%	30.1%	15.1%	36.2%	24%	23%	17%
VA Existing		6.1%	3.7%	6.1%	3.8%	6.2%	5.7%	5.6%	2.8%	6.8%	4%	4%	3%2
VA Existing		3.1%	0.5%	0.5%	0.5%	2.0%	0.4%	0.8%	0.4%	3.4%	1%	%0	%0
VA Existing		47.8%	37.2%	24.5%	36.8%	31.2%	57.0%	26.5%	28.4%	53.7%	40%	43%	31%
VA Existing		8.1%	39.7%	4.1%	40.4%	8.2%	11.4%	60.2%	7.6%	9.1%	4%	3%	2%
VA Existing		42.9%	37.5%	67.2%	50.2%	16.1%	37.9%	33.1%	32.3%	0.0%	38%	25%	35%
VA Existing		16.2%	%6.6	16.4%	10.1%	16.4%	15.2%	15.1%	7.6%	18.1%	12%	12%	% 6
VA Existing	5009 Low Flow pro-rings carray valve	16.2%	49.9% 49.6%	10.4%	10.1% 50.6%	15.4%	76.0%	75.3%	37 80%	18.1%	12%	12%	41%
VA Existing		17.0%	17.4%	17.2%	17.7%	5.8%	76.6%	76.3%	26.5%	19.0%	19%	20%	14%
VA Existing		26.0%	8.5%	11.2%	23.9%	38.3%	17.7%	21.0%	32.7%	0.0%	16%	27%	13%
VA Existing		23.0%	8.4%	9.0%	20.4%	21.7%	16.3%	20.1%	30.0%	0.0%	14%	27%	13%
VA Existing	6100 Base Refrigerated Vending Machines, Federal Standard	31.6%	16.4%	17.2%	27.2%	41.7%	21.1%	38.0%	46.8%	0.0%	22%	31%	19%
VA Existing		19.5%	11.4%	9.7%	16.3%	16.6%	13.6%	25.5%	30.1%	0.0%	13%	22%	13%
1													

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Commercial Fler Measure Innuts	sura Innite	APPLICABLITY*INCOMPLETE*FFASTRILTY	V*TNCOMPLE	TE*FEASTRI) TTV								
		(percent)											
			Restaurant	Retail	Grocery M	Warehouse	Education	Health	Lodging	Data Centers Non-Jurisdictional Religious Worship	on-Jurisdictional Reli	ious Worship	Misc
Segment Mea	Measure # Measure Description	suiding Type suilding Type suiding Type suilding Type suilding Type suilding Type suilding Type suilding Type suilding Type unilding Type unilding Type suilding Type	ding Type 3uile	ing Type 3uild	ling Type 3uil	ding Type 3ui	ding Type 3uil	Jing Type 3ui	Iding Type 3u	ulding Type uil	ding Type 1uild	ng Type 1uild	ng Type 1
VA Existing	6102 Vending Misers (Refrigerated units)	19.5%	11.4%	9.7%	16.3%	16.6%	13.6%	25.5%	30.1%	0.0%	13%	22%	13%
VA Existing	6200 Base Combi Oven	20.5%	28.2%	3.7%	24.6%	2.1%	%9.6	20.4%	29.9%	0.0%	13%	28%	12%
VA Existing	6201 Electric Combination Oven	18.4%	18.8%	3.3%	16.4%	1.4%	8.6%	13.6%	19.9%	0.0%	11%	25%	11%
VA Existing	6300 Base Convection Oven	3.5%	54.0%	9.8%	28.9%	9.5%	87.0%	22.6%	26.7%	2.0%	51%	38%	39%
VA Existing	6301 Energy Star Convection Oven	0.0%	36.0%	9.8%	39.3%	6.3%	87.0%	15.0%	37.8%	0.0%	%0	%0	%0
VA Existing	6400 Base Fryer	7.4%	19.4%	1.6%	15.6%	0.7%	7.0%	11.0%	15.4%	0.0%	%6	4%	12%
VA Existing	6401 Efficient Fryer	0.0%	15.5%	1.6%	12.5%	0.5%	0.0%	8.8%	12.3%	0.0%	2%	4%	12%
VA Existing	6500 Base Griddle	7.5%	10.4%	2.3%	%6.9	0.3%	12.6%	14.3%	22.9%	0.0%	11%	8%	11%
VA Existing	6501 Energy Star griddle	%0.9	8.3%	1.8%	5.5%	0.3%	10.1%	11.4%	18.3%	0.0%	%6	7%	%6
VA Existing	6600 Base Hot Food Holding Cabinet	0.4%	41.6%	2.6%	57.6%	0.0%	25.3%	29.0%	40.4%	0.0%	12%	41%	7%
VA Existing	6601 Energy Star hot food holding cabinet	0.3%	33.3%	2.1%	46.1%	0.0%	20.3%	23.2%	32.3%	0.0%	10%	33%	2%
VA Existing	6700 Base Steamer	8.5%	14.7%	2.0%	10.8%	0.0%	7.0%	14.7%	9.1%	0.0%	%9	5%	4%
VA Existing	6701 Efficient Steamer	0.0%	10.7%	1.6%	7.9%	0.0%	5.3%	10.7%	%9.9	0.0%	%0	%0	%0
VA Existing	7000 Base Electric Boiler, Federal Standard	0.1%	%0.0	%0.0	0.0%	0.0%	0.1%	0.5%	0.2%	0.0%	%0	%0	%0
VA Existing	7001 Ceiling/roof Insulation (electric boiler)	0.0%	%0.0	%0.0	0.0%	0.0%	%0.0	%0.0	%0.0	0.0%	%0	%0	%0
VA Existing	7002 Duct/Pipe Insulation (electric boiler)	0.1%	%0.0	0.0%	%0.0	0.0%	0.1%	0.2%	0.2%	0.0%	%0	%0	%0
VA Existing	7100 Base Electric Furnace, Federal Standard	0.8%	0.8%	0.3%	0.6%	0.7%	%0.0	1.0%	0.3%	0.0%	1%	%0	2%
VA Existing	7101 Heat Pump, SEER 16.0/HSPF 9.2 ENERGY STAR, <5.4 tons, heating	0.8%	0.7%	0.3%	0.6%	0.6%	%0.0	1.0%	0.3%	0.0%	1%	%0	2%
VA Existing	7102 Ceiling/roof Insulation (base furnace)	0.1%	0.2%	0.1%	0.2%	0.2%	0.0%	0.1%	0.0%	0.0%	%0	%0	%0
VA Existing	7103 Duct/Pipe Insulation (base furnace)	0.8%	0.8%	0.3%	0.6%	0.7%	%0.0	1.0%	0.3%	0.0%	1%	%0	2%
VA Existing	7104 Smart Thermostat (Base Furnace Heating)	0.7%	%9.0	0.3%	0.6%	0.6%	0.0%	%6.0	0.3%	0.0%	1%	%0	2%
VA Existing	7200 Base Heating Air-Source Heat Pump, SEER 15.0/HSPF 8.8 w/Aux Strip Heat	23.3%	13.8%	15.5%	24.7%	%0.6	55.4%	28.8%	23.8%	0.0%	30%	17%	14%
VA Existing	7201 Air-Source Heat Pump, SEER 16.0/HSPF 9.2 ENERGY STAR, <5.4 tons (base air-source heat pump heating)	21.5%	12.7%	14.3%	22.7%	8.3%	51.0%	26.5%	21.9%	0.0%	28%	16%	13%
VA Existing	7202 Ceiling/roof Insulation (base air-source heat pump heating)	2.3%	3.5%	5.7%	8.9%	2.3%	8.6%	2.5%	%9.0	0.0%	4%	2%	2%
VA Existing	7203 Duct/Pipe Insulation (base air-source heat pump heating)	23.3%	13.8%	15.5%	24.7%	%0.6	55.4%	28.8%	23.8%	0.0%	30%	17%	14%
VA Existing	7204 Smart Thermostat (Base Heat Pump Heating)	20.4%	10.0%	13.6%	23.8%	7.7%	24.6%	24.5%	22.9%	0.0%	30%	15%	14%
VA Existing	7300 Base Heating Packaged Heat Pump, IEER 13.9/COP 3.4 (w/ non-ER heating), 10 tons	18.6%	12.6%	3.4%	5.2%	3.2%	1.5%	16.6%	2.7%	0.0%	8%	4%	%6
VA Existing	7301 Packaged Heat Pump, heating, IEER 13.9/COP 3.4 (w/ non-ER heating), 10 tons	18.6%	12.6%	3.4%	5.2%	0.0%	1.5%	16.6%	%0.0	0.0%	8%	4%	%6
VA Existing	7302 Ceiling/roof Insulation (base packaged heat pump)	1.8%	3.2%	1.2%	1.9%	0.8%	0.5%	1.4%	0.1%	0.0%	1%	%0	1%
VA Existing	7303 Duct/Pipe Insulation (base packaged heat pump)	18.6%	12.6%	3.4%	5.2%	3.2%	1.5%	16.6%	2.7%	0.0%	8%	4%	%6
VA Existing	7304 Smart Thermostat (Base Rooftop/packaged heating)	16.3%	9.1%	3.0%	2.0%	2.7%	0.7%	14.1%	2.6%	0.0%	8%	3%	%6
VA Existing	7400 Base Ductless Mini-Split Heat Pump, SEER 15.0/HSPF 8.8	1.8%	3.6%	2.0%	7.6%	3.5%	4.8%	1.7%	3.2%	0.0%	3%	2%	2%
VA Existing	7401 Ceiling/roof Insulation (base ductless mini-split)	0.2%	%6.0	0.7%	2.7%	0.9%	0.8%	0.1%	0.1%	0.0%	%0	%0	%0
VA Existing	7403 Smart Thermostat (base packaged heat pump)	1.6%	2.6%	1.8%	7.3%	3.0%	2.1%	1.5%	3.1%	0.0%	3%	4%	2%
VA Existing	7800 Base Ventilation	88.6%	83.2%	71.1%	52.2%	40.6%	86.4%	79.4%	71.4%	94.7%	81%	88%	75%



F. NON-ADDITIVE MEASURE LEVEL RESULTS

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1000 16 SERR (13.08 ERR) Spile-System Act Conditioner (CAC) 1001 15 SERR (13.08 ERR) Spile-System Act Conditioner (CAC) 1003 15 SERR (13.08 ERR) Spile-System Act Conditioner (CAC) 1003 15 SERR (13.08 ERR) Spile-System Act Conditioner (CAC) 1003 15 SERR (13.08 ERR) Spile-System Act Conditioner (CAC) 1006 Caling R vol to R val insulation (CAC) 1009 Caling R vol to R val insulation (CAC) 1010 Caling R vol to R val insulation (CAC) 1011 Caling R vol to R val insulation (CAC) 1012 Caling R vol to R val insulation (CAC) 1013 Caling R vol to R val insulation (CAC) 1013 Caling R vol to R val insulation (CAC) 1014 Caling R vol to R val insulation (CAC) 1015 Caling R vol to R val insulation (CAC) 1016 Caling R vol to R val insulation (CAC) 1017 Caling R vol to R val insulation (CAC) 1018 Caling R vol to R val insulation (CAC) 1019 Caling R vol to R val insulation (CAC) 1019 Caling R vol to R val insulation (CAC) 1019 Caling R vol to R val insulation (CAC) 1019 Caling R vol to R val insulation (CAC) 1010 Caling R vol to R val insulation (CAC) 1010 Caling R vol to R val insulation (CAC) 1010 Caling R vol to R val insulation (CAC) 1010 Caling R vol to R val insulation (CAC) 1010 Caling R vol to R val insulation (RAC) 1010 Caling R vol to R val insulation (RAC) 1010 Caling R vol to R val insulation (RAC) 1010 Caling R vol to R val insulation (RAC) 1010 Caling R vol to R val insulation (RAC) 1011 Caling R vol to R val insulation (RAC) 1011 Caling R vol to R val insulation (RAC) 1011 Caling R vol to R val insulation (RAC) 1011 Caling R vol to R val insulation (RAC) 1011 Caling R vol to R val insulation (RAC) 1011 Caling R vol to R val insulation (RAC) 1011 Caling R vol to R val insulation (RAC) 1011 Caling R vol to R val insulation (RAC) 1011 Caling R vol to R val insulation (RAC) 1011 1010 Caling R vol to R val insulation (RAC) 1010 Caling R vol to R val insulati	Single Family 10% Single Family 10% Single Family 10% Single Family 16% Single Family 12% Single Family 13% Single Family 25% Single Family 13% Single Family 13% Single Family 13% Single Family 23% Single Family 23% Single Family 23% Single Family 13%	19% 19% 19% 19% 19% 19% 19% 19% 19% 19%	0.0 0.0 512.0 113.0 512.0 113.0 512.0 11.108.9 11.108.9 11.108.9 11.108.9 12.591.8 559.5 5	2,568 2, 2,568 2,5	2,449 2,449 3,441	 21	156 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6		0.00 10.00 10.00 2.5.05 9.26.36 17.98 11.79 11.79 2.4.23 2.7.48 2.7.78 2.7.78 2.7.78 2.7.78 118.20 2.7.7 118.20 82.07 118.20 82.07 2.03 4.11 118.20 82.07 82.07	N A A		N N N N N N N N N N N N N N N N N N N	N/A N/A 1.33 1.33 1.33 1.33 1.33 1.33 1.13 1.13 1.13 1.13 1.03 1.	NA N
1000 15 SERR (13.28 ERR) Spill-System Art Conditioner (CAC) 1003 15 SERR (13.28 ERR) Spill-System Art Conditioner (CAC) 1005 16 SERR (13.28 ERR) Spill-System Art Conditioner (CAC) 1006 Celling R-0 to R-38 insulation (CAC) 1009 Celling R-0 to R-38 insulation (CAC) 1009 Celling R-1 to R-38 insulation (CAC) 1001 Celling R-1 to R-38 insulation (CAC) 1002 Celling R-1 to R-38 insulation (CAC) 1002 Celling R-1 to R-38 insulation (CAC) 1002 Celling R-1 to R-38 insulation (CAC) 1003 M-38 insulation (CAC) 1003 Celling R-1 to R-38 insulation (CAC) 1003 Celling R-1 to R-38 insulation (CAC) 1002 Celling R-1 to R-38 insulation (CAC) 1003 M/100/WS - Double-Glazed Cellor to Energy Star CAC) 1003 M/100/WS - Double-Glazed Cellor to Energy Star CAC) 1004 Celling R-1 to R-38 insulation (RAC) 1007 Celling R-1 to R-49 insulation R-1 to R-		10% 16% 2% 2% 29% 63% 14% 14% 13% 63% 7% 7% 7% 7% 13% 63% 13% 63% 13% 63% 13% 63% 13% 19% 19% 19% 19% 19% 19% 19% 19% 19% 19	113.0 512.0 108.0 11.108.9 645.2 845.2 15.08.9 917.1 2.591.8 559.5 559.5 559.5 559.5 559.5 559.5 559.5 559.5 559.5 559.5 559.5 647.8 75.0 75.0 75.0 75.0 75.0 75.0 75.0 75.0			2	156 156 156 157 158 158 158 158 158 158 158 158		103.04 103.04 226.35 9.26.36 17.98 18.64 18.64 13.79 27.45 27.78 27.78 27.78 27.78 18.20 82.07 18.20 4.11 2.08 82.07 116.20 4.11 2.08 82.07 116.20 62.07 116.20 62.07 116.20 62.07 116.20 62.07 116.20 62.07 116.20 62.07 116.20 62.07 63.03 63.	7 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0.038 0.028 0.038 0.038 0.038 0.038 0.038 0.038 0.038 0.038 0.038 0.038 0.038 0.038 0.038 0.038 0.038	13.33 1.35 1.36 1.36 1.36 1.13 1.13 1.13 1.13 1.13	3.45 8.39 8.39 8.39 16.20 18.29 21.62 20.64 30.07 20.82 10.11 11.17 11.17 20.92 20.92 20.9
18 SEER Split-System Air Conditioner (CAC) 1005 1006 1007 1007 1008 1008 1009 1009 1009 1009 1009 1009		18%, 63%, 64%, 64%, 65%, 65%, 65%, 65%, 65%, 65%, 65%, 65	512.0 1.108.9 1.108.9 1.1372.8 1.1372.8 1.1372.8 1.108.9 1.108.9 1.108.9 1.108.9 1.108.9 1.108.9 1.108.9 1.108.9 1.108.9 1.100.0 1.100.0 1.100.9 1.100.9			2	200 8 8 115 116 117 117 118 119 119 119 119 119 119 119		235.05 26.36 26.36 117.98 118.64 118.64 13.77 24.23 27.95 27	Z 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0.098 0.098 0.039 0.039 0.039 0.050 0.095 0.012 0.025 0.030	1.36 1.36 1.36 1.37 1.03	8.39 16.20 6.40 6.40 10.20 21.62 21.62 21.62 21.62 21.63 21.03 21.
1005		5.2% 5.3% 6.4% 11.5% 11.	108.0 11,108.9 11,372.8 633.4 653.4 653.4 653.4 62.8 835.0 63.8 835.0 63.8 835.0 63.8 835.0 63.8 835.0 63.8 835.0 63.8 835.0 63.8 835.0 63.8 835.0			4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	8 8 115 215 217 218 219 219 219 219 219 219 219 219 219 219		9,26 26,36 117,98 113,79 24,45 24,23 24,23 27,78 12,778 118,20 8,207 118,20 28,07 118,20 28,07 2	V V V V V V V V V V V V V V V V V V V		1.95 1.95 1.95 1.95 1.95 1.95 1.95 1.95	2.623 2.623 2.623 0.644 0.646 0.646 0.766 0.767 0.038 0.038 0.038 0.038 0.038 0.038 0.038 0.038 0.038 0.038	116.20 6.40 6.40 26.44 26.44 26.44 20.03 11.03 10.03 1
Compose Comp		19% 19% 19% 19% 19% 19% 19% 19% 19% 19%	1,372.8 845.2 1,105.8 915.1 91			2	15 15 15 15 15 15 15 15 15 15 15 15 15 1		17.58 13.64 13.79 13.79 13.70 13.74 14.22 118.20 118.20 22.07 118.20 22.07 118.20 22.07 22.05 23.07 23.03 23.03 20.37 20	7 O O O O O O O O O O O O O O O O O O O		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2.16 0.76 0.64 0.64 0.64 0.64 0.64 0.76 0.98 0.98 0.98 0.09 0.05 0.05 0.05 0.05 0.05 0.05 0.05	6.40 18.29 20.44 20.44 20.28 20.28 20.28 10.01 20.29 20.22 20.22 20.22 20.22 20.23 20.23 20.23 20.23 20.24 20.24 20.25 20.24 20.25 20.27 2
Celling R-11 to R-3 Insulation (CAC)		114% 115% 9% 603% 603% 113% 113% 60% 60% 15% 125% 125% 125% 13% 13% 14% 19% 19% 19% 19% 19% 19% 19% 19% 19% 19	845.2 1.108.9 653.4 5.591.8 559.5 559.5 75.0 478.5 478.5 478.5 478.5 478.5 478.5 478.5 478.6 478.5 478.6 478.5 478.6 478			2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	116 12 215 22 22 22 22 22 24 49 1113 1113 24 49 1113 101 101 101 101 101 101 101 101 101 101		18 64 13.79 29.45 24.83 24.88 24.88 27.95 27.76 132.44 4.21 4.11 4.11 6.20 28.70 28.70 4.11 4.11 6.21 6.25 73.75 91.62 108.80 73.75 91.62 108.80 73.75 82.75 82.70	7	4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	0.456 0.34 0.34 0.34 0.039 0.034 0.058 0.058 0.057 0.057 0.058 0.058 0.067 0.0	0.76 0.64 0.52 0.52 1.13 1.13 1.03 1.75 1.75 1.75 0.08 0.08 0.02 0.03 0.03 0.03 0.03 0.03 0.03 0.03	18.29 26.44 30.07 30.07 30.07 30.07 30.07 30.92 5.94 5.94 5.94 5.94 5.90 5.90 5.90 5.94 5.94 5.94 5.94 5.94 7.33 8.34 NA NA N
1010 Calling R-19 to R-3 itsulation (CAC)		79% 639% 639% 639% 639% 639% 639% 639% 63	1,108.9 917.1 2,591.8 917.1 2,591.8 559.5 62.8 478.5 62.8 75.0 75.0 27.8 496.2 694.1 694.1 600 12.0 12.0 12.0 12.0 12.0 12.0 12.0 12			2	12 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		24.79 24.23 24.23 27.95 27.78 132.41 132.41 132.41 132.41 118.20 28.70 4.11 28.70 4.11 28.70 106.80 106.80 108.80 73.75 6.65	7 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	0.34 0.84 0.84 0.05 0.07 0.07 0.05 0.06 0.06 0.06 0.06 0.06 0.06 0.06	0.594 0.504 1.133 1.037 1.037 1.037 1.037 0.058 0.058 0.05 0.05 0.05 0.05 0.05 0.	26.02 20.02 20.82 20.82 10.11 10.11 10.13 10.39 10.39 10.39 10.18
1011 Celling R-15 to R-49 fraulation (CAC) 1012 Radiat R-15 to R-49 fraulation (CAC) 1013 Wall Blow-in-R-0 to R-13 insulation (CAC) 1014 Radiant Barret (CAC) 1015 Radiant Barret (CAC) 1016 Comprehenses Shell Art-Sealing (CAC) 1017 Comprehenses Shell Art-Sealing (CAC) 1018 Comprehenses Shell Art-Sealing - Inf. Readucho (CAC) 1028 Smart Thermosatt (CAC) 1029 Exterior Door Replacement (CAC) 1020 Exterior Door Replacement (CAC) 1021 ENERGY STAR Celling Fans (CAC) 1022 Windows - Adding Storm Windows (CAC) 1023 Windows - Stingle Pane Clear to Energy Star Coulde Radiant CAC 1024 Windows - Adding Storm Windows (CAC) 1025 Windows - Adding Storm Windows (CAC) 1026 Exterior Door Replacement (CAC) 1027 Exterior Door Replacement (CAC) 1028 Windows - Adding Storm Windows (CAC) 1031 Windows - Adding Storm Windows (CAC) 1040 Base Room AC, CEER 10.9 (non-electric heat) 105 Celling R-10 Re S-49 insulation (RAC) 106 Celling R-10 Re S-49 insulation (RAC) 107 Celling R-10 Re S-49 insulation (RAC) 108 Celling R-10 Re S-49 insulation (RAC) 109 Celling R-10 Re S-49 insulation (RAC) 1101 Readiant Barrier (RAC) 1110 Comprehensive Shell Art Sealing - Inf. Reduction (RAC) 1111 Will Blow-in R-10 Re-13 insulation (RAC) 1112 Readiant Bernet (RAC) 1113 Sealing Storm Windows (RAC) 1114 Windows - Shell Art Sealing - Inf. Reduction (RAC) 1115 Sealing S-10 Re-10 Reserved (RAC) 1116 Comprehensive Shell Art Sealing - Inf. Reduction (RAC) 1117 Sealing S-10 Re-10 Reserved (RAC) 1118 Sealing S-10 Reserved (RAC) 1119 Celling S-10 Reserved (RAC) 1110 Celling S-10 Reserved (RAC) 1111 Seal Art Celling S-10 Reserved (RAC) 1112 Windows - Adding Storm Windows (RAC) 1113 Seal Art Celling S-10 Reserved (RAC) 1114 Reserved (RAC) 1115 Seal Art Celling S-10 Reserved (RAC) 1116 Celling S-10 Reserved (RAC) 1117 Seal Art Celling S-10 Reserved (RAC) 1118 Seal Art Celling S-10 Reserved (9% 8% 8% 8% 8% 8% 8% 8% 8% 8% 8% 8% 8% 8%	917.1 2,591.8 835.5 835.5 62.8 62.8 62.8 483.4 483.4 483.4 483.4 496.2 639.1 496.2 639.1 401.5 1,108.9 1,108.9 1,108.9			2	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		24.23 24.88 27.98 27.78 27.78 132.41 4.22 118.20 82.07 118.20 28.07 28.07 21.62 108.80 73.75 0.00 11.80 80.37 11.62 10.80 10.8	V 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	0.34 0.58 0.58 0.70 0.70 0.70 0.00 0.00 0.00 0.00 0.0	0.466 0.767 0.763 0.763 0.774 0.774 0.027 0.038 0.038 0.038 0.038 0.038 0.038 0.038 0.038	30.07 10.20 10.20 10.11 10.07 10.03
1012 Road deck insulation, R-19 (CAC)		8% 8% 8% 8% 8% 8% 8% 8% 8% 8% 8% 8% 8% 8	559.18 559.5 835.5 62.8 62.8 62.8 62.8 648.3 648.3 648.3 648.2 639.1 600.0 600.1 600			2	21 49 49 49 49 40 40 40 40 40 40 40 40 40 40 40 40 40		24.88 57.95 1.32.41 4.22 15.08 118.20 28.70 28.70 28.70 28.70 28.70 11.82 20.37 20.37 21.62 10.62 10.60 11.80 20.37 20.3	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	0.88 0.08 1.02 1.02 1.05 1.05 1.05 1.05 1.03 1.03 1.03 1.03 1.03 1.03 1.03 1.03	0.76 0.76 1.03 1.03 1.03 1.52 1.52 0.08 0.27 0.27 0.18 0.17 0.17 0.18	112.20 10.11 11.07 17.39 17.39 5.94 5.94 5.94 5.90 3.05 3.05 3.05 3.05 3.05 3.05 3.05 3.0
10.13 Wall Blown in R to be A.13 insulation (CAC) 10.19 Duct Insulation (CAC) 10.10 Duct Insulation (CAC) 10.10 Duct Insulation (CAC) 10.10 Self-insular Weathersation (CAC) 10.10 Self-insular Weathersation (CAC) 10.10 Self-insular Weathersation (CAC) 10.10 Exterior Door Replacement (CAC) 10.10 Windows Film (CAC) 10.10 Windows Single Fare Clear to Energy Star (CAC) 10.10 Energy Star Room Aft Conditioner - CER 12 (RAC) 10.10 Ductless mini-spit heat pump SEER 13 of flow-effective head of Energy Star Room Aft Conditioner - CER 12 (RAC) 10.10 Ductless mini-spit heat pump SEER 13 of flow-effective head of Energy Star (CAC) 10.10 Celling R-O to R-3 insulation (RAC) 10.10 Celling R-O to R-3 insulation (RAC) 10.10 Celling R-10 to R-49 insulation (RAC) 10.11 Roomprehensive Star Insulation (RAC) 10.11 Roomprehensive Star Insulation (RAC) 10.12 Celling R-11 to R-49 insulation (RAC) 10.13 Windows - Adding Star Room (RAC) 10.14 Comprehensive Star Insulation (RAC) 10.15 Celling R-12 to R-43 insulation (RAC) 10.17 Celling R-13 to R-49 insulation (RAC) 10.17 Celling R-13 to R-49 insulation (RAC) 10.18 Comprehensive Stell Air Sealing - Int Reduction (RAC) 10.12 Exterior Don Replacement (RAC) 10.12 Energy Star Air Cleaner, PM 12-5 CADR = 200, CADR/Weat 1.9 10.10 Energy Star Air Cleaner, PM 12-5 CADR = 200, CADR/Weat 1.9 10.10 Energy Star Air Cleaner, PM 12-5 CADR = 200, CADR/Weat 1.9 10.10 Energy Star Air Cleaner, PM 12-5 CADR = 200, CADR/Weat 1.9 10.11 Energy Star Air Cleaner, PM 12-5 CADR = 200, CADR/Weat 1.9 10.11 Energy Star Room Pergenting (PM 12-10 Pergenting Pergenting (PM 12-10 PERGENT P		28% 255% 66% 66% 66% 66% 66% 66% 66% 66% 66%	259.5 478.5 478.5 370.7 483.4 483.4 486.2 575.0 27.8 496.2 696.2 694.1 401.0 1,108.9 1,108.9 1,108.9			3	24 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	000000000000000000000000000000000000000	57,95 133,41 4,22 15.08 15.08 18.20 28.70 4,11 2,26 50.37 91.62 108.80 73,75 0.00 0.00 0.00 6.55	7	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	1.058 3.574 3.573 3.573 3.573 0.055 0.048 0.18 0.128 0.128 0.128 0.128 0.13 0.13	1.37 1.37 1.03 4.73 4.73 6.75 6.05 6.05 7.06 8.06 9.06 9.06 9.16 9.16 9.16 9.16 9.16 9.16 9.17 9.18	20.82 10.111 111.07 2.92 2.92 2.92 5.94 5.90 3.05 3.05 3.05 3.1.34 31.36 38.41 8.34 4.52 N/A 10.18 70.83 70.
1019 Cool Roof (CAC)		13% 6% 6% 6% 6% 6% 6% 6% 6% 6% 6% 6% 6% 6%	478.5 62.8 370.7 169.9 169.9 169.9 496.2 27.8 496.2 639.5 63			2	113 113 113 113 113 113 113 113 113 113		132,41 15.08 15.08 182.07 1185.20 28.70 4.11 4.11 20.37 91.62 1108.80 73.75 0.00 0.00 6.65	N N N N N N N N N N N N N N N N N N N	\$ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	0.747 0.555 0.555 0.057 0.067 0.08 0.08 0.08 0.08 0.00 0.013 0.012 0.02 0.03	1.03 0.74 0.74 0.74 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.0	11.07 2.92 5.94 9.22 5.90 5.90 5.90 5.90 5.12.34 31.36 31.36 31.36 8.34 4.52 10.18 8.34 4.52 10.18 8.34 4.52 4.52 4.52 4.52 4.52 4.52 4.52 4.5
1019 Duct Testing and Sealing (CAC) 1022 Comprehensive Standard Thermostic (CAC) 1023 Comprehensive Stall Art Sealing (CAC) 1024 Exterior Door Replacement (CAC) 1025 Exterior Door Replacement (CAC) 1026 Exterior Door Replacement (CAC) 1027 Exterior Door Replacement (CAC) 1028 Windows Stall Art Sealing Fans (CAC) 1031 Windows - Adding Stom Windows (CAC) 1031 Windows - Stangle Pane Clear to Energy Star Double Pane (CAC) 1031 Windows - Adding Stom Windows (CAC) 1031 Windows - Adding Stom Windows (CAC) 1032 Exterior Star Replacement (CAC) 1033 Energy Star Room Art Conflictioner - CEER 12 (AAC) 1034 Cacling R-10 R R-23 Insulation (RAC) 1035 Cacling R-10 R R-23 Insulation (RAC) 1036 Cacling R-10 R R-23 Insulation (RAC) 1036 Cacling R-10 R R-23 Insulation (RAC) 1038 Cacling R-10 R R-23 Insulation (RAC) 1040 Cacling R-10 R R-23 Insulation (RAC) 1050 Cacling R-10 R R-23 Insulation (RAC) 1070 Cacling R-10 R R-23 Insulation (RAC) 1071 Rodderd Insulation R-20 R-23 Insulation (RAC) 1071 Rodderd Insulation R-20 R-23 Insulation (RAC) 1071 Rodderd Insulation R-20 R-23 Insulation (RAC) 1072 Exterior Door Replacement (RAC) 1073 Exterior Door Replacement (RAC) 1074 Exterior Door Replacement (RAC) 1075 Exterior Door Replacement (RAC) 1076 Exterior Door Replacement (RAC) 1077 Exterior Door Replacement (RAC) 1078 Excepting Dehan (Cart or Insulation Replacement (RAC) 1079 Exterior Door Replacement (RAC) 1070 Exter		6% 6% 15% 4% 4% 1% 25% 25% 25% 0% 0% 19% 19% 19% 19%	62.8 169.9 483.4 483.4 75.0 27.8 496.2 694.1 0.0 0.0 11.70 1.170 4,851.1 1.170			2 2 0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	0000000000000000	4,22 15,08 82,07 118,20 28,70 4,11 4,11 4,11 91,62 106,80 73,75 0,00 1,80 1,80 6,55 8,23	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	3.53 1.04 1.04 1.04 1.04 3.38 3.38 3.38 0.04 0.18 0.28 0.28 0.28 0.13 0.13 0.13 0.13	0.774 1.52 1.52 1.42 4.54 4.54 6.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05	2.92 117.39 5.94 9.22 5.90 5.90 5.90 5.12.34 31.36 8.34 4.52 4.52 4.52 10.18 8.34 10.78 39.27 1136.44
1022		8% 8% 15% 3% 3% 5% 52% 22% 23% 33% 139% 19% 19%	370.7 169.9 483.4 483.4 75.0 27.8 496.2 669.5 669.1 1127.0 0.0 1127.0 3,705.3 4,651.1 1,108.9 1,130.8			118 111 110 110 115 20 20 20 20 116 116	13 101 24 4 4 4 7 8 6 9 9 0 0 0 0 0	000000000000000	15.08 82.07 1118.20 28.70 4.11 2.26 50.37 91.62 108.80 73.75 0.00 1.80 6.65 8.23	1 0 \frac{1}{4}	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	0.55 0.04 0.67 0.67 0.08 0.18 0.18 0.13 0.13 0.13 0.12 0.26	0.74 1.52 0.98 1.42 4.54 4.54 0.05 0.05 3.06 N/A 0.75 0.18	117.39 5.94 5.90 3.05 3.05 31.36 31.36 38.41 8.34 8.34 10.18 10.18 70.83 39.27
10.22 Comprehensive Shell Air Sealing - Inf. Reduction (CAC) 10.24 Exterior Door Replacement (CAC) 10.25 Exterior Door Replacement (CAC) 10.25 Windows - Adding Stom Windows (CAC) 10.29 WINDOWS - Single Pane Clear to Energy Star CAC) 10.31 WINDOWS - Single Pane Clear to Energy Star CAC) 10.31 WINDOWS - Double-Classed Clear to Energy Star CAC) 10.31 Energy Star Room Air Canditioner - CER Iz (RAC) 10.32 Base Room Air Canditioner - CER Iz (RAC) 10.32 Ductless mini-spit heat pump SERR 12.0/HSFF 9.4 (RAC) 10.34 Ductless mini-spit heat pump SERR 12.0/HSFF 10.0 (RAC) 10.35 Celling R-11 to R-38 Insulation (RAC) 10.35 Celling R-12 to R-13 Insulation (RAC) 11.35 Roof deck insulation, R-19 (RAC) 12.35 Roof deck insulation, R-19 (RAC) 12.35 Exterior Door Replacement (RAC) 12.35 Exterior Door Replacement (RAC) 12.35 Entergy Star RAC Celling Stom Windows (RAC) 12.35 ENTROY STAR Celling Stom Windows (RAC) 12.35 ENTROY STAR Celling Star (RAC) 12.30 ENTROY STAR Celling Star (RAC) 12.30 ENTROY STAR A CELLING STAR STAR STAR STAR STAR STAR STAR STAR		15% 3% 3% 3% 3% 15% 25% 225% 235% 337% 199% 119%	109.9 109.9 109.3 127.8 496.2 639.5 639.5 639.5 639.1 60.0 0.0 1.0 3,705.3 1,708.9 1,108.9 1,372.8 845.2			111 101 102 202 202 203 104 106 106	100 24 4 4 43 78 63 63 63 63 63		18.20 28.70 4.11 2.26 50.37 91.62 108.80 73.75 0.00 1.80 6.65 8.23	1 0 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	7	0.04 0.05 0.95 0.04 0.08 0.08 0.13 0.50 0.13 0.12 0.13	0.98 0.98 1.42 1.42 0.05 0.27 0.38 1.66 0.75 0.18 0.17	5.94 5.90 5.90 5.90 5.136 3.34 8.34 8.34 8.34 10.18 66.92 70.83 39.27 71.83 116.44
1024 Self Install Weather action (CAC) 1026 Exterior Dor Replacement (CAC) 1028 Windows - Single Pane (CAC) 1029 WinDoWs - Single Pane (CAC) 1030 WinDoWs - Single Pane (CAC) 1031 WinDoWs - Single Pane (CAC) 1031 WinDoWs - Single Pane (CAC) 1032 WinDoWs - Single Pane (CAC) 1033 WinDoWs - Single Pane (CAC) 1040 Energy SER Room Air Contiders - CERF XI (RAC) 1050 Caling R- Self Single Read of CAC 1060 Caling R- Self Single Read - CAC 1071 Caling R- Self Single Read - CAC 1072 Caling R- Self Single Read - CAC 1073 Caling R- Self Single Read - CAC 1074 Caling R- Self Single Read - CAC 1075 Caling R- Self Single Read - CAC 1076 Caling R- Self Single Read - CAC 1076 Caling R- Self Single Read - CAC 1077 Caling R- Self Single Read - CAC 1078 Caling R- Self Single Read - CAC 1070 Caling R- Self Single Read - CAC 1071 Radiant Barrier (RAC) 1071 Radiant Barrier (RAC) 1070 Caling R- Self Single Read - CAC 1071 Caling R- Self Single Read - CAC 1072 Exterior Door Replacement (RAC) 1073 Exterior Door Replacement (RAC) 1074 Exercing Pane (Care to Energy Star (RAC) 1076 Energy Star Charle R- Self Single Star (RAC) 1077 Energy Star Polymidifier Read Star (RAC) 1078 Energy Star Polymidifier Read 1078 Energy Star Polymiditier Read 1078 Energy Star Read		4 % 1 % 1 % 1 % 1 % 1 % 1 % 1 % 1 % 1 %	75.0 27.8 496.2 639.5 3.188.6 694.1 401.5 0.0 10.0 3.705.3 4.851.1 11.708.9 11.372.8			115 20 20 20 20 20 9 9 9 16 16	24 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4		28.70 4.11 2.26 50.37 91.62 108.80 73.75 0.00 1.80 6.65 8.23	N/A	2	0.95 3.38 0.04 0.08 0.18 0.12 2.28 2.28 0.50 0.13 0.12 0.12	1.42 4.54 0.05 0.27 0.38 1.66 3.06 N/A 0.75 0.18 0.17	5.90 3.05 212.34 33.136 33.41 8.34 4.52 N/A N/A 70.83 39.27 47.63 47.63
1026 ERECOY STAR Colling Fans (CAC) 1028		3% 1% 6% 25% 25% 23% 0% 37% 45% 19% 19% 5% 5%	27.8 496.2 496.2 3.188.6 694.1 401.5 0.0 127.0 3,705.3 4,851.1 1,372.8 845.2			20 115 20 20 20 20 9 9 9 116 20 20	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	00000000000	4.11 2.26 50.37 91.62 108.80 73.75 0.00 1.80 6.65 8.23	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	8	3.38 0.04 0.18 0.28 1.23 1.23 0.50 0.13 0.12 0.26 0.26 0.26	4.54 0.05 0.27 0.28 1.66 3.06 N/A 0.75 0.18 0.17	3.05 212.34 31.36 36.41 8.34 4.52 N/A 10.18 66.92 70.83 39.27 47.63 1136.44
1027 (REMEYS TANG CHING Fan (CAC) 1029 (WINDOWS - WINDOW Film (CAC) 1029 (WINDOWS - Single Fane Clear to Energy Star (CAC) 1031 (WINDOWS - Dubble Gazad Clear to Energy Star (CAC) 1031 (MINDOWS - Dubble Gazad Clear to Energy Star (CAC) 1032 (MINDOWS - Dubble Gazad Clear to Energy Star (CAC) 1031 (Energy Star Roam Air Conditioner - CER 12 (RAC) 1032 (Ductless mini-spit heat pump SEER 130 (MSC) 1040 (Caling P. 10 to R. 24) Star Star (RAC) 1050 (Caling P. 10 to R. 24) Star Star (RAC) 1060 (Caling P. 11 to R. 24) Star Star (RAC) 1071 (Caling P. 12 to R. 24) Star Star (RAC) 1072 (Caling P. 12 to R. 24) Star Star (RAC) 1073 (Caling P. 12 to R. 24) Star Star (RAC) 1074 (Caling P. 12 to R. 24) Star Star (RAC) 1075 (Caling P. 12 to R. 24) Star Star (RAC) 1076 (Caling P. 12 to R. 24) Star Star (RAC) 1077 (Caling P. 12 to R. 24) Star Star (RAC) 1078 (Caling P. 12 to R. 24) Star Star (RAC) 1079 (Caling P. 12 to R. 24) Star Star (RAC) 1070 (Caling P. 12 to R. 24) Star Star (RAC) 1071 (Comprehensive Shell Air Sealing - Inf. Reduction (RAC) 1071 (Caling P. 12 to R. 24) Star Star (RAC) 1072 (Caling P. 12 to R. 24) Star Star (RAC) 1073 (Caling P. 24) Star Clear (RAC) 1074 (Caling P. 24) Star Clear (RAC) 1075 (Caling P. 24) Star Clear (RAC) 1076 (Caling P. 24) Star Clear (RAC) 1077 (Caling P. 24) Star Clear (RAC) 1078 (Caling P. 24) Star (RAC) 1079 (Caling P. 25) CADR (RAC) 1070 (Caling P. 25) CADR (RAC) 1070 (Caling P. 25) CADR (RAC) 1071 (Caling P. 25) CADR (RAC)		1% 6% 25% 25% 23% 0% 8% 37% 45% 19% 48% 5%	496.2 639.5 3,188.6 694.1 401.5 0.0 127.0 3,705.3 4,851.1 1,108.9 1,372.8			115 20 20 20 20 116 116	7 4 3 3 3 3 3 3 5 6 5 7 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0000000000	2.26 50.37 91.62 108.80 73.75 0.00 1.80 6.65 8.23	N O O O O 3	8	0.04 0.18 0.28 1.23 N/A N/A 0.13 0.12 0.26	0.05 0.27 0.27 0.28 3.06 N/A 0.75 0.18 0.18	212.34 31.36 36.41 36.41 4.52 N/A 10.18 66.92 66.92 70.83 39.27 39.27
Windows - Adding Stam Windows (CAC)		25% 25% 23% 0% 8% 37% 45% 19% 19% 48% 5%	3,188.6 694.1 401.5 0.0 127.0 3,705.3 4,851.1 1,108.9 1,372.8			20 20 20 20 9 9 116 20 20 20 20 20 20 20 20 20 20 20 20 20	78 63 6 7 7	000000000	91.62 108.80 73.75 0.00 1.80 6.65 8.23) 0 0 0 V	(0.28 0.28 0.50 0.13 0.12 0.22 0.02	0.29 0.29 0.29	36.41 8.34 4.52 N/A 10.18 66.92 70.83 39.27 47.63 1136.44
1033 WINDOWS - Single Pane Clear to Energy Star Double Pane (CAC)		25% 23% 0% 8% 8% 37% 45% 19% 19% 48% 5%	694.1 401.5 0.0 127.0 3,705.3 4,851.1 1,108.9 1,372.8 845.2			20 20 9 9 9 16 20 20	93 63 7 7 0	000000	108.80 73.75 0.00 1.80 6.65 8.23	0 0 0 1	Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z	1.23 2.28 0.50 0.13 0.12 0.22 0.02	1.66 3.06 N/A 0.75 0.18 0.17 0.35	8.34 4.52 N/A 10.18 66.92 70.83 39.27 47.63 1136.44
1031 WINDOWS - Louble-Glazed Cleave of Energy Star (CAC)		23% 0% 8% 37% 45% 19% 19% 5%	401.5 0.0 127.0 3,705.3 4,851.1 1,108.9 1,372.8 845.2			20 9 9 16 20 20	63 0 0 0 0	00000	73.75 0.00 1.80 6.65 8.23	0 N/A 0 1	4 4 4 4 4 2 2 2 2 2 2	2.28 N/A 0.50 0.13 0.26 0.26	3.06 N/A 0.75 0.18 0.17 0.35	4.52 N/A 10.18 66.92 70.83 39.27 47.63 136.44
1100 Energy Star Room AL, CERK LQU glon-electrine Read		0% 8% 37% 45% 19% 19% 4% 5%	127.0 3,705.3 4,851.1 1,108.9 1,372.8			9 9 16 20 20 20 20 20 20 20 20 20 20 20 20 20	007000	00000	0.00 1.80 6.65 8.23	N/A 0 1	4 4 4 4 4 2 2 2 2 2	0.50 0.13 0.25 0.22 0.08	N/A 0.75 0.18 0.35 0.29	N/A 10.18 66.92 70.83 39.27 47.63 136.44
1102 Ductiess mini-spit heat pump SEER 130/HSPF10 (RAC)		37% 45% 19% 19% 4% 5%	3,705.3 4,851.1 1,108.9 1,372.8 845.2			16 20 20 20	19 / 0 0 (000	6.65	1	N N N N N N N N N N N N N N N N N N N	0.13 0.12 0.26 0.22 0.08	0.18 0.17 0.29	66.92 70.83 39.27 47.63 136.44 161.07
1103 Ductless mini-spill teat prupe RERR 22.0,4FSPF1.0 (RAC) 1106 Celling R-O to R-39 insulation (RAC) 1107 Celling R-L1 to R-39 insulation (RAC) 1108 Celling R-L1 to R-39 insulation (RAC) 1109 Celling R-L1 to R-39 insulation (RAC) 1109 Celling R-L1 to R-39 insulation (RAC) 1109 Celling R-L1 to R-39 insulation (RAC) 1100 Celling R-L1 to R-39 insulation (RAC) 1111 Radiation R-10 to R-39 insulation (RAC) 1112 Radiant Barrier (RAC) 1120 Comprehensive Shell Art-Sealing - Inf. Reduction (RAC) 1121 Extendro Don Replacement (RAC) 1122 Windows - Adding Storm Windows (RAC) 1123 Windows - Adding Storm Windows (RAC) 1124 Windows - Adding Storm Windows (RAC) 1125 Windows - Adding Storm Windows (RAC) 1126 Recycling Denne Clare to Energy Star (RAC) 1260 Base Defurndifier (4d) prints(day, 1.5 liters/kWh) 1271 Base Defurndifier (4d) prints(day, 1.5 liters/kWh) 1272 Base Defurndifier (4d) prints(day, 1.5 liters/kWh) 1273 Base Defurndifier (4d) prints(day, 1.5 liters/kWh) 1274 Calling Base Air-Clear to Perery Star (PAC) 1275 Base Defurndifier (4d) prints(day, 1.5 liters/kWh) 1276 Base Defurndifier (4d) prints(day, 1.5 liters/kWh) 1277 Base Defurndifier (4d) prints(day, 1.5 liters/kWh) 1278 Base Air-Cleaner, PM 2.5 CADR = 200, CADR/watt 2.9 1279 Base Air-Cleaner, PM 2.5 CADR = 200, CADR/watt 2.9 1271 Base Director Clear to Energy Star (PAC) 1270 Base Defurndifier (4d) prints(day, 1.5 liters/kWh) 1271 Base Air-Cleaner, PM 2.5 CADR = 200, CADR/watt 2.9 1271 Base Air-Cleaner, PM 2.5 CADR = 200, CADR/watt 2.9 1271 Base Air-Cleaner, PM 2.5 CADR = 200, CADR/watt 2.9 1271 Base Air-Cleaner, PM 2.5 CADR = 200, CADR/watt 2.9		45% 19% 4% 5%	4,851.1 1,108.9 1,372.8 845.2			16 20 30	V 0 0 0	0 0 1	8.23		8	0.12 0.26 0.22 0.08	0.17	70.83 39.27 47.63 136.44 161.07
1105		19% 19% 4% 5%	1,372.8			20 2	000	D 1	21.0	Η 0	V /h	0.22	0.29	136.44 161.07
1106 Ceiling R-11 to R-3 Finstation (RAC)		4% 5%	845.2				c	0	0.10		N/A	0.08	,	136.44
1107 Celling R-11 of R-2 insulation (RAC)		2%	000			20	0	0	0.10	2	N/A)	0.10	161.07
1106 Cerling 8-19 (to R-a) Installation (RAC)		700	1,108.9			20	0 0	0 0	0.08	2 .	A/A	0.06	0.09	
1110 Roof deck Insulation, R-19 (RAC)		2%	917.1	,		2 20	0	0	0.11	nm	ΣŽ	0.04	0.02	258.60
1111 Well Blow-in R-0 to B-13 Insulation (RAC)		19%	2,591.8			20	0	0	0.14	1	N/A	0.11	0.15	91.44
1115		8%	559.5			25	0	0 0	1.08	0 (A/A	0.26	0.35	45.70
1117 Comprehensive Shell An's Sealing - 1n'r Reduction (RAC)	Single Family 25 % Single Family 13 %	13%	478.5			15	2 0	0	2.46	0	∢ ∢ ≥ ≥	0.34	0.47	24.31
1118 Self Intabl Weatherstation (RAC)		11%	483.4		1,126	11	1	0	1.62	0	N/A	0.22	0.33	27.45
1121 ENRROY STAR Celling Fast (RAC) 1122 Windows Factor Conv. Report (RAC) 1123 Windows - Adding Storm Windows (RAC) 1124 WINDOWS - Shoulbe-Gazad Clear to Fenery Star Pouble-Base (RAC) 1125 Resociting of non-efficient window Ac unit (RAC) 1200 Base Oblundifier (4d pints/day, 1.5 liers/kW) 1201 10% better than Enery Star (RAC) 1300 Base Air Cleaner, PM 2.5 CADR = 2400, CADRYWatt 1.9 1301 Energy Star Air Cleaner, PM 2.5 CADR = 2400, CADRYWatt 1.9 1301 Energy Star Air Cleaner, PM 2.5 CADR = 200, CADRYWatt 2.9 1400 Energy Star Air Cleaner, PM 2.5 CADR = 200, CADRYWatt 2.9 1401 ECM Furnace Fan (variable space motor)	Single Family 4%	4%	75.0			10	0 0	0 0	0.53	0 0	V/A	0.43	0.65	12.94
1122 Window Flim (RAC) 1123 Windows - Adding Storm Windows (RAC) 1124 WINDOWS - Single Pane Clear to Energy Star Double Pane (RAC) 1125 Recycling of non-efficient window AC unit (RAC) 1200 Recycling of non-efficient window AC unit (RAC) 1201 109% Better than Frency Star Demindrifile ROB (S-3-45 pinns/day) 1301 Base Air Cleaner, PM 2.5 CADR = 200, CADR/Watt 1.9 1301 Energy Star Air Cleaner, PM 2.5 CADR = 200, CADR/Watt 2.9 1401 ECM Furnace Fan (variable speed motor)		1%	496.2			15	0 0	0 0	0.00	> m	∢ ∢ ≥ ≥	0.04	0.05	219.44
1123 WINDOWS - Adding Stem Windows (RAC,) 1124 WINDOWS - Single Pane Clear to Energy Star-Double Pane (RAC) 1125 WINDOWS - Double-Glazed Clear to Energy Star (RAC) 1206 Recycling of Arton-erfficient window Act Curt (RAC) 1201 10% better than Frency Star-Doumlidfier (RaC) 1301 Sase Art Cleaner, PM 2.5 CADR = 200, CADR/Watt 1.9 1301 Energy Star-Art Cleaner, PW 1.5 CADR = 200, CADR/Watt 1.9 1400 Energy Star-Art Cleaner, PW 1.5 CADR = 200, CADR/Watt 2.9 1401 Energy Star-Art Cleaner, PW 1.5 CADR = 200, CADR/Watt 2.9 1401 ECM Furnace Fail (variable spaced motor)		%9	639.5			10		0	0.94		N/A	0.08	0.12	68.84
1124 WINDOWS - Snother Pate Cake To teregy Star (RAC) 1125 Recycling of non-efficient window AC unit (RAC) 1200 Recycling of non-efficient window AC unit (RAC) 1201 10% Beas Dehundifier (40 pints/day, 1.5 liters/kWh) 1201 10% better than Energy Star Dehundifier (ROS (35-45 pints/day) 1300 Research PM 2.5 CADR = 200, CADR/watt 1.9 1301 Energy Star Placemer, PM 2.5 CADR = 200, CADR/watt 2.9 1401 ECM Furnace Entrace Research PM 2.5 CADR = 200, CADR/watt 2.9 1401 CEM Furnace Farnace Research PM 2.5 CADR = 200, CADR/watt 2.9 1401 ECM Furnace Farnace Research PM 2.5 CADR = 200, CADR/watt 2.9	Single Family 25%	25%	3,188.6			20	0	0	1.70	п (A/A	0.13	0.17	79.93
1225 Recycling of non-efficient window AC unit (RAC) 1200 Base Defundifier (40 pints/day, 1.5 liters/kWh) 1201 10% better than Energy Star Defundifier ROB (35-45 pints/day) 1300 Base Art Ceaner, PM 2.5 CADR = 200, CADR/Watt 1.9 1301 Energy Star Air Cleaner, PM 2.5 CADR = 200, CADR/Watt 1.9 1401 EEM Funder Star Air Cleaner, PM 2.6 ADR = 200, CADR/Watt 2.9 1401 EEM Funder Star Air Cleaner, PM 2.6 ADR = 200, CADR/Watt 2.9 1401 EEM Funder Star Air Cleaner, PM 2.6 ADR = 200, CADR/Watt 2.9 1401 EEM Funder Star Air Cleaner, PM 2.7 CADR = 200, CADR/Watt 2.9 1401 EEM Funder Star Air Cleaner, PM 2.7 CADR = 200, CADR/Watt 2.9 1401 EEM Funder Star Air Cleaner, PM 2.7 CADR = 200, CADR/Watt 2.9 1401 EEM Funder Star Air Cleaner, PM 2.7 CADR = 200, CADR/Watt 2.9 1401 EEM Funder Star Air Cleaner, PM 2.7 CADR = 200, CADR/Watt 2.9 1401 EEM Funder Star Air Cleaner, PM 2.7 CADR = 200, CADR/Watt 2.9 1401 EEM Funder Star Air Cleaner, PM 2.7 CADR = 200, CADR/Watt 2.9 1401 EEM Funder Star Air Cleaner, PM 2.7 CADR = 200, CADR/Watt 2.9 1401 EEM Funder Star Air Cleaner, PM 2.7 CADR = 200, CADR/Watt 2.9 1401 EEM Funder Star Air Cleaner, PM 2.7 CADR = 200, CADR/Watt 2.9 1402 EEM Funder Star Air Cleaner, PM 2.7 CADR = 200, CADR/Watt 2.9 1403 EEM Funder Star Air Cleaner, PM 2.7 CADR = 200, CADR/Watt 2.9 1404 EEM Funder Star Air Cleaner, PM 2.7 CADR = 200, CADR/Watt 2.9 1405 EEM Funder Star Air Cleaner, PM 2.7 CADR = 200, CADR/Watt 2.9 1406 EEM Funder Star Air Cleaner, PM 2.7 CADR = 200, CADR/Watt 2.9 1407 EEM Funder Star Air Cleaner, PM 2.7 CADR = 200, CADR/Watt 2.9 1408 EEM Funder Star Air Cleaner, PM 2.7 CADR = 200, CADR/Watt 2.9 1409 EEM Funder Star Air Cleaner, PM 2.7 CADR = 200, CADR/Watt 2.9 1409 EEM Funder Star Air Cleaner, PM 2.7 CADR = 200, CADR/Watt 2.9 1400 EEM Funder Star Air Cleaner, PM 2.7 CADR = 200, CADR/Watt 2.9 1400 EEM Funder Star Air Cleaner, PM 2.7 CADR = 200, CADR/Watt 2.9 1400 EEM Funder Star Air Cleaner, PM 2.7 CADR = 200, CADR/Watt 2.9 1400 EEM Funder Star Air Cleaner, PM 2.7 CADR = 200, CADR/Watt 2.9 1400 EEM Funder	Single Family 25% Single Family 23%	25%	694.1			07	7 -	0 0	2.02	0 0	A/N	0.56	1.70	18.32
1200 Base Dehumidifier (4d pints/day, 1.5 liters/kWh) 1201 10% better than Ferrey Star Dehumidifer Role (3-4.5 pints/day) 1300 Base Air Geaner, PM. 2.5 CADR = 200, CADR/Watt 1.9 1301 Energy Star Air Cleaner, PM. 2.5 CADR = 200, CADR/Watt 2.9 1400 Base Burnace Far L'emrace & CAC 1401 ECM Furnace Far (variable speed motor)		100%	335.2			5 4	9 6	0	10.93	0	Z Z	0.96	1.70	2.21
1201 10% better than facegy Star Delumidifier Roll Sc3-45 punts/day) 1300 Base Air Cleaner, PM 2.5 CADR = 200, CADR/Watt 1.9 1301 Energy Star Air Cleaner, PM 2.5 CADR = 200, CADR/Watt 2.9 1400 Base Ghinaze Far Elmace St CADR 1401 ECM Furnace Far (variable speed motor)		%0	100.0			12	0	0	0.00	N/A	N/A	N/A	N/A	N/A
1301 Energy Star Africhener, PR 2.5 CADR = 200, CADR/Watt 2.9 1400 Base Furnace Par L-Immace R-OK/Watt 2.0 1401 EOM Furnace Far (variable speed motor)	Single Family 10%	10%	10.0			12	43	0 0	50.58	0 8	Α ×	21.79 N/A	31.28	0.31 N/A
Base Furnace Fan - Furnace & CAC ECM Furnace Fan (variable speed motor)		%99	56.7			0	57	o m	11.69	0	271.81	2.18	6.68	1.15
ECM Furnace Fan (variable speed motor)		%0	0.0			18	0	0	0.00	N/A	N/A	N/A	N/A	N/A
		20%	4,200.0			18	107	63	0.00	1	2,199.03	0.05	0.12	109.57
1 1500 Base Alf-Source Heat Pump, SEEK 214.3/HSPFz 7.5 W/Aux Strip Heat 1501 Hoat pump ingrade to (16 SEER 9.2 HSPF) (HD heat/col)	Single Family 0% Single Family 9%	%0 6	0.0			51 25	165	0 1	0.00	W/N	N/A 40.27	N/A 80	N/A 7 48	N/A
Heat pump upgrade to (18 SEER, 10 HSPF) (HP heat/cod)		14%	440.1			15	373	229	62.87	0	81.62	1.38	2.70	4.21
Ground Source Heat Pump EER 17.1/COP 3.6 ENERGY STAR (HP heat/cool		26%	8,865.4			15	136	84	22.99	1	899.31	0.13	0.25	46.38
		2%	108.0			4 5	19	11	3.14	0 0	141.67	0.26	0.52	7.31
Ceiling R-0 to R-30 Insulation (PP heat/cool) Ceiling R-0 to R-49 Insulation (HP heat/cool)	Single Family 55%	55%	1,372.8			2 20	31	19	5.21	0	65.54	2.10	4.92	3.38
1508 Ceiling R-11 to R-38 Insulaton (HP heat/cool)		16%	845.2			20	42	56	7.15	0	141.50	0.97	1.90	7.30
1509 Ceiling R-11 to R-49 Insulation (HP heat/cool)		17%	1,108.9		4,852 2,	50	31	19	5.28	0 0	167.60	0.82	1.60	8.64
1 1510 Celling R-19 to R-36 Insulation (HP heat/cool) 51 (Fig. 1911 Celling R-19 to R-49 Insulation (HP heat/cool) 51	Single Family /%	%6	917.1			20	46	28	7.83	0 0	243.92	0.50	0.97	14.24
Roof deck insulation, R-19 (HP heat/cool)		51%	2,591.8			20	40	25	6.79	0	132.72	1.04	2.02	6.84
Radiant Barrier (HP heat/cool)		4%	559.5			25	61	37	10.26	0	317.50	0.45	0.88	18.01
1 1514 Crawispace insulation (HP heat/cool) Si 1515 Bacomont inculation D.13 (HB heat/cool) Si	Single Family 36%	36%	563.8			20	196	120	32.98	0 0	35.40	3.89	7.58	1.83

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	est/cool) ne (ASHP) ne (ASHP) ne (ASHP) 1.1 GSHP heat/cool) (i) (i) (i) (i) (i) (i) (i) (i) (i) (Single Family		7% 17% 8% 8% 14% 28% 28% 28% 28%	1,403.7 2,676.4 478.5			Household Li	Life (vrs)	Potential GWH	Potential MW	Potential MW	Energy \$/kWH	\$/kW	Cost Test (TRC)		Custome Participant Payback Test (Years)
		nige Family	7.7% 17.6% 18.9% 18.9% 18.9% 18.9% 18.9% 18.9% 18.9% 18.9% 19.9% 19.9% 19.9% 19.9% 19.9% 19.9% 19.9% 19.9% 19.9% 19.9% 19.9% 19.9% 19.9% 19.9% 19.9% 19.9% 19.9% 19.9% 19.9%		2,6/6.4 478 5		5,620 3		20	4	m (0.72	0	544.96	0.25	0.49	28.10
		rigide Family	89% 189% 189% 189% 189% 189% 199% 199% 1					3998	15	38	23	6.35	0 0	169.85	0.33	1 30	21.7
		ongle Family ngle Family ningle Family	8% 28% 28% 28% 28% 28% 28% 28% 28% 28% 2		275.8			3,583	20	12	7	2.01	0	79.86	1.72	3.36	4.12
		noge Family	18% 19% 19% 19% 19% 19% 19% 19% 19% 19% 19		370.7			3,542	18	43	26	7.16	0 (108.60	1.18	2.31	5.60
		ngic Family right	14% 2% 2% 25% 25% 118% 118% 118% 119% 117% 117% 17% 17% 17% 17% 17%		169.9			3,222	= =	478	293	80.63	0 0	31.09	2.85	5.62	2.07
		and le Family ngle Family ningle Family	2% 3% 3% 25% 25% 18% 10% 10% 10% 10% 10% 10% 10% 10% 36% 36% 36% 36%		75.0			3,293	10	224	137	37.77	0	13.29	6.15	12.18	0.69
		radio femily radio	3% 2.55 % 114% 2.55 % 109% 114% 117% 5.53 % 5.53 % 5.53 % 3.64 % 36.4%		27.8			3,562	20	9	ю	0.94	0	39.62	3.47	92.9	2.04
		right Framily rough Framily ro	25 % 19 % 19 % 19 % 19 % 19 % 19 % 19 % 1		496.2	5,894 5		3,595	15	ς ξ	2 5	0.54	7 0	2,650.73	0.04	0.08	136.70
		rigle Family	25% 118% 114% 22% 23% 55% 116% 77% 51% 36% 36%		3.188.6			8499	20 02	185	30	31.10	0 0	318.39	0.14 0.43	0.28	16.43
		ngle Family ngle Family ngle Family ngle Family ngle Family ngle Family nigle Family	18% 0% 17% 2% 553% 16% 17% 78% 9% 44% 36%	25%	694.1			,700	20 20	219	134	36.93	0	72.96	1.89	3.68	3.76
		ngle Family nigle Family	0% 14% 2% 53% 16% 117% 77% 4% 36%		622.9			3,368	20	111	89	18.76	0	81.75	1.68	3.28	4.22
		riger Family	2% 53% 55% 16% 17% 9% 51% 36%	%0%	6,496.6			1,569	15	0 0	0 0	0.00	N/A	N/A	N/A	N/A	A/S
		ngle Family ngle Family ngle Family ngle Family nigle Family ingle Family ingle Family ingle Family ingle Family ingle Family ingle Family ingle Family ingle Family ingle Family	53% 55% 16% 17% 7% 9% 51% 4% 36%		108.0			558	CI 4	0 0	0 0	0.08	0 0	324.96	0.29	0.57	16.76
		ngle Family ngle Family ngle Family ngle Family ingle Family	55% 16% 17% 7% 9% 51% 4% 36%		1,108.9			730	50	0	0	0.08	0	125.00	1.10	2.15	6.45
		ngle Family ngle Family ngle Family ngle Family ingle Family	16% 17% 7% 9% 51% 4%		1,372.8			206	20	0	0	90.0	0	150.34	0.92	1.78	7.75
		ngle Family ngle Family ngle Family ingle Family	17% 7% 9% 51% 4% 36%		845.2			1,323	50	0	0	0.08	0	324.57	0.42	0.83	16.74
		ngle Family ngle Family ngle Family ngle Family ingle Family	7% 9% 51% 4% 36%		1,108.9		2,115	1,296	50	0 +	0 +	0.06	0 0	384.44	0.36	0.70	19.83
		ngle Family ngle Family ngle Family ingle Family ingle Family ingle Family ingle Family ingle Family	51% 4% 36%		055.4			732	02 02		- c	0.14	0 0	539.49	0.25	0.48	22.83
		ngle Family ngle Family ngle Family ingle Family ingle Family ingle Family ingle Family	4% 36%		2,591.8			780	20	1 0	0	0.07	0	304.42	0.45	0.88	15.70
		ngle Family ngle Family ingle Family ingle Family ingle Family ingle Family	36%		559.5			1,510	25	1	0	0.11	0	728.28	0.20	0.38	41.30
		ngle Family ngle Family ingle Family ingle Family ingle Family			563.8			1,153	20	2	1	0.36	0	81.21	1.70	3.30	4.19
		ngle ramily ingle Family ingle Family ingle Family	23%	23%	1,212.4		2,154	1,320	50	0 0	0 0	0.07	0 +	291.93	0.47	0.92	15.06
		ingle Family	17%		1,403.7			307	20 20		0 0	0.01		465.57	0.11	0.28	49.80
		ingle Family	7%		478.5			,479	15	2 0) 	0.28	1 0	389.61	0.29	0.57	20.05
			8%		275.8			1,562	20	0	0	0.02	0	183.19	0.75	1.46	9.45
		Single Family	8%		370.7			,544	18	0	0	0.08	0	249.10	0.52	1.00	12.85
		Single Family	14%		169.9			1,405	Π:	mι	2 (0.51	0 0	71.32	1.24	2.45	3.68
		Single Family	140%		75.0			7.284	11 1	n r	n ←	0.88	0 0	30.49	0.96	1.90 5.31	1 57
		Single Family	2%		27.8			,553	20	1 0	10	0.01	0	90.95	1.51	2.95	4.69
		Single Family	1%		496.2			792	15	0	0	0.01	ю	5,297.84	0.02	0.04	273.2
		Single Family	3%		639.5			1,525	10	1	0	0.09	1	1,309.79	90.0	0.12	67.55
		Single Family	25%		3,188.6			1,239	50	2		0.34	0 (730.31	0.19	0.37	37.66
		Single Family	18%		694.1			1,1//	02 02	7 -		0.40	0 0	167.35	0.82	1.60	8.63
1700 Base Electric Furnac	Base Electric Furnace + Central AC (SEER 13.0)	Single Family	%0		0.0			3,246	15	1 0	1 0	0.00	N/A	N/A	N/A	Z X	N/A
		Single Family	46%		446.1			,758	15	249	152	41.90	0	28.35	3.98	7.78	1.46
	Heat pump (18 SEER, 10 HSPF) (eFAF + CAC)	Single Family	51%		558.7			,585	15	277	170	46.75	0	31.82	3.55	6.93	1.64
	(eFAF + CAC)	ingle Family	57%		6,697.3			1,387	15	62	38	10.46	0 0	340.81	0.33	0.65	17.5
1706 Ceiling B-0 to B-3	_	Single Family	2%		1 108.0			5,223	4 6	4 O	7 (0.65	0 0	60.43	0.23	0.46	8.1C
	Ceiling R-0 to R-49 Insulation (eFAF + CAC)	Single Family	55%		1,372.8			,460	202	9	0 4	1.07	0	72.68	1.89	3.69	3.75
		Single Family	16%		845.2			2,737	20	6	2	1.47	0	156.91	0.88	1.71	8.09
		Single Family	17%		1,108.9			2,682	20	9	4	1.09	0	185.85	0.74	1.44	9.58
	Ceiling R-19 to R-38 Insulation (eFAF + CAC)	Single Family	7%		653.4		4,923 3	3,018	20	12	б ч	2.60	0 0	270.48	0.51	0.99	13.95
1712 Roof deck insula		Single ramily	% F		2.591.8			614	20 02	2 &	o ir	1.61	0 0	147.17	0.45	1.82	7.50
		Single Family	4%		559.5			3,123	25	13	n 00	2.11	0	352.07	0.41	0.79	19.9
1714 Crawlspace in	(C)	Single Family	36%		563.8		3,890 2	2,384	20	40	25	6.79	0	39.26	3.51	6.83	2.02
		Single Family	23%		1,212.4			2,731	20	00	ıs	1.37	0	141.13	0.98	1.90	7.28
		Single Family	7%		1,403.7			3,107	50	₩ (⊣ 1	0.15	0 (604.30	0.23	0.4	31.1
1719 Wall Blow-in R-U to F	Wall Blow-in R-0 to R-13 Insulation (ePAF + CAC)	Single Family	1/%		835.0		4,411 2	2,704	70	ω ξ	v 5	1.31	0 0	145.62	0.95	1.84	7.51
	0	Single Family	%6		275.8			3,231	20	Į m	2	0.44	0	83.73	1.64	3.20	4.32
	(C)	Single Family	%9		370.7	5,574 5	5,235 3	3,209	18	9	4	1.05	0	168.59	0.76	1.48	8.69
		Single Family	14%		169.9		1,741 2	906'	11	57	35	9.58	0	34.48	2.57	5.06	1.78
	FAF + CAC)	Single Family	28%		483.4			959'	10	66	09	16.60	0	44.50	1.84	3.64	2.29
		Single Family	14%		75.0			2,970	10	46	28	7.78	0 0	14.74	5.55	10.98	0.76
1727 EXCEND DOOF KE	Exterior Door Replacement (er AF + CAC) SII FNFRGY STAR Ceiling Fans (eFAF + CAC)	Single Family	%0		496.7			3,179	15	7 -	ч С	0.38	0 0	2.939.37	0.09	0.08	151.5
		Single Family	3%		639.5	5,304 5	5,148 3	3,155	10	10	9	1.69	0	633.19	0.13	0.26	32.6
	AF + CAC)	Single Family	25%		3,188.6			2,563	20	38	23	6.40	0	353.05	0.39	0.76	18.21
1730 WINDOWS - Single Pane Clear to	DOWS - Single Pane Clear to Energy Star Double Pane (eFAF + CAC) Sli	Single Family	25%		694.1			2,435	20	45	28	7.60	0	80.90	1.70	3.32	4.17

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Segment Number 1 1800 1 1801		o di di		Peak	Total	0		Peak	Commission	Technical	Peak Tech.	Peak Tech.	of Conserved	of Avoided	Resource	1	•
1 1800 1 1801	Measure	Type	Fraction		Household	DEC	٦	Ð	Service Life (yrs)	GWH	MW	MW	\$/kwh	\$/kW			(Years)
TOOT	Base Electric Furnace + Room AC (EER 9.7)	Single Family			0.0	2,413	2,413	1,479	15	0 +	0 +	0.00	N/A	N/A			N/A
1 1802		Single Family		55%	558.7	2,413	1,080	662	12			0.19	0	64.71		3.41	3.34
1 1803	NF + room A			%09	6,697.3		626	288	15	0	0	0.04	0	710.81		0.31	36.66
1 1804		Single Family		53%	1,108.9		1,123	688	50	0 0	0 0	0.01	0 0	132.63		2.02	6.84
1 1806	Ceiling R-11 to R-38 Insulation (eFAF + room AC)	Single Family	16%	16%	1,3/2.8		2,034	1,247	20	0 0	0 0	0.00	0 0	344.40		0.78	8.23
1 1807		Single Family		17%	1,108.9		1,993	1,222	20	0	0	0.00	0	407.93		99.0	21.0
1 1808		Single Family		7%	653.4		2,243	1,375	20	0	0	0.01	0	593.68		0.45	30.62
1 1809	Celling R-19 to R-49 Insulation (eFAF + room AC) Roof derk insulation R-19 (eFAF + room AC)	Single Family Single Family	%6	%15	917.1 2 591 8		2,202	1,350	20	0 0	0 0	0.01	0 0	323.02		0.40	34.65
1 1811		Single Family	4%	4%	559.5		2,321	1,423	25	0	0	0.01	0	772.78	0.19	0.36	43.82
1 1812	4C)	Single Family	36%	36%	563.8		1,772	1,086	20	0	0	0.03	0	86.17		3.11	4.44
1 1813		Single Family	23%	23%	1,212.4		2,030	1,244	20	0	0	0.01	0	309.77		0.87	15.98
1 1814		Single Family	7%	7%	1,403.7		2,309	1,415	50	0 (0 (0.00	(1,326.40	0.10	0.20	68.40
1 1815	Wall blow-in K-U to K-13 Insulation (eFAF + room AC)	Single Family	17%	17%	835.0		2,010	1,232	20	0 0	0 0	0.00	0	319.64	0.43	0.84	16.46
1 1817	AC)	Single Family	%8	%8	275.8		2,402	1,473	20	0 0	0	0.00	0	203.28	0.68	1.32	10.48
1 1818	AC)	Single Family	16%	16%	370.7		2,336	1,432	18	0	0	0.01	0	133.50	0.96	1.88	6.88
1 1819		Single Family	14%	14%	169.9		2,160	1,324	11	0	0	0.04	0	75.67	1.17	2.31	3.90
1 1820	· room AC)	Single Family	28%	28%	483.4		1,974	1,210	11	0	0	0.06	0	97.68	0.91	1.79	5.04
1 1821	Self Install Weatherization (eFAF + room AC)	Single Family	14%	14%	75.0		2,207	1,353	10	0 0	0 0	0.03	0 0	32.35	2.53	5.00	1.67
1 1824		Single Family	%	%+ 0	496.2		2,303	1.477	15	0 0	0 0	00.00	0 4	6.451.75	0.02	0.03	332.7
1 1825		Single Family	3%	3%	639.5	2,416	2,345	1,438	10	0	0	0.01		1,389.82	0.06	0.12	71.67
1 1826		Single Family	25%	25%	3,188.6	2,540	1,905	1,168	20	0	0	0.02	0	774.93	0.18	0.35	39.96
1 1827	۷	Single Family	25%	25%	694.1	2,413	1,810	1,109	20	0 (0 (0.03	0 (177.58	0.78	1.51	9.16
1 1828	WINDOWS - Double-Glazed Clear to Energy Star (eFAF + room AC) Recycling of non-efficient window AC unit (eFAF + RAC)	Single Family	100%	100%	335.2	2,741	2,258	1,384	707	0 -	0 -	0.01	o c	21.44	1.07	3.41	1.11
1 1900	6	Single Family	%0	%0	0.0		3,691	2,263	15	10	1 0	0.00	N/A	N/A	N/A	N/A	N/A
1 1901		Single Family	46%	46%	446.1		1,999	1,225	15	13	00	2.13	0	40.67	2.77	5.45	2.10
1 1902	Heat pump (18 SEER, 10 HSPF) (Elec baseboard heat + Central AC)	Single Family	51%	51%	558.7	3,691	1,803	1,105	15	14	6	2.38	0	45.65	2.47	4.83	2.35
1 1903		Single Family	57%	57%	8,865.4	3,691	1,578	967	15	m	2 0	0.53	0 0	647.28	0.17	0.34	33.38
1 1905	AC Maintenance and/or tune-up (baseboard heat + CAC) Ceiling R-0 to R-38 Inculation (Flec haseboard heat + Central AC)	Single Family	2%	2%	1 108.0	3,739	3,665	1,247	4 5	0 0	0 0	0.03	0 0	86 70	0.16	3.09	11.6
1 1907		Single Family	22 %	22%	1,372.8		1,660	1,017	20	0	0	0.05	0	104.28	1.32	2.57	5.38
1 1908		Single Family	16%	16%	845.2		3,112	1,907	20	0	0	0.07	0	225.12	0.61	1.19	11.6
1 1909	Ceiling R-11 to R-49 Insulation (Elec baseboard heat + Central AC)	Single Family	17%	17%	1,108.9		3,049	1,869	50	0	0 (0.06	0 (266.65	0.52	1.01	13.75
1 1910		Single Family	%/	7%	653.4		3,431	2,103	20 50	- 0	0 0	0.13	0 0	388.06	0.35	0.69	20.01
1 1912		Single Family	51% 81%	51%	2.591.8		1,835	1,125	20	0 0	0 0	0.02	0	211.15	0.65	1.27	10.89
1 1913		Single Family	4%	4%	559.5		3,551	2,177	25	1	0	0.11	0	505.13	0.28	0.55	28.65
1 1914		Single Family	36%	36%	563.8		2,711	1,662	20	2	1	0.35	0	56.32	2.45	4.76	2.90
1 1915		Single Family	23%	23%	1,212.4		3,105	1,903	20	0 0	0 0	0.07	0 +	202.48	0.68	1.32	10.4
1 1916	Wall Blow-in R-0 to R-13 Insulation (Flec baseboard heat + Central AC)	Single Family	17%	17%	835.0		3,075	1.885	20 20	0 0	0 0	0.01	- 0	208.93	0.16	1.28	10.7
1 1918		Single Family	7%	7%	478.5		3,478	2,132	15	2 0) T	0.27	0	270.23	0.42	0.82	13.94
1 1919		Single Family	%9	%9	275.8		3,679	2,255	20	0	0	0.02	0	178.48	0.77	1.50	9.20
1 1920	(C)	Single Family	%9	%9	370.7		3,649	2,236	18	0 (0 (0.05	0 0	241.88	0.53	1.03	12.47
1 1922	Smart Inermostat (Elec baseboard neat + Central AC) viahansiva Shall Air Saaling - Inf. Rad indion (Flac baseboard heat + Centri	Single Family	14% 28%	28%	169.9		3,304	2,025	= =	יו רי	7 6	0.49	0 0	63.85	L. 79	5.53	3.29
1 1924	3		14%	14%	75.0		3,377	2,070	1 01	2 0) H	0.40	0	21.15	3.87	7.65	1.09
1 1926		Single Family	4%	4%	27.8		3,615	2,216	20	0	0	0.02	0	32.44	4.25	8.27	1.67
1 1927	ENERGY STAR Ceiling Fans (baseboard heat + CAC)	Single Family	%0	%0	496.2		3,687	2,260	15	0	0	0.01	m	4,217.22	0.03	0.05	217.4
1 1928		Single Family	3%	3%	639.5		3,588	2,199	10		0 +	0.09	0	908.46	0.09	0.18	46.85
1 1930	Windows - Adding Storm Windows (baseboard near + CAC) DOWS - Single Pane Clear to Energy Star Double Pane Chaseboard heat +	Single Family	25%	25%	3,188.b 694.1		2,914	1,785	20 20	7 0	٦.	0.33	0 0	116.07	1.19	2.31	5.99
1 1931		Single Family	18%	18%	401.5		3,454	2,117	20	1 11		0.20	0	83.83	1.64	3.20	4.32
1 2000		Single Family	%0	%0	0.0		2,250	1,379	15	0	0	0.00	N/A	N/A	N/A	N/A	N/A
1 2001	Heat pump (16 SEER, 9.2 HSPF) (Elec baseboard heat + Room AC)	Single Family	52%	52%	446.1		1,078	661	15	9 1	4 4	1.07	0 0	58.74	1.92	3.75	3.03
1 2002	+	Single Family	%09 %09	%09 %09	8 865 4	2,250	1,007	548	3 5	۷ ,	1 4	1.14 0.49	0 -	1 009.40	0.11	0.22	52.0
1 2004	-	Single Family	23%	23%	3,705.3	2,250	1,051	644	16	20	12	3.29	1 0	476.94	0.25	0.48	24.60
1 2005		Single Family	28%	28%	4,851.1	2,250	941	577	16	21	13	3.59	0	572.11	0.21	0.40	29.50
1 2006	0	Single Family	23 %	23%	1,108.9	2,250	1,047	642	20	1	1	0.14	0	142.25	0.97	1.89	7.34
1 2007		Single Family	55%	55%	1,372.8	2,250	1,011	620	50		0 0	0.10	0 0	171.10	0.80	1.57	8.82
1 2009	Ceiling R-11 to R-39 Insulation (Elec baseboard neat + Koom AC) Ceiling R-11 to R-49 Insulation (Elec baseboard heat + Room AC)	Single Family	17%	17%	1.108.9	2.250	1,859	1,162	20 20	٠.	0 0	0.10	0 0	437.51	0.37	0.73	22.56
1 2010		Single Family	7%	7%	653.4	2,250	2,091	1,282	20	1	1	0.23	0	636.73	0.22	0.42	32.8
1 2011	Ceiling R-19 to R-49 Insulation (Elec baseboard heat + Room AC)	Single Family	%6	%6	917.1	2,250	2,053	1,259	20	1	1	0.15	0	720.68	0.19	0.37	37.17



	DSM ASSYST SUMMARY Measure	IRY III Monetons	Building	Energy Savings	Peak Reduction	Total Costs/	Base	<u>.</u>	Peak Watts/		Technical Potential	System al Peak Tech. al Potential	System Second Peak Tech. Potential	of Conserved Energy	c Levelized Cos of Avoided Peak Capacit	Resource Cost Test	Par	U
Company Comp			Single Family	51%	51%	2,591.8	2,273	1,118	Housenoid 685			0	0.13	0 0	346.45			17.87
No.	201		Single Family	4%	4%	559.5	2,259	2,164	1,327	25	П	1	0.19	1	828.82			47
The control of the co	201		Single Family	36%	36%	563.8	2,594	1,652	1,013	20	4 -	2 0	0.61	0 0	92.42		2.90	4.77
Statistical Color Statistics (201		Single Family	7%2	7%	1,403.7	2,430	2.153	1,100	20 20	- C	0 0	0.07	0	1.422.59	0.10	0.19	73
The control of the co	201		Single Family	17%	17%	835.0	2,250	1,874	1,149	20		0	0.12	0	342.82	0.40	0.78	17
Note:	201		Single Family	2%	7%	478.5	2,286	2,120	1,299	15	m I	2	0.48	0	443.40	0.25	0.50	22.87
Fig. 10 Fig. 10 Fig. 12 Fig.	201			14%	14%	169.9	2,337	2,014	1,234	==	in d	mu	0.86	0 0	81.16	1.09	2.15	4. n
From the sequence of the interaction of the sequence of the se	202			14%	14%	75.0	2,333	2,058	1,126	10	y 4	n m	0.70	0	34.70	2.36	4.66	ń ≓
Progression of the control of the	202.		Single Family	4%	4%	27.8	2,284	2,203	1,351	20	0	0	0.03	0	53.22	2.59	5.04	2.
1965 1965	202		Single Family	%0	%0	496.2	2,258	2,247	1,377	15	0	0	0.01	4	6,919.61	0.02	0.03	326
10005 State Stat	202		Single Family	3%	3%	639.5	2,253	2,187	1,340	10	(⊣ (0.15		1,490.60	0.05	0.11	76
Figure Control Con	202			25%	25%	3,188.6	2,368	1,776	1,089	20	m <	7 7	0.58	0	831.13	0.17	0.32	42
Proceedings Process	202,			18%	18%	401.5	2,556	2,105	1,290	20	5	1	0.35	0	137.55	1.00	1.95	7.09
Heave the first control first control first control single first votal	202		Single Family	100%	100%	335.2	2,250	0	0	4	19	12	3.25	0	22.99	1.58	3.18	1.19
Courage of the activation (Rec Cortred from, cost off) groups Front, as seed of the activation (Rec Cortred from, cost) groups Front, as seed of the activation (Rec Cortred from, cost) groups Front, as seed of the activation (Rec Cortred from, cost) groups Front, as seed of the activation (Rec Cortred from, cost) groups Front, as seed of the activation (Rec Cortred from, cost) groups Front, as a seed of the activation (Rec Cortred from, cost) groups Front, as a seed of the activation (Rec Cortred from, cost) groups Front, as a seed of the activation (Rec Cortred from, cost) groups Front, as a seed of the activation (Rec Cortred from, cost) groups Front, as a seed of the activation (Rec Cortred from, cost) groups Front, as a seed of the activation (Rec Cortred from, cost) groups Front, as a seed of the activation (Rec Cortred from, cost) groups Front, as a seed of the activation (Rec Cortred from, cost) groups Front, as a seed of the activation (Rec Cortred from, cost) groups Front, as a seed of the activation (Rec Cortred from, cost) groups Front, as a seed of the activation (Rec Cortred from, cost) groups Front, as a seed of the activation (Rec Cortred from, cost) groups Front, as a seed of the activation (Rec Cortred from, cost) groups Front, as a seed of the activation (Rec Cortred from, cost) groups Front, as a seed of the activation (Rec Cortred from, cost) groups Front, as a seed of the activation (Rec Cortred from, cost) groups Front, as a seed of the activation (Rec Cortred from, cost) groups Front, as a seed of the activation (Rec Cortred from, cost) groups Front, as a seed of the activation (Rec Cortred from, cost) groups Front, as a seed of the activation (Rec Cortred from, cost) groups Front, as a seed of the activation (Rec Cortred from, cost) groups Front, as a seed of the activation (Rec Cortred from, cost) groups Front, as a seed of the activation (Rec Cortred from, cost) groups Front, as a seed of the activation (Rec Cortred from, cost) groups Front, as a seed of the activation (Rec Cortred fro	210			%0	%0	2,869.0	4,360	4,360	2,582	15	0 0	0 +	0.00	N/A	A/A	Α, Υ Α,	N/A	z,
Consider to the State Institution (Control From event) Stage France 1 (1974) 1879 1879 1879 1879 1879 1879 1879 1879	210.			40%	40%	9.256.0	4,360	2,577	1,526	14	7 0	10	0.00	0	828.76	0.11	0.26	4. 4.
Claiming Not the Polymanne (The Central First, 1996) 1,145.4 4, 1949 1,145.4 4, 1949 1,145.1 4	210.			18%	18%	2,407.6	4,360	3,576	2,118	20	0	0	0.00	0	490.02	0.25	0.57	24
Complete Line Service From Complete Line Service	210		Single Family	18%	18%	3,104.4	4,360	3,561	2,109	20	0	0	0.00	0	619.91	0.19	0.45	30
Coming 8, 10 to 85 attained titles Certain Front, or coad) Single Franty 28, 8 2, 2014 4 2014 2 201	210		Single Family	4%	4%	2,407.6	4,360	4,195	2,485	50 20	0 0	0 0	0.00		2,329.09	0.05	0.12	116
Figure 10 Figure 10 Figure 11 Figure 12 Figu	210		Single Family	%6	2%	2,104.4	4,360	4,180	2,476	20 20	0 0	0 0	0.00	7 8	5,716.87	0.04	0.10	287
Foreign Convergion Control (1997) Foreign Convergion Convergio	210		Single Family	2%	2%	3,104.4	4,360	4,278	2,534	20	0	0	0.00	4	6,020.03	0.02	0.05	299
Proceedings Procession Pr	210		Single Family	27%	77%	2,494.7	4,428	1,038	614	20	0	0	0.00	0	117.51	1.03	2.36	.5
Weak of the final control of	211		Single Family	73%	73%	1,000.6	5,956	1,591	942	20 02		H C	0.00	0 0	36.61	3.29	7.58	i r
Will Blow in Fig. 01 Lindadon (like Cartral Furn, no cos) Single Farmy 34% 34% 185.2 4.340 2.840 1.341 1.450 1.340 1.3	211.		Single Family	51%	51%	2,227.4	5,361	2,625	1,554	20	0	0	0.00	0	130.05	0.93	2.13	9
And the control of th	211		Single Family	34%	34%	1,852.2	4,360	2,890	1,711	20	0	0	0.00	0	201.13	0.60	1.38	10
Heat Reconsoly Wentliner (Hiller Central Furn, no.cod) Single Family 13% 19% 1,700.04 427 3,099 1,1533 20 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	211		Single Family	14%	14%	275.8	5,005	4,327	2,562	20	0 0	0 0	0.00	0 0	130 59	1.86	1 98	3.23
Sant Thermotack (filed Cartner Floring Cartner	2110		Single Family	30%	30%	1,700.0	4,427	3,099	1,835	20) -	0.00	0	204.45	0.59	1.36	9 9
This contribution with the control for the c	211			13%	13%	169.0	4,514	3,946	2,337	12	0	0	0.00	0	47.54	1.77	4.07	2.37
Door Worksherwindting (Birch Charled Franch (17 Min 2004) 774, 375, 4499 74, 27, 4594 457, 4594	211			29%	29%	75.0	4,975	3,532	2,091	11 1	- c	- 0	0.00	0 0	51.34	1.53	3.52	. c
Third DNA County Carmen State Clear for First System (1974) Post of the control of the contr	2120		Single Family	7%2	7%2	37.5	4,499	4,173	2,471	, rv	0	0	0.00	0	18.35	2.23	5.05	i o
Lange Lang	212.			%0	%0	375.7	4,374	4,354	2,578	20	0	0	0.00	2	3,005.02	0.04	0.09	149
Uniforcy Object (Table Fronting) Single Franting (See Franting) Single Franting (See Franting	300		Single Family	%0	%0	395.3	287	287	65	32	0 0	0 (0.00	N/A	N/A	N/A	N/A	z :
Base theretory (100 for single Family 99, 194, 1946, 2 156, 1946, 1944, 19	30.		Single Family	44%	44%	114.0	787	787	45	32	0 6	o 14	0.00	Α/N	N/A 256.18	0.00	3.09	N/A
Michael Charles Charles (Paris) Single Earny 46% 46% 1280.3 15% 14.24 15% 14.24 15% 14.24 15% 14.24 15% 14.24 15% 14.24 14.	301		Single Family	%0	%0	133.5	155	155	32	32	0	0	0.00	N/A	N/A	N/A	N/A	χ
Motion/Occupance Serior (Inchical PD, 150 Rividay) Single Family 46% 46% 1,280.3 155 84 19 20 4 1 0.45 2 7,503.83 0.04 Motion/Occupance Serior (Inchical PD, 150 Rividay) Single Family 9% 96.8 103 2 1 1 6.45 2 7,503.83 0.04 Motion/Occupance Serior (Inchical PD, 150 Rividay) Single Family 9% 96.8 4.03 2 0	301		Single Family	15%	15%	1,463.2	156	133	30	20	0	0	90.0	9	26,101.89	0.01	0.03	497
Design Francis 25 mode	301		Single Family	46%	46%	1,280.3	155	84	19	20	4 ţ	⊣ ;	0.45	2 .	7,503.83	0.04	0.10	143
The Proposition of the Charactery Single Family 15% 15% 15% 15% 15% 11% 10% 11% 10% 11% 10% 11% 10% 11% 10% 11% 10% 11%	302(Single Family	%0	%0	86.8	403	403	91	32) O	0	0.00	N/A	8, 100.32 N/A	N/A	N/A	i Z
Motion/Cocquence Service (trace) (consider Family 129%) 64% 46% 46% 46% 48% 83.2.6 4.03 217 49 49 20 11 2 1.18 0 1,875.40	302		Single Family	15%	15%	951.5	406	345	78	20	1	0	0.15	н	6,525.47	0.04	0.11	124
Decided State Color Colo	302		Single Family	46%	46%	832.6	403	217	49	20	10	2	1.18	0 0	1,875.96	0.14	0.39	32
Timers (base interior LED, 6 has/day) Single Family (as a finite from the formation of the family (as a finite from the family (bound of the family (as a finite from the family (a	303(Single Family	%0%	%0	81.4	755	755	171	16	0	0	0.00	N/A	2,040.08 N/A	0.15 A/A	N/A	ς z
Motion/Consoline Service (LE), 6 Insyleday) Single Family Si	303		Single Family	15%	15%	892.2	760	646	147	20	2	1	0.28		3,262.74	0.08	0.22	62
Deciding State Color Col	303		Single Family	46%	46%	780.6	755	408	92	50	19	4.	2.21	0 0	937.98	0.28	0.77	17
Timers (base exterior LED lighting) Single Family 13% 13% 149.0 40 35 8 20 0 0.01 3 12,396.80 0.02 Motton/Occupance Servetior LED lighting) Single Family 3% 3% 13% 42 29 3 1 0.00 1 4,395.80 0.00 Base Refrigerator Servetior LED lighting) Single Family 0% 0% 1,872 1,873 187 1 0	303		Single Family	% AS 0	%65 0%0	0.0	39	39	113	16	777	51	0.00	o &	1,020.04 N/A	0.26 N/A	0.71 N/A	ę, s
Motion/Occupance Service (Deservicing Emily) Single Family 37% 30% 30% 103.3 42 20 5 1 0.62 1 4,305.02 0.06 Protoccula Protocular Protocul	304		Single Family	13%	13%	149.0	40	32	00	20	0	0	0.01	m	12,396.80	0.02	0.06	236
Base Refrigerator, Standard 2014 Single Family 19% 13% 47.7 40.0 35.8 8 0.00 0.00 1.00 1.55.5 0.7 1.55.5 0.00 1.0	304		Single Family	30%	30%	130.3	45	59	7	20	2	П	0.62	1	4,305.02	0.06	0.17	82
Refrigerator (Finety Start) Single Family 10%	304		Single Family	13%	13%	0.0	1.873	1.873	8 19	20	m c	н С	0.30	I N/A	3,659.43 N/A	0.07 N/A	0.20 N/A	69.81 N/A
Refrigerator (CET Net 2) Single Family 15% 15% 1,91 1,61 140 18 271 23 38.20 0	400		Single Family	10%	10%	106.9	1,972	1,775	153	18	109	0 6	15.42	0	595.85	0.98	2.99	4.
Efficient Refrigerator (2029) Single Family 10% 10% 1,001 1,501 1,501 138 18 10 10 0.00 0.04 0.	400		Single Family	15%	15%	213.7	1,916	1,629	140	18	271	23	38.20	0	817.47	0.72	2.18	5.92
Super-Efficient Refrigerator (2029) Single Family 15% 15% 137 1,601 1,360 117 18 26 23 37.54 0 978.00 0.60 BaseScend Methogeator (Sandard 2014) Single Family 10% 0% 0% 0.0 1,242 0 0 0 0.0 0<	410		Single Family	%O	10%	106 9	1,601	1,601	138	18	0 161	0 1	0.00	W/N	N/A 726.76	4/2 8/2	N/A 2 45	Z u
Base Second Refrigerator, Standard 2014 Single Family 0% 0% 1,242 1,242 107 18 0 0 00 0<	410.		Single Family	15%	15%	213.7	1,601	1,360	117	18	266	23	37.54	0	978.80	0.60	1.82	. 7.
2nd Refrigerator Recycling Single Family 100% 101% 1,42 0 0 8 447 38 63.06 0 124.85 2.42 Base Freezer Standard 2014 Single Family 0% 0% 0,0 1,138 10 0 0 0,00 N/A N/A Freezer (Ekrety Stan) Single Family 0% 0% 0,0 1,133 96 11 42 4 5,98 0 379,93 1.05 Base Freezer, Standard 2029 Single Family 0% 0,0 1,041 90 11 0 0 0,00 N/A N/A N/A	420		Single Family	%0	%0	0.0	1,242	1,242	107	18	0	0	00.00	N/A	N/A	N/A	N/A	z
Dase Freeze, Standard 2014 5 104 6 105 11 0 0 0.00 N/A N/A N/A N/A Single Family 0% 0% 0.0 1,041 1,041 90 11 0 0 0.00 N/A N/A N/A N/A Base Freezer, Standard 2029 Single Family 0% 0% 0.0 1,041 1,041 90 11 0 0 0.00 N/A N/A N/A N/A N/A	420		Single Family	100%	100%	141.1	1,242	0 ?	0 ,	ω;	447	38	63.06	0	124.85	2.42	7.69	0 :
Base Freezer, Standard 2029 Single Family 70% 0% 0.0 1,041 1,041 90 11 0 0 0.00 N/A N/A N/A	430		Single Family Single Family	10%	10%	0.0	1,218	1,218	105	==	0 4	0 4	0.00	∀ ⊂	N/A 379 93	N/A	N/A	N/A
	440.		Single Family	ì		i								,				i



Measure		Building	Energy Savings	Peak Reduction	Total Costs/	Base	<u>.</u>	Peak Watts/	Service	Technical Potential	System Peak Tech. Potential	System Second Peak Tech. Potential	Levelized Cost of Conserved Energy	evelized Cos of Avoided Peak Capacit	Total Resource Cost Test	Participant Toot	Custome It Payback
	Base Second Freezer, Standard 2014	Single Family	0%	%0	0.0	1,555	1,555	134	11	0	0	0.00	N/A	N/A		N/A	Ž 🖹
4501	2nd Freezer Recyding	Single Family	100%	100%	141.1	1,555	0	0 [ω ;	25	7 5	3.56	0	99.77		9.62	0.7
5000	base Clothes Washer, 2018 Standard Front Load (1MEF 1.84 / 1WF 4.7) Clothes Washer, FNFRGY STAR (1MFF 2.07 / 1WF 4.2)	Single Family	34%	34%	213.7	530	352	27	1 1	115	0 2	15.50	W/W	1.927.87		1,13	≥ 6
5100	Base Clothes Dryer, CEF 3.73	Single Family	%0	%0	0.0	124	124	7	12	0	0	0.00	N/A	N/A		N/A	ž
5101	Clothes Dryer, CEF 3.93 ENERGY STAR	Single Family	23%	23%	158.9	130	66	9	16	24	1	3.23	0	8,386.55		0.29	41.
5102	Clothes Dryer, CEF 4.30 CEE Tier 2	Single Family	30%	30%	291.1	127	83	ıo ₹	16	34	7 7	4.57		12,202.12		0.20	60.
5200	Base Dishwasher, Standard 2013 (<= 307 kWh)	Single ramily	%74	%0%	0.0	274	274	73	13	g 0	n 0	0.00	N/A	12,736.49 N/A		0.19 N/A	έŠ
5201	Dishwasher, ENERGY STAR (<= 270 kWh)	Single Family	4%	4%	160.3	275	264	22	13	00	1	1.05	П	16,997.81		0.09	118.
2300	Base 2-speed Pool Pump (ROB)	Single Family	%0	%0	0.0	2,010	2,010	101	10	0	0	0.00	N/A	N/A		N/A	Ž
5301	PV-Powered Pool Pumps ROB	Single Family	%86	%86	3,119.9	2,010	50	m [01 5	170	o (34.60	0 0	2,999.85		0.66	12.
5302	Variable-Speed Pool Pump (<1 hp) ROB Rece Exhaust fan 3.1 CEM/W <2.0 conse (quiet) ASHDAE 62.2	Single Family	36%	36%	217.0	2,073	1,32/	11	010	65 c	m c	12.07	0 8	548.22		3.61	Z.
5401	Exhaust fan, 8.3 CFM/W, <2.0 sones (quiet), ASHRAE 62.2	Single Family	63%	63%	22.0	147	55	2 5	01	7 0	9	9.21	0	272.38		4.38	1.9
0009	Base LED TV	Single Family	%0	%0	0.0	392	392	30	7	0	0	0.00	N/A	N/A		N/A	Š.
1009	Energy Star LED TV	Single Family	%09	%09	10.9	409	164	13	7	148	11	19.43	0	54.49		17.57	0.3
6002	Plug Load Controls - Smart Power Strip (base LED TV)	Single Family	2%	2%	67.8	393	384	30	4 1	9 0	0 0	0.49	1	13,779.11		0.06	28.
6100	Base LCD TV	Single Family	81 %	91%	0.0	21/	21/	7	, ,	> 5	0 6	0.00	N/N	N/A		17 86	≥ ~
6102	Plua Load Controls - Smart Power Strip (base LCD TV)	Single Family	2%	2%	59.5	218	212	16	. 4	-	0	0.11	> ∺	21.816.16		0.04	92.0
6200		Single Family	%0	%0	0.0	642	642	49	7	0	0	0.00	N/A	N/A		N/A	Š
6201		Single Family	%6	%6	8.7	650	589	45	7	89	П	1.06	0	176.72		5.45	1.1
6202	(base Other TV)	Single Family	2%	2%	54.3	643	628	49	4	2	0	0.19	0	6,733.04		0.13	28.
6300	Base Set-Top Box	Single Family	%0	%0	0.0	356	356	27	<u> </u>	0 0	0 0	0.00	Α/N	Z Z		A/A	2 2
6501	Base Desktop PC Energy Star Desktop PC	Single Family	13%	13%	1.3	286	248	2 2	^ ^	- <u>1</u>	0 =	0.00	¥/N	38.49		N/A 23.05	2 0
6502	Plug Load Controls - Smart Power Strip (base Desktop PC)	Single Family	31%	20%	32.5	285	197	19	4	37	7 7	3.03	0	636.09		1.29	2.9
0099	Base Laptop PC	Single Family	%0	%0	0.0	193	193	16	7	0	0	0.00	N/A	N/A		N/A	Š
6601	Energy Star Laptop PC	Single Family	18%	18%	1.9	197	162	13	7	56	7 0	3.26	0	61.40		14.45	0.4
6701	Base Monitor/ Display Friency Star Monitor	Single Family	%6	%2	2.1	259	239	0 02		0 0	0 0	0.00	W/W	190.32		N/A 4.66	≥ ⊊
7000	Base Water Heater (40 gal), Federal Standard EF 0.95	Single Family	%0	%0	0.0	3,110	3,110	988	15	0	0	0.00	N/A	N/A		N/A	έž
7001		Single Family	12%	12%	961.8	3,119	2,740	780	20	196	26	18.45	0	844.15		0.68	20
7002	Star	Single Family	26%	29%	1,068.7	3,216	1,330	379	0 ;	944	269	88.87	0 0	188.19		1.85	4.
7003	Solar Domestic Water Heating DHW Tank Wran	Single Family	30%	3%	4,6//.8	3,121	3 029	14b 862	Cl r	1,378	392	129.67	0 0	159 97		0.80	. 14.
7005	DIN WIAD	Single railiny	1%	1%	73.9	3,129	3,029	876	υţ	19	10	1 87	0 0	222.06		2 14	0 10
2002	Hot water turndown 5 degrees	Single Family	%9	%9	10.0	3,110	2,936	836	_	17	o ro	1.62	0	19.07		13.57	0.4
7007		Single Family	11%	11%	10.0	3,110	2,780	792	7	47	13	4.39	0	10.08		25.69	0.2
2008		Single Family	15%	15%	10.0	3,110	2,637	751	7	17	ın	1.57	0	7.03		36.84	0.1
7009		Single Family	19%	19%	10.0	3,110	2,513	716		0 0	2 2	0.79	0 0	5.56		46.54	
7010	Finance Star CW CFF Tier 2 (MFF=2 0)	Single Family	1%	1%	87.8	3,110	3.091	880	14	13	4	1.18	0 0	934.07	0.67	0.48	22.
7012	Energy Star Dishwasher (EF=0.72)	Single Family	%0	%0	160.3	3,111	3,103	884	13	4		0.35	2 0	7,132.11	0.02	0.06	170.
7013	Faucent Aerators	Single Family	%6	%6	32.7	3,198	2,923	832	6	132	38	12.46	0	39,49	2.97	8.10	0.5
7014		Single Family	2%	2%	49.8	3,228	3,059	871	10	36	10	3.36	0	98.20	1.30	3.55	2.3
8000	Base Electric Vehicle Level 1 Charger	Single Family	%0	%0	0.0	897	897	93	10	0 0	0 0	0.00	N/A	N/A	A/N	A/A	Σ'n
8002	Jen	Single Family	2%		327.0	899	988	9	9 9	0 0	0 0	0.00	9 0	198 784 44	0.0	0.04	190
8100	Base Electric Vehicle Level 2 Charger	Single Family	%0	%0	0.0	1,213	1,213	98	101	0	0	0.00	N/A	N/A	N/A	N/A	Ž
8101	Energy Star Electric Vehicle Level 2 Charger	Single Family	1%	1%	218.0	1,216	1,199	82	10	0	0	0.01	1	17,286.66	0.02	0.08	102.
8102	Smart (Networked) Electric Vehicle Level 2 Charger	Single Family	2%	%0	327.0	1,217	1,196	98	10	1	0	0.00	1	129,563.72	0.02	0.07	124
0006	Base Miscellaneous	Single Family	%0	%0	0.0	1,227	1,227	102	10	0 0	0 0	0.00	Α/N	Α Ś	V < X	A/A	2 2
9900	Indirect Feedback (Home French Senorts, Onower)	Single Family	2%	%2	0.6	15.047	14.821	3,005		248	0 65	0.00	۲ ۲ ۲	19.12	1 33	3.07	≥ °
1000	Base Central AC, SEER2 14.3 (non-electric heat)	Multi-Family	%0	%0	0.0	0	0	0	15	0	0	0.00	N/A	N/A	N/A	N/A	ź
1100	Base Room AC, CEER 10.9 (non-electric heat)	Multi-Family	%0	%0	0.0	922	922	0	6	0	0	0.00	N/A	N/A	N/A	N/A	Š.
1101	Energy Star Room Air Conditioner - CEER 12 (RAC)	Multi-Family	8%	8%	63.5	926	851	0 0	σ,	0,	0 (0.31	0,	A/A	0.75	1.15	6.¢
1102	Ductless mini-split heat pump SEER 19.0/HSPF 9.4 (RAC)	Multi-Family	37%	37%	1,852.7	922	585	0 0	16	н,	0 0	1.09	-	Α Ś	0.20	0.27	43.
1104	Courses Illin-Split fleat pullip SEEN 22.0/113F110.0 (NAC) Ceiling R-0 to R-38 Insulation (RAC)	Multi-Family	19%	19%	696.0	922	250	o c	20	- C	0 0	0.02	- C	X \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	0.19	0.20	32
1105	Ceiling R-0 to R-49 Insulation (RAC)	Multi-Family	19%	19%	861.6	922	747	0	20	0	0	0.02	0	N/A	0.26	0.35	39.
1106	Ceiling R-11 to R-38 Insulaton (RAC)	Multi-Family	4%	4%	530.5	922	882	0	20	0	0	0,02		N/A	0.09	0.12	112.
1107	Ceiling R-11 to R-49 Insulation (RAC)	Multi-Family	2%	2%	0.969	922	880	0	20	0	0	0.01	2	N/A	0.08	0.10	132.
1108	Ceiling R-19 to R-38 Insulation (RAC)	Multi-Family	2%	2%	410.1	922	902	0	20	0	0	0.03	2	N/A	0.05	0.07	188.
1109	Ceiling R-19 to R-49 Insulation (RAC)	Multi-Family	2%	2%	575.6	922	901	0 (50	0	0	0.02	m	N/A	0.05	0.07	212.
1110	Roof deck insulation, R-19 (RAC)	Multi-Family	19%	19%	1.626.7	926	753										75
SIII	TAN DESCRIPTION OF THE PROPERTY OF THE PROPERT	Manager of the last of the con-	20.00	70110	* 4 0 4 4	026	007	0 0	20	> (0 0	0.00	⊣ (A &	0.14	0.18	2

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Resid	entia	Residential Electric Existing Construction																
DSM ASSYST SUMMARY	r SUMMAR)	λ	Building	Energy Savings	Peak Reduction	Total Costs/	Base				Technical Potential	System Peak Tech. Potential	System Second Peak Tech. Potential	Levelized Cost of Conserved Energy	evelized Cos of Avoided Peak Capacit	Total Resource Cost Test	Pa	Customer t Payback
Segment	Number 1117	r Measure Commehensive Shell Air Sealing - Inf Reduction (RAC)	Type Multi-Family	Fraction 11%	Fraction 11%	Household	UEC 980		<u> </u>	Life (yrs)	GWH	₩	MW 0	\$/kwH	\$/kW		Test 0.50	(Years)
	1118	Self Install Weatherization (RAC)	Multi-Family	11%	11%	38.4	978	872	0	10	0	0	0.22	0	N/A	1.95		2.88
	1120	Exterior Door Replacement (RAC) ENFRGY STAR Ceiling Eans (RAC)	Multi-Family Multi-Family	4%	4%	20.8	940	906	0 0	20	0 0	0 0	0.01	0 0	N/A	2.11		4.88
	1122	Window Film (RAC)	Multi-Family	%9	%9	351.9	925	869	0	10	0	0	0.15	1 11	N/A	0.11		49.55
	1123	Windows - Adding Storm Windows (RAC)	Multi-Family	25%	25%	1,754.5	971	728	0	20	0	0	0.28	0	N/A	0.18		57.53
	1124	WINDOWS - Single Pane Clear to Energy Star Double Pane (RAC) WINDOWS - Double-Glazed Clear to Energy Star (RAC)	Multi-Family Multi-Family	23%	25%	381.9	922 1.048	692 811	0 0	50 20	0 0	0 0	0.33	0 0	∀ ₹	1.39		7.42
	1126	Recycling of non-efficient window AC unit (RAC)	Multi-Family	100%	100%	167.6		0	0	4	2	0	1.89	0	N/A	1.47		1.45
	1200	Base Dehumidifier (40 pints/day, 1.5 liters/kWh)	Multi-Family	0%	%0	100.0		1,243	0 0	12	0 +	0 0	0.00	N/A	N/A	A/A		N/A
- T	1300	LU% better than Energy Star Denumignier KOB (35-45 pints/day) Rase Air Cleaner PM 2 5 CADR = 200 CADR/Watt 1 9	Multi-Family	%OT	10% 0	0.0		316	0 1	77 6	- 0	0 0	0.91	0 N	Α Δ Δ	N/A		0.63 N/A
٠.	1301	Energy Star Air Cleaner, PM 2.5 CADR = 200, CADR/Watt 2.9	Multi-Family	%99	%99	56.7		146	7	n 0	^	0	1.52	0	368.44	1.61		1.56
1	1400	Base Furnace Fan - Furnace & CAC	Multi-Family	%0	%0	0.0		459	272	18	0	0	00.00	N/A	N/A	N/A		N/A
	1401	ECM Furnace Fan (variable speed motor) Base Air-Course Heat Dump, CEED 3.14.3/HCDE3.7.5 w/Aux Ctrip Heat	Multi-Family	20%	20%	2,100.0		255	151	18	01 0	9 0	0.00	1 1	1,315.74	0.09 N/N	0.20 N/A	65.56
٠.	1501	base Air-Source near rump, SEEKZ 14.3/nSPTZ 7.5 W/Aux Strip near Heat nump upgrade to (16 SEER, 9.2 HSPF) (HP heat/cool)	Multi-Family	%%	%8	20.6		3,346	2.050	t 12	- 82	- 11	3.05	۲ o	36.70	3.07	N/A	1.89
	1502	Heat pump upgrade to (18 SEER, 10 HSPF) (HP heat/cool)	Multi-Family	13%	13%	220.0		3,088	1,893	15	41	25	6.92	0	74.18	1.52	2.97	3.83
1	1505	Heat pump tune up (HP heat/cool)	Multi-Family	2%	2%	95.7		3,529	2,163	4	2	1	0.25	0	207.42	0.18	0.35	10.70
	1506	Ceiling R-0 to R-38 Insulation (HP heat/cool)	Multi-Family	23%	53%	696.0		1,650	1,011	20	ro 4	mı	0.92	0 0	56.64	2.43	4.74	2.92
	1508	Ceiling R-U to R-49 Insulation (HP heat/cool) Ceiling R-11 to R-38 Insulation (HP heat/cool)	Multi-Family	16%	16%	530.5		2.990	1.832	20 20	4 ru	v 60	0.86	0 0	147.07	2.02	3.94	7.58
٠.	1509	Ceiling R-11 to R-49 Insulation (HP heat/cool)	Multi-Family	17%	17%	0.969		2,930	1,796	20	4	2 0	0.64	0	174.20	0.79	1.54	8.98
1	1510	Ceiling R-19 to R-38 Insulation (HP heat/cool)	Multi-Family	7%	7%	410.1		3,297	2,021	20	6	9	1.53	0	253.52	0.54	1.06	13.07
	1511	Ceiling R-19 to R-49 Insulation (HP heat/cool)	Multi-Family	%6	%6	575.6		3,237	1,984	20	9 1	m 4	0.95	0 0	286.95	0.48	0.93	14.80
٠.	1517	Roof deck insulation, R-19 (nP neat/cool) Wall Blow-in R-0 to R-13 Insulation (HP heat/cool)	Multi-Family	17%	17%	1,626.7		2,034	1.810	20 20	\ L	t w	0.77	0 0	383.59	0.36	0.39	19.78
	1518	Cool Roof (HP heat/cool)	Multi-Family	%6	%6	300.3		3,292	2,018	15	23	14	3.85	0	141.99	0.79	1.55	7.32
	1519	Duct Insulation (HP heat/cool)	Multi-Family	%8	8%	304.0		3,531	2,164	20	;	⊣ ;	0.23	0 (151.31	0.91	1.77	7.80
	1520	Duct Testing and Sealing (HP heat/cool) Smart Thermostat (HP heat/cool)	Multi-Family Multi-Family	8%	8%	189.8		3,362	2,061	11	33	10	5.62	0 0	43.17	2.05	4.04	2.23
	1522	Comprehensive Shell Air Sealing - Inf. Reduction (HP heat/cool)	Multi-Family	28%	28%	247.5		3,001	1,839	: ::	49	30	8.24	0	32.91	2.69	5.31	1.70
-	1523	Self Install Weatherization (HP heat/cool)	Multi-Family	14%	14%	38.4		3,295	2,020	10	23	14	3.79	0	11.10	7.37	14.58	0.57
	1525	Exterior Door Replacement (HP heat/cool)	Multi-Family	2%	2%	20.8		3,515	2,155	20		0 0	0.09	0 +	49.15	2.80	5.46	2.53
	1527	CINERGE STAN CEILING Fails (TIT HEALT COU) Window Film (ASHP)	Multi-Family	4%	4%	351.9		3,412	2,092	10	- œ	o in	1.34	1 0	385.12	0.21	0.42	19.86
	1528	Windows - Adding Storm Windows (HP heat/cool)	Multi-Family	25%	25%	1,754.5		2,800	1,716	20	22	14	3.76	0	290.13	0.47	0.92	14.96
	1529	WINDOWS - Single Pane Clear to Energy Star Double Pane (ASHP)	Multi-Family	25%	25%	381.9		2,660	1,630	20	26	16	4.46	0	66.48	2.07	4.03	3.43
	1530	WINDOWS - Double-Glazed Clear to Energy Star (HP heat/cool)	Multi-Family	23%	23%	342.8		3,119	1,912	20	52	15	4.25	0 \$	58.19 N/A	2.37	4.61	3.00
	1700	Base Electric Furnace + Central AC (SEER 13.0)	Multi-Family	%0	%0	0.0		0	0	15	0 0	0	0.00	V/N	ΣŽ	(Ϋ́	X \ X
1	1800	Base Electric Furnace + Room AC (EER 9.7)	Multi-Family	%0	%0	0.0		1,845	1,131	15	0	0	0.00	N/A	N/A	N/A	N/A	N/A
	1900	Base Electric Baseboard Heating + Central AC (SEER 13.0)	Multi-Family	%0	%0	0.0		3,126	1,916	15	о г	0 (0.00	N/A	N/A	N/A	Υ Y Y Y	N/A
	1901	neat pump (16 SEEK, 9.2 hSPF) (Elec baseboard neat + Central AC) Heat pump (18 SEER, 10 HSPF) (Elec baseboard heat + Central AC)	Multi-Family	53%	53%	279.3		1,641	908	15	n w	n 4	1.00	0	26.22	4.87	8.41	1.35
-	1905	AC Maintenance and/or tune-up (baseboard heat + CAC)	Multi-Family	2%	2%	95.7		3,111	1,907	4	0	0	0.01	0	235.31	0.15	0.31	12.13
	1906	Ceiling R-0 to R-38 Insulation (Elec baseboard heat + Central AC)	Multi-Family	53%	53%	0.969		1,454	891	50	0 (0 (0.03	0 (64.26	2.14	4.17	3.31
	1908	Ceiling R-U to R-38 Insulation (Elec baseboard heat + Central AC) Ceiling R-11 to R-38 Insulaton (Elec baseboard heat + Central AC)	Multi-Family	55% 16%	16%	530.5		2.635	1.615	20 20	0 0	0 0	0.02	0 0	166.84	0.83	1.61	3.99
1	1909	Celling R-11 to R-49 Insulation (Elec baseboard heat + Central AC)	Multi-Family	17%	17%	0.969		2,582	1,583	20	0	0	0.02	0	197.62	0.70	1.36	10.19
	1910	Ceiling R-19 to R-38 Insulation (Elec baseboard heat + Central AC)	Multi-Family	7%	7%	410.1		2,906	1,781	20	0 0	0 (0.05	0 (287.61	0.48	0.93	14.83
	1911	Celling K-19 to K-49 insulation (Elec baseboard neat + Central AC) Roof deck insulation, R-19 (Elec baseboard heat + Central AC)	Multi-Family	76% 26%	26%	1.626.7		2,853	1,749	20 20	0 0	0 0	0.03	0 0	305.97	0.42	0.88	15.78
	1917	Wall Blow-in R-0 to R-13 Insulation (Elec baseboard heat + Central AC)	Multi-Family	17%	17%	459.4		2,604	1,596	20	0	0	0.03	0	135.76	1.01	1.98	7.00
1	1918	Cool Roof (baseboard heat + CAC)	Multi-Family	%6	%6	300.3		2,901	1,778	15	1	0	0.14	0	161.08	0.70	1.37	8.31
	1919	Duct Insulation (Elec baseboard heat + Central AC)	Multi-Family	%8	8%	304.0		3,112	1,908	20	0 0	0 0	0.01	0 0	170.38	0.81	1.57	8.79
	1920	Duct Testing and Sealing (Elec baseboard heat + Central AC) Smart Thermostat (Flec baseboard heat + Central AC)	Multi-Family Multi-Family	14%	14%	189.8		3,009	1,844	81 1	o -	o =	0.07	0 0	150.19	1.85	3.56	7.75
	1923	yrehensive Shell Air Sealing - Inf. Reduction (Elec baseboard heat + Centri		28%	28%	247.5	3,668	2,645	1,621	: ::	7 7		0.29	0	37.33	2.37	4.68	1.93
1	1924	Self Install Weatherization (Elec baseboard heat + Central AC)		14%	14%	38.4		2,905	1,780	10	1	0	0.14	0	12.59	6.50	12.86	0.65
	1926	Exterior Door Replacement (Elec baseboard heat + Central AC)	Multi-Family	4%	4%	20.8	3,185	3,073	1,884	20	0 0	0 0	0.01	0 -	28.62	4.81	9.37	1.48
	1927	Window Film (baseboard heat + CAC)	Multi-Family	4%	4%	351.9	3,132	3.008	1.844	CT 01	0 0	0 0	0.00	- 0	436.91	0.00	0.18	72.53
	1929	Windows - Adding Storm Windows (baseboard heat + CAC)		25%	25%	1,754.5	3,290	2,468	1,513	20	-	0	0.13	0	329.14	0.42	0.81	16.97
1	1930	DOWS - Single Pane Clear to Energy Star Double Pane (baseboard heat +		25%	25%	381.9	3,126	2,344	1,437	20		1	0.16	0	75.42	1.83	3.56	3.89
	1931)OWS - Double-Glazed Clear to Energy Star (Elec baseboard heat + Centri Base Florthic Baseboard Heating + Doom AC (EED 9.7)	Multi-Family	23%	23%	220.9	3,551	2,749	1,685	20	C	- 0	0.15	0 8	42.55 N/A	3.24 N/A	6.30 N/A	2.19
4 +4	2000	Heat pump (16 SEER, 9.2 HSPF) (Elec baseboard heat + Room AC)	Multi-Family	43%	43%	223.0	4,048	2,299	1,409	15	o m	5 0	0.46	0	19.68	5.73	11.21	1.01
	2002	Heat pump (18 SEER, 10 HSPF) (Elec baseboard heat + Room AC)	Multi-Family	46%	46%	279.3	4,048	2,167	1,328	15	m	2	0.50	0	22.91	4.92	9.62	1.18
4	2004	Duαless mini-split neat pump SEEK 19.0/HSPT 9.4 (KAC.)	Multi-Family	64 % 0%	444%	1,652.7	4,046	7,0,0	1,209	οT	ת	٥	7:3/	Þ	76.44.	0.02	1.00	7.40



Resid	ential	Residential Electric Existing Construction																
DSM ASSYS	DSM ASSYST SUMMARY											Work to N	Svetem Second	Levelized Cost	evelized Cos	Total		
	2			Energy	Peak	Total	9		Peak	Coming	Fechnical	Peak Tech.	Peak Tech.	of Conserved		Resource		Customer
Segment		Measure	Type	Fraction	Fraction	Household	DEC	UEC	_	Service Life (yrs)	GWH	MW	MW	\$/kwh	s/kW	(TRC)	Farticipant	(Years)
-1	2005	Ductless mini-split heat pump SEER 22.0/HSPF10.0 (RAC)	Multi-Family	22%	22%	2,425.5	4,048	1,826		16	10	9	1.77	0	168.47	0.70	ı	8.69
1	2006	Ceiling R-0 to R-38 Insulation (Elec baseboard heat + Room AC)	Multi-Family	53%	23%	0.969	4,048	1,883	1,154	20	0	0	0.07	0	49.62	2.78		2.56
1	2007	Ceiling R-0 to R-49 Insulation (Elec baseboard heat + Room AC)	Multi-Family	22%	22%	861.6	4,048	1,820		20	0	0	0.05	0	59.68	2.31		3.08
1	2008	Ceiling R-11 to R-38 Insulaton (Elec baseboard heat + Room AC)	Multi-Family	16%	16%	530.5	4,048	3,413		20	0	0	0.07	0	128.83	1.07		6.64
1	2009	Ceiling R-11 to R-49 Insulation (Elec baseboard heat + Room AC)	Multi-Family	17%	17%	0.969	4,048	3,344		20	0	0	0.05	0	152.60	0.90		7.87
1	2010	Ceiling R-19 to R-38 Insulation (Elec baseboard heat + Room AC)	Multi-Family	7%	7%	410.1	4,048	3,763		20	1	0	0.12	0	222.08	0.62		11.45
1	2011	Ceiling R-19 to R-49 Insulation (Elec baseboard heat + Room AC)	Multi-Family	%6	%6	575.6	4,048	3,695		20	0	0	0.08	0	251.36	0.55		12.96
1	2012	Roof deck insulation, R-19 (Elec baseboard heat + Room AC)	Multi-Family	76%	76%	1,626.7	4,069	3,007		20	1	0	0.09	0	236.26	0.58		12.18
1	2017	Wall Blow-in R-0 to R-13 Insulation (Elec baseboard heat + Room AC)	Multi-Family	17%	17%	459.4	4,048	3,372		20	0	0	90.0	0	104.83	1.31		5.41
1	2018	Cool Roof (baseboard heat + RAC)	Multi-Family	%6	%6	300.3	4,130	3,758		15	2	1	0.31	0	124.38	0.91		6.41
1	2019	Smart Thermostat (Elec baseboard heat + Room AC)	Multi-Family	14%	14%	142.4	4,205	3,624		11	т	7	0.45	0	37.82	2.34		1.95



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DSM ASSYST SUMMARY	SUM	MARY														
											System	System Second	Levelized Cost evelized Co:		Total	
				Energy	Peak	Total		Peak		Technical	Peak Tech.	Peak Tech.	of Conserved		Resource	
Mea	leasure		3 guilding	Savings R	Reduction	Costs/	Base	Watts/	Service	Potential	Potential	Potential	Energy	_	Cost Test F	articipant
Segment Number	mber	. Measure	Type F	raction	Fraction Fraction	Honsehold	UEC	-	Life (yrs)	ВWН	MW	MW	\$/kWH			Test
4 10	100) Base Code Home - IRC 2018 Single Fami	le Family	%0	%0	0.0	14,315 1	2,902	20	0	0	0.00	N/A	N/A		N/A
4 1(101	101 ode + 10% - Base Code HomSingle Fami	le Family	10%	10%	6.998	14,315 12,884	2,612	20	2	1	1.32	0			2.87



Profession	DSM ASSYST SUMMARY	ЈИМА RY			į					,			System Second	Levelized Cost	evelized Cos		
State Common Service (Common Service (Comm			Building		Reduction Fraction	Costs/	Base	- × ·		_			Peak lecn. Potential MW	or Conserved Energy	Peak Capacit	Cost Test	Par
Committee Comm			Office		%0	0.0	1.3		ı	18	0 \$	0 0	0.00	N/A	N/A		N/A
Color Colo	1 100.		Office		26%	0.1	1.1			14	F 9	7 7	1.54		28.84		9.44
Section (1997) Control Con	1 100		Office	61%	%69	0.3	111		п с	14	m 4		0.82		153.35	1.23	1.78
Seed to the piper, Intercent Character	1 100		Office	%9	3%	0.0	1.1		0.3	9		1 0	0.12		183.49		1.95
Note Property Control State Property C	1 100		Office	44%	19%	1.8	1.3		0.3	6 6	m r	0 0	0.32		2,567.14		0.20
Efficiency brought begins of the state of	1 105		Office	%0 0%	%0 %0	0.0	1.3		0.4	18	7 0	0 0	0:00		1,001.90 N/A		N/A
The proposed of the proposed	1 105		Office	75%	53%	0.4	1.1		0.1	18	27	10 0	4.12		245.14		2.16
The control of the co	1 110		Office	%9Z 26%	92%	0.0	1.2		0.3	18	15	O 6	0.00	0 A	N/A 112.47	N/A 2.25	3.83
Common Control (Linear District) Control (Linear Distr	1 110		Office	37%	45%	0.1	1.1		0.2	14	7	2	1.85	0	39.08	4.81	6.97
Heart to High Corner (sear 10)	1 110		Office	52%	59%	0.3	1.1		0.1	14	4 4	1 2	1.13	0 0	180.61	1.04	1.51
Beet then't (plating) conceived (plating) control (plating) and the plating) and the plating (plating) control (plating)	1 110		Office	%9	3%	0.0	11:		0.3	9	2 0	0 0	0.19	0	185.23	0.93	1.93
## Fig. 6	1 110		Office	44%	19%	1.8	1.3		0.3	6 ;	10 (п с	0.51	0 (2,591.53	0.09	0.19
Fig. Co. by post legacy (2) by the first part of the control of	1 115		Office	%c7 0%	%0 0	0.0	1.2	2 0	0.3	18	n 0	0 0	0.00	N/A	L,8/9.59 N/A	0.27 N/A	0.62 N/A
Note that the property of th	1 115		Office	%89	47%	0.4	1.1		0.2	18	39	7	5.98	. 0	274.97	1.10	1.92
Revert Lighting Corner (See LEU Total)	1 120		Office	43%	93%	0.0	9.0		0.2	18	0	0 6	0.00	ΑŅ	N/A	N/A	N/A
Base National Control (Series (Edwerd 17) 1979 197	1 120		Office	%9	3%	0.0	0.6		0.2	9	1 7	0	0.13	0	330.28	0.52	1.08
Part Continued State (See LE Divis) Original Property Origin	1 120		Office	44%	19%	1.8	0.7		0.2	6	4	0	0.36	П	4,620.85	0.05	0.11
Heat Helphane Uniting Rev. Company Rev. Rev. Rev. Rev. Rev. Rev. Rev. Rev.	1 120		Office	25%	%2	0.0	0.7		0.2	18	2 0	0 0	0.09	0 %	3,351.42 N/A	0.15 N/A	0.35
Highing control National (See Ell Dialy and Control Manual (See Ell Dial	1 122		Office	42%	32%	0.2	0.5	nm	0.1	15	34	7	5.74	0	407.25	0.62	1.06
Rest Care Light Care	1 122		Office	%9	3%	0.0	0.5	ı,	0.1	9	mı	0,	0.26	0,	375.32	0.46	0.95
Re Tibor Conjunct integral Service Screw-in, LED half-parted market, 2.295 Standard Contract of the Conjunct integral Service Screw-in, LED half-parted market, 2.295 Standard Contract of the Conjunct integral Service Screw-in, LED half-parted market, 2.295 Standard Contract of the Conjunct integral Service Screw-in, LED half-parted market, 2.295 Standard Contract of the Conjunct integral Service Screw-in, LED half-parted market, 2.295 Standard Contract of the Conjunct integral Service Screw-in, LED half-parted market, 2.295 Standard Contract Service Screw-in, LED half-parted market, LED half-parted market Service Screw-in, LED half-parted Screw-in, LED half-parted Screw-in, LED half-parted Screw-in, LED half-parted market Service Screw-in, LED half-parted Sc	1 122		Office	44% 25%	19%	0.3	0.6		0.7	10	· 4	- 0	0.17	т О	3,808.43	0.05	0.10
Resp. Large Larg	1 125		Office	%0	%0	0.0	9.0		0.2	18	0	0	0.00	N/A	N/A	N/A	N/A
REF TOCK & Drayley In Translate Secret (1) Profit Case (1) Pro	1 125		Office	22%	15%	4.0	0.6		0.1	18	o c	2 0	1.34	0 8	1,544.38	0.20 N/A	0.34
Base General Service Screw-In-Part	1 127		Office	22%	15%	0.0	0.5		0.1	18	17	o m	2.69	0	1,754.98	0.17	0.30
Base General Service Screw II, Integrated Transferred Service Screw II, Integrated Transferred Service Servi	1 130		Office	%0	%0	0.0	1.6		0.4	2	0 1	0	0.00	N/A	N/A	N/A	N/A
Experiency in experiency (laser 12)	1 130		Office	29%	33%	0.1	1.6		0.3		^ c	7 0	1.70	0 %	90.01 N/A	1.15 N/A	1.74
Base General Service Service (Tib Dulb) Office 9% 0.0 11 11 11 13 7 0 0 0 0 LED Serverin (Trobe LD) Office 10% 0.0 11 11 11 1 0	1 135		Office	73%	83%	0.1	8.4		0.2	7	32	o 01	8.70	0	12.23	8.46	12.77
Base General Service Secretion (1986 1974 197	1 140		Office	%0	%0	0.0	1.1		0.3	7	0	0	0.00	N/A	N/A	N/A	N/A
Base High Bay Lighting, All Dighting All D	1 140		Office	10%	11%	0.1	1.1		0.3		∞ c	7 0	1.97	0 %	385.41 N/A	0.27	0.41 N/A
Base High Bay Lighting, Flow Flow Flow Bay Lighting, Flow Flow Flow Bay Lighting, Flow Flow Bay Lighting, Flow Flow Bay Lighting, Lighti	1 142		Office	2%	2%	0.1	0.0		0.2	, _	·	0	0.36	1	2,445.86	0.04	0.06
High Bay Lettor (Base TS)	1 145		Office	%0	%0	0.0	2.7		0.7	18	0	0	0.00	N/A	N/A	N/A	N/A
High Bay LED Traffer (Base TS)	1 150		Office	%6E	0% 44%	0.0	F. F.		0.3	18	0 ^	0 -	0.00	A/A	36.78	N	N/A 7.41
Network Lighting Cortical (Base 15)	1 150		Office	47%	54%	0.1	1.3		0.2	14	ıκ		0.68	0	65.85	2.86	4.14
Base High Bay Lighting, Horighting Office 19% 19% 118	1 150		Office	%9	3%	0.0	1.3		0.3	9	0	0	0.04	0	161.38	1.07	2.21
Base High Bay Lighting, Fluorescent T5, Integrated market	1 150		Office	44% 25%	29%	D.3	c.1 4.1		0.3	. O.		0 0	0.10	0 0	1,637.52	0.11	0.72
High Bay Blacked Programmed LED Rixture	1 152		Office	%0	%0	0.0	1.3	1.3	0.3	18	0	0	0.00	N/A	N/A	N/A	N/A
High Performance Update Francisco Light Fr	1 152		Office	63%	47%	0.1	1.3	0.5	0.2	21	~ 0	⊣ 0	1.20	0 %	63.11	4.96	8.37
High Performance Lighting RRR - Combined Strategies (base high bay HID) Office 73% 55% 0.2 1.5 0.4 0.2 1.5 0.4 0.2 1.5 0.4 0.2 0.3	1 155		Office	63%	47%	0.0	L.5	0.5	0.7	18	2 0	0 0	0.33	W. 0	N/A 54.18	N/A 5.78	N/A 9.75
New York Highting Controls (Base High bay LED) Office 10% Office	1 155		Office	73%	22%	0.2	1.5	0.4	0.2	15	5	0	0.38	0	88.50	2.85	4.87
New North Hamilton (National Parker)	1 157		Office	0%	%0	0.0	0.5	0.5	0.1	18	0 +	0 0	0.00	N/A	N/A	S S	A/A
Base Clear List Standard Office 184 14 15 15 15 15 15 15 1	1 157		Office	25%	5%	0.3	0.6	0.4	0.1	10		0 0	0.03	10	4,161.22	0.12	0.28
EB sea Area Lighting Office S5% S5% O O O O O O O O O	1 160		Office	%0	%0	0.0	0.0	0.0	0.0	18	0	0	0.00	N/A	N/A	N/A	N/A
LED Outdoor Areal gighting (Base Outdoor HID)	1 160		Office	22%	22%	0.0	0.1	0.0	0.0	15	^ 0	7 0	1.62	0 %	83.91 N/A	2.54 N/A	3.87
ED outdoor lighting with bi-level controls (Base Outdoor HID) Office 80% 80% 0.6 5.1 4.7 0.9 0.1 1.8 3.6 4.6 16.42 0.0	1 165		Office	%89	%89	0.0	4.7	1.5	0.7	18	269	39	13.96	¥ 0	99.04	3.31	6.85
Outdoor Lighting Controls (Base Outdoor FLD)	1 165		Office	%08	%08	0.5	4.7	6.0	0.1	18	316	46	16.42	0	93.48	3.51	7.25
ED outdoor lighting with bl-level controls (Base Outdoor Incandescent) Office 15%	1 165		Office	16%	73%	9.0	5.1	E. 6		18	34	22	7.78	0 %	102.12	1.28	1.49
LED screew-in replacement (base Outdoor CFL)	1 170		Office	57%	57%	0.0	0.3	0.1		18	o io	0 =	0.24	0	1,822.29	0.18	0.37
Outdoor lighting controls (Base Outdoor Tincandescent) Office 16% 73% 0.6 0.4 0.3 0.0 18 1 0 0.16 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1	1 170		Office	30%	30%	0.0	0.3	0.2	0.0	7	2	0	0.13	0	198.71	0.78	1.64
LED outdoor lighting with bi-level controls (Base Outdoor Incandescent) Office 85% 85% 0.5 0.3 0.1 0.0 18 20 3 1.05 0.0 1.05 0.0 LED screw-in replacement (base Outdoor Incandescent) Office 75% 75% 0.0 0.3 0.1 0.0 7 18 3 0.92 0	1 170		Office	16%	73%	9.0	4.0	0.3	0.0	138	C	0 0	0.16	N/A	1,418.30 N/A	0.09 V/N	0.11 N/A
LED screw-in replacement (base Outdoor Incandescent) Office 75% 75% 0.0 0.3 0.1 0.0 7 18 3 0.92 0	1 175		Office	85%	85%	0.5	0.3	0.1	0.0	18	20	m	1.05	0	1,189.73	0.28	0.57
	1 175		Office	75%	75%	0.0	0.3	0.1	0.0	7	18	м	0.92	0	77.39	2.00	4.21



												0.040 0.070 0.070 0.010	\$/kWH 	\$/kW 1,380.83 N/A 2,127.45 N/A 200.43	(TRC) 0.09 N/A 0.06 N/A 1.44 0.32 0.15	0.11
Comparison Com		Outdoor Upting Controls (Base Outdoor Includescent) Base General Service Screwin, Outdoor ILDD bulb Outdoor Upting, Cortrols (Base Outdoor ILDD bulb Outdoor Upting, Controls (Base Outdoor ILDD bulb Outdoor Upting, Outdoor Bloorescent Tube Base Linear Upting, Outdoor Uten Tube Outdoor Upting Controls (Base Outdoor Fluorescent) Outdoor Upting Controls (Base Outdoor Fluorescent) Base Linear Upting, Outdoor Del Tube) Base Water-Cooled Centrifingal Chiller, Os Sk Witton, 500 tons Centrifugal Chiller, O.54 kWitton, 500 tons Colling/roof Insulation - Chiller Duct/Pepe Insulation - Chiller Base Dre Chiller Pumps and Towers Celling/roof Insulation - Chiller Duct/Pepe Insulation - Chiller Base Dre Chiller Pumps and Dout Pepe Insulation - Chiller With Committee Replaces Dry Bulb Economizer - Chiller Base Dry Fackaged System, Effe-10.3, 10 tons Dx Packaged System, Effe-10.3, 10 tons Colling/roof Insulation - DX Celling/roof Insulation - DX Celling/roof Insulation - DX Duct Testing/roof Insulation - DX Celling/roof Insulation - DX Centing/roof Insulation - DX Centing/r	Office	16% 16% 16% 16% 16% 16% 16% 16% 16% 16%	73% 73% 73% 73% 73% 73% 73% 73% 73% 73%							0.047 0.000 0.000 0.011 0.011 0.011 0.011 0.011 1.118 1.118 1.118 1.118 0.054 0.054 0.000	1	1,380.83 N/A 2,127.45 N/A 200.43	0.09 0.06 0.06 N/A 1.44 0.32 0.15	0.11
Company Comp		Outdoor Lighting Controls (Base Outdoor LED) Base Linear Lighting, Outdoor Ploucescent Tube Base Linear Lighting, Outdoor Ploucescent) Outdoor Lighting controls (Base Outdoor Fluorescent) Outdoor Lighting ornoris (Base Outdoor Fluorescent) Outdoor Lighting ornoris (Base Outdoor ED Tube) Base Water-Cooled Centrifual Chiller, 0.58 WW/fon 50 tons Centrifual Chiller, 0.58 WW/fon 50 tons Centrifual Chiller, 0.58 WW/fon 50 tons Conflict Tune Up/Dagnostics High Efficiency Chilled water & Condenser Water Pump Motors VSD for Chiller Pumps and Towers Celling/roof Insulation - Chiller Duct Pear Insulation - Chiller ENS Optimization - Chiller Wendow Film (Sandard) - Chiller We Economizer Replaces Dry Bulb Economizer - Chiller Duct Pearl High Efficiency Windows - Chiller We Economizer Replaces Dry Bulb Economizer - Chiller Duct Pearl High Efficiency Mindows - Chiller We Economizer Replaces Dry Bulb Economizer - Chiller Duct Pearl Film (Sandard) - Chiller We Economizer Child Film (Sandard) - Chiller Duct Pearl Film (Sandard) - Chiller Cool Rod - Dx Duct Pearl Insulation - DX Cool Rod - Dx Cool	office of the control	16% 40% 40% 653% 112% 90% 90% 90% 112% 112% 112% 112% 90% 90% 90% 90% 90% 90% 90% 90% 90% 90	73% 40% 40% 40% 73% 73% 73% 73% 73% 73% 73% 73% 74% 74% 74% 74% 76% 76% 76% 76% 76% 76% 76% 76% 76% 76							1.47 0.00 0.00 0.01 0.01 0.00 0.00 1.18 1.18		2,127.45 N/A 200.43	0.06 N/A 1.44 0.32 0.15	M/w
The control of the co		Base Linear Liphting, Outdoor Flourescent Tube Ros 2L4' LED Tube (base outdoor flourescent) Outdoor lighting with beleval controls (Base Outdoor Flourescent) Outdoor Lighting outdoors (Base Outdoor Flourescent) Base Linear Lighting, Outdoor LED Tube) Base Linear Lighting, Outdoor LED Tube) Base Water Copied Centrifugal Chiller, 0.58 kW/ton, 500 tons Duct/Pipe Insulation - Chiller Base DX Packaged System, EER-10, 3, 10 tons DX Packaged System, EER-10, 3, 10 tons Dx Packaged System, EER-10, 3, 10 tons Cool Road Cool Road - DX Cool Road - Duct/Pipe Insulation - DX Duct Teshing/Sealing - DX Duct Teshing/Sealing - DX Cool Road - Day Statem, EER-10, 20 tons Duct/Pipe Insulation - DX Cool Road - Day Statem, EER-10, 20 tons Duct/Pipe Insulation - DX Cool Road - Day Replaces Dy Bulb Economizer - DX Cool Road - Day Replaces Dy Bulb Economizer - DX Cool Road - Day Replaces Dy Bulb Economizer Road-In - DX Cool Road - Day Replaces Dy Bulb Economizer Road-In - DX Cool Road - Day Replaces Dy Bulb Economizer Road-In - DX Cool Road - Day Replaces Dy Bulb Economizer Road-In - DX Cool Road - Day Replaces Dy Bulb Economizer - DX Cool Road - Day Replaces Dy Bulb Economizer Road-In - DX Cool Road - Day Replaces Dy Bulb Economizer Road-In - DX Cool Road - Day Replaces Dy Bulb Economizer Road-In - DX Cool Road - Day Replaces Dy Bulb Economizer - DX Cool Road - Day Replaces Dy Bulb Economizer - DX Cool Road - Day Replaces Dy Bulb Economizer - DX Cool Road - Day Replaces DA Bulb Economizer - DX Cool Road - Day Replaces DA Bulb Economizer - DX Cool Road - Day Replaces DA Bu	onfree	0.0% 6.3% 11.2% 9.0% 9.0% 9.0% 9.0% 9.0% 9.0% 9.0% 9.0	0.9% 6.3% 7.3% 7.3% 7.3% 7.3% 9.9% 9.9% 9.9% 1.12% 1.12% 1.12% 1.12% 1.12% 1.12% 1.12% 2.9% 6.9% 6.9% 6.9% 6.9% 6.9% 6.9% 6.9% 6							0.00 0.11 0.18 0.01 0.00 0.00 15.76 1.11 1.11 0.54 0.05 0.00 0.00 0.00 0.00 0.00 0.00	\$ 0 0 1 \$ 1 \$ 0 0 0 0 0 0 0 0 0 0 0 0 0	N/A 200.43	N/A 1.44 0.32 0.15	0.07
Character with the control of c		ROB 2.4 LED Tube (Base outdoor fultorescent) Outdoor lighting with blevet controls (Base Outdoor Fultorescent) Outdoor Lighting outdoor Light (Base Outdoor Fultorescent) Base Unear Lighting, Outdoor LED Tube) Base Unear Lighting, Outdoor LED Tube) Base Unear Lighting, Outdoor LED Tube) Base Unear Lighting, Data (Base Outdoor LED Tube) Base Water-Cooked Centrificial Chiller, 554 WW/ton, 500 tons Centrifugal Chiller, 0.54 WW/ton, 500 tons Centrifugal Chiller, 0.54 WW/ton, 500 tons Centrifugal Chiller, 0.54 WW/ton, 500 tons Centrifugal Chiller Damps and Tower's Celling/Toof Traulation - Chiller EWS Optimization - Chiller EWS Optimization - Chiller Duct Petrifugal Sealing - Chiller EWS Optimization - Chiller Cool Roof - Chiller Windows Fin (Sandard) - Chiller Windows Fin (Sandard) - Chiller Base DX Packaged System, EER -103, 10 tons DX Packaged System, EER -103, 10 tons Cool Roof - DX Colling/Toof Traulation - DX Calling/Toof Traulati	office	639% 639% 169% 10% 10% 11% 11% 11% 10% 10% 66% 66% 66% 67% 67% 67% 67% 67% 67% 67	6.33% 7.73% 7.73% 7.73% 7.73% 9.9% 9.9% 9.9% 9.9% 9.9% 9.9% 9.9% 9.							0.11 0.18 0.00 0.00 0.13 15.76 1.18 1.11 1.11 0.54 0.32 0.32 0.32 0.32 0.00 0.00 0.00 0.00	- 0 0 0 0 8 1 8 1 0 0	200.43	1.44 0.32 0.15 N/A	N/A
Control light file and was a control light fi		outdoor lighting controls (Base Undoor Fluorescent) Base Linear Lighting, Outdoor LED Tube Base Linear Lighting, Outdoor LED Tube Outdoor Lighting Controls (Base Outdoor Fluorescent) Base Linear Lighting, Outdoor LED Tube) Base Water-Cooled Centrifingal Chiller, D. Sis Wifron, 500 tons Centringal Chiller, D. St Wifron, 500 tons Centringal Chiller, D. St Wifron, 500 tons Conlied Time Un/Dagnostics VSD for Chiller Pumps and Towers VSD for Chiller Pumps and Towers Collegify Control Fresibation - Chiller Duct/Pep Instalation - Chiller We Economizer Reglease by Bulb Economizer - Chiller We Economizer Pumps Effez-10, 3, 10 tons DX Packaged System, Effez-10, 3, 10 tons DX Packaged System, Effez-10, 3, 10 tons DX Packaged System, Effez-10, 3, 10 tons DX Tone Lufy Advanced Dagnostics Refrigerant Charge Adjustment - DX Caling/rod Insulation - DX Duct/Pep Insulation - DX Duct/Pep Insulation - DX Caling/rod Insulation - DX Caling/rod Insulation - DX Colling/rod Insulation - DX Outfringe Controls - DX	outice office of	5.5% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0%	73% 73% 73% 73% 73% 73% 73% 73% 73% 74% 747% 747							0.118 0.100 0.100 15.76 11.17 1.118 0.554 0.32 0.500 0.0000 0.000	- 0 0 0 0 0 N N N N N N N N N N N N N N	74 67 0 7	0.32 0.15 N/A	2.98
The control of the co		Outdoor Library Careboard National Challer Distance Library Careboard Careboard National Natio	office office of the control of the	10% 110% 111% 111% 111% 110% 110% 120% 12	0.5 % 0.9 %							0.00 0.00 11.76 11.76 11.11 11.11 0.54 0.57 0.57 0.57 0.57 0.57 0.57 0.57 0.57	4	1,017.58	0.1.0 4/N	0.67
Particle		Outdoor Lighting Controls (Base Outdoor LED Tube) Jase Water-Cooled Centrifuga Clinier, 0.58 kW/ron, 500 tons Centrifugal Chiller, 0.54 kW/ron, 500 tons Centrifugal Chiller, 0.54 kW/ron, 500 tons Centrifugal Chiller, 0.54 kW/ron, 500 tons Chiller Lea byDABagnostics Was Det Chiller Pumps and Towers Celling/roof Insulation - Chiller Duct Pesting/sealing - Chiller Duct Pesting/sealing - Chiller EMS Optimization - Chiller BAS Optimization - Chiller Risk Optimization - Chiller Duct Pesting/sealing - Chiller Window Film (Standard) - Chiller Window Film (Standard) - Chiller Window Film (Standard) - Chiller Dix Packaged System, EER-10.3, 10 tons DX Packaged System, EER-13.4, 10 tons DX Tube Up/ Advanced Degrossics Refrigerant Charge Adjustment - DX Celling/roof Insulation - DX Duct Testing/Sealing - DX Duct Testing/Sealing - DX Duct Testing/Sealing - DX Conlinging Regair - DX Conlinging Regair - DX Conlinging Regair - DX Conlinging Regair - DX Out Testing/Sealing - DX Conlinging Regair - DX Conlinging Regair - DX Out Testing/Sealing - DX Out Testing/Sealing - DX Conlinging Regair - DX Out Testing/Sealing - DX Conlinging Regair - DX Out Testing/Sealing - DX	office	116% 12% 99% 99% 111% 112% 119% 10% 50% 50% 60% 60% 60% 22% 25% 23%	73% 12% 12% 33% 33% 12% 10% 50% 60% 60% 60% 60%							0.013 0.00 115.76 1.118 1.111 0.54 0.52 0.63 0.63 0.60 0.00 0.00 0.00 0.00 0.00	. T N 0 0 0 0 0 F	N/A	7/7/	N/A
The contract of the contract		Sase Water-Cooled Centrifingal Chiller, 0.54 kW/ton, 500 tons Centrifugal Chiller, 0.54 kW/ton, 500 tons Chiller Puru b pD/bagnostics consider Chiller Puru b pD/bagnostics consider Chiller Puru Cool Roof - Chiller Purus and Towers Celling/Toof Insulation - Chiller Duct/Per Insulation - Chiller BAS Off Conformizer - Chiller Window Fin (Standard) - Chiller Base Dr. Packaged System, EER - 10.3, 10 tons DX DX Packaged System, EER - 13.4, 10 tons DX Dackaged System, EER - 13.4, 10 tons Cooling/Tool Insulation - DX Celling/Tool Insulation - DX Duct/Per Insulation - DX Cooling/Tool Insulation - DX Duct/Per Duct/Pe	office	12% 99% 13% 11% 11% 11% 10% 6% 6% 6% 25% 6% 25% 6% 25% 25% 25% 6%	12% 7% 7% 3% 9% 11.2% 12% 2% 6% 5% 5% 6% 6% 17% 7.8% 18% 18% 18% 18% 18% 18% 18% 18% 18% 1							0.00 15.76 1.11 0.51 0.54 0.32 3.62 0.00 0.00 0.00 9.80 5.47	X 00000-	1,276.47	0.10	0.12
The control of the co		Grilling at Chile Tune Up/Dagnostics (Igh Efficiency C734 PW/Univ 30 to 10 to	office	12.% 33% 33% 11.1% 11.1% 22.5% 6% 5.5% 6.6% 6.6% 6.0% 6.0% 6.0%	7.2% 3.3% 11.2% 11.2% 2.5% 6.6% 5.6% 7.9% 7.9% 0.0% 0.6% 2.3% 2.3% 2.3% 2.3%		, waa waa aa a					1.18 1.18 0.61 0.54 3.62 3.62 0.00 0.00 0.00 9.80 5.47	0000-	Α <u>«</u>	N/A	Α/,
The contract of the contract		igh Efficency Chilled Water & Condenser Water Pump Motors Valo To-Chiller Pumps and Towers Celling/Toof Insulation - Chiller Cool Roof - Chiller Duct Feet Testing/Sealing - Chiller Duct Peet Insulation - Chiller EMS Optimization - Chiller EMS Optimization - Chiller Window Film (Standard) - Chiller Was Economizer - Chiller Base DX Packaged System, ERR = 10.3, 10 tons DX Tune Up/ Advanced Degrostics Refrigerent Charge Advanced Degrostics As Calling/Tool Insulation - DX Cool Roof - DX Duct Testing/Sealing - DX Duct Testing/Sealing - DX Economizer Replaces Dy Bulb Economizer - DX Economizer Replaces Dy Bulb Economizer Packaged System (ER = 1.3) Cool Roof - DX	office of	3%, 111% 112% 112% 22% 66% 66% 110% 25% 25% 60% 25% 25% 25%	3% 12% 112% 36% 52% 6% 110% 55% 66% 66% 110% 123%	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2						1.11 0.54 0.32 3.62 3.62 0.00 0.00 0.00 9.80 5.47	000-	N/N	1.39	1.11
Out the first and shower control of the state of the stat		VSD for Chiller Pumps and Towers Celling/roof Insulation - Chiller Dout Testing/Sealing - Chiller Duct Pepe Insulation - Chiller EMS Optimization - Chiller EMS Optimization - Chiller My for the Insulation - Chiller Wisk Teomorizer - Chiller DX Packaged System, EER 1-10,3, 10 tons DX Packaged System, EER 1-13, 10 tons DX Dattone Up, Advanced Desprosites Refrigerant Charge Advanced Desprosites Celling/roof Insulation - DX Calling/roof Insulation - DX Calling/roof Insulation - DX Contact Testing/Sealing - DX Charge Testing/Sealing - DX	Office	11% 12% 13% 30% 22% 69% 110% 116% 25% 66% 6% 23% 23%	9% 112% 11% 2% 6% 6% 10% 47% 0% 23% 23% 23% 21%	11217	, , , , , , , , , , , , , , , , , , ,				0000000000	0.61 0.54 0.52 3.62 0.57 0.00 0.00 9.80 5.47	00-	X X	0.86	0.70
Description for motioning converted that the conver		Celing/nord Tristalston - Chiller Coo Roof - Chiller Duct Testing/Sealing - Chiler Duct Testing/Sealing - Chiler Duct Testing/Sealing - Chiler EMS Optimization - Chiller New Economizer Fablaces Dry Bulle Economizer - Chiller New Economizer Fablaces Dry Bulle Economizer - Chiller New Economizer Fablaces Dry Buller Base DX Packaged System, ERE-10.3, 10 tons DX Packaged System, ERE-13.4, 10 tons DX DX Tune Up/ Advanced Dagonastics Refrigeant Charge Adjustment - DX Cool Roof - DX Duct Testing/Sealing - DX Duct Testing/Sealing - DX Duct Testing/Sealing - DX Connext Termostal - DX Smart Thermostal - DX Smart Termostal - DX Smart Termostal - DX Windown Eller	Office	12% 11% 11% 20% 6% 6% 55% 55% 6% 6% 6%	112% 11% 23% 23% 65% 110% 47% 00% 23% 213%	2 1 5 8 0 4 5 2 2 0 2	, , , , , , , , , , , , , , , , , , ,				000000000	0.54 3.62 3.62 0.57 0.00 0.00 9.80 5.47	0 -	N/A	0.77	1.05
Designation of the control of the co		Cool Road - Chiller Duct Testing/Sealing - Chiller Duct Plea Insulation - Chiller ENS Optimization - Chiller Well Economizer - Chiller Base DX Packaged System, ERe-10.3, 10 tons DX Data Data Data Data Data Data Data Da	Office	11% 22% 6% 6% 55% 16% 05% 6%	1% 2% 6% 10% 5% 5% 47% 6% 6% 23% 21%	1 8 8 0 4 5 7 7 0 7	, , , , , , , , , , , , , , , , , , ,					0.32 3.62 0.57 0.00 0.00 9.80 5.47		N/A	0.44	0.36
Designation (1985) provided colored to the colored		Ouch Teambrighseaning United Duck Type Insulation - Chiller EMS Optimization - Chiller EMS Optimization - Chiller Window Finn (Standard) - Chiller Window Finn (Standard) - Chiller High Efficiency Windows - Chiller DAY Packaged System, EER-103, 10 tons DX Packaged System, EER-103, 10 tons DX Tackaged System, EER-13, 10 tons DX Tune Up, Advanced Degnostics Refrigerant Charge Advanced Degnostics Refrigerant Charge Advanced Degnostics Refrigerant Charge Advanced Degnostics Celling/Troof Insulation - DX Duct Teating/Sealing - DX Duct Teating/Sealing - DX Duct Teating/Sealing - DX Duct Teating/Sealing - DX Cenomizer Replaces Dy Bulb Economizer - DX Growthizer Repair - DX Smart Hermostat - DX Smart Hermostat - DX Smart Hermostat - DX	Office Office Office Office Office Office Office Office	2% 6% 10% 5% 16% 0% 6% 23%	2% 6% 10% 29% 47% 0% 6% 23% 21%	. 8 0 4 12 12 10 12	, a a a a a a a a a a a a a					0.00 0.00 0.00 0.00 0.00 5.47	4 0	¥	0.16	0.13
Figure 19 (19 Figure 19 - 19 Figure 19 - 19 Figure 19 - 19 Figure 19 Figure 19 - 19 Figure 19 Fi		EMS Optimization - Chiller New Economizer Febleses bry Bub Economizer - Chiller New Economizer Febleses bry Bub Economizer - Chiller New Hondow Fin (Standard - Chiller High Efficiency Windows - Chiller ERR-10.3, 10 tons DX Packaged System, ERR-10.3, 10 tons DX Packaged System, ERR-10.3, 10 tons DX Packaged System, ERR-13.4, 10 tons DX Tune Up/ Advanced Dagnostics Refrigerent Charge Adjustment - DX Coll for Insulation - DX Duct Tresting/Sealing - DX Duct Tresting/Sealing - DX Duct Tresting/Sealing - DX Condingrone Replaces Dry Bub Economizer - DX Economizer Replaces Dry Bub Economizer - DX Condingrone Replaces Dry Bub Economizer - DX Condingrone Replaces Dry Bub Economizer - DX Condingrone Replaces Dry Bub Economizer - DX Smart Thermoster - DX Smart Thermoster - DX	Office	6% 10% 5% 16% 25% 0% 6%	6% 10% 5% 29% 47% 0% 6% 23% 21%	0 4 12 12 10 12	י מ מ מ מ מ מ מ ס מ ו	7 4 6 6 6 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				0.00 0.00 0.00 9.80 5.47	o m	¥ ¥ X	0.02	0.02
Designation of the property of the control of the c		ial Enthalpy Economizer Replaces Dry Bubb Economizer - Chiller Whodow Film (Sandard) - Chiller Whodow Film (Sandard) - Chiller Base DX Packaged System, ER-10, 3, 10 tons DX Packaged System, ER-10, 3, 10 tons DX Packaged System, ER-10, 11 tons DX Packaged System, ER-10, 11 tons DX Packaged System, ER-11, 10 tons Cachermal Heat Pump, ER-13, 10 tons DX Packaged System, ER-13, 10 tons Cachermal Heat Pump, ER-13, 10 tons DX Packaged System, ER-10, 11 tons DX Packaged System, ER-11, 10 tons DX Packaged Syst	Office	10% 5% 16% 25% 0% 6% 23%	10% 5% 29% 47% 0% 6% 23% 21%	450000	0 2 2 2 2 2 2 2 2 2 3	8701586648			00000	0.00 0.00 9.80 5.47	0	N/A	0.52	1.38
He with the Emportance Collection of the State of the Sta		New Economizer - Chiller Window Film (Standard) - Chiller Base DX Packaged System, EEP-10, 3, 10 tons DX Packaged System, EEP-10, 3, 10 tons DX Packaged System, EEP-13, 4, 10 tons DX Dackaged System, EEP-13, 4, 10 tons DX Tube Up, Advanced Disgnostics DX Tube Up, Advanced Disgnostics Refrigerent Charge Adjustment - DX Cool Roof - DX Duct Testing/Sealing - DX Duct Testing/Sealing - DX Duct Testing/Sealing - DX Cool Roof - DX Duct Testing/Sealing - DX Cool Roof - DX Co	Office Office Office Office Office Office Office Office Office	5% 16% 25% 0% 6% 23%	5% 29% 47% 0% 6% 23% 21%	5 2 2 2 2 2 2 2 2 3					00000	0.00 9.80 5.47	0	N/A	90.0	0.15
Beach Company of Section 1982 198		Window Fine (Sandard) - Chinler Base DX Packaged System, EFR=10.3, 10 tons DX Packaged System, EFR=10.3, 10 tons DX Packaged System, EFR=13.4, 10 tons DX Packaged System, EFR=13.4, 10 tons Geothermal Hera Pump, EFR=13.1, 10 tons - DX DX Tune Up/ Advanced Dagnostics Refrigerant Charge Adjustment - DX Colling/roof insulation - DX Duct Traging/Sealing - DX Duct Traging/Sealing - DX Duct Traging/Sealing - DX Duct Traging/Sealing - DX Outpriple Insulation - DX Ceronomizer Replaces Dry Bulb Economizer - DX Grownizer Replaces Dry Bulb Economizer - DX Optimize Controls - DX	Office Office Office Office Office Office	16% 25% 0% 6% 23%	29% 47% 0% 6% 23% 21%	2 0 0 0					000	5.47	0	N/A	0.03	0.08
Part		Base DX Peckaged System, EER-10.3, 10 tons DX Packaged System, EER-10.3, 10 tons DX Packaged System, EER-13.4, 10 tons DX Packaged System, EER-13.4, 10 tons DX Tune Up/ Advanced Diagnostics Refrigerant Charge Adjustment - DX Caling/roof Issulation - DX Duct Tresting/Sealing - DX Duct Tresting/Sealing - DX Duct Tresting/Sealing - DX Condimize Replaces Dry Bulb Economizer - DX Condimize Replaces Dry Bulb Economizer - DX Condimizer Replaces Dry Bulb Economizer - DX Condimizer Replaces Dry Bulb Economizer - DX Condimizer Replaces Dry Bulb Economizer - DX Optimize Controls - DX Optimize Controls - DX Optimize Controls - DX Condimizer Replaces Dry Bulb Economizer - DX Condimizer Controls - DX Control - DX Condimizer Controls - DX Co	Office Office Office Office Office	0% 6% 23%	0% 6% 23% 21%	0.0					000		0 0	N/N	2.16	0.56
Weighting Space Fig. 14.0 Lives 6th 6t		DX Packaged System, Effe-10.9, 10 tons DX Packaged System, Effe-13.4, 10 tons Geothermal Heat Pump, Effe-13.4, 10 tons - DX DX Time Up/ Advanced Dagionastics Refigient Charge Adjustment - DX Refigient Charge Adjustment - DX Coll foxof - DX Duct Testing/Sealing - DX Duct Testing/Sealing - DX Duct Pier Insulation - DX Conding Final Economizer - DX Conding Final Economizer - DX Conding Repair - DX Optimize Controls - DX Smart Hermostat - DX Windown Eliza Controls - DX Windown Eliza Controls - DX	Office Office Office Office Office Office	6% 23%	6% 23% 21%	0.2					0	0.00	N/A	N/A	N/A	N/A
De Procession Servicine de Procession de la control de la		Do Redeged d'System, ERFL-13, 10 tons Accohemnal Hear Pump, ERFL-13, 10 tons - DX True up, Advanced Degnostics Partine up, Advanced Degnostics Refrigerant Charge Advanced Degnostics Caling/roof Insulation - DX Caling/roof Insulation - DX Duck/Plear Insulation - DX Duck/Plear Insulation - DX Duck/Plear Insulation - DX Connainzer Replaces Dy Bulb Economizer Popting Controlliser Repair - DX Optimize Controls - DX Smart Hermostat - DX Williams Electrical DX Connainzer Repairs - DX Optimize Controls - DX Optimize Controls - DX Optimize Controls - DX Connainzer Repairs - DX Optimize Controls - DX	Office Office Office Office Office	23%	23%							35.41	0	N/A	86.0	0.82
Continue to the continue to		Sequential reset virtuinity, text-s. J. v. touis - t. A. DX Tune Up/ Advanced Disgnostics. Refrigerent Charge Adjustment - DX Celing/roof Insulation - DX Cool Rood - DX Duct/Polentia/Scaling - DX Duct/Polentia/Scaling - DX Duct/Polentia/Scaling - DX Duct/Polentia/Scaling - DX Ordinize Repair - DX Optimize Controls - DX	Office Office Office	240/	21.70	0.5					0 0	135.75	0 0	Α <u>«</u>	2.76	2.31
Application of the property		Refrigerant Charge Adjustment - DX Celling/roof insulation - DX Cool Roof - DX Cool Roof - DX Duct Testing/Sealing - DX Duct Testing/Sealing - DX Duct Testing/Sealing - DX Cool Roof - DX Cool Roof - DX Dual Enthalpy Economizer Replaces Dry Bulb Economizer Replace Dx Connact Thermostal - DX Connact Thermostal - DX Windows Blood - DX Windows Blood - DX Windows Blood - DX	Office Office	%T7 6%	20%	4.7					0 0	6.15 2.27	00	4 / X	0.23	0.20
Confidency Confidenc		Celling/roof risulation - DX Cool Roof - DX Duct Testing/Sealing - DX Duct Testing/Sealing - DX Duct Per Institution - DX Economizer Replace Dy Bulb Economizer - DX Gronart Infermostat - DX Smart Infermostat - DX """" of the Infermostat - DX	Office Office	10%	10%	0.5					0	48.18	0	N/A	0.41	0.37
Coll Recomment Register DAY Coll Recomment Coll Recomment Coll Recomment Project DAY Coll Recomment Coll Register DAY Coll Recomment Register DAY Coll Recomment Coll Register DAY Coll Recomment Day DAY Coll Recommend Day DAY DAY Coll Recommend Day DAY DAY Coll Recommend Day		Cool Roof - DX Cot Roof - DX Duct Plasting/Sealing - DX Duct Plast Insulation - DX Duct Plast Insulation - DX Committer Repair - DX Committer Repair - DX Optimize Controls - DX Smart Plaremstat - DX	Office	12%	12%	0.5	2.7 2.				0	1.71	0	N/A	0.91	0.74
Dual Enthally Connective Character (April 2)		Out cleaning seeing - Ox Duck Teppen Insulation - DX Duck Pipen Insulation - DX Duck Pipen Insulation - DX Economizer Repair - DX Optimize Controls - DX Optimizer Control - DX Optimizer Controls - DX Optim	Office	2%	2%	0.1	2.5 2				0 0	5.57	0 0	Α ×	0.44	0.40
Dual Enthingly Economise Register OK Control Section Control OK		Oual Enthalpy Economizer Replaces Dry Buib Economizer - DX Economizer Replaces Dry Buib Economizer - DX Optimize Controls - DX Smart Premostat - DX """" Conditions of the Controls of the Controls of the Controls of the Controls of the Control of	Office	25%	2%	5.0	2.5 2.5 2.5				0 0	3.82	o -	¥	0.74	1.73
Examine Repair DATE Continue Repair DATE Continue Repair DATE Continue Repair DATE Continue Repair DATE DATE Continue Repair DATE		Economizer Repair - DX Optimize Controls - DX Smart Thermostat - DX Windows Time Conductor No.	Office	4%	4%	0.1	2.5		0.01	0	0	0.00	ч О	X X	0.18	0.50
Sequence of the control of the contr		Optimize Controls - DX Smart Hermostate - DX Window Ellip (Perceland)	Office	34%	17%	0.2	2.8 1.				0	120.34	0	N/A	1.59	1.45
Base First Hermonian Conference Co		Smart Inermostat - DX	Office	%9	4%	0.0	2.6 2				0	2.54	0	N/A	1.42	2.87
Base Fift Changing		William mirror and and a second	Office	12%	8%	0.3	2.5				0 0	13.50	0 0	N/A	0.30	0.58
Decided Separation of Control o		High Efficiency Windows - DX	Office	26%	26%	0.2	3.5				0	39.74	0	N/A	7.89	6.40
Decide the Part No. 1971 Control of the Control		Base DX Packaged System, 2029 Standard	Office	%0	%0	0.0	2.5 2.				0	00.00	N/A	N/A	N/A	N/A
Particle		DX Packaged System, EER=13.4, 10 tons	Office	14%	14%	0.5	2.2				0 (76.73	0 •	N/A	1.56	1.31
Redigeney Charge Adjustment - DX		Geoulerillal neat Purilly, EER= 13, 10 tolls - DX DX Tune Ub/ Advanced Diagnostics	Office	6%	12%	0.1	2.6				0 0	2.22	- 0	¥ ××	0.67	0.96
Color Colo		Refrigerant Charge Adjustment - DX	Office	10%	10%	0.5	2.5 2.				0	48.18	0	N/A	0.41	0.37
Dutificating/Sealing DX		Ceiling/roof Insulation - DX	Office	12%	12%	0.5	2.7 2			1	0	1.71	0	N/A	0.91	0.74
Dual Enthalty Economizer - DX Office		Cool Roof - DX	Office	2%2	2%	0.1	2.5			4 %	0 0	5.5/	0 0	A V	44.0	0.40
Dual Enthalpy Economizer Pox Office 34% 4% 4% 6% 6% 10, 12 28 14 0.0 10 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.		Duct/Pipe Insulation - DX	Office	2%	2%	0.8	2.5				0	3.82		N/A	0.05	0.04
Example Experience Experi	1 2161 1 2163 1 2164 1 2165 1 2216	Oual Enthalpy Economizer Replaces Dry Bulb Economizer - DX	Office	4%	4%	0.1	2.5 2.				0	0.00	0	N/A	0.18	0.50
State Parameter Character	1 2164 1 2165 1 2166	Economizer Repair - DX	Office	34%	17%	0.5	2.8 1				0 0	120.34	0 0	Α ×	1.59	1.45
Window Flim (Standard) - D.X. Office of Sept. 9% 16% 0.2 2.5 2.0 0.0 17.35 0 0.04 NA 0.48 Base Hard Pump Coding (14.3 SER), 8.1 SFP) Office of Sept. 26% 0.0 2.2 2.0 0.0 17.3 0 0.00 NA NA 1.32 Base Hard Pump Coding (14.3 SER), 8.1 SFP) Office of 14% 1.0% 0.0 2.2 1.0 0.0 1.0 0.00 NA NA NA 1.32 Mini-Spill Fleat Pump Coding) Office of 14% 1.0% 0.8 2.2 2.0 0.0 1.2 0.0 1.0 0.0 NA NA 0.3 Calling/rod* Insulation (Base Hast Pump Coding) Office of 12% 1.2% 0.2 2.2 2.0 0.0 1.0 0.0 NA 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 <th< td=""><td>1 2165 1 2166</td><td>Smart Thermostat - DX</td><td>Office</td><td>12%</td><td>8%</td><td>0.3</td><td>2.5</td><td></td><td></td><td></td><td>0</td><td>13.50</td><td>0</td><td>X Y</td><td>0.30</td><td>0.58</td></th<>	1 2165 1 2166	Smart Thermostat - DX	Office	12%	8%	0.3	2.5				0	13.50	0	X Y	0.30	0.58
High Efficiency Windows - DX Base Hast Pump coding (14.3 SER), 8.2 145F) Gening/roof Instalton (Base Heat Pump coding) Office 14% 0.6 0.2 2.2 2.0 0.0 15 0.0 0.00 N/A N/A N/A N/A N/A N/A Heat Pump coding (14.3 SER), 8.2 145F) Heat Pump pograde (18 SER), 8.2 145F) Office 14% 0.6 0.0 2.2 2.0 0.0 15 0.0 0.00 N/A N/A N/A 1.32 High Efficiency Window (Base Heat Pump Coding) Office 12% 12% 0.8 2.2 2.0 0.0 15 0.0 0.0 0.0 0.00 N/A 0.0 0.0 0.0 0.0 N/A 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	1 2166	Window Film (Standard) - DX	Office	%6	16%	0.2	2.5 2.				0	17.35	0	N/A	0.48	0.64
Heat Pump Congrade (18 SER, 8.2 MFFF), cooling) Office 14% 0.8 0.2 1.2 2.0 0.0 15 9 0 0 11.27 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0000	High Efficiency Windows - DX	Office	26%	26%	0.5	3.5				0 0	39.74	0 %	Α ×	7.89	6.40
Mint-Split Beat Pump Coloning)	1 2201	Pase near runip cooming (14:3 SEEK, 6:2 HSPF) Heat Pump Upgrade (18 SEER, 8.2 HSPF), cooling	Office	14%	14%	0.0	2.2				0 0	0.00	0	¥ ××	1.32	1.11
Caling/roof Institute (Base Heat Pump Cooling) Office 12% 12% 0.5 2.5 2.0 0.	1 2202	Mini-Split Heat Pump (Base Heat Pump Cooling)	Office	10%	10%	0.8	2.2 2.				0	11.27	0	N/A	0.30	0.25
Out-Off Pipe Institution (Base Residential Split-System) Office 12% 2% 0.3 2.2 2.0 0.0 10 2 2.2.1 0.04	1 2203	Ceiling/roof Insulation (Base Heat Pump Cooling)	Office	12%	12%	0.5	2.5 2				0	0.99	0	N/A	0.81	0.66
Window Film (Standard) (Base Feat Pum Coding)	1 2204	Duct/Pipe Insulation (Base Heat Pump Cooling)	Office	2%	2%	8.0	2.2 2.2				0 0	2.21	7 0	∀ × ×	0.04	0.04
High Efficiency Windows (Base Heat Pump Cooling) Office 26% 26% 0.2 2.7 2.0 0.0 20 16 0 20.21 0 0 0.0 20.21 0 0 0.0 20.21 0 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.		Smart Thermostat (base neat Pump Cooling) Window Film (Standard) (Base Heat Pump Cooling)	Office	%51	16%	0.5	2.2 2.2				0	10.04	0	¥ ₹ Ž	0.43	0.58
Split System Accordance		High Efficiency Windows (Base Heat Pump Cooling)	Office	79%	79%	0.2	2.7 2.				0	20.21	0	N/A	6.22	5.04
Split/Split SERIA (ILANG) CONTECT TATE OF TATE		Base Split-System AC, SEER 14.5, <5.4 tons	Office	%0	%0	0.0	2.0 2	2.0	0. 15		0 (0.00	N/A	N/A	N/A	N/A
Celling/roof Insulation (Base Residential Spili-System) Office 12% 12% 0.5 2.3 2.0 0.0 20 0 0.31 0 NA 0.75 Celling/roof Insulation (Base Residential Spili-System) Office 12% 12% 0.8 2.0 1.0 10 1 0 0.70 0.0 NA 0.75 Window Flim (Standard) (Base Residential Spili-System) Office 16% 0.9 0.2 2.1 1.7 0.0 10 9 0 5.67 0 0.70 Base PTAC cooling, EFE-10.2, 1 ton-System) Office 0% 0.0 2.6 2.6 0.0 15 0 0.000 NA NA NA NA NA		ilit System Air Conditioner, SEEK 16.0 ENEKGY STAK, <5.4 tons	Office	10%	10%	4.0	2.0	8.1	0.0		0 0	9.1/	0 0	N/A	0.50	0.42
Duct/Pipe Insulation (Base Residential Split-System) Office 2% 2% 0.8 2.0 0.0 10 1 0 0.70 2 NA 0.04 Smart Themostat (Base Residential Split-System) Office 12% 8% 0.3 2.0 1.8 9 0 2.46 0 NA 0.25 Window Flin (State Residential Split-System) Office 16% 29% 0.2 2.1 1.7 0.0 10 9 0 5.7 0 7.1 Base Place Residential Split-System) Office 16% 29% 0.2 2.1 1.7 0.0 10 9 0 5.7 0 7.1 Base Place Residential Split-System) Office 16% 0% 0.0 2.6 0.0 15 0 0.00 NA NA NA		Ceiling/roof Insulation (Base Residential Split-System)	Office	12%	12%	0.5	2.3	0.0	.0		0	0.31	0	N/A	0.75	0.61
Smart Themostat (Base Residential Spilt-System) Office 12% 8% 0.3 2.0 1.8 0.0 8 9 0 2.46 0 N/A 0.25 Window Flin (Standard) (Base Residential Spilt-System) Office 16% 29% 0.2 2.1 1.7 0.0 10 9 0 5.67 0 N 5.7 0 N/A N/A Base PTAC cooling, EER = 10.2, 1 ton Office 0% 0% 0.0 2.6 2.6 0.0 15 0 0 0.00 N/A		Duct/Pipe Insulation (Base Residential Split-System)	Office	2%	2%	0.8	2.0 2				0	0.70	2	N/A	0.04	0.04
### ### ##############################		Smart Thermostat (Base Residential Split-System)	Office	12%	8%	0.3	2.0	1.8		00	0 0	2.46	0 0	Α ×	0.25	0.48
		Wildow IIIII (Standard) (Dase Residential Spire 3) Sterii) Base PTAC cooling, EER=10.2, 1 ton	Office	0%0	0%	0.0	2.6 2.	6		0	0	0.00	N/A	X X	N/A	0.50 A/N



E 05	nercia	Commercial Electric Existing Construction															
DSM ASS	DSM ASSYST SUMMARY	IARY										System	System Second	Levelized Cost	evelized Cos	Total	
	Measure		Building	Energy Savings	Peak Reduction	Ŭ	Base		Peak Watts/	Service	Technical Potential	Peak Tech. Potential	Peak Tech. Potential	of Conserved Energy	of Pea	20	Pa
Segment Number 1 2401	Number 2401	Measure HE PTAC, EER=9.6, 1 ton, cooling	Type Office	Fraction 14%	Fraction 14%	Sq. 7	EUI	2.3		Life (yrs) 15	E P	Α 0	MW 6.14	\$/kwh	\$/kW	(TRC)	Test 0.96
	2402	Celling/roof Insulation (Base PTAC)	Office	12%	12%	0.5	3.0	2.6	0.0	20	0 6	0	0.13	0	N/A	96.0	0.79
	2500	window Film (Standard) (Base PLAC) Base Room AC, CEER 10.9	Office	%6	%0 0%	0.0	1.1	1.1	0.0	15	7 0	0 0	0.00	o W	₹ ₹ Ž	0.52 N/A	0.69 N/A
	2501	Room AC, CEER 12.0 ENERGY STAR	Office	2%	2%	0.2	1.1	1.1	0.0	15	0 ,	0	0.05	(N/A	0.10	0.09
	2502	Ductless Mini-Split SEER 18.0/HSPF 10.0 CEE Tier 1 (Base Room AC) Ceiling/roof Insulation (Base Room AC)	Office	30%	30%	0.3	1.1	0.8	0.0	15	- 0	0 0	0.77	0 0	∀	1.35	0.33
	2505	Window Film (Standard) (Base Room AC)	Office	16%	29%	0.2	1.1	1.0	0.0	10	0	0	0.14	0	N/A	0.39	0.52
п,	2506	į.	Office	11%	20%	0.2	1.2	1.1	0.0	20	0	0	0.03	0	N/A	0.75	0.92
	2600	Base Ductless Mini-Split Heat Pump, SEER 15.0/HSPF 8.8 Ceiling/mof Insulation (Rase Ductless Mini-split)	Office	12%	12%	0.0	1.8	1.8	0.0	15	0 0	0 0	0.00	W/A	∀	N/A	N/A 53
	2603	Window Film (Standard) (Base Ductless Mini-split)	Office	16%	29%	0.2	1.8	1.5	0.0	10	5 2	0	1.15	0	X/A	0.62	0.83
	2604	High Efficiency Windows (Base Ductless Mini-split)	Office	25%	47%	0.2	2.2	1.6	0.0	20		0	0.64	0	N/A	3.20	3.93
	3100	Base Open refrigerated/freezer cases	Office	11%	11%	0.0	0.0	0.0	0.0	16	0 0	0 0	0.00	Α V	N/A 158 77	N/A 24 1	N/A 3.09
	3103	Compressor VSD retrofft, open cases	Office	2.4%	%9	0.0	0.0	0:0	0.0	13	0	0	0.00	0	350.45	1.12	2.43
1	3105	Demand Hot Gas Defrost, open cases	Office	3%	3%	0.0	0.0	0.0	0.0	10	0	0	0.00	0	2,138.90	0.14	0.28
	3106	Electronically commutated evaporator fan motor, open cases	Office	27%	16%	0.0	0.0	0.0	0.0	15	0 0	0 0	0.00	0 0	380.19	1.59	3.46
	3107	High-efficiency fan motors, open cases Insulated suction lines, open cases	Office	% 0	% 0	0.0	0.0	0.0	0.0	5 =	0 0	o c	0.00	0 0	3.191.58	0.73	1.42
	3109	LED Display Lighting, open cases	Office	2%	7%	0.0	0.0	0.0	0.0	; œ	0	0	0:00	0	203.97	1.20	2.41
1	3111	Night covers for display cases, open cases	Office	11%	%0	0.0	0.0	0.0	0.0	2	0	0	0.00	0	N/A	09.0	1.59
	3112	Oversized Air Cooled Condenser, open cases	Office	8%	8%	0.0	0.0	0.0	0.0	16	0 (0 (0.00	0 0	216.59	1.99	3.88
	3114	Refrigeration Commissioning, open cases	Office	3%	3%	0.0	0.0	0.0	0.0	n m	0	0 0	0.00	0 0	233.17	0.44	0.87
-	3200	Base Closed refrigerated/freezer cases	Office	%0	%0	0.0	0.1	0.1	0.0	16	0	0	0.00	N/A	N/A	N/A	N/A
	3202	Energy-Star Refrigerator/Freezer, base closed cases	Office	10%	10%	0.0	0.1	0.1	0.0	12	0	0	0.02	0 (320.24	1.08	2.12
	3204	Bi-level LED Case Lighting (self-contained units), base closed cases	Office	11%	11%	0.0	0.0	0.1	0.0	∞ <u>~</u>	0 0	0 0	0.02	0 0	322 13	1.67	3.36
	3207	Compressor VSD retront, base closed cases Demand Hot Gas Defrost, base closed cases	Office	3%	3%	0.0	0.1	0.1	0.0	101	0	0 0	0.01	0 0	1,966.08	0.15	0.30
1	3208	Electronically commutated evaporator fan motor, base dosed cases	Office	23%	14%	0.0	0.1	0.1	0.0	15	0	0	0.03	0	402.68	1.50	3.27
	3209	Freezer-Cooler Replacement Gaskets, base closed cases	Office	2%	7%	0.0	0.1	0.1	0.0	4 ;	0 (0 (0.01	0 0	45.03	2.91	5.91
	3211	High-efficiency fan motors, base closed cases Inculated curtion lines hase closed cases	Office	4%	4% %	0.0	0.0	0.1	0.0	15	0 0	0 0	0.01	0 0	2 854 71	0.79	1.54
	3213	LED Display Lighting, base closed cases	Office	2%	2%	0.0	0.1	0.1	0.0	3 8	0	0	0.02	0 0	187.49	1.30	2.62
1	3214	Low or Anti-Sweat Door Film, base closed cases	Office	2%	2%	0.0	0.1	0.1	0.0	10	0	0	0.01	0	110.39	2.68	5.34
	3216	Oversized Air Cooled Condenser, base closed cases	Office	8%	8%	0.0	0.1	0.1	0.0	16	0 0	0 0	0.01	0 0	199.09	2.17	4.22
	3218	Refrigeration Commissioning, base closed cases	Office	23%	23%	0.0	0.1	0.1	0.0	nm	0 0	0 0	0.03	0	105.81	0.96	1.92
	3300	Base Walk-in refrigeration/freezer units	Office	%0	%0	0.0		0.0	0.0	16	0	0	0.00	N/A	N/A	N/A	N/A
1	3302	Auto-closer on main door to walk-in freezer	Office	1%	1%	0.0	0.0	0.0	0.0	00	0	0	0.00	0	465.04	0.52	1.05
	3303	Compressor VSD retrofit, walk-ins Demand Hot Gas Defrect walk-ins	Office	3%	%%	0.0	0.0	0.0	0.0	13	0 0	0 0	0.01	0 0	134.79	2.90	6.33
	3306	Electronically commutated evaporator fan motor, walk-ins	Office	23%	14%	0.0	0.0	0.0	0.0	15	0	0	0.03	0	168.49	3.59	7.81
1	3307	Evaporator fan controller for MT walk-ins	Office	1%	1%	0.0	0.0	0.0	0.0	16	0	0	0.00	1	8,402.88	0.05	0.10
	3309	Freezer-Cooler Replacement Gaskets, walk-ins	Office	1%	1%	0.0	0.0	0.0	0.0	4 -	0 0	0 0	0.00	0 0	61.42	2.13	4.33
	3311	mgn-eniciency ian moors, wark-ins Insulated suction lines, walk-ins	Office	%0	%0	0.0	0.0	0.0	0.0	11	0	0 0	0.00	0	611.27	0.52	1.04
1	3313	Oversized Air Cooled Condenser, walk-ins	Office	8%	%8	0.0	0.0	0.0	0.0	16	0	0	0.01	0	166.61	2.59	5.05
	3314	Refrigeration Coil Cleaning, walk-ins	Office	23%	23%	0.0	0.0	0.0	0.0	ın r	0 0	0 0	0.05	0 0	93.72	1.71	3.48
	3316	Retrigeration Commissioning, walk-ins Strip curtains for walk-ins	Office	5% 4%	4%	0.0		0.0	0.0	0 4	0	0 0	0.00	0 0	97.09	1.35	2.74
1	3400	Base Large Cold Storage Area	Office	%0	%0			0.0	0.0	16	0	0	0.00	N/A	N/A	N/A	N/A
	3402	Auto-closer on main door to walk-in freezer, base large cold storage	Office	1%	1%		0.0	0.0	0.0	00	0	0	0.00	0	465.04	0.52	1.05
	3403	Compressor VSD retrofit, base large cold storage	Office	7%	94%	0.0	0.0	0.0	0.0	13	0 0	0 0	0.00	0 0	134.79	2.90	6.33
	3405	Electronically commutated evaporator fair motor, base large cold storage Evaporator fan controller for MT walk-ins, base large cold storage	Office	1%	1%	0.0	0.0	0.0	0.0	16	0	0 0	0.00	0 #	N/A	0.05	0.10
1	3406	High-efficiency fan motors, base large cold storage	Office	4%	4%	0.0	0.0	0.0	0.0	15	0	0	0.00	0	217.91	1.89	3.69
1	3407	Insulated suction lines, base large cold storage	Office	%0	%0	0.0	0.0	0.0	0.0	11	0	0	0.00	1	N/A	0.02	0.05
	3409	Oversized Air Cooled Condenser, base large cold storage	Office	8%	8%	0.0	0.0	0.0	0.0	16	0 (0 (0.00	0 0	83.30	5.18	10.09
	3410	Kerrigeration Coil Cleaning, base large cold storage Refrioeration Commissioning base large cold storage	Office	23%	23%	0.0	0.0	0.0	0.0	n r	0 0	o c	0.00	0 0	70.29	2.28	4.63
	3412	Strip curtains for walk-ins, base large cold storage	Office	4%	4%	0.0	0.0	0.0	0.0	0 4	0	0	0:00	0	97.09	1.35	2.74
1	3500	Base Reach-in Refrigerator/Freezer, Federal Standard	Office	%0	%0	0.0	0.2	0.2	0.0	15	0	0	0.00	N/A	N/A	N/A	N/A
	3501	Energy Star solid door reach-in refrigerator/freezer	Office	2%	2%	0.0	0.2	0.2	0.0	15	0	0	0.02	0	151.08	2.73	5.32
	3502	Freezer-Cooler Replacement Gaskets, base reach-in	Office	%8	%6	0.0	0.5	0.2	0.0	4 п	0 0	0 0	0.01	0 0	229.62	0.57	1.16
	3600	Reingeration Coll Cleaning, base base reach-in Base Glass Door Reach-in Refrigerator/Freezer, Federal Standard	Office	%0	%0	0.0	0.7	0.2	0.0	15	0	0 0	0.00	N O	468.30 N/A	4.5 A/A	N.V
-	3601	Energy Star glass door reach-in refrigerator/freezer	Office	12%	12%	0.0	0.2	0.1	0.0	15	0	0	0.03	0	95.00	4.33	8.45
П	3602	Bi-level LED Case Lighting, base glass-door reach-in	Office	11%	11%	0.0	0.2	0.2	0.0	00	0	0	0.02	0	188.66	1.29	2.60

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Number Freezer-Coole 3603		170	Fraction Fra	Fraction 8 3% 2% 2% 2% 2% 2% 2% 2% 2% 2% 2% 2% 2% 2%		E11 E11		89 PF	Life (773) GWH 4 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	MA		HW (0.01) (0.02) (0.02) (0.02) (0.02) (0.02) (0.02) (0.02) (0.02) (0.03)	\$/kwh 0 0 N/A	\$/kWH \$/kW 0 136.78 0 258.59 N/A N/A 0 311.71 0 65.12	1.03 0.62 N/A 0.95 2.46 N/A 0.95 0.95	Tool F
							7		Ŭ ,		o c o c o c o d o o o o o o o o o o o o		0 0 N/ 0	126.78 258.59 N/A 311.71 65.12	1.03 0.62 N/A 0.95 2.46 N/A 0.46	Iest
							,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				Q Q Q Q Q 4 Q Q Q Q Q Q Q Q Q Q Q Q Q Q		0 <u>X</u> 0	258.59 N/A 311.71 65.12	0.62 N/A 0.95 2.46 N/A 0.46	2.10
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	Base Non-Defricerated Vending Machines Federal Chandard	, i					۷ ر					6 6	9/8	27.600,5 N/A	N/N	0.50 0.40
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6201	=	fice			0.0	0.2 C	1				1	46	0	60.16	7.50	14.30
6300	Oven	fice			0.0	0.7	0.7				0	00	N/A	N/A	N/A	N/A
6400		fice			0.0	0.7					0	00.	N/A	N/A	ν/A	Z S
6500		rice			0.0	0.1					0	00.	N/A	N/A	N/A	N/A
6501		TICE.			0.0	0.1					0	, o	0 \$	199.75	2.20	4.31
	Energy Char hot food holding cabinet	Office			0.0	2.0	7.0					200	¥ 0	188 73	7 30	4/M
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	al Standard	ال و			0.0							00	N/A	N/A	N/A	N/A
		E C			2.0							00	C	160.44	0.72	1.02
7002		fice			0.8	3.4					Ö	00		1,669.08	0.07	0.10
	P	fice			0.0						0	00	N/A	N/A	N/A	N/A
	tons, heating	fice			0.3		1.4 0.				Ö	00	0	20.82	4.56	6.43
		fice			0.5	3.8	3.3 2.				Ö	00	0	160.44	0.72	1.02
	Duct/Pipe Insulation (base furnace)	fice			0.8	3.4 3	3.3 2				Ö	00	1	1,669.08	0.07	0.10
		fice			0.3	3.4 3	3.0 2.				Ö	00	0	153.55	0.50	0.86
		Office (0.0	1.4					Ö	00	N/A	N/A	N/A	N/A
7201 eat Pump, SEER 16.0/H	eat Pump, SEER 16.0/HSPF 9.2 ENERGY STAR, <5.4 tons (base air-source heat pu	fice			0.3	1.4	1.3 0				Ö	00	0	312.84	0.30	0.43
		fice			0.5	1.6 1	1.4 0				0	00	0	385.58	0.30	0.42
	ating)				0.8	1.4 1	1.4 0				0	00	М	4,011.28	0.03	0.04
7204 Smar					0.3	1.4					0	00	0	369.02	0.21	0.36
					0.0	1.0	1.0				0	00	N/A	N/A	N/A	N/A
	ating), 10 tons					_						00.	0	677.37	0.14	0.20
7302 Ceiling/r						1.1	0 0					00.	0 •	561.54	0.20	0.29
												00.	4 (5,841.79	0.02	0.03
	Smart Inermostat (base koortop/packaged neating)	Office	13%				י ע		8 C	4 0		0.00	0 \$	537.42	0.14 N/A	0.24
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						1.0	1.7	0.00				8 8	o c	369.02	2.00	35.0
						6.7	5.7					8 8	9/8	N/A	N/A	0.50 VA
					2.0		4.0					24	<u> </u>	107.41	2/2	8 14
7803	Air Handler Ontimization 15 HD					0.0	100					02	0 0	43.10	00.5	10.10



Number N	Base Lr Base Lr Base Linear	Type 1 Office	Fraction 33% 33% 33% 33% 33% 33% 33% 33% 33% 33	5	2.4 FF		UI Sq	Sq Ft Life (yrs)	rs) GWH 421	MW 20	MΜ	\$/kWH \$/kW 0 367.60 0 500.62	\$/kW	(TRC) 0.95	Test
	Demand Convolled Verificiation, 15 HP Energy Recovery Verification, 15 HP Energy Recovery Verification Base Process Conjing Base Process Colling Base Process Colling Base Process Colling Base Process Colling Base Under Light Convolution of Process Base Unear Lighting, Fluorescent Fixture, 21471.2 Base Unear Lighting, Fluorescent Fixture, 214718, 1EB Base Linear Lighting, Fluorescent Fixture, 214718, 1EB Base Linear Lighting, LED Tube, 2 lamp fixture, 2028 Standard Base Linear Lighting, LED Tube, 2 lamp fixture, increated market Base Linear Lighting, LED Tube, 2 lamp fixture, increated market Base Linear Lighting, LED Tube, 2 lamp fixture, increated market Base Linear Lighting, LED Tube, 2 lamp fixture, increated market Base Ceneral Service Screw-in, CT Base General Service Screw-in, LED bulb	Office	33% 333% 00% 00% 00% 17% 00% 00% 00% 00% 00%	52% 72% 00% 00% 114% 00% 00% 00% 00%			ı	l	421	5		0 0		0.95	
	Base Compressed Air Base Process Coning Base Process Cooling Base Process Cooling Base Process Cooling Base Process Cooling Base Dear Industrialind process Base Dear Industrialind Base Base Linear Lighting, Fluorescent Fixture, 214'T1.2 Base Linear Lighting, Fluorescent Fixture, 214'T1.2 Base Linear Lighting, Fluorescent Fixture, 214'T8, 1 EB Base Linear Lighting, ED Tube, 2 lamp fixture, 2028 Standard Base Linear Lighting, ED Tube, 2 lamp fixture, 1028 Standard Base Linear Lighting, ED Tube, 2 lamp fixture, integrated market Base Linear Lighting, ED Tube, 2 lamp fixture, integrated market Base Linear Lighting, ED Tube, 2 lamp fixture, integrated market Base Caneral Service Screw-in, CED Base General Service Screw-in, CED Base General Service Screw-in, LED bulb	Office	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00% 00% 00% 00% 00% 00% 00% 00%				0.4 15	1.73	, t	275.33	>	367.60	100	1.04
	Base Process Cooling Base Electrochemical process Base Industrialibrotos or Pumps High Reficiency More Base Industrialibrotos or Pumps High Refliction Word or Pumps Base Linear Lighting, Fluorescent Fixture, 2.14°T1.2, Integrated market Base Linear Lighting, Fluorescent Fixture, 2.14°T3, 1 Es integrated market Base Linear Lighting, LED Tube, 2 lamp fixture, 2.14°T3, 1 Es integrated market Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market Base General Service Screw-in, CRI Base General Service Screw-in, LED bub	Office	0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0%	0 % % % % % % % % % % % % % % % % % % %					0	0 0	0.00	N/A	N/A	N/A	N/A
	Base Electrocheming process Base Process Coulding Base Industrial process Base Industrial Motor Wariable Speed Onive Control, Dase motors Base Industrial Efficiency Motor Base Linear Lighting, Fluorescent Fixture, 2,14,112 Base Linear Lighting, Fluorescent Fixture, 2,14,113, LBb, Integrated market Base Linear Lighting, LBD Tube, 2, lamp fixture, possed market Base Linear Lighting, LED Tube, 2, lamp fixture, integrated market Base Linear Lighting, LED Tube, 2, lamp fixture, integrated market Base Linear Lighting, LED Tube, 2, lamp fixture, integrated market Base Linear Lighting, LED Tube, 2, lamp fixture, integrated market Base Central Service Screw-in, CEL Base General Service Screw-in, CEL Base General Service Screw-in, LED bulb	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0% 0% 17% 0% 0% 0% 0%	0% 0% 114% 0% 0% 0% 0%					0	0	0.00	N/A	N/A	N/A	N/A
	Base Process Other Base Individual process Base Process Other High Efficiency Motor Variable Speed Orive Control, base motors Base Linear Lighting, Fluorescent Fixture, 21471.2 Base Linear Lighting, Fluorescent Fixture, 214718, 1EB Base Linear Lighting, Fluorescent Fixture, 214718, 1EB Base Linear Lighting, LED Tube, 2 lamp fixture, 2028 Standard Base Linear Lighting, LED Tube, 2 lamp fixture, 1028 Standard Base Linear Lighting, LED Tube, 2 lamp fixture, incarated market Base Linear Lighting, LED Tube, 2 lamp fixture, incarated market Base Linear Lighting, LED Tube, 2 lamp fixture, incarated market Base Ceneral Service Screw-in, CT Base General Service Screw-in, CT Base General Service Screw-in, LED bulb	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0% 0% 17% 0% 0% 0% 0% 0%	0% 11% 0% 0% 0% 0% 0%					0 0	0 0	0.00	N/A	N/A	A/A	N/A
	Base IndustrialMotors or Pumps High Fiftederny Motor Variable Speed Drive Control, Dase motors Base Linear Lighting, Fluorescent Fixture, 214'T12 Base Linear Lighting, Fluorescent Fixture, 214'T12 Base Linear Lighting, Fluorescent Fixture, 214'T13, 1EB Base Linear Lighting, ED Tube, 2 lamp fixture, 224'T8, 1 EB Base Linear Lighting, LED Tube, 2 lamp fixture, 2028 Standard Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market Base General Service Screw-in, CT Base General Service Screw-in, CT Base General Service Screw-in, LED tube	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	17% 17% 00% 00% 00% 00% 00%	14% 14% 0% 0% 0% 0% 0%					0 0	0 0	00.0	A/N	K \	K/N	N/A
	High Efficiency Motor Variable Speed orive Control, base motors Base Linear Lighting, Fluorescent Fixture, 2.L4712. Base Linear Lighting, Fluorescent Fixture, 2.L4713, Linegated market Base Linear Lighting, Fluorescent Fixture, 2.L4713, LBB, integrated market Base Linear Lighting, LBD Tube, 2 lamp fixture Base Linear Lighting, LBD Tube, 2 lamp fixture Base Linear Lighting, LBD Tube, 2 lamp fixture, integrated market Base Linear Lighting, LBD Tube, 2 lamp fixture, integrated market Base Centeral Service Screw-in, CH Base General Service Screw-in, CH Base General Service Screw-in, LBD bulb 2028 Standard Base General Service Screw-in, LBD bulb, 2028 Standard Base General Service Screw-in, LBD bulb, 2028 Standard	0 0 ffice 0 0 ffice 0 0 ffice 0 0 ffice 0 0 ffice 0 0 ffice 0 0 ffice	13% 00% 00% 00% 00% 00%	1% 14% 0% 0% 0% 0% 0% 0%					0	0	0.00	N/A	X X	N/A	Z V
	Variable Speed (brive Control), base motors Base Linear Lighting, Fluorescent Fixture, 2L4712, Base Linear Lighting, Fluorescent Fixture, 2L4712, integrated market Base Linear Lighting, Fluorescent Fixture, 2L4718, 1 EB, integrated market Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market Base Central Service Screw-in, CEI Base General Service Screw-in, CEI Base General Service Screw-in, LED bulb	0 0 ffice 0 0 ffice 0 0 ffice 0 0 ffice 0 0 ffice 0 0 ffice	17% 0% 0% 0% 0% 0%	14% 0% 0% 0% 0% 0% 0%					25	ю	4.05	0	598.45	0.78	1.43
	Base Linear Lighting, Fluorescent Fixture, 2L4T12. Base Linear Lighting, Fluorescent Fixture, 2L4T12, integrated market Base Linear Lighting, Fluorescent Fixture, 2L4T13, integrated market Base Linear Lighting, ED Tube, 2 lamp fixture, 2L4T8, 1EB, integrated market Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market Base Ceneral Service Screw-in, CEL Base General Service Screw-in, CEL Base General Service Screw-in, LED bulb	Office Office Office Office Office Office	%%% %0 %0	%0 %0 %0					282	28	10.35	0	654.24	0.60	1.34
	Base Linear Lighting, Fluorescent Fixture, 214°112, Integrated market Base Linear Lighting, Fluorescent Fixture, 214°115, If Be Base Linear Lighting, Fluorescent Fixture, 214°16, If Be integrated market Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market, 2028 Standard Base Center IS Service Screw-vin, CT. Base General Service Screw-vin, CT. Base General Service Screw-vin, CT. Base General Service Screw-vin, LD bub Base HD Lighting (low bay)	Office Office Office Office Office Office Office Office	%0 %0 %0 %0	%0 %0 %0		2.3	0.0	0.0	0 0	0 0	0.00	Α /Δ Α /Δ	¥ ××××××××××××××××××××××××××××××××××××	N/A	¥ ¥ X
	Base Linear Lighting, Fluorescent Frikure, 2.14°18.1 EB Base Linear Lighting, Fluorescent Frikure, 2.14°18.1 EB, integrated market Base Linear Lighting, LED Tube, 2 lamp fixture, 2025 Standard Base Linear Lighting, LED Tube, 2 lamp fixture, 2025 Standard Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market Base General Service Screw-in, CH Base General Service Screw-in, CH Base General Service Screw-in, LED bulb 2028 Standard	Office Office Office Office Office Office Office	%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%	%0 %0 %0					0	0	0.00	N/A	N/A	N/A	N/A
	Base Linear Lighting, Floorescent Fixture, 2.1479, 1.159, integrated market Base Linear Lighting, LED Tube, 2 lamp fixture, 2028 Standard Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market, 2028 Standard Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market, 2028 Standard Base Center Service Screw-in, CEL Base General Service Screw-in, CEL Base General Service Screw-in, LED bulb Base General Service Screw-in, LED bulb 2028 Standard Base General Service Screw-in, LED bulb, 2028 Standard Base General Service Screw-in, LED bulb, 2028 Standard Base General Service Screw-in, LED bulb, 2028 Standard	Office Office Office Office Office Office	%0 %0 %0	%0 %0					0	0	0.00	N/A	N/A	N/A	N/A
	Base Unear Lighting, LED Tube, 2 lamp fixture, 2028 Standard Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market Base General Service Service, "Incandescent/halogen Base General Service Service," in Crandescent/halogen Base General Service Service, "Lob butb Base General Service Service," Lib butb Base General Service Service, "Dub butb Base General Service Service," Lib butb Base General Service Service, "Dub butb Base General Service Service," Lib butb Base General Service Service, "Dub butb Base General Service Service," Lib butb Base General Service Service, "Dub butb Base General Service Service," Lib butb Base General Service Service, "Dub butb Base General Service Service," Lib butb Base General Service Service, "Dub butb Base HID Lighting (low bay)	Office Office Office Office	%%°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°	% % % 0 0 0		0.0		0.0	0	0	0.00	N/A	N/A	N/A	N/A
	Base Linear Lighting, LED Tube, 2 amp fixture, integrated market Base Linear Lighting, LED Tube, 2 amp fixture, integrated market, 2028 Standard Base General Service Screw-in, CFL Base General Service Screw-in, Incandescenty Halogen Base General Service Screw-in, LED bulb Base General Service Screw-in, LED bulb Base General Service Screw-in, LED bulb, 2028 Standard Base General Service Screw-in, LED bulb, 2028 Standard Base General Service Screw-in, LED bulb, 2028 Standard	Office Office Office Office	%0 0%0	%0					0 0	0 0	0.00	A/N	K/N	K / Z	N/A
	Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market, 2028 Standard Base Genetal Service Screw-in, CT. Base General Service Screw-in, Lincandescent/halogen Base General Service Screw-in, LED bulb Base General Service Screw-in, LED bulb, 2028 Standard Base General Service Screw-in, LED bulb, 2028 Standard Base General Service Screw-in, LED bulb, 2028 Standard	Office Office Office Office	%0	%0	0.0	. 0			0	0	0.00	X/N	K/N	(V	Z/N
	Base General Service Screw-in, CFL Base General Service Screw-in, LDL Bublic Base General Service Screw-in, LED bublic Base General Service Screw-in, LED bublic Base General Service Screw-in, LED bublic Base HDL Lighting (low bay)	Office Office Office	òò			0			0	0	0.00	N/A	N/A	N/A	N/A
	Base General Service Screw-in, Incandescent/halogen Base General Service Screw-in, LED bulb Base General Service Screw-in, LED bulb, 2028 Standard Base HID Lighting (low bay)	Office Office	0%0	%0				0.0	0	0	0.00	N/A	N/A	N/A	N/A
	Base General Service Screw-in, LED bulb Base General Service Screw-in, LED bulb, 2028 Standard Base HID Lighting (low bay)	Office	%0	%0	0.0	0 0		0.0	0 0	0 0	0.00	A/A	V/Α	V/Α	A/N
	Base HID Lighting (low bay)		% %	%0 0	0.0			0.0	0 0	0 0	00:0	N/A	¥ ××	¥ × ×	¥
		Office	%0	%0	0.0				0	0	0.00	N/A	N/A	N/A	N/A
	Base High Bay Lighting, Fluorescent T5	Office	%0	%0	0.0	0			0	0	00:00	N/A	N/A	N/A	N/A
	Base High Bay Lighting, Fluorescent T5, integrated market	Office	%0	%0	0.0	0 0			0 0	0 (0.00	N/A	N/A	A/A	N/A
	Base High Bay Lighting, HID lighting Base High Bay Lighting LED lighting	Office	%0	%0 0	0.0	0.0		0.0	0 0	0 0	0.00	N/A	N/A	Α /N	N/A
	Base CFL Exit Sign	Office	%0	%0	0.0	. 0			0	0	0.00	N/A	N/A	N/A	N/A
	Base Area Lighting, Outdoor HID	Office	%0	%0	0.0	0			0	0	0.00	N/A	N/A	N/A	N/A
	Base General Service Screw-in, Outdoor CFL	Office	%0	%0	0.0	0			0	0	0.00	N/A	N/A	N/A	N/A
	Base General Service Screw-in, Outdoor Incandescent/Halogen	Office	%0	%0	0.0	0 0			0 0	0 0	0.00	N/A	Α/2 2	Α/2 2	Α <u>γ</u>
	Base General Service Screw-in, Outdoor LED Build Base Lipear Liphthip Outdoor Fliprescent Tube	Office	%0	%0 0	0.0	o c			0 0	o c	00:0	N/A	¥	Α \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	N/A
	Base Linear Lighting, Outdoor LED Tube	Office	%0	%0	0.0	. 0			0	0	0.00	N/A	N/A	N/A	N/A
	Base Water-Cooled Centrifugal Chiller, 0.58 kW/ton, 500 tons	Office	%0	%0	0.0	0			0	0	00.00	N/A	N/A	N/A	N/A
	Base DX Packaged System, EER=10.3, 10 tons	Office	%0	%0	0.0	0 0			0 0	0 0	0.00	N/A	N/A	Α × ×	Α « A
	Base Heat Pump cooling (14.3 SEER, 8.2 HSPF)	Office	%0	%0	0.0	. 0			0	0	00:0	N/A	N/A	N/A	N/A
	Base Split-System AC, SEER 14.5, <5.4 tons	Office	%0	%0	0.0	0			0	0	0.00	N/A	N/A	N/A	N/A
	Base PTAC cooling, EER=10.2, 1 ton	Office	%0	%0	0.0	0 0			0 0	0 (0.00	A/A	A/A	Α/N	A/N
	Base Dirtles Mini-Split Heat Pirmo SEER 15 0/HSPF 8 8	Office	%0 0	%0 0	0.0				0 0	0 0	00.0	4/N	X & X	X /2	X X
	Base Open refrigerated/freezer cases	Office	%0	%0	0.0	. 0			0	0	0.00	N/A	N/A	N/A	N/A
	Base Closed refrigerated/freezer cases	Office	%0	%0	0.0				0	0	0.00	N/A	N/A	N/A	N/A
	Base Walk-in refrigeration/freezer units	Office	%0	%0	0.0	0 0			0 0	0 0	0.00	A/A	V/Α	V/Α	A/N
	base Large Cold Storage Area Raca Roach-in Refinerator/Freezer Federal Standard	Office	%0 %0	%0	0.0				0 0	0 0	00.0	A/N	K \	K/N	N/A
	Base Glass Door Reach-in Refrigerator/Freezer, Federal Standard	Office	%0	%0	0.0	. 0			0	0	0.00	N/A	N/A	N/A	N/A
	Base Ice Maker, Federal Standard	Office	%0	%0	0.0	0			0	0	0.00	N/A	N/A	N/A	N/A
	Base Residential-Type Refrigerator/Freezer, Federal Standard	Office	%0	%0	0.0	0 0			0 0	0 0	0.00	V/A	Α ×	∀ \ \ \ \ \	ĕ Ś
	Base Computer Network Server	Office	%0	%0	0.0	. 0			0	0	0.00	X X/X	X/N	X \ X	X X/X
	Base Desktop PC	Office	%0	%0	0.0	0		4	0	0	0.00	N/A	N/A	N/A	N/A
	Base Laptop PC	Office	%0	%0	0.0	0		.0 4	0	0	0.00	N/A	N/A	N/A	N/A
	Base Monitor, LCD	Office	%0	%0	0.0			4 4	0 0	0 0	0.00	N/A	N/A	N/A	N/A
	Base Imaging	Office	%0	%0	0.0	> 0			0 0	0 0	0.00	W/A	N/A	K/N	N/A
	Base Non-Refrigerated Vending Machines. Federal Standard	Office	%0	%0	0.0			,	0	0 0	0.00	K/N	K/N	(V () ()	X/N
3 6100	Base Refrigerated Vending Machines, Federal Standard	Office	%0	%0	0.0				0	0	0.00	N/A	N/A	N/A	N/A
	Base Combi Oven	Office	%0	%0	0.0	0			0	0	00:00	N/A	N/A	N/A	N/A
	Base Convection Oven	Office	%0	%0	0.0	0 0			0 0	0 0	0.00	N/A	A/A	V/N	N/A
	Base Fryer Base Griddle	Office	%0	%0	0.0	o			0 0	0 9	0.00	K/N	K/N	K / Z	N/A
	Base Hot Food Holding Cabinet	Office	%0	%0	0.0	. 0			0	0	0.00	X X/X	X/N	X \ X	X X/X
		Office	%0	%0	0.0				0	0	0.00	N/A	N/A	N/A	N/A
		Office	%0	%0	0.0	0.0	0.0	0.0 20	0	0	0.00	N/A	N/A	N/A	N/A
7100		Office	%0	%0	0.0	0.0			0 0	0 0	0.00	N/A	A/A	Α × ×	Α « V
7300	base neating All-Source neat Pump, SEEK 13.0/ HSPF 8.8 W/Aux Strip neat asset Heating Darkaged Heat Dump 1FFR 13.9/COP 3.4 (w/ non-FR heating) 10 to	Office	%0 %0	%0	0.0	0.0			0 0	0 0	00.0	A/N	K \	K/N	N/A



Ing Sevings Reduction	Savings raction 0% 0% 0% 0% 0% 0% 0% 1% 1% 1%	8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	### ##################################		Ser Life	9. Potential (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	Potential Potent	Potential Potent	Frency (KWH)	Peak Capaciti \$\frac{9}{1}\text{AW}\$ \text{NA}\$ \text{18.20.12} \text{1.2.29} \text{1.2.24.78} \text{10.0.19} \text{1.2.4.78} \text{10.10.19} \text{110.19} \text{110.19} \text{110.19} \text{110.19} \text{110.19} \text{110.19} \text{1.2.4.77}	(176) (176) (176) (176) (176) (178) (178) (178) (178) (178) (178) (178) (179)	Participant 1
7400 Base Ducties Min-Sight Heat Pump, SERR 15.0 (1958 R. 8) Office Only O'N O'N 800 Base Ducties Min-Sight Heat Pump, SERR 15.0 (1958 R. 8) Office Only O'N O'N O'N 810 Base Process Vertilation or Duction (1968 P. 12) O'N	0%6 0%6 0%6 0%6 0%6 0%6 0%6 0%6 0%6 0%6						000000000000000000000000000000000000000	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	\$ 4 4 4 4 5 5 5 7 0 0 0 0 0 0 5 0 5 0 0 0 0 0 0 0	NA NA NA NA NA NA NA NA NA NA NA NA 135.59 136.59 136.59 136.91 137.29 138.012 118.012	NAA	NA N
9.00 Base Uniquested And Season Compressed And Season Compressed And Season Compressed And Season Season Compressed And Season Sea	0.9% 0.9% 0.9% 0.9% 0.9% 0.9% 0.9% 0.9%					000000000000000000000000000000000000000		0.00 0.00	< < < < < < < < < < < < < < < < < < <	NA N	NAA NAA NAA NAA NAA NAA NAA NAA NAA NAA	NA N NA
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9600 Base Process Of Pumps Office Only 9500 Base Indeat-Lighting, Flucescent Fature, 2,4712 Office 0% 0% 9500 Base Linear Lighting, Flucescent Fature, 2,4712 Restaurant 0% 0% 1000 High Performance Lighting, Flucescent Fature, 2,4712 Restaurant 0% 0% 1000 LED Troffer (Base 112) Restaurant 0% 0% 1000 LED Troffer (Base 112) Restaurant 0% 0% 1000 LED Troffer (Base 112) Restaurant 0% 0% 1100 Mevork Lighting Control Truster (Base 112) Restaurant 0% 0% 1100 Base Linear Lighting, Flucescent Fature, 2,4712, Lts Regated market Restaurant 0% 0% 1100 Base Linear Lighting, Flucescent Fature, 2,4712, Lts Regated market Restaurant 0% 0% 1110 High Performance Lighting (Archive) (Base 118) Restaurant 0% 0% 1110 High Performance Lighting (Archive) (Base 118) Restaurant 0% 0% 1110 Hi	0.% 0.% 0.% 0.% 0.% 0.% 0.% 0.4 1.% 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6					000070000000000000000000000000000000000		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0		NA NA NA NA NA NA NA 135.69 136.99 11,820.12 11,820.12 11,820.13 1	N.A.A. N.A.A.A.A.A.A.A.A.A.A.A.A.A.A.A.A	N N A N N A N N A N N A N N A N N A N N A N N A N N A N N A N N A N N A N A N A N A N A N A N A N A N A N A N A N A N A N A N N N A N N N A N N N A N N N A N N N A N N N A N N N A N N N A N N N A N N N N A N N N N N
9300 Base liner Upfling, Florescent Fature, 2,471.2 Office 10 % Only 9300 Base Liner Upfling, Florescent Fature, 2,471.2 Restaurant 20% 0% 1001 High Performance Upfling, Florescent Fature, 2,471.2 Restaurant 20% 0% 1002 High Performance Upfling, Florescent Fature, 2,471.2 Restaurant 20% 0% 1003 RED Coc & Bright Department (1388 T 12) Restaurant 20% 0% 1004 LED Troffer (1888 T 12) Restaurant 20% 0% 1005 RED Coc & Bright Union (2007 E See 112) Restaurant 20% 0% 1100 RED Coc & Bright Union (2007 E See 112) Restaurant 20% 0% 1100 Restaurant 20% 0% 0% 1100 Restaurant 20% 0% 0% 1100 Republic Manaccu Lighting According Sea 120 0% 0% 1110 High Reformance Lighting According Sea 120 0% 0% 1110 High Reformance Lighting Res. Combined Strategies (Base 18) Restaurant 20% 0% 1110 High Reformance Lighting Res. Combined Strategies (Base 18) Restaurant 20%	0% 0% 0% 1 0% 1 49% 1 59% 1 79% 1 75% 1 75% 1 75%					000000000000000000000000000000000000000	000000000000000000000000000000000000000	0.00 0.00 0.02 0.02 0.01 0.01 0.00 0.00	<u> </u>	NA 61,92 25,69 136,58 77,29 10,09,94 1,820,12 12,478 NA	WAA WAA WAA WAA WAA WAA WAA WAA WAA GAGG	NAA NWA NWA NWA NWA NWA NWA NWA NWA NWA
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High Performance Lighting Rive Combined Strategies (Base 112) Receasions 69%	82% 49% 61% 79% 6% 1 44% 75% 1 0% 75%					0 0 0 0 7 0 7 0 7 0 0 0 0 0 0 0 0 0 0 0		0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	\$000000\$0\$000000\$0\$00000	6,192 2,569 105,94 108,012 1,224,78 1,224,78 1,244,78 1,244,78 1,244,78 1,244,78 1,344,78 1,49 1,10,10	4.08 4.08 1.22 1.23 1.57 1.57 1.57 1.39 0.41 1.04 2.78 2.78 2.78 2.78 1.19 1.19 1.19 1.25 1.19 0.41 1.18 1.25 1.18	6.94 1.78 3.25 3.25 3.25 3.25 0.28 0.26 0.28 0.28 1.52 1.52 1.52 0.28 0.28 0.28 0.28 0.28 0.28 0.28 0.2
1002 Rob 2.4 (12) Touck (124) Restaurant 6.9% 56% 56% 56% 56% 56% 56% 56% 56% 56% 56	riant 49% riant 61% riant 69% riant 69% riant 44% riant 05% riant 75% riant 75% riant 76%					000070000000000000000000000000000000000	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.20 0.1111 0.00 0.00 0.00 0.00 0.12 0.13 0.00 0.00 0.00 0.00 0.00 0.00 0.00		25.69 135.58 177.29 10.03.44 11.820.12 11.24.78 N/A 24.31.5 10.19 110.19	6.46 1.22 2.93 2.93 0.13 0.41 0.41 0.44 1.04 1.04 1.04 1.04 1.04 1.13 0.41	19.44 17.78 17.78 17.78 10.96 10.96 10.96 10.28 10.28 10.28 10.28 10.28 10.28 10.28 10.28 10.28 10.28 10.28 10.28 10.38
1003 LED Tricife (1828 PLT) Resisturant 79% 59%	riant 61% riant 79% riant 79% riant 44% riant 0% riant 75% riant 75% riant 75% riant 76% riant 7					0 0 0 0 0 0 0 0 0 1 1 1 0 1	000000000000000000000000000000000000000	0.11 0.00 0.00 0.00 0.00 0.13 0.13 0.00 0.00		136.58 77.29 1009.94 1,820.12 1,224.78 10.24.78 10.34.78 10.34.56 110.19 1,84.27 1,227.57 1,227.57 1,277.59 1,01.01 1,	2.93 2.93 1.57 0.41 1.39 0.41 1.39 1.57 1.57 0.41 1.57 0.41 1.57 0.41 1.57 0.41 0.41 0.41 0.67	4,178 4,178 0,28 0,28 0,96 0,96 0,44 6,44 6,44 6,44 6,44 6,44 6,44 6,4
1004 LED Toffer With lamp removal (112) Restaurant 19% 59%	riant 79% riant 6% riant 44% riant 25% riant 0% riant 75%					0000707000007700000	000000000000000000000000000000000000000	0.14 0.01 0.00 0.00 0.00 0.00 0.18 0.01 0.01		77.29 1182012 1182012 1182012 1182012 118304 11937 11937 110.19 1	1.57 1.57 0.41 1.39 1.74 1.39 1.74 4.80 1.59 1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57	3.25 3.25 0.28 0.09 0.09 0.04 0.44 7.00 1.52 0.02 0.02 0.02 0.03 0.04 0.04 0.04 0.05 0.05 0.05 0.05 0.05
Base Unear Lighting, Cartrick (Base 172) Restaurant 125% 15%	rant 25% rant 25% rant 25% rant 75% rant 75% rant 76% rant 76% rant 76%					000000000000000000000000000000000000000	000010000000000000000000000000000000000	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1,820.12 1,24.78 1,24.78 1,24.78 1,1,42.78 1,54.74 1,49 1,10.1	0.139 0.41 0.41 0.43 0.43 0.43 0.41 0.41 0.41 0.41 0.41 0.41 0.63	0.28 0.28 0.26 0.26 0.28 0.28 0.28 0.28 0.78 0.78 0.78 0.78 0.78 0.78
1007 Base Linear Liphting, Florescort Fature, 24 of 12, regarded market 1010 REFLOCA Byulght Integral Sensor LED traffer (24.85 12) 1101 REFLOCA Byulght Integral Sensor LED traffer (24.85 12) 1102 REFLOCA Byulght Integral Sensor LED traffer (24.85 12) 1103 Regarded 75% 75% 75% 1104 High Performance Lighting (RA - Combined Strategies (Base T8) Restauent 75% 55% 1105 Responsible of the Strategies (Base T8) Restauent 75% 55% 1106 Report (14.85	rant 25% rant 0% rant 75% rant 0% rant 76% rant 76%					000000000000000000000000000000000000000	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.00 0.00 0.00 0.00 0.01 0.01 0.00 0.00	o \$ o \$ o o o o o o o \$ o \$ o o o	1,224,78 NA NA NA 18,34 1,34,56 110,19 1,327,57 1,227,57 NA 2,44,73 197,89	0.41 WA N/A N/A N/A N/A N/A N/A N/A N/A N/A N/	0.96 NA A VA A VA A 6.44 6.44 6.44 6.44 6.44 6.44 6.44 6.4
10500 Bease Lunear Upithing, Futorescent Fixture, 2,44°15, if the granded market Restaurant 75% 53% 53% 51% 5100 High Performance Upithing Futorescent Fixture, 2,44°15, if the Restaurant 75% 52% 52% 5100 High Performance Upithing RR. Combined Strategies (Base TB) Restaurant 75% 52% 52% 5100 High Performance Upithing RR. Combined Strategies (Base TB) Restaurant 75% 55% 55% 5100 Restaurant 65% 54% 54% 54% 54% 54% 54% 54% 54% 54% 5	rant 0% rant 75% rant 0%			000000000000000000	0 U U U E U T U T U T U T U T U T U T U T	0 0 0 7 7 7 0 0 0 0 0 7 7 7 0 7 0 0 0	0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	<u>\$</u>	N/A 218.34 N/A 66.51 159.71 110.19 1,12.27.57 1,2.27.57	1,39 WA WA 4,80 4,80 1,57 1,57 1,57 1,57 1,57 1,18 1,25 1,18 1,18 1,18	2.42 0.44 0.44 0.44 7.02 3.39 3.39 3.39 0.28 0.28 0.28 0.38 0.40 0.40 0.11 0.15
1001 RETOCK DAMPIGHT INEGPED STRATEGIES (Base TB) Restaurant 1976 57% 57% 1100 RETOCK DAMPIGHT INEGPED STRATEGIES (Base TB) Restaurant 27% 52% 55% 1101 Restaurant 27% 22% 55% 1102 Restaurant 27% 22% 52% 22% 1102 Restaurant 27% 22%	rant /5% rant 0% rant 76%			5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	752 67 15 4 55 6 6 6 7 6 7 6 7 6 7 6 7 6 7 6 7 6 7	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0.55 0.18 0.18 0.01 0.01 0.01 0.00 0.00 0.00	> ½	218.34 NA NA NA 66.91 35.56 159.71 118.24.27 1,227.57 NA 243.15 NA 243.15 NA 243.15 1,227.57 1,227.57 NA 243.15 1,247.33 197.89	1.39 N/A 3.77 3.77 1.04 1.57 0.13 0.41 N/A 1.25 0.87 0.07	2.42 NVA 6.44 7.02 1.52 1.52 3.39 0.28 0.28 0.95 0.95 0.95 0.95 0.95 1.18 1.18 1.18 1.18 1.18
High Performance Lighting R.P. "Combined Stategies (Base TB) Resistanint 75% 57% 57% 1109	rant 76%				2 2 8 2 1 2 2 4 2 2 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0.13 0.13 0.00 0.00 0.00 0.00 0.00 0.00		66.97 34.56 159.71 81.49 11.874.27 1,227.57 NA 24.31 NA 24.31 197.89	3.77. 3.77. 4.80 1.04 1.57 0.41	6.47 7.02 1.52 3.99 3.24 0.28 0.95 N/A 2.18 1.81 1.81
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ILED Troffer (Base T8) Restaurant 59% 59% 1103 ILED Troffer (Base T8) Restaurant 59% 59% 1105 ILED Troffer (Base T8) Restaurant 59% 59% 1105 ILED Troffer (Base T8) Restaurant 69% 59% 1107 ILED Troffer (Base T8) Restaurant 69% 59% 1105 ILED Troffer (Base T8) Restaurant 69% 60% 59% 1105 ILED Troffer (Base T8) Restaurant 69% 60% 50% 50% 50% 50% 50% 50% 50% 50% 50% 5	rant 37%			0 0 0 0 0 0 0 0 0 0 0 0 0	2 4 5 4 5 5 6 6 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8	00000000000000	0000000000	0.08 0.01 0.00 0.00 0.00 0.00 0.00 0.00	0 0 0 0 0 8 0 8 0 0 0	159.71 81.49 1101.19 1,827.57 1,227.57 N/A 243.15 N/A 214.73	1.04 2.78 1.57 0.13 0.41 N/A 1.25 N/A 1.18 0.87 0.07	1.52 3.29 3.24 0.28 0.95 N/A N/A 2.18 1.81
1105	rant 52%			5 6 6 6 6 6 6 6 6 6 6	3232333222421	20000m0N0000	000000000	0.12 0.01 0.00 0.00 0.43 0.26 0.00	0 0 0 0 0 0 0 0 0	81.49 110.19 1,827.57 1,227.57 N/A 243.15 N/A 214.73	1.78 1.57 0.41 N/A 1.25 N/A 1.18 0.87 0.07	3.59 3.24 0.28 0.95 N/A 2.18 N/A 2.01 1.81
1156 Base Linear Lighting, Controls (Base T8) Restaurant	rant 75%			60000000000	1 4 10 10 10 10 10 10 10 10 10 10 10 10 10	000000000	0000000	0.00 0.00 0.00 0.00 0.00 0.00 0.00	0 0 0 × 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1,824.27 1,227.57 N/A 243.15 N/A 214.73 197.89	0.41 N/A 1.25 N/A 1.18 0.87 0.07	0.28 0.95 N/A 2.18 N/A 2.01 1.81
1107 Base Unear Lighting, Ploucescent Fluthure, 2.44% I En (ringerated market Restaurant 68% 67% 67% 1153	rant 44%			000000000		0000000	00 # 0 0 0	0.00 0.00 0.43 0.26 0.00 0.00	0 N/A 0 0 0 0 0	1,227.57 N/A 243.15 N/A 214.73 197.89	0.41 N/A 1.25 N/A 1.18 0.87 0.07	0.95 N/A 2.18 N/A 2.01 1.81 0.15
1155 Rest Cock & Daylight Integral Search Education (base TB integrated) 1150 RET Ock & Daylight Integral Search Education (base TB integrated) 1151 Rest Cock & Daylight Integral Search Education (base TB integrated) 1202 High Performance Lighting, LED Tube, 2 lamp fixture, 2028 Standard (Seasurant 69% 33% 1204 1203 Restormance Lighting Control Tuneup (Base LED Tube) 1204 Restaurant 64% 159% 1205 High Performance Lighting RR - Cock Daylight Integral Search Control Tuneup (Base LED Tube) 1206 Restaurant 64% 159% 1207 High Performance Lighting RR - Cock Daylight Integral Search Control Tuneup (Base LED Tube) 1208 Restaurant 64% 159% 1209 Restaurant 64% 159% 1209 Restaurant 64% 159% 1200 Restaurant 64% 159% 1200 Restaurant 64% 159% 1201 RET Occ & Daylight Integral Search Control (Rase LED Tube) 1202 RET Occ & Daylight Integral Search Control (Rase LED Tube) 1203 RET Occ & Daylight Integral Search Control (Rase LED Tube) 1204 Restaurant 64% 159% 1206 RET Occ & Daylight Integral Search Control (Rase LED Tube) 1206 RET Occ & Daylight Integral Search Control (Rase LED Tube) 1206 RET Occ & Daylight Integral Search Control (Rase LED Tube) 1206 RET Occ & Daylight Integral Search Control (Rase LED Tube) 1207 Restaurant 64% 159% 1208 RET Occ & Daylight Integral Search (Rase LED Tube) 1209 Restaurant 64% 159% 1200 Restaurant 64% 16% 16% 16% 16% 16% 16% 16% 16% 16% 16	rant 25%			00000000		0 m 0 n 0 0 0 0	0 11 0 0 0 0	0.00 0.43 0.00 0.26 0.00	A/N 0 /N 0 0 0	N/A 243.15 N/A 214.73 197.89	N/A 1.25 N/A 1.18 0.87 0.07	N/A 2.18 N/A 2.01 1.81
1200 Base Linear Lighting, Cantol Turber (Base IED Tube) Restaurant 20% 47% 1201 High Performance Lighting Control (Base LED Tube) Restaurant 20% 32% 1202 Restaurant 20% 20% 20% 1203 Remove Lighting Control (Base LED Tube) Restaurant 20% 32% 1204 Base Linear Lighting, LED Tube, 2 lamp Rivare, 2028 Standard Restaurant 20% 20% 1205 High Performance Lighting, LED Tube, 2 lamp Rivare, 2028 Standard Restaurant 20% 20% 1206 High Performance Lighting RR - Combined Strategies (Base LED Tube) Restaurant 20% 20% 1207 Remove Lighting RR - Combined Strategies (Base LED Tube) Restaurant 20% 20% 1208 Base Linear Lighting, LED Tube, 2 lamp Rivare, 2028 Standard Restaurant 20% 20% 1209 Remove Lighting RR - Combined Strategies (Base LED Tube) Restaurant 20% 20% 1209 Remove Lighting RR - Combined Strategies (Base LED Tube) Restaurant 20% 20% 1209 Remove Lighting, LED Tube, 2 lamp Rivare, 2 lamp Restaurant 20% 20% 1209 Remove Lighting, LED Tube, 2 lamp Rivare, 2 lamp Restaurant 20% 20% 1209 Restaurant 20% 20% 20% 1200 Restaurant 20% 20%	rant 0%			0000000	m n n n n n	00000	H O O O O	0.43 0.00 0.26 0.00	0 × 0 0 0	243.15 N/A 214.73 197.89	1.25 N/A 1.18 0.87 0.07	2.18 N/A 2.01 1.81 0.15
1201 High Performance Lighting R/R - Combined Strategies (Base LED Tube) Restaurant Restaurant 12% 23% 1203 Hopfing Control Tuneup (Base LED Tube) Restaurant 12% 33% 1204 Base Linear Lighting, LED Tube LeD Tube) Restaurant 12% 5% 1205 Base Linear Lighting, LED Tube LeD Tube) Restaurant 12% 5% 1206 High Performance Lighting R/R - Combined Strategies (Base LED Tube) Restaurant 12% 32% 1206 High Performance Lighting (LED Tube) (Base LED Tube) Restaurant 12% 32% 1206 High Performance Lighting (LED Tube) (Base LED Tube) Restaurant 12% 5% 1206 High Performance Lighting (LED Tube) (Base LED Tube) Restaurant 12% 5% 1207 Base Linear Lighting, LED Tube, 2 lamp Mixture, integrated market 12% Restaurant 12% 15% 1207 Base Linear Lighting, LED Tube, 2 lamp Mixture, integrated market 2028 Standart Restaurant 22% 15% 1207 Base General Service Screw-in, Inchaesent Tiblogen Restaurant 22% 15% 1207 Base General Service Screw-in, LED Tube (Base LED Integrated Market 2028 Standard Restaurant 22% 15% 1207	rant 68%			00000	20000	00000	000	0.26 0.00 0.01	000	214.73	1.18 0.87 0.07 0.23	2.01 1.81 0.15
1202 Restaurant 69% 39% 1203 Rework Lighting Control Tuneau (Base LED Tube) Restaurant 25% 59% 1204 Base Linear Lighting Carbor Tuneau (Base LED Tube) Restaurant 25% 59% 1205 High Performance Lighting RR - Combined Strategies (Base LED Tube) Restaurant 27% 59% 1206 High Performance Lighting RR - Combined Strategies (Base LED Tube) Restaurant 60% 59% 1207 Restaurant 60% 60% 60% 60% 1208 Base Linear Lighting RR - Combined Strategies (Base LED Tube) Restaurant 60% 60% 1209 Base Linear Lighting LED Tube 2 lamp fixture, integrated market 22% 84% 15% 1207 RET Occ & Daylight Integral Sensor LED troffer (base linear LED integrated) Restaurant 60% 60% 1208 RET Occ & Daylight Integral Sensor LED troffer (base linear LED integrated) Restaurant 60% 60% 1209 RET Occ & Daylight Integral Sensor LED troffer (base linear LED integrated) Restaurant 60% 60% 1206 RET Occ & Daylight Integral Sensor LED troffer (base linear LED integrated) Restaurant 60% 60% 1207 RET Occ & Daylight Integral Sensor LED troffer (base linear LED integrated) Restaurant 60% 60% 1208 RET Occ & Daylight Integral Sensor LED troffer (base linear LED integrated) Restaurant 60% 60% 1209 Restaurant 60% 60% 60% 1200 Restaurant 60% 60% 60% 1200 Restaurant 60% 60% 60% 60% 60% 1200 Restaurant 60% 60%	rant 42%			0000	m 2 m	0000	0 0	0.00	0 0	197.89	0.87 0.07 0.23	1.81
1203 Nework Lighting Control (Base LED Tube) Restaurant 149% 199% 1204 Base Line Tublishing Control (Base LED Tube) Restaurant 142% 199% 1225 High Performance Upiting RR - Control Tronguy (Base LED Tube) Restaurant 142% 199% 1229 Restaurant 142% 144% 199% 1229 Restaurant 1229 R	rant 6%			000	2 6	000	0	0.01	0		0.07	0.15
Base Linear Lighting, LED Tube, 2 lamp fixture, 2028 Standard Restaurant 25% Base Linear Lighting, LED Tube, 2 lamp fixture, 2028 Standard Restaurant 25% 32% Lighting Control Tuben, (Base LED Tube) Restaurant 25% 32% 1222 Report Control Tuben, 2 lamp fixture, 100% 1228 Restaurant 25% 32% 1228 Restaurant 25% 25% 1228 Restaurant 25% 25% 2000	rant 44%				2	0 0		000	c	3,276.22	0.23	
High Performance Lighting R/R - Combined Strategies (Base LED Tube) Restaurent 42% 32% 1228 Restaurent 64% 1228 Restaurent 64% 1228 Restaurent 62% 1228 Restaurent 62% 1229 Restaurent 62% 1239 Restaurent 62% 124 Restaurent 62% 1250 Restaurent 62% 124	rant 25%				2 18		0 0	0.00	0 N	2,204.61 N/A	N/A	0.53 N/A
1222 Nework Ughting Cortrol Tuneu (Base LED Tube) Restaurant Programment Cortrol Tuneu (Base LED Tube) 3% 3% 1223 RET Occ & Dayloff Linear-Lighting, LED Tube, 2 lamp fixture, integrated market, 2028 Standart Restaurant Programment Cortrol Tuneur (Base Inear Lighting, LED Tube, 2 lamp fixture, integrated market, 2028 Standart Restaurant Programment LED Screw-in, CEL Dube Led Tuneur (Base Inear Lighting, LED Tube, 2 lamp fixture, integrated market, 2028 Standart Restaurant Programment LED Screw-in, CEL Dube Led Tube (Base General Scrive) in Incandescent/Inagen Restaurant Programment LED Screw-in, LED Dube Restaurant Programment (Base Inear Lighting Cortrol Expection) in Incandescent/Inagen Restaurant Programment LED Screw-in replacement (Base LED) Restaurant Programment Programm	rant 42%			0	7	ю	·	0.53	0	244.01	1.03	1.77
12229 Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market Restaurant 23% 15% 1225 RET Occ & Daylight Integral Sensor LED trige pred Restaurant 23% 15% 1225 RET Occ & Daylight Integral Sensor LED trige pred Restaurant 23% 15% 1225 RET Occ & Daylight Integral Sensor LED trige pred Restaurant 22% 15% 1230 RET Occ & Daylight Integral Sensor LED trige pred Restaurant 22% 15% 1230 RET Occ & Daylight Integral Sensor LED trige pred Restaurant 22% 15% 1230 LED screwn in replacement (base CM) Restaurant 23% 13% 1230 LED screwn in replacement (base CM) Restaurant 23% 13% 1230 LED screwn in replacement (base CM) Restaurant 23% 13% 1230 LED screwn in replacement (base CM) Restaurant 23% 13% 1230 LED screwn in replacement (base CM) Restaurant 23% 23% 1230 LED screwn in replacement (base CM) Restaurant 23% 23% 1230 LED screwn in replacement (base CM) Restaurant 23% 23% 1230 LED screwn in replacement (base CM) Restaurant 23% 23% 1230 LED screwn in replacement (base CM) Restaurant 23% 23% 1230 Restaurant 23% Restaurant 23% 23% 1230 Restaurant 23% Restaurant 23% 23% 1230 Restaurant 23% Restaurant 23% 23% 1230 High Performance Lighting (PR - Combined Strategies (Base TS) Restaurant 23% 23% 1230 Restaurant 23% Restaurant 23% 23% 1230 High Performance Lighting (PR - Combined Strategies (Base TS) Restaurant 23% 23% 1230 Restau	rant 6%			0 0	2 6	0 (0 (0.00	0	224.88	0.77	1.59
1250 Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market Restaurant 1256 15% 1275 RET Occ & Daylight Integrated market, 2028 Standard Restaurant 1275 Rest Linear LeD fullop, 2 lamp fixture, integrated market, 2028 Standard Restaurant 1276 1276 1275	rant 44%			o d	7 6	0 0	0 0	0.02	0 0	2.505.24	0.20	0.14
1251 RET Occ & Daylight Titlegal Sensor LED roffer (base linear LED integrated) Restaurant 20% 1275 RET Occ & Daylight Titlegal Sensor LED troffer (base linear LED integrated) Restaurant 20% 15% 1300 Base Liber Uphting, LED Tuble, 2 lamp Rktur, integrated market, 2008 Standard Restaurant 20% 15% 1301 Base General Service Screw-In, CET Restaurant 20% 0% 1301 Base General Service Screw-In, Jurcandescent/Halogen Restaurant 20% 0% 1400 LED screw-in replacement (base LED) Restaurant 0% 0% 1425 LED screw-in replacement (base LED) Restaurant 0% 0% 1425 Base General Service Screw-in, LED bulb, 2028 Standard Restaurant 0% 0% 1425 Base High Bay Lighting (louk bay) Restaurant 0% 0% 1501 High Performance Lighting (louk bay) Restaurant 0% 0% 1502 Base High Bay Lighting, Chronescent TS Restaurant 0% 0% 1503 High Performance Lighting Controls (Base TS) Restaurant </td <td>rant 0%</td> <td></td> <td></td> <td>0</td> <td>ım</td> <td>0</td> <td>0</td> <td>0.00</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>N/A</td>	rant 0%			0	ım	0	0	0.00	N/A	N/A	N/A	N/A
1275 Base Linear Liphting, LED Tuble, 2 lamp fixture, integrated market, 2028 Standart Restaurant 0% 1276 RET Occ & Daylight and Service Screw-in, CEL 188 1301 LED screw-in replacement Clase (TL) Restaurant 0% 1313 LED screw-in replacement (Jose CEL) Restaurant 29% 0% 1313 LED screw-in replacement (Jose LED) Restaurant 29% 0% 1400 LED screw-in replacement (Jose LED) Restaurant 29% 0% 1401 LED screw-in replacement (Jose LED) Restaurant 29% 0% 1402 Base General Service Screw-in, LED bulb Restaurant 20% 0% 1402 Base General Service Screw-in, LED bulb Restaurant 20% 0% 1455 Base General Service Screw-in, LED bulb Restaurant 20% 0% 1501 High Performance Lighting (Onthologe) Restaurant 20% 0% 1502 High Performance Lighting (Onthologe) Restaurant 20% 0% 1503 High Performance Lighting Corntols (Base TS) Restaurant	Restaurant 22%			0	2	П	0	0.12	0	1,375.55	0.22	0.38
1300 Base General Service Screev-In, Carlo Base General Service Screev-In, Carlo Base General Service Screev-In, Carlo Base General Service Screev-In, Incadescent/Halogen Restaurant 29% 33% Base General Service Screev-In, Incadescent/Halogen Restaurant 29% 33% Base General Service Screev-In, Incadescent/Halogen Restaurant 29% 0.0% 1403 1401	Restaurant 0%			0.9	2 5	0 6	0 0	0.00	√ _A	N/A 1 563 13	N/A 10	N/A
1301 Ebs General Service Screw-in palacement (base CFU) 1351 Ebs General Service Screw-in, Incandescent/halogen Restaurant 29% 33% 1351 Ebs Screw-in replacement (base (brandescent/halogen) Restaurant 73% 63% 1401 Ebs Screw-in replacement (base (ED) Restaurant 73% 63% 1425 Ebs Screw-in replacement (base (ED) Restaurant 73% 73% 1450 Base General Service Screw-in, LED bulb, 2028 Standard Restaurant 73% 73% 1450 Base HID Lighting (tow bay) Restaurant 73% 73% 1501 High Performance Lighting R.M Combined Strategles (Base 15) Restaurant 73% 73% 1503 High Performance Lighting R.M Combined Strategles (Base 15) Restaurant 73% 73% 1504 High Performance Lighting R.M Combined Strategles (Base 15) Restaurant 73% 73% 1503 Lighting Control Tuneur (Base 15) Restaurant 73% 73% 1504 Restaurant 73% 73% 73% 1506 Base High Bay Lighting Grontrol State 15) Restaurant 73% 73% 1506 Base High Bay Lighting Grontrol State 73% 73% 1506 Base High Bay Lighting Grontrol State 73% 73% 1507 Restaurant 73% 73% 73% 1508 Base High Bay Lighting Grontrol State 73% 73% 1509 Restaurant 73% 73% 73% 1506 Restaurant 73% 73% 73% 1507 High Bay El-evel Programmed LED Fixture Restaurant 73% 73% 1506 High Performance Lighting Al.M. Combined Strategles (Base High Bay Lievel Programmed LED Fixture Restaurant 73% 73% 1507 High Performance Lighting Al.M. Combined Strategles (Base High Bay Lievel Programmed LED Fixture Restaurant 73% 73% 1507 Restaurant 73% 73% 73% 73% 1508 Restaurant 73% 73% 73% 73% 73% 1509 Restaurant 73% 7	rant 0%				1 1	4 0	0	0.00	N/A	N/A	N/A	N/A
1350 Base General Service Screw-in, Incandescent/Halogen Restaurant 0% 1400 Bess General Service Screw-in, IED bulls open Restaurant 0% 1401 LED screw-in replacement (base LED) Restaurant 0% 1425 LED screw-in replacement (base LED) Restaurant 0% 1426 LED screw-in replacement (base LED) Restaurant 0% 1450 Base High Bay Lighting (low bay) Restaurant 0% 1501 High Performance Lighting (low bay) Restaurant 0% 1502 High Performance Lighting (low bay) Restaurant 3% 1503 High Performance Lighting (low bay) Restaurant 3% 1504 Lighting Control (lase TS) Restaurant 3% 1504 Network Lighting Control (lase TS) Restaurant 44% 1505 Base High Bay Lighting Controls (lase TS) Restaurant 5% 1504 Base High Bay Lighting Controls (lase TS) Restaurant 5% 1505 Base High Bay Lighting, Controls (lase TS) Restaurant 6% 6%	rant 29%			0	1 6	0	0	0.09	0	80.17	1.12	1.70
1400 Leaver of the page defined a Service Screen'rin, LED build	rant 0%			o o	4 -	0 1	0 1	0.00	A/A	N/A	A/A	A/N C
1401 LED screw-in replacement (base LED) Restaunnt 10% 11% 1425 Base General Service Screw-in, Febbut, 2028 Standard Restaurnt 2% 2% 1450 Base HD Lighting (but belt) Restaurnt 2% 2% 1501 High Performance Lighting, Row belt) Restaurnt 2% 0% 1502 High Performance Lighting, RVR - Combined Strategies (Base TS) Restaurnt 3% 44% 1503 High Ray Lighting, Florescent TS Restaurnt 4% 55% 1504 High Ray Lighting, Florescent TS Restaurnt 4% 54% 1503 High Bay Lighting, Florescent TS Restaurnt 4% 13% 1504 Lighting, Control Timeup (Base TS) Restaurnt 4% 19% 1504 Mework Lighting Control Gase TS) Restaurnt 2% 15% 1505 Base High Bay Liteue Programmed LED Fixture Restaurnt 13% 15% 1550 Base High Bay Bi-Leve Programmed LED Fixture Restaurnt 13% 17% 1550 High Bay Bi-Leve	rant 0%				1 6	0	v 0	0.00	o X	N/A	0.20 N/A	12.34 N/A
1425 Base General's Evence Screw-in, LeDib, 2028 Standard Restaurant 0% 1456 LED screw-in registerement (base LED) Restaurant 2% 0% 1450 Base HD Lighting (low bay) Restaurant 0% 0% 1501 High Performance Lighting (AF Combined Strategles (Base TS) Restaurant 0% 0% 1502 High Performance Lighting (AF Combined Strategles (Base TS) Restaurant 3% 44% 1503 High Bay LED Trube (Base TS) Restaurant 4% 19% 1504 Lighting Control (Trubup (Base TS)) Restaurant 4% 19% 1505 Base High Bay LeD Trafer (Base TS) Restaurant 4% 19% 1506 Base High Bay Leb Trafer (Base TS) Restaurant 2% 2% 1506 Base High Bay Leb Trage (Base TS) Restaurant 3% 47% 1507 High Bay Bi-Leve (Programmed LED Fixture Restaurant 3% 47% 1550 Base High Bay Librang (Programmed LED Fixture Restaurant 3% 47% 1550 High Bay	rant 10%				1	1	0	0.13	. 0	343.28	0.26	0.40
1450 Base HD Lighting (low bay) 1500 Base HD Lighting (low bay) 1510 Restaurant 0% 0% 1510 High Performance Lighting (Art. Combined Strategies (Base TS) 1511 High Performance Lighting (Art. Combined Strategies (Base TS) 1512 High Performance Lighting (Art. Combined Strategies (Base TS) 1513 High Performance Lighting Corrol Troffer (Base TS) 1514 Restaurant 37% 1515 Base High Bay Lighting Corrol (Base TS) 1516 Base High Bay Lighting Corrol (Base TS) 1516 Base High Bay Lighting Corrol (Base TS) 1517 Restaurant 6% 3% 1517 Restaurant 6% 0% 1518 High Bay Bi-Leve Programmed LED Fixture 1518 High Performance Lighting, HD lighting 1518 High Performance Lighting (Art. Combined Strategies (Base High Bay Lighting, HD lighting) 1518 Restaurant 6% 0% 1518 Restaurant 6% 0% 1518 High Performance Lighting, HD lighting 1518 Restaurant 6% 0%	rant 0%					0 0	0 0	0.00	N/A	N/A	V/A	N/A
1500 Restaurant 0% 0%	rant 0%			5 ∺	2 18	0	0	0.00	T N/A	2,178.46 N/A	4.0.V	N/A
1501 High Performance Uptifuting RP Combined Strategies (Base T5) Restaurant Responsibility of the Combined Strategies (Base T5) Restaurant Responsibility of the Combined Strategies (Base T5) Restaurant Responsibility of Strategies (Base T5) Restaurant	rant 0%			0.	0	0	0	0.00	N/A	N/A	N/A	N/A
150.2 ROB L24* LED Tube (1886 1-5) Restaurant 59% 150.3 High Bay LED Troffer (1886 1-5) Restaurant 59% 150.4 Lighthing Control Tuneup (1888 1-5) Restaurant 69% 39% 150.5 Restaurant 69% 20% 20% 150.6 Restaurant 69% 20% 150.6 Restaurant 25% 29% 150.6 Restaurant 25% 25%	rant 73%			0.	0	0	0	0.00		3,755.09	0.07	0.11
1504 Lighting Control Tuneup (8ase T5) Restaurant 6% 3% 35% 35% 35% 35% 35% 35% 35% 35% 35%	rant 39%			. c	0 12	0 0	0 0	0.00	0 0	32.76 58.66	5.07	7.41
1505 Network Lighting Controls (Base TS) Restaurant 49% 19% 1506 Base High Bay Lighting, Florescent TS, Integrated market Restaurant 55% 5% 5% 1526 Base High Bay Lighting, Florescent TS, Integrated market Restaurant 6% 6% 1550 High Bay Bay Leiverly Programmed LED Fixture Restaurant 6% 6% 1551 High Bay Bay Leiverly Programmed LED Fixture Restaurant 6% 47% 1552 High Performance Lighting RR, Cacol Programmed LED Fixture Restaurant 5% 47% 1575 High Performance Lighting RR, Cacol Programmed LED Fixture Restaurant 3% 65% 1576 Network Lighting Corrols (Base High Bay Leib) Bay LED) Restaurant 3% 65% 1576 Network Lighting Corrols (Base High Bay LED) Restaurant 44% 19%	rant 6%			. 0		0	0	0.00	O 11	5,910.68	0.03	0.06
1506 Restaurant 25% Restaurant 5% 5% 1525 Base High Bay Libriting, Fluxeresent T3, Integrated market Restaurant 0% 0% 1526 High Bay Be Level Programmed LED Fixture Restaurant 63% 47% 1550 Base High Bay Libriting Restaurant 0% 0% 1551 High Bay Bay Bi-Level Programmed LED Fixture Restaurant 0% 0% 1552 High Bay Bay Bi-Level Programmed LED Fixture Restaurant 73% 55% 1552 High Performance Lighting R/R - Combined Strategies (base high bay HID) Restaurant 73% 55% 1575 Network Lighting Controls (Base high bay LED) Restaurant 44% 19%	rant 44%			o.	0	0	0	0.00	11	97,854.24	0.00	0.01
15.26 Boase High Bay Bi-Leve Programmed LED Fixture Restaurant 70% 70% 15.26 High Bay Bi-Leve Programmed LED Fixture Restaurant 70% 70% 15.51 High Bay Bi-Leve Programmed LED Fixture Restaurant 70% 70% 15.51 High Bay Bi-Leve Programmed LED Fixture Restaurant 73% 70% 15.52 High Performance Lighting R/R - Combined Strategies (base high bay HID) Restaurant 73% 55% 15.54 Restaurant 73% 70% 70% 70% 15.55 Restaurant 73% 70% 70% 70% 15.56 Restaurant 73% 70% 70% 70% 15.57 Restaurant 70% 70% 70% 70% 15.58 Restaurant 70% 70% 70% 70% 15.59 Restaurant 70% 70% 70% 70% 15.50 Restaurant 70% 70% 70% 15.50 70% 70% 70% 70% 70% 15.50 70% 70% 70% 70% 70% 70% 15.50 Restaurant 70% 70% 70% 15.50 70% 70% 70% 70% 70% 70% 15.50 70% 70% 70% 70% 70% 70% 15.50 70% 70% 70% 70% 70% 70% 15.50 70% 70% 70% 70% 70% 70% 70% 15.50 70% 70% 70% 70% 70% 70% 70% 15.50 70% 70% 70% 70% 70% 70% 70% 70% 70% 70% 15.50 70% 70% 70% 70% 70% 70% 70% 70% 70% 70% 70% 70%	rant 25%		0.0	0.0	0 10	0 0	0 0	0.00	4 2	65,847.24	0.01	0.02
1550 Base High Bay Lighting, HID lighting Restaurent 9% 0% 1551 High Berformance Lighting RR. Combined Strategies (base high bay HID) Restaurant 57% 47% 1572 High Performance Lighting RR. Combined Strategies (base high bay HID) Restaurant 73% 55% 1575 However, Lighting, Combined Strategies (base high bay LID) Restaurant 73% 0% 1576 Network Lighting, Combined Strategies (base high bay LID) Restaurant 44% 19%	rant 63%					0 0	0 0	0.00	¥ 0	N/A 57.48	5.01	8.51
1551 High Bay Bi-Level Programmed LED Fixture Restaurant 63% 47% 1552 High Performance Lighting AIR - Combined Strategies (base high bay HID) Restaurant 73% 55% 1575 Base High Bay Lighting, LED lighting 1576 Network Lighting, Corrols (Base high bay LED) Restaurant 44% 19%	rant 0%			0.		0	0	0.00	N/A	N/A	N/A	N/A
1552 High Performance Lighting KR. *Combined Strategies (base high bay HID) Restaurant 73% 55% 1575 High Bay Lighting, LED lighting is a Restaurant 0% 0% 1576 Network Lighting Controls (Base high bay LED) Restaurant 44% 19%	rant 63%	0.0		0	0	0	0	0.00	0	49.35	5.84	9.91
Network Lighting Controls (Base high bay LED) Restaurant 44% 19%	rant 73%	0.2	0.0	o o	0 15	0 0	0 0	0.00	1 N/A	3,241.45	0.08 N/A	0.13 N/A
	rant 44%	1.8		0		0	0	0.00	29	248,664.90	0.00	0.00
Occupancy Sensor (Base high bay LED) Restaurant 25%	rant 25%	0.3	0.0	0 0.		0	0	0.00	6	167, 329.47	0.00	0.01
1 1600 Base CFL Exit Sign Regardant 0% 0% 1 1 1601 Lanca Control Contr	ant t	0.0	0.1	. 0	18	0 °	0 0	0.00	Ø o	N/A 104 27	A 2	N/A 3 11
Base Area Lighting, Outdoor HID Restau	rant	0.0	3.2	2 0.0	5 15	4 0	0	0.00	N/A	N/A	A/N	N/A



Comm	ercial	Commercial Electric Existing Construction															
DSM ASSYST SUMMARY	T SUMMA!	ıry											System Second	Levelized Cost	evelized Cos	Total	
Σ	Measure		Building	Energy	Peak Reduction	Total Costs/	Base	,	Peak Watts/	Service	Technical Potential	Peak Tech.	Peak Tech.		of Avoided	Resource Cost Test	Participant
Segment N	Number	Measure	Type	Fraction	Fraction	Sq Ft	EUI						MM	\$/kwH	\$/kW	(TRC)	Test
	1652	LED outdoor lighting with bi-level controls (Base Outdoor HID)	Restaurant	80%	80%	0.4	3.2	0.6	0.1	15	16	2	0.83	0 0	93.48	3.09	6.39
	1653	Outdoor Lighting Controls (Base Outdoor HID) Base General Service Screw-in, Outdoor CFI	Restaurant	16%	73%	4.0	4.0	2.9	0.1	18	0 2	п О	0.49	0 N/A	104.79 N/A	1.25 N/A	1.45 N/A
	1701	LED outdoor lighting with bi-level controls (Base Outdoor CFL)	Restaurant	22%	22%	0.4	0.2	0.1	0.0	15	0	0	0.01	0	1,822.29	0.16	0.33
	1702 1703	LED screw-in replacement (base Outdoor CFL) Outdoor Lighting Controls (Base Outdoor CFL)	Restaurant	30%	30%	0.0	0.2	0.2	0.0	18	0 0	0 0	0.01	0 +	198.71	89.0	0.10
. 	1750	Base General Service Screw-in, Outdoor Incandescent/Halogen	Restaurant	%0	%0	0.0	0.7	0.7	0.1	15	0	0	0.00	N/A	N/A	N/A	N/A
	1751	LED outdoor lighting with bi-level controls (Base Outdoor Incandescent)	Restaurant	85%	85%	4.0	0.5	0.0	0.0	15	2 5	0 0	0.09	0 0	1,189.73	0.24	3.68
	1753	Outdoor Lighting Controls (Base Outdoor Incandescent)	Restaurant	16%	73%	0.4	0.3	0.2	0.0	18	0	0	0.05	o =1	1,416.98	0.09	0.11
	1800	Base General Service Screw-in, Outdoor LED bulb	Restaurant	0%	0%	0.0	0.2	0.2	0.0	15	00	0 0	0.00	N/A	N/A 7 1 83 14	N/A	N/A
	1850	Outdoor Lighting, Outdoor Fluorescent Tube	Restaurant	%0	%0	0.0	0.4	0.4	0.1	15	0	0	0.00	N/A	N/A	N/A	N/A
₩,	1851	ROB 2L4' LED Tube (base outdoor fluorescent)	Restaurant	40%	40%	0.0	0.4	0.2	0.0	13		0	0.03	. 0 (200.43	1.29	2.68
	1852	LED outdoor lignting with bi-level controls (Base Outdoor Fluorescent) Outdoor Lighting Controls (Base Outdoor Fluorescent)	Restaurant	63% 16%	73%	0.0	0.4	0.3	0.0	18	۰ 0	0	0.03	0 =	898.27	0.15	0.17
1	1900	Base Linear Lighting, Outdoor LED Tube	Restaurant	%0	%0	0.0	0.3	0.3	0.0	15	0	0	0.00	N/A	N/A	N/A	N/A
	1901	Outdoor Lighting Controls (Base Outdoor LED Tube) Base Water-Cooled Centrifuaal Chiller. 0.58 kW/ton. 500 tons	Restaurant	16%	73%	0.0	1.9	0.2	0.0	18	0 0	0 0	0.02	N/A	1,309.88 N/A	0.10 N/A	0.12 N/A
	2001	Centrifugal Chiller, 0.54 kW/ton, 500 tons	Restaurant	12%	12%	0.2	2.0	1.7	0.0	23	0	0	0.22	0	N/A	2.23	1.77
	2002	Chiller Tune Up/Diagnostics	Restaurant	%6	7%	0.1	2.1	1.9	0.0	ر د د	0 0	0 0	0.01	0 +	N/A	0.86	1.36
	2007	Celling/roof Insulation - Chiller Duct Testing/Sealing - Chiller	Restaurant	20%	24%	0.3	1.9	1.6	0.0	18	0	0	0.03	۰ 0	¥ × × ×	0.53	1.22
-	2009	EMS Optimization - Chiller		%9	%9	0.0	2.0	1.9	0.0	LO.	0	0	0.00	0	N/A	0.83	2.21
	2010	Dual Enthalpy Economizer Replaces Dry Bulb Economizer - Chiller Window Film (Standard) - Chiller	Restaurant	10%	18%	4.0	2.0	1.8	0.0	10	0 0	0 0	0.00	0 0	V/A	0.09	0.25
	2013	High Efficiency Windows - Chiller	Restaurant	14%	25%	0.2	2.1	1.8	0.0	20	0	0	0.07	0	X Y	1.08	1.32
	2100	Base DX Packaged System, EER=10.3, 10 tons	Restaurant	%0	%0	0.0	2.7	2.7	0.0	15	0 4	0 0	0.00	N/A	N/A	N/A	N/A
	2101	DX Packaged System, EER=10.9, 10 tons DX Packaged System, EER=13.4, 10 tons	Restaurant	23%	23%	0.7	2.7	2.1	0.0	15	21	0	7.02	0 0	¥	3.02	2.53
₩.	2103	Geothermal Heat Pump, EER=13, 10 tons - DX	Restaurant	21%	21%	2.4	2.7	2.1	0.0	15	₩.	0	1.22	0	N/A	0.26	0.22
	2104	DX Tune Up/ Advanced Diagnostics Refrigerant Charge Adjustment - DX	Restaurant	10%	10%	0.1	2.8	2.7	0.0	9 9		0 0	0.38	0 0	N/A	0.73	1.05
	2106	Ceiling/roof Insulation - DX	Restaurant	12%	12%	1.3	2.9	2.6	0.0	20		0	1.69	0	N/A	0.36	0.29
	2107	Cool Roof - DX	Restaurant	7%	7%	0.5	2.7	2.5	0.0	10	m u	0 0	3.74	0 0	A/N	0.63	0.57
	2109	Duct resung/searing - DX Duct/Pipe Insulation - DX	Restaurant	2%	26%	0.3	2.7	2.6	0.0	10	0 11	0	1.43	0 =	N A	0.13	0.12
	2110	Dual Enthalpy Economizer Replaces Dry Bulb Economizer - DX	Restaurant	4%	4%	9.0	2.7	2.6	0.0	10	0	0	0.00		N/A	0.04	0.11
	2111	Economizer Repair - DX Ontimize Controls - DX	Restaurant	15%	4%	1.2	2.8	2.4	0.0	ın ın	s c	0 0	8.07	0 0	Α Α Α	0.14	3.14
	2114	Smart Thermostat - DX	Restaurant	12%	8%	0.3	2.8	2.4	0.0	0 00	1 00	0	2.12	0	N/A	0.34	0.66
	2115	Window Film (Standard) - DX	Restaurant	10%	18%	0.3	2.7	2.4	0.0	10	9 1	0	4.08	0	N/A	0.39	0.52
	2150	nign Emclency Windows - D.X Base DX Packaged System, 2029 Standard	Restaurant	0%	0%	0.0	2.7	2.7	0.0	15	n 0	0	0.00	N/A	N A	2.36 N/A	N/A
	2152	DX Packaged System, EER=13.4, 10 tons	Restaurant	14%	14%	0.2	2.4	2.1	0.0	15	12	0	15.20	0 ,	N/A	1.71	1.43
	2153	Geothermal Heat Pump, EEK=13, 10 tons - DX DX Tune Up/ Advanced Diagnostics	Restaurant	17% 6%	12%	0.1	2.8	2.7	0.0	15		0 0	0.38	1 0	N/A	0.13	1.05
	2155	Refrigerant Charge Adjustment - DX	Restaurant	10%	10%	0.5	2.9	2.6	0.0	10		0	1.58	0	N/A	0.49	0.44
	2156	Ceiling/roof Insulation - DX Cool Roof - DX	Restaurant	12%	12%	1.3	2.9	2.6	0.0	10	- m	0 0	3.74	0 0	Α Α Α	0.36	0.29
	2158	Duct Testing/Sealing - DX	Restaurant	22%	26%	0.3	2.7	2.1	0.0	18	9	0	0.50	0	N/A	0.83	1.93
	2159	Duct/Pipe Insulation - DX	Restaurant	2%	2%	0.3	2.7	2.6	0.0	10	0	0 0	1.43		Α < ×	0.13	0.12
	2161	Conditionally Economizer Repair - DX	Restaurant	15%	7%	1.2	2.8	2.4	0.0	2 2	o IO	0 0	8.07	10	N/A	0.14	0.12
	2163	Optimize Controls - DX	Restaurant	%9	4%	0.0	2.8	2.6	0.0	10	2	0	0.50	0	N/A	1.56	3.14
	2164	Smart Thermostat - DX Window Film (Standard) - DX	Restaurant	12%	18%	0.3	2.8	2.4	0.0	8 C	o c	0 0	2.12	0 0	∀	0.34	0.66
	2166	High Efficiency Windows - DX	Restaurant	14%	14%	0.2	2.9	2.5	0.0	20	. 10	0	6.05	0	N/A	2.36	1.91
	2200	Base Heat Pump cooling (14.3 SEER, 8.2 HSPF)	Restaurant	0%	0%	0.0	4.5	2.4	0.0	15	0 6	0 0	0.00	N/A	N/A	N/A	N/A
	2202	neat Pump Upgrade (18 SEEK, 8.2 HSPF), cooling Mini-Split Heat Pump (Base Heat Pump Cooling)	Restaurant	14%	14%	0.8	2.4	2.2	0.0	15	ი ⊔	0	1.00	0 0	¥	0.33	0.27
-	2203	Ceiling/roof Insulation (Base Heat Pump Cooling)	Restaurant	12%	12%	1.3	2.6	2.3	0.0	20	0	0	0.44	0	N/A	0.32	0.26
	2204	Duct/Pipe Insulation (Base Heat Pump Cooling)	Restaurant	12%	2%	0.3	2.4	2.4	0.0	10 8	0 6	0 0	0.37	⊣ ⊂	N/A	0.12	0.11
	2206	Window Film (Standard) (Base Heat Pump Cooling)	Restaurant	10%	18%	0.3	2.4	2.2	0.0	10	2 2	0	1.05	0	N/A	0.35	0.46
		High Efficiency Windows (Base Heat Pump Cooling)		14%	14%	0.5	2.6	2.2	0.0	20	0	0 0	1.56	0 %	N/A	2.12	1.72
		Split System Air Conditioner, SEER 16.0 ENERGY STAR, <5.4 tons	Resta	10%	10%	0.0	2.2	2.0	0.0	15	0	0	0.55	0	N/A	0.55	0.46
1		ctless Mini-Split SEER 18.0/HSPF 10.0 CEE Tier 1 (Base Residential Split-Systen	π Restaurant	70%	20%	0.8	2.2	1.8	0.0	15	1	0	1.28	0	N/A	0.60	0.50



Commerc	Commercial Electric Existing Construction															
DSM ASSYST SUMMARY	МАКУ											System Second	Levelized Cost	evelized Cos	Total	
Measure		Building	Energy Savings	Peak Reduction	Total Costs/	Base	>	Peak Watts/	Service	Technical Potential	Peak Tech. Potential	Peak Tech. Potential	of Conserved Energy	of Avoided Peak Capacit	~ 0	Participant
Segment Number	er Measure Cailing/roof Inculation (Race Recidential Sollt-System)	Type	Fraction 12%	Fraction 120%	Sq.F	EUI 2						MW 0	\$/kwH	\$/kW		Test
1 2304		Restaurant	2%	2%	0.3	2.2	2.2	0.0	10	0	0	0.08	o =1	N/A	0.11	0.10
1 2305	-	Restaurant	12%	8%	0.3	2.3	2.0	0.0	80 £	0 0	0 0	0.12	0 0	ĕ Š	0.28	0.54
1 2400		Restaurant	%0	%0	0.0	2.9	2.9	0.0	15	0	0	0.00	N/A	N/A	N/A	N/A
1 2401		Restaurant	14%	14%	4.0	2.9	2.5	0.0	15	0 0	0 0	0.26	0 0	Α ×	1.26	1.05
1 2405		Restaurant	10%	18%	0.3	2.9	2.6	0.0	10	0 0	0	0.06	0	N/A	0.42	0.55
1 2500		Restaurant	%0	%0	0.0	1.2	1.2	0.0	15	0 0	0 0	0.00	N/A	N/A	N/A	N/A
1 2501	Pictless Mini-Sr	Restaurant	30%	30%	0.5	1.2	1.2	0.0	15	0 0	0 0	0.02	- 0	V 4/N	0.11	0.10
1 2503		Restaurant	12%	12%	1.3	1.3	1.2	0.0	20	0	0	0.01	D =1	N/A	0.16	0.13
1 2505		Restaurant	10%	18%	0.3	1.2	1.1	0.0	10	0	0	0.03	0	N/A	0.17	0.23
1 2506	High Efficiency Windows (Base Room AC) Base Ductless Mint-Split Heat Pump. SEER 15.0/HSPF 8.8	Restaurant	%9	11%	0.0	1.3	1.2	0.0	20	0 0	0 0	0.01	0 N	A N N	0.28 N/A	0.35 N/A
1 2601	Ceiling/roof Insulation (Base Ductless Mini-split)	Restaurant	12%	12%	1.3	2.1	1.9	0.0	20	0	0	0.07	0	N/A	0.26	0.21
1 2603	Window Film (Standard) (Base Ductless Mini-split)		10%	18%	0.3	1.9	1.8	0.0	10	0	0 (0.18	0	N/A	0.28	0.37
1 2604		Restaurant	14%	72%	0.0	2.1	1.8	0.0	16	0 0	0 0	0.00	0 W	4 4 2 2	1.09 N/A	1.34 N/A
1 3102	Bi-level LED	Restaurant	11%	11%	0.0	1.2	1.1	0.1	80	0	0	0.02	0	205.33	1.19	2.39
1 3103		Restaurant	7%	%9	0.0	11 :	1.0	0.1	13	0 0	0 0	0.03	0 0	482.93	0.81	1.77
1 3105	Demand Demost Eleαric, open cases Demand Hot Gas Defrost, open cases	Restaurant	3%	3%	0.1	11	11	0.1	10	0 0	0	0.02	0 0	2,878.18	0.24	0.20
1 3106		Restaurant	27%	16%	0.1	1.4	1.0	0.1	15	1	0	0.05	0	455.23	1.33	2.89
1 3107	High-efficiency fan motors, open cases Tosulated curtion lines open cases	Restaurant	%4%	4 ° % °	0.0	::::	111	0.1	15	0 0	0 0	0.04	0 0	770.19	0.53	1.04
1 3109		Restaurant	7%	7%	0.0	1.1	1.0	0.1	1 8	0	0	0.06	0	277.89	0.88	1.77
1 3111		Restaurant	11%	%0	0.0	1.2	1.1	0.1	5	0	0	0.00	0	N/A	0.48	1.29
1 3112	Oversized Air Cooled Condenser, open cases Refrigeration Coil Cleaning, open cases	Restaurant	8%	23%	0.0	1.2	1.1	0.1	16	0 -	0 0	0.04	0 0	290.19	1.49	2.90
1 3114		Restaurant	3%	3%	0.0	1.1	1.1	0.1	m	0	0	0.01	0	312.41	0.33	0.65
1 3200		Restaurant	%0,	0%	0.0	5.7	5.7	9.0	16	0 0	0 +	0.00	N/A	N/A	N/A	N/A
1 3204		Restaurant	11%	11%	0.7		2 10	9.0	7 8	o m	1 0	0.41	0 0	320.24	1.73	3.48
1 3205		Restaurant	7%	%9	0.1	5.7	5.3	9.0	13	00		0.48	0	331.31	1.18	2.57
1 3206	Demand Defrost Electric, base closed cases	Restaurant	8%	8%	4.0	8 1	5.3	9.0	10	7 ′	. ⊂	0.93	0 0	828.58	0.36	0.71
1 3208	Electronical	Restaurant	23%	14%	0.0	6.9	5.3	0.0	15	7 6	D #1	0.68	0 0	365.52	1.65	3.60
1 3209		Restaurant	2%	7%	0.0	5.9	5.5	9.0	4	4	0	0.53	0	45.03	2.91	5.91
1 3211	High-efficiency fan motors, base closed cases Tneulated curtion lines hase closed cases	Restaurant	4%	4%	0.1	5.7	4.2	9.0	15	ın c	- ⊂	0.62	0 0	528.39	0.78	1.52
1 3213		Restaurant	7%	7%	0.1	5.7	5.3	0.0	1 8	o 00	o ==	1.01	0	190.65	1.28	2.57
1 3214		Restaurant	2%	2%	0.0	5.7	5.5	9.0	10	10	0	0.58	0	110.39	2.68	5.34
1 3215	Oversized Air Cooled Condenser, base closed cases Refrigeration Coil Cleaning, base closed cases	Restaurant	23%	23%	0.1	v. 6 v. 4	4.9	0.5	16 5	5 16	7 7	2.02	0 0	127.99	1.25	4.22
1 3218	ш.	Restaurant	2%	2%	0.0	2.8	5.5	9.0	м	М	0	0.40	0	105.81	96.0	1.92
1 3300	Base Walk-in retrigeration/freezer units Auto-closer on main door to walk-in freezer	Restaurant	1%	1%	0.0	32.1	32.1	2.5 4.5	16	0 =	0 -	0.00	V/A	N/A 465.04	N/A	N/A 1.05
1 3303		Restaurant	2%	%9	0.3	32.1	30.0	3.3	13	103	6	6.19	0	138.63	2.82	6.15
1 3304	Demand Defrost Electric, walk-ins	Restaurant	8%	8%	1.0	32.8	30.2	3.3	10	93	10 %	11.92	0 0	346.71	0.85	1.70
1 3306	Electronical	Restaurant	23%	14%	1.0	39.0	29.8	3.6	15	111	۸ ۵	8.69	0	152.95	3.95	8.61
1 3307		Restaurant	1%	1%	1.5	32.2	32.1	3.5	16	m ;	0,	0.37	Η (8,412.38	0.05	0.10
1 3310	ree	Restaurant	1% 9%		0.0	32.3	30.2	3.2	15	94	1 OI	11.98	0 0	147.40	2.79	5,45
1 3311		Restaurant	%0	%0	0.0	32.1	32.1	3.5	11 :	п;	0 1	0.10	0	611.27	0.52	1.04
1 3313	Oversized Air Cooled Condenser, walk-ins Refrigeration Coil Cleaning walk-ins	Restaurant	93%	23%	5.0	33.5	30.8	n n	16	203	, 66	8.43	0 0	166.61	2.59	3.48
1 3315		Restaurant	3%	3%	0.1	32.5	31.7	3.4	n m	20	2	2.53	0	89.68	1.13	2.27
1 3316		Restaurant	4%	4%	0.1	33.0	31.7	3.4	4 ,	21	2 0	2.65	0	97.95	1.34	2.72
1 3402	Base Large Cold Storage Area Auto-closer on main door to walk-in freezer. base large cold storage	Restaurant	1%	1%	0.0	10.8	10.8	1.2	16	0 0	0 0	0.00	W/A	N/A 465.04	N/A 0.52	1,05
1 3403		Restaurant	2.6	%9	0.1		10.1	1.1	13	2	0	0.12	0	138.63	2.82	6.15
1 3404	Elec	Restaurant	23%	14%	0.3	13.1	10.0	1.2	15	7	0 0	0.17	0 +	152.95	3.95	8.61
1 3406	Evaporator fan controller for MT walk-ins, base large cold storage High-efficiency fan motors, base large cold storage	Restaurant	4%	4%	0.1	10.8	10.3	1.1	15	D T	0	0.16	т О	8,412.38 221.10	1.86	3.63
1 3407		Restaurant	%0	%0	0.2	10.8	10.8	1.2	11	0	0	0.00	-	13,522.83	0.02	0.05
1 3409	Oversized Air Cooled Condenser, base large cold storage Refringuation Coll Cleaning thase large cold storage	Restaurant	8%	8%	0.1	11.2	10.3	1.1	16	1 4	0 0	0.17	0 0	83.30	5.18	10.09
1 3411		Restaurant	2%	2%	0.0	11.0	10.5	1.1	n m		0	0.10	0	44.27	2.30	4.60



	Commerc	Commercial Electric Existing Construction															
	DSM ASSYST SL	MMARY		1	100	ţ		·	700		r indo	System	System Second	Levelized Cost	evelized Cos	Total	
Column C	Measu Segment Numb		Building	Savings	Reduction	Costs/ Sq Ft	Base		_	_	Potential GWH	Potential	Potential	Energy \$/kWH	Peak Capacit	Cost Test	Participant Test
	1 3412		Restaurant	4%	4%	0.0	11.1			4 7	0 0	0 0	0.05	0 %	97.95	1.34	2.72
Column C	1 3501		Restaurant	7%	2%	0.1	4.9		0.5	15	D 11		0.17	0	151.08	2.73	5.32
Part Color	1 350%		Restaurant	3%	3%	0.0	8 8		0.5	4 ru	п О	0 0	0.06	0 0	229.62	0.57	1.16
	1 360C		Restaurant	%0	%0	0.0	6.2		0.7	15	0	0	0.00	N/A	N/A	N/A	N/A
The control	1 3601		Restaurant	12%	12%	0.1	9.9		0.6	15	9 6	⊣ ⊂	0.78	0 0	95.00	4.33	8.45
Column C	1 3603		Restaurant	3%	3%	0.0	6.3		0.7	0 4	7 1	0	0.17	0	126.78	1.03	2.10
	1 3604			2%	2%	0.0	6.3		0.7	rv Ş	₩ 0	0 0	0.12	0	258.59	0.62	1.26
Particular Coll Collange Particular Coll	1 3701		Restaurant	10%	10%	0.0	2.0		0.2	9 9	2 5	o ∺	0.00	V. 0	311.71	N/A 0.95	1.89
Part	1 3702		Restaurant	2%	2%	0.0	1.9		0.2	2	1	0	0.10	0	339.31	0.47	96.0
Part	1 3800		Restaurant	10%	10%	0.0	9.0	0.6	0.1	18	0 -	0 0	0.00	Υ _A	N/A 1 020 84	N/A 0.46	N/A
Section of Control C	1 3802		Restaurant	2%	2%	0.0	0.0	0.0	0.1	2	1 0	0	0.02	0	2,902.84	0.06	0.11
Properties of color	1 3900		Restaurant	%0	0%	0.0	0.1	0.1	0.0	14	0 0	0 0	0.00	N/A	N/A	N/A	N/A
Particular Par	1 3902		Restaurant	2%	2%	0.0	0.1	0.1	0.0	5 T	0	0 0	0.00	D =1	8,127.95	0.02	0.04
Fine part Fine	1 4000		Restaurant	%0	%0	0.0	0.3	0.3	0.0	4	0	0	0.00	N/A	N/A	N/A	N/A
Page	1 4005		Restaurant	33%	23%	0.0	0.3	0.2	0.0	4 4	m O	0 0	0.19	0 W	28.46 N/A	5.48 N/A	12.08 N/A
Part	1 4101		Restaurant	33%	33%	0.0	0.1	0.0	0.0	4		0	0.10	0	139.02	0.86	1.69
Page	1 4200		Restaurant	%0	%0	0.0	0.0	0.0	0.0	4 4	0 0	0 0	0.00	N/A	N/A	N/A	N/A
Figure 1 Figure 2	1 420.		Restaurant	%0°	%0° 0%	0.0	0.0		0.0	1 4	0 0	0 0	0.00	N/A	N/A	N/A	0.30 N/A
Proceedings Process	1 4301			21%	21%	0.0	0.0		0.0	4 5	0 0	0 0	0.02	0 +	164.37	0.73	1.43
Base Where Fleeting Fleeting Management 216	1 4400			%0 %0	%0	0.0	0.0		0.0	9	0 0	0 0	0.00	N/A	9,919.29 N/A	N/A	N/A
Pack of the pack	1 4401			21%	21%	0.0	0.0	0.0	0.0	9 !	0	0	0.00	. 0	61.68	2.81	5.50
Heat Fund Water Heater (if source) Restaurner 20% 10% 20% 10% 10% 10% 10% 10% 10% 10% 10% 10% 1	1 5000			7%	5%	0.0	v. 4 v. v.	č. 4.	0.5	15	0 1	0 0	0.00	Α 0	N/A 149.06	N/A 2.57	N/A 4.84
Particles When Prefet Restriction Restriction 19th 14 4 4 4 5 4 5 5 5 5	1 5002		Restaurant	20%	20%	0.4	5.5		0.4	10	10	o =1	1.48	0	342.85	0.80	1.55
Parament of coulomb gatemat parament Shame and Shame and Coulomb gatemat parament Shame and Coulomb gatemat paramet Shame and Coulomb gatemat Shame and Coulomb gatemat paramet Shame and Coulomb gatemat Shame	1 5003		Restaurant	10%	10%	0.1	4.5		0.5	50		0 0	0.14	0 0	256.48	1.84	3.42
Heat brown your float (Sectional Section 1879) (Section 1879) (Sec	1 5005		Restaurant	2%	2%	0.5	5.4	4.2	0.5	15	- 10	o =1	0.69	0	1,831.92	0.21	0.39
FreeCuistant normalist of the Exercisian National Processing Restauring (2.7%) Processing	1 5006			%59	65%	0.1	4.5		0.2	10	92	00 (9.63	0	21.83	12.61	24.27
Base Non-Meritone princines growt value 14%	1 500,			2%	%Z 2%	0.0	4.5	4 4	0.5	15	2 2	0 0	0.28	0 0	109.20	0.79	1.49
Restaunce 24	1 5010			14%	14%	0.1	4.5		0.5	ç ın	18	2 2	2.59	0	84.46	1.76	3.47
Base Non-integrated vertically Rectand Standard (1976)	1 5011			3%	3%	0.1	4.5		0.5	15		0	0.20	0	301.20	1.27	2.40
Base Hering registrated (welfully blazer) (externated welfully blazer) (externat	1 6000			21%	35%	0.0	0.0		0.0	v ru	0 0	0 0	0.00	Υ/A	N/A 1.927.86	N/A 0.11	N/A 0.23
Wending Messer (Refrigerented glass-frint units) Reazurant (3%) 23% 0.0 0.0 0	1 6100			%0	%0	0.0	0.0		0.0	15	0	0	0.00	N/A	N/A	N/A	N/A
Part	1 6101		Restaurant	33%	23%	0.0	0.0	0.0	0.0	ın u	0 0	0 0	0.00	0 0	465.89	0.44	0.96
Restaunt Lange Stand Legistic Combination Owen Restaunt Standard Edge Standard	1 6200		Restaurant	%0	%0	0.0	5.4	4.3	0.0	12	0	0	0.00	N Y	N/A	N/A	N/A
Base Federing Convection Oven Restaurant 4% 1% 1% 1% 1% 1% 1% 1%	1 6201			24%	24%	0.1	5.2	2.4	0.2	12	30	en :	5.28	0	52.15	8.66	16.50
Base Hearth Free Front Floating Cability Confined Cability Confined Cability Ca	1 6300			14%	14%	0.0	2.7	2.7	0.2	12	0 ^	o	0.00	V/A	N/A 127.58	3.54	N/A 6.74
Base Herd regidie	1 6400			%0	%0	0.0	2.7	2.7	0.2	12	0	0	0.00	N/A	N/A	N/A	N/A
Base Hearth of Application (Section of Long Transcript Character Long Transcript Character Cha	1 6401			%8	%8 6	0.2	3.1	3.1	0.2	12	2 0	0 0	0.34	0 0/0	1,198.18 N/A	0.38 N/A	0.72 N/A
Base Record Caling/Lock Insulation (electric boiler) Restaurant 10% 0% 0.0 2.3 2.5 0.2 12 0 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	1 6501			11%	11%	0.1	3.1	2.8	0.2	12	2 0	0	0.29	0	199.75	2.26	4.31
Base Electric Boller, Federal Standard Restaurant 79% 70%	1 6600			%0	%0	0.0	2.2	2.2	0.2	12	0 %	0 6	0.00	N/A	N/A	N/A	N/A
Base Electric Bolley Federal Standard 79% 79% 70% 70 120 1	1 6700			%0	%0/	0.0	2.3	2.3	0.7	12	0 0	n 0	0.00	o N	N/A	2.39 N/A	4.36 N/A
Base Electric Boller, Feetz Standard	1 6701			%62	%62	0.7	5.9	9.0	0.1	12	14		2.44	. 0	328.65	1.37	2.62
Pear Pump, SEER 16.0/HSPF 9.2 RENGY STAR, <5.4 tons, heating to Restaurent 12% 0.% of 0.% o	1 7000			12%	12%	0.0	12.0	12.0	7.8	20	0 0	0 0	0.00	V/A	N/A 123.73	N/A 0.93	N/A 1.32
Base Hearting The Maching Heat Houng SERN IS ON College of No. 12	1 7002			2%	2%	0.3	12.0	11.8	7.6	20	0	0	0.00	0	187.25	0.61	0.87
Pear Fully, State Not Pear Fully, State No	1 7100			%0	%0	0.0	12.0	12.0	7.8	15	0 0	0 6	0.00	Ν'A	N/A	N/A	N/A
Duck/Pipe Insulation (Daze durance) Restaurant Personal Land (Daze durance) Restaurant Personal Land (Daze durance) 2% 0.3 12.5 10.9 7.4 8 0.00 0.00 0.01 0.00 0.01	1 7102			12%	12%	1.3	13.2	3.1 11.6	7.5	20	n 0	0 0	0.00	0	123.73	0.93	1.32
Base Heating Air-Source Heat Pump, SERR 15.0/HEAP Bas M/ALIX STrip Heat Restaurant 1.2% 0% 0.0 5.0 5.0 3.2 15 0 0.0 0.0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0.0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0.0 0.0 0 0.0 0.0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0.0 0 0.0 0 0.0 0 0.0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0.0 0 0.0 0.0 0.0 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	1 7103			2%	2%	0.3	12.0	11.8	7.6	20	0 +	0 0	0.00	0 0	187.25	0.61	0.87
ear Pump, SEER 16.0/HSPF 9.2 RNRFOY STAR, <-54 trons (base alir-source heat pum healths) Restaurant 12% 1.8 1.3 5.5 4.8 3.1 2.0 1 1 0.00 0 0 297.34 1.08 Cellingford Insulation (base alir-source heat pum healths) Restaurant 12% 2% 0.3 5.0 4.9 3.2 20 1 1 0.00 0 0 450.02 0.26 Duct/Pipe Insulation (base alir-source heat pum healths) Restaurant 2.5% 2.5% 0.3 5.0 4.9 3.2 20 1 1 0.00 0 0.00 0.36	1 /10²			13%	%8 8	0.0	12.5	5.0	3.2	8 12	п 0	0 0	0.00	0 W	42.23 N/A	1.81 N/A	3.11 N/A
Cemigration of the property	1 7201	eat Pump, SEER 16.0/HSPF 9.2 ENERGY STAR, <5.4 tons (base air-source heat	Restau	10%	10%	0.3	5.0	5.4	2.9	15	4 -	7 -	0.00	. 0 0	87.74	1.08	1.53
	1 7203		Restaurant	2%	2%	0.3	5.0	0.4	3.2	20	٠.		0.00	0 0	450.02	0.26	0.36



DSM AS	DSM ASSYST SUMMARY	IMMARY	:	Energy	Peak	Total		D.			_	System Peak Tech.	System Second Peak Tech.	Levelized Cost of Conserved	evelized Cos	Total Resource	;
Segmen	Measure Segment Number	re er Measure	Building Type	Savings Fraction	Reduction Fraction	Costs/ Sq Ft	Base EUI	EUI W	Watts/Se Sq Ft Life	Service Pour Pour Pour Pour Pour Pour Pour Pour	Potential GWH		Potential MW	Energy \$/kWH	Peak Capacit	Cost Test (TRC)	Participant Test
Π,	7204	Smart Thermostat (Base Heat Pump Heating)	Restaurant	13%	8%	0.3		l	l	ω ;	4 (2	0.00	0		0.75	1.29
	7301	ase Heating Packaged Heat Pump, 1EEK 13.9/COP 3.4 (W/ non-EK heating), 10 tol Packaged Heat Pump. heating. IEER 13.9/COP 3.4 (w/ non-ER heating). 10 tons	Restaurant	%09 80%	%0 90%	2.7			2.2	15	15	o 9	0.00	V 0	189.98	N/A 0.50	0.70
1	7302		Restaurant	12%	12%	1.3			2.1	20	1	1	0.00	0	433.04	0.27	0.38
	7303	Duct/Pipe Insulation (base packaged heat pump) Smart Thermostat (Base Boofton/packaged heating)	Restaurant	2%	2%	0.3			2.2	20	0 0	0 -	0.00	0 0	655.38	0.18	0.25
	7400	100	Restaurant	%0	%0	0.0			3.2	20	۰ 0	1 0	0.00	N/A	N/A	N/A	N/A
Η,	7401		Restaurant	12%	12%	1.3	5.5	8.4	3.1	20	0 ,	0	0.00	0	297.35	0.39	0.55
	7403	Smart Thermostat (base packaged heat pump)	Restaurant	13%	%80	0.0			3.1	s 5		0 0	0.00	0 8	101.49	0.75 N/A	1.29
	7801		Restaurant	1%	1%	0.1			1.3	20	o IO	o ==	1.37	0	429.21	1.26	2.02
1	7803		Restaurant	10%	10%	0.0			1.1	80	49	9	13.52	0	27.60	9.22	15.77
	7804	۵	Restaurant	33%	62%	2.4			0.5	15	148	34	97.12	0 0	289.29	1.20	1.32
	7806	Separate Makeup Air / Exhaust Hoods AC	Restaurant	25%	7% 78	1.5			0.9	15	98	12	27.04	0 0	452.44	0.97	1.57
1	8000		Restaurant	%0	%0	0.0			0.0	13	0	0	0.00	N/A	N/A	N/A	N/A
	8100		Restaurant	%0	%0	0.0	0.0		0.0	15	0 0	0 0	0.00	Α/N 3	V/A	N/A	N/A
	8300	Base Electrochemical process	Restaurant	%0	%0	0.0			0.0	15	0 0	0 0	0.00	¥ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	X X	X X	X \X X \X
1	8400		Restaurant	%0	%0	0.0			0.0	15	0	0	0.00	N/A	N/A	N/A	N/A
	9300	Base	Restaurant	%0	%0	0.0	_		0.3	20	0 (0 (0.00	N/A	N/A	N/A	N/A
	9301	High Efficiency Motor Variable Speed Drive Control: base motors	Restaurant	17%	14%	0.0	3.0		0.3	15	o c	0 0	0.01	o c	451.70	1.11	2.02
	9900		Restaurant	%0	%0	0.0	^		0.3	10	0	0	0.00	N/A	N/A	N/A	N/A
е	1000	Base Linear Lig	Restaurant	%0	%0	0.0	0		0.0	18	0	0	0.00	N/A	N/A	N/A	N/A
mı	1100		Restaurant	%0	%0	0.0	0 0		0.0	18	0 0	0 0	0.00	Α < ×	Α / N	N/A	N/A
m m	1150	base Linear Lighting, Fluorescent Fixture, 2L4 18, 1 EB Base Linear Lighting, Fluorescent Fixture, 2L4 T8, 1 EB, integrated market	Restaurant	%0	%0	0.0			0.0	18	0 0	0 0	0.00	¥ ×	X X	N/A	X X
m	1200		Restaurant	%0	%0	0.0	0		0.0	18	0	0	0.00	N/A	N/A	N/A	N/A
m	1225	Base Linear Lighting, LED Tube, 2 lamp fixture, 2028 Standard	Restaurant	%0	%0	0.0	0		0.0	18	0	0	0.00	N/A	N/A	N/A	N/A
mr	1250		Restaurant	%0	%0 %0	0.0	0 0		0.0	18	0 0	0 0	0.00	Α/Ν Α/Ν	Α × ×	N/A	N/A
nm	1300		Restaurant	%0	%0	0.0	. 0		0.0	7	0 0	0 0	0.00	¥ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	X X	X	X X/X
m	1350		Restaurant	%0	%0	0.0	0		0.0		0	0	0.00	N/A	N/A	N/A	N/A
m	1400		Restaurant	%0	%0	0.0	0		0.0	9	0 6	0	0.00	N/A	N/A	N/A	N/A
mm	1425	Base General Service Screw-in, LED bulb, 2028 Standard Base HTD Lighting (low hay)	Restaurant	%0	%0	0.0	0 0		0.0	18	0 0	0 0	0.00	N/A	N/A	V/A	X/X
n	1500		Restaurant	%0	%0	0.0	. 0		0.0	18	0	0	0.00	N/A	N/A	N S	N/A
3	1525	Base High Bay Lighting, Fluorescent T5, integrated market	Restaurant	%0	%0	0.0	0		0.0	18	0	0	0.00	N/A	N/A	N/A	N/A
mı	1550		Restaurant	%0	%0	0.0	0 0		0.0	18	0 0	0 0	0.00	Α/N	N/A	Α× X	A/A
ი ო	1600	base nign bay Lignung, LED lignung Base CFL Exit Sign	Restaurant	%0	%0	0.0			0.0	18	0	0	0.00	¥ ×	X X	¥	X X
М	1650		Restaurant	%0	%0	0.0	0		0.0	15	0	0	0.00	N/A	N/A	N/A	N/A
m i	1700		Restaurant	%0	%0	0.0	0		0.0	15	0	0	0.00	N/A	N/A	N/A	N/A
mm	1750		Restaurant	%0	%%	0.0	0 0		0.0	15	0 0	0 0	0.00	A/A	Α Α Α	Α/Α V	X \ X
n m	1850	Base Linear Lighting, Outdoor Fluorescent Tube	Restaurant	%0	%0	0.0	. 0		0.0	15	0	0 0	0.00	N/A	N/A	Z X	N/A
m	1900		Restaurant	%0	%0	0.0	0		0.0	15	0	0	0.00	N/A	N/A	N/A	N/A
m	2000	Base Water-Cooled Centrifugal Chiller, 0.58 kW/ton, 500 tons	Restaurant	%0	%0	0.0	0.0		0.0	23	0 0	0 0	0.00	Α/2 Α/2	V/A	Υ V V	A/A
nm	2150		Restaurant	%0	%0	0.0			0.0	15	. 0	0	0.00	N/A	N/A	Z Z	N/A
m	2200		Restaurant	%0	%0	0.0	0		0.0	15	0	0	0.00	N/A	N/A	N/A	N/A
mm	2300	Base Split-System AC, SEER 14.5, <5.4 tons Base PTAC cooling FER = 10.2, 1 ton	Restaurant	%0	%0	0.0	0 0		0.0	15	0 0	0 0	0.00	N/A	N/N	V \ \	V \ \
nm	2500		Restaurant	%0	%0		. 0		0.0	15	0	0	0.00	N/A	N/A	Z Y	N/A
m i	2600	Base Dud	Restaurant	%0	%0	0.0	0.0		0.0	15	0	0	0.00	N/A	N/A	N/A	N/A
mm	3100	Base Open refrigerated/freezer cases	Restaurant	%0	%%		0 0		0.0	16	0 0	0 0	0.00	A/A	Α Α Α	Α/Α V	X \ X
n m	3300		Restaurant	%0	%0				0.0	16	. 0	0	0:00	N/A	N/A	Z Z	N/A
m	3400		Restaurant	%0	%0		0		0.0	16	0	0	0.00	N/A	N/A	N/A	N/A
mm	3500	Base Reach-in Refrigerator/Freezer, Federal Standard Base Glace Door Beach-in Befringerator/Freezer Federal Standard	Restaurant	%0	%0		0.0		0.0	15	0 0	0 0	0.00	N/A	N/A	V/A	X/X
n m	3700		Restaurant	%0	%0	0.0	0.0		0.0	10	0 0	0 0	0.00	√ × ×××××××××××××××××××××××××××××××××××	Z X	Ϋ́	N/N
n	3800	Base Re	Restaurant	%0	%0		0.0		0.0	18	0	0	0.00	N/A	N/A	N/A	N/A
mı	3900	Base C	Restaurant	%0	%0	0.0	0.0		0.0	14	0 0	0 0	0.00	N/A	N/A	N/A	A/A
n n	4000	base Computer Network Server Base Desktop PC	Restaurant	%0	%0	0.0	0.0		0:0	4 4	0 0	0 0	0.00	¥ ×	X X	K K	X X
n	4200		Restaurant	%0	%0	0.0	0.0		0.0	. 4	0	0	0.00	N/A	N/A	N/A	N/A
m r	4300	Ba	Restaurant	%0	%0	0.0	0.0		0.0	4 (0 0	0 0	0.00	N/A	N/A	N/A	N/A
n	3	base Imaging	Kestaurant	0,70	P,0	5	5		0.0	٥	Þ	>	0.00	N/M	N/N	W/N	IN/A



Second particular between the control of the cont	Measure Segment Number	Measure		Energy Savings Fraction	Peak Reduction Fraction	Total Costs/ Sq Ft	Base	Ē	Peak Watts/ Sq Ft	Service Life (yrs)	Technical Potential) GWH	System Peak Tech. Potential MW	System Second Peak Tech. Potential MW	Levelized Cost of Conserved Energy \$/kWH	evelized Cos of Avoided Peak Capacity \$/kW	Total Resource Cost Test (TRC)	Participant Test
The stration of the strategy o	2000	Base Water Heater, Resistance Heater, Standard Standby Wattage	ı	%0	%0	0.0	0.0		0.0	15		0 0	0.00	A/N		N/A	N/A
The state of the s	6100	Base Refrigerated Vending Machines, Federal Standard	Restaurant	%0	%0	0.0	0.0		0.0	ח נח	0	0	0.00	N/A	ΣÝ	Ϋ́	N/A
The property of the control of the c	6200	Base Combi Oven	Restaurant	%0	%0	0.0	0.0		0.0	12	0 0	0 0	0.00	N/A	A/N	N/A	N/A
The service of country	6400		Restaurant	%0	%0	0.0	0.0		0.0	12	0	0 0	0.00	X X	₹ ₹ Ž	Ϋ́Υ	Ϋ́
The control of the co	6500		Restaurant	%0	%0	0.0	0.0		0.0	12	0	0	0.00	N/A	N/A	N/A	N/A
The contract of the first of the contract of t	6200		Restaurant	%0	%0	0.0	0.0		0.0	12	0 0	0 0	0.00	V/A	V/A	N/A	ĕ Š
The state of the control of the cont	7000		Restaurant	%0	%0	0.0	0.0		0.0	20	0	0	0.00	X X	₹ ₹ Ž	¥ × × × ×	¥ ¥ Ž Ž
See Part P	7100		Restaurant	%0	%0	0.0	0.0		0.0	15	0	0	0.00	N/A	N/A	N/A	N/A
Book Outside Part	7200		Restaurant	%0	%0	0.0	0.0		0.0	15	0 0	0 0	0.00	N/A	A/N	Α Ś	N/A
Executation Processory Pr	7400		Restaurant	%0	%0	0.0	0.0		0.0	20	0	0	0.00	¥	∢	X X	¥ ¥ X
Restriction of the property of the statement of the control of t	7800		Restaurant	%0	%0	0.0	0.0		0.0	20	0	0	0.00	N/A	N/A	N/A	N/A
Part	8000		Restaurant	%0	%0	0.0	0.0		0.0	13	0 (0 0	0.00	N/A	N/A	N/A	N/A
Base Proceeding Processes	8100		Restaurant	%0	%0	0.0	0.0		0.0	15	0 0	0 0	0.00	N/A	A/A	A/A	A/A
Heat bear in the control of the co	8300		Restaurant	%0	%0	0.0	0.0		0.0	15	0	0	0.00	X/X	¥ ×	X X	¥ ¥ Ž
High Performance United (Fig. 12) Best of the control of the cont	8400		Restaurant	%0	%0	0.0	0.0		0.0	15	0	0	0.00	N/A	N/A	N/A	N/A
Head to the content of the content	9300		Restaurant	%0	%0	0.0	0.0		0.0	20	0	0	0.00	N/A	N/A	N/A	N/A
However, part	0066		Restaurant	%0	%0	0.0	0.0		0.0	0 9	0 (0	0.00	N/A	V/A	ν V V	Α/N
United (Bar 12) Control (Bar	1001		Ketall	82%	0% 62%	0.0	0.6		8.0	8 1	0 0	۰ ۵	1.46	W/W	N/A 46.16	N/A	N/A
Extra control	1002		Retail	49%	25%	0.1	2.5		0.3	12	ח יח	2 2	1.33	0	25.60	6.48	9.47
Each Line Control	1003		Retail	61%	%69	0.7	2.5		0.2	12	m	1 11	0.70	0	136.12	1.22	1.78
Heart Comparing State Co	1004		Retail	%62	%68	0.5	2.5		0.1	18	4	1	0.90	0	77.02	2.94	4.22
Beact Interviewing claims (1997) Research (1	1005		Retail	%9	3%	0.0	2.5		9.0	9	Π.	0	0.05	0	81.96	2.11	4.36
Best Leaf Lighting, Liceaner Printing State 178 17	1006		Retail	44% 25%	19%		2.6		9.0	υ ,	- 0	0 0	0.09	0 0	1,318.24	0.19	0.38
RETOR & bryight integral server. LID ringer desirement (1987) 879, 879, 879, 879, 879, 879, 879, 879,	1050		Retail	%0	%0	0.0	3.0		0.8	18	0	0	0.00	× ×	N/A	N/A	N/A
High Performance Lighting (National States) Section 1978 Sec	1051		Retail	75%	23%	0.8	2.5		0.3	18	23	4	3.55	0	217.60	1.39	2.43
High Performance Julying Art. According States (1894) Recall 1976, Art. According States (1994) Recall 1	1100		Retail	%0	%0	0.0	2.6	2.0	0.7	18	0 (0 +	0.00	N/A	N/A	N/A	N/A
Example Exam	1107		Retail	37%	97%	0.7	2.3	o -	5.0	12	o m		0.39	0 0	36.74	4.75	8.10
Exemination (19) Retain (1	1103		Retail	52%	29%	0.7	2.3	H	0.3	12	2	1	0.44	0	169.80	0.98	1.43
Head to the control trient trien	1104		Retail	75%	85%	0.5	2.3		0.1	18	2 0	Η (0.63	0 (86.63	2.62	3.75
State Chart-Lighting, Chrosology Service (Base Piles Processer) State Chart-Lighting, Chrosology Service (Base Piles Processer) State Chart-Lighting, Chrosology Service (Base Piles Processer) State Chart-Lighting, Chrosology Service (Base ED Tube) Retail State State Chart-Lighting, Chrosology Service (Base ED Tube) Retail State	1106		Retall	44%	19%	0.6	2.5		0.0	οσ	0 -	> C	0.04	0 0	1 409 49	1.97	4.08
REF OCCE & Delygith Integrated market Retail 69% 47% 0% 6.0 2 2 6 2 6 0.7 18 18 0 0 0.00 N/A NA	1107		Retail	25%	22%	0.3	2.4		0.6	10	0	0	0.02	0	945.69	0.53	1.24
RETOCK & Daylight State Carrier (1982) Rebail 65% 47% 0.8	1150		Retail	%0	%0	0.0	5.6		0.7	18	0	0	0.00	N/A	N/A	N/A	N/A
High Performance Lighting REAL DLAGS Recall 40% 20% 20% 20% 20% 20% 20% 20% 20% 20% 2	1151		Retail	%89	47%	8.0	2.3		0.3	18	15	m	2.33	0 \$	258.51	1.17	2.05
High Performance Lighting, Cornel (Thing) (See Fig. 1974) Seal 1976 Seal	1200		Retail	42%	32%	0.0	4 - 1	4.1	4.0	81 12	0 61	0 4	3.22	W/A	160.07	N/A	N/A
New Not Lighting Charles (Label Liber) Retail 25% 5% 5% 5% 5% 5% 5% 5	1202		Retail	%9	3%	0.0	1.4	1.3	0.4	9	7	0	0.08	0	147.52	1.17	2.42
Base Linear Lighting, LED Tube, Carnowing State LED Tube) Retail 25% 5% 6% 0.3 1.4 1.1 0.4 10 1 0 0.00 0.00 0.00 0.00	1203		Retail	44%	19%	1.8	1.4	0.8	0.3	6	1	0	0.13	0	2,372.83	0.10	0.21
High Performance Lighting APL - Combined Strategies (Basel ED Tube) Retail 10% 1.5% 1.2 1.2 1.2 1.2 1.3 1.5 1.	1204		Retail	25%	2%	0.3	1.4	1.1	0.4	10		0	0.03	0	1,592.02	0.31	0.74
Pase Linear Updating Carbon	1225		Retail	42%	32%	0.0	1.2	1.2	0.3	18	0 28	0 4	0.00	Υ/A	N/A	NA %	N/A
Received Lighting Controls (Base LED Tube) Rechi 44% 19% 1.6 1.3 1.0 0.3 0.0 0.0 0.15 0.0	1227		Retail	6%	3%	0.0	1.2	1.2	0.3	CT 9	1	0	0.12	0 0	167.64	1.03	2.13
Base Linear Lighting, LED Tube, 2 larger Return 25% 5% 0.3 1.4 1.4 0.4 1.4 0.4 1.4 0.4 0.4 0.6 0.05 0.05 0.05 0.05 0.05 0.05	1228		Retail	44%	19%	1.8	1.3	0.7	0.3	6	2 2	0	0.19	0	2,696.39	0.09	0.19
Base Unique (LE) Traces Daylight Integral Sersor LED Unique (Laborated) 0% 0.0 1.4	1229		Retail	25%	2%	0.3	1.3	1.0	0.3	10	1	0	0.05	0	1,809.12	0.28	0.65
See Ferrock Boardin Liberated Section 22% 15% 0.8 1.4 1.1 0.3 18 10 2 1.51 0 0.12	1250		Retail	%0	%0	0.0	1.4	1.4	0.4	18	0	0	0.00	N/A	N/A	N/A	N/A
Pase Cheer Ugang LEV Tribes Crew'n, Integrated market, ALAS Standard Retail 29% 0.9 0.0 0.	1251		Retail	22%	15%	0.8	1.4	1.1	0.3	18	10	2 0	1.51	0	1,370.86	0.22	0.39
Record Company	1275		Retail	%0	0%0	0.0	1.2	1.2	0.0	18	0 ;	0 6	0.00	N/A	N/A	N/A	A/A
Elas General Starctevin replacement (base CFL) Rebail 29% 33% 0.1 1.3 0.9 0.2 6 3 1 0.71 0 0.7 0.9 0.1 1.3 0.9 0.2 0	1300		Retail	%77	15% 0%	0.0	1.3	1.3	0.3	18	14 0	n 0	0.00	0 /V	L,557.79	N/A	N/A
Base General Service Screwin, Incandescent/Halogen Retail 0% 0,0 3.7 3.7 1.0 1 0 0.00 N/A	1301		Retail	29%	33%	0.1	1.3	0.9	0.2	9	m		0.71	0	79.90	1.13	1.71
ED screw-in replacement (base LED)	1350		Retail	%0	%0		3.7	3.7	1.0	1	0	0	0.00	N/A	N/A	N/A	N/A
Base General Service Servin, LED bill Retail 10% 11% 0.1 0.9 0.8 0.2 0 0 0.00 0.00 0.0 0.0 0.0 0.0 0.0 0	1351		Retail	73%	83%	0.1		1.0	0.5	9 '	20	15	12.60	0	10.85	8.28	12.59
Base General Service Screvin, LED bulb, 2028 Standard Rebail 0% 0% 0.0 0.7 0.7 0.2 6 0 0 0.00 NA	1400		Retall	10%	11%	0.0		8.0	7.0	ی م	0 6	o -	0.00	W/A	342 11	N/A	N/A
LED screw-in replacement (base LED) Retail 0% 0% 0.0 6.1 6.1 6.1 16.18 0 0 0.012 1 2,171.05 0.04 Base High Berling Horsezent 7 High Performance Lighting RVR - Combined Strategies (Base T5) Retail 0% 0% 0.0 6.6 6.6 1.8 18 0 0 0.00 N/A N/A N/A N/A N/A High Performance Lighting RVR - Combined Strategies (Base T5) Retail 73% 55% 0.4 6.6 1.8 0.8 15 44 9 7.31 0 39.44 6.40 High Performance Lighting RVR - Combined Strategies (Base T5) Retail 39% 44% 0.3 6.6 4.0 1.0 1.2 23 7 5.89 0 5.08 High RAY - Combined Strategies (Base T5) Retail 47% 54% 0.6 6.6 3.5 0.8 12 29 9 7.20 0 58.46 2.84	1425		Retail	%0	%0			0.7	0.5	9	4 0	+ 0	0.00	N/A	N/A	N/A	N/A
Base HID lighting (low bay) Retail 0% 0.0 6.1 6.1 1.6 1.8 0 0.00 N/A N/A Base HID lighting (low bay) Retail 0% 0.0 6.6 6.6 1.8 1.8 0 0.00 N/A N/A High Performance Lighting PIR - Complined Strategies (Base T5) Retail 73% 55% 0.4 6.6 1.8 1.8 1.8 44 9 7.31 0 39.44 6.40 1.0 1.2 2.3 7 5.08 1.0 1.2 2.3 7 5.08 2.04 5.08 1.0 1.2 2.9 9 7.20 0 58.45 2.84 High Part ED Trude (Base T5) Retail 4.7% 5.4% 0.6 6.6 3.6 4.9 9 7.20 0 5.08 5.08	1426		Retail	7%	2%		0.7	0.7	0.2	9	0	0	0.12		2,171.05	0.04	90.0
Base High Performere Light Bay Lighting RR - Combined Strategies (Base TS) Retail 73% 55% 0.4 6.6 1.8 1.8 1.8 0 0 0.00 N/A N/A N/A High Performere Lighting RR - Combined Strategies (Base TS) Retail 73% 55% 0.4 6.6 1.8 0.8 1.5 4.4 9 7.31 0 3.9.44 6.40 1.0 1.2 2.3 7 5.89 0 3.9.44 6.40 High Bay LED Traffer (Base TS) Retail 4.7% 5.4% 0.6 6.6 3.5 0.8 1.2 2.3 7 5.89 0 5.8.46 2.84 2.84	1450		Retail	%0	%0			6.1	1.6	18	0	0	0.00	N/A	N/A	N/A	N/A
High Performance Lighting KR Combined Strategies (Base 13) Retail 73% 5.5% 0.4 6.6 1.8 0.8 15 44 9 7.31 0 39.44 6.40 3.9 6.6 4.0 1.0 1.2 23 7 5.89 0 3.2.64 5.08 High Bave LPD Traffer Raser TS) Retail 47% 5.4% 0.6 6.6 3.5 0.8 12 29 9 7.20 0 5.8.46 2.84	1500		Retail	%0	%0	0.0		9.9	1.8	18	0	0	0.00	N/A	N/A	N/A	A/A
No Ext. LL 1019 (bost 1) Refail 47% 54% 0.6 6.6 3.5 0.8 12 29 7.20 0 55.4 5.84	1501		Retail	73%	55%	4.0		8.1.8	8.0	15	4 6	9 1	7.31	0 0	39.44	6.40	10.93
	1503		Petal	24%	444.00	0.0		4.0	T.0	77	52	`	0.09	0	32.04	00.0	C+./



DSM ASSYST SUMMARY	SUMMARY												:	:			
Measure	ure	Building	Energy Savings	Peak Reduction	Total Costs/	Base	- \$	Peak Watts/S	T Service P	Technical I Potential	System Peak Tech. Potential	System Second Peak Tech. Potential	Levelized Cost of Conserved Energy	é o §	Total Resource Cost Test	Participant	
Segment Number		Type	Fraction 44%	Fraction 19%	Sq Ft	EUI	3.8					MW 0.17	\$/kwH	\$/kW		Test	
1 1506		Retail	25%	2%	0.3	6.9	5.2	1.7	10		0	0.04	0	334.98	1.49	3.50	
1 15	Base H	Retail	0%	47%	0.0	9.9	2.5	1.8	18	98	0 00	0.00	V/A	N/A 57.29	N/A 5,03	N/A 8.54	
1 15:		Retail	%0	%0	0.0	7.6	7.6	2.0	18	0	0	0.00	N/A	N/A	N/A	N/A	
1 15.	51 High Bay Bi-Level Programmed LED Fixture 52 High Borfermance Lighting D/B - Combined Ctrategies (has bigh bay HTD)	Retail	63%	47%	0.5	7.7	2.9	1.1	18	4 п		0.74	0 0	49.19	5.86	9.94	
1 1575		Retail	%0	%0	0.0	2.6	2.6	0.7	18	0	0 0	0.00	N/A	N/A	N/A	N/A	
1 16	Ba	Retail	%0	%0	0.0	0.0	0.0	0.0	18	0 0	0 0	0.00	N/A	N/A	N/A	N/A	
1 16 1 16		Retail	%cc 0%	%cc 0%	0.0	3.1	3.1	0.0	5 5	7 0	0 0	0.00	N/A	N/A	2.13 N/A	3.24 N/A	
1 16	1651 LED Outdoor Area Lighting (Base Outdoor HID)	Retail	%89	%89	0.3	3.1	1.0	0.1	18	38 0	9	2.00	0	99.04	3.31	6.85	
1 16:	LED out	Retail	80%	80%	0.4	3.1	9.0	0.1	18	45	7	2.35	0	93.48	3.51	7.25	
1 16.	53 Outdoor Lighting Controls (Base Outdoor HID) Base General Service Screw-in Outdoor CEI	Retail	16%	73%	4.0	3.5	2.9	0.1	18	m c	2 0	0.79	0 8	99.13 N/A	1.32	1.54 N/A	
1 1 17		Retail	27%	57%	0.0	0.2	0.1	0.0	18 1	o ==	0	0.02	0	1,822.29	0.18	0.37	
1 17		Retail	30%	30%	0.0	0.2	0.2	0.0	7	0	0	0.03	0	198.71	0.78	1.64	
1 17		Retail	16%	73%	4.0	0.3	0.5	0.0	18	0 0	0 0	0.02	1	1,376.87	0.10	0.11	
1 17	50 base general Service Screw-in, Outdoor Incandescent, nabyen 51 LED outdoor lighting with bi-level controls (Base Outdoor Incandescent)	Retail	85%	85%	0.0	0.2	0:0	0.0	18	9	5 ∺	0.30	¥ 0	1,189.73	0.28	0.57	
1 17:		Retail	75%	75%	0.0	0.2	0.1	0.0	7	2	1	0.26	0	77.39	2.00	4.21	
	53 Outdoor Lighting Controls (Base Outdoor Incandescent) Base General Service Screw-in Outdoor LED builb	Retail	16%	73%	4.0	0.3	0.5	0.0	1 18	0 0	0 0	0.10	N/A	1,340.50	0.10 N/A	0.11 N/A	
		Retail	16%	73%	0.0	0.2	0.1	0.0	18	o =	o ==	0.20	1	2,065.30	0.06	0.07	
	50 Base Linear Lighting, Outdoor Fluorescent Tube	Retail	%0	%0	0.0	0.4	0.4	0.1	15	0	0	0.00	N/A	N/A	N/A	N/A	
	Span CH I	Retail	40%	40%	0.0	4.0	0.5	0.0	12 12	9 9		0.33	0 0	1 017 58	1.44	2.98	
		Retail	16%	73%	0.4	0.4	0.3	0.0	18	7 1		0.22) H	849.79	0.15	0.18	
1 1900		Retail	%0	%0	0.0	0.2	0.2	0.0	15	0	0	0.00	N/A	N/A	N/A	N/A	
	Duro Base Wat	Retail		0%	4.0	1.9	1.9	0.0	23	0 0	0 0	0.00	N/A	1,239.18 N/A	N/A	0.12 N/A	
		Retail	12%	12%	0.2	2.0	1.7	0.0	23	0	0	0.51	0	N/A	2.23	1.77	
		Retail	%6	7%	0.1	2.1	1.9	0.0	ro 5	0 0	0 0	0.03	0 +	N/A	0.87	1.37	
	05 Celling/roof Insulation - Chiller Duct Testing/Sealing - Chiller	Retail	12%	12%	0.3	1.9	1.8	0.0	18	0 1	0 0	0.08	- 0	▼	0.55	0.20	
		Retail	%9	%9	0.0	2.0	1.9	0.0	22	0	0	0.00	0	N/A	0.83	2.21	
	Dual Enthalpy E	Retail	4.50%	%9	4.0	1.5	1.5	0.0	010	0 0	0 0	0.00	0 0	Α/N	0.06	0.16	
	12 Wildow Film (Standard) - Chiller 13 High Efficiency Windows - Chiller	Retail	14%	25%	0.1	2.0	1.7	0.0	70	0 0	0	0.13	0	¥ ×	3.42	4.19	
	Ba	Retail	%0	%0	0.0	3.2	3.2	0.0	15	0	0	0.00	N/A	N/A	N/A	N/A	
	01 DX Packaged System, EER=10.9, 10 tons	Retail	%9	93%	0.5	3.2	3.0	0.0	15	18	0 0	23.55	0 0	Α ×	1.28	1.08	
	Ğ	Retail	21%	21%	2.4	3.2	2.6	0.0	15	٦, ٣	0 0	4.09	0	Z Y	0.31	0.26	
		Retail	%9	2%	0.1	3.4	3.2	0.0	10	2	0	1.05	0	N/A	0.88	1.27	
	05 Refrigerant Charge Adjustment - DX ریزانجول میراندول	Retail	10%	10%	0.5	3.5	3.2	0.0	10	m ‡	0 0	4.39	0 0	ĕ Š	0.59	0.53	
		Retail	13%	13%	0.2	. w.	2.9	0.0	10	14	0	17.50	0	N/A	1.46	1.31	
		Retail	22%	26%	0.3	3.2	2.5	0.0	18	22	0	1.79	0	N/A	0.98	2.28	
	09 Dual Enthalpy Economizer Replaces Dry Bulb Economizer - DX	Retail	%2	%2	0.1	n (r)	3.1	0.0	01 01	7 0	0 0	0.00	٦ 0	¥ ¥ X	0.06	0.08	
		Retail	33%	16%	0.2	3.6	2.4	0.0	22	59	0	93.48	0	N/A	2.01	1.83	
		Retail	%9	4%	0.0	3.4	3.2	0.0	ı, o	9 %	0 0	1.69	0 (N/A	1.87	3.77	
	M	Retail	2%	4%	0.1	3.2	3.2	0.0	10	ŧ n	0 0	1.69	0 0	X X/N	0.30	0.40	
		Retail	14%	14%	0.1	3.9	3.3	0.0	20	15	0	19.67	0	N/A	10.21	8.28	
	50 Base DX Packaged System, 2029 Standard 52 DX Packaged System, EER=13.4, 10 tons	Retail	14%	14%	0.0	2.6	3.2	0.0	15	0 4	0 0	0.00	V/A	A S	N/A 2.05	N/A 1.72	
	ğ	Retail	12%	12%	2.4	2.9	2.6	0.0	15	2	0	2.14		N/A	0.16	0.14	
1 2154		Retail	96%	20%	0.1	3.4	3.2	0.0	10	2 5	0 0	1.05	0 0	N/A	0.88	1.27	
		Retail	12%	12%	1.3	o co	3.1	0.0	70	15	0	4.39	0	¥ ×	0.43	0.35	
		Retail	13%	13%	0.2	3.4	5.9	0.0	10	14	0	17.50	0	N/A	1.46	1.31	
		Retail	22%	26%	0.3	3.2	2.5	0.0	18	22	0 0	1.79	0 +	ĕ Š	0.98	2.28	
1 214	59 Dual Enthalpy Economizer Replaces Dry Bulb Economizer - DX	Retail	2%	2%	0.0	. w	3.1	0.0	10	7 0	0 0	0.00	т О	¥ × Ž Ž	0.33	0.88	
1 21(Retail	33%	16%	0.2	3.6	2.4	0.0	LO.	29	0	93.48	0	N/A	2.01	1.83	
1 21.	63 Optimize Controls - DX 64 Smart Thermoetat - DX	Retail	12%	4% %8	0.0	ю. 4. ч	3.2	0.0	ın œ	9 77	0 0	1.69	0 0	∀	1.87	3.77	
1 21		Retail	2%	4%	0.1	3.5	3.2	0.0	10	ţ m	0	1.69	0	N/A	0.30	0.40	
1 21,	66 High Efficiency Windows - DX	Retail	14%	14%	0.1	3.9	3.3	0.0	20	15	0	19.67	0	N/A	10.21	8.28	

Part		DSM ASSYST SUMMARY	ST SUMMAR	£										System	System Second	Levelized Cost	evelized Cos		
Column C			easure	Manager	Building	Energy Savings	Peak Reduction		Base	<u> </u>	Peak Watts/	Service	Technical Potential	Peak Tech. Potential	Peak Tech. Potential	of Conserved Energy	of Avoided Peak Capacit		
Note of the control	Column C	-1	2200	Base Heat Pump cooling (14.3 SEER, 8.2 HSPF)	Retail	%0	%0		5.9	5.9	0.0	15	0	0	0.00	N/A	N/A	N/A	
March Marc	The control of the co		2201	Heat Pump Upgrade (18 SEER, 8.2 HSPF), cooling	Retail	14%	14%	0.3	2.9	2.5	0.0	15	11	0 0	14.48	0 0	8 × ×	1.74	1.46
Name of the Control (1984 and Control (1984) No. 2004 No. 20	Comparison Continues of the Continue of th		2203	Ceiling/roof Insulation (Base Heat Pump Cooling)	Retail	12%	12%	1.3	3.1	2.8	0.0	50	4	0	5.30	0	N/A	0.38	0.31
The contract of the contract o	With a principal princip	₩,	2204	Duct/Pipe Insulation (Base Heat Pump Cooling)	Retail	2%	2%	0.8	2.9	2.9	0.0	10	-	0 0	0.82	Η (N/A	90.0	0.05
Set System of Contract Contrac	Section of the continue of the		2206	Smart I nermostat (base neat Pump Cooling) Window Film (Standard) (Base Heat Pump Cooling)	Retail	2%	4 %	0.1	2.9	2.8	0.0	10 8	G +	0 0	0.48	0 0	X X	0.35	0.36
National Processing State Set Set Set Set Set Set Set Set Set S	State with the placement of the second placement of th	-	2207	High Efficiency Windows (Base Heat Pump Cooling)	Retail	14%	14%	0.1	3.1	5.6	0.0	20	4	0	4.90	0	N/A	8.05	6.52
State Compared to the compared by the comp	Authorized Miscolar Series (1985 April 1985		2300	Base Split-System AC, SEER 14.5, <5.4 tons	Retail	%0	%0	0.0	2.6	2.6	0.0	15	0 •	0 (0.00	N/A	N/A	N/A	N/A
Control (claric) (riche Sections) Control (claric) (riche Section)	Comparison (Date Interface of the Control (Date Interface)			Split System Air Conditioner, SEER 16.0 ENERGY STAR, <5.4 tons less Mini-Split SEER 18.0/HSPF 10.0 CEE Tler 1 (Base Residential Split-System	Retail	10%	10%	0.8	2.7	2.4	0.0	15	4 0	0 0	5.04	0 0	A A	0.66	0.55
WOUND IN	Author of the Control (1997 - 1997 -	1 1		Celling/roof Insulation (Base Residential Split-System)	Retail	12%	12%	1.3	2.9	2.5	0.0	20	2	0	2.81	0	N/A	0.35	0.28
Committed Comm	We will replicate the proof galacter and the		2304	Duct/Pipe Insulation (Base Residential Split-System)	Retail	2%	2%		2.7	2.6	0.0	10	0 1	0	0.43	П	N/A	0.05	0.05
Fig. 12 Fig.	Figure 10 Figure 11 Figure 12 Figure 12 Figure 13 Figure 13 Figure 14 Figu		2305	Smart Thermostat (Base Residential Split-System)	Retail	12%	8%	0.3	2.7	2.4	0.0	∞ ⊊	n 6	0 0	1.36	0 0	¥	0.32	0.63
Company of transfort (see First) Company of tra	Figure 10 Figure 10 Figure 10 Figure 10 Figure 11 Figu		2400	Window Film (Standard) (base Residential Split-System) Base PTAC cooling. EER=10.2. 1 ton	Retail	0%	0%	0.0	3.5	3.5	0.0	12	n 0	0 0	0.00	o W	X X	1.62 N/A	2.16 N/A
Continued to Continue to Con	Contributed House PACING Sealer 1974 S	1	2401	HE PTAC, EER=9.6, 1 ton, cooling	Retail	14%	14%	0.4	3.5	3.0	0.0	15	1	0	0.78	0	N/A	1.51	1.26
Contact Market Contact Conta	Control of Control o	1	2402	Ceiling/roof Insulation (Base PTAC)	Retail	12%	12%	1.3	3.8	3.3	0.0	20	0	0	0.27	0	N/A	0.46	0.37
Notice Control of the Control of	Contract Office Contract Certain Certa	п.	2405	Window Film (Standard) (Base PTAC)	Retail	2%	4%	0.1	 	4.6	0.0	10	0 0	0 0	0.02	0 0	Α «	0.32	0.43
Outside State Stat	Decides the size (18 th 2014) of CHE That (18 th 2014) of CHE The (18 th 2014)		2501	Room AC. CEER 10.9	Retail	% 6	%60	0.0	1.5	0.1	0.0	C 12	0 0	0 0	0.00	N/ Y	4 × ×	0.14	0.11
Second color of the color of	Comparison (Command) Command) Command) Command		2502	Ductless Mini-Split SEER 18.0/HSPF 10.0 CEE Tiler 1 (Base Room AC)	Retail	30%	30%	0.3	1.5	1.0	0.0	15	2 0	0	2.05	0	N/A	1.78	1.49
Second Hosting Microbial Plancial Pla	Note that the process which which the part of the pa	1	2503	Ceiling/roof Insulation (Base Room AC)	Retail	12%	12%	1.3	1.6	1.4	0.0	20	0	0	0.33	1	N/A	0.19	0.16
Care process with the control of t	Repaired to the control tension (see Control service) (see Contr	₽,	2505	Window Film (Standard) (Base Room AC)	Retail	13%	23%	0.1	1.5	1.3	0.0	10	0 0	0 0	0.19	0 0	N/A	0.89	1.19
Wildlight of Children (1986) Right (1987) 174 274	Wildlight of Resident Annual Chees Charles with right? Read of 17% 17% 17 2 2 0		2600	High Efficiency Windows (Base Room AC) Race Durtless Mini-Split Heat Prime SEER 15 0/HSPE 8 8	Retall	%n 0	%6	1.0	L.5	4. C	0.0	07	0 0	o	0.03	0 N	N/N	0.90 N/A	N/A
With fine (Standbridge) Retail 113% 23% 0.1 24 2.1 0.0 0.3 0.0 0.4 4.4 14.4 Bill-level (Dises Optices with right) Retail 14% 2.0 0.0	Window file (Standard) (Inclination) Retail 13% 25% 0.1 24 21 0.0		2601	Ceiling/roof Insulation (Base Ductless Mini-split)	Retail	12%	12%	1.3	2.5	2.2	0.0	50	0	0	0.58	0	N/A	0.31	0.25
High Relative Windows Glees Outsides Minight (1) Real 15% 20% 0.0 12 20 20 0.0 20 0.0 0.0 10 M.A. 416 416 M.A.	Howelfferenty vincano, group cases Result 14% 15% 10%	1	2603	Window Film (Standard) (Base Ductless Mini-split)	Retail	13%	23%	0.1	2.4	2.1	0.0	10		0	0.34	0	N/A	1.42	1.89
Phieto Liboratory and present factors Phieto Liboratory Phieto Phieto Liboratory Phieto Ph	Phiete I.D. Case Apply Option creases Realing 11% 11	₽,	2604	High Efficiency Windows (Base Ductless Mini-split)	Retail	14%	25%	0.1	2.5	2.1	0.0	50	0 (0 0	0.27	0	N/A	4.16	5.11
Comparative Control Particle Control P	Compressor Vision Consistency Security		3100	Base Open retrigerated/freezer cases Richard LED Case Lighting (self-contained units) onen cases	Retail	11%	11%	0.0	0.0	0.0	0.0	I6	0 0	0 0	0.00	Ϋ́ C	N/A 156.87	N/A 1 56	N/A 3 13
Demand led force Hearter, other clears Seal Sea	Electronicity communicate exportance in creates the case of the control between the case of the case o		3103	Compressor VSD retrofit, open cases	Retail	7%	%9	0.0	0.0	0.0	0.0	13	0 0	0 0	0.00	0	360.44	1.08	2.37
Electromicity contract cases Real 3% 3% 15% 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Electrolicity controlled contro	1	3104	Demand Defrost Electric, open cases	Retail	8%	8%	0.0	0.0	0.0	0.0	10	0	0	0.00	0	861.53	0.34	0.68
High efficiency from mission stay of exemple Second State Se	Electrophially controlled value of the controlled va	1	3105	Demand Hot Gas Defrost, open cases	Retail	3%	3%	0.0	0.0	0.0	0.0	10	0	0	0.00	0	2,161.67	0.14	0.27
Transient action lines, acron consequence Real 11% 1	Translered action lines, a control cases Real 19% 19% 10		3105	Electronically commutated evaporator fan motor, open cases High-efferiens: fan motors open cases	Retail	40%	16%	0.0	0.0	0.0	0.0	t 1	0 0	0 0	0.00	0 0	352.25	1.72	3.74
Participated Holy Lighting Approach crosses Retain 11% 7% 7% 7% 7% 7% 7% 7%	Hear HED Design Light Control Cases, Open Cases Real Hamily 1974, 9		3108	Insulated suction lines, open cases	Retail	%0	%0	0.0	0.0	0.0	0.0	11	0	0	0.00	0	3,191.58	0.10	0.20
Nelti cover for disjuy case, open cases Retail 11% 0% 00 00 00 00 00 00 00 00 00 00 00 00	Might Cover for Condition Cases, goal or Cases Rebail 1916, 6	1	3109	LED Display Lighting, open cases	Retail	2%	2%	0.0	0.0	0.0	0.0	89	0	0	0.00	0	203.16	1.20	2.41
Professional Configuration	Participacid Michael Enginesia	Π.	3111	Night covers for display cases, open cases	Retail	11%	%0	0.0	0.0	0.0	0.0	ıs !	0	0	0.00	0	N/A	0.65	1.73
Profit P	Registration Control		3112	Oversized Air Cooled Condenser, open cases	Retail	88%	33%	0.0	0.0	0.0	0.0	16	0 0	0 0	0.00	0 0	120.34	1.99	3.88
Energy Star Control Con	Basic Closed refrequency (Feering 1974) Feering 1974 Feering		3114	Refrigeration Commissioning, open cases	Retail	3%	3%	0.0	0.0	0.0	0.0	nm	0 0	0 0	0.00	0 0	233.17	0.44	0.87
Effective Character Set Set Set III Retail 11% 10% 0.0	Electrolicity Cornective Content of Secretary Retail 10% 10% 10%		3200	Base Closed refrigerated/freezer cases	Retail	%0	%0	0.0	0.7	0.7	0.1	16	0	0	0.00	N/A	N/A	N/A	N/A
High-refuelt IED Gaze Chase Reali 11% 11	Heli-well EDG Compare Light Dised Cased Cases Realia 7% 6% 6% 1% 6% 6% 1% 6% 6	1	3202	Energy-Star Refrigerator/Freezer, base closed cases	Retail	10%	10%	0.0	0.7	9.0	0.1	12	1	0	0.11	. 0	320.24	1.08	2.12
Parametric description of the case of th	Compression VSD retainable seed classes Retail %6 6% 0.0 0.7 0.0	1	3204	Bi-level LED Case Lighting (self-contained units), base closed cases	Retail	11%	11%	0.0	0.7	9.0	0.1	œ !	1	0	0.08	0	144.19	1.69	3.40
Particular of the control of Case State Case Case Case Case Case Case Case Cas	Electronic Deniand Force State State 3% 3% 3% 3% 3% 3% 3% 3		3205	Compressor VSD retrofit, base closed cases	Retail	%/	%9	0.0	0.7	9.0	0.1	13	- 0	0 0	0.05	0 0	331.31	1.18	2.57
Electronically commutated evaporator fan motor, base closed cases Retail 7% 7% 7% 7% 7% 7% 7% 7	Electronically commutated evaporator far motory, based closed cases Retail 23% 14% 0.0 0.8 0.0 0.1 15 10 0.10 0	٦ -	3205	Demand Defrost Electric, base dosed cases Demand Hot Gas Defract hase closed cases	Retall	%%	3%	1.0	7.0	0.7	7. 0	9 5	0 0	0 0	0.03	0 0	1 987 00	0.37	0.74
Freezer-Cooler Replaced cases Rebil 7% 7% 0.0 0.1 0.0 0.	Freezer-Conciler Rapia Conder Cases Retail 79% 78% 78% 78% 78% 78% 78% 78% 78% 78% 78		3208	Electronically commutated evaporator fan motor, base closed cases	Retail	23%	14%	0.0	0.8	0.6	0.1	12	· =	0	0.10	0	377.00	1.60	3.49
High-Refueld Classes Retail 2% 2% 0.0 0.7 0.7 0.1 10 0 0.03 0.03 0.12 High-Refueld Classes Oreact Classes Retail 2% 2% 0.0 0.7 0.7 0.1 11 10 0 0 0.03 0.03 0.12 High-Refueld Classes Closed Classes Retail 2% 2% 0.0 0.7 0.7 0.1 11 15 0 0 0.03 0.0 157.40 0.80 Retail 0% 0% 0.0 0.7 0.7 0.1 11 10 0 0 0.00 0.0 0.0 0.0 0.0 0.0	High Fet Relation Cross Data Closed Classes Retail 1 2% by 100 0.0.7 0.0.7 0.1 0.0	1	3209	Freezer-Cooler Replacement Gaskets, base closed cases	Retail	7%	2%	0.0	0.7	9.0	0.1	4	0	0	90.0	0	45.03	2.91	5.91
High-endeactory and motory, page closed cases Retail 4% 6% 6% 6% 6% 6% 6% 6%	Higher desired interesty Tan modes Cases Retail 4% 4% 60,0 0.7 0.1 1.1 0 0.0		3210	High R-Value Glass Doors, base closed cases	Retail	2%	2%	0.0	0.7	0.7	0.1	10	0	0 (0.03	0	2,407.67	0.12	0.24
LED big lay Lighting base closed crass Refail 79% 70% 0.0 0.7 0.6 0.1 10 0.00 0.00 0.00 0.00 0.00 0.0	Lab Display Lighting, base closed closes Rebial 7% 7% 7% 7% 7% 7% 7% 7		3211	High-efficiency fan motors, base closed cases Included cuckion lines have closed cases	Retail	4%	4%	0.0	0.7	0.7	0.1	12	0 0	0 0	0.03	0 0	517.40	0.80	1.55
Low or Anti-Sweet Door Filth, base closed crases Retail 5% 60 0.7 0.6 0.1 10 0.0<	Low or Anti-Sweat Door Flint, base closed clases Retail 5% 5% 0,0 0,1 0,1 0,1 0,0 0,1 0,1 0,1 0,1 0,0 0,1		3213	LED Display Lighting, base closed cases	Retail	%2	2%	0.0	0.7	0.6	0.1	7 80	o +	0	0.08	0	186.75	1.31	2.63
Oversized Aff Cooled Condenser, base closed classes Retail 8% 6 0 0.7 0 0.7 0 1799,09 2.17 Refrigeration Connectioning, base closed classes Retail 5% 0.0 0.7 0.1 16 1 0 0.7 1.7 9 2.17 Refrigeration Commissioning, base closed classes Retail 5% 0.0 0.7 0.1 3 0.0<	Oversized Art Cooled Catases Retail 8% 8% 0.0 0.1 16 1 0.0 0.0 0.0 199.09 Retrigeration Could Ceaning, Dase dosed cases Retail 5% 5% 5% 0.0 0.1 1 5 0 0.0	1	3214	Low or Anti-Sweat Door Film, base closed cases	Retail	2%	2%	0.0	0.7	9.0	0.1	10	0	0	0.06	0	110.39	2.68	5.34
Refrigeration found Lealaning Sabe closed cases Retail 23% 5.0 0 0.0 0.7 0.7 0.1 1 5 0 0.0 0.2 0 0.2 0 0.1 1.5 1.2	Refigeration Confidence crosses Refail 23% 5.9% 0.0 0.1 3 2 0 0.22 0 127.99 Base Walkin in reflectable Charles and Confidencial Standing Laborator And Confidencial Confidencia	1	3216	Oversized Air Cooled Condenser, base closed cases	Retail	8%	8%	0.0	0.7	9.0	0.1	16	1	0	0.07	0	199.09	2.17	4.22
National Action lines and line and line and lines are retained to the second lines and lines are retained as a second line are retained as a second line and lines are retained as a second line and lines are retained as a second lines are retained lines are retained as a second lines are retained lines are retained lines are retained lines are retained as a second lines are retained lines are reta	Marching-endout Journalisation Agenta 279 279 270		3217	Refrigeration Coil Cleaning, base closed cases	Retail	23%	23%	0.0	0.8	9.0	0.1	ın r	~ 0	0 0	0.22	0 0	127.99	1.25	2.55
Auto-closer on main door to walk-in freezer Retail 1% 1% 0.0 0.3 0.0	Auto-closer on main door to walk-in repeare Retail 1% 1% 0.0 0.3 0.3 0.0 8 0	٦.	3300	Rerngeration Commissioning, base dosed cases Base Walk-in refrioeration/freezer.units	Retail	%°C	%c	0.0	0.0	0.3	1.0	ر 16	0 0	o c	0.04	0 N	105.81 N/A	0.90 N/A	1.92 N/A
Compressor VSO retroit, walk-ins Retail 7% 6% 0.0 0.3 0.0 13 0.0 0.0 0.0 13 0.0 0.0 0.0 13 0.0 0	Comparestor VSD extention, walk-instance the control of control o		3302	Auto-closer on main door to walk-in freezer	Retail	1%	1%	0.0	0.3	0.3	0.0	0	0	0	0.00	0	465.04	0.52	1.05
Demand Portos Electronically commutated evaporator fram motor, walk-ins Retail 3% 8% 0.0 0.0 0.3 0.3 0.0 10 0 0 0.01 0 0.01 0 0.01 0 0.089	Demand Defined Effects, walk-rins Retail 3% 3% 0.0 0.3 0.3 0.0 10 0 0.0 0 13.37 Demand Hot as Defined, walk-rins Retail 3% 3% 0.0 0.3 0.0 10 0 0 0.0 0.0 15 0 0 0 0.0 0.0 0.0 0	1	3303	Compressor VSD retrofit, walk-ins	Retail	7%	%9	0.0	0.3	0.3	0.0	13	0	0	0.02	0	138.63	2.82	6.15
Perand tot Gas Detacks, walk-risk Retail 3% 3% 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	Person for the Sar Decision Wark-ins Retail 3% 3% 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	1	3304	Demand Defrost Electric, walk-ins	Retail	8%	8%	0.0	0.3	0.3	0.0	10	0	0	0.01	0	331.37	0.89	1.78
Percentionary voluntaries are regarded from the which is retain 1.5% 14% 1.0%	Executionary Confidence (Valorication Americals) Retail 14% 14% 14% 15%		3305	Demand Hot Gas Defrost, walk-ins	Retail	3%	3%	0.0	0.3	0.3	0.0	10	0 0	0 0	0.01	0 0	831.43	0.36	0.71
Freeze-Cooler Replacement Gaskets, walk-line Retail 1% 1% 0.0 0.3 0.3 0.3 0.0 16 0.0 0.0 0 0.0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0	Freeze-Cooler Replacement Gaskets, walk-ins Retail 1% 1% 1% 1% 1% 1% 1% 1% 1% 1% 1% 1% 1%		3307	Electronically commutated evaporator fan motor, waik-ins Evaporator fan controller for MT walk-ins	Retall	1%	14%	0 0	4.0	5.0	0.0	16	0 0	0 0	0.04	> -	8 410 41	3.83	8.35
High-refineincy fan motors, walk-ins Retail 6% 0.0 0.1 0.1 0.0	High-efficiency fan motors, walk-ins Retail 6% 6.0 0.3 0.3 0.0 15 0 0 0.02 0 142.80 Insulated suction (mest, walk-ins Retail 0% 0% 0.0 0.3 0.3 0.0 11 0 0 0 0 61.127 Oversized Authority, walk-ins Retail 2% 8% 8% 8% 0.0 0.3 0.3 0 16 0 0.0 0 166.61 Refrigeration Coil Cleaning, walk-ins Retail 23% 23% 0.0 6,4 0.3 0.0 5 1 0 0 9 93.72	-	3309	Freezer-Cooler Replacement Gaskets, walk-ins	Retail	1%	1%	0.0	0.3	0.3	0.0	4	0	0	0.00	+ 0	61.42	2.13	4.33
Insulated suction lines, walk-ins Retail 0% 0% 0.0 0.3 0.3 0.0 11 0 0 0.00 0 611.27 0.52 Oversized Air Choeld Chordenser, walk-ins Retail 8% 8% 0.0 0.3 0.3 0.0 16 0 0 0.02 0 0.66.61 2.59	The design of the design of the detail of the design of		3310	High-efficiency fan motors, walk-ins	Retail	%9	%9	0.0	0.3	0.3	0.0	15	0	0	0.02	0	142.80	2.88	5.62
Oversized Alf Cooled Condenser, walk-ins Retail 8% 8% 0.0 0.0 0.3 0.3 0.0 16 0 0 0.02 0 0.66.61 2.59	Oversized Alfr Cooled Condenser, walk-ins Retail 8% 8% 0.0 0.3 0.3 0.0 16 0 0 0.02 0 166.61 Refrigeration Coil Cleaning, walk-ins Retail 2.3% 2.3% 0.0 0.4 0.3 0.0 5 1 0 0.07 0 93.72	1	3311	Insulated suction lines, walk-ins	Retail	%0	%0	0.0	0.3	0.3	0.0	11	0	0	0.00	0	611.27	0.52	1.04
	Keringeration Coi Ceaning, walk-ins Ketail 2.3% U.0 U.4 U.3 U.0 5 1 U U.17 U 93.7.2	Η.	3313	Oversized Air Cooled Condenser, walk-ins	Retail	8%	8%	0.0	0.3	0.3	0.0	16	0	0	0.02	0	166.61	2.59	20.5



Commer	Commercial Electric Existing Construction															
DSM ASSYST SUMMARY	ЈМ МАКУ											ystem Second	Levelized Cost	evelized Cos	Total	
Measure		Building	Energy Savings	Peak Reduction	Total Costs/	Base	A Na	Peak Watts/ Service		Technical Per Potential Per	Peak Tech. Potential	Peak Tech. Potential	of Conserved Energy	of Avoided Peak Capacit	Resource Cost Test	Participant
1 3315	Refrig	Retail	3%	3%	0.0	0.3		ב			0	0.01	\$/ ¥₩Π	89.68	1.13	2.27
1 3316		Retail	4%	4%	0.0	0.3				0	0	0.01	0	98.53	1.33	2.70
1 3402	Dase Large Cold Storage Area Auto-closer on main door to walk-in freezer, base large cold storage	Retail	1%	1%	0.0	0.0			8 8		. 0	0.00	0	465.04	0.52	1.05
1 3403		Retail	7%	%9	0.0	0.0			e i	0	0 0	0.00	0 (138.63	2.82	6.15
1 3405	t Electronically commutated evaporator fan motor, base large cold storage Evaporator fan controller for MT walk-ins, base large cold storage	Retail	1%	14%	0.0	0.0		0.0	n 9	. 0	0 0	0.00	0 1	15/./5	3.83	0.10
1 3400		Retail	4%	4%	0.0	0.0			10	0	0	0.00	0	216.50	1.90	3.71
1 340	ć	Retail	%0	%0	0.0	0.0		0.0		0 0	0 0	0.00	₩ 0	13,522.83	0.02	0.05
1 3410		Retail	23%	23%	0.0	0.0			9 10		0 0	0.00	0	70.29	2.28	4.63
1 3411	4	Retail	2%	2%	0.0	0.0		0.		0	0	0.00	0	44.27	2.30	4.60
1 341.	Strip curtains for walk-ins, base large cold storage Base Reach-in Refricerator/Freezer Federal Standard	Retail	% % 0	4 ° % °	0.0	0.0			4 7	0 0	0 0	0.00	0 %	98.53 N/A	1.33 N/A	2.70 N/A
1 3501		Retail	2%	7%	0.1	7.4		0.7			0	0.11	0	151.08	2.73	5.32
1 350.	Ē	Retail	3%	3%	0.1	7.3		8 0		0 0	0 0	0.04	0 0	229.62	0.57	1.16
1 3600	Reingeration Coll Cleaning, base base reacti-in Base Glass Door Reach-in Refrigerator/Freezer, Federal Standard	Retail	%0	%0	0.0	2.2		5.5	. 10		0 0	0.00	N/A	408.30 N/A	0.34 N/A	N/A
1 360.		Retail	12%	12%	0.0	2.3		.2 1:	5	e .	0	0.32	. 0	95.00	4.33	8.45
1 360	Bi-Ryel LED Case Lighting, base glass-door reach-in Fraezer-Cooler Replacement Gaskets, base place-door reach-in	Retail	3%	3%	0.0	2.3		2. 2		7 -	0 0	0.22	0 0	126.46	1.31	2.63
1 3604		Retail	2%	2%	0.0	2.2	2.2 0	0.2	. 10	1 0	0	0.05	0	258.59	0.62	1.26
1 370.	Base Ice Maker, Federal Standard	Retail	%0	%0	0.0	0.0		0.0	0 0	0 0	0 0	0.00	N/A	N/A	A/A	N/A
1 370;	Refr	Retail	10%	10%	0.0	0.0		0.0	2 10		0 0	0.00	0 0	65.12	2.46	5.00
1 380	Base Res	Retail	%0	%0	0.0	0.1		.0	80	0	0	0.00	N/A	N/A	N/A	N/A
1 380	Energy Star refrigerator/freezer Refrigeration Coll Cleaning, residential-type refrigerator	Retail	10%	10%	0.0	0.1		_	89 14	0 0	0 0	0.05	0 0	1,020.84	0.46	0.89
1 3900		Retail	%0	%0	0.0	0.0		0.0	4	0	0	0.00	N/A	N/A	N/A	N/A
1 390.		Retail	10%	10%	0.0	0.0		0.0	4	0 0	0 0	0.03	0 0	669.02	0.58	1.14
1 390	Kerngeration Coll Cleaning, Compact refrigerator Base Computer Network Server	Retail	%0 %0	%0T	0.0	0.0		0.0			0 0	0.00	o X	1,359.91 N/A	0.10 N/A	N/A
1 400.		Retail	33%	23%	0.0	0.1		0.0		2	0	0.12	. 0	23.99	6.50	14.33
1 410) Base Desktop PC Fnerov Star or Better PC	Retail	33%	33%	0.0	0.1		0.0		0 0	00	0.00	Υ c	N/A 117.10	N/A 1.02	N/A 2.01
1 4200		Retail	%0	%0	0.0	0.0		0.	_	. 0	0	0.00	N/A	N/A	N/A	N/A
1 420.	Energy Star or Better Laptop	Retail	30%	30%	0.0	0.0		0.0		0 0	0 0	0.01	0 2	69.78	1.71	3.38
1 430.	Energy S	Retail	21%	21%	0.0	0.0		0.0			. 0	0.04	0	152.53	0.78	1.54
1 430.	Plug-load cont	Retail	11%	2%	0.0	0.0		0.0		0	0	0.00	1	9,755.48	0.05	0.12
1 440) base Imaging Energy Star or Better Imaging Equipment	Retail	21%	21%	0.0	0.0				0 0	0 0	0.00	Ψ c	N/A 69.11	N/A 2.50	N/A 4.91
1 5000	Base Water	Retail	%0	%0	0.0	9.0		15		. 0	0	0.00	N/A	N/A	N/A	N/A
1 500	High Efficiency Water Heater (electric) Heat Plimp Water Heater (air source)	Retail	20%	2%	0.0	9.0		0.1	s c	00	0 -	0.10	0 0	97.71	3.92	7.39
1 500;		Retail	10%	10%	0.0	9.0					0	0.11	0	168.17	2.80	5.22
1 500	Solar Water Heater Damand controlled discillating systems	Retail	70%	70%	0.1	9.0			0 4	0 ~	0 0	0.02	0 -	181.60	2.59	4.83
1 5000		Retail	%29	%59	0.1	9.0		10		1 W	0	0.47	10	165.61	1.66	3.20
1 500		Retail	2%	2%	0.0	9.0		п.	ın o	2	0 +	0.24	0 0	189.04	2.03	3.82
1 501.	Secirculation Pump Timer Clock - Controls for Central Domestic Hot Water	Retail	3%	3%	0.0	0.0		0.1 15		n -1	т О	0.09	0 0	1,194.47	0.32	0.60
1 6000		Retail	%0	%0	0.0	0.0			10	0	0	0.00	N/A	N/A	N/A	N/A
1 600	Vending Misers (Non-Refrigerated) - Base Refringrated Vending Machines Federal Standard	Retail	51%	35%	0.0	0.0		0.0		0 0	0 0	0.00	0 8	1,739.25 N/A	0.12 N/A	0.26 N/A
1 610.		Retail	33%	23%	0.0	0.0		0.		0	0	0.01	0	436.19	0.46	1.03
1 610.	Vending	Retail	51%	35%	0.0	0.0			10.0	0 0	0 0	0.01	0	273.88	0.74	1.64
1 620.		Retail	54%	54%	0.0	8.0		0.0	7 7	o m	0 0	0.00	N/N 0	N/A 60.16	N/A 7.50	IV.30
1 630		Retail	%0	%0	0.0	9.0			2	0	0	0.00	N/A	N/A	N/A	N/A
1 630	Energy Star Convection Oven Base Frver	Retail	14%	14%	0.0	0.6	0.5	9 9	7 2	7 0	0 0	0.30	o X	133.82 N/A	3.3/ N/A	6.43 N/A
1 640.		Retail	8%	%8	0.0	0.4	0.3 0	0.	2	0	0	0.02	0	1,217.66	0.37	0.71
1 650	Base Griddle Framo Star oriddle	Retail	11%	0%	0.0	9.0			2 0	0 0	0 0	0.00	Υ V	N/A 199.75	N/A 2.26	N/A 4.31
1 6600		Retail	%0	%0	0.0	0.7			7 2	. 0	0	0.00	N/A	N/A	N/A	N/A
1 660.	En	Retail	70%	20% 00%	0.1	0.8		0.0	12	2 0	0 0	0.42	0 2	188.73	2.39	4.56
1 670.		Retail	79%	%62	0.3	1.2			7 2	o m	0	0.53	0	350.31	1.29	2.46
1 700	Base Electric Boiler, Federal Standard	Retail	%0	%0	0.0	6.8		4.	0	0	0	0.00	N/A	N/A	N/A	N/A



DSM ASSYST SUMMARY	SUMMARY												evelized Cos	Total	
Measure Segment Number	a .	Building	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/	Base	Wa Fur	Peak Watts/ Service	Technical vice Potential (vrs) GWH	cal Peak Tech. ial Potential	ı. Peak Tech. I Potential MW	of Conserved of Avoided Energy Peak Capacit	of Avoided Peak Capacit	Resource Cost Test (TRC)	Participant Test
1 70(Celling/roof Insulation (electric boiler)	Retail	12%	12%	1.3						0.00	0	223.68	0.51	0.73
1 710	7002 Duct/Pipe Insulation (electric boiler) 7100 Base Electric Furnace, Federal Standard	Retail	%7	%7	8.0			4.4		0 0	0.00	I W	829.76 N/A	0.14 N/A	0.20 N/A
1 71,	7101 Heat Pump, SEER 16.0/HSPF 9.2 ENERGY STAR, <5.4 tons, heating	Retail	%09	%09	0.3	7.1	2.9 1.		15 3	2 0	0.00	. 0 0	10.35	9.17	12.94
1 71(2%	2%	0.8					0 0	0.00	o =	829.76	0.14	0.20
1 71,			13%	8%	0.3					0 0	0.00	0	76.38	1.00	1.72
1 720	7200 base reading All-Source reat Pullip, SEER 15.0/ RSPP 6.0 W/Aux Surp heat 7201 eat Pump, SEER 16.0/HSPF 9.2 ENERGY STAR, <5.4 tons (base air-source heat pu		10%	10%	0.0			1.7		o io	0.00	W/N	155.52	0.61	0.86
1 72			12%	12%	1.3				4 4	m ·	0.00	0	537.56	0.21	0.30
1 72	7203 Duct/Pipe Insulation (base air-source heat pump heating) 7204 Smart Thermostat (Base Heat Pump Heating)	Retail	2%	2%	8.0	2.8	2.8	1.8	0 2	1 4	0.00	п C	1,994.15	0.06	0.08
1 730	ase Heating Packa	Retail	%0	%0	0.0		1.9	13 15	0 2	0	0.00	N/A	N/A	N/A	N/A
1 73		Retail	%09	%09	2.7	1.9	0.8	0.5		ı, c	0.00	0	336.75	0.28	0.40
1 73	502 Ceiling/roof Insulation (base packaged heat pump) 503 Duct/Pine Insulation (base packaged heat pump)	Retail	12%	12%	1.3		1.8	20 20 20	0 0	0 0	0.00	2 1	782.87	0.15	0.21
	Smart Thermostat (Base Rooftop/ packaged heating)	Retail	13%	8%	0.3		1.7 1			1	0.00	10	267.34	0.29	0.49
	Base	Retail	%0	%0	0.0	ω ·	2.8 1	1.8	0 ,	0 (0.00	N/A	N/A	N/A	N/A
	7401 Celling/roof Insulation (base ductiess mini-split) 7403 Smart Thermostat (base packaged heat pump)	Retail	12%	12%	1.3		2.5	1.7 20	0 **	0 +	0.00	0	537.56	0.21	0.30
		Retail	%0	%0	0.0	2		7	0	0	0.00	N/A	N/A	N/A	N/A
		Retail	1000	10%	0.0	ın ıı					1.77	0 0	512.54	1.06	1.69
		Retail	33%	62%	2.4	n in		0.3	5 5 183	42	119.81	0 0	547.86	0.63	0.70
	Energy Recovery Ventilation (ERV	Retail	2%	2%	0.2	LO.					15.38	0	422.12	1.28	2.05
		Retail	%0	%0	0.0				13 0	0 0	0.00	N/A	N/A	N/A	N/A
	.00 Base Process Cooling	Retail	%0 0	%0 0	0.0	0.0		0.0		0 0	0.00	A A	4 4 2 X	N/A A/A	V V
	Base	Retail	%0	%0	0.0			0.0	0	0	0.00	N/A	N/A	N/A	N/A
		Retail	%0	%0	0.0					0 0	0.00	Α V	Α <u>γ</u>	N/A	N/A
		Retail	1%	1%	0.0	68.0				0	0.56	0	504.61	0.93	1.69
	Variable Sp.	Retail	17%	14%	7.2			7.9		4	1.44	0	551.65	0.71	1.59
		Retail	%0	%0	0.0	2.3				0 0	0.00	Α/N	A/N	N/A	N/A
	500 Base Linear Lighting, Fluorescent Fixture, 2L4T12, integrated market	Retail	%0	%0	0.0					0	0.00	X/X	X X/X	X X	X X
		Retail	%0	%0	0.0					0	0.00	N/A	N/A	N/A	N/A
			%0	%0	0.0					0 0	0.00	N/A	A/N	N/A	N/A
	500 Base Linear Lighting, LED 1006, 2 Idmp 11xture 225 Base Linear Lighting, LED Tube, 2 Idmp fixture, 2028 Standard		%0	%0	0.0			0.0		0	0.00	X X	X X	X X	₹ ₹
			%0	%0	0.0					0	0.00	N/A	N/A	N/A	N/A
			%0	%0	0.0					0 0	0.00	N/A	N/A	N/A	N/A
	1300 Base General Service Screw-in, UrL 1350 Base General Service Screw-in, Incandescent/halogen	Retail	%0 0	%0 0	0.0					0	0.00	¥ × ¥ ×	∀	K K	∀
		Retail	%0	%0	0.0				0	0	0.00	N/A	N/A	N/A	N/A
	Base General	Retail	%0	%0	0.0	0 0				0 0	0.00	N/A	N/A	N/A	N/A
		Retail	%0 0	%0	0.0	0:0				0 0	0.00	ΣŽ	4	X X	₹ ¥ X
	1525 Base High Bay Lighting, Fluorescent T5, integrated market	Retail	%0	%0	0.0	0				0	0.00	N/A	N/A	N/A	N/A
		Retail	%0	%0		0 0				0 0	0.00	8/N	∀	4 ×	N/A
		Retail	%0	%0	0.0				0 0	0	0.00	N/A	X Y	N/A	N/A
		Retail	%0	%0		0				0	0.00	N/A	N/A	N/A	N/A
	1700 Base General Service Screw-in, Outdoor CFL	Retail	%0	%0	0.0	0 0				0 0	0.00	Α Ś	A N	N/A	N/A
	500 Base General Service Screw-in, Outdoor LED bulb	Retail	%0	%0						0	0.00	X X	X X	X X	₹ ₹
		Retail	%0	%0		0				0	0.00	N/A	N/A	N/A	N/A
	Base Linear Lighting, Outdoor LED Tube	Retail	%0	%0	0.0	0.0				0 0	0.00	Α× N	Α × Α ×	Α × ×	∀ ×
		Retail	%0	%0		0.0				0	0.00	X X	X X	X X	X X
		Retail	%0	%0	0.0					0	0.00	N/A	N/A	N/A	N/A
	ш	Retail	%0	%0	0.0	0.0	0.0			0 0	0.00	N/A	N/A	N/A	N/A
	000 Base Spiresystem AC, SEEK 14.5, < 5.4 tons 100 Base PTAC cooling FFR=10.2 1 ton	Retall	%0	%0	0.0		0.0			0 0	0.00	X \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	X X	4 /2 2	₹
		Retail	%0	%0	0.0	0.0	0.0			0	0.00	N/A	N/A	N, N	N/A
	Base Dud	Retail	%0	%0	0.0	0.0	0.0			0	0.00	N/A	N/A	N/A	N/A
3 310	3100 Base Open refrigerated/freezer cases 3200 Base Closed refrigerated/freezer cases	Retail	%0	%0	0.0	0.0	0.0	0.0 16	9	0 0	0.00	N/A N/A	∀ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	A/N A/N	∀ \ \ \ \ \
		Retail	%0	%0	0.0	0.0	0.0			0	0.00	Z X	N/A	(V	<
	3400 Base Large Cold Storage Area	Retail	%0	%0	0.0	0.0	0.0			0	0.00	N/A	N/A	N/A	N/A



Column C	DSM ASSTST SUMMAKY Measure Segment Number	UNIVAKY Ire Messure Per Messure	Building	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/	Base	ā	Peak Watts/	Service Life (vrs)	Technical Potential	System Peak Tech. Potential MW	System Second Peak Tech. Potential MW	Levelized Cost of Conserved Energy \$/kWH	evelized Cos of Avoided Peak Capacit	Total Resource Cost Test (TRC)	Participant Test
The control of the co	3500		Retail	%0	%0	0.0	0.0	0.0	0.0	15		0	00.00	N/A		N/A	N/A
Column C			Retail	%0	%0	0.0	0.0	0.0	0.0	15	0 0	0 0	0.00	V/A	₹ ×	A/A	N/A
Column C			Retail	%0	%0	0.0	0.0	0.0	0.0	18	0	0	0.00	N/A	N/A	N/A	N/A
Column C			Retail	%0	%0	0.0	0.0	0.0	0.0	14	0	0	0.00	N/A	N/A	N/A	N/A
Note			Retail	%0	%0	0.0	0.0	0.0	0.0	4 4	0 0	0 0	0.00	V/A	Υ X	Α .	Α/N
Column C			Retail	%0	%0	0.0	0.0	0.0	0.0	1 4	0 0	0 0	0.00	₹ \ 2	₹ \ 2	X	₹ \ 2
Packet whether places and standard several conditions of the standard several condit			Retail	%0	%0	0.0	0.0	0.0	0.0	4	0	0	0.00	N/A	N/A	N/A	N/A
State of the control of the contro			Retail	%0	%0	0.0	0.0	0.0	0.0	9	0	0	0.00	N/A	N/A	N/A	N/A
Comparison Com			Retail	%0	%0	0.0	0.0	0.0	0.0	15	0	0	0.00	N/A	N/A	N/A	N/A
Secretary Control Co			Retail	%0	%0	0.0	0.0	0.0	0.0	ın ı	0 0	0 0	0.00	V/A	Υ V V	Α/N	A/N
Part			Potail	%0	%0	9 0	9 0	0.0	0.0	o Ç	0 0	0 0	0.00	N/N	X \ X	4/N	K/N
Second colored color			Retail	%0	%0	0.0	0.0	0.0	0.0	12	0	0	0.00	(V	X X	Z Z	X/X
Part			Retail	%0	%0	0.0	0.0	0.0	0.0	12	0	0	0.00	N/A	N/A	N/A	N/A
Second Process Proce			Retail	%0	%0	0.0	0.0	0.0	0.0	12	0	0	0.00	N/A	N/A	N/A	N/A
March Property P			Retail	%0	%0	0.0	0.0	0.0	0.0	12	0	0	0.00	N/A	N/A	N/A	N/A
Description			Retail	%0	%0	0.0	0.0	0.0	0.0	12	0	0	0.00	N/A	N/A	N/A	N/A
200 September			Retail	%0	%0	0.0	0.0	0.0	0.0	20	0	0	0.00	N/A	N/A	N/A	N/A
200 Part All Part			Ketall	%0	%0	0.0	0.0	0.0	0.0	T T	0 0	0 0	0.00	N/A	N/A	N/A	N/A
March Marc			Ketall	%0	%0	9 0	9 0	0.0	0.0	C T	0 0	0 0	0.00	N/N	X \ X	K/N	A/N
The control of the			Retail	%0	% %	0.0	0.0	0.0	0.0	2 2	0 0	0 0	00.0	(A	Z X	X	(A/X
State Stat			Retail	%0	%0	0.0	0.0	0.0	0.0	20	0	0	0.00	N/A	N/A	N/A	N/A
State Stat			Retail	%0	%0	0.0	0.0	0.0	0.0	13	0	0	0.00	N/A	N/A	N/A	N/A
Page			Retail	%0	%0	0.0	0.0	0.0	0.0	15	0	0	0.00	N/A	N/A	N/A	N/A
Section Sect			Retail	%0	%0	0.0	0.0	0.0	0.0	16	0 0	0 0	0.00	V/A	Υ V V	Α/N	A/N
See Beas Interval living content of the content			Retail	%0	%0	9.0	9 0	9 0	0.0	1 1	0 0	0 0	0.00	Z /N	¥	X /2	X / X
State Stat			Retail	%0	%0	0.0	0.0	0.0	0.0	20	0	0	0.00	N/A	N/A	N/A	N/A
1000 High Performance Lighting (Freeze) (Freeze Control) (Freeze Contr			Retail	%0	%0	0.0	0.0	0.0	0.0	10	0	0	0.00	N/A	N/A	N/A	N/A
High Performance (page) Face (page) 12 Grocery 28% 514 Grocery 28% 515 Grocery 515 Groce			Grocery	%0	%0	0.0	2.2	2.2	9.0	18	0	0	0.00	N/A	N/A	N/A	N/A
10.003 Control Prince (pase 12) Control Pr			Grocery	82%	62%	0.5	1.9	4.0	0.2	15	0 0	0 0	0.08	0 0	59.94	4.21	7.19
1005			Grocery	61%	%69 %69	0.3	1.9	0.7	2.0	0 00	0 0	0 0	0.07	0 0	92.79	1.26	1.89
Digite Digitity Control (Sees T12) Concept Conce			Grocery	%62	%68	0.3	1.9	0.4	0.1	18	0	0	0.05	0	52.50	4.32	6.19
10.00 Beac luter Upfling Conferency 1979, 19			Grocery	%9	3%	0.0	1.9	1.8	0.5	9 0	0	0 (0.01	0	106.42	1.62	3.36
1015 September Parker P			Grocery	250%	19%	S : C	J. 1.	1.1	4.0	v 5	o c	0 0	0.00	0	1,772.17	0.14	0.28
In this part of the company of the company 75% 7			Grocery	0.67	%0	0	2.3	2.3	9.0	18	0 0	0 0	00.0	N A	L,192.40	N/A	0.90 A/A
10.00 High Performance Lighting, R.PCrombined Startegies (Seer TS) 75%			Grocery	75%	53%	0.4	1.9	0.5	0.2	18		0	0.20	0	148.33	2.04	3.57
1101 High Performance Lighting RA. Combined Strategie (Base FB) Grocey 37% 57%			Grocery	%0	%0	0.0	2.1	2.1	9.0	18	0	0	0.00	N/A	N/A	N/A	N/A
102			Grocery	%92	22%	0.2	1.9	0.5	0.2	15	0	0	90.0	0	65.80	3.84	6.55
LED TOTAL WITH Interpret (1888 I B) Grocery 25% 63% 1.9			Grocery	37%	42%	0.1	1.9	1.2	0.3	ω (0 (0 (0.05	0 (23.85	4.89	7.33
1157 High Performance Lighting Corrival (Base LED Tube) Grocery 67% 57% 1.5 1.5 1.8 1.5			Grocery	25%	96.0	5.0	J. 1.	9.0	7.0	ωº	o c	0 0	0.03	0	110.24	1.06	1.39
100 Base Linear Lighting, Corror (gase TB) Corcery 25% 15% 15% 11% 10% 1			Grocery	%9	3%.	0	1.9	. 6	2.0	9	0 0	0 0	10.0	0 0	108.37	1.59	3.30
1157 Ref Cocce & Daylight Integral Service (Base II) 12.0 1.214.25 1.0 1.2 1.0 1.0 1.0 1.0 1.2 1.0 1			Grocery	44%	19%	1.8	1.9	1.1	0.4	0	0	0	0.00	0	1,804.65	0.14	0.28
1150 Base Unear-Upilitity Florecescener Rickline; Plorecescener Rickline;			Grocery	25%	2%	0.3	1.9	1.4	0.5	10	0	0	0.00	0	1,214.25	0.41	96.0
The Pock Daylgat Integral Sancker LED Tube) Grocery 68% 47% 0.4 1.9 0.6 0.3 18 1 0 0.00			Grocery	%0	%0	0.0	2.1	2.1	9.0	18	0	0	0.00	N/A	N/A	N/A	N/A
1202 High Performance Lighting RAR - Compiled Stategles (Base LED Tube) Grocey 42% 53% 6.2 1.1 6.6 6.2 1.5 7 1.1 6.5 6.5 1.2 1.1 6.5 1.1 6.5			Grocery	%89	47%	4.0	1.9	0.6	0.3	18	- 0	0 0	0.15	0 0	167.83	1.81	3.15
1222 Elegating Control Tuneup (Base LED Tube) Grocery 64% 13% 11 11 10 10 13 19 19 19 19 19 19 19			Grocery	42%	32%	0.0	11	0.6	2.0	0 12	2 6	o =	1.13	Š C	207.85	1.22	2.07
1233 Network Lighting Cortrols (Base LED Tube) Grocery 44% 19% 18 1.1 0.6 0.2 9 0 0.05 0.0 0.05 0.			Grocery	%9	3%	0.0	1.1	1.0	0.3	9	н	0	0.09	0	191.55	06:0	1.86
1204 Base Linear Lighting Cardwing Cardwing Cardwing Cardwing Cardwing LED Tube) Grocery 25% 5% 0.3 1.1 0.8 0.3 1.0 0.0			Grocery	44%	19%		1.1	9.0	0.2	6	0	0	0.05	0	3,189.91	0.08	0.16
1225 High Performance Lighting, RLP Comparing a Street Street Lighting for Light Street Street Lighting for Light Street Lighting Light Street Lighting Charles (Base Light Lighting Charles) Grocery 42% 13% 0.0 0.9 0.5 0.2 0.9 0.5 0.2 0.9 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0			Grocery	25%	2%		1:1	8.0	0.3	10	0 0	0 0	0.01	0 1	2,146.32	0.23	0.55
1228			Grocery	42%	32%		9.0	9.0	0.0	1 T	0 10	O =	0.00	W/W	N/A 236 19	1 07	N/A 1 82
1228 Network Lighting Controls (Base LED Tube) Grocery 44% 19% 1.8 0.9 0.5 0.2 9 0.0			Grocery	%9	3%		6.0	6.0	0.2	9		4 0	0.09	0	217.67	0.79	1.64
1229 Base Unear Lighting, EED Yuke, 2 lamp fixture, integrated market Grocery 25% 5% 0.3 0.9 0.7 0.2 10 0.0 0.0 0.01 0.0 0.20 1250 Base Unear Lighting, EED Yuke, 2 lamp fixture, integrated market Grocery 22% 15% 0.4 1.1 1.1 0.3 0.2 18 0.0 0.0 0.0 0.0 1251 RET Occ & Day/light Integrated Service Careginated market, 2028 Standard Grocery 22% 15% 0.4 0.1 0.1 0.8 0.2 18 0 0.0 0.0 0.0 1252 Base Linear Lighting, EED Yuke, 2 lamp fixture, integrated market, 2028 Standard Grocery 22% 15% 0.4 0.7 0.2 18 0 0.0 0.0 1253 RET Occ & Day/light Integrated Service Strewnin, CR Grocery 22% 13% 0.0 0.4 0.4 0.4 0.4 0.4 0.4 0.4 0.4 1254 Base General Service Strewnin, CR Grocery 22% 12% 12% 12% 0.4 0			Grocery	44%	19%		0.9	0.5	0.2	6	0	0	0.05	0	3,624.90	0.07	0.14
1250 RETOCK Daylight Integrated market Grosery 2 % 15% 16% 0.0 1.1 1.1 0.3 18 0 0 0.00 N/A NA 1.1 1.1 0.3 18 0 0 0.00 N/A NA 1.1 1.1 0.3 18 0 0 0.00 N/A NA 1.1 1.1 0.3 1.1 1.1 0.3 1.1 1.1 0.3 1.1 1.1 0.3 1.1 1.1 0.3 1.1 1.1 0.3 1.1 1.1 0.3 1.1 1.1 0.3 1.1 0.3 0 0 0.00 N/A NA 1.1 0.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0			Grocery	25%	2%	0.3	0.9	0.7	0.2	10	0	0	0.01	0	2,439.00	0.20	0.48
1251 RET Occ & Daylor Integral Sensor ELD Tregrated) Grocery 22% 13% 0.4 1.1 0.8 0.2 18 3 1 0.53 0 9 9448 0.3.2 1255 RET Occ & Daylor Integral Sensor ELD Tregrated) Grocery 22% 15% 0.4 0.9 0.7 0.2 18 3 1 0.52 0 0 1,061.91 0.29 126 RET Occ & Daylor Integral Sensor ELD Tregrated) Grocery 22% 15% 0.4 0.9 0.7 0.2 18 3 1 0.52 0 0 1,061.91 0.29 130 Essee General Service Screw-in, FLA Grocery 23% 33% 0.0 0.4 0.3 0.1 4 0 0 0.0 0.0 0.0 546 1.13 130 Essee General Service Screw-in, Incandessent/halogen Grocery 29% 0.0 0.0 1.2 1.2 0.3 1 0 0 0 0 0 0 0.0 0.0 NA			Grocery	%0	%0	0.0	1.1	1.1	0.3	18	0	0	0.00	N/A	N/A	N/A	N/A
1275 asset Linear Lighton Father, Laborate Floring and Market, 2025 standing and Market (Despite Place) in the Control of Control			Grocery	22%	15%	4.0	1.1	0.8	0.2	18	m	₩ (0.53	0	934.48	0.32	0.57
1300 LEb screw-in replacement (base CErrey-in, Incandescent/halogen Grocery 0% 0% 0.0 0.12 1.2 0.3 1 0 0 0.00 N/A N/A N/A N/A 1350 Base General Service Screw-in, Incandescent/halogen Grocery 0% 0% 0.0 1.2 1.2 0.3 1 0 0 0 0.00 N/A			Grocery	22%	15%	0.0	D C	9.0	0.0	18	۳ د	O =	0.00	Y/Y	1 061 91	N/A	A/V
1301 LEb screw-in replacement (base CFL) Grocery 29% 33% 0.0 0.4 0.3 0.1 4 0 0 0.01 0 54.46 1.13 1.30 Base General Service Screw-in, Incandescent/halogen Grocery 0% 0% 0.0 1.2 1.2 0.3 1 0 0 0.00 N/A			Grocery	%0	%0	0.0	0.4	0.4	0.1	-	0	0	0.00	N/A	N/A	N/A	N/A
1350 Base General Service Screw-in, Incandescert/halogen Grocery 0% 0% 0.0 1.2 1.2 0.3 1 0 0 0.000 N/A N/A N/A			Grocery	29%	33%	0.0		0.3	0.1	4	0	0	0.01	0	54.46	1.13	1.74
			Grocery	700													



Commerc	Commercial Electric Existing Construction															
DSM ASSYST SUMMARY	ЧМА КУ											System Second	Levelized Cost	evelized Cos	Total	
Measure		Building	Energy Savings	Peak Reduction	Total Costs/	Base	ΑŠ	Peak Watts/ Serv		<u> </u>	تا ک اتا	Peak Tech. Potential	of Conserved Energy	P a	Resource Cost Test	Participant
Segment Number		Type	Fraction 0%	Fraction 0%	Sq F	0.3			Life (yrs) G	ОМН	Mω	MM 0:00	\$/kWH	\$/kW	(TRC)	Test N/A
1 1401		Grocery	10%	11%	0.0	0.3		7	4 4	0 0	0 0	0.03	0 2	233.20	0.26	0.41
1 1426	Dase General	Grocery	2%	2%	0.0	0.2	0.2	0.1	t 4	0 0	0 0	0.00	0	1,479.95	0.04	0.06
1 1450	Base HID Lighting (low bay) Base High Bay Lighting. Fluorescent TS	Grocery	%0	%%	0.0	4.7		2. 2.	00 00	0 0	0 0	0:00	Α Α/Χ Α/Χ	8/8 8/8	Α X	Α Α Α
1 1501	High Perform	Grocery	73%	22%	0.2	2.7			iνi	·	0	0.16	0	48.16	5.24	8.95
1 1502		Grocery	39%	44% 84% 84%	0.1	2.7		4. 6.	00 00		0 0	0.13	0 0	39.85	5.24	7.86
1 1504	Lighting Control Tuneup (Base T5)	Grocery	%9	3%	0.0	2.7		1.5		0	0	0.01	0	75.81	2.28	4.71
1 1505		Grocery	75%	19%	1.8	2.7		0.6	o C	0 0	0 0	0.00	0 0	1,262.46	0.19	0.40
1 1525	Base High Bay	Grocery	%0	%0	0.0	2.7		0.7	o	0 0	0 0	0.00	N/A	N/A	N/A	N/A
1 1526		Grocery	63%	47%	0.1	2.7		0.4	2 0		0	0.14	. 0	39.05	5.42	9.35
1 1550		Grocery	0%	47%	0.0	3.1		0.8	80, 70	0 1	0 0	0.00	Υ ο	33.53	N/A 6.31	N/A 10.89
1 1552		Grocery	73%	25%	0.2	3.1		0.4		1	0	0.12	0	41.57	6.07	10.36
1 1575	Base High Bay Lighting, LED lighting	Grocery	0%	10%	0.0	1.1	1.1	0.3	80. d	0 0	0 0	0.00	δ/A	N/A	V/A	N/A
1 1577		Grocery	25%	2%	0.3	11		0.3	. 0.	ı	0	0.04	0	2,158.58	0.23	0.54
1 1600	Bg	Grocery	%0	%0	0.0	0.0	0.0	0.0	ος π	0 0	0 0	0.00	A/A	N/A	N/A	N/A
		Grocery	%0 0%	%0	0.0	5.4		0.0	0.10	0 0	0 0	0.00	N/A	N/A	9.39 N/A	N/A
	Base	Grocery	%0	%0	0.0	0.4			15	0	0	0.00	N/A	N/A	N/A	N/A
		Grocery	%%	%0	0.0	1.1		0.2	rv. rv	0 0	0 0	0.00	V/A	V \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	V V V V	X X
		Grocery	%0	%0	0.0	0.7	0.7		. 22	0 0	0	0.00	N/A	Z Z	Z X	Z Z
		Grocery	%0	%0	0.0	0.4		0.1	ru i	0	0	0.00	N/A	N/A	N/A	N/A
1 2000	Base Water-Cooled Centrifugal Chiller, 0.58 KW/ton, 500 tons Centrifugal Chiller, 0.54 kW/ton, 500 tons	Grocery	12%	0% 12%	0.0	1.6	1.6	0.0	n n	0 0	0 0	0.00	∀ 0	X X	N/A 2.23	N/A 1.77
		Grocery	%6	2%	0.0	1.7		0.0	ıs.	0	0	0.00	0	N/A	0.86	1.36
	High Efficiency Chilled Water & Condenser Water Pump Motors VSD for Chiller Pumps and Towers	Grocery	3%	%° 6	0.0	1.6	1.5	0.0	o r	0 0	0 0	0.01	0 0	∀	1.34	1.08
		Grocery	12%	12%	1.5	1.7		0.0	. 0	0	0	0.02	D =1	N/A	0.19	0.15
		Grocery	%8%	8%	0.5	1.6			25.0	0 0	0 0	0.01	0 0	N/A	0.56	0.47
		Grocery	2%	2%	0.3	1.6			0 0	0 0	0	0.01	D F1	Z Z	0.08	0.07
		Grocery	%9	%9	0.0	1.6		0.0	15	0	0	0.00	0	N/A	0.68	1.81
	Dual Enthalpy Economizer Replaces Dry Bulb Economizer - Chiller New Franchizer - Chiller	Grocery	11%	11%	0.3	1.6			01 01	0 0	0 0	0.00	0 0	V/A	0.14	0.38
	Wir	Grocery	1%	5%	0.2	1.6			10	0	0	0.00	o =	N/A	0.03	0.04
		Grocery	1%	2%	0.2	1.6	1.5	0.0	0.1	0	0	0.00	1	N/A	0.09	0.11
	Base DX Packaged System, EER=10.3, 10 tons DX Darkaged System FER=10.9 10 tons	Grocery	%0	%0	0.0	2.5			rvi rv	0 ^	0 0	0.00	Υ Α	V \/	V. V.	N/A
		Grocery	23%	23%	0.2	2.5			15	16	0	11.44	0	N/A	3.40	2.84
	Geot	Grocery	21%	21%	2.0	2.5		0.0	rvi c	0 0	0 0	0.52	0 0	V/A	0.29	0.24
	PX Tulle Op/ Advance Diagnostics Refrigerant Charge Adjustment - DX	Grocery	10%	10%	0.4	2.7			. 0	D =	0 0	0.72	0	X	0.55	0.49
		Grocery	12%	12%	1.5	2.7	2.4		0.0	2	0	2.32	0	N/A	0.30	0.25
	Cool Koof - UX Duct Testing/Sealing - DX	Grocery	15%	15%	0.2	2.5	1.9	0.0	o. «	nn	0 0	3.73	o c	X X	1.14	2.13
		Grocery	2%	2%	0.3	2.5			0	-	0	0.75		N/A	0.12	0.11
	Dual Enthalpy Economizer Replaces Dry Bulb Economizer - DX	Grocery	1%	1%	0.0	2.5	2.5	0.0	0. 1	0 0	0 0	0.00	0 0	V/A	1.13	3.04
		Grocery	%9	4%	0.0	2.6	2.4		n in	D T	0 0	0.21	0	X/X	1.44	2.89
		Grocery	12%	8%	0.2	2.5	2.2	0.0	ω "	4 (0	1.17	0 (N/A	0.37	0.72
	Window Film (Standard) - DX High Efficiency Windows - DX	Grocery	1%	16%	0.7	2.5	2.3	0.0	0.0	7 0	o c	1.55	0 -	X X	0.48	0.65
		Grocery	%0	%0	0.0	2.5	2.5		15	0	0	0.00	N/A	N/A	N/A	N/A
	(Grocery	14%	14%	0.2	2.2	1.9		rvi r	ı, c	0 0	6.47	0 •	N/A	1.92	1.61
		Grocery	12%	12%	2.0	2.2	2.0	0.0	15	0 0	0 0	0.27	1 0	4 4 2 2	0.15	0.13
	Refr	Grocery	10%	10%	0.4	2.7			0		0	0.72	0	N/A	0.55	0.49
		Grocery	12%	12%	1.5	2.7	2.4		0.0	2	0 0	2.32	0 (N/A	0.30	0.25
	Cool Roof - DX Duct Testing/Sealing - DX	Grocery	15%	15%	0.3	2.5	1.9	0.0	o &	n m	0 0	3.73	0 0	∀ ∀ ∀	0.92	2.13
		Grocery	2%	2%	0.3	2.5	2.4	0.	0.		0	0.75	·	N/A	0.12	0.11
1 2160	Dual Enthalpy Economizer Replaces Dry Bulb Economizer - DX	Grocery	1%	1%	0.0	2.5	2.5	0.0	0. 4	0 0	0 0	0.00	0 0	N/A	1.13	3.04
1 2163		Grocery	%9	4%	0.0	2.6	2.4	9 9	n in	D =	0 0	0.21	0	₹ ∀	1.44	2.89



Comn	nercial	Commercial Electric Existing Construction																
DSM ASSY	DSM ASSYST SUMMARY	IRY											System Second	Levelized Cost	evelized Cos	Total		
	Measure		Building	Energy Savings	Peak Reduction	Total Costs/	Base	ě Š	Peak Watts/Ser	Te Service Po	Technical P Potential	Peak Tech. Potential	Peak Tech. Potential	of Conserved Energy	of Avoided Peak Capacit	Resource Cost Test	Participant	
Segment	Number	Measure	Type	Fraction	Fraction	Sq Ft	EUI						MW	\$/kWH	\$/kW	(TRC)	Test	
	2165	Window Film (Standard) - DX	Grocery	%6	16%	0.2	2.5	2.3	0.0	10	5 1	0 0	1.55	0 0	N/A	0.48	0.65	
	2166	High Efficiency Windows - DX Base Hoat Dimp cooling (14.3 CEED B.9 HCDE)	Grocery	1%	1%	0.2	2.5			20	0 0	0 0	0.21	1 1	Α <u>×</u> ×	0.22	0.18	
	2201	Heat Pump Upgrade (18 SEER, 8.2 HSPF), cooling	Grocery	14%	14%	0.3	2.2			15	o =1	0 0	0.72	0	N/A	1.33	1.12	
	2202	Mini-Split Heat Pump (Base Heat Pump Cooling)	Grocery	10%	10%	0.7	2.2			15	0	0	0.18	0	N/A	0.37	0.31	
	2203	Celling/roof Insulation (base Heat Pump Cooling) Duct/Pipe Insulation (Base Heat Pump Cooling)	Grocery	2%	2%	0.3	2.2			10	0 0	0 0	0.26	0 11	¥ δ Σ	0.27	0.10	
1	2205	Smart Thermostat (Base Heat Pump Cooling)	Grocery	12%	8%	0.2	2.2			8	0	0	0.13	0	N/A	0.33	0.64	
	2206	Window Film (Standard) (Base Heat Pump Cooling)	Grocery	%6	16%	0.5	2.2			10	0 0	0 0	0.17	0 +	Α <u>«</u>	0.43	0.58	
	2207	High Efficiency Windows (Base Heat Pump Cooling) Base Split-System AC, SEER 14.5, <5.4 tons	Grocery	0%	1%	0.0	2.7			20 15	0 0	0 0	0.00	N/A	N/A	0.20 N/A	0.16 N/A	
		Split System Air Conditioner, SEER 16.0 ENERGY STAR, <5.4 tons	Grocery	10%	10%	0.4	2.1		0	15		0	0.99	0	N/A	0.50	0.42	
		Ouchless Mini-Split SEER 18.0/HSPF 10.0 CEE Tier 1 (Base Residential Split-System Colling from Para Bacidocella Self-System)	Grocery	20%	20%	0.7	2.0		0.0	15	2 0	0 0	2.32	0 -	N/A	0.68	0.57	
	2304	Celling/Lod Insulation (base Residential Split-System) Duct/Pipe Insulation (Base Residential Split-System)	Grocery	2%	2%	0.3	2.0	2.0		10	0 0	0 0	0.17		N/A	0.10	0.09	
	2305	Smart Thermostat (Base Residential Split-System)	Grocery	12%	8%	0.2	2.0		0.0	00		0	0.27	0	N/A	0.30	0.59	
	2306	Window Film (Standard) (Base Residential Split-System) Base PTAC cooling, FFR=10-2-1 for	Grocery	1%	2%	0.0	2.0		0.0	10	0 0	0 0	0.04	N/A	A A	0.04 N/A	0.06 N/A	
	2500	Base Room AC, CEER 10.9	Grocery	%0	%0	0.0	1.4		0.0	15	0	0	0.00	N/A	N/A	N/A	N/A	
	2501	Room AC, CEER 12.0 ENERGY STAR	Grocery	20%	2%	0.2	1.4		0.0	15	0 6	0 0	0.25	₩ 0	V \ \	0.13	0.11	
	2503	Duttless Filli Split SEEK 16.9/H3FF 10.0 CEE Hel 1 (Base Rooth AC) Ceiling/roof Insulation (Base Room AC)	Grocery	12%	12%	1.5	1.5			20	o	0 0	0.65	0 #	N/A	0.17	0.14	
	2505	Window Film (Standard) (Base Room AC)	Grocery	1%	2%	0.2	1.4	1.3	0.0	10	0 0	0 0	0.05	2	N/A	0.03	0.04	
	2601	base Duccless Mini-Split heat Pump, SEEK 15.U/H3PF 6.8 Ceiling/roof Insulation (Base Ductless Mini-split)	Grocery	12%	12%	1.5	1.9			20	0 0	0 0	0.00	1/A	¥ × X X	N/A 0.22	0.18	
	2603	Window Film (Standard) (Base Ductless Mini-split)	Grocery	1%	2%	0.2	1.8			10	0	0	0.03		N/A	0.04	0.05	
	2604	High Efficiency Windows (Base Ductless Mini-split)	Grocery	1%	2%	0.5	1.8			20	0 0	0 0	0.02	1 N/A	∀	0.10 N/A	0.12	
	3101	Edition to mpressor motor, open cases	Grocery	12%	12%	0.1	6.9		7.0	15	0 0	0 0	0.04	0	111.46	3.69	7.21	
	3102	Bi-level LED Case Lighting (self-contained units), open cases	Grocery	11%	11%	0.2	6.1		9.6	φ <u>;</u>	6 1	0	1.12	0 0	226.90	1.08	2.16	
	3103	Compressor VSD retrorit, open cases Demand Defrost Electric, open cases	Grocery	%%	%%	0.7	6.2		9.6	10	n in	0 0	0.31	0 0	1.215.42	0.80	0.48	
	3105	Demand Hot Gas Defrost, open cases	Grocery	3%	3%	0.5	6.2		9.0	10		0	0.19	0	2,896.44	0.10	0.20	
	3106	Electronically commutated evaporator fan motor, open cases	Grocery	27%	16%	9.0	7.6		0.7	15	7 .	0 0	0.54	0 0	460.66	1.31	2.86	
	3108	Insulated suction lines, open cases	Grocery	%0	%0	0.0	6.1		7.0	11	0 0	0 0	0.00	0	4,303.32	0.07	0.15	
	3109	LED Display Lighting, open cases	Grocery	2%	2%	0.1	6.1		9.0	00	9		0.71	0	281.49	0.87	1.74	
	3110	Multiplex Compressor System, open cases	Grocery	14%	14%	0.0	7.0		2.0	14	 0	0 0	0.18	0 0	752.02	0.52	1.02	
	3112	Oversized Air Cooled Condenser, open cases	Grocery	8%	%8	0.5	6.4			16	o m	0	0.42	0	292.03	1.48	2.88	
₩,	3113	Refrigeration Coil Cleaning, open cases	Grocery	23%	23%	0.3	6.9		9.0	2	10		1.29	0	187.75	0.85	1.74	
	3114	Refrigeration Commissioning , open cases Base Closed refrigerated /freezer cases	Grocery	%"	%6	0.1	6.2			19	- 0	0 0	0.13	0 8	314.40 N/A	0.32 N/A	0.65 N/A	
	3201	Efficient compressor motor, base closed cases	Grocery	%6	%6	0.1	10.1			15		0	0.07	0	104.66	3.93	7.67	
	3202	Energy-Star Refrigerator/Freezer, base closed cases Anti-ewest (humidictar) controls base closed cases	Grocery	10%	10%	0.3	9.6		0.0	12	13		1.69	0 0	320.24	1.08	2.12	
	3204	Bi-level LED Case Lighting (self-contained units), base closed cases	Grocery	11%	11%	0.2	9.5			4 00	24	o m	3.04	0	154.68	1.58	3.17	
	3205	Compressor VSD retrofit, base closed cases	Grocery	7%	%9	0.2	9.5	8.6	6.0	13	14		0.83	0 0	331.31	1.18	2.57	
	3207	Demand Hot Gas Defrost, base closed cases	Grocery	3%	3%	0.5	9.3			10 12	Ç 4	1 0	0.51	0	1,974.58	0.15	0.30	
	3208	Electronically commutated evaporator fan motor, base closed cases	Grocery	23%	14%	0.7	11.1			15	16		1.24	0	367.25	1.65	3.59	
	3209	Freezer-Cooler Replacement Gaskets, base closed cases High R-Value Glass Doors, base closed cases	Grocery	% %	% %	0.0	0.0 0.0		0.1	4 0	۲ «		0.92	0 0	7 405 67	2.91	5.91	
	3211	High-efficiency fan motors, base closed cases	Grocery	4%	4%	0.2	4.6			15	n In	- H	0.62	0	519.31	0.79	1.55	
	3212	Insulated suction lines, base closed cases	Grocery	%0	%0	0.0	9.5		0.0	11	0 4	0 0	0.01	0 0	2,854.71	0.11	0.22	
	3213	LED Display Lighting, base closed cases Low or Anti-Sweat Door Film, base closed cases	Grocery	% %	% %	0.1	2.6			s 2	LD 80	7 1	1.91	0 0	110.39	2.68	5.34	
	3215	Multiplex Compressor System, base closed cases	Grocery	14%	14%	0.0	, 9.			14	4	0	0.48	0	512.67	0.76	1.49	
	3216	Oversized Air Cooled Condenser, base closed cases	Grocery	8%	8%	0.2				16	6 6	(1.14	0 6	199.09	2.17	4.22	
	321/	Refrigeration Coll Cleaning, base dosed cases Refrigeration Commissioning, base dosed cases	Grocery	23%	23%	0.3	10.4	0.8	0.9	a m	2/	η	3.50	0 0	127.99	1.25	2.55	
	3300	Base Walk-in refrigeration/freezer units	Grocery	%0	%0	0.0			1.6	16	0	0	0.00	N/A	N/A	N/A	N/A	
	3301	Efficient compressor motor, walk-ins	Grocery	%6	%6	0.2		13.0 4	1.6	15	m	0 ,	0.42	0	43.79	9.40	18.34	
	3302	Auto-closer on main door to walk-in freezer Compressor VSD retrofit, walk-ins	Grocery	1%	1%	0.3	43.4	42.8 4 40.3 4	6.4	13	98	- 00	1.13	0 0	138.63	0.52	1.05	
1	3304	Demand Defrost Electric, walk-ins	Grocery	8%	8%	1.4		40.5	4.4	10	75	00	9.58	0	346.71	0.85	1.70	
	3305	Demand Hot Gas Defrost, walk-ins	Grocery	3%	3%	1.0	43.4	42.3	9:10	10	24	നഴ	3.03	0 0	826.23	0.36	0.71	
	3307	Electronically committeed evaporator fair motor, wain-ins Evaporator fan controller for MT walk-ins	Grocery	1%	1%	2.1		43.1 4	9.4	16	. T	0	0.18	D 14	8,406.14	0.05	0.10	



DSM ASSYST SUMMARY	IMARY											Svetem Second	l evelized Cost	evelized Cos	Total	
Measure	e e	Building	Energy Savings	Peak Reduction	Total Costs/	Base	į	Peak Watts/		<u> </u>	ia h	Peak Tech. Potential	of Conserved Energy	of Avoided Peak Capacit	Resource Cost Test	Participant
1 3308	Floating head pressure controls, walk-ins	Grocery	7%	7%	6.0	46.2			14	e e	0	0.39		238.91	1.63	3.20
1 3309	Freezer-Cooler Replacement Gaskets, walk-ins High-efficiency fan motors, walk-ins	Grocery	1%	1%	0.0	43.4	42.8	6.5	4	ω 4	1 2	1.05	0 0	61.42	2.13	5.59
1 3311	Insulated suction lines, walk-ins	Grocery	%0	%0	0.0	43.1	43.1	4.6	11	1 5	0 6	0.08	0 (611.27	0.52	1.04
1 3313	Multiplex Compressor System, walk-ins Oversized Air Cooled Condenser, walk-ins	Grocery	8%	8%	0.7	44.9	42.4	0 4.	16	53	7 9	6.77		166.61	2.59	5.05
1 3314	Refrigeration Coll Cleaning, walk-ins	Grocery	23%	23%	1.2	48.7	37.5	4.0	50 0	163	18	20.86	0 0	93.72	1.71	3.48
1 3316	Kerrigeration Commissioning, waik-ins Strip curtains for walk-ins	Grocery	3% 4%	3% 4%	0.7	43.7	42.2	o.4. 7.5	v 4	16 26	3 6	3.27		98.66	1.13	2.70
1 3400	Base Large Cold Storage Area	Grocery	%0	%0	0.0	1.9	1.9	0.2	16	0	0	0.00	_	N/A	N/A	N/A
1 3401	Efficient compressor motor, base large cold storage Auto-closer on main door to walk-in freezer base large rold storage	Grocery	9%	%6	0.0	2.1	1.9	0.2	15	0 0	0 0	0.01	0 0	43.79	9.40	18.34
1 3403	Auto-cosei oli Iliani dodi to wan-ili il eezer, base large cola storage Compressor VSD retrofit, base large cold storage	Grocery	7%	%9	0.0	1.9	1.8	0.2	13	o #	0	0.09	0	138.63	2.82	6.15
1 3404	Electronically commutated evaporator fan motor, base large cold storage	Grocery	23%	14%	0.1	2.4	1.8	0.2	15	7	0 0	0.13	0 +	153.67	3.93	8.57
1 3405	Evaporator fan controller for M I walk-ins, base large cold storage High-efficiency fan motors, base large cold storage	Grocery	4%	1%	0.0	2.0	1.9	0.2	15	0 1	0 0	0.00	1 0	8,406.14	1.89	3.70
1 3407	Insulated suction lines, base large cold storage	Grocery	%0	%0	0.0	2.0	1.9	0.2	11	0	0	0.00	1	13,522.83	0.02	0.05
1 3408	Multiplex Compressor System, base large cold storage	Grocery	14%	14%	0.1	2.2	1.9	0.2	14	0 +	0 0	0.05	0 0	214.52	1.82	3.56
1 3410	Oversized All Cooled Colldenser, base large cold storage Refrigeration Coil Cleaning, base large cold storage	Grocery	23%	23%	0.0	2.2	1.7	0.2	2 2	⊣ Ƙ	0 0	0.37	0	70.29	2.28	4.63
1 3411	Refrigeration Commissioning, base large cold storage	Grocery	2%	2%	0.0	2.0	1.9	0.2	М	1	0	0.07	0	44.27	2.30	4.60
1 3412	Strip curtains for walk-ins, base large cold storage	Grocery	4%	4%	0.0	2.0	1.9	0.5	4 7	00	0 0	90.0	0 %	98.66	1.33	2.70
1 3501	Energy Star solid door reach-in refrigerator/freezer	Grocery	% 2%	2%	0.1	6.6	9.5	1.0	15	0 0	D 11	1.09	0	151.08	2.73	5.32
1 3502	Freezer-Cooler Replacement Gaskets, base reach-in	Grocery	3%	3%	0.1	9.7	9.5	1.0	4	e	0	0.43	0	229.62	0.57	1.16
1 3503	Refrigeration Coil Cleaning, base base reach-in Base Class Door Beach-in Defricerator/Emerca: Federal Standard	Grocery	5%	5%	0.1	9.7	9.5	1.0	ro f	2 0	0 0	0.28	0 0	468.36	0.34 N/A	0.70
1 3700	Base Glass Door Neachtill Neingelatur/Trieger, Federal Standard Base Ice Maker, Federal Standard	Grocery	%0	%0	0.0	0.4	0.4	0.0	01	0	0 0	0.00	N/A	N/A	N/A	N/A
1 3701	Energy Star Ice Machines	Grocery	10%	10%	0.0	0.4	0.3	0.0	10	0	0	0.05	0	311.71	0.95	1.89
1 3/02	Retrigeration Coll Cleaning, base ice maker Base Residential-Tvne Refrigerator/Freezer: Federal Standard	Grocery	%7	%7	0.0	0.4	0.4	0.0	ر 2	o c	0 0	0.01	0 N	339.31 N/A	0.4/ N/A	0.96 N/A
1 3801	Energy Star refrigerator/freezer	Grocery	10%	10%	0.1	0.7	9.0	0.1	18	0	0	0.05	0	1,020.84	0.46	0.89
1 3802	Refrigeration Coil Cleaning, residential-type refrigerator	Grocery	2%	2%	0.0	0.7	0.7	0.1	; n	0	0 (0.01	0	2,902.84	90.0	0.11
1 3900	Base Compact Refrigerator, Federal Standard Energy Star Compact Refrigerator	Grocery	10%	10%	0.0	0.1	0.1	0.0	14	0 0	0 0	0 00	Υ ο	N/A 669,02	N/A 0.58	N/A 1.14
1 3902	Refrigeration Coil Cleaning, compact refrigerator	Grocery	2%	2%	0.0	0.1	0.1	0.0	. 15	0	0	0.00	·	8,127.95	0.02	0.04
1 4000	Base Computer Network Server	Grocery	%0	%0 %CC	0.0	0.2	0.2	0.0	4 -	0 +	0 0	0.00	N/A	N/A	N/A	N/A
1 4100	Energy Star server Base Desktop PC	Grocery	%60	0%	0.0	0.1	0.1	0.0	4 4	т О	0 0	0.00	N/A	Z8.30 N/A	0.50 N/A	N/A
1 4101	Energy Star or Better PC	Grocery	33%	33%	0.0	0.1	0.1	0.0	4	1	0	0.10	0	138.53	98.0	1.70
1 4200	Base Laptop PC	Grocery	%0 30%	30% 30%	0.0	0.0	0.0	0.0	4 4	0 0	0 0	0.00	Α/A	N/A 60 78	N/A	N/A 3.38
1 4300	Base Monitor, LCD	Grocery	%0	%0		0.0	0.0	0.0	- 4	0	0	0.00	N/A	N/A	N/A	N/A
1 4301	Energy Star or Better Monitor - LCD	Grocery	21%	21%	0.0	0.0	0.0	0.0	4 ;	0 0	0	0.01	0 ,	164.58	0.73	1.43
1 4400	Piug-ioad controls - Commercial Smart Sunp (base monitor LCD) Base Imaging	Grocery	%17%	%0 6		0.0	0.0	0.0	07	0	0	00.0	I W	9,516.14 N/A	0.02 V/A	N/A
1 4401	Energy Star or Better Imaging Equipment	Grocery	21%	21%	0.0	0.0	0.0	0.0	9	0	0	0.00	0	61.68	2.81	5.50
1 5000	Base Water Heater, Resistance Heater, Standard Standby Wattage	Grocery	%0 %	%0	0.0	0.5	0.5	0.0	15	0 0	0 0	0.00	Α/Α Ο	N/A 24 24	N/A 2 86	N/A 38
1 5002	Heat Pump Water Heater (air source)	Grocery	20%	20%	0.0	0.2	0.1	0.0	10	0	0	0.05	0	308.76	0.89	1.72
1 5003	Tankless Water Heater Solar Water Heater	Grocery	10%	10%	0.0	0.2	0.2	0.0	50	0 0	0 0	0.00	0 0	230.98	2.04	3.80
1 5005	Demand controlled circulating systems	Grocery	2%	2%	0.3	0.2	0.2	0.0	15	0	0	0.02	0 4	30,331.39	0.01	0.02
1 5006	Heat Recovery Unit	Grocery	65%	65%		0.2	0.1	0.0	10	2	0	0.30	0	541.57	0.51	0.98
1 5007	Hot Water Pipe Insulation	Grocery	12%	12%	0.0	0.5	0.5	0.0	15	0 0	0 0	0.01	0 0	306.55	1.25	2.35
1 5010	Low flow pre-rinse spray valve	Grocery	11%	11%		0.2	0.2	0:0	2 5	0	0	0.06	0	100.01	1.49	2.93
1 5011	Recirculation Pump Timer Clock - Controls for Central Domestic Hot Water	Grocery	3%	3%	0.0	0.2	0.2	0.0	15	0	0	0.01	1	4,994.33	0.08	0.14
1 6000	Base Non-Refrigerated Vending Machines, Federal Standard Vanding Misers (Non-Befringrated)	Grocery	92%	32%	0.0	0.0	0.0	0.0	ın ır	0 0	0 0	0.00	V/A	N/A 1 789 47	N/A	N/A 0.25
1 6100	Base Refrigerated Vending Machines, Federal Standard	Grocery	%0	%0	0.0	0.1	0.1	0:0	ח ה	0	0	0.00	N/A	N/A	N/A	N/A
1 6101	Vending Misers (Refrigerated glass-front units)	Grocery	33%	23%	0.0	0.1	0.1	0.0	ın	0	0	0.02	. 0	444.10	0.46	1.01
1 6102	Vending Misers (Refrigerated units)	Grocery	51%	35%	0.0	0.1	0.0	0.0	υţ	0 0	0 0	0.02	0 3	281.79	0.72	1.59
1 6200	Base Combi Oven Electric Combination Oven	Grocery	54%	54%	0.0	3.3	1.5	0.7	12	13	o =	2.23	N/A 0	N/A 52.15	N/A 8.66	16.50
1 6300	Base Convection Oven	Grocery	%0	%0	0.0	0.7	0.7	0.1	12	0	0	0.00	N/A	N/A	N/A	N/A
1 6301	Energy Star Convection Oven	Grocery	14%	14%	0.0	0.8	0.6	0.1	12	7 0	0 0	0.31	0 2	127.58	3.54	6.74
1 6400	Base 177e7 Efficient Fiver	Grocery	%%	%6	0.0	1.3	1.3	0.1	12	o =	0 0	0.00	W/W	1.198.18	N/A 0.38	N/A 0.72
1 6500	Base Griddle	Grocery	%0	%0	0.0	2.0	2.0	0.2	12	0	0	0.00	N/A	N/A	N/A	N/A



Figure 1975 Secretary 13-15 1	Measure Segment Number	Measure Mazeure Mazeure	Building	Energy Savings Fraction	Peak Reduction Fraction	Total Costs/	Base	- × v	Peak Watts/Sel	Tec Service Pot	Technical P Potential I GWH	System Peak Tech. Potential MW	System Second Peak Tech. Potential MW	Levelized Cost of Conserved Energy	Levelized Cost Levelized Cos of Conserved of Avoided Energy Peak Capacit \$\k\WH\$	Total Resource Cost Test	Participant Test
State Control of State Con	י בני) Abo	110%	110%	3			ı			c		- A	100 75	20.0	4 24
Figure F	1 660		Grocery	%0	%0	0.0				12	1 0	0	0.00	N/A	N/A	N/A	E V
10.00 Description of the control	1 660		Grocery	%02	20%	0.2				12	24	2	4.30	0	188.73	2.39	4.56
1.2. Calling official Francis Grant Calling Carry 25th Carry 25th Calling Carry 25th Calling Carry 25th Calling Carry 25th Carry 25	1 670		Grocery	%0	%0	0.0				12	0	0	0.00	N/A	N/A	N/A	N/A
Design Proposition Proposi	1 67		Grocery	%62	%62	0.2				12	c	0	0.47	0	328.65	1.37	2.62
The State of Comparison of Comparison	1 70		Grocery	%0	%0	0.0				20	0	0	0.00	N/A	N/A	N/A	N/A
1,100, 1	1 70,		Grocery	12%	12%	1.5				50	0 0	0	0.00	0	264.25	0.44	0.62
11 12 12 13 14 15 15 15 15 15 15 15	1 00		Grocery	2%	2%	0.3	2 .			20	0 (0 0	0.00	0 %	363.45	0.32	0.45
11.55 Decry Page Intelligent Clear Principal Clear Princip	1 /1		Grocery	%0	%0%	0.0	7 1			C 2	o +	0 -	0.00	A/A	N/A	N/A	N/A
1,101 1,10	1 71(Grocery	12%	12%	. r	0 1	0 0		20		н С	00:0	0 0	264.25	0.37	0.62
2006 Septembro	1 710		Grocery	5%	2%	0.3	. 2			20	0	0	0.00	0	363.45	0.32	0.45
7202 Seed better being package with the covery of the covery	1 710			13%	8%	0.2	2	5.4	3.7	80	0	0	0.00	0	69.21	1.11	1.90
12.20 12.2	1 721			%0	%0	0.0	9	5.6	1.7	15	0	0	0.00	N/A	N/A	N/A	N/A
Callipport (above because the Army Callipport (abov	1 72.			10%	10%	0.3	9		1.5	15	m	2	0.00	0	170.31	0.56	0.79
2.201 Processed feet Purply Particle	1 72.		Grocery	12%	12%	1.5	ω υ		1.6	20		0	0.00	0 +	635.08	0.18	0.26
7301 Separation Legacian Methods (17) Control (17) C	1 /2		Grocery	2%	%2	n . c	٥		0 1	20	-	o +	0.00	⊣ (8/3.48	0.13	0.19
Table Description (Page packaged Next Parms) Concary 12% Concary 1	1 /2			13%	% 0	7.0				×Ψ	nc		0.00	0 %	166.34 N/A	0.46 N/A	6.79
7333 Colligid ford fluction (base post-gast beat and seasons) Concey 173, as a colligid ford fluction (base post-gast beat and seasons) Concey 173, as a colligid ford fluction (base post-gast beat and seasons) Concey 173, as a colligion (base post-gast beat and seasons) Concey 173, as a colligion (base post-gast beat and seasons) Concey 273, as a colligion (base post-gast beat and seasons) Concey 273, as a colligion (base post-gast beat and seasons) Concey 173, as a colligion (base post-gast beat and seasons) Concey 173, as a colligion (base post-gast beat and seasons) Concey 173, as a colligion (base post-gast beat and seasons) Concey 173, as a colligion (base post-gast beat and seasons) Concey 173, as a colligion (base post-gast beat and seasons) Concey 173, as a colligion (base post-gast beat and seasons) Concey 173, as a colligion (base post-gast beat and seasons) Concey 173, as a colligion (base post-gast beat and seasons) Concey 173, as a colligion (base post-gast beat and seasons) 173, as a colligion (base post-gast beat and seasons) 173, as a colligion (base post-gast beat and seasons) 173, as a colligion (base post-gast beat and seasons) 173, as a colligion (base post-gast beat and seasons) 173, as a colligion (base post-gast beat and seasons) 173, as a colligion (base post-gast beat and seasons) 173, as a colligion (base post-gast beat and seaso	1 73(%09	%09	0.0				2 2	۰ د	۰ ۵	00.0	<u> </u>	301.76	3.3	0.44
7331 Dunchfaller Includition (hise packaged Inserting) Genery 13% 2% <td>1 734</td> <td></td> <td>Grocery</td> <td>12%</td> <td>12%</td> <td>1 12</td> <td></td> <td></td> <td></td> <td>20</td> <td>10</td> <td>10</td> <td>0.00</td> <td>·</td> <td>924.89</td> <td>0.12</td> <td>0.18</td>	1 734		Grocery	12%	12%	1 12				20	10	10	0.00	·	924.89	0.12	0.18
7304 Strate Thermostate (Base Pocklagery I Bashery) Grocery 13% 9% 0.2 1.6 1.1 8 0 </td <td>1 730</td> <td></td> <td>Grocery</td> <td>5%</td> <td>2%</td> <td>0.3</td> <td>1.8</td> <td></td> <td></td> <td>20</td> <td>0</td> <td>0</td> <td>0.00</td> <td></td> <td>1,272.09</td> <td>0.09</td> <td>0.13</td>	1 730		Grocery	5%	2%	0.3	1.8			20	0	0	0.00		1,272.09	0.09	0.13
7400 Base Durkliss fine John File R. 1.0. Straff (best packaged) heat Durklis (best packaged	1 730		Grocery	13%	8%	0.2				80	0	0	0.00	0	242.25	0.32	0.54
	1 74	Base Ductless Mini-Split Heat Pump, SEER 15.0/HSPF 8.	Grocery	%0	%0	0.0				20	0	0	0.00	N/A	N/A	N/A	N/A
March Marc	1 74.		Grocery	12%	12%	1.5				20	0	0	0.00	0	635.08	0.18	0.26
Main All All All All All All All All All Al	1 74		Grocery	13%	%8	0.5				ω 6	- €	0 0	0.00	0 1	166.34	0.46	0.79
No. Accordance (Continue) Accordance (Continue) (S. 1949) Concept 10%	1 78(Grocery	1%	1%	0.0				20	o =	0 0	0.00	¥ <	407 50	1 33	N/A 2 13
Part	1 78(Grocery	10%	10%	0.0				20 80	7	o -	1.87	0 0	94 50	2 69	4.61
Finely Recovery North-Life Character (RECOVERY) 7% 7% 7% 7% 7% 7% 7% 7	1 780		Grocery	33%	62%	2.5					, 22	4 1/1	14.58	0 0	990.56	0.35	0.38
300 Concey 25% 0.3 0.0<	1 780		Grocery	2%	7%	0.1			0.3		2		1.31	0	334.92	1.61	2.59
Base Compressed African Services Heat	1 780		Grocery	25%	25%	0.3			0.3		0	0	0.09	0	309.84	1.41	2.30
8100 Base Process Colong Grocety 0% 0.0	1 80t		Grocery	%0	%0	0.0			0.0		0	0	0.00	N/A	N/A	N/A	N/A
Succession Base Process Confined Success of Grocery Ower			Grocery	%0	%0	0.0			0.0		0	0	0.00	N/A	N/A	N/A	A/A
Base University Hoursease of Fature, 2.4.17, 1.8 Base University Hoursease Fature, 2.4.17, 1.8 Base Canal University Hourse Individual LD Tube, 2. Inny fature, Individual Market, 2.0.2 Standard Grocery Owly 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.			Grocery	%0	%6	0.0			0.0		0 0	0 0	0.00	X	Α × ×	Α ×	X S
Base Indextrially drops or Pumps			Grocery	%0	%0	0.0			0.0			o c	00.0	4 /Z	4 /N	X /2 Z/2	4 × ×
1990 Base Unear Lighting, EDT Libe, 2 lamp fixture, 2.4712, riggated market Grocery 0% 0% 0.0			Grocery	%0	%0	0.0			0.0		. 0	0	0.00	N/A	N/A	N/A	N/A
1000 Base Linear Lighting, Fluorescent Fixture, 2L4T3. I and Ender Lighting, Ender Lighting, LED Tube, 2 lamp Fixture, integrated market, Grocery Code, Code Code Code Code Code Code Code Code			Grocery	%0	%0	0.0			0.3		0	0	0.00	N/A	N/A	N/A	N/A
1050 Base Linear Lighting, Housezener Fixture, 2,1473, I. EB Grocery 0% 0% 0% 0.0			Grocery	%0	%0	0.0			0.0	18	0	0	00.00	N/A	N/A	N/A	N/A
100 Base Linear Lighting, EDT Tube, 2 lamp fixture, 2478, 1 EB Grocery 0% 0% 0.0 0			Grocery	%0	%0	0.0			0.0	18	0	0	0.00	N/A	N/A	N/A	N/A
1350 Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market, 2028 Standard Grocery 0% 0% 0,0 0,0 0,0 0,0 0,0 0,0 0,0 0,0 0			Grocery	%0	%0	0.0			0.0	18	0 0	0 0	0.00	N/A	A/N	A/A	Υ/S
1250 Base Linear Lighting, LED Tube, 2 lamp fixture, 2008 Standard Grocery			Grocery	%0	%0	0.0	0.0		0.0	100	0 0	00	0.00	A & &	V/A	A/A	K S
1250 Base Linear Lighting, LED Tube, 2 lamp fixture, integrated market Grocery 0% 0% 0.0 0.0 0.0 0.0 0.0 18 0 0.			Grocery	%0	%	0.0	0 0		0.0	18			00.0	¥ /×	K/N/N/N/N/N/N/N/N/N/N/N/N/N/N/N/N/N/N/N	(A (X	¥ ×
1275 Base Linear Lighting, LED Tube, 2 lamp fixture, irregrated market, 2028 Standard Grocery 0% 0% 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,				%0	%0	0.0			0.0	18	. 0	0	0.00	N/A	N/A	N/A	N/A
1300 Base General Service Screw-in, CFL Grocery 0% 0% 0.0				%0	%0	0.0	0.0		0.0	18	0	0	0.00	N/A	N/A	N/A	N/A
1350 Base General Service Screw-in, Incandescent/halogen Grocery 0% 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0				%0	%0	0.0	0.0		0.0	1	0	0	0.00	N/A	N/A	N/A	N/A
1400 Base General Service Screen, LED bulb Grocery 0% 0,0 0,0 0,0 0,0 0,0 0,0 0,0 0,0 0,0			Grocery	%0	%0	0.0	0.0		0.0	1	0	0	0.00	N/A	N/A	N/A	N/A
1425 Base General Service Screw-in, LED bulb, 2.028 Standard Grocery 0% 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0			Grocery	%0	%0	0.0	0.0		0.0	4	0	0	0.00	N/A	N/A	N/A	N/A
1450 Base III July (N) (V) (U) (U) (U) (U) (U) (W) (V) (V) (V) (V) (V) (V) (V) (V) (V) (V			Grocery	%0	%0	0.0	0.0	0.0	0.0	4 ;	0 0	0 0	0.00	V/A	A/N	A/A	A/S
			Grocery	%0	%0	0.0	0.0	0.0	0.0	18	0	0	0.00	N/A	N/A	N/A	N/A



Commercial E	Commercial Electric New Construction															
Measure		Building	Energy Savings	Peak Reduction	Total Costs/	Base	ě »	Peak Watts/Se	Te Service Pc	Technical P Potential	System S Peak Tech. Potential	System Second Peak Tech. Potential	Levelized Cost .evelized Cos of Conserved of Avoided Energy Peak Capacit	evelized Cos of Avoided Peak Capacit	Total Resource Cost Test	Participant
Segment Number	Measure	Type	Fraction	Fraction	Sq Ft		EUIS	_	_		ΜW	MΜ	\$/kWH	\$/kW	(TRC)	Test
4 100	Base Bldg Design - 15%	Office	%0	%0	0.0	18.7		3.0	20	0	0	0.00	ΝΑ	N/A	ΑN	N/A
4 200	Base Bldg Design - 30%	Office	%0	%0	0.0	18.7		3.0	20	0	0	0.00	ΝΆ	N/A	ΑŅ	N/A
4 201	High Performance Building/Int Design - Tier 2 30% - Office	Office	30%	30%	3.4	18.7		2.1	20	82	13	17.73	0	361.55	1.09	1.80
4 300	Base Bldg Design - 50%	Office	%0	%0	0.0	18.7		3.0	20	0	0	0.00	ΑŅ	A/A	ΑŅ	ΝΆ
4 301	High Performance Building/Int Design - Tier 3 50% - Office	Office	20%	20%	0.9	18.7		1.5	20	15	2	3.28	0	379.63	1.04	1.72
4 400	Base Bldg Design - 70%	Office	%0	%0	0.0			3.0	20	0	0	0.00	N/A	A/A	Ϋ́	Z/A
4 100	Base Bldg Design - 15%	Restaurant	%;	%;	0.0	45.1	45.1	7.3	20	0 0	0 1	0.00	ĕ ĕ	A/Z	₹Ş,	Α Î
700	nign Penormance building/int Design - Her I 15% - Restaurant Book Black Doxing - 50%	Restaurant	% %	0%	0.0			2.0	20	0 0	- c	07.0		200.04 N/A	50.7	2.34 N/A
4 4 200	High Performance Building/Int Design - Tier 2 30% - Restaurant	Restaurant	30%	30%	0.7			5.7	20	o 0:	0 0	2.02	<u> </u>	183.46	2.15	3.56
4 300	Base Blda Design - 50%	Restaurant	%	%0	0.0			.3	20	0	10	00.0	××	A/N	2 ∢	S X
4 302	High Performance Building/Int Design - Tier 3 50% - Restaurant	Restaurant	20%	20%	7.4			3.6	20	4	-	0.76	0	192.63	2.04	3.39
4 400	Base Bldg Design - 70%	Restaurant	%0	%0	0.0			7.3	20	0	0	0.00	ΑN	A/A	ΝΑ	ΑN
4 402	High Performance Building/Int Design - Tier 4 Near Zero Energy (60-75%) - Restaurant	Restaurant	%02	%02	11.6			2.2	20	_	0	0.12	0	216.22	1.82	3.02
4 100	Base Bldg Design - 15%	Retail	%0	%0	0.0	15.5		2.5	20	0	0	0.00	ΑN	A/A	N/A	Z/A
4 200	Base Bldg Design - 30%	Retail	%0	%0	0.0			2.5	20	0	0	0.00	ΑN	A/A	N/A	ΑN
4 203	High Performance Building/Int Design - Tier 2 30% - Retail	Retail	30%	30%	2.5			1.8	20	26	4	5.64	0	316.28	1.24	2.06
4 300	Base Bldg Design - 50%	Retail	%0	%0	0:0	15.5		2.5	20	0	0	0.00	ΥX	K/N	ΝΆ	Ϋ́
4 303	High Performance Building/Int Design - Tier 3 50% - Retail	Retail	20%	20%	4.4		7.8	.3	20	4	_	0.94	0	332.10	1.19	1.96
4 400	Base Bldg Design - 70%	Retail	%0	%0	0.0			5.5	20	0	0	0.00	Κ/N	Y/N	ΑŅ	ΑŅ
4 403	High Performance Building/Int Design - Tier 4 Near Zero Energy (60-75%) - Retail	Retail	%02 %02	%0 <i>2</i>	6.0			0.8	20	- (0 0	0.15	0	372.76	1.06	1.75
4 100	Base Bldg Design - 15%	Grocery	%6,	%0,	0.0			3.6	20	0 1	0 ,	0.00	ΑN O	A/A	∀ ?	Α.
4 4 4 4 4 104	High Performance Building/Int Design - Lier 1 15% - Grocery Race Rido Design - 30%	Grocery	اع% %	15% %	c. C	53.2		ر ا ا	20	o c	- c	21.1	0 8	113.05 N/A	3.48 N/A	5.7. V/N
4 204	High Performance Building/Int Design - Tier 2 30% - Grocery	Grocery	30%	30%	2.2			9.0	20		· -	1.80	0	80.75	4.88	8.08
4 300	Base Bldg Design - 50%	Grocery	%0	%0	0.0		53.2	8.6	20	0	0	0.00	ΑN	A/N	ΑŅ	Ϋ́
4 304	High Performance Building/Int Design - Tier 3 50% - Grocery	Grocery	%09	%09	3.8			1.3	20	က	-	0.67	0	84.79	4.64	7.69
4 400	Base Bldg Design - 70%	Grocery	%0	%0	0.0		53.2 8	3.6	20	0	0	00:00	ΝΆ	A/A	∀ ≥	ΚŅ
4 404	High Performance Building/Int Design - Tier 4 Near Zero Energy (60-75%) - Grocery	Grocery	%02	%02	0.9		15.9	5.6	20	0	0	0.10	0	95.17	4.14	6.85
4 100	Base Bldg Design - 15%	Warehouse	%0	%0	0.0		6.4	9.8	20	0	0	0.00	₹ Z	ĕ/Z	ΑŅ	₹ Ž
4 105	High Performance Building/Int Design - Tier 1 15% - Warehouse	Warehouse	15%	15%	£. 6		4.2	7.0	20	5 5	0 (0.43	0	1,044.80	0.38	0.62
4 200	Base Bldg Design - 30%	Warehouse	%0	%0	0.0	6.4	6.4	9.8	20	0	0	0.00	Ψ.	Α/Z	Ψ.Z	₹ Z
4 205	High Performance Building/Int Design - Tier 2 30% - Warehouse	Warehouse	30%	30%	e. c	0.4	3.4	9.6	20	ი ი	- 0	0.69	0 1	746.27	0.53	0.87
300	Base Blog Design - 50%	warehouse	% č	% č	0.0	2. d	9.4 c	».«	020	o 7	-	0.00	¥ °	N/A	¥ 2 0	¥ 6
4 305	nign Penormance building/int Design - Tief 3 50% - warehouse Rase Rido Design - 70%	Warehouse	% % % %	%0°	5.0	υ. σ	6.2	4. C	20	- c	0 0	0.28	o M	00:00 / V/N	0.50 N/A	0.03 A/N
4 405	High Performance Building/Int Design - Tier 4 Near Zero Energy (60-75%) - Warehouse	Warehouse	%02	20%	5.2	6.4	1.5	2.0	20	0	0	0.04	0	879.53	0.45	0.74
4 100	Base Bldg Design - 15%	Education	%0	%0	0.0	12.2	12.2	5.0	20	0	0	0.00	N/A	A/N	Α×	ΑŽ
4 106	High Performance Building/Int Design - Tier 1 15% - School	Education	15%	15%	2.4	12.2	10.3	1.7	20	7	_	1.61	0	775.85	0.51	0.84
4 200	Base Bldg Design - 30%	Education	%0	%0	0.0	12.2	12.2	5.0	20	0	0	0.00	Ϋ́	K/N	₹Ž	ΥŽ



G. SUPPLY-CURVE DATA

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Resid	Residential Electric Existing Construction	ion			Resi
Energ	Energy Supply Curve		Cumulative	Levelized	Сара
Measure Number	Measure	Measure GWH Savings	Measure GWH Savings	Energy Cost \$/kWH	Measure Number
7009	Hot water turndown 20 degrees Hot water furndown 15 degrees	16 32	16 48	00:00	180
1201	10% better than Energy Star Dehumidifier ROB (35-45 pints/day)	76	123	0.01	182
1026	Exterior Door Replacement (CAC) Duct Insulation (CAC)	9	130	0.01	180
1802	Heat pump (18 SEER, 10 HSPF) (eFAF + room AC)	- თ	145	0.01	200
1702	Heat pump (18 SEER, 10 HSPF) (eFAF + CAC)	439	585	0.01	190
6501	Exterior Door Replacement (et Ar + 100m AC) Energy Star Desktop PC	78 78	565 613	0.0	172
7007	Hot water turndown 10 degrees	87	701	0.01	162
1801	Heat pump (16 SEER, 9.2 HSPF) (eFAF + room AC) Fnerrov Star I C.D T.V	30	731 815	0.01	152
6001	Energy Start ED TV Heat pump (18 SEER, 10 HSPF) (Elec baseboard heat + Room AC)	286 16	1,101	0.00	170
1902	Heat pump (18 SEER, 10 HSPF) (Elec baseboard heat + Central AC)	23	1,140	0.01	192
6601	Energy Star Laptop PC	23	1,193	0.01	190
1025	Door Weatherization (CAC)	36	1,229	0.01	161
1120	Exterior Door Replacement (RAC) Exterior Door Replacement (PEAF + CAC)	o «	1,229	0.01	151
1623	Exterior Door Replacement (GSHP heat/cool)	0 0	1,236	0.01	211
7006	Hot water turndown 5 degrees	32	1,267	0.0	700
1701	Heat pump (16 SEER, 9.2 HSPF) (eFAF + CAC)	735	2,024	0.01	200
4501	2nd Freezer Recycling	8 7	2,072	0.02	161
1829 4201	Recycling of non-emblent window AC unit (eFAF + RAC) 2nd Refrigerator Recycling	785	2,083 2,870	0.02	150
1926	Exterior Door Replacement (Elec baseboard heat + Central AC)	0	2,870	0.02	211
7013	Faucent Aerators Door Weatherization (RAC)	1 1	3,111 3,112	0.02	150 202
1901	Heat pump (16 SEER, 9.2 HSPF) (Elec baseboard heat + Central AC)	39	3,151	0.02	152
1612	Crawlspace insulation (GSHP heat/cool)	ω 8	3,159	0.02	707
1514 2110	Crawispace insulation (HP neat/cool) Crawispace insulation (Elec Central Furn. no cool)	333	3,493 3,493 494	0.02	162 650
2023	Exterior Door Replacement (Elec baseboard heat + Room AC)	ı -	3,495	0.02	150
1301	Energy Star Air Cleaner, PM 2.5 CADR = 200, CADR/Watt 2.9	116	3,610	0.02	211
1605	Ceiling R-0 to R-49 Insulation (GSHP heat/cool)	0	3,627	0.03	161
2001	Heat pump (16 SEER, 9.2 HSPF) (Elec baseboard heat + Room AC)	20	3,647	0.03	610
1619	Smart Thermostat (GSHP heat/cool)	11	3,681	0.03	171
1521	Smart Thermostat (HP heat/cool)	509	4,190	0.03	151
6701 1501	Energy Star Monitor Heat pump upgrade to (16 SEER, 9.2 HSPF) (HP heat/cool)	0 273	4,190 4,463	0.03	660 161
2117	Smart Thermostat (Elec Central Furn, no cool)	7	4,465	0.03	160
5401	Exhaust fan, 8.3 CFM/W, <2.0 sones (quiet),ASHRAE 62.2 Ceiling R-0 to R-49 Insulation (HP heat/cool)	156 13	4,621 4,634	0.03	170 212
1006	Ceiling R-0 to R-38 Insulation (CAC)	12	4,646	0.04	161
8001	Energy Star Electric Vehicle Level 1 Charger Recycling of non-efficient window AC unit (baseboard heat + RAC)	3 46	4,649 4.695	0.04 0.04	172 152
8101	Energy Star Electric Vehicle Level 2 Charger	7	4,702	0.04	707
4002 1524	Remgerator (CEE Her 2) Door Weatherization (HP heat/cool)	538 79	5,240 5,319	0.04	201

	Cumulative Levelized Measure Capacity MW Cost Savings \$/kW Cost 5 10 275 10 275 10 275 10 275 11 298 12 308 14 322 14 332 14 331 16 335 20 348 221 348 221 348 221 348 221 348 221	832 32	855 861 861 35 1,065 37 1,065 37 1,075 46 1,075 46 1,076 1,076 1,076 1,076 1,076 1,098 1,577 1,577 1,577 1,577 1,611 62	1,669 66 1,728 71 1,731 77 2,074 83 2,075 86 2,075 89 2,075 97 2,081 104 2,103 106 2,118 113 2,129 118 2,134 140 2,134 140 2,135 153 2,136 154 2,136 161 2,136 163 2,136 163 2,136 163 2,136 163 2,136 163 2,137 163 2,137 163 2,136 163 2,136 163 2,137 163 2,1
uo	Measure MW Savings 5 269 0 0 14 4 4 4 4 4 4 51 8 8 8	0	24 5 204 0 0 1 12 7 7 7 7 167 167	48 48 343 44 44 44 47 47 47 47 47 47 47
Residential Electric Existing Construction	Measure Number Heat pump (18 SEER, 10 HSPF) (eFAF + room AC) 1802 Heat pump (18 SEER, 10 HSPF) (eFAF + room AC) 1802 Heat pump (18 SEER, 10 HSPF) (eFAF + room AC) 1803 Heat pump (16 SEER, 22 HSPF) (eFAF + room AC) 1804 Heat pump (16 SEER, 22 HSPF) (eFAF + room AC) 1805 Heat pump (18 SEER, 10 HSPF) (EFAF + room AC) 1902 Heat pump (18 SEER, 10 HSPF) (EFAF + room AC) 1902 Heat pump (18 SEER, 10 HSPF) (EFAF + room AC) 1902 Heat pump (18 SEER, 10 HSPF) (EFAF + room AC) 1903 Hat water unmown 15 degrees 1706 Exterior Door Replacement (eFAF + CAC) 1623 Exterior Door Replacement (eSHP heat/cool) 1525 Exterior Door Replacement (GSHP heat/cool) 1623 Heat pump (16 SEER, 22 HSPF) (eFAF + CAC) 1829 Heat pump (16 SEER, 22 HSPF) (eFAF + RAC)	Exterior Door Replacement (Elec baseboard heat + Central AC)	Heat pump (16 SEER, 9.2 HSPF) (Elec baseboard heat + Central AC) Crawlspace insulation (GSHP heat/cool) Crawlspace insulation (HP heat/cool) Exterior Door Replacement (Elec baseboard heat + Room AC) Crawlspace insulation (Elec Central Furn, no cool) Hot water turndown 5 degrees Ceiling R-0 to R-49 insulation (GSHP heat/cool) Heat pump (16 SEER, 9.2 HSPF) (Elec baseboard heat + Room AC) Smart Thermostat (GSHP heat/cool) Heat pump upgrade to (16 SEER, 9.2 HSPF) (HP heat/cool) Smart Thermostat (Elec Central Furn, no cool) Ceiling R-0 to R-49 insulation (HP heat/cool) Recycling of non-efficient window AC unit (baseboard heat + RAC)	Door Weatherization (HP heat/cool) Faucent Aerators Door Weatherization (GSHP heat/cool) Energy Star Desktop PC Heat pump upgrade to (18 SEER, 10 HSPF) (HP heat/cool) Basement insulation (Elec Central Furn, no cool) Duct insulation (Elec Central Furn, no cool) Duct insulation (Elec Central Furn, no cool) Duct insulation (GSHP heat/cool) Energy Star LCD TV Crawkspace insulation (EAF + CAC) Duct Insulation (HP heat/cool) Energy Star LED TV Crawkspace insulation (EAF + CAC) Duct Testing and Sealing (GSHP heat/cool) Ceiling R-11 to R-49 insulation (GSHP heat/cool) Ceiling R-11 to R-49 insulation (GSHP heat/cool) Basement insulation (Elec Central Furn, no cool) Basement insulation R-15 (GSHP heat/cool) Smart Thermostat (Elec Deaseboard heat + Room AC)
Resid	Measure Number 1802 1802 1803 1804 1804 1805 1902 1902 1902 1902 1902 1902 1903 1903 1903 1903 1904 1905 1905 1906 1906 1906 1906 1906 1906 1906 1906	1926	1901 1612 2023 2100 2100 1605 2001 1619 1621 1521 1501 2029	1524 1624 1622 1632 1502 2111 2114 1617 1618 1607 1607 1607 1613 1613 1623 1623 1623 1623 1623 1623
	### Cost ####################################	0.01	0.01 0.01 0.01 0.01 0.02 0.02 0.02 0.02	0.02 0.02 0.02 0.03 0.03 0.03 0.03 0.03

SUPPLY CURVE DATA



Resid	Residential Electric Existing Construction	tion			Resid
Energy	Energy Supply Curve		Cumulative	Levelized	Capac
Measure Number	Measure	Measure GWH Savings	Measure GWH Savings	Energy Cost \$/kWH	Measure Number
5302 1622	Variable-Speed Pool Pump (<1 hp) ROB Door Weatherization (GSHP heat/cool)	102 2	5,421 5.423	0.04	2022
1001	16 SEER (13.68 EER) Split-System Air Conditioner (CAC)	169	5,592	0.05	2007
4301	Freezer (Energy Star) Wall Blowsin B-0 to B-13 Insulation (CAC)	79	5,671	0.05	2104
9901	Indirect Feedback (Home Energy Reports, Opower)	484	5,033 6.183	0.05	1725
7014	Low Flow Showerhead 1.5 Gal/Min	61	6,244	0.05	1604
1502	Heat pump upgrade to (18 SEER, 10 HSPF) (HP heat/cool)	260	6,804	0.05	1516
2111	Basement insulation R-13 (Elec Central Furn, no cool)	0 0	6,804	0.05	2014
1020	Duct Testing and Sealing (CAC)	24	6.828	0.05	4201
4001	Refrigerator (Energy Star)	241	7,069	0.05	1523
302	LED Tube replacement for fluorescent lamps	45	7,114	0.06	1907
1118	Self Install Weatherization (RAC)		7,115	0.06	9901
1617	Duct Insulation (GSHP heat/cool)	. 0	7,122	0.00	1922
1714	Crawlspace insulation (eFAF + CAC)	24	7,146	0.07	181
1022	Smart Thermostat (CAC)	108	7,254	0.07	2115
1519 1104	Duct Insulation (HP heat/cool) Ceiling R-0 to R-38 Insulation (RAC)	0 28	7,272	0.07	1506 302
			ļ		
1126	Recycling of non-efficient window AC unit (RAC) Pipe Wran	50	7,292	80.0	1601
1618	Duct Testing and Sealing (GSHP heat/cool)	67 -	7,323	60.0	7007
1607	Ceiling R-11 to R-49 Insulation (GSHP heat/cool)	0	7,323	60.0	1822
2120	Door Weatherization (Elec Central Furn, no cool)	0 7	7,323	0.09	1518
1613	Basement insulation R-13 (GSHP heat/cool)		7,326	0.10	1808
1722	Smart Thermostat (eFAF + CAC)	. 4	7,367	0.10	1718
1520	Duct Testing and Sealing (HP heat/cool)	72	7,438	0.10	1812
1003	18 SEER Split-System Air Conditioner (CAC)	328	7,766	0.10	7002
1115	Wall Blow-in R-0 to R-13 Insulation (RAC)	-	7,767	0.10	2101
7002	Heat Pump Water Heater - Energy Star	1,578	9,345	0.10	6701
2019	Smart I hermostat (Elec baseboard heat + Koom AC) Door Weatherization (Elec baseboard heat + Room AC)	m c	9,353	0.11	2118
2104	Ceiling R-0 to R-49 Insulation (Elec Central Furn, no cool)	10	9,355	0.11	5401
1509	Ceiling R-11 to R-49 Insulation (HP heat/cool)	44 (9,369	0.11	2116
1621	Celling K-0 to K-49 insulation (Elec baseboard near + Room AC) Self Install Weatherization (GSHP heat/cool)	o - -	9,369	0 0	1628
1725	Door Weatherization (eFAF + CAC)	7	9,376	0.12	1611
1604	Ceiling R-0 to R-38 Insulation (GSHP heat/cool)	← ;	9,377	0.12	1805
1031	WINDOWS - Double-Glazed Clear to Energy Star (CAC) Basement insulation R-13 (HP heat/cool)	19	9,396 9,439	0.12	4002
6502	Plug Load Controls - Smart Power Strip (base Desktop PC)	63	9,503	0.12	1522
2014	Crawlspace insulation (Elec baseboard heat + Room AC)	en ·	9,505	0.13	1715
1914	Crawispace insulation (Elec baseboard heat + Central AC)	- %	9,506	0.13	1717
1523 5001	Sell Install Weatherization (TP nearcool) Clothes Washer, ENERGY STAR (IMEF 2.07 / IWF 4.2)	38 239	9,544 9,783	0 0 4 4	1627
1907	Ceiling R-0 to R-49 Insulation (Elec baseboard heat + Central AC)	0	9,783	0.14	1530
1925	Door Weatherization (Elec baseboard heat + Central AC)	0 0	9,783	0.15	8001
2115	Duct Testing and Sealing (Elec Central Furn, no cool) Smart Thermostat (Flec hasehoard heat + Central AC)	0 0	9,784	0.15	4301
1819	Smart Thermostat (eFAF + room AC)	1 ←	9,786	0.15	8101
1506	Ceiling R-0 to R-38 Insulation (HP heat/cool)	19	9,806	0.15	1513

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Door Weatherization (Elec baseboard heat + Room AC) Savings Savings 2 Calling R-11 to R-49 insulation (Feb Peathcoon) 9 2.24 2.24 2 Calling R-10 to R-49 insulation (Feb Peathcoon) 0 2.241 2.241 2 Calling R-10 to R-49 insulation (Feb Carter) 0 2.241 2.242 2 Calling R-10 to R-49 insulation (Elec Leaseboard heat + Room AC) 2 2.46 2.242 2 Calling R-10 to R-49 insulation (ESH P headrood) 2 2.46 2.275 3 Calling R-10 to R-49 insulation (ESH P headrood) 2 2.27 2 2.27 Calling R-10 to R-49 insulation (ESH P headrood) 2 2.36 2 2.37 Calling R-10 to R-49 insulation (ESH P headrood) 2 2.36 2 2.37 Calling R-10 to R-49 insulation (EP headrood) 2 2.36 2 2.37 Calling R-10 to R-49 insulation (EP headrood) 2 2.46 2 2.46 Door Weatherization (EBC baseboard heat + Central AC) 1 2 2.46 2 2.46 Door Weatherization (EAF + room AC) 0 2 2.46 2 2.46 Door Weatherization (EAF + room AC) 0 2 2.47 2 2.48 Celling R-10 to R-38 insulation (EAF + room AC) 0 2 2.48 2 2.48 Door Weatherization (EA		2.23.2 2.23.2 2.23.2 2.24.1 2.24.1 2.24.6 2.24.6 2.36.5 2.46.6 2.46.6 2.46.6 2.46.6 2.46.6 2.48.8 2.48.8 2.48.8 2.48.9 2.49.0	259 259 269 273 273 273 273 273 273 273 273 273 273
Celling R-1 to R-49 insulation (FP heatroon) Celling R-1 to R-49 insulation (Fer baseboard heat + Room AC) Celling R-1 to R-49 insulation (Fer Central Furn, no cool) Self Install Weatherization (Fer Central Furn, no cool) Consultage R-1 to R-49 insulation (Fer Central Furn, no cool) Consultage R-1 to R-49 insulation (Fer Central Furn, no cool) Crawlepace insulation (Fer baseboard heat + Room AC) Crawlepace insulation (Fer baseboard heat + Room AC) Crawlepace insulation (Fer baseboard heat + Central AC) Crawlepace insulation (Fer baseboard heat + Central AC) Crawlepace insulation (Fer baseboard heat + Central AC) Self Install Weatherization (Fer headroon) Conference of Celling R-1 to Fer baseboard heat + Central AC) Self Install Weatherization (Fer baseboard heat + Central AC) Conference of Celling R-1 to Fer baseboard heat + Central AC) Door Weatherization (Fer baseboard heat + Central AC) Self Install Weatherization (Fer baseboard heat + Central AC) Colling R-1 to Fer Sal installation (Fer baseboard heat + Central AC) Colling R-1 to Fer Sal installation (Fer baseboard heat + Central AC) Door Weatherization (Fer baseboard heat + Central AC) Colling R-1 to Fer Sal installation (Fer F room AC) Door Weatherization (Fer F room AC) Colling R-1 to Fer placement for fluorescent larnes Ground Source Heat Pump EER 17.1/COP 3 & ENERGY STAR (GSHP Door Weatherization (Fer F + room AC) Colling R-1 to R-29 insulation (Fer F + room AC) Colling R-1 to R-29 insulation (Fer F + room AC) Colling R-1 to R-29 insulation (Fer F + room AC) Energy Star AM-War Central Furn no cool) Complements with Ware Heater - Energy Star Developed Star		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	200 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
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Crawkspace insulation (Elec baseboard heat + Room AC) Crawkspace insulation (Elec baseboard heat + Room AC) Crawkspace insulation (Elec baseboard heat + Central AC) Salt istall washing attach (HP heat/cool) Ceiling R-0 to R-0 insulation (Elec baseboard heat + Central AC) Son Veatherization (Elec baseboard heat + Central AC) Con Veath Thermostal (Elec baseboard heat + Central AC) Smart Thermostal (Elec baseboard heat + Central AC) Con Veath Thermostal (Elec Baseboard heat + Central AC) Smart Thermostal (Elec Baseboard heat + Central AC) Caling R-0 to R-38 insulation (HP heat/cool) Caling R-0 to R-38 insulation (HP heat/cool) Cool Roof (GSHP heat/cool) Cool Roof (GSHP heat/cool) Cool Roof (GSHP heat/cool) Cool Roof (HP heat/cool) Duct Insulation (EAFF + Coom AC) Cool Roof (HP heat/cool) Cool Roof		2.274 2.274 2.274 2.274 2.274 2.274 2.286 2.286 2.286 2.246	202 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Caimignation (Elec baseboard heat + Central AC) Ceiling R-0 for R-9 install Weatherization (HP heatlood) Ceiling R-0 to R-9 insulation (Elec baseboard heat + Central AC) Self Install Weatherization (HP heatlood) Ceiling R-0 to R-94 insulation (Elec baseboard heat + Central AC) Som Thermostal (Elec baseboard heat + Central AC) Ceiling R-0 to R-94 insulation (Elec baseboard heat + Central AC) Door Weatherization (Elec baseboard heat + Central AC) Ceiling R-0 to R-94 insulation (Ele-F + room AC) Ceiling R-0 to R-94 insulation (Ele-F + room AC) Ceiling R-0 to R-94 insulation (Ele-F + room AC) Ceiling R-0 to R-94 insulation (Ele-F + room AC) Ceiling R-0 to R-94 insulation (Ele-F + room AC) Ceiling R-0 to R-94 insulation (Ele-F + room AC) Ceiling R-0 to R-94 insulation (Ele-F + room AC) Ceiling R-10 to R-94 insulation (Ele-F + room AC) Ceiling R-10 to R-94 insulation (Ele-F + room AC) Ceiling R-10 to R-94 insulation (Ele-F + room AC) Ceiling R-10 to R-94 insulation (Ele-F + room AC) Exhaust fan, 8.3 CFMW, ~2.0 sones (quell-ARPA E 2.2 High efficiency central air-source heat pump (Elec Central Furn, no cool) Ceiling R-10 to R-94 insulation (Ele-F + room AC) Exhaust fan, 8.3 CFMW, ~2.0 sones (quell-ARPA E 2.2 Ceiling R-10 to R-94 insulation (ER-F + room AC) Ceiling R-10 to R-94 insulation (ER-F + room AC) Ceiling R-10 to R-94 insulation (ER-F + room AC) Ceiling R-10 to R-94 insulation (ER-F + room AC) Ceiling R-10 to R-94 insulation (ER-F + room AC) Ceiling R-10 to R-94 insulation (ER-F + room AC) Ceiling R-10 to R-94 insulation (ER-F + room AC) Ceiling R-10 to R-94 insulation (ER-F + room AC) Ceiling R-10 to R-94 insulation (ER-F + room AC) Ceiling R-10 to R-94 insulation (ER-F + room AC) Ceiling R-10 to R-94 insulation (ER-F + room AC) Ceiling R-10 to R-94 insulation (ER-F + room AC) Ceiling R-10 to R-94 insulation (ER-F + room AC) Ceiling R-10 to R-94 insulation (ER-F + room AC) Ceiling R-10 to R-94 insulation (ER-F + room AC) Ceiling R-10 to R-94 insulation (ER-F + room AC) Cei		2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.	214 223 223 233 250 24 250 250 250 250 250 250 250 250 250 250
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Control Restrict Control Res		2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2	27.23.23.23.23.23.23.23.23.23.23.23.23.23.
Door Weathertzation (Elec Desboard Neglots, Dyonesa) Society Creature (Teval Act) Socie		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	253 243 243 248 248 259 259 259 259
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Smart Thermostat (eFAF + room AC)		2,466 2,466 2,448 2,488 2,489 2,500	243 248 248 254 259 291
Duct Testing and Sealing (Elec Central Furn, no cool) Celling R-0 to R-28 insulation (I-P heatbool) LED Tube replacement for fluorescent lamps Ground Source Heat Pump EER 17.1/COP 3.6 ENERGY STAR (GSHP LED Tube replacement for fluorescent lamps Ground Source Heat Pump EER 17.1/COP 3.6 ENERGY STAR (GSHP Leaftcool) Cool Roof (GSHP heatbool) Cool Roof (I-P heatbool) Cool Roof (I-P heatbool) Colling R-19 to R-49 insulation (GFAF + room AC) Colling R-19 to R-49 insulation (GFAF + room AC) Heat Pump Water Heater - Energy Star High efficiency central air-source heat pump (Elec Central Furn, no cool) Celling R-19 to R-49 insulation (HP heatbool) Exhaust fan, 8.3 CFM/W, <0.20 sones (quiet),ASHRAE 62.2 Heat Pump Water Heater - Energy Star Monitor Self install Weatherization (HP heatbool) Exhaust fan, 8.3 CFM/W, <0.20 sones (quiet),ASHRAE 62.2 Hat Recovery Ventitators (Elec Central Furn, no cool) Celling R-19 to R-49 insulation (GFAF + room AC) Heat Recovery Ventitators (Elec Central Furn, no cool) Celling R-19 to R-49 insulation (GFAF + room AC) Radient Barrier (GSHP heatbool) Radient Brownin R-0 to R-13 Insulation (FAF + CAC) Ceiling R-11 to R-38 Insulation (FAF + CAC) Radient Brownin R		2,466 2,478 2,488 2,489 2,500	248 249 254 259 291
Ceiling R-0 to R-38 Insulation (HP heat/cool) LED Tube replacement for fluorescent lamps Ground Source Heat Pump ERF 17.1/COO S ENERGY STAR (GSHP heat/cool) Cool Roof (GSHP heat/cool) Door Weatherization (eFAF + room AC) Cool Roof (HP heat/cool) Cool Roof (HP heat/cool) Energy Star other TV Ceiling R-19 to R-49 Insulation (GSHP heat/cool) Cawlspace insulation (eFAF + room AC) High efficiency central air-source heat pump (Elec Central Furn, no cool) Cawlspace insulation (eFAF + room AC) Heat Pump Water Heater - Energy Star Ceiling R-19 to R-49 Insulation (HP heat/cool) Exhaust fan, 8.3 CFMW, -2.1 sones (quely, ASHRAE 62.2 Heat Recovery Ventilators (Elec Central Furn, no cool) Exhaust fan, 8.3 CFMW, -2.1 sones (quely, ASHRAE 62.2 Heat Recovery Ventilators (Elec Central Furn, no cool) Comprehensive Shell Aff Sealing - Inf. Reduction (GSHP heat/cool) Comprehensive Shell Aff Sealing - Inf. Reduction (HP heat/cool) Comprehensive Shell Aff Sealing - Inf. Reduction (HP heat/cool) Ceiling R-0 to R-49 insulation (FAF + CAC) Ceiling R-10 to R-43 insulation (FAF + CAC) Ceiling R-10 to R-43 insulation (FAF + CAC) Ceiling R-10 to R-41 singulation (FAF + CAC) Ceiling R-11 to R-38 insulation (FAF + CAC) Ceiling R-11 to R-38 insulation (FAF + CAC) Ceiling R-11 to R-38 insulation (FAF + CAC) WINDOWS - Single Pane Clear to Energy Star (DSHP) Ceiling R-11 to R-48 insulation (FAF + CAC) Energy Star Aff Clearer, Vehicle Level 1 Charger T 3.257 Ceiling R-11 to R-48 insulation (FAF + CAC) Ceiling R-11 to R-48 insulation (FAF + CAC) Energy Star Electric Vehicle Level 1 Charger T 3.257 Ceiling R-11 to R-48 insulation (FAF + CAC) Ceiling R-11 to R-48 insulation (FAF + CAC) T 3.257 Ceiling R-11 to R-48 insulation (FAF + CAC) T 3.257 Ceiling R-11 to R-48 insulation (FAF + CAC) T 3.257		2,478 2,488 2,489 2,500	248 254 254 291 291
Cool Roof (GSHP heat/cool) 2,488		2, 488 2,489 2,500 2,500	249 254 291 291
Cool Roof (GSHP heat/cool) 3 2,492		2,489 2,492 2,500	254 291 294
Cool Roof (GSHP heat/cool) 3 2,492		2,492 2,500 2,500	259 291 294
Pipe Wrap		2,500	291
Door Weatherization (eFAF + noom AC)		2 500	294
Ceiling R-19 to R-49 translation (GSHP heat/cool) Ceiling R-19 to R-49 translation (GSHP heat/cool) Energy Star other TV Duct Insulation (FAF + CAC) Crawlagace insulation (FAF + room AC) High efficiency central aris-source heat pump (Elec Central Furn, no cool) Self Install Weatherization (Elec Central Furn, no cool) Ceiling R-19 to R-49 translation (HP heat/cool) Exhaust fan, 8.3 CFMW, <2.0 sones (quelt, ASHARE 62.2) Heat Recovery Ventilators (Elec Central Furn, no cool) Comprehensive Shell Ari Sealing - Inf. Reduction (GSHP heat/cool) Comprehensive Shell Ari Sealing - Inf. Reduction (GSHP heat/cool) Ceiling R-0 to R-49 insulation (FAF + room AC) Ceiling R-0 to R-49 insulation (FAF + CAC) WINDOWS - Double-Glazed Clear to Energy Star (GSHP heat/cool) Ceiling R-0 to R-49 insulation (FAF + CAC) Wall Blow-in R-0 to R-13 insulation (FAF + CAC) Ceiling R-11 to R-38 insulation (FAF + CAC) WINDOWS - Single Pane Clear to Energy Star (GSHP) WINDOWS - Single Pane Clear to Energy Star (HP heat/cool) Ceiling R-11 to R-38 insulation (GSHP heat/cool) Ceiling R-11 to R-38 insulation (FAF + CAC) Energy Star Electric Vehicle Level 1 Charger Ceiling R-11 to R-49 insulation (FAF + CAC) Table Clear R-0 - CAC - CA		4,555	}
Certing R-19 to R-49 Insulation (EAF + CAC)		2,620	306
Duct Insulation (eFAF + CAC)		2,620	331
Heat Pump Water Heater - Energy Star 449 2,623 Heat Pump Water Heater - Energy Star 449 3,072 High efficiency central air-source heat pump (Elec Central Furn, no cool) 3 3,075 Self Install Weatherization (Elec Central Furn, no cool) 12 3,076 Celing R-19 to R-49 Insulation (HP heat/cool) 12 3,076 Comprehensive Shell Air Sealing - Inf. Reduction (GSHP heat/cool) 1 3,102 WINDOWS - Double-Glazed Clear to Energy Star (GSHP heat/cool) 1 3,103 WINDOWS - Double-Glazed Clear to Energy Star (GSHP heat/cool) 1 3,105 Celling R-0 to R-49 Insulation (EAFF + room AC) 1 3,105 Rentgy Star Air Cleaner, PM 2: CADR = 200, CADR/watt 2: 9 6 3,157 Comprehensive Shell Air Sealing - Inf. Reduction (HP heat/cool) 64 3,221 Basement Insulation R-13 (ERFA + CAC) 3 3,224 WINDOWS - Single Pane Clear to Energy Star Double Pane (GSHP) 1 3,227 WINDOWS - Single Pane Clear to Energy Star Double Pane (GSHP) 1 3,227 WINDOWS - Single Pane Clear to Energy Star (HP heat/cool) 0 3,257 WINDOWS - Singl		2,022	347
Heat Pump Water Heater - Energy Star		2,623	320
High efficiency central air-source heat pump (Elec Central Furn, no cool)		3,072	362
Self Install Weatherization (Elec Central Furn, no cool)	-	3,075	369
Self instalt Weathertezian (Elec Central Furn, no cool) Ceiling R-19 to R-49 Insulation (HP heat/cool) Exhaust fan, 8.3 CFWW, ~2.0 sone (quiet), ASHRAE 62.2 Exhaust fan, 8.3 CFWW, ~2.0 sone (quiet), ASHRAE 62.2 Hear Recovery Ventilators (Elec Central Furn, no cool) Comprehensive Shell Air Sealing - Inf. Reduction (GSHP heat/cool) WINDOWS - Double-Glazed Clear to Energy Star (GSHP heat/cool) Ceiling R-0 to R-49 Insulation (eFAF + room AC) Energy Star Air Cleaner, PM 2.5 CADR = 200, CADRWatt 2.9 Energy Star Air Cleaner, PM 2.5 CADR = 200, CADRWatt 2.9 Energy Star Air Cleaner, PM 2.5 CADR + room AC) WINDOWS - Single Pane Clear to Energy Star Double Pata(cool) WINDOWS - Single Pane Clear to Energy Star Double Pane (GSHP) WINDOWS - Single Pane Clear to Energy Star Double Pane (GSHP) Theazer (Energy Star H Charger Theazer (Energy Star H Char		3,076	378
Cerling R-19 to R-48 insulation (HP heat/cool) 12 3.087 Exhaust fan, 8.3 CFM/W, < 2.0 sones (quiet), ASHRAE 62.2		3,076	379
Example Care	-	3,087	381
Comprehensive Shell Air Sealing - Inf. Reduction (GSHP heat/coo)	-	3,100	410
WINDOWS - Double-Glazed Clear to Energy Star (GSHP heat/cool) Radiant Barrier (GSHP heat/cool) Celling R-0 to R-49 insulation (eFAF + room AC) Energy Star Air Cleaner, PM 2: 5 CADR = 200, CADRWatt 2: 9 Energy Star Air Cleaner, PM 2: 5 CADR = 200, CADRWatt 2: 9 Comprehensive Starl Air Sealing - Inf. Reduction (HP heat/cool) Basement insulation R-13 (FAFF + CAC) WINDOWS - Single Pane Clear to Energy Star Double Pane (GSHP) WINDOWS - Single Pane Clear to Energy Star Double Pane (GSHP) WINDOWS - Sungle Pane Clear to Energy Star Double Pane (GSHP) Theazer (Energy Star) Celling R-11 to R-88 Insulation (FAFF + CAC) WINDOWS - Single Pane Clear to Energy Star Double Pane (GSHP) Theazer (Energy Star) Theazer (Energy Star) S.256 Celling R-11 to R-49 Insulation (FAFF + CAC) 3.257 3.258	-	3,102	4 4
Radiant Barrier (GSHP heat/cool)	-	3,103	4 4
Ceiling R-0 to R-49 Insulation (eFAF + room AC) 0 3,105 Energy Star Air Cleaner, PM 2.5 CADR = 200, CADRWatt 2.9 6 3,157 Comprehensive Shell Air Sealing - Inf. Reduction (HP heat/cool) 64 3,221 Basement insulation R-13 (eFAF + CAC) 2 3,224 Will Blowun R-0 to R-13 insulation (eFAF + CAC) 3 3,227 Ceiling R-11 to R-38 insulation (SAPP) 1 3,227 WINDOWS - Single Pane Clear to Energy Star Outle-Glazed Clear to Energy Star (HP heat/cool) 2 3,250 Energy Star Electric Vehicle Level 1 Charger 7 3,256 Ceiling R-11 to R-48 insulation (eFAF + CAC) 1 3,256 Ceiling R-11 to R-48 insulation (eFAF + CAC) 1 3,256	-	3,105	442
Energy Star Air Cleaner, PM. 2.5 CADR = 200, CADRWatt 2.9 6 3,151 Comprehensive Shell Air Sealing - Inf. Reduction (HP heat/cool) 64 3,221 Basement insulation R-13 (eFAF + CAC) 2 3,221 Wall Blowwin R-0 to R-13 insulation (eFAF + CAC) 3 3,227 Ceiling R-11 to R-38 insulation (SAP) 1 3,227 WINDOWS - Single Pane Clear to Energy Star Outle-Glazed Clear to Energy Star (HP heat/cool) 2,350 Energy Star Electric Vehicle Level 1 Charger Freezer (Energy Star) 1 3,256 Ceiling R-11 to R-49 insulation (eFAF + CAC) 1 3,256	-	3,105	444
Comprehensive Shell Air Sealing - Inf. Reduction (HP heat/cool) Comprehensive Shell Air Sealing - Inf. Reduction (HP heat/cool) 2 3.757 Basement insulation R-13 (RAF + CAC) 2 3.221 Wall Blow-in R-0 to R-13 Insulation (eFAF + CAC) 3 3.227 Wall Blow-in R-0 to R-13 Insulation (eFAF + CAC) 3 3.227 WINDOWS - Single Pane Clear to Energy Star Double Pane (GSHP) 1 3.228 WINDOWS - Double-Glazed Clear to Energy Star (HP heat/cool) 2 3.250 Energy Star Electric Vehicle Level 1 Charger 7 3.250 Freezer (Energy Star) 7 3.256 Celling R-11 to R-49 Insulation (EFAF + CAC) 1 3.258 Col		3,151	461
Completising Statistical designation (FTAFF + CAC) Basement insulation R-13 (FAFF + CAC) Wall Blow-in R-0 to R-13 Insulation (eFAF + CAC) Wall Blow-in R-0 to R-13 Insulation (eFAF + CAC) WiNDOWS - Single Pane Clear to Energy Star Double Pane (GSHP) WINDOWS - Single Pane Clear to Energy Star Double Pane (GSHP) Energy Star Electric Vehicle Level 1 Charger Freezer (Energy Star) Freezer (Energy Star) Ceiling R-11 to R-49 Insulation (FAF + CAC) 13.256 13.267	-	3,157	461
Wall Bow-in R. Or R13 insulation (eFAF+CAC) 3 3.227 WINDOWS - Single Pane Clear to Energy Star Double Pane (GSHP) 1 3.227 WINDOWS - Single Pane Clear to Energy Star Double Pane (GSHP) 1 3.227 WINDOWS - Double-Glazed Clear to Energy Star (HP neat/cool) 22 3.250 Energy Star Electric Vehicle Level 1 Charger 0 3.250 Freezer (Energy Star) 7 3.257 Celling R-11 to R-49 Insulation (FAF+CAC) 1 3.256	-	3,22	264 C C C
Ceiling R-11 to R-38 Insulaton (GSHP heat/cool) 0 3,227 WINDOWS - Single Pane Clear to Energy Star Double Pane (GSHP) 1 3,228 WINDOWS - Double-Glazed Clear to Energy Star (HP heat/cool) 22 3,250 Energy Star Elective Cehicle Level 1 Charger 0 3,250 Freezer (Energy Star) 7 3,257 Ceiling R-11 to R-49 Insulation (EAF + CAC) 1 3,257	-	3,227	510
WINDOWS - Single Pane Clear to Energy Star Double Pane (GSHP) 1 3,228 WINDOWS - Double-Glazed Clear to Energy Star (HP heat/cool) 22 3,250 Energy Star Electric Vehicle Level 1 Charger 0 3,250 Freezer (Energy Star) 7 3,257 Ceiling R-11 to R-49 Insulation (FAF + CAC) 1 3,258		3,227	513
WINDOWS - Louble-Glazed Clear to Energy Star (HP heat/cool) 22 3,250 Energy Star Electiv Cehicle Level 1 Charger 0 3,250 Freezer (Energy Star) 7 3,257 Ceiling R-11 to R-49 Insulation (FAF + CAC) 1 3.28		3,228	518
Eriergy star Electric Central Eaver 0 5,250 Freezer (Energy Star) 7 3,257 Ceiling R-11 to R-49 Insulation (FAF + CAC) 1 3.258		3,250	220
Ceiling R-11 to R-49 Insulation (eFAF + CAC)		3,250	537
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SUPPLY CURVE DATA

Cumulative Levelized Measure Capacity MW Cost Savings \$/kW

549 558

3,296 3,296 3,296 3,298 3,298 3,330 3,554 3,555 3,566 3,567 3,588 3,591 3,604 3,605 3,605 3,605 3,605



uo	Measure	MW Savings	- 0	ò	0 0	10	31	c 0	· E	-	21	m·	- 4	2 0	0	0	0	-	0	0	0 ;	24	ν c	o C	<u>7</u> 0	· Ω	0 0		Þ	12	0.0	> C	o C	0	0 (> C	o c	ο Φ	0	0	0 •	69	
Residential Electric Existing Construction	Capacity Supply Curve	Measure	Wall Blow-in R-0 to R-13 Insulation (Elec baseboard heat + Room AC) Roof deck insulation R-19 (CSHP heatlcool)	WINDOWS -	cool) Self Install Weatherization (eFAF + CAC)		WINDOWS - Sin	Self Install Weatherization (Elec baseboard heat + Room AC)		Ceiling R-0 to R-38 Insulation (eFAF + CAC)		Duct Testing and Sealing (eFAF + CAC)			ర	Dnct	 Duct Insulation (Elec baseboard heat + Central AC) WINDOWS - Double-Glazed Clear to Energy Star (Elec baseboard heat 		×		Ö		VIINDOVVS - Double-Glazeu Clear to Effergy star (eTAF + CAC) Self Install Mootherization (eEAF + 1500m AC)		Wall Blow-in R		Windows - Adding Storm Windows (GSHP) Duct Testing and Sealing (eFAF + room AC)	Solf Inch				Rasement insulation R-13 (Flec hasehoard heat + Room AC)	Č	> 8		Ceiling R-11 to R-49 Insulation (Flec Central Firm no cool)		_	Ceili		Floor	Floor K-U to K-19 Insulation-Batts (HP heat/cool) Windows - Adding Storm Windows (HP heat/cool)	
Resid	Capac	Number	2017	2	2121	1817	1529	2021	1508	1706	4001	1720	1615	1603	1909	1920	1919	2028	1917	2006	2103	1517	1,01	1718	1815	5302	1626 1818	1024	1924	1505	2018	1614	1906	1828	2118	2106	2100	3032	2009	1608	2112	1516 1528	
	Levelized Energy	Cost \$/kWH	0.16	5	0.18	0.19	0.19	0.21	0.21	0.22	0.22	0.22	0.23	0.24	0.25	0.25	0.25	0.27	0.27	0.27	0.30	0.31	0.5	0.37	0.32	0.32	0.33	28	ţ.	0.34	0.34	0.35	0.37	0.38	0.38	95.0 98.0	98.0	68.0	0.40	0.40	0.40	0.42 0.43	
	Cumulative Measure	Savings	9,807	5	10,601	10,796	10,796	10,798	10,799	10,804	10,840	10,840	10,859	11,430	11,433	11,438	11,441	11,441	11,443	11,443	11,548	11,552	11,557	11,559	11,595	11,788	11,789 11,850	11 851	00,1	11,851	11,851	11,853	11.857	11,857	11,908	11,908	11 929	11,934	11,981	11,982	12,003	12,038 12,038	
ion	Measure	Savings	← κ)	0 0	196	0 7	- 8	10	9	35	0 :	19	131	7	2	ო	-	2	0	105	4 4	n c	> -	36	193	1 60	-	-	0	0 (ν 4		0	51	- 6	<u> </u>	1 10	48	-	21	3 ₄ –	
Residential Electric Existing Construction	Energy Supply Curve	Measure Course Lost Dums EED 17 4/COD 2 & ENIEDCY STAD /CSUD			Drain Water Heat Recovery (GFX) Door Weatherization (eFAF + room AC)			Celling R-19 to R-49 illsulation (GSDF Heaveou) Duct Insulation (eFAF + CAC)	Craw	High efficiency central air-source heat pump (Elec Central Furn, no cool)		Self	Celling K-19 to K-49 Insulation (HP heat/cool) Dimmer Switch (hase interior LED 6 hrs/dav)		Heat Re		Comprehensive Shell Air Sealing - Inf. Reduction (GSHP heat/cool)	WINDOWS - Double-Glazed Clear to Energy Star (GSHP heat/cool)	Radiant Barrier (GSHP heat/cool)		Compreher	Basement insulation R-13 (eFAF + CAC) Moli Plow in D 0 to D 12 Inculation (cEAE + CAC)		WOONW			Ceiling R-11 to R-49 Insulation (eFAF + CAC) Radiant Barrier (HP heat/cool)	Mall Blowin B-0 to	_			Energy Star Room Air Conditioner - CEEK 12 (RAC) Self Install Weatherization (AFAE + CAC)		WINDOW	\$	Sell Install Weathertzation (Elec Daseboard Heat + Room AC) Ceiling R-11 to R-38 Instilaton (HP heat/cool)				Wall E	Roof deck in	DHW Tank Wrap Heat pump tune up (GSHP heat/oool)	
Resid	Energ	Measure	1601	2	7010	1518	1105	1719	1812	2101		2119	1511	1018	2116	1009	1620	1628	1611	1805	1522	1/15	1606	1627	1530	5301	1709 1513	2017			1610	1724	1817	1125	1529	1508	1706	1720	1013	1615	1512	7004 1603	

3,606 3,606 3,606 3,630 3,633 3,644 3,644 3,644 3,650 3,650 3,651

3,663 3,665 3,665 3,666 3,666

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873 876 889 902 931 943 948 949 959 966 987 997 1,009

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Resid	Residential Electric Existing Construction	tion			Resid	Residential El
Energ	Energy Supply Curve				Capaci	Capacity Supply
Measure Number	Measure	Measure GWH Savings	Cumulative Measure GWH Savings	Levelized Energy Cost \$/kWH	Measure Number	
3022	Motion/Occupance Sensor (base interior LED, 2.5 hrs/day)	19	12,057	0.44	2113	Wall Blow-in
1909	Ceiling R-11 to R-49 Insulation (Elec baseboard heat + Central AC)	0	12,057	0.44	3033	Dir
1920	Duct Testing and Sealing (Elec baseboard heat + Central AC)	0 0	12,058	0.44	2005	Ductless n
	Duct Illsulation (Elec baseboard fleat + Certitial AC) WINDOWS - Double-Glazed Clear to Energy Star (Elec baseboard heat	Þ	12,030	0.4 0.	0	
2028	+ Room AC)	~	12,059	0.45	1711	Ceil
1017	Wall Blow.in R-0 to R-13 Insulation (Flac baseboard beat + Central AC)	c	12.059	0.45	1931	WINDOWS - DO
5103	Clothes Driver, CEF 5.20 CEE Tier 3	28	12.117	0.46	1510	Ceil
5102	Clothes Dryer, CEF 4.30 CEE Tier 2	55	12,172	0.46	1816	
2103	Ceiling R-0 to R-38 Insulation (Elec Central Furn, no cool)	0	12,172	0.46	1723	Comprehens
2006	Ceiling R-0 to R-38 Insulation (Elec baseboard heat + Room AC)	0 6	12,172	0.46	1713	
3023	Wall blow-ill K-0 to K-13 filsulation (TP fieav.cod) Dimmer Switch (base interior LED, 2.5 hrs/day)	239	12,212	0.40 0.48	1813	Bas
		}	î)		WINDOWS - Si
1731	WINDOWS - Double-Glazed Clear to Energy Star (eFAF + CAC)	4	12,455	0.49	1730	(
1821	Self Install Meatherization (eEAE + room AC)	c	12 155	0.49	1703	Ground Source n
1718	Cool Roof (eFAF + CAC)	0 61	12.474	64.0 64.0	1708	Cei
1815	Wall Blow-in R-0 to R-13 Insulation (eFAF + room AC)	? o	12,474	0.50	1911	Ceiling R-19 to
1626	Windows - Adding Storm Windows (GSHP)	က	12,477	0.53	1807	Ceiling
1818	Duct Testing and Sealing (eFAF + room AC)	0	12,477	0.53	1712	Ž T
1004	Solf Instal Montharization (Clay and a too background by	c	12 477	0	1000	Ground Source n
1030	WINDOWS - Single Pane Clear to Energy Star Double Pane (CAC)	20 00	12,477	0.53	1804	Ceilin
		ì	î)		Comprehensive S
1505	Heat pump tune up (HP heat/cool)	19	12,516	0.54		
2018	Cool Roof (baseboard heat + RAC)	41	12,520	0.54	3022	Motion/Oc
1011	Celling K-19 to K-49 insulation (CAC) Floor R-0 to R-19 insulation-Bate (CSHD heat/cool)	~ 0	12,526	0.55	7003	Comprehensive
2		Þ	12,320	9	220	Ground Source
2015	Basement insulation R-13 (Elec baseboard heat + Room AC)	0	12,527	0.55	1503	
5101	Clothes Dryer, CEF 3.93 ENERGY STAR	48	12,575	0.56	1401	Ū
2003	Solar Domestic Water Heating	799	13,374	0.56	3023	Dimr
0,70	Comprenensive Shell Air Sealing - Int. Reduction (Elec Central Furn, no	c	10 074	9	1007	WINDOWS - SI
2106	Ceiling R-11 to R-49 Insulation (Flec Central Furn, no cool)	o c	13.374	0.30	2011	Ceiling R-19 t
1008	Ceiling R-11 to R-38 Insulaton (CAC)	, _	13,381	0.57	1912	Roof deck in
2109	Roof deck insulation, R-19 (Elec Central Furn, no cool)	0	13,381	0.57	2108	Ceiling R-'
1906	Ceiling R-0 to R-38 Insulation (Elec baseboard heat + Central AC)	0	13,381	0.57		Roof deck ir
1828	WINDOWS - Double-Glazed Clear to Energy Star (eFAF + room AC)	0	13,381	0.58	6502	Plug Load
1915	Basement insulation R-13 (Elec baseboard heat + Central AC)	0	13,382	0.58	1930	
2112	Floor R-0 to R-19 Insulation-Batts (Elec Central Furn, no cool)	0	13,382	09.0	5001	Clothes
2009	Ceiling R-11 to R-49 Insulation (Flec baseboard heat + Room AC)	C	13.382	0 60	2102	Ground Source
1012	Roof deck insulation, R-19 (CAC)	7	13,389	0.61		Ceiling R-11 to
1608	Calling R-10 to R-38 Inculation (GSHB heat/cool)	•	13 380	6	0000	Comprehensive S
2113	Wall Blow-in R-0 to R-13 Insulation (Elec Central Furn, no cool)	- 0	13,390	0.62	1716	Floor
1516	Floor R-0 to R-19 Insulation-Batts (HP heat/cool)	9	13,395	0.63	1705	AC
1528	Windows - Adding Storm Windows (HP heat/cool)	112	13,508	0.63	1810	Roo
1116	Ductiess mini-split neat pump SEER 22.0/noPF10.0 (RAC) Cool Roof (RAC)	77	13.537	0.66	1625	L
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velized nergy Cost /kWH	Capacii Measure Number	Capacity Supply Curve Measure Number	Measure MW Savings	Cumulative Measure MW Savings	Levelized Capacity Cost \$/kW
0.44 0.44 0.44 0.45	2113 3033 2005 1918	Wall Blow-in R-0 to R-13 Insulation (Elec Central Furn, no cool) Unimer Switch (base interior LED, 6 hrs/day) Ductless min-split heat pump SEER 22.0/HSPF10.0 (RAC) Cool Roof (baseboard heat + CAC)	0 10 10 10 10	3,747 3,847 3,864 3,864	1,042 1,071 1,077 1,114
0.45	1711	Ceiling R-19 to R-49 Insulation (eFAF + CAC)	-	3,865	1,125
0.45	1031	WINDOWS - Double-Glazed Clear to Energy Star (Elec baseboard heat + Central AC)	c	3 865	1 130
0.46	1510	Ceiling R-19 to R-38 Insulation (HP heat/cool)	9 2	3,884	1,212
0.46	1816	Cool Roof (eFAF + RAC)	0	3,884	1,227
0.46	1723	Comprehensive Shell Air Sealing - Inf. Reduction (eFAF + CAC) Radiant Barrier (eFAF + CAC)	თ ო	3,890	1,392
0.48	7004	DHW Tank Wrap	o 은	3,903	1,473
0.48	1813	Basement insulation R-13 (eFAF + room AC) WINDOWS - Single Pane Clear to Energy Star Double Pane (eFAF +	0	3,903	1,550
0.49	1730	Ground Source Heat Dump EER 17 1/COD 3 & ENERGY STAR (eEAE +	က	3,906	1,552
0.49	1703		17	3,923	1,595
0.49	1708	Ceiling R-11 to R-38 Insulaton (eFAF + CAC)	-	3,924	1,597
0.50	1911	Ceiling R-19 to R-49 Insulation (Elec baseboard heat + Central AC)	0 0	3,924	1,603
0.53 0.53	1807	Celling K-11 to K-49 Insulation (eFAF + 100m AC) Roof deck insulation, R-19 (eFAF + CAC)	> ←	3,924 3,925	1,687
		Ground Source Heat Pump EER 17.1/COP 3.6 ENERGY STAR (eFAF +			
0.53	1803	room AC)	0 (3,926	1,751
0.53	1804	Celling K-0 to K-38 insulation (erAF + room AC) Comprehensive Shell Air Sealing - Inf. Reduction (Elec baseboard heat +	Þ	3,926	1,869
0.54	1923	Čentral AC)	0	3,926	1,911
0.54	3022	Motion/Occupance Sensor (base interior LED, 2.5 hrs/day)	4	3,930	1,931
0.55	7003	Solar Domestic Water Heating	227	4,158	1,966
0.55	1820	Comprenensive Snell Air Sealing - Inr. Reduction (eFAF + foom AC) Ground Source Heat Pump EER 17.1/COP 3.6 ENERGY STAR (HP	Þ	4,158	0/8,1
0.55	1503	heat/cool)	71	4,229	2,031
0.56	1401	ECM Furnace Fan (variable speed motor) Dimmer Switch (hase interior LED -2.5 hrs/dav)	128	4,357	2,106
		WINDOWS - Single Pane Clear to Energy Star Double Pane (eFAF +		•	i
0.56	1827	room AC)	0	4,411	2,131
0.56	2011	Ceiling R-19 to R-49 Insulation (Elec baseboard heat + Room AC)	0 0	4,411	2,140
0.57	2108	Root deck insulation, R-19 (Elec baseboard near + Central AC) Ceiling R-19 to R-49 Insulation (Flec Central Firm no cool)	> C	4,411	2,193
0.57	2012	Roof deck insulation, R-19 (Elec baseboard heat + Room AC)	0	4,412	2,267
0.58	6502	Plug Load Controls - Smart Power Strip (base Desktop PC)	ဇ	4,415	2,291
84.0	1030	WINDOWS - Single Pane Clear to Energy Star Double Pane (baseboard	c	A 44E	2 2 4 7
0.00	5001	Clothes Washer, ENERGY STAR (IMEF 2.07 / IWF 4.2)	o 1	4,413	2,355
		Ground Source Heat Pump with Desuperheater (Elec Central Furn, no	,		
0.60	2102	cool) Ceiling R-11 to R-38 Insulaton (Elec baseboard heat + Central AC)	0 0	4,430 4,430	2,363
		Comprehensive Shell Air Sealing - Inf. Reduction (Elec baseboard heat +			
0.61	2020	Room AC)	← ·	4,430	2,411
0.62	1716	AC Maintenance and/or time in (AEAF + CAC)		4,431	2,413
0.03	1810	Roof deck insulation R-19 (eEAF + room AC)	- c	4,432	2,434
0.66	1913	Radiant Barrier (baseboard heat + CAC)) O	4,432	2,703
0.67	1625	Window Film (GSHP)	0	4,433	2,804

Cumulative Levelized Measure Capacity MW Cost Savings \$/kW

2,830 2,874

4,433 4,439 3,146 3,225 3,228 3,278 3,308 3,456 3,682 3,710 3,710 3,930 4,088

4,441 4,456 4,456 4,456 4,457 4,458 4,458 4,458 4,140

4,459

4,420 4,445 4,509

4,459 4,459 4,459 4,531 4,560 4,565

4,459 4,459 4,459 4,659 4,835 4,861 4,866 4,873 4,876 5,072

4,460 4,462 4,462 4,463 4,463 4,464 4,464 5,756 5,834

4,465 4,467 6,383 7,704 7,711 7,733

4,476 4,480 4,481 4,485





Resid	Residential Electric Existing Construction	ion			Resid	Residential Electric Existing Construction	on	
Enera	Energy Supply Curve				Capaci	Capacity Supply Curve		
Measure			Cumulative Measure GWH	Levelized Energy Cost	Measure		Measure MW	5 -
	ייכמטעי	Savings	Savings	LIAAV /c		WINDOWS - Single Pane Clear to Energy Star Double Pane (baseboard	Savings	
1918	Cool Roof (baseboard heat + CAC) Celling R-19 to R-49 Insulation (eFR+ + CAC) WINDOWS Double Closed Closets Energy Star (Else baseboard heat	- 2	13,538 13,539	0.68	2027 1729	heat + RAC) Windows - Adding Storm Windows (eFAF + CAC)	0 9	
1931	WildDOWS - Double-Glazed Clear to Energy Star (Elect baseboard fleat:	0	13,540	69.0	1710	Ceiling R-19 to R-38 Insulation (eFAF + CAC)	2	
1103	Ductless mini-split heat pump SEER 22.0/HSPF10.0 (RAC)	4	13,544	0.72	1527	Window Film (ASHP)	16	
1510	Ceiling R-19 to R-38 Insulation (HP heat/cool)	30	13,574	0.74	1809	Ceiling R-19 to R-49 Insulation (eFAF + room AC)	0 0	
1816	Comprehensive Shell All Sealing - Ini. Reduction (CAC) Cool Roof (eFAF + RAC)	38 0	13,612	0.75	2008	Ceiling R-11 to R-38 Insulaton (Elec Central Furn, no cool) Ceiling R-11 to R-38 Insulaton (Elec baseboard heat + Room AC)	0	
3043	Photocell	2	13,617	0.84	1826	Windows - Adding Storm Windows (eFAF + room AC)	0	
1723	Comprehensive Shell Air Sealing - Inf. Reduction (eFAF + CAC)	10	13,627	0.85	3043	Photocell	-	
1713	Radiant Barrier (eFAF + CAC)	ro r	13,632	0.87	2016	Floor R-0 to R-19 Insulation-Batts (Elec baseboard heat + Room AC)	0 0	
1813	Ductiess mini-split heat pump SEER 19.0/HSPT 9.4 (RAC) Basement insulation R-13 (eFAF + room AC)	n 0	13,637	0.95	1929	AC Maintenance and/of tune-up (baseboard heat + CAC) Windows - Adding Storm Windows (baseboard heat + CAC)	0	
	WINDOWS - Single Pane Clear to Energy Star Double Pane (eFAF +					Ground Source Heat Pump EER 17.1/COP 3.6 ENERGY STAR (Elec		
1730	CAC) Ground Source Heat Pump EFR 17 1/00B 3 6 ENERGY STAR (aEAE +	വ	13,642	0.95	1903	baseboard heat + Central AC)	←	
1703	Ground Source freat Fullip EEN 77.7001 3.3 ENENGT 31AN (et Al.)	27	13,669	0.98	1811	Radiant Barrier (eFAF + room AC)	0	
1708	Ceiling B-10 to B-30 Insulation (eFAF + CAC)	0.0	13,671	0.98	2107	Ceiling R-19 to R-38 Insulation (Elec Central Furn, no cool)	0 0	
<u> </u>	Celling K-19 to K-49 insulation (Elec baseboard neat + Central AC)	Þ	13,671	98.0	2013	Kadiant barrier (baseboard neat + KAC)	>	
1807	Ceiling R-11 to R-49 Insulation (eFAF + room AC)	0	13,671	0.99	1916	Floor R-0 to R-19 Insulation-Batts (Elec baseboard heat + Central AC)	0	
1712	Roof deck insulation, R-19 (eFAF + CAC) Timers (hases interior I ED, 6 brs/day)	0 6	13,674	1.03	1910	Ceiling R-19 to R-38 Insulation (Elec baseboard heat + Central AC)	0 0	
	Ground Source Heat Pump EER 17.1/COP 3.6 ENERGY STAR (eFAF +	o		9	120		Þ	
1803	room AC)	_	13,677	1.07	3031	Timers (base interior LED, 6 hrs/day)	-	
3042	Motion/Occupance Sensor (base exterior LED lighting)	6	13,686	1.10	3042	Motion/Occupance Sensor (base exterior LED lighting)	2	
6202	Plug Load Controls - Smart Power Strip (base Other TV)	4	13,690	1.10	1808	Ceiling R-19 to R-38 Insulation (eFAF + room AC) Ground Source Heat Primp FFR 17 1/COP 3 6 ENERGY STAR /Flec	0	
1117	Comprehensive Shell Air Sealing - Inf. Reduction (RAC)	-	13,691	1.11	2003	baseboard heat + Room AC)	2	
1029	Windows - Adding Storm Windows (CAC)	43	13,733	1.11	1806	Ceiling R-11 to R-38 Insulaton (eFAF + room AC)	0	
1804	Ceiling R-0 to R-38 Insulation (eFAF + room AC)	0,	13,733	1.15	1814	Floor R-0 to R-19 Insulation-Batts (eFAF + room AC)	0,	
	Radiant Barrier (RAC) Comprehensive Shell Air Sealing - Inf. Reduction (Flec baseboard heat	-	13,734	61.1	2020	Windows - Adding Storm Windows (baseboard near + KAU)	-	
1923	+ Central AC)	-	13,735	1.17	2010	Ceiling R-19 to R-38 Insulation (Elec baseboard heat + Room AC)	0	
1820	Comprehensive Shell Air Sealing - Inf. Reduction (eFAF + room AC)	0	13,735	1.21	1526	ENERGY STAR Ceiling Fans (HP heat/cool)	2	
1503	Glouing Source near ruing EEN 17.17COP 5.0 EINENGT 51AN (DP heat/cool)	116	13.851	1 24	5301	PV-Powered Pool Pilms BOB	10	
1401	ECM Furnace Fan (variable speed motor)	216	14,066	1.25	5103	Clothes Dryer, CEF 5.20 CEE Tier 3	? ო	
1010	Ceiling R-19 to R-38 Insulation (CAC)	6	14,075	1.28	3012	Motion/Occupance Sensor (base interior LED, 0.5 hrs/day)	5	
1005	AC Maintenance and/or tune-up (CAC) WINDOWS - Single Pane Clear to Energy Star Double Pane (eEAE +	7	14,082	1.30	5102	Clothes Dryer, CEF 4.30 CEE Tier 2	m	
1827	room AC)	0	14,082	1.31	3013	Dimmer Switch (base interior LED, 0.5 hrs/day)	21	
2011	Ceiling R-19 to R-49 Insulation (Elec baseboard heat + Room AC)	0	14,082	1.31	3021	Timers (base interior LED, 2.5 hrs/day)	0	
2108	Ceiling R-19 to R-49 Insulation (Elec Central Furn, no cool)	00	14,082	1.33	1928	Window Film (baseboard heat + CAC)	0 "	
2012	Roof deck insulation, R-19 (Elec baseboard heat + Certra AC)	0	14,082	1.39	1728	Window Film (eFAF + CAC)	o ←	
	Ground Source Heat Pump with Desuperheater (Elec Central Furn, no							
2102	(2001) (MINDOWS - Simple Pane Clear to Energy Star Double Pane (baseboard	0	14,083	1.40	7011	Energy Star CW CEE Tier 2 (MEF=2.0)	←	
1930	heat + RAC)	0	14,083	1.42	1727	ENERGY STAR Ceiling Fans (eFAF + CAC)	0	
1124	WINDOWS - Single Pane Clear to Energy Star Double Pane (RAC)	0 0	14,084	1.47	3041	Timers (base exterior LED lighting)	0 (
8081	Comprehensive Shell Air Sealing - Inf. Reduction (Elec baseboard heat	Þ	14,084	84.	5707	Window Film (baseboard neat + KAC)	>	
2020	+ Room AC)	-	14,085	1.48	1927	ENERGY STAR Ceiling Fans (baseboard heat + CAC)	0	

10,888

4,511

8,449 9,264 9,297 9,402 9,907

4,506 4,506 4,506 4,509 4,509 15,343 17,381 17,589

4,511 4,511 4,512 17,949

4,512



Reside	Residential Electric Existing Construction	ion			Resider	Residential Elec
Energy	Energy Supply Curve				Capacity	Capacity Supply Cu
			Cumulative	Levelized		
		Measure	Measure	Energy		
Number	Measure	Savings	Savings	\$/kwH	Number	
1716	Floor R-0 to R-19 Insulation-Batts (eFAF + CAC)	-	14,086	1.48	5201	Dishwash
1705	AC Maintenance and/or tune-up (eFAF + CAC)	2	14,088	1.50	6202	Plug Load Cont
1810	Roof deck insulation, R-19 (eFAF + room AC)	0	14,088	1.55	2024	ENERGY STA
1913	Radiant Barrier (baseboard heat + CAC)	0	14,088	1.66	1824	ENERGY
1110	Roof deck insulation, R-19 (RAC)	0	14,088	1.71	3011	Timers
1625	Window Film (GSHP)	_	14,089	1.72	1825	_
M	WINDOWS - Single Pane Clear to Energy Star Double Pane (baseboard					
2027	heat + RAC)	_	14,089	1.73	7012	Ener
3012	Motion/Occupance Sensor (base interior LED, 0.5 hrs/day)	7	14,097	1.75	6002	Plug Load Con
1729	Windows - Adding Storm Windows (eFAF + CAC)	10	14,107	1.76	6102	Plug Load Con
5201	Dishwasher, ENERGY STAR (<= 270 kWh)	18	14,125	1.79	1001	16 SEER (13.68
3013	Dimmer Switch (base interior LED, 0.5 hrs/day)	93	14,218	1.92	1003	18 SEER
1710	Ceiling R-19 to R-38 Insulation (eFAF + CAC)	က	14,221	1.93	1005	AC Ma
2105	Ceiling R-11 to R-38 Insulaton (Elec Central Furn, no cool)	0	14,221	1.96	1006	Ceilir
1527	Window Film (ASHP)	25	14,246	1.98	1001	Ceilir
1809	Ceiling R-19 to R-49 Insulation (eFAF + room AC)	0	14,246	2.01	1008	Ceilin
1028	Window Film (CAC)	22	14,268	2.04	1009	Ceilin
3021	Timers (base interior LED, 2.5 hrs/day)	2	14,270	2.10	1010	Ceilin

	Resider	Residential Electric Existing Construction	tion		
	Capacity	Capacity Supply Curve			
pez			:	Cumulative	
^	Measure		Measure MW	Measure MW	Capacity Cost
¥	Number	Measure	Savings	Savings	\$/kw
Ī	5201	Dishwasher, ENERGY STAR (<= 270 kWh)	1	4,513	21,534
	6202	Plug Load Controls - Smart Power Strip (base Other TV)	0	4,513	21,831
	2024	ENERGY STAR Ceiling Fans (baseboard heat + RAC)	0	4,513	22,527
	1824	ENERGY STAR Ceiling Fans (eFAF + RAC)	0	4,513	23,999
	3011	Timers (base interior LED, 0.5 hrs/day)	0	4,513	36,836
	1825	Window Film (eFAF + RAC)	0	4,513	39,260
	7012	Energy Star Dishwasher (EF=0.72)	0	4,514	89,502
	6002	Plug Load Controls - Smart Power Strip (base LED TV)	0	4,514	102,231
	6102	Plug Load Controls - Smart Power Strip (base LCD TV)	0	4,514	284,643
	1001	16 SEER (13.68 EER) Split-System Air Conditioner (CAC)	0	4,514	ΑX
	1003	18 SEER Split-System Air Conditioner (CAC)	0	4,514	ΑX
	1005	AC Maintenance and/or tune-up (CAC)	0	4,514	√ Z
	1006	Ceiling R-0 to R-38 Insulation (CAC)	0	4,514	√ Z
	1007	Ceiling R-0 to R-49 Insulation (CAC)	0	4,514	Α/Z
	1008	Ceiling R-11 to R-38 Insulaton (CAC)	0	4,514	A/A
	1009	Ceiling R-11 to R-49 Insulation (CAC)	0	4,514	A/A
	1010	Ceiling R-19 to R-38 Insulation (CAC)	0	4,514	√ Z



Kesidential Electric New Construction	Ö	Cumulative Levelized	Measure Measure Energy	GWH GWH Cost Me	Savings \$/kWH Nu	30 0.06	1 30 0.07
	Energy Supply Curve				Measure	Code + 10% - Base Code Home	Code + 15% - Base Code Home
	Energy			Measure	Number	101	102

Residen	Residential Electric New Construction	struction		
Capacity	Capacity Supply Curve			
			Cumulative	umulative Levelized
		Measure	Measure	Capacity
Measure		MM	MΜ	Cost
Number	Measure	Savings	Savings	\$/kW
101	Code + 10% - Base Code Home	9	9	282
102	Code + 15% - Base Code Home	0	9	353

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Energy Supply Curve Measure Number 6201 Electric 4001 En	'Ve				בייהם הט				
		Measure	Cumulative Measure	Levelized		capacity supply curve	Measure	Cumulative Measure	Levelized
Ш	Measure	GWH Savings	GWH Savings	Cost \$/kWH	Measure Number	Measure	MW Savings	MW Savings	Cost \$/kW
	Electric Combination Oven	211	211	0.01	7101	Heat Pump, SEEK 16.0/HSPF 9.2 ENERGY STAR, <5.4 tons, heating	53	53	19
	Energy Star server	591	801	0.01	1351	LED screw-in replacement (base incandescent/halogen)	133	186	25
LED screw-in re LED screw-in rep	LED screw-in replacement (base incandescent/halogen) LED screw-in replacement (base Outdoor Incandescent)	442 253	1,243 1,496	0.01	1002 1752	ROB 2L4' LED Tube (Base T12) LED screw-in replacement (base Outdoor Incandescent)	11 37	197 234	49 54
						High Performance Lighting R/R - Combined Strategies (base low			
Efficie	Efficient compressor motor, walk-ins	2	1,498	0.01	1452	bay HID)	7	235	09
Efficient comp	Efficient compressor motor, base large cold storage	0	1,498	0.01	1526	High Bay Bi-Level Programmed LED Fixture	4 ;	249	62
Compre	Compressed Air - End Use Optimization	57	1,555	0.01	1102	ROB 2L4' LED Tube (Base T8)	16	266	64
ш [Efficient industrial process	ო	1,558	0.04	1551	High Bay Bi-Level Programmed LED Fixture	υ ,	271	98
T ::	Emclent Industrial process	o ;	1,558	0.0	9201	Efficient combination Oven	∞	582	13
High Performance Ligh	industrial process improved operations High Performance Lighting R/R - Combined Strategies (base low bay	32	086,1	0.0	1066	Ellicient compressor motor, wark-ins	-	897	<u> </u>
	HID)	80	1,598	0.01	3401	Efficient compressor motor, base large cold storage	0	289	7.7
Heat Pump, SEER 16.0	Heat Pump, SEER 16.0/HSPF 9.2 ENERGY STAR, <5.4 tons, heating	82	1,680	0.01	4001	Energy Star server	49	338	85
High Bay	High Bay Bi-Level Programmed LED Fixture	71	1,750	0.01	1001 H	1001 High Performance Lighting R/R - Combined Strategies (Base T12)	41	353	88
Energy Star g	Energy Star glass door reach-in refrigerator/freezer	7	1,762	0.01	1101	High Performance Lighting R/R - Combined Strategies (Base T8)	26	379	91
Com	Compressed Air - Leak Reduction	26	1,788	0.01	8004	Compressed Air - End Use Optimization	7	386	91
Efficient co.	Efficient compressor motor, base closed cases	- }	1,789	0.01	8401	Efficient industrial process	0	386	91
Variable	Variable Speed Drive Control, base motors	202	1,991	0.01	8101	Efficient industrial process	۰ ،	386	91
High Bay	High bay bi-Level Programmed LED Fixture	27	2,018	0.01	9303	Industrial process improved operations	4 (390	82
Oversized Air Co.	Dodgestred Air Cooled Condenser base large cold storage	2,03	4,049	0.0	1503	ROB 21 4' LED Tube (Base 15)	<u>?</u> «	409	200
En	Energy Star Convection Oven	37	4,088	0.01	1652	LED outdoor lighting with bi-level controls (Base Outdoor HID)	294	703	66
ROE	ROB ŽĽ4' LED Tube (Base T12)	36	4,124	0.01	1601	LED Exit Sign	80	711	102
Cor	Compressed Air - Maintenance	24	4,148	0.02	1004	LED Troffer with lamp removal (T12)	10	721	102
Electronically comm	Electronically commutated evaporator fan motor, base large cold								
	storage	က	4,151	0.02	8008	Compressed Air - Leak Reduction	ო	724	107
Electronically co.	Electronically commutated evaporator fan motor, walk-ins	152	4,303	0.02	1451	LED fixture (base Low bay HID)	7	726	107
Compressor	Compressor VSD retrofit, base large cold storage	4 6	4,307	0.02	3601	Energy Star glass door reach-in retrigerator/freezer	← (727	117
Com _l Freezer-Cooler R	Compressor VSD retroint, wark-ins Freezer-Cooler Renjacement Gaskate, hase closed cases	183	4,490	0.02	3201	Efficient compressor motor, base closed cases Compressed Air - Maintenance	» د	730	13.0
High Performance Lic	High Derformance Lighting R/R - Combined Strategies (Rase T12)	2.2	4,502	20.0	7802	Variable Speed Drive Control hase motors	» &	750	2,5
THE CHAIN THE PRINCE IN	Efficient compressor motor, open cases	⁷ C	4,574	20.0	3409	Oversized Air Cooled Condenser hase large cold storage	2 0	750	13.5
Air	Air Handler Optimization, 15 HP	555	5,130	0.02		LED Troffer with lamp removal (78)	15	765	138
Fineray	Fnerdy Star or Better Imaging Equipment	-	5 130	000	1552	ingir renormande Eigridig (viv Compined Stategres (base ingri	ď	77.1	148
High Performance List	High Performance Lighting R/R - Combined Strategies (Base T8)	132	5,762	20:0	7803	Air Handler Ontimization 15 HP	67	838	149
	Low Flow Faucet Aerators	2 25	5 321	20:0	4401	Frency Star or Better Imaging Equipment	5 C	838	149
Energy Stars	Enerav Star solid door reach-in refrigerator/freezer	16	5,337	0.02	5008	Low Flow Faucet Aerators	2	845	153
RO	ROB 2L4' LED Tube (Base T8)	45	5.390	0.02	3209	Freezer-Cooler Replacement Gaskets, base closed cases		847	162
High	High-efficiency fan motors, walk-ins	133	5.523	0.02	1003	LED Troffer (Base T12)	· თ	856	167
Lov	Low-flow pre-rinse spray valve	37	5,560	0.02	3101	Efficient compressor motor, open cases	0	856	167
Low or Anti-	Low or Anti-Sweat Door Film. base closed cases	13	5.573	0.02	1501	High Performance Lighting R/R - Combined Strategies (Base T5)	9	862	171
Refrigeration C	Refrigeration Commissioning, base large cold storage	! -	5,575	0.02		Energy Star Convection Oven	က	865	174
Energy	Energy Star hot food holding cabinet	184	5,759	0.02	5010	Low-flow pre-rinse spray valve	4	870	174
Refrigeration (Refrigeration Coil Cleaning, base large cold storage	7	5,766	0.02	3501	Energy Star solid door reach-in refrigerator/freezer	7	872	176
0	Energy Star griddle	17	5,783	0.02	3403	Compressor VSD retrofit, base large cold storage	10	872	180
Oversized	Oversized Air Cooled Condenser, walk-ins	106	5,889	0.02	3310	High-efficiency fan motors, walk-ins	41	886	181

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Com	Commercial Electric Existing Construction	tion			Commo	Commercial Electric Existing Construction	ction		
Energ	Energy Supply Curve				Capacit	Capacity Supply Curve		:	
Measure	Messure	Measure GWH Savings	Cumulative Measure GWH	Levelized Energy Cost	Measure	Measure	Measure MW Savings	Cumulative Measure MW	Levelized Capacity Cost \$/kW
5006		156	6,045	0.02	1301	LED screw-in replacement (base CFL)	14	900	181
3309	Freezer-Cooler Keplacement Gaskets, walk-ins Energy Star or Better Laptop	2 9	6,060	0.02	3303 3214	Compressor VSD retroilt, walk-ins Low or Anti-Sweat Door Film, base closed cases	- 1	917	182 194
1601		31	6,094	0.03	7001	Ceiling/roof Insulation (electric boiler)	. 0	918	195
1503	High Bay LED Troffer (Base T5)	44	6,138	0.03	3411	Refrigeration Commissioning, base large cold storage Air-Source Heat Pump. SEER 16.0/HSPF 9.2 ENERGY STAR.	0	918	195
3216 1502	Oversized Air Cooled Condenser, base closed cases ROB 21.4' LED Tube (Base T5)	15 20	6,153 6,172	0.03	7201 3410	<5.4 tons (base air-source heat pump heating) Refrigeration Coil Cleaning, base large cold storage	133	1,051	195 202
	High Performance								
1552	HID) I ED Troffer with Jamp removal (712)	30	6,202	0.03	5006	Heat Recovery Unit	19	1,071	205
1851	ROB	4 4	6,248	0.03	1851	ROB 2L4' LED Tube (base outdoor fluorescent)	. 8	1,084	215
3314		311	6,559	0.03	4201	Energy Star or Better Laptop	0	1,084	218
2207	High Efficiency Windows (Base Heat Pump Cooling)	37	6,595	0.03	1051	RET Occ & Daylignt integral Sensor LED troffer (base 112 integrated)	4	1,125	228
1451		9	6,602	0.03	3309	Freezer-Cooler Replacement Gaskets, walk-ins	2	1,127	229
5001	High Efficiency Water Heater (electric)	7	6,609	0.03	3404	Erectionicany commutated evapoliatorian motor, base large cold storage	0	1,127	244
		ļ	0	0	1	RET Occ & Daylight Integral Sensor LED troffer (base T8	i.		0
3316	Strip curtains for walk-ins Strip curtains for walk-ins, base large cold storage	4/	6,656	0.03	1151 3306	Integrated) Flectronically commutated evaporator fan motor, walk-ins	35 10	1,162	249 249
3312		. 1	6,676	0.03	6601	Energy Star hot food holding cabinet	16	1,188	252
3208	ш	28	6,703	0.03	3216	Oversized Air Cooled Condenser, base closed cases	2	1,189	264
1501		32	6,736	0.03	6501	Energy Star griddle	- -	1,191	266
3702	Refrigeration Coil Cleaning, base ice maker	4	6,740	0.03	5001 H	High Efficiency Water Heater (electric) High Performance Lighting R/R - Combined Strategies (Base LFD		1,191	272
3406	High-efficiency fan motors, base large cold storage	_	6.741	0.03	1201	Tube)	40	1.231	277
3204	Bi-level L	27	6,769	0.04	3314	Refrigeration Coil Cleaning, walk-ins	33	1,265	292
2116		80	6,849	0.04	7104	Smart Thermostat (Base Furnace Heating)	4	1,268	303
3602		9 (6,855	0.04	7403	Smart Thermostat (base packaged heat pump)	£ ,	1,282	303
3408	Multiplex Compres	o \$	6,855	0.04	3316	Strip curtains for walk-ins	മ	1,287	307
9713	Ontimize Controls - DX	χ Σ σ	6,903 6,962	0.0 4 40	3412	Strip curtains for walk-ins, base large cold storage I FD Troffer (Rase T8)	o C	1,28/	304
5003		8 ~	6,902 9,902	5000	3312	Multiplex Compressor System walk-ins	<u> </u>	1 299	500
8301	#H	- 2	686	0.0 40.0	3702	Refrigeration Coil Cleaning base ice maker	4 C	299	321
2102	DX Pac	789	7,778	0.04	5004	Solar Water Heater	· -	1,300	322
2013		22	7,800	0.04	3406	High-efficiency fan motors, base large cold storage	0	1,300	323
3112	Oversized Air Cooled Condenser, open cases	က	7,804	0.04	7204	Smart Thermostat (Base Heat Pump Heating) Bilevel I FD Case Lighting (self-contained units) base closed	63	1,393	325
8002	Compressed Air - Cold Air Intake	5	7,808	0.04	3204	Cases	က	1,396	329
3106	Electronically	9	7,815	0.04	3602	Bi-level LED Case Lighting, base glass-door reach-in	-	1,397	334
1104 1005	LED Troffer with lamp removal (18) Lighting Control Tuneup (Base T12)	48 5	7,863 7,868	0.04	8301 3408	Efficient industrial process Multiplex Compressor System, base large cold storage	0 0	1,399 1,399	338 343
1407		500	0	5	000	Commenced Air Cold Air Intolo	*	7	747
3603	רבו סככ א שאווקוון ווופקומו ספוואסן בכת ונסוופן (ממאפ בנוע ווופקומופט) Freezer-Cooler Replacement Gaskets, base glass-door reach-in	3 8	8,092	0.0 4 4	1005	Compressed All - Cold All Intake Lighting Control Tuneup (Base T12)		0,4°C	363
3217		45	8,138	0.04	8201	Efficient industrial process	. 2	1,403	365
8201		19	8,157	0.04	1105	Lighting Control Tuneup (Base T8)	← (1,404	374
2604 1105 3308	High Efficiency Windows (Base Ductiess Mint-split) Lighting Control Tuneup (Base T8) Floating head pressure controls, walk-ins	9 2 9	8,162 8,172 8,174	0.04 0.04 0.04	3112 5003 1702	Oversized Alr Cooled Condenser, open cases Tankless Water Heater T. LED screw-in replacement (base Outdoor CFL)	0	1,404 1,405 1,406	375 388 393
3102	Bi-level LED Case Lighting (self-contained units), open cases	o	8,183	0.04	3603 F	Freezer-Cooler Replacement Gaskets, base glass-door reach-in	0	1,406	396
i								Ċ	0



Com	Commercial Electric Existing Construction	ion			Commo	Commercial Electric Existing Construction	tion		
Energ	Energy Supply Curve		:	:	Capacit	Capacity Supply Curve			
Measure		Measure GWH	Cumulative Measure GWH	Levelized Energy Cost	Measure	Money	Measure MW	Cumulative Measure MW	Levelized Capacity Cost
1151	er (base T8 integrated)	187	8,370	0.05	3217	Refrigeration Coil Cleaning, base closed cases	5 5	1,411	399
5003	Tankless Water Heater	ω ;	8,378	0.05	3308	Floating head pressure controls, walk-ins	0	1,412	403
1003	LED Troffer (Base T12)	30	8,408	0.05	3102	Bi-level LED Case Lighting (self-contained units), open cases	← ;	1,413	407
4101	Energy Star or Better PC EMS Optimization Obillor	111	8,519	0.05	4101	Energy Star or Better PC	4 4	1,426	417
3205	Compres	0 00	8,525	0.03	7801	High Efficiency Motor	t 0	1,430	440
3701		g 6	8,555	0.05	3701	Energy Star Ice Machines	1 ←	1,433	480
7801	High Efficiency Motor	18	8,573	0.05	7805	Energy Recovery Ventilation (ERV)	. 49	1,482	484
1301	LED screw-in replacement (base CFL)	45	8,618	0.05	4301	Energy Star or Better Monitor - LCD	~	1,484	489
						Electronically commutated evaporator fan motor, base closed	•		9
1201	1201 High Performance Lighting K/R - Combined Strategies (Base LED Tube)	198	8,816	90.0	3208	Cases	N C	1,485	509
2108	LED Screw-in replacement (base Outdoor CTL) Dirct Testing/Sealing - DX	204	9,024	0.06	3315	Lighting Control Latterp (base 15) Refrigeration Commissioning walk-ins	o e.	1,463	544
6102	Venc	† œ	9,036	0.06	7102	Ceiling/roof Insulation (base furnace)) (1,489	555
3315	ľ	24	090'6	0.06	3205	Compressor VSD retrofit, base closed cases	. 2	1,491	563
7805	Energy Recovery Ventilation (ERV)	403	9,463	90.0	7202	Ceiling/roof Insulation (base air-source heat pump heating)	17	1,508	605
4301	Energy Star or Better Monitor - LCD	7	9,474	90.0	7304	Smart Thermostat (Base Rooftop/packaged heating)	18	1,526	614
1504	Lighting Control Tuneup (Base T5)	_	9,475	90.0	7401	Ceiling/roof Insulation (base ductless mini-split)	က	1,529	624
2001	Centrifugal Chiller, 0.54 kW/ton, 500 tons	63	9,538	90.0	3106	Electronically commutated evaporator fan motor, open cases	0	1,529	632
2401	HE PTAC, EER=9.6, 1 ton, cooling	72	9,610	90.0	3113	Refrigeration Coil Cleaning, open cases	_	1,530	637
2111	Economizer Repair - DX	270	9,880	0.02	3203	Anti-sweat (humidistat) controls, base closed cases	0	1,530	671
		(0	1	i	Packaged Heat Pump, heating, IEER 13.9/COP 3.4 (w/ non-ER	i		0
3113	Ketrigeration Coll Cleaning, open cases	o n (9,889	0.07	7301	neating), 10 tons	105 0	1,636	089
3203	Anti-sweat (numidistat) controls, base closed cases	7 4	9,89	0.07	3202	Energy-Star Remigerator/Preezer, base closed cases	ν τ	1,037	745
3202	Energy-July remigeratory respective cused cases Chiller Tine Hy/Disanostics	2 ∞	9,907 0,015	0.08	8302	Industrial process improved operations	- 0	1,630	720
3218	Refriderat	യ	9,921	80.0	8202	Industrial process improved operations	10	1,642	720
3502	ŭ	9 (2	26.6	0.08	8402	Industrial process improved operations	ı C	1,642	741
3604	Refrigeration Coil Cleaning, base glass-door reach-in	5	9,928	0.08	3218	Refrigeration Commissioning, base closed cases	· -	1,643	745
2502	Ductless Mini-Split SEER 18.0/HSPF 10.0 CEE Tier 1 (Base Room AC)	32	096.6	0.08	3502	Freezer-Cooler Replacement Gaskets, base reach-in	-	1.643	746
8102		∞	896'6	0.08	6102	Vending Misers (Refrigerated units)	-	1,644	749
8302	Industrial process improved operations	15	9,983	0.08	7002	Duct/Pipe Insulation (electric boiler)	0	1,644	753
8202	Industrial process improved operations	4	866'6	0.08	3604	Refrigeration Coil Cleaning, base glass-door reach-in	0	1,645	756
3103	Compressor VSD retrofit, open cases	4	10,002	80:0	1401	LED screw-in replacement (base LED)	12	1,657	788
3304	Demand Defrost Electric, walk-ins	112	10,114	0.09	2002	Hot Water Pipe Insulation	τ- '	1,658	793
8402	Industrial process improved operations	ကဖ	10,116	60.0	3304	Demand Defrost Electric, walk-ins	12	1,670	797
3901	Energy stat Compact Reingerator	n (10,120	0.00	3901	Demond Controlled Ventiletien 15 UD	0 0	1,0/1	0.0
5007	LED HOURT (Dase 10) Hot Water Dipe Insulation	3 C 1 C	10,132	60.0 60.0	1202	Lighting Control Tubern (Base LED Tube)	787	1,967	847
1202	Lighting Control Tine in (Base LED Tirks)	2 2	10,103	0.09	7806	Separate Make in Air / Exhaust Hoods AC	- ^	1,900	800
7806	Separate Makeup Air / Exhaust Hoods AC	57	10.228	0.10	3103	Compressor VSD retrofit, open cases	~ C	1.976	932
		5	1	-		Recirculation Pump Timer Clock - Controls for Central Domestic	ò		
2004	VSD for Chiller Pumps and Towers	7	10,235	0.11	5011	Hot Water	-	1,977	096
2201	Heat Pump Upgrade (18 SEER, 8.2 HSPF), cooling	127	10,362	0.11	5002	Heat Pump Water Heater (air source)	80	1,984	1,002
i	Recirculation Pump Timer Clock - Controls for Central Domestic Hot	,	0		0	Č	ď		
5011	Water	10	10,372	0.11	3801	Energy Star retrigerator/freezer	o ≁	1,993	1,075
3244	High officiency for motors have closed once.	7 2	10,434	21.0	3211	Multiplex Compressor System Page closed cases	- c	1,994	1,00,1
5002	Heat Pilms Water Heater (air source)	, 9	10,461	0.12	7302	Multiplex Collibration (base packaged bases)	۰ د	1,994	1,132
7104	Smart Thermostat (Base Furnace Heating)	9	10,534	0.12	9301	High Efficiency Motor	1 /	2,004	1.227
						Auto-closer on main door to walk-in freezer, base large cold		i i	į
7403	Smart Thermostat (base packaged heat pump)	33	10,568	0.12	3402	storage	0	2,004	1,250

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Com	Commercial Electric Existing Construction	ion			Comm	Commercial Electric Existing Construction	ıction		
Energ	Energy Supply Curve		Cumulative	Levelized	Capacit	Capacity Supply Curve		Cumulative	Levelized
Measure Number	Measure	Measure GWH Savings	Measure GWH Savings	Energy Cost \$/kWH	Measure Number	Measure	Measure MW Savings	Measure MW Savings	
2306 7001	Window Film (Standard Ceiling/roof Ir Air-Source Heat Pump, SEER	52 0	10,620 10,620	0.12 0.13	3503 1901	Refrigeration Coil Cleaning, base base reach-in Outdoor Lighting Controls (Base Outdoor LED Tube)	5 0	2,004 2,006	1,277 1,302
7201	(base air-source heat pump heating)	206	10,826	0.13	3302	Auto-closer on main door to walk-in freezer	-	2,008	1,337
2104		13	10,839	0.13	3311	Insulated suction lines, walk-ins	0	2,008	1,399
2405		1 5	10,854	0.13	3107	High-efficiency fan motors, open cases	0 (2,008	1,454
3111		ກຸດ	10,859	0.13	3110	Multiplex Compressor System, open cases	0 8	2,008	1,486
3213 7204	Muliplex Complessor System, base closed cases Smart Thermostat (Base Heat Pump Heating)	232	11,000	0.13	9302	Valiable opeca Drive Conitor, base motors Efficient Fryer	2 -	2,072	1,572
3402	Auto-closer	0	11,093	0.13		Refrigeration Coil Cleaning, residential-type refrigerator	7	2,013	1,631
					_	RET Occ & Daylight Integral Sensor LED troffer (base linear LED			
2404	Occup	33	11,126	4 2	1251	integrated)	9 0	2,099	1,716
3503	Emicient Fryer Defineration Oal Cleaning hase hase reach in	† -	11,140	4 7	9305	Vending Misers (Kerrigerated glass-front units) Demand Hot Cas Defract Walk ins	> <	2,099	7,768
6101		t m	11.147	4.0	1801	Outdoor Lighting Controls (Base Outdoor LED)	+ 5	2.115	2.189
2107		49	11,196	0.14	7103	Duct/Pipe Insulation (base furnace)	! ←	2,115	2,278
3302	Auto-	13	11,209	0.14	3206	Demand Defrost Electric, base closed cases	_	2,117	2,323
3311	Insulated suction lines, walk-ins	-	11,209	0.15	7203	Duct/Pipe Insulation (base air-source heat pump heating)	23	2,140	2,352
9301	High Efficiency Motor	22	11,266	0.15	3114	Refrigeration Commissioning, open cases	0	2,140	2,373
9302	Variable Speed Drive Control base motors	647	11 913	0 16	1852	LED outdoor lignting with bi-level controls (base Outdoor Fling-scent)	-	2 141	2379
3107		<u>;</u> -	11 915	00	3104	Demand Defrost Flectric, open cases	- c	2,141	3.478
		-) - - -	5		LED outdoor lighting with bi-level controls (Base Outdoor	ò	ī	
2603	Win	6	11,923	0.16	1751	Incandescent)	2	2,146	3,543
3110		_	11,924	0.16	1107	Occupancy Sensor (Base T8)	-	2,147	3,677
2003	High	4	11,928	0.17	1007	Occupancy Sensor (Base T12)	0	2,147	3,750
3802	Refrige	29	11,995	0.18	8002	Compressed Air - Equipment Upgrade	ი •	2,150	3,830
2506	High	- 8	11,996	0.18	1701	LED outdoor lighting with bi-level controls (Base Outdoor CFL)	← 0	2,151	3,844
2007	Duct Testing/Sealing - Criller	900	12,064	0.10 0.10	1000	Vending Misers (Non-Reinigerated)	-	2,151	5,129
1004	Ductless Mini-Sp	606,1	0,70,01		3902	Netrigeration Con Creating, Compact Temperator	Þ	2, 131	0,55
2302		204	13,576	0.20	3207	Demand Hot Gas Defrost, base closed cases	0	2,152	5,859
1107		12	13,589	0.20	1204	Occupancy Sensor (Base LED tube)	_	2,152	6,385
1007		9	13,595	0.20	2009	Low Flow Showerheads	0	2,152	7,117
3305		833	13,629	0.22	3210	High R-Value Glass Doors, base closed cases	0 (2,152	7,594
2305	Smart Thermostat (Base Residential Split-System)	82	13,713	0.22	5005	Demand controlled circulating systems	m c	2,150	7,611
2203	Dual Fot	ò +	13,800	0.22	32.12 7303	Duct/Pine Insulation (hase packaged heat nump)	> 0	2,136	8,165 8,466
1401		- 40	13.841	0.24	8008	Compressed Air - Zero-Loss Condensate Drain	1 ←	2,159	8.477
2012		26	13,867	0.24	1106	Network Lighting Controls (Base T8)	. 2	2,160	8,693
7304	Smart Th	45	13,912	0.25	3105	Demand Hot Gas Defrost, open cases	0	2,160	8,797
2206		29	13,941	0.25	1006	Network Lighting Controls (Base T12)	_	2,161	8,821
2114		201	14,142	0.25	1577	Occupancy Sensor (Base high bay LED)	-	2,162	9,842
3206		12	14,154	0.25	1506	Occupancy Sensor (Base T5)	0	2,162	10,260
3114	Refrigeration Commissioning, open cases	Υ-	14,154	0.26	3108	Insulated suction lines, open cases	0	2,162	12,486
2402	Ceiling/roof Insulation (Base PTAC)	ო	14,158	0.26	3405 E	Evaporator fan controller for MT walk-ins, base large cold storage	0	2,162	14,324
2115		89	14,226	0.26	1203	Network Lighting Controls (Base LED Tube)	_	2,163	15,007
2505		4	14,229	0.31	3307	Evaporator fan controller for MT walk-ins	0	2,163	15,708
	RET Occ & Daylight Integra								
1251	integrated)	101	14,330	0.32	4303	Plug-load controls - Commercial Smart Strip (base monitor LCD)	0	2,164	17,513
1852	LED outdoor lighting with bi-level controls (Base Outdoor Fluorescent)	ω	14,338	0.34	1505	Network Lighting Controls (Base T5)	0	2,164	23,873
ZINC	man to the territory								7

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APPENDIX G



Comm	Commercial Electric Existing Construction	ion			Commer	Commercial Electric Existing Construction	ction		
Energy	Energy Supply Curve				Capacity	Capacity Supply Curve			
			Cumulative	Levelized				Cumulative	
		Measure	Measure	Energy			Measure	Measure	Capacity
Measure	Measure	Savings	Savings	Cost \$/kWH	Measure	Measure	MW Savings	MW Savings	\$/kW
1204	Occupancy Sensor (Base LED tube)	10	14,348	0.35	1576	Network Lighting Controls (Base high bay LED)	_	2,165	28,691
7102	Ceiling/roof Insulation (base furnace)	_	14,349	0.36	3407	Insulated suction lines, base large cold storage	0	2,165	29,211
3104	Demand Defrost Electric, open cases	က	14,351	0.37	8007	Compressed Air - Low Pressure-Drop Filters	0	2,165	408,093
2105	Refrigerant Charge Adjustment - DX	39	14,390	0.39	2001	Centrifugal Chiller, 0.54 kW/ton, 500 tons	0	2,165	N/A
7202	Ceiling/roof Insulation (base air-source heat pump heating)	27	14,417	0.39	2002	Chiller Tune Up/Diagnostics	0	2,165	N/A
6001	Vending Misers (Non-Refrigerated)	0	14,418	0.40	2003 High	High Efficiency Chilled Water & Condenser Water Pump Motors	0	2,165	N/A
7401	Ceiling/roof Insulation (base ductless mini-split)	4	14,422	0.40	2004	VSD for Chiller Pumps and Towers	0	2,165	N/A
2006	Cool Roof - Chiller	2	14,427	0.42	2005	Ceiling/roof Insulation - Chiller	0	2,165	N/A
	Packaged Heat Pump, heating, IEER 13.9/COP 3.4 (w/ non-ER								
7301	heating), 10 tons	163	14,590	0.44	2006	Cool Roof - Chiller	0	2,165	N/A
8005	Compressed Air - Equipment Upgrade	22	14,612	0.45	2007	Duct Testing/Sealing - Chiller	0	2,165	N/A
7002	Duct/Pipe Insulation (electric boiler)	_	14,612	0.49	2008	Duct/Pipe Insulation - Chiller	0	2,165	N/A
2203	Ceiling/roof Insulation (Base Heat Pump Cooling)	12	14,624	0.50	2009	EMS Optimization - Chiller	0	2,165	A/N
2005	Ceiling/roof Insulation - Chiller	ю	14,627	0.51	2010 Dual	2010 Dual Enthalpy Economizer Replaces Dry Bulb Economizer - Chiller	0	2,165	N/A
1751 LE	1751 LED outdoor lighting with bi-level controls (Base Outdoor Incandescent)	34	14,661	0.51	2011	New Economizer - Chiller	0	2,165	A/N
2601	Ceiling/roof Insulation (Base Ductless Mini-split)	က	14,663	0.53	2012	Window Film (Standard) - Chiller	0	2,165	N/A
1577	Occupancy Sensor (Base high bay LED)	14	14,678	0.53	2013	High Efficiency Windows - Chiller	0	2,165	N/A
2106	Ceiling/roof Insulation - DX	28	14,706	0.55	2102	DX Packaged System, EER=13.4, 10 tons	0	2,165	N/A
1506	Occupancy Sensor (Base T5)	_	14,707	0.56	2104	DX Tune Up/ Advanced Diagnostics	0	2,165	A/N
1701	LED outdoor lighting with bi-level controls (Base Outdoor CFL)	7	14,714	0.56	2105	Refrigerant Charge Adjustment - DX	0	2,165	A/N

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Com	Commercial Electric New Construction				Comm	Commercial Electric New Construction		
į			Cumulative	Levelized				Cumulative Lev
/easure		Measure GWH	Measure GWH	Energy Cost	Measure		Measure MW	Measure Cal
Number		Savings	Savings	\$/kWH	Number	Measure	Savings	Savings \$
209 309		<u>†</u> 4	12	0.01	309 309	High Performance Building/Int Design - Tier 2 30% - Data Centers High Performance Building/Int Design - Tier 3 50% - Data Centers	7 -	0 0
9	Ηig	•	0	Š		High Performance Building/Int Design - Tier 4 Near Zero Energy (60-75%) - Data	c	c
204 204	High Performance Building/Int Design - Tier 2 30% - Grocery	- œ	24	0.0	204 204 204	High Performance Building/Int Design - Tier 2 30% - Grocery	→	o 4
304		ာက	27	0.01	308	High Performance Building/Int Design - Tier 3 50% - Grocery	· -	. 4
109		7	8	0.01	109	High Performance Building/Int Design - Tier 1 15% - Data Centers	-	9
404	High Performance Building/Int Design - Her 4 Near Zero Energy (60-75%) -	c	35	0 0	707	High Performance Bullding/Int Design - Her 4 Near Zero Energy (ธ0-/ ๖%) - เลือดลา	c	ď
104	High Performance Buildin	ס גר	S 4	0.02	<u> </u>	High Performance Building/Int Design - Tier 1 15% - Grocery	→	o (c
202	Ι	ာတ	64	0.03	202	High Performance Building/Int Design - Tier 2 30% - Restaurant	- 2	ο Φ
302		4	23	0.03	302	High Performance Building/Int Design - Tier 3 50% - Restaurant	· -	ာ
	High Performance Building/Int [,	Ç.			High Performance Building/Int Design - Tier 4 Near Zero Energy (60-75%) -	((
402		- (53	0.03	402	Restaurant	0 1	o (
213	Figh Performance Building/Int Design - Her 1 15% - Restaurant High Performance Building/Int Design - Tier 2 30% - Industrial	ي م	9 2	0.04	213	Figh Performance Building/Int Design - Her 1 15% - Restaurant High Performance Building/Int Design - Tier 2 30% - Industrial	- œ	5 5 7
313		ς ω	£ 6	0.05	313	High Performance Building/Int Design - Tier 3 50% - Industrial	· -	9 9
203		26	128	0.05	203	High Performance Building/Int Design - Tier 2 30% - Retail	4	21
303		4	132	0.05	303	High Performance Building/Int Design - Tier 3 50% - Retail	~	21
	High Performance Building/Int De	•	,	0		High Pertormance Building/Int Design - Tier 4 Near Zero Energy (60-75%) -	c	2
413 504	Industrial Lich Berformance Building Int Decian Tion 2 30% Office	- 6	133	0.06	413	Industrial Lich Dorformanco Building/lat Docion Tior 2 30% Office	⊃ ç	27
707	High Performance Building/Int Design - Tier 4 Near Zero Energy (60-75%) -	70	612	0.00	102	ngii reiloinaile building in Design - Herz 30% - Oince	2	c c
403		_	216	90.0	403 F	High Performance Building/Int Design - Tier 4 Near Zero Energy (60-75%) - Retail	0	35
301		15	231	90.0		High Performance Building/Int Design - Tier 3 50% - Office	7	37
206		12	243	0.09	206	High Performance Building/Int Design - Tier 2 30% - School	5	39
212	ΕĒ	32	278	0.09	212	High Performance Building/Int Design - Tier 2 30% - Miscellaneous	ဖ (45
306	High Performance Building/Int Design - Tier 2 30% - Health High Deformance Building/Int Design - Tier 3 50% - School	<u>.</u> r	291 205	60.0	207 306	High Performance building/Int Design - Her 2 30% - Health High Derformance Building/Int Design - Tier 3 50% - School	ν -	4 / 4 / 8 / 4 / 4 / 4 / 4 / 4 / 4 / 4 /
312	Ï	, E	309	0.00	312	High Performance Building/Int Design - Tier 3 50% - Miscellaneous	- 0	50
307		5 2	313	0.10	307	High Performance Building/Int Design - Tier 3 50% - Health	1 ←	20
208		14	327	0.10	208	High Performance Building/Int Design - Tier 2 30% - Lodging	2	53
	High Performance Building/Int Des					High Performance Building/Int Design - Tier 4 Near Zero Energy (60-75%) -		
406		~ 1	328	0.11	406	School	0	53
308	High Performance Building/Int Design - Tier 3 50% - Lodging	2	333	0.11	308	High Performance Building/Int Design - Tier 3 50% - Lodging	-	54
110		c	300	7	710	High Performance Building/Int Design - Her 4 Near Zero Energy (60-75%) -	c	7
1	High Performance Building/Int	4	8	- - -	7	MISCOIRITOCIA	Þ	<u> </u>
407		_	336	0.11	407 H	High Performance Building/Int Design - Tier 4 Near Zero Energy (60-75%) - Health	0	54
	High Performance Building/Int De		ļ	!		High Performance Building/Int Design - Tier 4 Near Zero Energy (60-75%) -	,	i
408	Lide Performance Pullship Perform Tier 7000 April	- (337	0.12	408	Lodging Control Holding Control Trans 200/ Washington	0 7	54
106		ာ ထ	340 348	0.12	203 106	High Performance Building/III Design - Tier 4 15% - Walerlouse High Derformance Building/Int Design - Tier 4 15% - School	- +	22
305	Ξ	o -	349	0.13	305	High Performance Building/Int Design - Tier 3 50% - Warehouse	- 0	20
112	Ι	22	371	0.13	112	High Performance Building/Int Design - Tier 1 15% - Miscellaneous	4	09
107		80	379	0.13	107	High Performance Building/Int Design - Tier 1 15% - Health	_	61
210		17	396	0.13	210	High Performance Building/Int Design - Tier 2 30% - Non-Jurisdictional	က	64
310	High	9 (402	0.14	310	High Performance Building/Int Design - Tier 3 50% - Non-Jurisdictional	← ·	65
108		o	411	0.14	108	High Performance Building/Int Design - Tier 1 15% - Lodging	-	99
405	nigii Pendinance bullang/in Design - Hel 4 Neal Zelo Enelgy (oo-73%) - Marahansa	c	7	7	105	ngn Penormance building/mu besign - Hel 4 Near Zero Energy (50-75%) - Marahansa	c	99
5	High Performance Building/Int	Þ	<u>-</u>	<u>†</u>		Warehouse High Performance Building/Int Design - Tier 4 Near Zero Energy (60-75%) - Non-	Þ	9
410		_	412	0.16	410	Jurisdictional	0	99
214		80	420	0.17	214	High Performance Building/Int Design - Tier 2 30% - Agricultural	~	68
105	High Performance Building/Int Design - Tier 1 15% - Warehouse	7 0	422	0.17	105	High Performance Building/Int Design - Tier 1 15% - Warehouse	0 0	68
314		n	475	0.18	314	High Performance ธนแตเทg/เก≀ Design - Her 3 จบ% - Agricutural	ס	60

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Con	Commercial Electric New Construction				Comm	Commercial Electric New Construction			
Ener	Energy Supply Curve				Capaci	Sapacity Supply Curve			
			Cumulative	Levelized				Cumulative Lev	ē
		Measure	Measure	Energy			Measure	Measure Ca	ပ္မ
Measure	g).	GWH	GWH	Cost	Measure		ΜW	MM	
Number	r Measure	Savings	Savings	\$/kwH	Number	Measure	Savings	Savings Savings	₩
110	High Performance Building/Int Design - Tier 1 15% - Non-Jurisdictional	11	436	0.19	110	High Performance Building/Int Design - Tier 1 15% - Non-Jurisdictional	2	20	ľ
	High Performance Building/Int Design - Tier 4 Near Zero Energy (60-75%) -					High Performance Building/Int Design - Tier 4 Near Zero Energy (60-75%) -			
414	Agricultural	0	436	0.20	414	Agricultural	0	70	
114	High Performance Building/Int Design - Tier 1 15% - Agricultural	2	442	0.23	114	High Performance Building/Int Design - Tier 1 15% - Agricultural	_	71	•
211	High Performance Building/Int Design - Tier 2 30% - Religious Worship	7	449	0:30	211	High Performance Building/Int Design - Tier 2 30% - Religious Worship	_	72	·
311	High Performance Building/Int Design - Tier 3 50% - Religious Worship	က	452	0.32	311	High Performance Building/Int Design - Tier 3 50% - Religious Worship	0	73	•
	High Performance Building/Int Design - Tier 4 Near Zero Energy (60-75%) -					High Performance Building/Int Design - Tier 4 Near Zero Energy (60-75%) -			
411	Religious Worship	0	452	0.36	411	Religious Worship	0	73	
111	High Performance Building/Int Design - Tier 1 15% - Religious Worship	2	457	0.42	111	High Performance Building/Int Design - Tier 1 15% - Religious Worship	-	74	•••

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H. MEASURE-LEVEL RANKING BY ECONOMIC ENERGY SAVINGS POTENTIAL

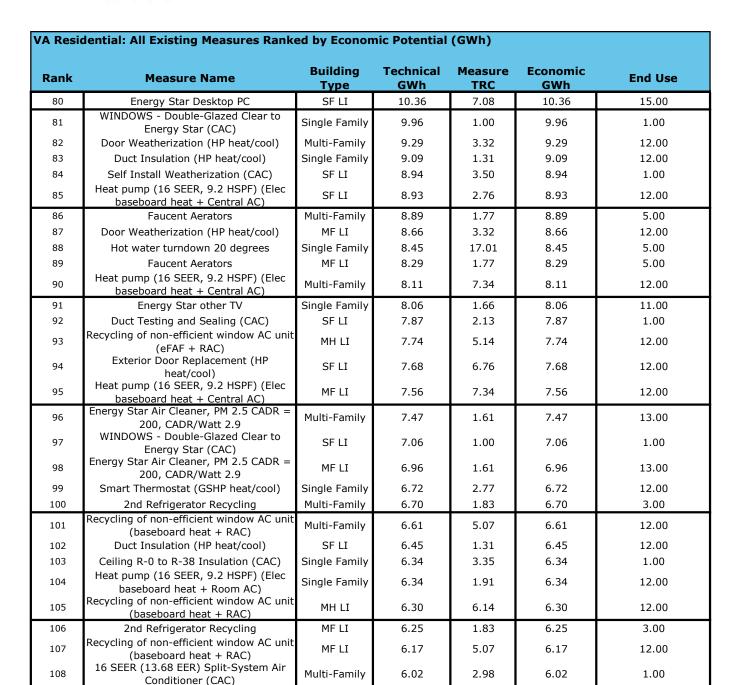


A Resid	dential: All Existing Measures Rank	ed by Econon	nic Potential	(GWh)		
Rank	Measure Name	Building Type	Technical GWh	Measure TRC	Economic GWh	End Use
1	2nd Refrigerator Recycling	Single Family	447.35	2.42	447.35	3.00
2	Heat pump (16 SEER, 9.2 HSPF) (eFAF + CAC)	Single Family	327.69	5.25	327.69	12.00
3	2nd Refrigerator Recycling	SF LI	317.35	2.42	317.35	3.00
4	Smart Thermostat (HP heat/cool)	Single Family	254.55	2.62	254.55	12.00
5	Heat pump (16 SEER, 9.2 HSPF) (eFAF + CAC)	SF LI	232.46	5.25	232.46	12.00
6	Crawlspace insulation (HP heat/cool)	Single Family	194.88	3.87	194.88	12.00
7	Smart Thermostat (HP heat/cool)	SF LI	180.58	2.62	180.58	12.00
8	Energy Star LED TV	Single Family	148.37	5.40	148.37	11.00
9	Crawlspace insulation (HP heat/cool)	SF LI	138.25	3.87	138.25	12.00
10	Heat pump upgrade to (16 SEER, 9.2 HSPF) (HP heat/cool)	Single Family	136.05	2.31	136.05	12.00
11	Faucent Aerators	Single Family	127.05	2.85	127.05	5.00
12	Energy Star LED TV	SF LI	105.26	5.40	105.26	11.00
13	Heat pump upgrade to (16 SEER, 9.2 HSPF) (HP heat/cool)	SF LI	96.51	2.31	96.51	12.00
14	16 SEER (13.68 EER) Split-System Air Conditioner (CAC)	Single Family	91.51	2.48	91.51	1.00
15	Faucent Aerators	SF LI	90.13	2.85	90.13	5.00
16	Exhaust fan, 8.3 CFM/W, <2.0 sones (quiet), ASHRAE 62.2	Single Family	74.31	1.36	74.31	15.00
17	16 SEER (13.68 EER) Split-System Air Conditioner (CAC)	SF LI	64.92	2.48	64.92	1.00
18	Smart Thermostat (CAC)	Single Family	59.71	1.55	59.71	1.00
19	Variable-Speed Pool Pump (<1 hp) ROB	Single Family	59.29	1.19	59.29	13.00
20	Energy Star Air Cleaner, PM 2.5 CADR = 200, CADR/Watt 2.9	Single Family	57.45	2.18	57.45	13.00
21	Heat pump (16 SEER, 9.2 HSPF) (eFAF + CAC)	MH LI	55.90	14.96	55.90	12.00
22	Heat pump (16 SEER, 9.2 HSPF) (eFAF + CAC)	Multi-Family	52.84	5.20	52.84	12.00
23	Exhaust fan, 8.3 CFM/W, <2.0 sones (quiet),ASHRAE 62.2	SF LI	52.72	1.36	52.72	15.00
24	Heat pump (16 SEER, 9.2 HSPF) (eFAF + CAC)	MF LI	49.27	5.20	49.27	12.00
25	Hot water turndown 10 degrees	Single Family	46.09	9.28	46.09	5.00
26	Energy Star LCD TV 10% better than Energy Star	Single Family	43.93	5.49	43.93	11.00
27	Dehumidifier ROB (35-45 pints/day)	Single Family	43.09	21.79	43.09	1.00
28	Freezer (Energy Star)	Single Family	42.44	1.05	42.44	4.00
29	Smart Thermostat (CAC)	SF LI	42.36	1.55	42.36	1.00
30	Variable-Speed Pool Pump (<1 hp) ROB	SF LI	42.06	1.19	42.06	13.00
31	Energy Star Air Cleaner, PM 2.5 CADR = 200, CADR/Watt 2.9	SF LI	40.75	2.18	40.75	13.00
32	Heat pump (18 SEER, 10 HSPF) (eFAF + CAC)	Single Family	37.93	2.41	37.93	12.00
33	Door Weatherization (HP heat/cool)	Single Family	34.46	1.51	34.46	12.00
34	Smart Thermostat (eFAF + CAC)	Single Family	33.88	1.53	33.88	12.00
35	Hot water turndown 10 degrees	SF LI	32.70	9.28	32.70	5.00
36	Low Flow Showerhead 1.5 Gal/Min	Single Family	32.24	1.18	32.24	5.00
37	Energy Star LCD TV	SF LI	31.16	5.49	31.16	11.00
38	10% better than Energy Star Dehumidifier ROB (35-45 pints/day)	SF LI	30.57	21.79	30.57	1.00
39	Smart Thermostat (HP heat/cool)	Multi-Family	30.42	1.87	30.42	12.00



	M	Building	Technical	Measure	Economic	E
lank	Measure Name	Туре	GWh	TRC	GWh	End Use
40	Freezer (Energy Star)	SF LI	30.11	1.05	30.11	4.00
41	Smart Thermostat (HP heat/cool)	MF LI	28.37	1.87	28.37	12.00
42	Heat pump (18 SEER, 10 HSPF) (eFAF + CAC)	SF LI	26.91	2.41	26.91	12.00
43	Energy Star Laptop PC	Single Family	26.32	4.44	26.32	15.00
44	Crawlspace insulation (eFAF + CAC)	Single Family	25.94	2.26	25.94	12.00
45	2nd Freezer Recycling	Single Family	25.23	3.03	25.23	4.00
46	Door Weatherization (HP heat/cool)	SF LI	24.44	1.51	24.44	12.00
47	Smart Thermostat (eFAF + CAC)	SF LI	24.03	1.53	24.03	12.00
48	Low Flow Showerhead 1.5 Gal/Min	SF LI	22.87	1.18	22.87	5.00
49	LED Tube replacement for fluorescent lamps	Single Family	22.42	1.14	22.42	2.00
50	Heat pump (16 SEER, 9.2 HSPF) (eFAF + room AC)	MH LI	19.91	14.90	19.91	12.00
51	Door Weatherization (CAC)	Single Family	18.72	7.60	18.72	1.00
52	Energy Star Laptop PC	SF LI	18.67	4.44	18.67	15.00
53	Crawlspace insulation (eFAF + CAC)	SF LI	18.40	2.26	18.40	12.00
54	2nd Freezer Recycling	SF LI	17.90	3.03	17.90	4.00
55	Heat pump upgrade to (16 SEER, 9.2 HSPF) (HP heat/cool)	Multi-Family	17.50	2.97	17.50	12.00
56	Heat pump (16 SEER, 9.2 HSPF) (eFAF + CAC)	Mobile Home	16.86	14.96	16.86	12.00
57	Recycling of non-efficient window AC unit (baseboard heat + RAC)	Single Family	16.70	1.37	16.70	12.00
58	Hot water turndown 5 degrees	Single Family	16.68	4.80	16.68	5.00
59	Hot water turndown 15 degrees	Single Family	16.65	13.41	16.65	5.00
60	Heat pump upgrade to (16 SEER, 9.2 HSPF) (HP heat/cool)	MF LI	16.32	2.97	16.32	12.00
61	LED Tube replacement for fluorescent lamps	SF LI	15.90	1.14	15.90	2.00
62	Wall Blow-in R-0 to R-13 Insulation (CAC)	Single Family	15.29	2.59	15.29	1.00
63	Energy Star Desktop PC	Single Family	14.61	7.08	14.61	15.00
64	Energy Star LED TV	Multi-Family	14.28	5.76	14.28	11.00
65	Duct Testing and Sealing (HP heat/cool)	Multi-Family	13.47	1.10	13.47	12.00
66	Energy Star LED TV	MF LI	13.32	5.76	13.32	11.00
67	Door Weatherization (CAC)	SF LI	13.28	7.60	13.28	1.00
68	Exhaust fan, 8.3 CFM/W, <2.0 sones (quiet),ASHRAE 62.2	Multi-Family	13.09	1.36	13.09	15.00
69	Self Install Weatherization (CAC)	Single Family	12.60	3.50	12.60	1.00
70	Heat pump (16 SEER, 9.2 HSPF) (Elec baseboard heat + Central AC)	Single Family	12.59	2.76	12.59	12.00
71	Duct Testing and Sealing (HP heat/cool)	MF LI	12.56	1.10	12.56	12.00
72	Exhaust fan, 8.3 CFM/W, <2.0 sones (quiet),ASHRAE 62.2	MF LI	12.21	1.36	12.21	15.00
73	Recycling of non-efficient window AC unit (baseboard heat + RAC)	SF LI	11.85	1.37	11.85	12.00
74	Hot water turndown 5 degrees	SF LI	11.84	4.80	11.84	5.00
75	Hot water turndown 15 degrees	SF LI	11.81	13.41	11.81	5.00
76	Duct Testing and Sealing (CAC)	Single Family	11.10	2.13	11.10	1.00
77	Wall Blow-in R-0 to R-13 Insulation (CAC) Exterior Door Replacement (HP	SF LI	10.85	2.59	10.85	1.00
78	heat/cool)	Single Family	10.83	6.76	10.83	12.00
79	Smart Thermostat (HP heat/cool)	MH LI	10.40	2.94	10.40	12.00







VA Commercial: All Existing Measures Ranked by Economic Potential (GWh) **Technical** Measure **Economic** Rank **Measure Name Building Type End Use GWh TRC GWh** LED outdoor lighting with bi-level controls 571.02 571.02 3.51 1 Misc **Outdoor Lighting** (Base Outdoor HID) LED outdoor lighting with bi-level controls 2 Agricultural 400.91 3.51 400.91 **Outdoor Lighting** (Base Outdoor HID) Demand Controlled Ventilation, 15 HP 3 Health 326.15 Ventilation 326.15 1.32 LED outdoor lighting with bi-level controls Office 316.49 3.51 316.49 Outdoor Lighting 4 (Base Outdoor HID) 5 Air Handler Optimization, 15 HP Office 278.64 5.50 278.64 Ventilation LED outdoor lighting with bi-level controls Religious Worship 267.91 3.51 267.91 Outdoor Lighting 6 (Base Outdoor HID) 167.03 7 Restaurant 167.03 1.41 Refrigeration Refrigeration Coil Cleaning, walk-ins 8 **Energy Star server** Education 144.48 5.78 144.48 Office Equipment 9 Refrigeration Coil Cleaning, walk-ins Grocery 134.37 1.41 134.37 Refrigeration Variable Speed Drive Control, base 10 Office 131.80 3.79 131.80 Ventilation motors 11 DX Packaged System, EER=13.4, 10 tons Lodging 124.51 4.24 124.51 Cooling 12 Demand Controlled Ventilation, 15 HP Restaurant 124.20 1.01 124.20 Ventilation Energy Recovery Ventilation (ERV) Office 117.03 Ventilation 13 117.03 1.05 LED outdoor lighting with bi-level controls Outdoor Lighting 14 Industrial 115.59 3.51 115.59 (Base Outdoor HID) Smart Thermostat (Base Heat Pump 15 Lodging 106.93 1.26 106.93 Heating Heating) Air Handler Optimization, 15 HP 103.48 3.59 103.48 Ventilation Lodging 16 17 Energy Recovery Ventilation (ERV) Health 101.45 1.66 101.45 Ventilation 18 Compressor VSD retrofit, walk-ins Restaurant 101.24 2.78 101.24 Refrigeration LED screw-in replacement (base 19 Misc 97.96 8.62 97.96 Indoor Lighting incandescent/halogen) 20 Energy Star server Data Centers 90.60 5.73 90.60 Office Equipment Air-Source Heat Pump, SEER 16.0/HSPF 21 9.2 ENERGY STAR, <5.4 tons (base air-Lodging 88.36 2.40 88.36 Heating source heat pump heating) Office 87.11 22 DX Packaged System, EER=13.4, 10 tons 87.11 2.26 Cooling 2.57 86.23 23 High-efficiency fan motors, walk-ins Restaurant 86.23 Refrigeration LED screw-in replacement (base 7.70 24 Religious Worship 82.64 82.64 Indoor Lighting incandescent/halogen) Electronically commutated evaporator fan 25 Restaurant 79.78 2.83 79.78 Refrigeration motor, walk-ins 26 77.93 2.67 77.93 Compressor VSD retrofit, walk-ins Refrigeration Grocery LED screw-in replacement (base Outdoor 27 Misc 77.85 5.74 77.85 Outdoor Lighting Incandescent) 28 Economizer Repair - DX Office 74.47 1.56 74.47 Cooling 29 Air Handler Optimization, 15 HP Retail 74.13 4.54 74.13 Ventilation 2.30 72.01 30 DX Packaged System, EER=13.4, 10 tons Misc 72.01 Cooling 31 Energy Star server Misc 68.10 5.61 68.10 Office Equipment Electronically commutated evaporator fan 67.95 2.82 67.95 32 Grocery Refrigeration motor, walk-ins DX Packaged System, EER=13.4, 10 tons 3.47 67.65 33 Retail 67.65 Cooling Ductless Mini-Split SEER 18.0/HSPF 10.0 34 CEE Tier 1 (Base Residential Split-66.25 1.46 66.25 Coolina Lodging System) 35 Energy Star server Office 63.74 5.73 63.74 Office Equipment 36 DX Packaged System, EER=13.4, 10 tons Education 59.95 1.83 59.95 Cooling 57.02 57.02 37 Oversized Air Cooled Condenser, walk-ins Restaurant 2.25 Refrigeration



VA Com	mercial: All Existing Measures Ran	ked by Economi	c Potential (GWh)		
Rank	Measure Name	Building Type	Technical GWh	Measure TRC	Economic GWh	End Use
38	Compressed Air - End Use Optimization	Industrial	56.07	4.95	56.07	Compressed Air
39	Energy Recovery Ventilation (ERV)	Retail	55.80	1.28	55.80	Ventilation
40	Energy Star hot food holding cabinet	Lodging	54.72	2.39	54.72	Cooking
41	Heat Recovery Unit	Restaurant	54.60	10.53	54.60	DHW
42	DX Packaged System, EER=13.4, 10 tons	Data Centers	52.37	12.31	52.37	Cooling
43	LED screw-in replacement (base Outdoor Incandescent)	Office	51.04	5.74	51.04	Outdoor Lighting
44	Electric Combination Oven	Health	50.89	8.66	50.89	Cooking
45	LED outdoor lighting with bi-level controls (Base Outdoor HID)	Lodging	50.62	3.09	50.62	Outdoor Lighting
46	LED screw-in replacement (base incandescent/halogen)	Retail	49.99	8.28	49.99	Indoor Lighting
47	Air Handler Optimization, 15 HP	Restaurant	49.44	9.32	49.44	Ventilation
48	High Performance Lighting R/R - Combined Strategies (Base LED Tube)	Religious Worship	49.29	1.21	49.29	Indoor Lighting
49	Electric Combination Oven	Lodging	48.61	8.66	48.61	Cooking
50	Economizer Repair - DX	Data Centers	48.34	9.18	48.34	Cooling
51	LED screw-in replacement (base incandescent/halogen)	Lodging	48.09	7.99	48.09	Indoor Lighting
52	High Performance Lighting R/R - Combined Strategies (Base T8)	Religious Worship	48.05	4.19	48.05	Indoor Lighting
53	HE PTAC, EER=9.6, 1 ton, cooling	Lodging	47.15	2.96	47.15	Cooling
54	Oversized Air Cooled Condenser, walk-ins	Grocery	46.70	2.29	46.70	Refrigeration
55	LED outdoor lighting with bi-level controls (Base Outdoor HID)	Retail	45.27	3.51	45.27	Outdoor Lighting
56	RET Occ & Daylight Integral Sensor LED troffer (base T8 integrated)	Health	44.22	1.32	44.22	Indoor Lighting
57	Economizer Repair - DX	Retail	43.47	1.48	43.47	Cooling
58	High-efficiency fan motors, walk-ins	Grocery	43.09	2.81	43.09	Refrigeration
59	RET Occ & Daylight Integral Sensor LED troffer (base T12 integrated)	Religious Worship	42.53	1.07	42.53	Indoor Lighting
60	RET Occ & Daylight Integral Sensor LED troffer (base T8 integrated)	Office	42.37	1.21	42.37	Indoor Lighting
61	Variable Speed Drive Control, base motors	Lodging	42.13	2.78	42.13	Ventilation
62	Duct Testing/Sealing - DX	Lodging	41.66	1.89	41.66	Cooling
63	Electric Combination Oven	Religious Worship	40.94	7.50	40.94	Cooking
64	DX Packaged System, EER=13.4, 10 tons	Warehouse	39.61	4.68	39.61	Cooling
65	Heat Recovery Unit	Lodging	39.04	6.24	39.04	DHW
66	High Bay Bi-Level Programmed LED Fixture	Retail	37.84	5.03	37.84	Indoor Lighting
67	LED screw-in replacement (base incandescent/halogen)	Agricultural	36.61	8.62	36.61	Indoor Lighting
68	Centrifugal Chiller, 0.54 kW/ton, 500 tons	Lodging	36.58	4.32	36.58	Cooling
69	DX Packaged System, EER=13.4, 10 tons	Health	35.23	3.63	35.23	Cooling
70	Heat Pump Upgrade (18 SEER, 8.2 HSPF), cooling	Office	34.78	1.32	34.78	Cooling
71	LED screw-in replacement (base incandescent/halogen)	Office	34.53	8.46	34.53	Indoor Lighting
72	Energy Star hot food holding cabinet	Restaurant	33.27	2.39	33.27	Cooking
73	RET Occ & Daylight Integral Sensor LED troffer (base T12 integrated)	Office	31.77	1.48	31.77	Indoor Lighting
74	Energy Star hot food holding cabinet	Religious Worship	31.37	2.39	31.37	Cooking
75	Energy Recovery Ventilation (ERV)	Restaurant	31.15	1.39	31.15	Ventilation



VA Com	mercial: All Existing Measures Ran	ked by Economi	c Potential (GWh)		
Rank	Measure Name	Building Type	Technical GWh	Measure TRC	Economic GWh	End Use
76	LED outdoor lighting with bi-level controls (Base Outdoor HID)	Health	31.10	3.09	31.10	Outdoor Lighting
77	Heat Recovery Unit	Health	30.84	1.32	30.84	DHW
78	Heat Pump, SEER 16.0/HSPF 9.2 ENERGY	Misc	30.65	4.66	30.65	Heating
79	STAR, <5.4 tons, heating Electric Combination Oven	Restaurant	29.98	8.66	29.98	Cooking
80	Energy Star hot food holding cabinet	Health	29.60	2.39	29.60	Cooking
81	RET Occ & Daylight Integral Sensor LED	Health	29.01	1.63	29.01	Indoor Lighting
	troffer (base T12 integrated)					
82 83	High Bay LED Troffer (Base T5) Industrial process improved operations	Retail Industrial	28.56 27.71	2.84 4.80	28.56 27.71	Indoor Lighting
	RET Occ & Daylight Integral Sensor LED					Motors
84	troffer (base T12 integrated)	Retail	27.36	1.66	27.36	Indoor Lighting
85	LED screw-in replacement (base incandescent/halogen)	Health	26.98	8.09	26.98	Indoor Lighting
86	Compressed Air - Leak Reduction	Industrial	26.06	3.72	26.06	Compressed Air
87	Strip curtains for walk-ins	Grocery	25.56	1.33	25.56	Refrigeration
88	RET Occ & Daylight Integral Sensor LED	Misc	25.50	1.41	25.50	Indoor Lighting
89	troffer (base T8 integrated) Energy Star hot food holding cabinet	Grocery	24.45	2.39	24.45	Cooking
90	Compressed Air - Maintenance	Industrial	23.94	3.36	23.94	Compressed Air
91	Efficient Steamer	Health	22.64	1.37	22.64	Cooking
92	Low Flow Faucet Aerators	Lodging	22.47	6.71	22.47	DHW
93	RET Occ & Daylight Integral Sensor LED troffer (base T12 integrated)	Misc	21.20	1.73	21.20	Indoor Lighting
94	DX Packaged System, EER=13.4, 10 tons	Restaurant	21.10	3.02	21.10	Cooling
95	Window Film (Standard) - DX	Lodging	20.86	1.48	20.86	Cooling
96	Strip curtains for walk-ins	Restaurant	20.66	1.34	20.66	Refrigeration
97	RET Occ & Daylight Integral Sensor LED troffer (base T8 integrated)	Warehouse	20.42	1.27	20.42	Indoor Lighting
98	LED screw-in replacement (base Outdoor Incandescent)	Religious Worship	19.71	5.74	19.71	Outdoor Lighting
99	Efficient industrial process	Industrial	19.70	1.37	19.70	Process
100	Bi-level LED Case Lighting (self-contained	Grocery	19.49	1.30	19.49	Refrigeration
101	units), base closed cases High Performance Lighting R/R - Combined Strategies (Base LED Tube)	Retail	19.22	1.58	19.22	Indoor Lighting
102	Heat Pump Upgrade (18 SEER, 8.2 HSPF), cooling	Lodging	19.16	4.05	19.16	Cooling
103	Efficient industrial process	Industrial	18.66	1.28	18.66	Process
104	Multiplex Compressor System, walk-ins	Grocery	18.60	1.53	18.60	Refrigeration
105	LED outdoor lighting with bi-level controls (Base Outdoor HID)	Warehouse	17.78	3.09	17.78	Outdoor Lighting
106	Energy Recovery Ventilation (ERV)	Misc	17.34	1.15	17.34	Ventilation
107	High Efficiency Windows - DX	Office	17.26	4.37	17.26	Cooling
108	Duct Testing/Sealing - DX	Data Centers	17.17	7.17	17.17	Cooling
109	Low-flow pre-rinse spray valve LED screw-in replacement (base Outdoor	Restaurant	17.09	1.71	17.09	DHW
110	Incandescent)	Health	16.89	5.04	16.89	Outdoor Lighting
111	RET Occ & Daylight Integral Sensor LED troffer (base T8 integrated)	Retail	16.53	1.29	16.53	Indoor Lighting
112	LED screw-in replacement (base CFL)	Misc	16.17	1.17	16.17	Indoor Lighting
113	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
114	Smart Thermostat (base packaged heat pump) LED outdoor lighting with bi-level controls	Lodging	16.04	1.39	16.04	Heating
115	(Base Outdoor HID)	Restaurant	15.92	3.09	15.92	Outdoor Lighting



Rank	Measure Name	Building Type	Technical GWh	Measure TRC	Economic GWh	End Use
116	Energy Star Convection Oven	Education	15.61	3.37	15.61	Cooking
117	High Performance Lighting R/R - Combined Strategies (Base LED Tube)	Health	15.33	2.10	15.33	Indoor Lighting
118	Heat Pump, SEER 16.0/HSPF 9.2 ENERGY STAR, <5.4 tons, heating	Lodging	15.05	30.86	15.05	Heating
119	ROB 2L4' LED Tube (Base T8)	Religious Worship	14.90	3.05	14.90	Indoor Lighting
120	LED Troffer with lamp removal (T8)	Religious Worship	14.89	1.43	14.89	Indoor Lighting
121	Refrigeration Coil Cleaning, base closed cases	Restaurant	14.74	1.17	14.74	Refrigeration
122	LED screw-in replacement (base Outdoor Incandescent)	Retail	14.61	5.74	14.61	Outdoor Lightin
123	Electronically commutated evaporator fan motor, base closed cases	Grocery	14.13	1.46	14.13	Refrigeration
124	LED outdoor lighting with bi-level controls (Base Outdoor HID)	Education	14.10	3.51	14.10	Outdoor Lightin
125	Duct Testing/Sealing - DX	Warehouse	13.98	2.26	13.98	Cooling
126	Efficient Steamer	Restaurant	13.87	1.37	13.87	Cooking
127	Cool Roof - DX High Performance Lighting R/R -	Warehouse	13.84	2.81	13.84	Cooling
128	Combined Strategies (Base T5) High Efficiency Windows (Base Heat	Retail	13.79	2.02	13.79	Indoor Lightin
129	Pump Cooling)	Office	13.75	5.39	13.75	Cooling
130	Cool Roof - DX	Retail	13.73	1.46	13.73	Cooling
131	LED screw-in replacement (base Outdoor Incandescent)	Education	13.73	5.74	13.73	Outdoor Lightin
132	Heat Recovery Unit	Education	13.54	1.92	13.54	DHW
133	Electric Combination Oven	Grocery	12.69	8.66	12.69	Cooking
134	High Performance Lighting R/R - Combined Strategies (Base T12)	Religious Worship	12.68	3.92	12.68	Indoor Lightin
135	High Performance Lighting R/R - Combined Strategies (Base T8)	Lodging	12.20	3.49	12.20	Indoor Lighting
136	High Performance Lighting R/R - Combined Strategies (Base T8)	Health	12.12	5.21	12.12	Indoor Lighting
137	ROB 2L4' LED Tube (Base T5)	Retail	12.05	2.62	12.05	Indoor Lightin
138	High Performance Lighting R/R - Combined Strategies (Base T8)	Office	11.83	1.76	11.83	Indoor Lightin
139	High Performance Lighting R/R - Combined Strategies (Base T8)	Education	11.77	2.29	11.77	Indoor Lighting
140	Window Film (Standard) (Base PTAC)	Lodging	11.74	1.09	11.74	Cooling
141 142	Demand controlled circulating systems Variable Speed Drive Control, base	Lodging Industrial	11.70 11.67	1.82 6.39	11.70 11.67	DHW Ventilation
143	motors Centrifugal Chiller, 0.54 kW/ton, 500 tons	Office	11.65	1.31	11.65	Cooling
144	Optimize Controls - DX	Lodging	11.52	3.91	11.52	Cooling
145	High Efficiency Windows - DX	Misc	11.33	4.48	11.33	Cooling
146	Heat Pump Upgrade (18 SEER, 8.2 HSPF), cooling	Health	10.91	1.45	10.91	Cooling
147	Ductless Mini-Split SEER 18.0/HSPF 10.0 CEE Tier 1 (Base Residential Split- System)	Warehouse	10.87	1.67	10.87	Cooling
148	Heat Pump Upgrade (18 SEER, 8.2 HSPF), cooling	Retail	10.85	1.66	10.85	Cooling
149	Window Film (Standard) - DX	Warehouse	10.83	4.83	10.83	Cooling
150	Energy Star server	Health	10.51	5.56	10.51	Office Equipme
151	DX Packaged System, EER=13.4, 10 tons	Industrial	10.22	1.57	10.22	Cooling
152	RET Occ & Daylight Integral Sensor LED troffer (base T8 integrated)	Industrial	9.69	1.41	9.69	Indoor Lighting
153	Optimize Controls - DX	Office	9.64	1.42	9.64	Cooling



Rank	Measure Name	Building Type	Technical	Measure	Economic	End Use
154	Low-flow pre-rinse spray valve	Education	GWh 9.28	TRC 8.54	GWh 9.28	DHW
	RET Occ & Daylight Integral Sensor LED					
155	troffer (base T12 integrated)	Agricultural	9.19	1.73	9.19	Indoor Lighting
156	High Performance Lighting R/R - Combined Strategies (Base LED Tube)	Lodging	9.06	1.15	9.06	Indoor Lighting
157	High Performance Lighting R/R - Combined Strategies (Base T8)	Misc	9.06	2.95	9.06	Indoor Lighting
158	High Bay Bi-Level Programmed LED Fixture	Health	8.92	5.10	8.92	Indoor Lighting
159	Ductless Mini-Split SEER 18.0/HSPF 10.0	Health	8.85	1.86	8.85	Cooling
160	CEE Tier 1 (Base Room AC) Heat Pump, SEER 16.0/HSPF 9.2 ENERGY	Office	8.83	4.56	8.83	Heating
	STAR, <5.4 tons, heating Bi-level LED Case Lighting (self-contained	Office		4.50		rieating
161	units), open cases	Grocery	8.76	1.08	8.76	Refrigeration
162	High Efficiency Windows - DX	Lodging	8.54	8.18	8.54	Cooling
163	Energy Star solid door reach-in refrigerator/freezer	Grocery	8.53	2.73	8.53	Refrigeration
164	Freezer-Cooler Replacement Gaskets, walk-ins	Restaurant	8.47	1.77	8.47	Refrigeration
165	Energy Star Convection Oven	Health	8.46	3.54	8.46	Cooking
166	LED screw-in replacement (base CFL)	Lodging	8.45	1.09	8.45	Indoor Lightin
167	High Efficiency Windows - Chiller	Office	8.38	2.16	8.38	Cooling
168	Electric Combination Oven	Office	8.32	7.50	8.32	Cooking
169	Heat Pump Upgrade (18 SEER, 8.2 HSPF), cooling	Warehouse	8.29	2.47	8.29	Cooling
170	RET Occ & Daylight Integral Sensor LED troffer (base T12 integrated)	Industrial	8.28	1.73	8.28	Indoor Lighting
171	Oversized Air Cooled Condenser, base closed cases	Grocery	8.23	2.01	8.23	Refrigeration
172	High Performance Lighting R/R - Combined Strategies (Base T12)	Retail	8.18	5.14	8.18	Indoor Lightin
173	Electric Combination Oven	Misc	8.13	7.50	8.13	Cooking
174	Low Flow Faucet Aerators	Retail	8.12	7.04	8.12	DHW
175	Refrigerant Charge Adjustment - DX	Lodging	8.08	1.19	8.08	Cooling
176	DX Packaged System, EER=13.4, 10 tons	Grocery	8.02	3.04	8.02	Cooling
177	High Performance Lighting R/R - Combined Strategies (Base T12)	Office	8.00	1.93	8.00	Indoor Lighting
178	Compressor VSD retrofit, base closed	Restaurant	7.99	1.18	7.99	Refrigeration
179	cases High Efficiency Windows - DX	Retail	7.89	5.23	7.89	Cooling
180	High Performance Lighting R/R -	Warehouse	7.81	3.09	7.81	Indoor Lighting
181	Combined Strategies (Base T8) Variable Speed Drive Control, base	Religious Worship	7.73	2.02	7.73	Ventilation
182	motors High Efficiency Windows - Chiller	Lodging	7.58	3.93	7.58	Cooling
183	Low or Anti-Sweat Door Film, base closed	Grocery	7.52	2.58	7.52	Refrigeration
184	cases ROB 2L4' LED Tube (Base T8)	Office	7.43	4.87	7.43	Indoor Lighting
185	RET Occ & Daylight Integral Sensor LED	Warehouse	7.40	1.63	7.40	Indoor Lighting
186	troffer (base T12 integrated) High Performance Lighting R/R -	Misc	7.32	3.52	7.32	Indoor Lighting
187	Combined Strategies (Base T12) LED Exit Sign	Office	7.32	2.54	7.27	Indoor Lighting
	High Performance Lighting R/R -					
188	Combined Strategies (Base T12) High Performance Lighting R/R -	Lodging	7.23	3.53	7.23	Indoor Lightin
189	Combined Strategies (Base T12)	Health	7.17	5.77	7.17	Indoor Lightin
190	High Bay Bi-Level Programmed LED Fixture	Office	7.17	4.96	7.17	Indoor Lightin





Rank	Measure Name	Building Type	Technical GWh	Measure TRC	Economic GWh	End Use
191	Freezer-Cooler Replacement Gaskets,	Grocery	7.15	2.90	7.15	Refrigeration
192	base closed cases ROB 2L4' LED Tube (base outdoor fluorescent)	Retail	7.05	1.58	7.05	Outdoor Lighting
193	Variable Speed Drive Control, base motors	Misc	6.98	4.18	6.98	Ventilation
194	Freezer-Cooler Replacement Gaskets, walk-ins	Grocery	6.93	1.80	6.93	Refrigeration
195	Electronically commutated evaporator fan motor, base closed cases	Restaurant	6.86	1.31	6.86	Refrigeration
196	Air Handler Optimization, 15 HP	Grocery	6.84	2.72	6.84	Ventilation
197	Heat Pump Water Heater (air source)	Retail	6.77	1.05	6.77	DHW
198	Energy Star Convection Oven	Restaurant	6.76	3.54	6.76	Cooking
199	ROB 2L4' LED Tube (Base T8)	Health	6.76	4.09	6.76	Indoor Lighting
200	LED screw-in replacement (base CFL)	Office	6.75	1.15	6.75	Indoor Lighting
201	High Performance Lighting R/R -	Grocery	6.74	1.22	6.74	Indoor Lighting
202	Combined Strategies (Base LED Tube) High Bay LED Troffer (Base T5)	Health	6.73	2.77	6.73	Indoor Lighting
203	LED screw-in replacement (base	Restaurant	6.67	8.26	6.67	Indoor Lighting
	incandescent/halogen)					
204	ROB 2L4' LED Tube (Base T12)	Office	6.63	7.07	6.63	Indoor Lighting
205	LED Troffer with lamp removal (T8)	Health	6.61	2.67	6.61	Indoor Lighting
206	High Bay Bi-Level Programmed LED Fixture	Warehouse	6.59	5.95	6.59	Indoor Lighting
207	ROB 2L4' LED Tube (Base T8)	Education	6.56	4.65	6.56	Indoor Lighting
208	Low Flow Faucet Aerators	Education	6.51	4.63	6.51	DHW
209	High Performance Lighting R/R - Combined Strategies (Base T8)	Retail	6.47	5.21	6.47	Indoor Lighting
210	High Bay Bi-Level Programmed LED Fixture	Religious Worship	6.46	5.01	6.46	Indoor Lighting
211	High Efficiency Motor	Retail	6.40	1.06	6.40	Ventilation
212	High Efficiency Windows - DX	Health	6.34	5.51	6.34	Cooling
213	High Performance Lighting R/R - Combined Strategies (Base T12)	Education	6.28	2.81	6.28	Indoor Lighting
214	LED screw-in replacement (base incandescent/halogen)	Industrial	6.08	8.62	6.08	Indoor Lighting
215	LED screw-in replacement (base Outdoor Incandescent)	Lodging	6.04	5.04	6.04	Outdoor Lightin
216	LED Troffer with lamp removal (T12)	Religious Worship	5.92	2.02	5.92	Indoor Lighting
217	Energy Star glass door reach-in refrigerator/freezer	Restaurant	5.87	4.16	5.87	Refrigeration
218	Electronically commutated evaporator fan motor, open cases	Grocery	5.83	1.11	5.83	Refrigeration
219	High Efficiency Motor	Industrial	5.82	3.07	5.82	Ventilation
220	LED Troffer with lamp removal (T8)	Lodging	5.79	1.68	5.79	Indoor Lighting
221	Window Film (Standard) (Base Heat Pump Cooling)	Warehouse	5.67	6.72	5.67	Cooling
222	LED Troffer with lamp removal (T8)	Office	5.62	2.17	5.62	Indoor Lighting
223	High Efficiency Windows - DX	Education	5.61	3.86	5.61	Cooling
224	Low Flow Faucet Aerators	Office	5.58	1.87	5.58	DHW
225	Energy Star griddle	Lodging	5.48	2.26	5.48	Cooking
226	ROB 2L4' LED Tube (Base T12)	Religious Worship	5.47	3.97	5.47	Indoor Lighting
227	High Performance Lighting R/R - Combined Strategies (Base T5)	Warehouse	5.28	2.12	5.28	Indoor Lighting
228	High Performance Lighting R/R - Combined Strategies (base high bay HID)	Warehouse	5.25	1.69	5.25	Indoor Lighting
229	ROB 2L4' LED Tube (Base T12)	Health	5.24	5.95	5.24	Indoor Lighting
230	Energy Star griddle	Health	5.23	2.26	5.23	Cooking





			Technical	Measure	Economic	
Rank	Measure Name	Building Type	GWh	TRC	GWh	End Use
231	High Performance Lighting R/R - Combined Strategies (base high bay HID)	Lodging	5.19	5.03	5.19	Indoor Lighting
232	LED Troffer (Base T12)	Religious Worship	5.18	1.33	5.18	Indoor Lighting
233	High Performance Lighting R/R - Combined Strategies (base high bay HID)	Religious Worship	5.15	1.23	5.15	Indoor Lighting
234	High Performance Lighting R/R - Combined Strategies (base high bay HID)	Retail	5.13	7.42	5.13	Indoor Lighting
235	LED Troffer (Base T8)	Health	5.12	1.10	5.12	Indoor Lighting
236	Recirculation Pump Timer Clock - Controls for Central Domestic Hot Water	Lodging	5.06	8.47	5.06	DHW
237	Heat Pump, SEER 16.0/HSPF 9.2 ENERGY STAR, <5.4 tons, heating	Health	4.99	6.58	4.99	Heating
238	Ductless Mini-Split SEER 18.0/HSPF 10.0 CEE Tier 1 (Base Room AC)	Lodging	4.99	3.60	4.99	Cooling
239	LED Exit Sign	Misc	4.97	2.46	4.97	Indoor Lighting
240	LED Troffer (Base T8)	Office	4.91	1.14	4.91	Indoor Lighting
241	HE PTAC, EER=9.6, 1 ton, cooling	Office	4.81	1.15	4.81	Cooling
242	Electric Combination Oven	Education	4.74	7.50	4.74	Cooking
243	Ductless Mini-Split SEER 18.0/HSPF 10.0 CEE Tier 1 (Base Room AC) High Bay Bi-Level Programmed LED	Misc	4.65	1.17	4.65	Cooling
244	Fixture	Warehouse	4.57	5.10	4.57	Indoor Lighting
245	Refrigeration Coil Cleaning, walk-ins	Lodging	4.55	1.69	4.55	Refrigeration
246	Compressed Air - Cold Air Intake	Industrial	4.54	1.29	4.54	Compressed Air
247	Cool Roof - DX	Industrial	4.50	1.12	4.50	Cooling
248	Chiller Tune Up/Diagnostics	Lodging	4.49	1.51	4.49	Cooling
249 250	LED screw-in replacement (base Outdoor Incandescent) ROB 2L4' LED Tube (Base T8)	Restaurant Lodging	4.36 4.35	5.04 2.96	4.36 4.35	Outdoor Lighting Indoor Lighting
251	Energy Star server	Agricultural	4.32	5.61	4.32	Office Equipment
252	Energy Recovery Ventilation (ERV)	Grocery	4.31	1.47	4.31	Ventilation
253	Window Film (Standard) (Base Heat Pump Cooling)	Lodging	4.28	1.14	4.28	Cooling
254	LED screw-in replacement (base Outdoor	Agricultural	4.27	5.74	4.27	Outdoor Lighting
255	Incandescent) DX Tune Up/ Advanced Diagnostics	Lodging	4.20	1.71	4.20	Cooling
256	High Efficiency Motor	Restaurant	4.14	1.05	4.14	Ventilation
257	RET Occ & Daylight Integral Sensor LED troffer (base T12 integrated)	Restaurant	4.12	1.66	4.12	Indoor Lighting
258	LED Troffer with lamp removal (T12)	Health	4.05	3.06	4.05	Indoor Lighting
259	High Efficiency Windows - DX	Religious Worship	4.00	1.86	4.00	Cooling
260	Centrifugal Chiller, 0.54 kW/ton, 500 tons	Misc	3.97	1.18	3.97	Cooling
261	LED Troffer with lamp removal (T12)	Retail	3.89	3.19	3.89	Indoor Lighting
262	High Efficiency Windows (Base Heat Pump Cooling)	Misc	3.87	4.02	3.87	Cooling
263	LED Troffer (Base T12)	Office	3.87	1.46	3.87	Indoor Lighting
264	High Efficiency Windows (Base Heat Pump Cooling)	Retail	3.84	8.05	3.84	Cooling
265	Optimize Controls - DX	Retail	3.81	1.11	3.81	Cooling
266	LED Exit Sign	Lodging	3.81	2.55	3.81	Indoor Lighting
267	Oversized Air Cooled Condenser, base closed cases	Restaurant	3.77	1.59	3.77	Refrigeration
268	LED Troffer with lamp removal (T12)	Office	3.73	2.34	3.73	Indoor Lighting



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Rank	Measure Name	Building Type	Technical GWh	Measure TRC	Economic GWh	End Use
269	EMS Optimization - Chiller	Lodging	3.69	1.71	3.69	Cooling
270	Optimize Controls - DX	Warehouse	3.68	2.48	3.68	Cooling
271	Smart Thermostat (Base Furnace Heating)	Lodging	3.68	3.27	3.68	Heating
272	High Efficiency Windows - DX	Restaurant	3.66	1.82	3.66	Cooling
273	Air-Source Heat Pump, SEER 16.0/HSPF 9.2 ENERGY STAR, <5.4 tons (base air- source heat pump heating)	Restaurant	3.65	1.08	3.65	Heating
274	LED Troffer with lamp removal (T8)	Education	3.65	1.17	3.65	Indoor Lighting
275	Refrigeration Coil Cleaning, base large cold storage	Restaurant	3.59	2.05	3.59	Refrigeration
276	High Performance Lighting R/R - Combined Strategies (Base T5)	Religious Worship	3.56	1.55	3.56	Indoor Lighting
277	Energy Star server	Religious Worship	3.56	5.61	3.56	Office Equipmer
278	LED Troffer (Base T12)	Health	3.53	1.42	3.53	Indoor Lighting
279	ROB 2L4' LED Tube (Base T12)	Retail	3.53	4.35	3.53	Indoor Lighting
280	High Efficiency Windows (Base Heat Pump Cooling)	Health	3.46	4.94	3.46	Cooling
281	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
282	LED Exit Sign	Religious Worship	3.41	2.46	3.41	Indoor Lighting
283	LED Troffer with lamp removal (T12)	Lodging	3.37	1.67	3.37	Indoor Lighting
284	LED Troffer (Base T12)	Retail	3.33	1.46	3.33	Indoor Lighting
285	LED screw-in replacement (base CFL)	Religious Worship	3.33	1.05	3.33	Indoor Lighting
286	Refrigeration Coil Cleaning, base closed cases	Religious Worship	3.31	1.25	3.31	Refrigeration
287	Energy Star or Better PC	Lodging	3.29	1.01	3.29	Office Equipmer
288	Ductless Mini-Split SEER 18.0/HSPF 10.0 CEE Tier 1 (Base Room AC)	Grocery	3.29	1.67	3.29	Cooling
289	High Performance Lighting R/R - Combined Strategies (base low bay HID)	Data Centers	3.27	6.82	3.27	Indoor Lighting
290	High Performance Lighting R/R - Combined Strategies (Base T5)	Health	3.25	2.33	3.25	Indoor Lighting
291	Efficient Steamer	Lodging	3.24	1.37	3.24	Cooking
292	Electric Combination Oven	Retail	3.23	7.50	3.23	Cooking
293	Electronically commutated evaporator fan motor, base closed cases	Religious Worship	3.18	1.33	3.18	Refrigeration
294	Low or Anti-Sweat Door Film, base closed cases	Restaurant	3.18	1.89	3.18	Refrigeration
295	High Performance Lighting R/R - Combined Strategies (base high bay HID)	Misc	3.13	1.39	3.13	Indoor Lighting
296	ROB 2L4' LED Tube (Base T12)	Lodging	3.12	3.62	3.12	Indoor Lighting
297	High Performance Lighting R/R - Combined Strategies (Base T8)	Industrial	3.11	2.66	3.11	Indoor Lighting
298	Heat Pump, SEER 16.0/HSPF 9.2 ENERGY STAR, <5.4 tons, heating	Restaurant	3.11	16.25	3.11	Heating
299	High Bay Bi-Level Programmed LED Fixture	Religious Worship	3.09	4.30	3.09	Indoor Lighting
300	High Efficiency Windows (Base Heat Pump Cooling)	Lodging	3.08	11.07	3.08	Cooling
301	RET Occ & Daylight Integral Sensor LED troffer (base T8 integrated)	Restaurant	3.08	1.37	3.08	Indoor Lighting
302	Efficient Steamer	Retail	3.03	1.29	3.03	Cooking
303	LED Troffer (Base T12)	Lodging	2.97	1.23	2.97	Indoor Lighting
304	LED Troffer (Base T8)	Misc	2.96	1.17	2.96	Indoor Lighting
305	High Efficiency Windows (Base Heat	Religious Worship	2.95	1.67	2.95	Cooling





Rank	Measure Name	Building Type	Technical	Measure	Economic	End Use
Kalik		building Type	GWh	TRC	GWh	Liid Ose
306	Ceiling/roof Insulation (base air-source heat pump heating)	Lodging	2.93	1.53	2.93	Heating
307	Heat Pump Upgrade (18 SEER, 8.2 HSPF), cooling	Restaurant	2.93	1.38	2.93	Cooling
308	Cool Roof - DX	Grocery	2.93	1.14	2.93	Cooling
309	Oversized Air Cooled Condenser, open cases	Grocery	2.90	1.31	2.90	Refrigeration
310	HE PTAC, EER=9.6, 1 ton, cooling	Health	2.90	1.57	2.90	Cooling
311	ROB 2L4' LED Tube (Base T8)	Misc	2.87	3.21	2.87	Indoor Lighting
312	High Bay Bi-Level Programmed LED Fixture	Lodging	2.85	2.99	2.85	Indoor Lighting
313	Heat Recovery Unit	Retail	2.84	1.48	2.84	DHW
314	ROB 2L4' LED Tube (Base T5)	Health	2.84	2.56	2.84	Indoor Lighting
315	Cool Roof - DX	Data Centers	2.82	10.33	2.82	Cooling
316	High Bay Bi-Level Programmed LED	Retail	2.82	3.73	2.82	Indoor Lighting
317	Fixture Energy Star server	Restaurant	2.82	5.48	2.82	Office Equipment
318	LED screw-in replacement (base CFL)	Retail	2.81	1.13	2.81	Indoor Lighting
319	Freezer-Cooler Replacement Gaskets,	Restaurant	2.81	1.97	2.81	
	base closed cases					Refrigeration
320	LED Troffer with lamp removal (T8)	Misc	2.81	2.09	2.81	Indoor Lighting
321	High Performance Lighting R/R - Combined Strategies (Base T12)	Agricultural	2.80	3.11	2.80	Indoor Lighting
322	Refrigeration Coil Cleaning, base closed cases	Lodging	2.79	1.01	2.79	Refrigeration
323	ROB 2L4' LED Tube (Base T12)	Misc	2.79	4.61	2.79	Indoor Lighting
324	Heat Pump, SEER 16.0/HSPF 9.2 ENERGY STAR, <5.4 tons, heating	Warehouse	2.78	5.50	2.78	Heating
325	Energy Star solid door reach-in refrigerator/freezer	Religious Worship	2.77	2.73	2.77	Refrigeration
326	Efficient Steamer	Grocery	2.67	1.37	2.67	Cooking
327	Energy Star server	Warehouse	2.63	5.47	2.63	Office Equipment
328	Efficient industrial process	Industrial	2.59	5.05	2.59	Process
329	Refrigeration Coil Cleaning, base large cold storage	Grocery	2.58	2.03	2.58	Refrigeration
330	LED Troffer (Base T12)	Misc	2.58	1.52	2.58	Indoor Lighting
331	Bi-level LED Case Lighting (self-contained units), base closed cases	Restaurant	2.57	1.41	2.57	Refrigeration
332	Window Film (Standard) (Base Residential Split-System)	Retail	2.57	1.62	2.57	Cooling
333	Heat Pump, SEER 16.0/HSPF 9.2 ENERGY	Retail	2.57	9.17	2.57	Heating
334	STAR, <5.4 tons, heating Energy Star glass door reach-in refrigerator/freezer	Lodging	2.54	4.06	2.54	Refrigeration
335	High Performance Lighting R/R - Combined Strategies (Base T12)	Industrial	2.52	3.11	2.52	Indoor Lighting
336	Lighting Control Tuneup (Base T8)	Religious Worship	2.50	1.14	2.50	Indoor Lighting
337	ROB 2L4' LED Tube (Base T8)	Warehouse	2.48	3.12	2.48	Indoor Lighting
338	Energy Star hot food holding cabinet	Education	2.47	2.39	2.47	Cooking
339	Optimize Controls - DX	Health	2.46	1.20	2.46	Cooling
340	LED screw-in replacement (base Outdoor Incandescent)	Industrial	2.45	5.74	2.45	Outdoor Lighting
341	Energy Star Convection Oven	Lodging	2.43	3.54	2.43	Cooking
342	LED Troffer with lamp removal (T8)	Warehouse	2.42	2.04	2.42	Indoor Lighting
343	ROB 2L4' LED Tube (base outdoor fluorescent)	Office	2.40	1.58	2.40	Outdoor Lighting
344	Energy Star hot food holding cabinet	Retail	2.40	2.39	2.40	Cooking



386

387

388

Incandescent)
LED Troffer with lamp removal (T8)

Refrigeration Coil Cleaning, base closed

cases

VA Commercial: All Existing Measures Ranked by Economic Potential (GWh) **Technical** Measure **Economic** Rank Measure Name **Building Type End Use GWh** TRC **GWh** 346 ROB 2L4' LED Tube (Base T12) Education 2.39 3.90 2.39 Indoor Lighting 347 Energy Star hot food holding cabinet Misc 2.38 2.39 2.38 Cooking Energy Star glass door reach-in 348 Retail 2.38 4.07 2.38 Refrigeration refrigerator/freezer DHW 349 2.37 1.41 2.37 Tankless Water Heater Lodging 1.02 Office Equipment 350 Energy Star or Better PC Retail 2.34 2.34 351 ROB 2L4' LED Tube (Base T8) Retail 2.31 3.64 2.31 Indoor Lighting 352 2.23 1.31 2.23 DHW Solar Water Heater Lodging Bi-level LED Case Lighting, base glass-353 1.32 2.22 Restaurant 2.22 Refrigeration door reach-in 354 Floating head pressure controls, walk-ins 1.17 2.21 Refrigeration Grocery 2.21 ROB 2L4' LED Tube (Base T5) 355 Office 2 21 5 11 2 21 Indoor Lighting 356 LED Troffer (Base T12) Education 2.21 1.28 2.21 Indoor Lighting 357 Lodging 2.20 1.96 2.20 DHW High Efficiency Water Heater (electric) 358 High Efficiency Motor Health 2.19 1.19 2.19 Motors 359 High Bay LED Troffer (Base T5) Office 2.18 2.30 2.18 Indoor Lighting 6.22 2.17 360 Efficient compressor motor, walk-ins Grocery 2.17 Refrigeration 361 LED Troffer with lamp removal (T12) Misc 2.15 2.37 2.15 Indoor Lighting High Performance Lighting R/R -362 Warehouse 2.11 2.94 2.11 Indoor Lighting Combined Strategies (Base T12) 363 2 09 5.61 2 09 Energy Star server Industrial Office Equipment 364 Energy Star server Lodging 2.07 6.43 2.07 Office Equipment 2.06 365 Efficient Steamer Education 2.06 1.34 Cooking Ductless Mini-Split SEER 18.0/HSPF 10.0 Warehouse 366 2.02 4.12 2.02 Cooling CEE Tier 1 (Base Room AC) High Bay Bi-Level Programmed LED 367 Education 2.01 4.21 2.01 Indoor Lighting Fixture Compressor VSD retrofit, base large cold 368 Restaurant 2.00 2.78 2.00 Refrigeration storage 2.40 369 Compressor VSD retrofit, walk-ins Lodging 1.99 1.99 Refrigeration 370 Low-flow pre-rinse spray valve Health 1.98 2.93 1.98 DHW High Bay Bi-Level Programmed LED 371 Office 5.78 1.95 Indoor Lighting 1.95 372 **Data Centers** 1.13 1.95 Duct/Pipe Insulation - DX 1.95 Cooling High Performance Lighting R/R -373 Misc 1.91 1.20 1.91 Indoor Lighting Combined Strategies (Base T5) 374 Retail 1.89 6.50 1.89 Office Equipment Energy Star server Low Flow Faucet Aerators 375 Agricultural 1.89 1.32 1.89 DHW LED screw-in replacement (base Outdoor 376 **Data Centers** 1.89 5.74 1.89 Outdoor Lighting Incandescent) 377 Ceiling/roof Insulation - DX Lodging 1.88 1.79 1.88 Cooling Bi-level LED Case Lighting, base glass-378 Lodging 1.86 1.29 1.86 Refrigeration door reach-in 379 Low Flow Faucet Aerators Restaurant 1 85 2.50 1 85 DHW 380 Solar Water Heater Office 1.85 2.15 1.85 DHW 381 Education 1.36 1.84 Indoor Lighting LED Troffer with lamp removal (T12) 1.84 DHW 382 Low-flow pre-rinse spray valve Misc 1.81 1.02 1.81 383 Optimize Controls - DX Data Centers 1.80 9.63 1.80 Cooling 384 1.79 Retail 2.13 Indoor Lighting LED Exit Sign 1.79 385 **Energy Star Convection Oven** Grocery 1.77 3.54 1.77 Cooking LED screw-in replacement (base Outdoor

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1.77

1.75

1.74

5.04

1.84

1.25

1.77

1.75

1.74

Outdoor Lighting

Indoor Lighting

Refrigeration

Warehouse

Retail

Retail



VA Com	mercial: All Existing Measures Ran	ked by Economi	c Potential (GWh)		
Rank	Measure Name	Building Type	Technical GWh	Measure TRC	Economic GWh	End Use
389	High Bay Bi-Level Programmed LED Fixture	Misc	1.72	3.88	1.72	Indoor Lighting
390	Bi-level LED Case Lighting, base glass- door reach-in	Retail	1.71	1.29	1.71	Refrigeration
391	Centrifugal Chiller, 0.54 kW/ton, 500 tons	Education	1.71	1.48	1.71	Cooling
392	VSD for Chiller Pumps and Towers	Lodging	1.70	2.04	1.70	Cooling
393	High-efficiency fan motors, walk-ins	Lodging	1.70	2.22	1.70	Refrigeration
394	Energy Star Convection Oven	Retail	1.69	3.37	1.69	Cooking
395	High Bay Bi-Level Programmed LED Fixture	Misc	1.65	5.23	1.65	Indoor Lighting
396	High Efficiency Windows - Chiller	Misc	1.65	1.42	1.65	Cooling
397	Electronically commutated evaporator fan motor, base large cold storage	Restaurant	1.65	2.96	1.65	Refrigeration
398	Energy Star griddle	Restaurant	1.64	2.26	1.64	Cooking
399	LED Exit Sign	Education	1.63	2.16	1.63	Indoor Lighting
400	Ductless Mini-Split SEER 18.0/HSPF 10.0 CEE Tier 1 (Base Room AC)	Retail	1.61	1.78	1.61	Cooling
401	High Bay Bi-Level Programmed LED	Lodging	1.59	4.02	1.59	Indoor Lighting
402	Fixture LED Exit Sign	Restaurant	1.56	2.04	1.56	Indoor Lighting
403	High Performance Lighting R/R - Combined Strategies (base high bay HID)	Office	1.56	1.96	1.56	Indoor Lighting
404	Refrigeration Coil Cleaning, base closed cases	Education	1.55	1.25	1.55	Refrigeration
405	High Performance Lighting R/R - Combined Strategies (Base LED Tube)	Restaurant	1.54	1.18	1.54	Indoor Lighting
406	Lighting Control Tuneup (Base T8)	Lodging	1.53	1.68	1.53	Indoor Lighting
407	LED Exit Sign	Agricultural	1.52	2.46	1.52	Indoor Lighting
408	High Bay LED Troffer (Base T5)	Education	1.52	2.50	1.52	Indoor Lighting
409	RET Occ & Daylight Integral Sensor LED troffer (base T12 integrated)	Grocery	1.51	2.44	1.51	Indoor Lighting
410	Energy Star griddle	Religious Worship	1.50	2.26	1.50	Cooking
411	LED Troffer with lamp removal (T8)	Industrial	1.48	2.89	1.48	Indoor Lighting
412	Hot Water Pipe Insulation	Retail	1.46	1.83	1.46	DHW
413	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
414	Compressor VSD retrofit, base large cold storage	Grocery	1.44	2.76	1.44	Refrigeration
415	Bi-level LED Case Lighting (self-contained units), base closed cases	Religious Worship	1.43	1.23	1.43	Refrigeration
416	Ductless Mini-Split SEER 18.0/HSPF 10.0 CEE Tier 1 (Base Residential Split- System)	Data Centers	1.42	3.23	1.42	Cooling
417	Optimize Controls - DX	Restaurant	1.40	1.14	1.40	Cooling
418	Refrigeration Coil Cleaning, walk-ins	Warehouse	1.38	1.69	1.38	Refrigeration
419	High Bay Bi-Level Programmed LED Fixture	Industrial	1.37	6.10	1.37	Indoor Lighting
420	High Performance Lighting R/R - Combined Strategies (Base T5)	Agricultural	1.36	1.20	1.36	Indoor Lighting
421	Freezer-Cooler Replacement Gaskets, base glass-door reach-in	Restaurant	1.36	1.03	1.36	Refrigeration
422	Refrigeration Coil Cleaning, base ice maker	Lodging	1.34	2.46	1.34	Refrigeration
423	Energy Star server	Grocery	1.34	5.50	1.34	Office Equipment
424	Recirculation Pump Timer Clock - Controls for Central Domestic Hot Water	Education	1.33	1.65	1.33	DHW
425	LED Troffer with lamp removal (T12)	Agricultural	1.31	3.32	1.31	Indoor Lighting



VA Com	mercial: All Existing Measures Ran	ked by Economi	c Potential (GWh)		
Rank	Measure Name	Building Type	Technical GWh	Measure TRC	Economic GWh	End Use
426	ROB 2L4' LED Tube (base outdoor fluorescent)	Lodging	1.31	1.42	1.31	Outdoor Lighting
427	Ceiling/roof Insulation - Chiller	Lodging	1.30	1.02	1.30	Cooling
428	Energy Star solid door reach-in	Restaurant	1.30	2.73	1.30	Refrigeration
429	refrigerator/freezer High Efficiency Windows (Base Ductless Mini-split)	Lodging	1.28	5.72	1.28	Cooling
430	Electronically commutated evaporator fan motor, base large cold storage	Grocery	1.26	2.93	1.26	Refrigeration
431	High Performance Lighting R/R - Combined Strategies (Base T12)	Restaurant	1.24	3.86	1.24	Indoor Lighting
432	High Efficiency Windows (Base Heat Pump Cooling)	Restaurant	1.23	2.12	1.23	Cooling
433	High Performance Lighting R/R - Combined Strategies (Base T5)	Education	1.22	1.45	1.22	Indoor Lighting
434	Hot Water Pipe Insulation	Education	1.22	1.06	1.22	DHW
435	ROB 2L4' LED Tube (Base T12)	Agricultural	1.21	4.61	1.21	Indoor Lighting
436	High Bay LED Troffer (Base T5) High Bay Bi-Level Programmed LED	Lodging	1.20	2.50	1.20	Indoor Lighting
437	Fixture	Agricultural	1.18	5.23	1.18	Indoor Lighting
438	LED Troffer with lamp removal (T12)	Industrial	1.18	3.32	1.18	Indoor Lighting
439	Bi-level LED Case Lighting (self-contained units), base closed cases	Education	1.17	1.37	1.17	Refrigeration
440	Electronically commutated evaporator fan motor, walk-ins	Lodging	1.15	2.91	1.15	Refrigeration
441	Ceiling/roof Insulation (Base PTAC)	Lodging	1.14	1.42	1.14	Cooling
442	Ceiling/roof Insulation (Base Residential Split-System)	Lodging	1.13	1.67	1.13	Cooling
443	LED Troffer (Base T8)	Industrial	1.12	1.17	1.12	Indoor Lighting
444	Oversized Air Cooled Condenser, walk-ins	Lodging	1.12	1.94	1.12	Refrigeration
445	LED Troffer (Base T12)	Agricultural	1.12	1.52	1.12	Indoor Lighting
446	Bi-level LED Case Lighting (self-contained units), base closed cases	Lodging	1.11	1.44	1.11	Refrigeration
447	ROB 2L4' LED Tube (Base T8)	Industrial	1.11	3.26	1.11	Indoor Lighting
448	Lighting Control Tuneup (Base T8)	Health	1.10	2.85	1.10	Indoor Lighting
449	Lighting Control Tuneup (Base T12)	Religious Worship	1.09	1.75	1.09	Indoor Lighting
450	ROB 2L4' LED Tube (Base T12)	Industrial	1.09	4.61	1.09	Indoor Lighting
451	ROB 2L4' LED Tube (base outdoor fluorescent)	Misc	1.08	1.58	1.08	Outdoor Lighting
452	Heat Pump, SEER 16.0/HSPF 9.2 ENERGY STAR, <5.4 tons, heating Electronically commutated evaporator fan	Religious Worship	1.07	1.34	1.07	Heating
453	motor, base closed cases Oversized Air Cooled Condenser, base	Lodging	1.07	1.51	1.07	Refrigeration
454	closed cases RET Occ & Daylight Integral Sensor LED	Lodging	1.04	2.02	1.04	Refrigeration
455	troffer (base T8 integrated)	Grocery	1.04	1.98	1.04	Indoor Lighting
456	High Efficiency Windows - Chiller Heat Pump, SEER 16.0/HSPF 9.2 ENERGY	Religious Worship	1.03	1.03	1.03	Cooling
457	STAR, <5.4 tons, heating	Industrial	1.02	4.66	1.02	Heating
458	LED Troffer (Base T12)	Industrial	1.01	1.52	1.01	Indoor Lighting
459	High Efficiency Windows - Chiller	Health	1.00	2.15	1.00	Cooling
460	Electronically commutated evaporator fan motor, base closed cases	Retail	0.99	1.18	0.99	Refrigeration
461	High Efficiency Windows (Base Ductless Mini-split)	Office	0.98	3.19	0.98	Cooling
462	LED Troffer with lamp removal (T12)	Warehouse	0.98	2.91	0.98	Indoor Lighting
463	High Performance Lighting R/R - Combined Strategies (Base T8)	Restaurant	0.98	3.37	0.98	Indoor Lighting



Heat Pump, SEER 16.0/HSPF 92 ENERGY Strak, C.54 Inos, heating Refrigeration Coil Cleaning, walk-ins Misc 0.98 1.40 0.98 Refrigeration Coil Cleaning, walk-ins Misc 0.97 2.28 0.97 Indoor Indoor Indoor Refrigeration Misc 0.97 2.28 0.97 Indoor Indoor Indoor Refrigeration Misc 0.96 1.46 0.96 Refrigeration Coil Cleaning, walk-ins Lodging 0.95 2.59 0.95 Refrigeration Coil Cleaning 0.95 2.59 0.95 Refrigeration Coil Cleaning 0.95 2.59 0.95 Refrigeration Coil Cleaning 0.95 2.26 0.93 Cool Cleaning 0.95 0.92 0.95 Refrigeration Coil Cleaning 0.95 0.92 0.95 Refrigeration Coil Cleaning 0.95 0.92 0.95 0.95 Refrigeration Cleaning 0.95 0.92 0.95 Refrigeration Cleaning 0.95 0.92 0.95	Use	End Us	Economic GWh	Measure TRC	Technical GWh	Building Type	Measure Name	Rank
STAK, S-3-tons, neating STAK, S-3-tons,	ating	Heatin				Grocery	* *	464
Refrigerant Charge Adjustment - DX	eration	Refrigera	0.98	1 40	0.98	Misc		465
High Performance Lighting R/R - Combined Stratepies (Base T5) High-efficiency fan motors, base large cold storage Low or Anti-Sweat Door Film, base closed cases Lodging 0.95 2.59 0.95 Refrige cold storage Low or Anti-Sweat Door Film, base closed cases Low or Anti-Sweat Please		Cooling						
Combined Strategies (Base 15)	-							
Low or Anti-Sweat Door Film, base closed cases Lodging 0.95 2.59 0.95 Description	,	_				5 5	_ ` ` ,	
Low Flow Faucet Aerators		Refrigera					Low or Anti-Sweat Door Film, base closed	
Energy Star griddle	Н\Λ/	DHW	0.95	1 32	0.05	Industrial		470
Tankless Water Heater								
Tankless Water Heater Restaurant 0.92 1.80 0.92 DF	_	DHW					<i>5,</i> 5	
ROB 2L4* LED Tube (Base T12)		DHW						
Freezer-Cooler Replacement Gaskets, base closed cases Dodging								
No.91	-	_						
High Efficiency Water Heater (electric) Restaurant 0.90 3.61 0.90 Refrige Restaurant 0.90 3.61 0.90 Refrige Restaurant 0.88 2.57 0.88 Discription Disc	eration	Refrigera	0.91	2.91	0.91	Lodging		475
### Energy Star solid door reach-in refrigerator/freezer Energy Star solid door reach-in refrigerator (Base T12)	eration	Refrigera	0.90	3.61	0.90	Restaurant	,	476
Ferringerator/freezer Energy Star solid door reach-in refrigerator/freezer Energy Star solid door reach-in refrigerator/freezer Education 0.86 2.73 0.86 Refrigerator/freezer Education 0.86 1.36 0.86 Indoor I	HW	DHW	0.88	2.57	0.88	Restaurant		477
Page	eratior	Refrigera	0.87	2.73	0.87	Retail	refrigerator/freezer	478
Lighting Control Tuneup (Base T12)		Refrigera					refrigerator/freezer	
High Efficiency Water Heater (electric) Education 0.84 1.63 0.84 Discrepancy LED Exit Sign Industrial 0.84 2.46 0.84 Indoor I							` '	
LED Exit Sign Industrial 0.84 2.46 0.84 Indoor 1 1 1 1 1 1 1 1 1	-	_					, , ,	
LED screw-in replacement (base CFL) Health 0.83 1.10 0.83 Indoor In		DHW					, , , , , , , , , , , , , , , , , , , ,	
High Bay Bi-Level Programmed LED Fixture Grocery 0.82 5.42 0.82 Indoor I	_	_					_	
Histure (base Low bay HID) Electronically commutated evaporator fan motor, walk-ins Energy Star griddle ELD screw-in replacement (base incandescent/halogen) Refrigeration Coil Cleaning, base ice maker High Performance Lighting R/R - Combined Strategies (base high bay HID) Querisized Air Cooled Condenser, base closed cases Refrigeration Commissioning, base large cold storage ROB 2L4' LED Tube (base outdoor fluorescent) LED Exit Sign LED screw-in replacement (base incandescent/halogen) Religious Worship Restaurant Restauran	•	Indoor Ligi					High Bay Bi-Level Programmed LED	
Electronically commutated evaporator fan motor, walk-ins	Lightin	Indoor Lie	0.81	2 12	0.81	Data Centers		186
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High Performance Lighting R/R - Combined Strategies (base high bay HID) 492 Optimize Controls - DX Grocery 0.75 1.33 0.75 Coo 493 Oversized Air Cooled Condenser, base closed cases 494 Refrigeration Commissioning, base large cold storage ROB 2L4' LED Tube (base outdoor fluorescent) 495 ROB 2L4' LED Tube (base outdoor fluorescent) 496 LED Exit Sign Health 0.71 3.39 0.71 Indoor Indo	-					·	incandescent/halogen)	
Combined Strategies (base high bay HID) 492 Optimize Controls - DX 493 Oversized Air Cooled Condenser, base closed cases 494 Refrigeration Commissioning, base large cold storage 495 ROB 2L4' LED Tube (base outdoor fluorescent) 496 LED Exit Sign 497 Lighting Control Tuneup (Base T8) 498 Lighting Control Tuneup (Base LED Tube) 499 Tankless Water Heater 490 High Efficiency Windows (Base Ductless Mini-split) 500 Variable Speed Drive Control, base motors Application Combined Strategies (base high bay HID) 490 Grocery 60.75 60.	eration	Remgera	0.77	2.40	0.77	Religious Worship	maker	490
493Oversized Air Cooled Condenser, base closed cases Refrigeration Commissioning, base large cold storage ROB 2L4' LED Tube (base outdoor fluorescent)Religious Worship0.741.500.74Refrigeration Commissioning, base large cold storage Restaurant495ROB 2L4' LED Tube (base outdoor fluorescent)Restaurant0.721.420.72Outdoor496LED Exit SignHealth0.713.390.71Indoor landoor lando	Lightin	Indoor Ligi	0.76	8.53	0.76	Health	3 3 .	491
closed cases Refrigeration Commissioning, base large cold storage ROB 2L4' LED Tube (base outdoor fluorescent) Restaurant Restaurant Refrigeration Commissioning, base large cold storage ROB 2L4' LED Tube (base outdoor fluorescent) Restaurant Restaurant Refrigeration Commissioning, base large cold storage ROB 2L4' LED Tube (base outdoor fluorescent) Restaurant Refrigeration Control Tube (base outdoor fluorescent) Resta	oling	Cooling	0.75	1.33	0.75	Grocery	Optimize Controls - DX	492
Refrigeration Commissioning, base large cold storage ROB 2L4' LED Tube (base outdoor fluorescent) Restaurant Refrigeration Commissioning, base large cold storage ROB 2L4' LED Tube (base outdoor fluorescent) Restaurant Restaurant Refrigeration Commissioning, base large cold storage ROB 2L4' LED Tube (base outdoor Restaurant Restaurant Refrigeration Commissioning, base large cold storage ROB 2L4' LED Tube (base outdoor Restaurant Restaura	jeratior	Refrigera	0.74	1.50	0.74	Religious Worship	*	493
495 fluorescent) Restaurant 0.72 1.42 0.72 Outdoor 496 LED Exit Sign Health 0.71 3.39 0.71 Indoor Indoo	eratior	Refrigera	0.73	2.12	0.73	Restaurant	Refrigeration Commissioning, base large	494
497 Lighting Control Tuneup (Base T8) Warehouse 0.69 1.31 0.69 Indoor II 498 Lighting Control Tuneup (Base LED Tube) Health 0.68 1.59 0.68 Indoor II 499 Tankless Water Heater Retail 0.67 2.55 0.67 DH 500 High Efficiency Windows (Base Ductless Misc 0.67 2.08 0.67 Coo 501 Variable Speed Drive Control, base motors Data Centers 0.66 8.75 0.66 Ventil	r Lighti	Outdoor Lig	0.72	1.42	0.72	Restaurant	`	495
498 Lighting Control Tuneup (Base LED Tube) Health 0.68 1.59 0.68 Indoor leading to the second secon	Lightin	Indoor Ligl	0.71	3.39	0.71	Health	LED Exit Sign	496
499 Tankless Water Heater Retail 0.67 2.55 0.67 DH 500 High Efficiency Windows (Base Ductless Misc 0.67 2.08 0.67 Coo Mini-split) Variable Speed Drive Control, base motors Data Centers 0.66 8.75 0.66 Ventile	Lightin	Indoor Ligl	0.69	1.31	0.69	Warehouse	Lighting Control Tuneup (Base T8)	497
High Efficiency Windows (Base Ductless Misc 0.67 2.08 0.67 Coo Mini-split) Variable Speed Drive Control, base motors Data Centers 0.66 8.75 0.66 Ventile	Lightin	Indoor Ligl	0.68	1.59	0.68	Health	Lighting Control Tuneup (Base LED Tube)	498
Mini-split) Mini-split) Misc 0.67 2.08 0.67 Coo Variable Speed Drive Control, base motors Data Centers 0.66 8.75 0.66 Ventil	HW	DHW	0.67	2.55	0.67	Retail	Tankless Water Heater	499
motors Data Centers 0.66 6.75 0.66 Vental	oling	Cooling	0.67	2.08	0.67	Misc	Mini-split)	500
	ilation	Ventilati	0.66	8.75	0.66	Data Centers		501
Oversized Air Cooled Condenser, base Grocery 0.65 3.57 0.65 Refrige		Refrigera					motors Oversized Air Cooled Condenser, base	



VA Commercial: All Existing Measures Ranked by Economic Potential (GWh) **Technical** Measure **Economic** Rank **Measure Name Building Type End Use GWh** TRC **GWh** 503 Lighting Control Tuneup (Base T12) Health 0.64 3.11 0.64 Indoor Lighting 504 High Efficiency Windows - DX Warehouse 0.63 2.12 0.63 Cooling Low or Anti-Sweat Door Film, base closed 505 Religious Worship 0.63 1.77 0.63 Refrigeration cases 506 LED screw-in replacement (base CFL) 1.17 0.63 Indoor Lighting Agricultural 0.63 507 High Efficiency Water Heater (electric) Retail 0.62 3.60 0.62 DHW High Performance Lighting R/R -508 Agricultural 1.39 0.62 Indoor Lighting 0.62 Combined Strategies (base high bay HID) 509 High Bay LED Troffer (Base T5) Grocery 0.62 2.93 0.62 Indoor Lighting HE PTAC, EER=9.6, 1 ton, cooling 510 Retail 0.61 1.51 0.61 Cooling Ductless Mini-Split SEER 18.0/HSPF 10.0 511 Office 0.61 1.35 0.61 Coolina CEE Tier 1 (Base Room AC) 512 0.61 1.36 0.61 Heating Duct/Pipe Insulation (base furnace) Lodging 513 Refrigeration Coil Cleaning, walk-ins Agricultural 0.61 1.71 0.61 Refrigeration High Bay Bi-Level Programmed LED 514 Grocery 0.60 6.31 0.60 Indoor Lighting Fixture Freezer-Cooler Replacement Gaskets, 515 Lodging 0.60 1.03 0.60 Refrigeration base glass-door reach-in Electronically commutated evaporator fan 516 Restaurant 0.60 1.27 0.60 Refrigeration motor, open cases 517 Lighting Control Tuneup (Base T5) Retail 0.59 2.93 0.59 Indoor Lighting 518 Misc 0.59 2.76 0.59 Refrigeration Compressor VSD retrofit, walk-ins 519 Restaurant 3.15 0.58 LED Troffer with lamp removal (T12) 0.58 Indoor Lighting Energy Star solid door reach-in 520 2 73 0.57 Health 0.57 Refrigeration refrigerator/freezer 521 High Efficiency Motor Grocery 0.57 1.11 0.57 Ventilation Heat Pump Upgrade (18 SEER, 8.2 522 0.57 1.33 0.57 Grocery Cooling HSPF), cooling Freezer-Cooler Replacement Gaskets, 523 Retail 0.56 1.03 0.56 Refrigeration base glass-door reach-in 0.56 524 Lighting Control Tuneup (Base T8) Misc 0.56 1.24 Indoor Lighting Freezer-Cooler Replacement Gaskets, 525 Religious Worship 0.55 1.85 0.55 Refrigeration base closed cases RET Occ & Daylight Integral Sensor LED 526 **Data Centers** 1.20 0.55 Indoor Lighting 0.55 troffer (base T8 integrated) Efficient compressor motor, base closed 527 3.93 0.55 0.55 Refrigeration Grocery cases Lighting Control Tuneup (Base T12) Retail 0.55 2.02 0.55 Indoor Lighting 528 529 Office Energy Star or Better Laptop 0.54 1 71 0.54 Office Equipment 530 ROB 2L4' LED Tube (Base T12) Restaurant 0.54 4.37 0.54 Indoor Lighting 531 0.53 1.34 0.53 Refrigeration Strip curtains for walk-ins Lodging 532 Tankless Water Heater Office 0.53 2.34 0.53 DHW 533 Energy Star griddle Grocery 0.52 2.26 0.52 Cooking 534 2.04 Cooling DX Tune Up/ Advanced Diagnostics Warehouse 0.52 0.52 Refrigeration Commissioning, base large 535 0.52 2.10 0.52 Refrigeration Grocery cold storage Window Film (Standard) (Base Ductless 536 1.36 0.51 Cooling Retail 0.51 Mini-split) 537 High-efficiency fan motors, walk-ins Misc 0.50 2.55 0.50 Refrigeration Bi-level LED Case Lighting (self-contained 538 Retail 0.50 1.31 0.50 Refrigeration units), base closed cases 539 Refrigerant Charge Adjustment - DX **Data Centers** 0.50 4.03 0.50 Cooling LED Troffer (Base T12) 0.50 1.45 0.50 540 Restaurant Indoor Lighting 541 Refrigeration Coil Cleaning, walk-ins 0.49 1.45 0.49 Refrigeration Retail High Performance Lighting R/R -542 0.48 4.17 0.48 Indoor Lighting Grocery Combined Strategies (base high bay HID)



VA Com	mercial: All Existing Measures Ran	ked by Economi	c Potential (GWh)		
Rank	Measure Name	Building Type	Technical GWh	Measure TRC	Economic GWh	End Use
543	High Performance Lighting R/R - Combined Strategies (Base T12)	Grocery	0.48	4.20	0.48	Indoor Lighting
544	LED Troffer with lamp removal (T8)	Restaurant	0.47	2.80	0.47	Indoor Lighting
545	High Efficiency Chilled Water & Condenser Water Pump Motors	Lodging	0.46	2.44	0.46	Cooling
546	Oversized Air Cooled Condenser, base closed cases	Retail	0.46	1.76	0.46	Refrigeration
547	Strip curtains for walk-ins, base large cold storage	Grocery	0.46	1.33	0.46	Refrigeration
548	Refrigeration Coil Cleaning, base closed cases	Health	0.45	1.25	0.45	Refrigeration
549	Tankless Water Heater	Health	0.45	1.09	0.45	DHW
550	Electronically commutated evaporator fan motor, base large cold storage	Agricultural	0.45	2.47	0.45	Refrigeration
551	Economizer Repair - DX	Grocery	0.44	1.71	0.44	Cooling
552	LED outdoor lighting with bi-level controls (Base Outdoor HID)	Data Centers	0.44	3.51	0.44	Outdoor Lighting
553	Ceiling/roof Insulation (base ductless mini split)	Lodging	0.44	1.69	0.44	Heating
554	Ceiling/roof Insulation (Base Heat Pump Cooling)	Lodging	0.43	1.55	0.43	Cooling
555	Electronically commutated evaporator fan motor, base closed cases	Health	0.43	1.33	0.43	Refrigeration
556	LED Exit Sign	Warehouse	0.42	1.64	0.42	Indoor Lighting
557	Solar Water Heater	Education	0.42	1.05	0.42	DHW
558	High Efficiency Windows - Chiller	Education	0.42	1.93	0.42	Cooling
559	Solar Water Heater	Health	0.42	1.01	0.42	DHW
560	High Bay Bi-Level Programmed LED Fixture	Health	0.42	3.79	0.42	Indoor Lighting
561	Low or Anti-Sweat Door Film, base closed cases	Retail	0.42	2.25	0.42	Refrigeration
562	High Efficiency Chilled Water & Condenser Water Pump Motors	Health	0.41	1.39	0.41	Cooling
563	High Efficiency Windows (Base Ductless Mini-split)	Retail	0.41	4.16	0.41	Cooling
564	Strip curtains for walk-ins, base large cold storage	Restaurant	0.41	1.34	0.41	Refrigeration
565	Energy Star or Better Laptop	Religious Worship	0.41	1.71	0.41	Office Equipment
566	High-efficiency fan motors, base large cold storage	Grocery	0.40	1.47	0.40	Refrigeration
567	High Efficiency Water Heater (electric)	Office	0.40	2.68	0.40	DHW
568	Freezer-Cooler Replacement Gaskets, base closed cases	Retail	0.40	2.53	0.40	Refrigeration
569	Low-flow pre-rinse spray valve	Grocery	0.39	1.34	0.39	DHW
570	Electronically commutated evaporator fan motor, walk-ins	Misc	0.38	2.85	0.38	Refrigeration
571	Energy Star griddle	Office	0.38	2.26	0.38	Cooking
572	Centrifugal Chiller, 0.54 kW/ton, 500 tons		0.38	2.13	0.38	Cooling
573	LED screw-in replacement (base CFL)	Industrial	0.38	1.17	0.38	Indoor Lighting
574	Oversized Air Cooled Condenser, walk-ins	Warehouse	0.37	2.14	0.37	Refrigeration
575	Oversized Air Cooled Condenser, base closed cases	Education	0.36	1.56	0.36	Refrigeration
576	Electronically commutated evaporator fan motor, base closed cases	Office	0.36	1.26	0.36	Refrigeration
577	LED Troffer (Base T8)	Restaurant	0.36	1.14	0.36	Indoor Lighting
578	High Performance Lighting R/R - Combined Strategies (Base T8)	Grocery	0.35	3.66	0.35	Indoor Lighting
579	Refrigeration Coil Cleaning, walk-ins	Office	0.35	1.70	0.35	Refrigeration
580	ROB 2L4' LED Tube (Base T8)	Restaurant	0.35	3.15	0.35	Indoor Lighting



D		Dudde =	Technical	Measure	Economic	
Rank	Measure Name	Building Type	GWh	TRC	GWh	End Use
581	LED screw-in replacement (base CFL)	Restaurant	0.34	1.12	0.34	Indoor Lighting
582	High Bay Bi-Level Programmed LED Fixture	Agricultural	0.34	3.88	0.34	Indoor Lighting
583	Refrigeration Coil Cleaning, base ice maker	Misc	0.34	2.46	0.34	Refrigeration
584	HE PTAC, EER=9.6, 1 ton, cooling	Data Centers	0.34	6.76	0.34	Cooling
585	Duct/Pipe Insulation (electric boiler)	Lodging	0.34	1.36	0.34	Heating
586	Oversized Air Cooled Condenser, walk-ins	Misc	0.33	2.23	0.33	Refrigeration
587	Low or Anti-Sweat Door Film, base closed cases	Education	0.33	2.00	0.33	Refrigeration
588	Electronically commutated evaporator fan motor, walk-ins	Retail	0.33	2.82	0.33	Refrigeration
589	Electronically commutated evaporator fan motor, walk-ins	Office	0.32	2.73	0.32	Refrigeration
590	Low Flow Faucet Aerators	Warehouse	0.32	2.19	0.32	DHW
591	Oversized Air Cooled Condenser, open	Restaurant	0.32	1.49	0.32	Refrigeration
592	cases Freezer-Cooler Replacement Gaskets,	Education	0.31	2.25	0.31	Refrigeration
593	base closed cases Refrigeration Coil Cleaning, base large					
	cold storage High Performance Lighting R/R -	Agricultural	0.31	2.19	0.31	Refrigeration
594	Combined Strategies (Base T5) RET Occ & Daylight Integral Sensor LED	Grocery	0.30	1.69	0.30	Indoor Lighting
595	troffer (base T8 integrated)	Agricultural	0.30	1.30	0.30	Indoor Lighting
597	Refrigeration Coil Cleaning, base closed cases	Misc	0.29	1.03	0.29	Refrigeration
598	Separate Makeup Air / Exhaust Hoods AC	Grocery	0.29	1.20	0.29	Ventilation
599	ROB 2L4' LED Tube (base outdoor fluorescent)	Religious Worship	0.28	1.58	0.28	Outdoor Lighting
600	Energy Star hot food holding cabinet	Office	0.28	2.39	0.28	Cooking
601	Compressor VSD retrofit, walk-ins	Retail	0.28	2.68	0.28	Refrigeration
602	Bi-level LED Case Lighting, base glass- door reach-in	Health	0.28	1.26	0.28	Refrigeration
603	DX Tune Up/ Advanced Diagnostics	Data Centers	0.27	6.05	0.27	Cooling
604	High-efficiency fan motors, walk-ins	Warehouse	0.27	2.46	0.27	Refrigeration
605	High Efficiency Windows (Base Ductless Mini-split)	Education	0.27	1.79	0.27	Cooling
606	ROB 2L4' LED Tube (Base T5)	Grocery	0.27	2.76	0.27	Indoor Lighting
607	ROB 2L4' LED Tube (base outdoor fluorescent)	Education	0.26	1.58	0.26	Outdoor Lighting
608	High Efficiency Windows (Base Heat Pump Cooling)	Education	0.26	3.46	0.26	Cooling
609	Heat Pump Upgrade (18 SEER, 8.2 HSPF), cooling	Data Centers	0.26	15.60	0.26	Cooling
610	Lighting Control Tuneup (Base T8)	Retail	0.26	1.23	0.26	Indoor Lighting
611	Energy Star glass door reach-in refrigerator/freezer	Health	0.26	3.97	0.26	Refrigeration
612	Heat Pump, SEER 16.0/HSPF 9.2 ENERGY STAR, <5.4 tons, heating	Education	0.26	7.81	0.26	Heating
613	Energy Star griddle	Retail	0.25	2.26	0.25	Cooking
614	Compressor VSD retrofit, walk-ins	Agricultural	0.25	2.33	0.25	Refrigeration
615	Energy Star or Better Imaging Equipment	Religious Worship	0.25	2.53	0.25	Office Equipment
616	Variable Speed Drive Control, base motors	Education	0.25	2.31	0.25	Ventilation
617	Ceiling/roof Insulation (base packaged	Lodging	0.25	1.16	0.25	Heating
	heat pump) Efficient industrial process					Process
618	Efficient industrial process	Industrial	0.24	5.05	0.24	Pr





Rank	Measure Name	Building Type	Technical GWh	Measure TRC	Economic GWh	End Use
619	Refrigeration Coil Cleaning, walk-ins	Health	0.24	1.69	0.24	Refrigeration
620	Window Film (Standard) - Chiller	Retail	0.23	1.02	0.23	Cooling
621	High Efficiency Windows (Base Ductless Mini-split)	Health	0.23	2.55	0.23	Cooling
622	Energy Star Convection Oven	Warehouse	0.22	3.54	0.22	Cooking
623	Electronically commutated evaporator fan motor, walk-ins	Health	0.22	3.11	0.22	Refrigeration
624	Energy Star or Better Imaging Equipment	Office	0.22	2.63	0.22	Office Equipment
625	LED screw-in replacement (base incandescent/halogen)	Education	0.22	7.83	0.22	Indoor Lighting
626	High-efficiency fan motors, walk-ins	Agricultural	0.22	2.16	0.22	Refrigeration
627	Bi-level LED Case Lighting (self-contained units), base closed cases	Misc	0.22	1.46	0.22	Refrigeration
628	Efficient compressor motor, open cases	Grocery	0.22	2.86	0.22	Refrigeration
629	Ceiling/roof Insulation (Base Ductless Mini-split)	Lodging	0.21	1.43	0.21	Cooling
630	Centrifugal Chiller, 0.54 kW/ton, 500 tons	Warehouse	0.21	1.94	0.21	Cooling
631	Energy Star or Better Laptop	Misc	0.21	1.71	0.21	Office Equipment
632	HE PTAC, EER=9.6, 1 ton, cooling	Restaurant	0.20	1.26	0.20	Cooling
633	High Efficiency Windows - Chiller	Retail	0.20	3.42	0.20	Cooling
634	High Efficiency Windows (Base Heat Pump Cooling)	Warehouse	0.20	1.81	0.20	Cooling
635	Strip curtains for walk-ins	Misc	0.20	1.33	0.20	Refrigeration
636	Freezer-Cooler Replacement Gaskets, walk-ins	Lodging	0.20	1.83	0.20	Refrigeration
637	High Efficiency Windows (Base Ductless Mini-split)	Restaurant	0.20	1.09	0.20	Cooling
638	Ductless Mini-Split SEER 18.0/HSPF 10.0 CEE Tier 1 (Base Room AC)	Restaurant	0.20	1.48	0.20	Cooling
639	Lighting Control Tuneup (Base T12)	Warehouse	0.20	1.31	0.20	Indoor Lighting
640	Centrifugal Chiller, 0.54 kW/ton, 500 tons	Industrial	0.19	1.03	0.19	Cooling
641	Energy Star glass door reach-in refrigerator/freezer	Office	0.19	4.02	0.19	Refrigeration
642	Bi-level LED Case Lighting (self-contained units), base closed cases	Health	0.18	1.23	0.18	Refrigeration
643	ROB 2L4' LED Tube (Base T12)	Grocery	0.18	4.19	0.18	Indoor Lighting
644	Energy Star solid door reach-in refrigerator/freezer	Misc	0.18	2.73	0.18	Refrigeration
645	LED Troffer (Base T12)	Grocery	0.18	1.46	0.18	Indoor Lighting