ATTACHMENT B

The Cleveland Electric Illuminating Company

Energy Efficiency & Peak Demand Reduction Program Portfolio

(For the Period January 1, 2013 through December 31, 2015)

July 31, 2012

Docket No. 12-2191-EL-POR

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1.0 OVERVIEW OF PLAN

1.1. Summary describing the electric utility's Energy Efficiency and Peak Demand Reduction ("EE&PDR") Program Portfolio Plan ("Plan") to meet or exceed the statutory benchmarks for EE &PDR reductions.

On July 31, 2008, Am. Sub. S.B. 221 ("S.B. 221") was enacted to revise Chapter 4928 of the Ohio Revised Code ("R.C.") to, among other things, establish statutory percentage benchmark reductions in energy consumption and peak demand. These benchmarks are set forth in R.C. 4928.66(A)(1)(a) and (b) and require Ohio's electric utilities to reduce energy consumption and peak demands for the period January 1, 2013 through December 31, 2015 ("Reporting Period") as follows:

CEI Table 1: S.B. 221 Percentage EE&PDR Benchmarks

Year[1]	Energy Consumption MWh	Peak Demand kW
2013	3.20%	4.00%
2014	4.20%	4.75%
2015	5.20%	5.50%

The Public Utilities Commission of Ohio ("Commission") adopted rules that address, among other things, an electric distribution utility's compliance with, and measurement and reporting of, a utility's energy efficiency ("EE") and peak demand reduction ("PDR") results ("Rules").[1] Pursuant to R.C. § 4928.66 and the related Rules, Ohio Edison Company ("Ohio Edison" or "OE"), The Cleveland Electric Illuminating Company ("CEI" or "CE" or "Company"), and The Toledo Edison Company ("Toledo Edison" or "TE") (collectively, the "Companies") each developed an energy efficiency and peak demand reduction ("EE&PDR") strategy that is designed to comply with their respective benchmarks.[2] While each of these Companies' Plans is specific to them, the Companies strived to develop Plans that are consistent throughout the FirstEnergy Ohio footprint.

Based on the above benchmarks, the aggregate kWh and KW reduction requirements for the Companies as a whole are as follows:

CEI Table 2: Total FirstEnergy Ohio S.B. 221 EE and PDR Reduction Requirements

Year	Energy Efficiency Benchmarks Percentage	Required Energy Efficiency Savings MWh	Peak Demand Reduction Benchmarks Percentage	Required Peak Demand Reductions MW
2013	3.20%	1,725,369	4.00%	463
2014	4.20%	2,306,086	4.75%	551
2015	5.20%	2,903,410	5.50%	622

[1] *See generally, § 4901:1-39-01 et seq., Ohio Admin. Code.*
[2] Although each of the Companies is submitting a separate plan, the program designs for each of the Companies are virtually identical.

CEI's individual requirement is:

CEI Table 3: CEI S.B. 221 Benchmarks for the Period 2013 - 2015

Year	Energy Efficiency Benchmarks Percentage	Required Energy Efficiency Savings MWh	Peak Demand Reduction Benchmarks Percentage	Required Peak Demand Reductions MW
2013	3.20%	608,007	4.00%	166
2014	4.20%	810,348	4.75%	195
2015	5.20%	1,015,987	5.50%	219

The figures in CEI Table 2 and 3 represent the Company's planning benchmarks as required by Rule 4901:1-39-05. They have been calculated consistent with this Rule's requirements and the provisions of R.C. §4928.66(A)(2)(c). These benchmarks are based on information provided in the Company's April 16, 2012 Long-Term Forecast Report ("LTFR") in PUCO Form FE4-D1, adjusted for weather and the results of mercantile customer self-directed projects that have been filed with the Commission prior to April 24, 2012. The three year rolling average benchmark for CEI is 19,000, 19,294 and 19,538 for 2013, 2014 and 2015, respectively. These benchmarks have been established for planning purposes and will be adjusted, as necessary, in the Company's annual filings that are required by the Commission.

The programs outlined in this Plan were designed to achieve a balance of costs and end results, keeping in mind the Company's four primary goals: (i) comply with statutory requirements; (ii) provide programs for each of the major customer classes; (iii) develop a portfolio that provides implementation flexibility; and (iv) maximize kWh reductions per dollar spent basis during the Plan period. As indicated below, this Plan contemplates a suite of EE&PDR programs for all major customer segments. It is generally an expansion of the successful elements currently included in the Company's 2010 – 2012 Energy Efficiency and Peak Demand Reduction Portfolio Plan ("Existing Plan") as approved by the Commission in Docket No. 09-1947-EL-POR et al. ("2009 Portfolio Case") and includes the following programs:

Residential programs:

- Appliance Turn-In Program
- Low Income Program
- Direct Load Control Program
- Energy Efficient Products Program
- Home Performance Program

Small Enterprise programs:

- C&I Energy Efficient Equipment Program - Small
- Energy Efficient Buildings Program - Small

Mercantile-Utility (Large Enterprise) programs:

- C&I Energy Efficient Equipment Program - Large
- Energy Efficient Buildings Program - Large

Government Program:

- Government Tariff Lighting Program

Other Programs:

- Mercantile Customer Program
- T&D Improvements
- Conservation Voltage Reduction Study
- Smart Grid Modernization Initiative

Demand Response Program:

- Demand Reduction Program

Below is a table that details how the Company's programs included in the Existing Plan align with the programs proposed in this Plan:

CEI Table 4: Existing & New Programs

Existing Program Name	New Program Name
Residential Programs	
Appliance Turn-In Program	Appliance Turn-In Program
Comprehensive Residential Retrofit Program	Home Performance Program
Online Audit Program	
Efficient New Homes Program	
Energy Efficient Products Program	Energy Efficient Products Program
CFL Program	
Direct Load Control Program	Direct Load Control Program
Community Connections Program	Low Income Program
Small Enterprise Programs	
C&I Equipment Program - Small	C&I Energy Efficient Equipment Program - Small
C&I Equipment Program (Industrial Motors) - Small	
C&I Equipment Program (Commercial Lighting) - Small	
C&I New Construction Program	Energy Efficient Buildings Program - Small
C&I Audits	
Mercantile-Utility (Large Enterprise) Programs	
C&I Equipment Program - Large	C&I Energy Efficient Equipment Program - Large
C&I Equipment Program (Commercial Lighting) - Large	
C&I Equipment Program (Industrial Motors) - Large	
Technical Assessment Umbrella Program	
Technical Assessment Umbrella Program	Energy Efficient Buildings Program - Large
C&I Equipment Program - Large	
C&I Interruptible Load Program	Demand Reduction Program
Demand Response	
Government Programs	
Government Lighting Program	Government Tariff Lighting Program
Other Programs	
Mercantile Self-Direct	Mercantile Customer Program
Transmission & Distribution Programs	T&D Improvements
N/A	Conservation Voltage Reduction Study
Smart Grid Modernization Initiative	Smart Grid Modernization Initiative

The successful implementation of this Plan is projected to generate Total Discounted Lifetime Benefits of approximately 136,636,750 million, which results in a score on the Total Resource Cost ("TRC") test of 1.7.[3]

The total proposed costs for these programs during the Reporting Period are $77,930,853 and are reported in PUCO Table 3 in Appendix C-3 and Appendix B. These costs will be recovered through the Company's Rider DSE, which was approved in Case No. 08-0935-EL-SSO, and amended in the 2009 Portfolio Case.

The Company believes that it has prepared an EE&PDR strategy as reflected in this three year Plan that balances near-term energy savings opportunities among all rate classes with longer-term programs that continue to create jobs and build capacity for delivering greater energy and demand reduction impacts in the

[3] *See* Section 8.0 for a discussion on the TRC test.

future. The result of these efforts is a comprehensive set of programs that, if approved as filed, will enable the Company to comply with R.C. § 4928.66. requirements and achieve the energy savings and peak demand reduction goals set forth in CEI Table 3.

CEI Table 5 shows the number of customers and sales or revenues that make up the Company's major customer segments addressed in this Plan.

CEI Table 5: CEI Customer Class Characteristics

Cleveland Electric Illuminating 2013			
Sector	**# of Customers**	**MWh**	**kW**
Residential (Excluding Low-Income)	612,031	4,862,684	N/A
Residential Low-Income	49,767	395,409	N/A
Small Enterprise	91,093	7,121,842	2,132,003
Mercantile-Utility (Large Enterprise)	650	6,440,519	1,267,347
Governmental	387	143,741	N/A
Total	**753,928**	**18,964,194**	**3,399,350**

Forecasted 2013 usage from the LTFR has been assigned to five categories: (i) Residential Other; (ii) Residential Low Income; (iii) Small Enterprise; (iv) Mercantile-Utility; and (v) Governmental.[4] Residential Customers taking service under the RS tariff were split between "Residential" and "Residential Low Income". Because the Company does not separately track (and therefore has no way to distinguish between) "Residential Low Income" customers and "Residential" customers, those customers who were enrolled in the Percentage of Income Payment Program ("PIPP") as of March 2012 were used as a proxy for the low income category. For purposes of this plan, the Small Enterprise group consists of small commercial and industrial ("C&I") customers who are taking service on the General Service Secondary Rate schedule ("GS"). The Mercantile-Utility group consists of large C&I customers taking service on the General Service Primary ("GP"), General Service Sub-transmission ("GSU"), and General Service Transmission ("GT") rate schedules. The Governmental group consists of customers on the Street Lighting ("STL") and Traffic Lighting ("TRF") rate schedules. Customers were assigned to these categories based on available information in the Company's billing systems.

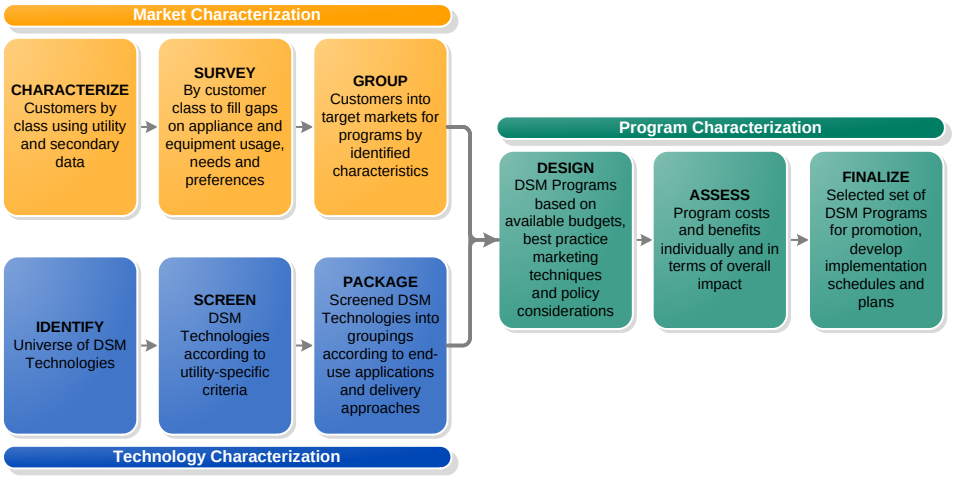
1.2. Summary of the process used and key assumptions made to develop the Plan

Process

Figure 1, below illustrates the process undertaken to develop this Plan. The Market Potential Study which was an integral tool in the development of this Plan is included in attached Appendix D.

[4] Although the Commission has preliminarily indicated a preference for information to be provided for customer segments different from that set forth in CEI Table 5, (*see* Docket No. 09-0714-EL-UNC), no final order has been issued in that docket. In light of this, as well as the fact that the Companies do not track data in a manner that would allow them to present the data in the format requested by the Commission, the Companies have attempted to present the data in a format that most closely resembles that requested by the Commission. See the Companies' comments filed on September 11, 2009, September 14, 2009, and September 18, 2009 in the above-referenced docket for a more detailed explanation.

Figure 1: FirstEnergy EE&PDR Plan Development Process



The Company's approach balances key sources of information:

- Program experience and anticipated energy savings results, captured through implementation of the current portfolio of programs and similar programs in other jurisdictions;
- Industry experience provided by the Company's Energy Efficiency consultants, contractors and program administrators;
- Customer attitudes and preferences obtained through mail and telephone surveys and interviews conducted as part of the 2012 Market Potential Study; and
- External stakeholder experience and opinions captured through a collaborative process[5]

Collaborative Group members' input was obtained through a series of meetings, followed by conference calls and e-mail communications with interested organizations.

To capture customer data, FirstEnergy commissioned primary market research for the Companies, with approximately 100 completed surveys of C&I customers, and 800 mail surveys of residential customers analyzed for this study. Additionally, interviews were held with CEI Managed Account and National Account representatives to capture needed energy related information on the Company's largest customers.

The program portfolio design team considered more than 100 EE&PDR measures, including energy efficiency measures as identified by the Companies' Plan development team, energy efficiency consultant, and stakeholders including the Companies' implementation team and the Collaborative Group. This review also considered programs being offered by both Ohio utilities and utilities in other jurisdictions.

When developing the model, the program portfolio design team worked with its energy efficiency consultant to determine certain modeling assumptions, which are discussed in more detail below. The team also relied upon its experience in managing the existing suite of EE&PDR programs already approved by the Commission, as well as its experience in managing similar programs offered by the Company's sister utilities in other jurisdictions to develop certain model inputs. Other model inputs were based on market survey results, and input from the EE&PDR implementation team that is comprised of both FirstEnergy employees

[5] The Companies' utilized a collaborative process in which interested parties met with the Companies to discuss the development of the Programs included in the Companies' Plans ("Collaborative Group"). This Collaborative Group process is discussed in Section 3.1.5 of the Plan.

and outside national contractors who know first hand the levels of incentives being offered in the marketplace and how well they are being received.

The program portfolio development team used an iterative process to refine and complete the modeling that included reviewing the projected results for each program and measure and reviewing the results with its energy efficiency consultants and implementation team. This review included assessing the reasonableness of the projected results based on potential in the market, potential customer participation, estimated costs and potential savings. Values for market potential were based on the results set forth in the Market Potential Study. Estimated program participation values were informed by program implementation experience through the Existing Plan, the implementation of sister utility programs in other jurisdictions and the experiences of the Company's energy efficiency consultants with other utility programs throughout the country. Potential program savings were predominantly based upon the values included in the current draft of the Ohio technical reference manual ("TRM"), actual program results to date, individual customer project results, and values in other states' TRMs that were established to support energy efficiency programs in those jurisdictions.

Assumptions and Priorities

There are both portfolio based and program/measure specific assumptions that must be made when modeling the programs included in this Plan. For overall compliance purposes, this Plan continues to assume that if it exceeds its targets in any given year, the excess will be banked and applied towards future years' compliance either during or subsequent to the Reporting Period. For purposes of cost effectiveness testing throughout the Plan, the program portfolio development team used a discount rate of 8.48% based on the Companies' most recently authorized overall post-tax weighted average cost of capital ("WACC"). Avoided cost data is based on available PJM forecasted wholesale energy prices and PJM capacity prices. These values were escalated using the growth rate included in the 2012 Early Outlook of the U.S. Department of Energy's Energy Information Administration, Annual Electric Outlook, which for purposes of this Plan was approximately 2.3% Customer participation levels and other program/measure specific assumptions, which were discussed above, are set forth in the Program Cost Detail Support information, included in Appendix B.

When designing this Plan, one of the design team's priorities was to build off of the Existing Plan and leverage the synergies already created through that plan, thus avoiding new start up costs where possible and reducing overall Plan costs.

The above assumptions and priorities yield results that allowed the Company to develop a Plan that will comply with statutory requirements. However, there are certain conditions under which these programs will be implemented over the next 3 years that may have a material impact on actual results:

- Current economic conditions indicate a cautious recovery of Ohio's economic base. This causes concern that business and government accounts may not support the pace of investment estimated in the Plan, and slow the pace of mass market penetration;
- New or redesigned programs proposed herein will not have a historical basis for participation rates and other factors included in the model. This may cause installation rates to be lower than modeled, particularly in the early years;
- Newly proposed programs may not provide adequate incentives to achieve targeted participants' penetration rates and energy/demand savings, especially given the current state of the economy; and
- Timely Commission approval of this Plan is critical, not only to provide the Company with the opportunity to comply with its statutory requirements during the Reporting Period, but also to avoid the loss of momentum gained through the Existing Plan.

These and other risks have been factored into the Plan to the degree reasonably possible. Nevertheless, because of these and other potential uncertainties, the Commission must have in place a process that affords the Company the ability to make mid-stream adjustments in a timely manner and provides the Company with the opportunity to meet its statutory targets. Such an approach will also allow the Company to proactively address rapidly evolving technology and market trends. This Plan is based on the assumption that such a process is in place and that the Commission will approve this Plan in a time frame that allows it to be launched on January 1, 2013.

1.3. Summary tables of portfolio savings goals, budget & cost-effectiveness (PUCO Tables 1, 2 and 3)

PUCO Tables 1-3 in Appendix C-3 summarize the portfolio savings goals, budgets, and cost-effectiveness of the proposed portfolio.

PUCO Table 1 sets forth lifetime costs and benefits of the programs being presented to the various customer segments. The Cost Benefit Ratio was calculated consistent with Commission directives. While certain programs within a segment may not pass the TRC, the portfolio as a whole does, as indicated in PUCO Table 1. PUCO Table 2 sets forth the projected kWh and KW savings by customer segment to be achieved as a result of the programs being proposed in this Plan. PUCO Table 3 sets forth the costs of programs for each of the customer segments.

1.4. Summary of the utility implementation strategy to manage the portfolio, engage customers and trade allies, encourage innovation and market access, transform markets, and align or coordinate with other utilities.

The Company intends to provide market access to the majority of its program services through a mix of third party vendors, administrators selected by the Company Pursuant to a stipulation entered into in Case No. 08-0935-EL-SSO, the Companies committed to using specific organizations as “Administrators.” The administrator program is discussed in Section 5.1.1 of the Plan. This commitment was extended through stipulations approved in Case Nos. 10-388-EL-SSO and 12-1230 EL SSO and community agencies, the latter of which will focus its efforts on certain residential programs. The Company uses the Administrators primarily to educate their respective customer segments and to “market” various programs being offered by the Company to achieve the program targets and objectives. The terms and conditions under which Administrators work are set forth in the Administrator agreements approved by the Commission on December 2, 2009 in Docket No. 09-553-EL-EEC. The amounts Administrators are paid were approved in the Commission's December 2, 2009 and March 16, 2011 Entries in Docket No. 09-553-EL-EEC and in Case Nos. 10-388-EL-SSO and 12-1230-EL-SSO. The various program descriptions included in Sections 3.2 through 3.5 of the Plan include a description of the anticipated delivery process.

The Company’s programs included in the Existing Plan are currently being managed by various third party vendors. Most of these contracts will expire at the end of this year, when the Company’s Existing Plan ends. While this Plan is being considered for approval, the Company will evaluate existing vendor performance and determine if certain aspects of the current process should be modified or eliminated. On an as needed basis, the Company will solicit bids from potential implementation vendors, either in addition to, or in place of, current vendors. However contract negotiations with selected vendors cannot be finalized until after Commission approval, thus making it critical that the Commission approve this Plan within a reasonable time frame.

The Company will continue its general customer awareness campaign that is designed to educate both customers and the media about energy efficiency and peak demand reduction programs and benefits. The Company will review the market survey results and the results from the Market Potential Study, information received from its independent evaluator, as well as feedback received from its implementation vendors to assess whether new or modified messages should be incorporated into its marketing campaigns. The Company will also continue to rely on the Collaborative Group to provide valuable feedback and to assist in making their constituencies aware of potential EE&PDR opportunities.

Market access and market transformation is generally discussed in the specific program descriptions set forth in Sections 3.2 through 3.5 of the Plan. More specifically, the cost projection for the Company's Existing Plan was $79.7 million, while this Plan is projected to cost $77.9 million. These significant spending levels over relatively short periods of time should contribute to market transformation by providing an influx of funds that should increase the demand for Ohio-specific retail and wholesale stock of more efficient electric consuming appliances, HVAC equipment, lighting and other process equipment. The programs included in this Plan and promoted by the Company should also have the effect of making customers aware of efficient alternatives, thus creating an increased level of demand for such equipment. In the future, this should drive the costs of such equipment down to a point where they may not have to be subsidized through utility sponsored programs. In light of this anticipated market transformation, the Company will continue to evaluate new measures, including those that were not accepted for inclusion in this Plan, and will vet with the Collaborative Group potential new measures as circumstances arise during the Plan period. To the extent that new measures show promise for inclusion in the Company's Portfolio, such measures will be discussed in the annual status report or in a separate filing with the Commission.

When designing this Plan, the Companies reviewed programs being offered by other utilities. They also worked with other utilities during the development of the TRM and have participated in workshops being offered by the Commission on comprehensive home performance programs. The Companies welcome the opportunity to participate in similar future activities

1.5. Summary of the utility's data management, quality assurance and internal evaluation processes, including how the Plan and individual programs will be updated or refined based on evaluation results.

The Company is committed to designing and implementing robust processes, organizations and systems that achieve the energy savings and demand reduction goals established in S.B. 221.

Section 6.0 of this report presents detailed plans regarding the data management quality assurance and evaluation processes for the Plan. Each program description in Section 2 provides a brief description of the planned evaluation, measurement and verification ("EM&V") steps intended for each program. Further, the Company is committed to working with the Commission's Independent Program Evaluator to support its efforts in evaluating the programs. On an as needed basis, informal vendor-conducted customer satisfaction surveys will be performed to provide feedback to the Company, as well as comments from the Company's Administrators and Collaborative Group. In addition to making interim adjustments to programs as suggested by these feedback activities, the Company will propose any major changes it believes are necessary in its annual reporting to the Commission or at other times as deemed necessary by the Company.

1.6. Summary of any cost recovery mechanisms.

The Company will continue to collect costs associated with the design, approval and implementation of the programs included in this Plan and will continue to recover them through its current Demand Side Management and Energy Efficiency Rider (Rider DSE), which was approved in Case No. 08-935-EL-SSO

("ESP Case"). The Company is not seeking (and does not intend to seek) any modifications to Rider DSE during the Reporting Period. However, consistent with the terms set forth in the Rider, any revenues received net of costs through the PJM Reliability Pricing Model capacity auctions for the ATSI zone and any savings generated through the incentive mechanism that has been included in this Plan will flow through this Rider. For a more detailed explanation of these issues, see Section 7.1.

1.7. Transition of existing programs to new programs.

The Company's goal is to maintain the momentum created through programs included in the Existing Plan and to leverage in this Plan the synergies already created through the implementation of those programs. This Plan assumes approval in a time frame that allows the Company to seamlessly transition from the Existing Plan to this Plan. If such approval is delayed, the Company will work with the Collaborative Group to develop a transition plan that will attempt to avoid program suspension and minimize customer confusion and dissatisfaction. However, because of the uncertainties surrounding the launch of an unapproved plan, the Companies will not proceed beyond 2012 without Commission approval of either this Plan or a to-be-developed transition plan. Assuming timely approval, the Companies intend to generally run existing programs as they currently do under the Existing Plan, given that many of the programs and measures included in this Plan are simply a combination of programs and measures already included in the Existing Plan, plus additional measures. There is one exception to this approach. Pursuant to the Commission's Order issued in Case No. 12-1230-EL-SSO,[6] the Companies will modify their program documents, effective January 1, 2013, so that customers knowingly, as a condition of participation in programs, tender ownership of their energy efficiency resources to the Companies whenever practical. However, this prerequisite to participation will not be included in those program elements, such as the CFL buy down component of the Energy Efficient Products program, in which the Company has no reasonable control over ensuring participants knowingly commit such resources.[7]

[6] *In re the Application of Ohio Edison, The Cleveland Electric Illuminating Company and The Toledo Edison Company for Authority to Provide for a Standard Service Offer Pursuant to R.C. § 4928.143 in the Form of an Electric Security Plan*, Case No. 12-1230-EL-SSO, Opinion and Order (July 18,2012)

[7] In such instances, the Company will post a notice on its website, in which the Company indicates that ownership in such energy efficiency resources will transfer to the Company upon participation in such programs.

2.0 ENERGY EFFICIENCY PORTFOLIO – PROGRAM SUMMARIES

2.1. Residential program summaries – indicate which programs are new or continuing

The Company will continue, unchanged, the following programs from the Existing Plan that are targeted at residential customers, all of which are summarized in Section 3.2 of this Plan:

- **Appliance Turn-In Program**; and
- **Direct Load Control Program**.

The Company will continue the following programs from the Existing Plan, with certain changes outlined below. Each of these programs is summarized in Section 3.2 of this Plan:

- **Energy Efficient Products Program -** a continuation and consolidation of the existing Energy Efficient Products Program and CFL Program, with modifications to the mix of measures being offered and distribution methods. The following changes have been made to the current programs as reflected in the new Energy Efficiency Products Program:
    - Added whole house fans and ductless mini-splits to HVAC and water heating sub-program;
    - Added Freezers to the appliances sub-program;
    - Removed programmable thermostats from the appliances sub-program because they are no longer Energy Star® qualified;
    - Added televisions, computers and computer monitors to the consumer electronics sub-program; and
    - Added point-of-sale CFLs and LEDs, ceiling fans and new emerging technologies to the lighting sub-program.

- **Home Performance Program -** a continuation and consolidation of the existing "Comprehensive Residential Retrofit Program, "Online Audit Program," and "Efficient New Homes Program." The following changes have been made to the current programs as reflected in the new Home Performance Program:
    - Added all-electric home audits;
    - Added energy efficiency kits including customized contents for standard, all-electric and school kits;
    - Added a behavioral program that provides customers with energy usage reports.

2.2. Residential Low-Income program summaries – indicate which programs are new or continuing.

In addition to the Residential Programs described above in which all Residential Low-Income customers can participate, the Company will offer through this Plan a continuation of a program from the Existing Plan that specifically targets and is available to qualified Residential Low Income customers. This program, which is identical to the Community Connections Program as set forth in the Existing Plan, is summarized in Section 3.2.1 of this Plan:

- **Low Income Program (formerly called "Community Connections Program")** - this program is identical to the Community Connections Program included in the Existing Plan and is administered by the Ohio Partners for Affordable Energy. This program was extended by the Commission in its July 18, 2012 Order in the Companies' ESP-3 Case, Case No. 12-1230-EL-SSO

2.3. Small Enterprise program summaries –indicate which programs are new or continuing.

The Company will continue and consolidate the following programs from the Existing Plan, with certain changes outlined below. These programs specifically target the small business sector, which is comprised of customers taking service under rate schedule GS (Small Enterprise), and are more fully described in Section 3.3 of this Plan:

- **C&I Energy Efficient Equipment Program (Small)** - a continuation and consolidation of the existing C&I Equipment Program-Small, C&I Equipment Program (Industrial Motors) – Small, and C&I Equipment Program (Commercial Lighting) – Small. The following changes to the current programs have been made as reflected in the new C&I Efficient Equipment Program – Small:
    - Expanded measures in the HVAC and water heating sub-program;
    - Added measures including recycling in the appliances sub-program;
    - Expanded measures in the food service sub-program;
    - Expanded measures to include LED, Halogen and other EE Lighting technologies in the lighting sub-program; and
    - Removed prescriptive rebates for motors up to and over 200HP from the customer equipment sub-program, but the Company will consider rebates for motors in their custom equipment sub-program.

- **Energy Efficient Buildings Program-Small –** a continuation and consolidation of the C&I New Construction Program and C&I Audit Program. The following changes were made to the current programs as reflected in the new Energy Efficient Buildings Program – Small:
    - Targeted custom building offering for shell improvements; and
    - Added energy efficiency kits.

2.4. Mercantile-Utility program summaries – indicate which programs are new or continuing.

The Company will continue and consolidate the following programs from the Existing Plan, with certain changes outlined below. These programs specifically target the mercantile-utility sector, which is comprised of customers taking service under rate schedule GP, GSU and GT, and are more fully described in Section 3.4 of this Plan:

- **C&I Energy Efficient Equipment Program – (Large)** - a continuation and consolidation of the C&I Equipment Program-Large, C&I Equipment Program (Industrial Motors) – Large, Technical Assessment Umbrella Program and C&I Equipment Program (Commercial Lighting) – Large. The following changes to the current programs have been made as reflected in the new C&I Efficient Equipment Program (Large):
    - Expanded measures in the HVAC sub-program;
    - Expanded measures to include LED, Halogen and other EE Lighting technologies in the lighting sub-program; and
    - Removed prescriptive rebates for motors up to and over 200HP from the customer equipment sub-program, but the Companies will consider rebates for motors in their custom equipment sub-program.
- **Energy Efficient Buildings Program – (Large)** - a continuation and consolidation of the Technical Assessment Umbrella and C&I Equipment Program - Large. The measures included in this program are unchanged from the Existing Plans.
- **Demand Reduction Program** – a continuation of the existing C&I Interruptible Load Tariffs approved in the Companies' ESP-2 and continued in the Companies' ESP-3, and contracted demand resources element. The following changes were made to the Demand Reduction Program:
    - Revised the program to permit the Companies to count demand response resources participating in the PJM market for the applicable delivery year, without the need to contract for these resources separately. This change avoids the Companies providing compensation that is otherwise not required for these resources.

2.5. Governmental program summaries – indicate which programs are new or continuing.

The Company's program for government sector customers has been renamed the Government Tariff Lighting Program, which is a continuation of the LED Traffic Signals measure with the addition of an Energy Efficient Street Lighting measure, which provides rebates to customers who replace customer owned and maintained street lighting equipment. The program is more fully described in Section 3.5 of the Plan. The Company has specific rate codes that enable identification of municipal lighting accounts that qualify for this program.

In addition to this program, which is specifically targeted to certain government entities, government customers qualify for measures and services of the other programs for non-residential customers (such as the C/I Energy Efficient Equipment – Small or Energy Efficient Buildings – Small Programs), subject to each program's eligibility rules.

2.6. Other program summaries – indicate which programs are new or continuing.

The Company has four other programs, three of which are addressed in separate dockets and are summarized in Section 3.6 of the Plan:

Mercantile Customer Program (Continuing)

The Company's existing Mercantile Self-Direct Program is continuing in this Plan, but under the new name -- Mercantile Customer Program. This program targets mercantile customer energy efficiency projects implemented from January 1, 2010 through the end of this Plan period, incenting customers to either commit projects that have already been completed, or incent customers to invest in new energy efficiency projects. Applications for approval of mercantile sited programs are separately filed with the Commission in individual dockets, with any incentives paid to customers (and recovered by the Company through Rider DSE) approved in those individual dockets. Although the budgets included in this Plan do not include any costs associated with the incentives paid to customers, the budgets do include costs associated with the administration and evaluation of this program.

T&D Improvements (Continuing)

The Company's existing Transmission & Distribution Program is continuing in this Plan, but under the new name – T&D Improvements Program, which accumulates the savings achieved through various T&D efficiency projects completed for the benefit of the Company. These projects involve various system improvements that, when made, reduce line losses, which in turn result in a more efficient delivery system. Examples of the types of efficiency projects in the T&D program include, but are not limited to (i) the re-conductoring of lines; (ii) substation improvements; (iii) the addition of capacitor banks; and (iv) the replacement of voltage regulators. These projects are selected through a comprehensive project evaluation process that includes among other things, assessment of capital requirements and constraints, projected results, and financial paybacks. The Company seeks approval for inclusion of the savings associated with these projects through a separate docket. No costs from this program are included in the budgets for this Plan, though costs associated with reporting and filing for compliance with the Companies' requirements under SB 221 will be recovered in Rider DSE.

Smart Grid Modernization Initiative (Continuing)

The Companies' Smart Grid Modernization Initiative project will continue and is comprised of three elements 1) Distribution Automation, 2) Volt/VAR Control, and 3) a Consumer Behavior Study. This program was approved in Case No. 09-1820-EL-ATA et al. No costs from this program are included in the budgets for this Plan, though costs associated with reporting and filing for compliance with the Companies' requirements under SB 221 as well as previously approved costs associated with Rider PTR will be recovered in Rider DSE.

Conservation Voltage Reduction Study (New)

This Plan includes a new program – the Conservation Voltage Reduction Study -- which will study the potential impacts of such a program by analyzing distribution circuits and identifying operational changes that could achieve additional energy savings and demand reductions.

3.0 PROGRAM DESCRIPTIONS

3.1. Discussion of criteria and process used for selection of programs:

The program selection process included the following activities, with several activities encompassing the program development timeline and being performed coincidently or iteratively:

1. The FirstEnergy energy efficiency plan development team ("Team") reviewed potential programs and measures based on feedback from: (i) the Ohio Collaborative; (ii) FirstEnergy's energy efficiency implementation team; (iii) evaluation contractor and energy efficiency consultants; (iv) a review of the programs and measures currently being offered through the Existing Plan; and (v) by reviewing EE and PDR programs implemented by other utilities, including the Company's sister utilities in other jurisdictions.
2. The potential programs and measures underwent a screening process carried out by the Team, which included among other things assessment of the anticipated participation, implementation requirements and savings impacts. Potential programs and measures were reviewed with the Collaborative Group, the Company's implementation team and its energy efficiency consultants.
3. Consumer research was conducted to identify the likelihood of customer participation/technology adoption, barriers to adoption and potential interest in specific services for overcoming those barriers. Research included gathering data on customers' current conservation practices, appliance saturation and demographic information.
4. Program cost characteristics were developed at the technology level, including, for example, incentive levels; marketing, administration and vendor costs; incremental measure costs; and the availability of other benefits. The value of benefits was developed from savings estimates or formulas that were included in the Ohio draft TRM being considered by the Commission for those measures covered, and from other industry sources, including TRMs from other states. The Company's results were then reviewed by its energy efficiency consultant.
5. Technologies were grouped by (i) sectors, such as residential and C&I; (ii) end uses, such as lighting, appliances and HVAC; and (iii) program types, such as home performance, efficient products, and efficient buildings.
6. The economic modeling was completed on an iterative basis and TRC values were determined for each program. The TRC results for each of the programs included in this Plan can be found in PUCO Tables 7A through 7G in Appendix C-3.
7. Program designs were then finalized and evaluated based on whether each:
    - Promotes cost effective EE&PDR results;
    - Involves proven delivery strategies;
    - Includes programs that address prescriptive and custom measures; and
    - Leverages existing delivery channels that have proven to be successful.
8. The results from the 2012 Market Potential Study, included as Appendix D, were used to finalize and to confirm that the final program designs and assumptions were consistent with market potential.
9. Once all programs were designed and modeled, the Plan as a whole was evaluated to balance results and costs to ensure Plan reasonableness and compliance in a cost effective manner. These results were

reviewed with the Collaborative Group, the Company's implementation team and energy efficiency consultants, incorporating, when appropriate, suggestions for improvement from these groups.

The Company believes that it has designed a suite of programs that move from the general to the specific, from providing customers with generic information about saving energy to customized information and services that will help them make energy efficiency changes in their own homes and facilities.

Through program implementation, customers will be encouraged to have an energy audit to help identify the opportunities that are available for increasing energy efficiency and lowering energy costs. These audits will serve a dual purpose of providing important "as-found" characteristics of homes and equipment before the installation of measures, and will offer the Company and its implementation vendor's important information about the age of equipment being replaced. Audits for the residential sector will be accessed either through the Comprehensive Home Audit, on line through the Company's Online Audit tool already approved by the Commission[8], or through Ohio Partners for Affordable Energy ("OPAE") who will implement the Company's Community Connections (Low Income) program.[9] To help identify prescriptive measures for commercial and industrial customers, participants can receive incentives for a comprehensive audit once they implement recommended and qualified measures as set forth in such an audit and eligible under the Plan.

To facilitate implementation of recommended measures, the Company will offer a suite of fixed rebates and calculated incentives. Customers are also given incentives for removing refrigerators, freezers and old inefficient room air conditioners from the system, and for replacing inefficient HVAC systems and appliances (such as central air conditioners and heat pumps) with newer qualifying energy efficient models.

Finally, for select appliances and equipment, the Company will install communications devices that will enable customers to participate in demand response programs.

3.1.1. Describe portfolio design criteria, overall program objectives and logistics and metrics that define program success.

The portfolio design criteria and overall objectives are discussed in Section 3.1 above. General metrics for each program are discussed below, with individual program metrics descriptions set forth in Appendix C.

Fundamental metrics for program performance are the number of participants, kWh savings, kW peak load reductions, dollars spent, dollars per kWh saved, and dollars per kW of peak load reduction. Individual program metrics follow the three main metric designations: Immediate (Near Term) Metrics which are generally numeric counts, Intermediate Metrics, which generally involve a calculation or data collection through surveys or other means, and Long-Term Metrics, which generally focus on accomplishment of broader range goals over longer periods of time. The Company incorporates both the Immediate and Intermediate Metrics, but not the Long-Term metrics, because these generally extend beyond the Plan period.

3.1.2. Describe how programs were constructed for each portfolio to provide market coverage sufficient to reach overall energy and demand savings goals. Describe analyses and/or research that were performed (e.g., market, best-practices, market modeling).

[8] See PUCO Case No. 09-0580-EL-EEC *et seq*.
[9] See PUCO Case No. 12-1230-EL-SSO.

The EE&PDR Program Portfolio was developed based on the market penetration and other market research results set forth in the Market Potential Study included in Appendix D. The following steps were taken to develop the program portfolio included in this Plan:

1. The first step was to select the potential programs and measures, with the programs included in the Existing Plan being considered first. Virtually all of the programs and measures included in the Existing Plan are included as the cornerstone of this Plan. Additional measures and programs were then evaluated to supplement and enhance this core group of programs.
2. Once selected, programs and measures were evaluated to ensure the portfolio of programs passed the TRC test and could meet the savings goals.
3. The final step was to ensure that the portfolio represented a comprehensive range of programs that addressed the needs of each major customer group (e.g., low income, large C&I, Governmental) and incorporated all of the major customer end-uses (e.g., appliances, lighting, HVAC).
4. The results from the Market Potential Study was used to finalize and verify that the final modeling inputs used to create the portfolio of programs were reasonable.

3.1.3. Describe available results for programs currently operated by the utility (continuing programs) and/or for similar programs operated by other program administrators in similar markets.

The Company currently provides 19 EE or PDR programs through its Existing Plan. These programs are ongoing and appear as part of this proposed portfolio, having been consolidated in this Plan. Comprehensive Results of the currently implemented programs were reported in the Company's Portfolio Status Report filed with the Commission on May 15, 2012 in Docket No. 12-1534-EL-EEC. For the convenience of the reader, certain summary tables are provided in Appendix A: Results of Existing Plan.

3.1.4. Indicate number of customers and baseline kW and kWh consumption in each sector:

3.1.4.1. Residential: **See CEI Table 5 in Section 1.1**

3.1.4.2. Residential Low-Income: **See CEI Table 5 in Section 1.1**

3.1.4.3. Small Enterprise: **See CEI Table 5 in Section 1.1**

3.1.4.4. *Mercantile-Utility:* **See CEI Table 5 in Section 1.1**

3.1.4.5. *Governmental:* **See CEI Table 5 in Section 1.1**

3.1.4.6. *Other:* **See CEI Table 5 in Section 1.1**

3.1.5. Describe Stakeholder processes used for program development

In accordance with the Stipulation entered into in Case No. 08-0935-EL-SSO ("ESP I Stipulation"), the Companies created the Collaborative Group, which is comprised of interested stakeholders who represent various customer groups and industry interests, to consider the EE&PDR opportunities within the Company's service territory and to share knowledge and viewpoints on EE&PDR issues from their perspective.

The Collaborative Group was formed in May 2009, along with two subcommittees: (i) Residential/Low-Income; and, (ii) Commercial / Industrial & Demand Response. The Collaborative Group and the related subcommittees formally meet on an ongoing basis to discuss program performance and operations, best practices, and other energy efficiency and peak demand reduction matters.

When developing this Plan, the Companies solicited input from the Collaborative Group and related subcommittees on potential measures and programs to be included in this Plan on several occasions throughout the Fall and Winter of 2011, and engaged this group with plan development activities in the first half of 2012. Company personnel also held multiple conference calls and exchanged communications with interested Collaborative Group member organizations throughout the plan development process. This Plan incorporates many of the Collaborative member's suggestions.

3.1.6. Describe alignment with other utility and non-utility programs

When practical, the Company strives to coordinate its EE&PDR program design with other utilities and has designed each of the Companies' three EE&PDR portfolio plans so that there is commonality among program offerings, program participation requirements and EM&V protocols within the FirstEnergy Ohio footprint. Additionally the Company attempts to review all filings of the other Ohio utilities as they pertain to EE&PDR matters to determine if adopting some of these utilities' ideas may improve FirstEnergy programs. Company employees involved in program design and implementation have very good working relationships with their counterparts at the other Ohio investor owned utilities and engage in recurring meetings to discuss program implementation, EM&V and design challenges, and do not hesitate to discuss specific concerns or problems with their counterparts in these organizations as needed. When designing the current refrigerator pick up program, and in an effort to avoid customer confusion, the Company selected its vendor partly because it was the same vendor used by its neighboring utilities. Further, the Companies actively participate in Commission sponsored workshops that currently address alternative financing and comprehensive home energy audits and other whole home solutions, and expect to continue to participate in these and other workshops that address EE&PDR program issues that are state-wide or involve policies better resolved at the state level.

The Company's Low Income Program partners with the Ohio Partners for Affordable Energy who uses the funds from this program to leverage other state funded programs through various agencies within the State of Ohio. The Company's proposed Home Performance Program includes a school program that is modeled to be consistent with school programs offered by other Ohio utilities. Additionally, the Company's implementation team works closely with industry groups and trade allies and considers opportunities to leverage funding sources where possible to support program operations.

Portfolio Overview

A comprehensive portfolio of programs is listed in CEI Tables 6 and 7 below. These programs provide customers with a full range of services – from customized information identifying energy saving opportunities for their homes and facilities, to significant incentives for reducing the cost of implementing certain of these recommendations. Low income customers can obtain certain measures and services at no additional cost, and small enterprise customers similarly receive selected services at a significantly reduced cost. Comprehensive assessments are also available to residential customers. Finally, in recognition of the substantial benefits of addressing energy efficiency at the time of building design, two programs are offered that will work with builders and developers of residential and non-residential new construction to help move energy efficiency levels beyond current building codes. The programs are described in detail in Sections 3.2 through 3.6.

3.0 PROGRAM DESCRIPTIONS

Virtually all of the programs set forth below have their genesis in the programs implemented under the Existing Plan, with the latter enhanced and streamlined by combining programs with similar operational characteristics or offerings and supplementing or expanding them with additional measures.

CEI Table 6: EE&PDR Programs by Sector

Residential Programs (inclusive of Low-Income)
Appliance Turn-In Program
Home Performance Program
Energy Efficient Products Program
Direct Load Control Program
Low Income Program
Small Enterprise Programs
C&I Energy Efficient Equipment Program - Small
Energy Efficient Buildings Program - Small
Mercantile-Utility (Large Enterprise) Programs
C&I Energy Efficient Equipment Program - Large
Energy Efficient Buildings Program - Large
Demand Reduction Program
Government Programs
Government Tariff Lighting Program
Other Programs
Mercantile Customer Program
T&D Improvements
Conservation Voltage Reduction Study
Smart Grid Modernization Initiative

Many of the programs being proposed in this Plan contemplate the use of rebates to incent the installation of efficient equipment by customers. Appendix C-4 lists all rebate schedules for each technology included in this Plan.

3.2. Residential Programs

The table below details the comparison of the sectors existing programs to the new programs and descriptions for this Plan:

CEI Table 7: Residential Existing & New Program Names & Descriptions

Residential Programs		
Existing Program Name	New Program Name	Program Description
Residential Programs		
Appliance Turn-In Program	Appliance Turn-In Program	The program consists of customers receiving a rebate for turning in a working refrigerator, freezer, or room air conditioner.
Comprehensive Residential Retrofit Program	Home Performance Program	This program is a combination of the existing Comprehensive Residential Retrofit, Online Audit, and Efficient New Homes programs. In addition, this program also consists of energy efficiency kits and a behavioral program being offered to customers.
Online Audit Program		
Efficient New Homes Program		
Energy Efficient Products Program	Energy Efficient Products Program	The program provides rebates to consumers and financial incentives and support to retailers that sell energy efficient products, such as HVAC, appliances, lighting, home electronics, and other electricity conservation products.
CFL Program		
Direct Load Control Program	Direct Load Control Program	The program consists of a customer having their central air conditioning compressor cycled during summer peak periods.
Community Connections Program	Low Income Program	The program consists of weatherization services being offered to low-income customers.

The table below details each measure that is offered in the programs listed in CEI Table 7 and whether it is an existing or new measure:

CEI Table 8: Proposed Residential Portfolio

Proposed Residential Portfolio			
Program Name	**Sub Program**	**Measure Name**	**Measure Status**
Appliance Turn-In Program	**Appliance Turn-In**	Refrigerator Recycling	Existing
		Freezer Recycling	Existing
		Room Air Conditioner Recycling	Existing
Home Performance Program	**Audits**	Comprehensive Audit	Existing
		On-Line Audit	Existing
		All Electric Home Audit	New
	Kits	Efficiency Kit - Standard	New
		Efficiency Kit - All-Electric	New
		Efficiency Kit - School	New
	New Homes	New Construction	Existing
	Behavioral	Energy Usage Reports	New
Energy Efficient Products Program	**HVAC & Water Heating**	Air Source Heat Pump	Existing
		HVAC Maintenance	Existing
		Central Air Conditioner	Existing
		Ground Source Heat Pump	Existing
		Whole House Fan	New
		Room Air Conditioner	Existing
		Ductless Mini-Split AC & HP	New
		Solar Water Heating	Existing
		HP Water Heater	Existing
		EE Water Heater	Existing
	Appliances	Clothes Washers	Existing
		Dehumidifiers	Existing
		Refrigerators	Existing
		Freezers	New
		Pool Pump Motors	Existing
	Consumer Electronics	Smart Strips	Existing
		Televisions	New
		Computers	New
		Computer Monitors	New
	Lighting	Torchiere Floor Lamps	Existing
		Ceiling Fan with Integral CFLs	New
		Energy Efficient Lighting Products	New
		Emerging Technology	New
Direct Load Control Program	**Direct Load Control**	DLC - CAC	Existing
		DLC - Pool Pump	Existing
		DLC - Water Heater	Existing
Low Income Program	**Low Income**	Community Connections	Existing

Below is a summary of all of this sector's programs being proposed in this Plan:

Program Title and Program years during which program will be implemented	**1. Direct Load Control** **2013 – 2015**
Objective(s) and program metrics	This program has and will continue to offer to residential customers a programmable thermostat. The thermostat will cycle the compressors of central air conditioners using an algorithmic cycling strategy. The result of this equipment upgrade will provide the Company with a program that will have the capability to reduce loads over more hours during the summer. Participating customers can also program the thermostat for their preferred day, night, and seasonal settings in order to achieve electric and gas energy savings throughout the year. Relevant metrics are provided in Appendices B and C.
Target market (including participation requirements)	The target market for this program is residential homeowners who meet the following criteria that are subject to change at the discretion of the Company: (1) The customer must reside in a location that supports the communication strategy. (2) The customer must have a working central air conditioner or heat pump, (3) The customer must not be in arrears in payments for greater than 60 days.
Program approach, rationale and description	This existing program began in the summer of 2007 under the terms of the Company's RCP Supplemental Stipulation and continued in the Existing Plan.
Implementation strategy (including expected changes that may occur in different program years)	Total administration of the program, including installation of thermostat, marketing, call center, and general administration is provided by a third party vendor. During summer peak periods, the Company can currently curtail air conditioning usage during a critical peak day. Customers have the ability to override (i.e. opt out of) a curtailment event. With the new program, a compressor cycling process will be employed.
Program issues and risks and risk management strategy	Technology is rapidly developing in this market, and the Company will remain flexible about testing and revising the type of equipment used for this program over time.
Ramp-Up strategy	This is a continuation of the Companies' existing program. .
Marketing strategy	This program will be launched with existing participants and expanded on an as needed basis.
Market Transformation Strategy (if applicable)	This program affords customers the opportunity to gain experience with energy management technology, which can also

	be used when Smart Metering becomes available.
Eligible measures and incentive strategy, include tables for each year of program, as appropriate showing financial incentives & rebate levels (e.g., $ per measure, $ per kWh or MW saved)	The program offers customers a programmable thermostat that can be used to achieve year around electric savings for those with electric heat and/or central air cooling. See Appendix C-4 for rebate/incentive amounts.
Non-Energy Benefits	Increased consumer feeling of control over household energy consumption. Experience with technology that lends itself to Smart Metering programs. In addition, program kWh savings may result in reduced greenhouse gas emissions.
Other information deemed appropriate	None.

Program Title and Program years during which program will be implemented	**2. Appliance Turn-In Program** **2013 - 2015**
Objective(s) and program metrics	To remove older inefficient appliances from the system by offering customers an incentive and pick-up and disposal service at no additional cost for refrigerators, freezers and room air conditioners. Relevant metrics are provided in Appendices B and C.
Target market (including participation requirements)	The target market for this program is existing multi and single family households, renters and home owners. Customers must have working equipment at the time of pick up.
Program approach, rationale and description	Provides a service and incentive to customers for turning in inefficient operating appliances. Large and other qualifying appliances will be picked up at the customer's residence. In addition, periodic events may be offered at centralized drop-off locations where customers can drop off smaller inefficient operating appliances such as compact refrigerators and room air conditioners. The Company will work with manufacturers and retailers for point of purchase rebates, mid-stream incentives, and up-stream buy-downs for select measures and will consider other methods for providing rebates and other rebate application processes. The program will use strategies including, but not limited to, dealer incentives, give-aways, and/or special promotional events to encourage sales of high efficiency products, and/or retirement of less efficient equipment.
Implementation strategy (including expected changes that may occur in different program years)	A vendor will be hired to deliver this program in coordination with other Ohio utilities if appropriate under the circumstances. Regional roll-out and community outreach will support the program.
Program issues and risks and risk management strategy	The key risk is that appliances will be turned in that were either not being used or are non-functional. Vendors will be required to test a sample of appliances before issuing the incentive, or sample a percentage of appliances after pick up to determine the percent of units that are not generating energy savings. Customers will be asked to verify working order when they register for pick up.
Ramp-Up strategy	This is a continuation of the Companies' existing program.
Marketing strategy	Customers will be alerted to this service through various media and marketing channels to facilitate targeted roll-out of the program, and efficient collection in targeted areas. A broad

	customer awareness campaign will include introduction of the program and the need for consumers to take energy efficiency actions.
Market Transformation Strategy (if applicable)	Appliance removal programs help to accelerate market transformation by encouraging customers to remove older inefficient appliances, thereby making them aware of the higher consumption of these older units.
Eligible measures and incentive strategy, include tables for each year of program, as appropriate showing financial incentives & rebate levels (e.g., $ per measure, $ per kWh or MW saved)	Equipment that will be removed through this program includes: ➢ Refrigerators ➢ Freezers ➢ Room air conditioners The customer receives an incentive following pick up or turn in of major appliances. Other equipment may be included in exchange events, where old units are swapped out for a coupon toward the purchase of a new high efficiency unit. The program may also include a coupon toward the purchase of a high efficient appliance through the Energy Efficient Products program. See Appendix C-4 for rebate/incentive amounts.
Non-Energy Benefits	The removal of the appliances may result in avoided carbon emissions. Customer bills may also be lower as a result of lower energy consumption. The program should promote responsible disposal of hazardous materials.
Other information deemed appropriate	None

Program Title and Program years during which program will be implemented	**3. Energy Efficient Products Program** **2013 – 2015**
Objective(s) and program metrics	The Energy Efficient Products Program provides rebates to consumers and/or "upstream" financial incentives and support to manufacturers, distributors, and retailers that sell energy efficient products, such as ENERGY STAR® qualified appliances, high efficiency lighting, and other electricity conservation products. The program includes promotional support, point-of-sale materials, training, promotional events and rebates for select appliances. This is a continuation of the existing program and is now broken into the following sub-programs: ➢ HVAC & Water Heating ➢ Appliances ➢ Consumer Electronics ➢ Lighting Relevant metrics are provided in Appendices B and C.
Target market (including participation requirements)	Residential customers of the Company that purchase high-efficiency appliances or other qualifying products from retailers.
Program approach, rationale and description	The approach to this program is to provide an avenue for customers to take advantage of the information gained from energy efficiency messages and energy audits and make the changes recommended. A key barrier to implementation of energy efficiency measures remains their higher first cost over less efficiency models. While federal tax credits and other programs have increased awareness in recent years, rebates and other discounts are still needed to move people to act in areas of the country where the market has had limited exposure to energy efficiency concepts. This program involves consumer education and dealer marketing and incentives for selling appliances with ENERGY STAR® brand labels and other qualifying equipment and measures. The Company will work with manufacturers and retailers for point of purchase rebates, mid-stream incentives, and up-stream buy-downs for select measures and will consider other methods for providing rebates and other rebate application processes. The program will use strategies including, but not limited to, dealer incentives, give-aways, and/or special promotional events to encourage sales of high efficiency products, and/or retirement of

	less efficient equipment.
Implementation strategy (including expected changes that may occur in different program years)	The Company will work with manufacturers and retailers for point of purchase rebates, up-stream buy-downs and consider other methods for providing rebates and other rebate application processes. A vendor will be secured to take applications, process documentation regarding purchased products and mail the rebate checks. A separate activity will involve implementation of the retailer program. For contractor-installed products such as HVAC, the Company will work with contractors supporting their marketing and installation of energy efficient products, and participation in the program.
Program issues and risks and risk management strategy	Current economic conditions are the main potential threat to program success. Economic conditions may limit customers' ability to purchase energy efficient equipment and technology. Educational materials will need to highlight the lower operating costs of high efficiency equipment and the quick payback customers will enjoy from making the higher efficiency choice. Evaluations will monitor the extent of uptake on each product and determine whether rebate levels need to be adjusted.
Ramp-Up strategy	This is a continuation of the Companies' existing programs.
Marketing strategy	The program will use strategies including, but not limited to, dealer incentives, give-aways, and/or special promotional events to encourage sales of high efficiency products, and/or retirement of less efficient equipment. The program will be marketed, where practical, in conjunction with the online audit and comprehensive residential audit as the "next step" toward achievement of the identified energy savings. Mass marketing will target this program as a cornerstone of the various other programs and services available to residential customers under the overall portfolio.
Market Transformation Strategy (if applicable)	The objective of the program is to promote the installation of energy efficient equipment which will increase market demand for those measures, thereby increasing availability and lowering prices.
Eligible measures and incentive strategy, include tables for each year of program, as appropriate showing financial incentives & rebate levels (e.g., $ per measure, $ per kWh or MW saved)	For the proposed program, the minimum qualifying efficiency ratings are based on current ENERGY STAR® Qualified Appliances (where applicable) published by the US EPA. Eligible program measures and incentive strategy are included in Appendix C-4, and include technologies such as, but not limited to: ➢ HVAC and Water Heating

	➢ Appliances ➢ Consumer Electronics ➢ Lighting This program also allows for the inclusion of emerging consumer technology that shows promise for reducing customers' energy consumption.
Non-Energy Benefits	The installation of high efficiency measures may result in lower carbon emissions. The impact evaluation will quantify the avoided emissions. In addition, program kWh savings may result in reduced greenhouse gas emissions.
Other information deemed appropriate	This program focuses on electric energy using equipment. Building shell and weatherization measures are covered under the Online Efficient Products Catalog Program and, for electric heat customers, the Comprehensive Residential Retrofit Program.

Program Title and Program years during which program will be implemented	**4. Home Performance Program** **2013 - 2015**
Objective(s) and program metrics	This is a consolidated program that is a combination of the existing Comprehensive Residential Retrofit, Online Audit, and Efficient New Homes programs. In addition, the program is broken into the following sub-programs: ➢ Audits ➢ Kits ➢ New Homes ➢ Behavioral The objective of this program is to provide energy efficiency education and awareness for customers to conserve energy in their homes. Relevant metrics are provided in Appendices B and C.
Target market (including participation requirements)	The target market for this program is residential customers and builders of new residential home construction.
Program approach, rationale and description	Audits Comprehensive Audit This program offers residential customers a comprehensive home energy audit with air infiltration testing through the use of blower door technology or other diagnostic tools for improving the integrity of the building shell. It also examines appliance efficiency, lighting and HVAC systems. The cost of the comprehensive audit is subsidized by the Company, with the customer paying a discounted fee. After completing a home energy audit, customers are provided with a list of energy savings projects and measures applicable to their home and the associated energy savings impacts. Customers who implement eligible energy savings measures are entitled to rebates from the Company. All Electric Home Audit This is similar to the Comprehensive Audit described above and specifically targets all-electric homes. On-Line Audit The Online Home Energy Audit Tool is a software program that provides the Company with the necessary tools and equipment needed to properly supply customers

with the information and education required to lower their energy costs through energy efficiency program participation and other actions. This tool provides an approach that increases the efficiency and effectiveness of the Company's customer service by helping the residential customers better understand and manage their bills. The tool converts the customers' input of their energy usage characteristics into information customers can understand and act upon, including such things as the cost of heating and cooling their homes, the reasons their bills may have changed.

Kits

The Companies' Efficiency kit offerings will include a variety of items meant to introduce customer segments to energy efficient technologies that can be easily installed in the home, and serve as a gateway for broader home efficiency education. Kit contents may include items such as, but not limited to: Educational Materials, CFLs, Smart Strips, Faucet Aerators, Low Flow Shower Heads, Furnace Whistles, etc. Kit contents and targeted segments are subject to change during the course of this Plan, and initially include:

Efficiency Kit – Standard

This kit provides non-electric water heating energy efficiency kits to non-electric water heating customers per their request.

Efficiency Kit – All Electric

This kit provides electric water heating energy efficiency kits to electric water heating customers per their request.

Efficiency Kit – School

This kit provides energy efficiency kits and education through participating schools.

New Homes

This program provides a rebate to local builders for achieving energy efficiency targets through a combination of building shell and appliance upgrades. To qualify for this program, the house must exceed the standard building code by 15 percent consistent with energy efficiency standards as published by the Department of Energy under the ENERGY STAR® program. Homes must also qualify at the current ENERGY STAR® level, as determined by the EPA.

Behavioral

	This program provides monthly energy usage reports and specific information about each customer's energy usage as well as analysis regarding their usage over time, with specific tips for conserving energy on a monthly basis. The Company will work with manufacturers and retailers for point of purchase rebates, mid-stream incentives, and up-stream buy-downs for select measures and will consider other methods for providing rebates and other rebate application processes. The program will use strategies including, but not limited to, dealer incentives, give-aways, and/or special promotional events to encourage sales of high efficiency products, and/or retirement of less efficient equipment.
Implementation strategy (including expected changes that may occur in different program years)	The implementation and administration of this program will continue to be provided by a third party vendor.
Program issues and risks and risk management strategy	The risks associated with this program are primarily getting enough customers to participate in the program. Well established marketing techniques will be used to promote the participation in this program.
Ramp-Up strategy	For the existing program offerings, there will be no ramp-up period. For new program offerings, it is anticipated that it will take at least three to six months to launch after program approval.
Marketing strategy	The marketing of this program will continue to be provided by a third party vendor. For the existing program offerings, existing marketing strategies will be continued. For new program offerings, existing marketing strategies from similar and already successfully implemented programs will be utilized.
Market Transformation Strategy (if applicable)	This program's objective of the transformation of markets toward higher market share of efficient electric appliances, products, and homes will be achieved by educating customers about energy efficiency and offering them incentives to purchase energy efficient products.
Eligible measures and incentive strategy, include tables for each year of program, as appropriate showing financial incentives & rebate levels (e.g., $ per measure, $ per kWh or MW saved)	The following product categories are offered with this program: ➢ Audits ➢ Kits ➢ New Homes ➢ Behavioral Please see Appendix C-4 for a list of measures available within each product category listed above along with their rebate/incentive amounts.

Non-Energy Benefits	Lower operating costs, improved condition of housing stock, improved homeowner comfort, improved capacity of the local contractor base to deliver comprehensive services, improved customer service and reduced greenhouse gas emissions.
Other information deemed appropriate	None.

3.2.1. *Residential Low-Income Programs*

Program Title and Program years during which program will be implemented	**5. Low Income Program** **2013-2015**
Objective(s) and program metrics	This program provides electric energy conservation measures and client education to the Company's low-income customers that receive electric service from the Company. This program is administered by OPAE who works with community-based agencies and subcontractors. Under various stipulations, the last of which was approved in Case No. 12-1230-EL-SSO, the Company will provide funds to enhance the existing program's attention to electric energy savings measures. In that case, the Low Income Program is referred to as the "Community Connections" program. Relevant metrics are provided in Appendices B and C.
Target market (including participation requirements)	The target beneficiaries of this program are residential customers and landlords of residents eligible for one of the following: (i) the Ohio Home Weatherization Assistance Program (HWAP); (ii) Percent of Income Payment Plan (PIPP); or (iii) Home Energy Assistance Program (HEAP).
Program approach, rationale and description	This program involves the Company providing funding to OPAE who subcontracts to community-based agencies to provide electric energy conservation measures and energy education to the Company's' low-income residential customers. All work is completed pursuant to appropriate government permits and inspected as required. All services use due care to assure that all services, materials and supplies are of good quality, reasonably priced, and installed in a professional workmanlike manner and all contractors are duly qualified to complete the work they have been assigned. Energy conservation services are to be performed throughout the Company's' service territory.
Implementation strategy (including expected changes that may occur in different program years)	Program services will be delivered by OPAE and subcontracted to community-based agencies. Participation by low-income customers in other programs will be tracked or estimated to support reporting and evaluation.
Program issues and risks and risk management strategy	The Company expects minimal risks as this program is already operational. OPAE will monitor program performance to mitigate emerging risks.
Ramp-Up strategy	This is a continuation of the Companies' existing program.

Marketing strategy	Information regarding the program will be communicated both through OPAE and its related community-based agencies and the Companies' call center and website.
Market Transformation Strategy (if applicable)	This program's objective of the transformation of markets toward higher market share of efficient electric appliances, products, and homes will be achieved through direct installation of efficient products and materials, and by educating customers about energy efficiency and offering them incentives to purchase energy efficient products.
Eligible measures and incentive strategy, include tables for each year of program, as appropriate showing financial incentives & rebate levels (e.g., $ per measure, $ per kWh or MW saved)	Pursuant to the terms of various stipulations, the last of which was approved in Case No. 12-1230-EL-SSO, the Companies have included funding in the portfolio Plan to cover the cost of measures and OPAE administration. Electric energy conservation measures and client education include but are not limited to: Home energy audits, installation of CFLs, blower door tests, air sealing (such as weather stripping, caulking, foam), appliance replacement, insulation, cooling load reducing measures, electric hot water heat reducing measures, such as energy-saving shower heads and faucet aerators and limited health and safety measures. Qualified customers will receive, at no additional cost, electric energy conservation measures and customer energy education. Landlords of qualified low-income residential customers will receive similar measures at 50 percent of the cost. These improvements will result in more efficient electricity usage which will result in less electric consumption.
Non-Energy Benefits	The installation of high efficiency measures may result in lower carbon and other greenhouse gas emissions. Lower societal costs through reduced energy bills that are paid through a social program.
Other information deemed appropriate	Energy efficiency measures must meet the State of Ohio Weatherization Program standards, must satisfy the TRC test or its equivalent as well as necessary EM&V requirements and/or be included in the Ohio TRM.

3.3. Small Enterprise Programs

For purposes of this Plan the Company included as its Small Enterprise sector all customers taking service under its rate schedule GS. The table below details the comparison of this sector's existing programs to the new programs and descriptions included in this Plan:

CEI Table 9: Existing & New C/I Small Enterprise Programs

C/I & DR Programs in Proposed Portfolio		
Existing Program Name	**New Program Name**	**Program Description**
Small Enterprise Programs		
C&I Equipment Program - Small	C&I Energy Efficient Equipment Program - Small	Provides financial incentives (Prescriptive & Performance) and support to customers directly or through retialers for implementing energy efficient equipment and products. Other delivery mechanisms may include EE kits provided to participants.
C&I Equipment Program (Industrial Motors) - Small		
C&I Equipment Program (Commercial Lighting) - Small		
C&I New Construction Program	Energy Efficient Buildings Program - Small	Provides financial incentives and support to customers for implementing energy efficient custom building shell or system improvements. Other delivery mechanisms include EE kits provided to participants and incentives towards energy efficiency audits.
C&I Audits		

The table below details each measure that is offered in the programs listed in CEI Table 9 and whether it is an existing or new measure:

CEI Table 10: Proposed C/I Small Enterprise Portfolio

Proposed C/I & DR Portfolio Measures			
Program	**Sub Program**	**Measure Name**	**Measure Status**
C&I Energy Efficient Equipment Program Small	**HVAC & Water Heating**	Air Conditioning 65,000-760,000 BTU/Hr (5-65TN)	Existing
		HVAC Maintenance - Small C&I	New
		Hotel Room HVAC/Receptacle Controls	New
		Dual Enthalpy Economizer	New
		Electric Chillers	New
		Room Air Conditioners - Small C&I	New
		Electric Water Heaters	Existing
		Water-Cooled cent Chiller Upto 300 tn	Existing
	Appliances - Small	Clothes Washer - Small C&I	Existing
		Refrigerator Recycling - Small C&I	New
		Freezer Recycling - Small C&I	New
		Room Air Conditioner Recycling - Small C&I	New
		Refrigerators - Small C&I	New
		Freezers - Small C&I	New
		Vending Equipment Controller (Remote Mount, Lighting)	Existing
		Window Film	Existing
		Smart Strip (Load Sensing & Occupancy) - Small C&I	Existing
	Food Service	Efficient Refrigeration Condenser	Existing
		Commercial Solid Door Freezers	Existing
		Commercial Solid Door Refrigerators	Existing
		Commercial Glass Door Refrigerators	New
		Efficient Refrigeration Condenser	Existing
		Ice Machines	Existing
		Steam Cookers	Existing
		Hot Food Holding Cabinet	New
		Fryers & Griddles	New
		Combination & Convection Ovens	New
		Refrigerated Case Covers	New
		Anti Sweat Heater Controls	New
		LED Reach in Refrig / Freezer Lights	New
		Pre Rinse Sprayers	Existing
		Strip curtains for walk-in Refrig/Freezer	Existing
	Lighting	Ext HID to > EE Technology (St, Area & Prk Gar)	Existing
		Linear Flourescent Retrofits (Stndrd & Non Stndrd)	Existing
		LED Exit Signs (Retrofit Only)	Existing
		Energy Efficient Lighting Products - Small C&I	New
		Lighting Controls (Occupancy & Daylight) - Small C&I	Existing
	Custom Equipment	VFDs up to 200 HP	Existing
		VFDs greater than 200 HP	Existing
		Custom	Existing
Energy Efficient Buildings Program Small	**New Buildings**	New Construction - Small C&I	Existing
	C&I Audits	Audit - Small C&I	Existing
		On-Line Audit - Small C&I	Existing
	Custom Buildings	Custom Buildings	New
	Kits	Efficiency Kits - Small C&I	New

Below is a summary of all of this sector's programs being proposed in this Plan:

Program Title and Program years during which program will be implemented	**6. C&I Energy Efficient Equipment Program - Small** **2013 - 2015**
Objective(s) and program metrics	This is a consolidated program that is a combination of the existing C&I Equipment Program-Small, C&I Equipment Program (Industrial Motors)-Small, and C&I Equipment Program (Commercial Lighting)-Small and the addition of new measures as indicated above. In addition, the consolidated program is broken into the following sub-programs: • HVAC & Water Heating • Appliances • Food Service • Lighting • Custom Equipment The primary objective of the program is to accelerate the adoption and increase the market share of high efficiency equipment among commercial and industrial customers. This program will provide financial support through incentives to the commercial and industrial customer who implements qualifying high efficiency measures, recycles inefficient appliances or retrofit specialized processes and applications to higher efficiency processes and applications. Prescriptive and performance incentives are intended to reduce customer's capital investment for qualifying high efficiency equipment. Relevant metrics are provided in Appendices B and C.
Target market (including participation requirements)	Commercial, industrial, and municipal customers in the Company's Ohio service territory.
Program approach, rationale and description	This program will provide financial support through incentives to the commercial and industrial customer who implements qualifying high efficiency measures. Prescriptive and performance incentives are intended to reduce customer's capital investment for qualifying high efficiency equipment. Potential enhancements to this program include working with customers, manufacturers, allies, wholesalers and retailers including mid/up-stream incentives on select measures, other methods for providing incentives and other rebate application processes based on market considerations and opportunities that are identified during program implementation. Initiatives may be added as current technologies are retired from the market and new ones require promotion and encouragement.

HVAC & Water Heating

HVAC measures within the C&I Energy Efficient Equipment Program - Small are intended to encourage customers to maintain or install more efficient HVAC equipment in an effort to reduce both energy consumption and demand in the HVAC end use category. The Plan proposes traditional and newer efficiency measures within this grouping as listed in the table above. Prescriptive-based incentives will be provided to encourage customers to perform maintenance on existing units to ensure baseline performance levels are being met, to upgrade less efficient HVAC equipment to higher efficiency units, and to install HVAC system controls, in order to improve system operation and decrease system run hours. These program measures are selected and designed to encourage the customer to retrofit existing systems, implement controls and install newer energy efficiency measures.

Water Heating measures within the C&I Energy Efficient Equipment Program - Small are intended to encourage customers to install more efficient water heating equipment in an effort to reduce both energy consumption and demand in the water heating end use. The Plan proposes traditional and newer efficiency sub-measures within this grouping. Prescriptive based incentives will be provided to customers for upgrading less efficient Domestic Hot Water (DHW) equipment to higher efficiency units. The focus will be on replacing resistive electric domestic storage type units. These program measures as designed to encourage customer renovation of existing systems and install newer energy efficiency measures.

Appliances

Appliance recycle and rebate measures within the C&I Energy Efficient Equipment Program - Small are intended to encourage customers to recycle inefficient refrigeration and room air conditioning appliances and replace them with ENERGY STAR® qualified appliances in an effort to reduce both energy consumption and demand in the Small Enterprise sector.

Prescriptive-based incentives will be provided to consumers and financial incentives and support to retailers that sell energy efficient products, such as ENERGY STAR® qualified appliances.

Provides a service and incentive to customers for turning in inefficient operating appliances. Large and other qualifying appliances will be picked up at the customer's business. In addition, periodic events may be offered at centralized drop-off locations where customers can drop off smaller

inefficient operating appliances such as compact refrigerators and room air conditioners.

Food Service

Food service / commercial kitchens measures within the C&I Energy Efficient Equipment Program - Small are intended to encourage customers to install more efficient food service equipment in an effort to reduce both energy consumption and demand in the food service sector. The Plan proposes traditional, ENERGYSTAR® rated, and newer efficiency measures within this grouping as listed in the table above. Prescriptive incentives will be offered for retrofits of existing, and for the installation of new, energy efficient systems and equipment. These program measures are designed to encourage customers to retrofit existing food service equipment implement equipment controllers or to install newer energy efficiency measures.

Lighting

Lighting measures within the C&I Energy Efficient Equipment Program - Small are intended to encourage customers to install more efficient lighting equipment in an effort to reduce both energy consumption and demand in the lighting end use category. The Plan proposes measures within this grouping as listed in the table above. Prescriptive and performance based incentives will be provided to customers for upgrading less efficient lighting systems to higher efficiency lighting and controls. Prescriptive incentives will be offered for individual lighting applications and smaller retrofit projects employing standard efficient lighting technologies. Performance based incentives will be offered for higher efficient technologies as well as larger projects and retrofits, based on kWh savings. These program measures are designed to encourage customer renovation of existing lighting systems and to install newer energy efficiency measures by not limiting the reward to standard efficient lighting technologies. This offering will allow for future market development that can bring even greater energy savings without modification of the program design.

Custom

Custom measures within the C&I Energy Efficient Equipment Program - Small are intended to encourage customers to retrofit to or install more efficient specialized processes and applications in an effort to reduce both energy consumption and demand. Calculated or performance based incentives will be provided to customers for upgrading less efficient specialized processes and applications (e.g. variable frequency drives, motors, compressed air leakage reduction, equipment replacement, combined heat and power, process

	change, etc.) to high efficiency specialized processes and applications.
Implementation strategy (including expected changes that may occur in different program years)	A qualified Program Implementation Vendor ("Vendor") will conduct the marketing and rebate fulfillment aspects of this program. Intra Company resources will be utilized to conduct outreach to their constituents regarding program availability. All existing measures will continue as implemented from 2012 into the 2013-2015 Plan. Minor changes to existing measures will be implemented as efficiently as possible in an effort to reduce Vendor costs and attempt to reduce customer confusion. This program is designed to provide incentives after customers have installed qualified energy efficient equipment. The Company will consider providing the direct installation of select energy efficiency measures to customers through participating contractors during program implementation or as a future enhancement.
Program issues and risks and risk management strategy	Ramp up in new measures may be slower than otherwise expected. A customer education campaign that informs customers about the benefits of energy efficiency in general, as well as the specific benefits regarding energy efficiency will be utilized to minimize slow ramp-up.
Ramp-Up strategy	The Company intends to direct its Vendor to begin communicating program changes and the new measure offering in the last two months of 2012 so Commercial and Industrial customers can plan and budget for projects in 2013. The program changes and new measures are expected to be 'fully launched' that is, offered to the entire target population on the launch date. It is assumed that the ramp up period for new program measures will occur in the 2013 and 2014 plan years. In the 2013-2014 plan years, the participation rates are projected to be lesser of future year levels representing the Company's estimate of ramp-up.
Marketing strategy	Marketing activities will target eligible customers to inform them of the program changes and the new measure, its components, and the associated benefits through bill inserts, direct mail, website, trade shows, the business customer newsletter, and key account managers. The Company will work with distributors and contractors to market eligible higher efficiency equipment than required by federal standard. Additionally, Company resources will be utilized to conduct outreach to their constituents regarding program availability.
Market Transformation Strategy (if	The objective of the program is to promote the installation of

applicable)	energy efficient equipment which will increase market demand for those measures, thereby increasing customer awareness, EE product availability and lowering EE product prices.
Eligible measures and incentive strategy, include tables for each year of program, as appropriate showing financial incentives & rebate levels (e.g., $ per measure, $ per kWh or MW saved)	Incentives are designed to help overcome cost barriers of implementing the program measures. Proposed measures with their eligibility and rebate strategy can be found in CEI Table 10, Appendix C-1, and Appendix C-4.
Non-Energy Benefits	Due to the longer life of some high efficiency equipment, customers do not need to maintain or replace consumables as often thus reducing the customers operation and maintenance costs.
Other information deemed appropriate	None.

Program Title and Program years during which program will be implemented	**7. Energy Efficient Buildings Program - Small** **2013 - 2015**
Objective(s) and program metrics	This is a consolidated program that is a combination of the existing C&I New Construction Program, C&I Audits and the addition of new measures as indicated above. In addition, the new program is broken into the following sub-programs: New Buildings C&I Audits Custom Buildings Kits The primary objective of this program is to accelerate the adoption and increase the energy efficiency of buildings among commercial and industrial customers. This program will provide financial support through incentives to the commercial and industrial customers who implements qualifying high efficiency measures. Relevant metrics are provided in Appendices B and C.
Target market (including participation requirements)	All existing commercial, industrial, and municipal customers with buildings in the Company's Ohio service territory.
Program approach, rationale and description	This program will provide financial support through incentives to the commercial and industrial customer who implements qualifying high efficiency building shell improvements, request or complete an energy efficiency audit, or request an EE Kit. Prescriptive and performance incentives are intended to reduce customer's capital investment for qualifying high efficiency equipment. Initiatives may be added as current technologies are retired from the market and new ones require promotion and encouragement. <u>New Buildings</u> The New Construction measure within the Energy Efficient Buildings Program - Small is intended to encourage customers to construct buildings to higher efficiency codes and standards in an effort to reduce both energy consumption and demand. The Plan proposes a measure within this grouping as listed in the table above. This sub-program provides financial support through incentives for the design and construction of buildings that exceed standard building codes and practices by 15% of the electrical consumption and meet ENERGY STAR®. The incentives will cover a portion of the incremental cost for design services over the

base cost of building design.

Project eligibility is any new construction or major renovation project, where significant electric energy use is projected, for potential to improve efficiencies of electric equipment to meet the increased energy efficiency standard.

The program provides incentives to building owners and developers for achieving energy efficiency targets through a combination of building shell and equipment upgrades. To qualify for this program, the facility must exceed the standard building code by 15 percent consistent with energy efficiency standards as published by the Department of Energy under the ENERGY STAR® program.

While not a requirement, some projects may elect to expand their targets toward LEED certification status. This program also seeks to move construction to ASHRAE 90.1 standards.

C&I Audits

The Audit - Small measure with-in the Energy Efficient Buildings Program - Small is intended to encourage customers to acquire a detailed third party energy efficiency audit for their building and/or process systems. This program will provide financial support through incentives to the commercial and industrial customer who implements qualifying audit recommended high efficiency building shell and/or system improvements. The incentive will be toward the customers cost of the third party audit pending approval and implementation of audit recommended energy efficiency improvements that are incented through the Company's other Plan programs. The program provides audit incentives of up to $4000.

Custom Buildings

The Custom Buildings sub-program group of measures within the Energy Efficient Buildings Program - Small is intended to encourage customers to install specialized building shell improvements to reduce energy consumption and demand by improved building energy performance.

This program provides financial support through incentives for the implementation of cost effective, high efficiency measures to improve building energy performance by commercial and industrial customers. Incentives are intended to reduce customer's capital investment for selected high efficiency equipment and operations.

Performance incentives will be provided to customers for installing highly specialized custom building shell improvements. The incentive will be based on verified energy savings through the EM&V process. The energy

	savings threshold per project to qualify for the incentive is initially set at 20,000kWh/yr. Kits The Kit measure within the Energy Efficient Buildings Program - Small is intended to educate customers on the benefits of simple EE&C measures and other opportunities to accelerate the adoption and increase the market share of high efficiency equipment in the small business sector, to improve building energy performance in an effort to reduce both energy consumption and demand. The Plan proposes initial measures within this grouping as listed in the table above and Kits may include items such as, but not limited to, Compact Fluorescent Lights, Smart Strips, Faucet Aerators etc. This sub-program provides cost effective measures and promotes customer participation and adoption of more comprehensive measures through an Energy Efficiency Kit provided at no upfront cost to the small business customers. These Energy Efficiency Kit measures are implemented by the customer and provide the opportunity to get broad participation in the program which spurs additional interest in energy efficiency. The Energy Efficiency Kits will promote customer participation from engaged customers in other C/I programs and the adoption of more comprehensive measures. The Energy Efficient Buildings Program will provide Energy Efficiency kits to commercial and industrial customers to demonstrate the positive effects of EE&C measures and promote other Company programs and comprehensive measures. The kit will act as the incentive for this program measure.
Implementation strategy (including expected changes that may occur in different program years)	A qualified Program Implementation Vendor ("Vendor") will conduct the marketing and rebate fulfillment aspects of this program. Intra Company resources will be utilized to conduct outreach to their constituents regarding program availability. All existing measures will continue as implemented from 2012 into the 2013-2015 Plan. Minor changes to existing measures will be implemented as efficiently as possible in an effort to reduce Vendor costs and attempt to reduce customer confusion.
Program issues and risks and risk management strategy	Ramp up in new measures may be slower than otherwise expected. A customer education campaign that informs customers about the benefits of energy efficiency in general, as well as the specific benefits regarding energy efficiency will be utilized to minimize slow ramp-up.
Ramp-Up strategy	The Company intends to direct its Vendor to begin communicating program changes and the new measure offering in the last two months of 2012 so Commercial and Industrial

	customers can plan and budget for projects in 2013. The program changes and new measures are expected to be 'full launched' that is, offered to the entire target population on the launch date. It is assumed that the ramp up period for new program measures will occur in the 2013 and 2014 plan years. In the 2013-2014 plan years, the participation rates are projected to be lesser of future year levels representing the Company's estimate of ramp-up.
Marketing strategy	Marketing activities will target eligible customers to inform them of the program changes and the new measure, its components, and the associated benefits through bill inserts, direct mail, website, trade shows, the business customer newsletter, and key account managers. The Company will work with distributors and contractors to market eligible higher efficiency equipment than required by federal standard. Additionally, Company resources will be utilized to conduct outreach to their constituents regarding program availability.
Market Transformation Strategy (if applicable)	The objective of the program is to promote the installation of energy efficient equipment and increase building shell performance which will increase market demand for those measures, thereby increasing customer awareness, EE product availability and lowering EE product prices.
Eligible measures and incentive strategy, include tables for each year of program, as appropriate showing financial incentives & rebate levels (e.g., $ per measure, $ per kWh or MW saved)	Proposed measures with their eligibility and rebate strategy can be found in CEI Table 10, Appendix C-1, and Appendix C-4
Non-Energy Benefits	Due to the longer life of some high efficiency equipment, customers do not need to maintain or replace consumables as often thus reducing the customers operation and maintenance costs.
Other information deemed appropriate	None.

3.4. Mercantile-Utility Programs (Large Enterprise) program summaries – indicate which programs are new or continuing.

For purposes of this Plan the Company included as its Mercantile-Utility (Large Enterprise) sector all customers taking service under its rate schedules GP, GSU, and GT. The table below details the comparison of this sector's existing programs to new programs included in this Plan:

CEI Table 11: Existing & New C/I Large Enterprise Programs

C/I & DR Programs in Proposed Portfolio		
Existing Program Name	**New Program Name**	**Program Description**
Mercantile-Utility (Large Enterprise) Programs		
C&I Equipment Program - Large	C&I Energy Efficient Equipment Program - Large	Provides financial incentives (Prescriptive & Performance) and support to customers directly or through retialers for implementing energy efficient equipment and products. Other delivery mechanisms may include EE kits provided to participantsparticipants and incentives towards energy efficiency audits.
C&I Equipment Program (Commercial Lighting) - Large		
C&I Equipment Program (Industrial Motors) - Large		
Technical Assessment Umbrella Program		
C&I Equipment Program - Large	Energy Efficient Buildings Program - Large	Provides financial incentives and support to customers for implementing energy efficient custom building shell or system improvements. Other delivery mechanisms include EE kits provided to participants and audits coupled with direct installation of low cost measures.
C&I Interruptible Load Program	Demand Reduction Program	Captures load curtailment and curtailable capacity from the Companies' Interruptible Load Programs (Economic Load Response and Optional Load Response) and from additional demand resources including resources participating in the PJM market or through contracts for demand response attributes with customers or PJM CSPs.

The table below details each measure that is offered in the programs listed in CEI Table 11 and whether it is an existing or new measure:

CEI Table 12: C/I Large Enterprise Portfolio

Proposed C/I & DR Portfolio Measures			
Program	**Sub Program**	**Measure Name**	**Measure Status**
C&I Energy Efficient Equipment Program - Large	**HVAC - Large**	Air Conditioning 65,000-760,000 BTU/Hr (5-65TN) - Large C&I	Existing
		HVAC Maintenance - Large C&I	New
		Dual Enthalpy Economizer - Large C&I	New
		Electric Chillers - Large C&I	New
		Water-Cooled cent Chiller up to 300 tn - Large C&I	Existing
	Lighting - Large	Energy Efficient Exterior Lighting (Area & Prk Gar) - Large C&I	Existing
		Linear Fluorescent Retrofits (Stndrd & Non Stndrd) - Large C&I	Existing
		LED Exit Signs (Retrofit Only) - Large C&I	Existing
		Energy Efficient Lighting Products - Large C&I	New
		Lighting Controls (Occupancy & Daylight) - Large C&I	Existing
	Custom Equipment - Large	VFDs up to 200 HP - Large C&I	Existing
		VFDs greater than 200 HP - Large C&I	Existing
		Custom - Large C&I	Existing
Energy Efficient Buildings Program - Large	**C&I Audits - Large**	Audit - Large C&I	Existing
	Custom Buildings - Large	Custom Buildings - Large C&I	Existing
		Retrocommissioning - Large C&I	Existing
Demand Reduction Program	**Demand Response - Large**	Interruptible Tariff	Existing
		Contracted Demand Resources	Existing

Below is a summary of all of this sector's program summaries being proposed in this Plan:

Program Title and Program years during which program will be implemented	**8. C&I Energy Efficient Equipment Program - Large** **2013-2015**
Objective(s) and program metrics	This is a consolidated program that is a combination of the existing C&I Equipment Program-Large, C&I Equipment Program (Industrial Motors)-Large, C&I Equipment Program (Commercial Lighting)-Large, Technical Assessment Umbrella Program and the addition of new measures as indicated above. In addition, the consolidated program is broken into the following sub-programs: • HVAC • Lighting • Custom Equipment The primary objective of the program is to accelerate the adoption and increase the market share of high efficiency equipment among commercial and industrial customers. This program will provide financial support through incentives to the commercial and industrial customer who implements qualifying high efficiency measures or retrofit specialized processes and applications to higher efficiency processes and applications. Prescriptive and performance incentives are intended to reduce customer's capital investment for qualifying high efficiency equipment. Relevant metrics are provided in Appendices B and C.
Target market (including participation requirements)	Commercial, industrial, and municipal customers in the Company's Ohio service territory.
Program approach, rationale and description	This program will provide financial support through incentives to the commercial and industrial customer who implements qualifying high efficiency measures. Prescriptive and performance incentives are intended to reduce customer's capital investment for qualifying high efficiency equipment. Potential enhancements to this program include working with customers, manufacturers, allies, wholesalers and retailers including mid/up-stream incentives on select measures, other methods for providing incentives and other rebate application processes based on market considerations and opportunities that are identified during program implementation. Initiatives may be added as current technologies are retired from the market and new ones require promotion and encouragement.

HVAC

HVAC measures within the C&I Energy Efficient Equipment Program - Large are intended to encourage customers to maintain or install more efficient HVAC equipment in an effort to reduce both energy consumption and demand in the HVAC end use category. The Plan proposes traditional and newer efficiency measures within this grouping as listed in the table above. Prescriptive-based incentives will be provided to encourage customers to perform maintenance on existing units to ensure baseline performance levels are being met, to upgrade less efficient HVAC equipment to higher efficiency units, and to install HVAC system controls, in order to improve system operation and decrease system run hours. These program measures are selected and designed to encourage the customer to retrofit existing systems, implement controls and install newer energy efficiency measures.

Lighting

Lighting measures within the C&I Energy Efficient Equipment Program - Large are intended to encourage customers to install more efficient lighting equipment in an effort to reduce both energy consumption and demand in the lighting end use category. The Plan proposes measures within this grouping as listed in the table above. Prescriptive and performance based incentives will be provided to customers for upgrading less efficient lighting systems to higher efficiency lighting and controls. Prescriptive incentives will be offered for individual lighting applications and smaller retrofit projects employing standard efficient lighting technologies. Performance based incentives will be offered for higher efficient technologies as well as larger projects and retrofits, based on kWh savings. These program measures are designed to encourage customer renovation of existing lighting systems and to install newer energy efficiency measures by not limiting the reward to standard efficient lighting technologies. This offering will allow for future market development that can bring even greater energy savings without modification of the program design.

Custom

Custom measures within the C&I Energy Efficient Equipment Program - Large are intended to encourage customers to retrofit to or install more efficient specialized processes and applications (e.g. variable frequency drives, motors, compressed air leakage reduction, equipment replacement, combined heat and power, process change, etc.) in an effort to reduce both energy consumption and

	demand. Performance based incentives will be provided to customers for upgrading less efficient specialized processes and applications to high efficiency specialized processes and applications.
Implementation strategy (including expected changes that may occur in different program years)	A qualified Program Implementation Vendor ("Vendor") will conduct the marketing and rebate fulfillment aspects of this program. Intra Company resources will be utilized to conduct outreach to their constituents regarding program availability. All existing measures will continue as implemented from 2012 into the 2013-2015 Plan. Minor changes to existing measures will be implemented as efficiently as possible in an effort to reduce Vendor costs and attempt to reduce customer confusion.
Program issues and risks and risk management strategy	Ramp up in new measures may be slower than otherwise expected. A customer education campaign that informs customers about the benefits of energy efficiency in general, as well as the specific benefits regarding energy efficiency will be utilized to minimize slow ramp-up.
Ramp-Up strategy	The Company intends to direct its Vendor to begin communicating program changes and the new measure offering in the last two months of 2012 so Commercial and Industrial customers can plan and budget for projects in 2013. The program changes and new measures are expected to be 'full launched' that is, offered to the entire target population on the launch date. It is assumed that the ramp up period for new program measures will occur in the 2013 and 2014 plan years. In the 2013-2014 plan years, the participation rates are projected to be lesser of future year levels representing the Company's estimate of ramp-up.
Marketing strategy	Marketing activities will target eligible customers to inform them of the program changes and the new measure, its components, and the associated benefits through bill inserts, direct mail, website, trade shows, the business customer newsletter, and key account managers. The Company will work with distributors and contractors to market eligible higher efficiency equipment than required by federal standard. Additionally, Company resources will be utilized to conduct outreach to their constituents regarding program availability.
Market Transformation Strategy (if applicable)	The objective of the program is to promote the installation of energy efficient equipment which will increase market demand for those measures, thereby increasing customer awareness, EE product availability and lowering EE product prices.
Eligible measures and incentive strategy, include tables for each year of	The incentives are designed to help overcome cost barriers of implementing the measures. Proposed measures with their

program, as appropriate showing financial incentives & rebate levels (e.g., $ per measure, $ per kWh or MW saved)	eligibility and rebate strategy can be found in CEI Table 12, Appendix C-1, and Appendix C-4.
Non-Energy Benefits	Due to the longer life of some high efficiency equipment, customers do not need to maintain or replace consumables as often thus reducing the customers operation and maintenance costs.
Other information deemed appropriate	None.

Program Title and Program years during which program will be implemented	**9. Energy Efficient Buildings Program - Large** **2013 - 2015**
Objective(s) and program metrics	This is a consolidated program that is a combination of the existing C&I Equipment Program-Large and the addition of new measures as indicated above. In addition, the consolidated program is broken into the following sub-programs: C&I Audits Custom Buildings The primary objective of this program is to accelerate the adoption and increase the energy efficiency of buildings among commercial and industrial customers. This program will provide financial support through incentives to the commercial and industrial customers who implements qualifying high efficiency measures. Relevant metrics are provided in Appendices B and C.
Target market (including participation requirements)	All existing commercial, industrial, and municipal customers with buildings in the Company's Ohio service territory.
Program approach, rationale and description	This program will provide financial support through incentives to the commercial and industrial customer who implements qualifying high efficiency building shell improvements, retro commissioning of building operation systems or requests an energy efficiency audit. Prescriptive and performance incentives are intended to reduce customer's capital investment for qualifying high efficiency equipment. Initiatives may be added as current technologies are retired from the market and new ones require promotion and encouragement. <u>C&I Audits</u> The Audit - Large measure with-in the Energy Efficient Buildings Program - Large is intended to encourage customers to acquire a detailed third party energy efficiency audit for their building and/or process systems. This program will provide financial support through incentives to the commercial and industrial customer who implements qualifying audit recommended high efficiency building shell and/or system improvements. The incentive will be toward the customers cost of the third party audit pending approval and implementation of audit recommended energy efficiency improvements that are incented through the Company's other Plan programs. The program provides audit incentives of up to $4000.

	Custom Buildings The Custom Buildings measure within the Energy Efficient Buildings Program - Large is intended to encourage customers to install specialized building shell improvements to reduce energy consumption and demand by improved building energy performance. This program provides financial support through incentives for the implementation of cost effective, high efficiency measures to improve building energy performance by commercial and industrial customers. Incentives are intended to reduce customer's capital investment for selected high efficiency equipment and operations. Performance incentives will be provided to customers for installing highly specialized custom building shell improvements. The incentive will be based on verified energy savings through the EM&V process. The energy savings threshold per project to qualify for the incentive is 20,000kWh/yr. The incentive strategy is up to 50% of the total project. The Retrocommissioning measure within the Energy Efficient Buildings Program - Large is intended to encourage customers to gain and utilize certified building system operation training and energy management systems to reduce energy consumption and demand by improved building energy performance. Energy Management Systems**:** Performance incentives will be provided to customers for installing energy management systems. The incentive will be based on verified energy savings through the EM&V process. The energy savings threshold per project to qualify for the incentive is 20,000kWh/yr. The incentive strategy is up to 50% of the total project.
Implementation strategy (including expected changes that may occur in different program years)	A qualified Program Implementation Vendor ("Vendor") will conduct the marketing, auditing and rebate fulfillment aspects of this program. Intra Company resources will be utilized to conduct outreach to their constituents regarding program availability. All existing measures will continue as implemented from 2012 into the 2013-2015 Plan. Minor changes to existing measures will be implemented as efficiently as possible in an effort to reduce Vendor costs and attempt to reduce customer confusion.
Program issues and risks and risk management strategy	Ramp up in new measures may be slower than otherwise expected. A customer education campaign that informs customers about the benefits of energy efficiency in general, as well as the specific benefits regarding energy efficiency will be utilized to minimize slow ramp-up.

Ramp-Up strategy	The Company intends to direct its Vendor to begin communicating program changes and the new measure offering in the last two months of 2012 so Commercial and Industrial customers can plan and budget for projects in 2013. The program changes and new measures are expected to be 'full launched' that is, offered to the entire target population on the launch date. It is assumed that the ramp up period for new program measures will occur in the 2013 and 2014 plan years. In the 2013-2014 plan years, the participation rates are projected to be lesser of future year levels representing the Company's estimate of ramp-up.
Marketing strategy	Marketing activities will target eligible customers to inform them of the program changes and the new measure, its components, and the associated benefits through bill inserts, direct mail, website, trade shows, the business customer newsletter, and key account managers. The Company will work with distributors and contractors to market eligible higher efficiency equipment than required by federal standard. Additionally, Company resources will be utilized to conduct outreach to their constituents regarding program availability.
Market Transformation Strategy (if applicable)	The objective of the program is to promote the installation of energy efficient equipment and increase building shell performance which will increase market demand for those measures, thereby increasing customer awareness, EE product availability and lowering EE product prices.
Eligible measures and incentive strategy, include tables for each year of program, as appropriate showing financial incentives & rebate levels (e.g., $ per measure, $ per kWh or MW saved)	Proposed measures with their eligibility and rebate strategy can be found in CEI Table 12, Appendix C-1, and Appendix C-4.
Non-Energy Benefits	Due to the longer life of some high efficiency equipment, customers do not need to maintain or replace consumables as often thus reducing the customers operation and maintenance costs.
Other information deemed appropriate	None.

Program Title and Program years during which program will be implemented	**10. Demand Reduction Program** **2013-2015**
Objective(s) and program metrics	This is a continuation of the Companies' existing program with addition of demand response resources participating in the PJM market for the applicable delivery year. The program includes the existing C/I Interruptible Load (Riders ELR or OLR) and Contracted Demand Resources measures. The primary objective of this program is obtaining demand response resources including load curtailment, resources participating in the PJM market or contracts for demand response attributes with customers or PJM CSPs. This program provides financial support through the Companies Tariffs and incentives to Commercial and Industrial customers who contract for the ability to curtail with the Company or its Vendor. Relevant metrics are provided in Appendices B and C.
Target market (including participation requirements)	Interruptible Tariff Customers taking service under the Company's Riders ELR or OLR Contracted Demand Resources Customers taking service under Company Rate Schedules GS, GP, GSU, or GT.
Program approach, rationale and description	<u>Interruptible Tariff</u> Please refer to the Company's Riders ELR and OLR in its Electric Service Tariff for program description and rationale. <u>Contracted Demand Resources</u> The Company will count demand response resources participating in the PJM market for the applicable delivery year through PJM CSPs. The Company also has the ability to contract with customers or PJM Curtailment Service Providers (CSPs) for demand response attributes. PJM CSPs will provide services to register customer curtailable load resources in the PJM markets and Company program. The PJM CSPs will structure individual contracts with customers to participate in the PJM markets. Customer participation in the program and incentives will be according to the contracts established between the Company or PJM CSP and the customer.

Implementation strategy (including expected changes that may occur in different program years)	This program is a continuation of the Companies' existing C/I Interruptible Load Program. The Companies' Interruptible Tariffs (Riders ELR and OLR) are currently approved through May 31, 2016.
Program issues and risks and risk management strategy	This program relies in part on individual contracted resources. As such, the Company is exposed to performance risk associated with an individual contracted resource's ability to curtail should an event or test event be called. The Company is mitigating this risk through targeting customers of sufficient size and technical knowledge to fully understand Program commitments, as well as incorporating the demand response resources that are participating in the PJM markets.
Ramp-Up strategy	Not applicable.
Marketing strategy	Interruptible Tariff – N/A Contracted Demand Resources This program will utilize the marketing efforts of PJM CSPs, and Company Account Managers to provide customers with information on the Contracted Demand Resources measure and PJM programs that are available to them.
Market Transformation Strategy (if applicable)	Not applicable.
Eligible measures and incentive strategy, include tables for each year of program, as appropriate showing financial incentives & rebate levels (e.g., $ per measure, $ per kWh or MW saved)	Proposed measures with their eligibility and rebate strategy can be found in CEI Table 12, Appendix C-1, and Appendix C-4.
Non-Energy Benefits	Reduces the need to build additional generating capacity which, in turn, may benefit the environment.
Other information deemed appropriate	None

3.5. Governmental program summaries – indicate which programs are new or continuing.

For purposes of this Plan the Company included as its Government sector all customers taking service under its rate schedule GS. The table below compares the existing program to the new program being proposed in this Plan:

CEI Table 13: Existing & New Government Programs

C/I & DR Programs in Proposed Portfolio		
Existing Program Name	**New Program Name**	**Program Description**
Government Programs		
Government Lighting Program	Government Tariff Lighting Program	Provides financial incentives and support to customers for implementing energy efficient street lighting or traffic lighting technologies on customer owned and maintained installations.

The table below details each measure that is offered in the programs listed in CEI Table 13 and whether it is an existing or new measure:

CEI Table 14: Government Portfolio

Proposed C/I & DR Portfolio Measures			
Program	**Sub Program**	**Measure Name**	**Measure Status**
Government Tariff Lighting Program	**Government**	LED Traffic Signals	Existing
		Energy Efficient Street Lighting	New

The Company's program for government sector customers focuses on customer owned Street Lighting and Traffic/Pedestrian Lighting technology. The opportunities are significant for cost-effective retrofitting of older standard technology to new more efficient lighting fixtures.

The company's existing Government Lighting Program is being renamed the Government Tariff Lighting Program. While this program is specifically targeted to the government entities served on the Companies' street and traffic lighting rate schedules, government facilities qualify for measures and services of other programs for non-residential customers (such as the C/I Energy Audits and Efficient Equipment programs), subject to each program's eligibility rules.

Below is a summary of the Government program being proposed in this Plan:

Program Title and Program years during which program will be implemented	**11. Government Tariff Lighting Program** **2013 – 2015**
Objective(s) and program metrics	The primary objective of this program is to accelerate the adoption and increase the energy efficiency of incandescent traffic or pedestrian signals and customer owned and maintained street or area lighting systems. This program will provide financial support through incentives to the government/municipal customers who implement qualifying high efficiency measures. Relevant metrics are provided in Appendices B and C.
Target market (including participation requirements)	Government customers with traffic and public safety signals served under rate schedule TRF, and/or customers with street and area lighting systems served under the Customer Owned provision of rate schedule STL.
Program approach, rationale and description	This program provides financial support through incentives for the implementation of cost effective, high efficiency measures to improve traffic and public safety, and/or street and area lighting by Government / Municipal customers. Incentives are intended to reduce customer's capital investment for selected high efficiency equipment and operations. Prescriptive incentives will be provided to customers for installing higher efficient lighting technologies. The LED Traffic Signal Measure is targeted at local governments. This component of the program will seek to convert incandescent traffic control or public safety signals to LED technology. The Energy Efficient Lighting Technology measure is offered to municipalities who own and maintain street and area lighting systems and convert or replace the lights with a higher efficient technology.
Implementation strategy (including expected changes that may occur in different program years)	A qualified Program Implementation Vendor ("Vendor") will conduct the marketing and rebate fulfillment aspects of this program. Intra Company resources will be utilized to conduct outreach to their constituents regarding program availability. All existing measures will continue as implemented from 2012 into the 2013-2015 Plan. Minor changes to existing measures will be implemented as efficiently as possible in an effort to reduce Vendor costs and attempt to reduce customer confusion.
Program issues and risks and risk management strategy	Ramp up in new measures may be slower than otherwise expected, due to among other reasons, the long lead in time needed for governmental budgeting processes. A customer education campaign that informs customers about the benefits of

	energy efficiency in general, as well as the specific benefits regarding energy efficiency will be utilized to minimize slow ramp-up.
Ramp-Up strategy	The Company intends to direct its Vendor to begin communicating program changes and the new measure offering in the last two months of 2012 so Government and municipal customers can plan and budget for projects in 2013. The program changes and new measures are expected to be 'full launched' that is, offered to the entire target population on the launch date. It is assumed that the ramp up period for new program measures will occur in the 2013 and 2014 plan years. In the 2013-2014 plan years, the participation rates are projected to be lesser of future year levels representing the Company's estimate of ramp-up.
Marketing strategy	Marketing activities will target eligible customers to inform them of the program changes and the new measure, its components, and the associated benefits. Additionally, Company resources will be utilized to conduct outreach to their constituents regarding program availability.
Market Transformation Strategy (if applicable)	The objective of the program is to promote the installation of energy efficient equipment which will increase market demand for those measures, thereby increasing customer awareness, EE product availability and lowering EE product prices.
Eligible measures and incentive strategy, include tables for each year of program, as appropriate showing financial incentives & rebate levels (e.g., $ per measure, $ per kWh or MW saved)	Proposed measures with their eligibility and rebate strategy can be found in CEI Table 14, Appendix C-1, and Appendix C-4.
Non-Energy Benefits	Reduced operations and maintenance costs associated with traffic, street, and area lighting systems for local governments.
Other information deemed appropriate	None.

3.6. Other program summaries – indicate which programs are new or continuing.

For purposes of this Plan the Company included all customers taking service under all rate schedules. A comparison of existing programs, to new programs, designed for all customer sectors are listed in the following table:

CEI Table 15: Existing & New Other Programs

C/I & DR Programs in Proposed Portfolio		
Existing Program Name	**New Program Name**	**Program Description**
Other Programs		
Mercantile Self-Direct	Mercantile Customer Program	Captures energy efficiency and peak demand reduction projects committed to the Company by Mercantile customers as provided for by O.R.C. 4928.01 and 4928.66
Transmission & Distribution Programs	T&D Improvments	Capture savings achieved through various T&D projects that reduce line losses, which in turn results in a more efficient delivery system.
N/A	Conservation Voltage Reduction Study	The Company is proposing to study a Conservation Voltage Reduction (CVR) Program by carefully analyzing their distribution circuit designs to identify operational changes that potentially could achieve additional energy savings and demand reductions.
Experimental/Special Programs	Smart Grid Modernization Initiative	The intent of the project is to produce an an integrated system of protection, performance, efficiency and economy that extends across the energy delivery system for multiple stakeholder benefits.

The table below details each measure that is offered in the programs listed in CEI Table 15 and whether it is an existing or new measure:

CEI Table 16: Other Portfolio

Proposed C/I & DR Portfolio Measures			
Program	**Sub Program**	**Measure Name**	**Measure Status**
Mercantile Customer Program	**Mercantile**	Mercantile Customer Projects	Existing
T&D Improvements	**Distribution Upgrades**	Distribution Upgrades	Existing
Conservation Voltage Reduction Study	**Conservation Voltage Reduction**	Conservation Voltage Reduction Study	New
Smart Grid Modernization Initiative	**Smart Grid Modernization Initiative**	Smart Grid Modernization Initiative	Existing

Below is a summary of the Other programs proposed in this Plan:

Program Title and Program years during which program will be implemented	**12. Mercantile Customer Program** **2013-2015**
Objective(s) and program metrics	To obtain a commitment from mercantile customers that will allow the Company to include EE&PDR savings from the customer's EE&PDR projects. Relevant metrics are provided in Appendices B and C. **Project Description** Eligible customers who have achieved EE&PDR savings independent of utility programs or incentives may file joint applications with the Company to the Commission for commitment of these savings to the Company and a request to exempt the customer from paying certain charges included in the Company's Rider DSE or opt for a cash rebate. **Project justification as an allowable efficiency activity** R.C. § 4928.66, Section (A) (2) (c) allows for "including the effects of all demand-response programs for mercantile customers of the subject electric distribution utility and all such mercantile customer-sited energy efficiency and peak demand reduction programs, adjusted upward by the appropriate loss factors."
Target market (including participation requirements)	All customers that meet the definition of "mercantile customer", as defined in R.C. § 4928.01 (A) (19) are eligible for this program.
Program approach, rationale and description	Customers must comply with the rules as dictated by the Commission's Mercantile Pilot Program, Docket 10-834-EL-POR.
Marketing and Implementation Strategy	The Company uses Administrators, who are trained periodically on the latest interpretation of Commission orders and rules, process changes, and general updates. The list of Administrators at the time of this filing includes: Association of Independent Colleges & Universities, Council of Small Enterprises, County Commissioners' Association of Ohio (CCAO), E-Group, Industrial Energy Users of Ohio, Ohio Hospitals Association, Ohio Manufacturer's Association, Ohio Schools Council, and Roth Brothers. The role of Administrators includes, but is not limited to, the following: 1. Educating customers about the program. This step includes providing customers with background on S.B. 221 EE & PDR requirements for utilities, explaining the

	two incentive options available. 2. Identifying for the Company customers who appear to qualify as a mercantile customer, who are interested in the program, who have projects that may qualify and who otherwise qualify under the Company's applicable rate schedules. 3. Providing estimates of potential EE and PDR savings. 4. Screening potential customer project(s) to determine if the project(s) appear to qualify under Commission Rules and Company rate schedules. 5. For those projects that qualify, complete all necessary forms provided by the Company and gather all supporting documentation required by the Company and/or the Commission. The Company also engages the regional customer service representatives, who are trained and educated on the details of the various program offerings. These representatives meet with a select group of customers to communicate program details. Alternatively, customers can access similar information on the Company's energy efficiency website, energysaveohio.com, where program literature and application forms can be downloaded.
Program issues and risks and risk management strategy	Risks associated with this program primarily relate to verification documentation and finalization of TRM and EM&V protocols. Also, there is uncertainty related to the 24 month renewal process required for exemption extensions. The Company is working with various parties at the Commission to resolve this outstanding issue.
Ramp-Up Strategy	This is a continuation of the existing program.
Eligible measures and incentive strategy, include tables for each year of program, as appropriate showing financial incentives & rebate levels (e.g., $ per measure, $ per kWh or MW saved)	Incentives will be consistent with Commission directive under either the Mercantile Pilot Program, Docket 10-834-EL-POR, or other relevant proceeding and may include Rider DSE2 exemptions, or cash rebates. As of the time of this filing, Customers have a choice between two options for program incentives. The Mercantile Customer program and associated incentives are subject to change at the discretion of the Companies and/or the Commission. • **Option 1 - Cash Rebate:** The cash rebate under the Mercantile Customer Program is 75% of what the project would qualify for under the new FirstEnergy Utilities Incentive Programs. These rebates are capped at the lowest of 50% of the total project cost, $250,000 per project or $500,000 per customer per year. • **Option 2 -DSE2 Rider Exemption:** To receive the

	exemption from the rider, a customer's project savings as compared to its baseline energy usage must meet or exceed the utility's statutory benchmark. The customer is eligible to receive the exemption for as long as the project meets those standards. Exemptions longer than 24 months may be subject to a true-up review. The details for this true-up process are under review by the Commission and may be subject to change without notice.
Non-Energy Benefits	Rewards customers that took a proactive approach to energy efficiency, thus encouraging more such actions in the future.
Other Information deemed appropriate	This program includes costs for marketing assistance through outside third parties. Costs associated with the rebates paid under Option 1 above are not included in the program budgets set forth in Appendices B. Rather, these costs are separately submitted as part of the individual filings that are submitted to the Commission for approval. Upon approval the costs are recovered through the Company's Rider DSE.

Program Title and Program years during which program will be implemented	**13. T&D Improvements Program** **2013-2015**
Objective(s) and program metrics	The Company's existing Transmission & Distribution Program has been renamed to the T&D Improvements Program and is included as part of this Plan. The Company has developed the T&D Improvements program that accumulates the savings achieved through various energy efficiency T&D projects completed by the Company. These projects involve various system improvements that, when made, reduce the amount of line losses, which in turn results in a more efficient delivery system. Relevant metrics are provided in Appendices B and C.
Program approach, rationale and description	This program will contain projects such as, but not limited to, the following that will serve to reduce system line losses, or improve system operation efficiency: a. Reconductoring projects involve the replacement of existing wires with larger wires between either the transmission towers or distribution poles. b. Substation projects including tying together previously unconnected transmission or distribution lines, and/or the addition or upgrade of transformers and circuits in new or existing locations. c. Transmission capacitor bank projects include the addition or expansion of large capacitor banks at a substation location. Distribution capacitor bank projects include the addition of capacitor banks, or a series of banks, in parallel at a substation location or on distribution poles along the circuit. d. Distribution voltage regulation projects involve the replacement of existing equipment with larger and/or more efficient equipment. These projects are selected through a comprehensive project evaluation process that includes among other things, capital requirements and constraints, projected results, and financial paybacks. **Project justification as an allowable efficiency activity** R.C. 4928.66(A)(2)(d) permits a utility to include, for purposes of compliance with statutory EE&PDR benchmarks, "transmission and distribution infrastructure improvements that reduce line losses".
Market Transformation Strategy (if applicable)	None
Eligible measures and incentive	None

strategy, include tables for each year of program, as appropriate showing financial incentives & rebate levels (e.g., $ per measure, $ per kWh or MW saved)	
Non-Energy Benefits	None
Other information deemed appropriate	**Economic benefit from energy savings** Less generation will be required to be purchased, thus reducing total generation costs that would be passed on to customers. Costs associated with this program are not included in the program budgets set forth in Appendices B. Rather, these costs (and their recovery) will be addressed in separate future proceedings.

Program Title and Program years during which program will be implemented	**14. Conservation Voltage Reduction Study** **2013-2015**
Objective(s) and program metrics	Consistent with the Companies' filing in Docket No. 12-814-EL-UNC, the Companies are proposing to study the possible energy efficiency impacts of a Conservation Voltage Reduction (CVR) project on their systems by carefully analyzing their distribution circuits to identify operational changes that have the potential to achieve additional energy savings and demand reductions. Relevant metrics are provided in Appendices B and C.
Target market (including participation requirements)	The CVR Study will examine potential impacts of targeting residential and non residential customers on select distribution circuits where voltage reduction may be achieved while maintaining voltage within regulatory requirements.
Program approach, rationale and description	Conservation Voltage Reduction ("CVR") is the one-time reduction of the distribution circuit voltage, where the voltage is left in a reduced state, with the goal of reducing energy use by consumers on the circuit. To assess the possibility for a CVR project on the Companies' circuits, the Companies will need to carefully analyze their distribution circuits, equipment, and any operational changes so that customers would not experience any degradation of service quality.
Implementation strategy (including expected changes that may occur in different program years)	The Company will carefully analyze the Company's distribution circuits and identify potential areas that may benefit from a CVR project.
Program issues and risks and risk management strategy	The CVR study will determine if the system can operate effectively during peak loads while remaining in compliance with the Ohio Administrative Code – 4901:1-10-04 Equipment for voltage measurements and system voltage and frequency requirements by modeling voltage reductions. The results of the study may find limited opportunities to cost effectively implement CVR.
Ramp-Up strategy	None
Marketing strategy	None
Market Transformation Strategy (if applicable)	None
Eligible measures and incentive strategy, include tables for each year of program, as appropriate showing	None

financial incentives & rebate levels (e.g., $ per measure, $ per kWh or MW saved)	
Non-Energy Benefits	None
Other information deemed appropriate	None

Program Title and Program years during which program will be implemented	**15. Smart Grid Modernization Initiative** **2013-2015**
Objective(s) and program metrics	The intent of the Smart Grid Modernization Initiative (SGMI) is to study the impact of producing an integrated system of protection, performance, efficiency and economy on the energy delivery system for multiple stakeholder benefits. As part of the project, the Company is examining 1) a Consumer Behavior Study, a controlled random test of approaches to Peak Time Rebate Pricing and in home technologies with usage information provided through a web portal; 2) Volt /VAR Controls; and, 3) Distribution Automation. In addition to technical findings, critical non-technical issues such as cost, customer awareness and interaction, and regulatory cost recovery will be explored and understood. Full project objectives and relevant metrics can be found in the Companies filings in Case No 09-1820-EL-ATA et al.
Target market (including participation requirements)	The Ohio site deployment will be executed within a Cleveland suburban area serving residential customers on distribution circuits, representing a demand of over 200 MVA.
Program approach, rationale and description	As part of the economic stimulus package known as the American Recovery and Reinvestment Act of 2009 ("ARRA"), the Department of Energy ("DOE") solicited applications for approximately $3.4 billion of investment grants for the deployment of smart grid technologies. FirstEnergy proposed investing $114 million to evaluate "smart grid" technologies intended to improve the reliability of its three-state service areas' electric distribution infrastructure and to evaluate how the individual distribution systems interact with each other. The costs associated with the Ohio portion of this experimental program are being recovered under a separate AMI rider. Costs associated with the Peak Time Rebate Rider (Rider PTR) being offered as part of the Consumer Behavior Study are recovered through Rider DSE. For the Consumer Behavior study, automated meter infrastructure (AMI) will support customer conservation and demand management in this specific project area. AMI will also include a front-end system that collects customer data and interfaces with a hosted meter data management system, providing detailed customer information regarding specific time of usage. Customers will be offered in-home technology and a peak time rebate to encourage them to manage their energy usage during certain critical peak periods.

	The Volt VAR Control and Distribution Automation Projects will produce an integrated system of performance, efficiency and economy that extends across a portion of the CEI energy delivery system, providing multiple stakeholder benefits. Crosscutting protection system coordination will be supported by SCADA-integrated automation platforms, providing a single Regional Dispatch Office (RDO) control point
Implementation strategy (including expected changes that may occur in different program years)	None
Program issues and risks and risk management strategy	None
Ramp-Up strategy	None
Marketing strategy	None
Market Transformation Strategy (if applicable)	None
Eligible measures and incentive strategy, include tables for each year of program, as appropriate showing financial incentives & rebate levels (e.g., $ per measure, $ per kWh or MW saved)	None
Non-Energy Benefits	None
Other information deemed appropriate	Other information associated with the Companies' SGMI program, including program risks and risk management, implementation strategy, and relevant project milestones as well as information pertaining to the Consumer Behavior Study and Peak Time Rebate can be found in Docket No 09-1820-EL-ATA et al.

3.7. Program Budgets and Data Tables

The Companies have included program budgets and additional data tables as Appendices to this Plan as follows:

- Number of participants are shown in Appendix C-2
- The measures included in this Plan are shown in Appendix C-1
- Dollar incentives are shown in Appendices B1-B3
- kWh savings are shown in PUCO Tables 2 and 7A-7G in Appendix C-3
- kW peak-demand reduced are shown in PUCO Tables 2 and 7A-7G in Appendix C-3
- Estimated program budgets (total) by year are shown in Appendices B
- Savings targets, including tables with MWh and MW goals per year and cumulative tables that document key assumptions of savings per measure or projects are shown in Appendix C
- Cost-effectiveness, including TRC test results for each program with values for each benefit and cost component of TRC calculation are shown in PUCO Tables 7A-7G in Appendix C-3
- Anticipated costs to participating customers are shown in PUCO Table 6A in Appendix C-3

4.0 PLANNING, REPORTING AND TRACKING SYSTEMS

4.1. Program Planning:

As previously discussed, the cornerstone of this Plan is the suite of current successful EE&PDR programs included in the Existing Plan. When designing this Plan, the goal was retain these programs and measures, but streamline and supplement them so as to minimize costs and enhance the value and opportunities to the customer. Therefore, virtually all of the programs and measures included in the Existing Plan have been retained in some form in this Plan.

4.1.1. Define schedule for updating plans and for reporting such updates to Commission

Each year, the Company, as required by the Commission's Rules, files a portfolio status report, which addresses the performance of all approved EE&PDR programs included in the then current approved plan.[10] Included in the filing will be a recommendation on whether each program should be continued, modified, or eliminated. The Company may propose alternative programs to replace eliminated programs, taking into account the overall balance of programming in its three year plan.[11]

Implemented programs are constantly monitored with results reported to Company personnel by program managers as more fully discussed in Section 4.2.1 below. Throughout the Reporting Period, the Company will track program results and the progress being made towards achieving the Company's targets, sharing this information with the Collaborative Group as appropriate. Notification to the Commission of any changes to this Plan as approved by the Commission will be provided as required by the Commission's Rules.[12]

4.2. Project Management Tracking Systems:

4.2.1. Provide brief overview of the utility data tracking system for managing and reporting measures, project program and portfolio activities, status and performance as well as utility performance and expenditures.

The Company utilizes a comprehensive system to report and track activities and results associated with EE&PDR programs across the FirstEnergy system. The reporting and tracking system has the ability to track a customer through program-specific stages as well as provide standard status reports for individual participants and overall programs. The Companies contracted with Applied Energy Group ("AEG"), who developed a comprehensive tracking database for FirstEnergy's Pennsylvania Companies; therefore, the Company was able to replicate that system and reconfigure based on Ohio requirements. Meetings were also conducted with internal and third-party program managers, and the Companies' EM&V contractors to further define requirements in order to ensure accurate reporting of all program metrics. Expenditures are tracked and verified on a monthly basis using the Company's enterprise-wide financial system. Budget vs. actual reports are monitored to ensure program budgets stay within those approved in the Plan.

The Company continually works with third-party program managers and the Companies' EM&V consultant to verify the accuracy of data transferred from implementation contractor databases to the tracking and reporting system.

[10] *See generally* § 4901:1-39-05(C)(2)(c), Ohio Admin. Code.
[11] *See generally* § 4901:1-39-05(C)(2)(c), Ohio Admin. Code.
[12] Id.

4.2.2. Describe how the Utility will coordinate with the Commission on data tracking and transfer. Provide examples of data fields captured

The reporting and tracking system is a web-based application, allowing for access from any internet connection with the proper security authorizations. The system is capable of interfacing with both internal and external source systems to gather detail data and then summarize it for reporting purposes. The system uploads measures and program information on a routine (daily, weekly or monthly) basis. Data integrity is ensured through a routine reconciliation process. This not only reduces paperwork, but helps maintain quality control over data entry as well as allowing for quick evaluation of program performance, and progress towards goal attainment. In addition to standard and customer reports the system has the ability to perform ad-hoc reporting.

The following are examples of data fields captured across various programs:

- Customer name;
- Customer contact information (address, e-mail, phone);
- Customer type;
- Account number;
- Project/Program name;
- Contractor/Retailer;
- Measure;
- Service address;
- Job status;
- Completion date;
- Heating system type;
- kWh/kW savings;
- Incentive;
- Transaction results;
- Measures implemented.

The system allows for varying levels of security-controlled access by Company staff, program contractors, and trade allies.

4.3. Annual report to be posted on PUCO website:

As discussed in Section 4.2, the Company's tracking and reporting system will be used to monitor progress of the programs included in this Plan. Reports will be provided as required by the Commission.

4.3.1. List reports that would be provided to the Commission, the schedule for their delivery, and the intended contents. The focus should be on metrics identified in Section 3.1.1

- An annual portfolio status report is required to be filed with the Commission each year.[13] The Company's report will be filed consistent with the deadlines established by the Commission; the format and content of the report will be consistent with that defined by the Commission.

4.3.2. Describe data that would be available (including format and timeframe of availability) for Commission review and audit.

As indicated in Section 4.2.2, the system will have the ability to provide reports as reasonably required by the Commission. Any data included within the system would be made available to Commission Staff through normal data request procedures. This information would be available for Commission review and audit.

[13] *See* generally § 4901:1-39-05, Ohio Admin. Code.

5.0 PORTFOLIO MANAGEMENT AND IMPLEMENTATION STRATEGIES

5.1. Overview of Utility Management and Implementation Strategies:

5.1.1. Describe the types of services to be provided by the utility as well as by any third-party providers, such as consultants and trade allies. Indicate which organizations will provide which services and the basis for such allocation

Generally the Company will continue overall administration and oversight of this Plan, and utilize third party vendors to perform various program implementation and support duties. Specific activities that the Company will oversee include Plan development; the execution of marketing campaigns; Quality Assurance/Quality Control activities and tracking and reporting activities. The Companies will use contractors to provide many program implementation services, including assistance with Plan design and implementation, EM&V and the installation of the tracking and reporting tool.

The Company may also use the following Administrators that have been approved by the Commission[14], for specific programs, class of customers or to accomplish the goals of a given program. Each of these Administrators is expected to commit to a reasonable level of efficiency and peak demand reductions on behalf of their members; to agree to a reasonable administration fee; and to agree to track and provide documentation evidencing the incremental energy reduction and actual kWh savings achieved from certain programs:

1. Ohio Schools Council
2. Ohio Hospital Association
3. Council of Smaller Enterprises (“COSE”)
4. Ohio Manufacturer’s Association
5. Industrial Energy Users
6. FirstEnergy Solutions Corp. dba The E Group (“The E Group")
7. Roth Bros Inc.
8. Association of Independent Colleges and Universities of Ohio
9. County Commissioners Association of Ohio Service Corporation (CCAOSC)

Unless otherwise expressly stated in this Plan, the compensation paid to these administrators is as approved by the Commission in Docket Nos. 09-0553-EL-EEC, 10-388-EL-SSO, or 12-1230-EL-SSO.

5.1.2. Describe risks to program performance and any risk management strategies that will be employed to mitigate those risks. Examples of risks that can cause a program to not deliver expected savings including program design flaws, technologies targeted by a program failing to deliver the savings expected (or failing to prove that they have delivered the savings), and customers or other key market players (e.g. contractors) choosing not to participate in a program

[14] While the Companies entered into a contract with The Ohio Energy Group, who had also been approved by the Commission, this group notified the Companies of its intent to terminate the agreement.

There are various risks associated with the implementation of this Plan, the more significant of which are described below:

1. Performance Risk is the risk that, due to design or implementation assumptions, the program does not deliver expected savings.

   While modeling assumptions yielded results that support program success within budget, the Company notes the conditions under which these programs will be implemented during the Reporting Period. Below is a list of some of the more material risks the Company will face:

   - The TRM has not been finalized and the uncertainty around the deemed savings estimates poses a risk to our compliance achievements as well as putting the cost effectiveness outcomes at risk.
   - The timing of the regulatory process and related uncertainty while the Plan is under consideration delays the Companies' ability to enter into contracts with implementation vendors and begin large scale execution of program support and implementation activities prior to approval of this Plan. This Plan is based on an assumption that it will be approved no later than November 1, 2012.
   - The economic impact of the continued slow recovery of Ohio's economic base causes concern that business and government accounts may not support the pace of investment estimated, and slow the pace of mass market penetration;
   - Newly introduced programs and measures included in this Plan will not have a historical basis for participation rates or experience. As a result, installation rates may be lower than modeled, particularly in the early years;
   - Targeted participants rates and energy/demand savings may not be achieved due to a variety of factors such as changing technology, market trends or incentives that are not high enough to encourage desired energy efficiency investment. The ability to make mid-stream adjustments on a timely basis to program measures or incentive levels is of paramount importance for the Company to meet its targets and allows the Company to proactively address rapidly evolving technology and market trends.

   The Company has taken steps to identify and manage risks as well as to prepare for contingencies that may be necessary during the Plan's implementation period. Those steps are as follows:

   - The Company will continue seeking input from the Collaborative Group and its Administrator Group as circumstances dictate.
   - The Company will continue to consult with its program implementation vendors to modify program implementation strategies and suggest program designs changes as indicated by participation and savings results.
   - The Company intends to perform EM&V of its EE&PDR programs in order to ensure that all programs are reasonable in terms of dollars spent, participation rates achieved and kWh and kW savings realized.
   - The Company has developed its incentive strategy in a way that allows timely response to market trends. By employing incentive ranges as opposed to fixed points, the Company has the ability to quickly adjust incentive levels within the approved range to maximize program participation with appropriate incentive levels.
   - The Company will continue to address issues and remain committed to resolve: (i) important programmatic change requirements; (ii) potential additions that are found to be necessary and/or desirable as the Company, the Collaborative Group and the Administrator Group collects and assesses

key program performance metrics over the course of each program's deployment and operation; and (iii) unforeseen events that may arise over the next several years.

Given the significant investment required to meet the EE & PDR targets established for the Reporting Period, the Company believes that it is both prudent and necessary to have a robust evaluation process in place from the date of each program's inception, as well as the financial capability to make those changes that are either indicated by the program process evaluations and/or general economic conditions as they change over time.

The Company believes that its Plan contains the right mixture of incentives and measure offerings to meet the prescribed targets. Further, the Company's risk management strategies, as designed, should provide the flexibility necessary to maximize the potential for success.

2. Technology Risk is the risk that program technologies fail to deliver the savings expected.

   This Plan incorporates virtually all of the programs included in the Existing Plan. Therefore this risk is minimized because of the known historic results for the vast majority of the technologies. However, this risk is heightened for those new measures or existing measures that have been modified since incorporated through the Existing Plan. The Company has attempted to manage this risk by relying on its expert consultants, its experience with similar measures used by its sister utilities in other jurisdictions and industry research. Further, This Plan incorporates a comprehensive suite of programs that will have an immediate impact on energy use and, in the long run, should help transform the market into one where customers seek energy efficient options on a regular basis.

3. Market Risk is the risk that customers, or other key market players, such as contractors, are not aware of available programs, or choose to not participate in a program.

   The Company will continue to carefully evaluate various approaches to building and enhancing awareness through communications in order to minimize market risk. It plans to further raise customers' awareness of the benefits of energy efficiency and conservation, as well as the existence of its programs offered through this Plan through a wide-reaching educational campaign, and community level outreach. In addition to a Company developed media campaign, the Company intends to utilize the relationships that its Administrator Group has with various target markets, providing them with educational tools as well. Further, each program implementation vendor will also support and supplement such efforts with program specific marketing activities.

   Market risk will be assessed through program tracking and periodic surveys to gauge awareness of the programs and, for those not participating, barriers to participation. Market risk will also be assessed through periodic process evaluations. This will enable the Company to identify issues related to market risk and implement mid-course corrections to enable the programs to stay on track.

4. Evaluation Risk is the risk that independent EM&V will, based on different measurement methodologies and assumptions, support different levels of savings than those estimated in this Plan. The Company minimizes this risk through its ongoing work with its EM&V consultant, an expert in EE&PDR program design and evaluation, insights gained through Company experiences in other jurisdictions, and by utilizing the draft Ohio TRM and other industry guidelines to estimate program savings. The Company and its EM&V consultant will also work with the Commission's statewide Independent Program Evaluator, in an effort to perform EM&V activities consistent with Commission directives and the laws of the State of Ohio in a sufficiently robust manner so as to reliably capture all applicable program-related savings.

5.1.2.1. Describe the utility's approach and process for shifting goals and funds, as needed between programs and adding new measures/and or programs.

The Company has developed a contingency plan in the unlikely event that any of the following four issues arise:

What if the savings don't materialize? If it is found that one or more programs are not meeting expectations, the Company will take one or more of the following actions:

1. Shift the focus of underperforming programs to measures that have a higher adoption rate. The Company's Plan utilizes over 90 measures that are rolled up into programs. This large number of measures incorporated into the programs allows flexibility to shift emphasis to incorporate successful measures as are required to achieve program energy savings goals.

2. Expand program measures to include emerging technology that shows the potential to produce costs effective savings and may not have been well known, tested, accepted by the market, or produced in sufficient quantities at the time this Plan was designed. The Company will continue to monitor technologies reviewed but not incorporated into this Plan throughout the Reporting Period, discussing potential for such technologies with the Collaborative Group as appropriate. To the extent that new measures show promise for inclusion in the Company's Portfolio, such measures will be discussed in the annual status report that is filed with the Commission.

3. Alter the program delivery processes utilized in order to enhance market penetration. Options here may include having vendors add field staff to handle more inquiries or shorten response times, eliminating or adjusting project requirements if bottlenecks appear to be stalling progress, or other adjustments as dictated by process evaluations. Any changes made will take care not to compromise data tracking for evaluation purposes.
4. Investigate issues that customers have with problem programs and modify delivery based upon the results of these surveys.
5. Shift program delivery to more aggressively promoted and perhaps rebated versions.
6. In extreme cases, abandon non-performing programs or measures and replace them with other programs or measures that show the potential for greater success.
7. Shift resources to higher performing programs. The Plan assumes customer participation based on current experience of the Companies and their consultants. These are based, among other things, on customer participation in existing programs, and market survey results. To the extent actual customer participation significantly differs from these assumptions, the Plan's resources may need to be rebalanced among programs or Sectors to ensure the overall objectives of the Plan are met.
8. Add delivery channels.
9. Shift resources among sectors as needed to address demand.
10. Alter rebate levels on a temporary or long term basis to affect market response.

The Company expects to have the ability to shift resources among programs and/or among customer sectors within the portfolio as needed to meet the goals, consistent with Commission rules.

What mid-course corrections could be implemented? In addition to the steps previously identified, the Company believes that certain programs could be ramped up through enhanced marketing efforts to achieve kWh and kW impacts greater than anticipated under the Company's proposed Plan. This may require a re-balancing of program goals and budgets. Notwithstanding, the EE&PDR program tracking system will provide guidance for making such mid-course decisions and adjustments with enough time for such corrections to take effect. The Companies have infrastructure in place for analysis of such information and the development and resolution of recommendations arising from such analysis.

What would be communicated to regulators and others? In addition to the regular annual status reports submitted each year, the Company will make available to the Commission any pertinent information related to this Plan upon request. Additionally, the Company intends to apprise the Collaborative Group of progress towards achieving the goals throughout the Reporting Period during their regularly scheduled or, if need be, ad hoc meetings and subcommittee meetings.

How will the appropriate mid-course corrections be identified? The Company anticipates using process evaluations to determine progress and identify any necessary corrective actions. Process evaluations will be performed using a combination of participant satisfaction and key customer perception surveys -- all performed using statistically significant samples along with a kWh/kW impact/cost analysis in which each program's performance are compared with Plan expectations. On a monthly basis, the Company conducts an internal evaluation that reviews the progress of each program from both an energy savings and budget perspective. The Company will also meet periodically with the Collaborative Group and its Administrator Group, gathering intelligence learned from either of them.

5.1.2.2. Describe the process for collecting and addressing participating customers, contractor and trade ally feedback (e.g. suggestions and complaints)

During the design phase of the programs, the Companies sought and obtained feedback on potential improvements to the programs included in the Existing Plan and on new programs and measures being contemplated from customers, contractors, various sales channels and members of the Collaborative Group through a variety of methods. Viewpoints of all customer segments were incorporated into EE&PDR program design. Collaborative Group meetings on different aspects of the EE&PDR program design were also held. To the extent practical, responses from these Collaborative Group members have been factored in to the various program designs.

While implementing the approved Plan, the Company will gain additional direct input from various sources, including (i) vendors that perform program management and implementation services; (ii) Collaborative Group members; (iii) results from other utilities; (iv) the Commission or its Independent Program Evaluator for insights into the evolution of the EM&V process; and (v) any continuation of the rulemaking process, where the Companies intend to actively participate in the development of solutions to issues as they arise. Customers will be surveyed to measure satisfaction with the programs and related services, and the efficiency of the EE&PDR measures being implemented. Further, the Companies will investigate program and measure complaints and suggestions from customers, and intend to continue to participate in industry working groups. The Companies' EM&V consultant will assist with program assessments and make recommendations for improvement. Program results and changes will be shared with the Collaborative Group and/or the Administrator Group as appropriate.

5.1.2.3. Describe the procedures for measurement and project installation verification, quality assurance and control, and savings documentation.

The Companies will pursue evaluations of each of the programs that will include features such as:

- Verification of equipment installation and operation;
- Verification and review of documentation supporting energy savings and demand reductions claimed along with the methodologies, data and assumptions used in their development.
- Performance of logging and metering studies as appropriate;
- Process reviews supporting quality assurance and informing vendor performance of program services;
- Coordination and communications related to EM&V activities with the statewide Independent Program Evaluator.

As more fully discussed in Section 5.2, FirstEnergy has a dedicated department focused on energy efficiency and related matters. This group oversees activities of an EM&V consultant who assists the Companies in their EM&V efforts related to each program that is launched.

The Company has included evaluation plans in Section 6.4, which address each program as out lined in the program summaries included in Sections 3.2 through 3.6 of the Plan. The Company recognizes that such evaluations will also be influenced by the statewide Independent Program Evaluator, whose team will articulate the Commission's EM&V expectations. The Companies' EM&V team works in tandem with the statewide Independent Program Evaluator to collect and provide data, addresses questions about their evaluation approach and findings, and assists the Commission's team in their role as advisors to the Commission.

The TRM being developed through the Commission is not final as of the date of this filing. The Companies will continue to support deliberations on the TRM values and their applicability in EM&V.

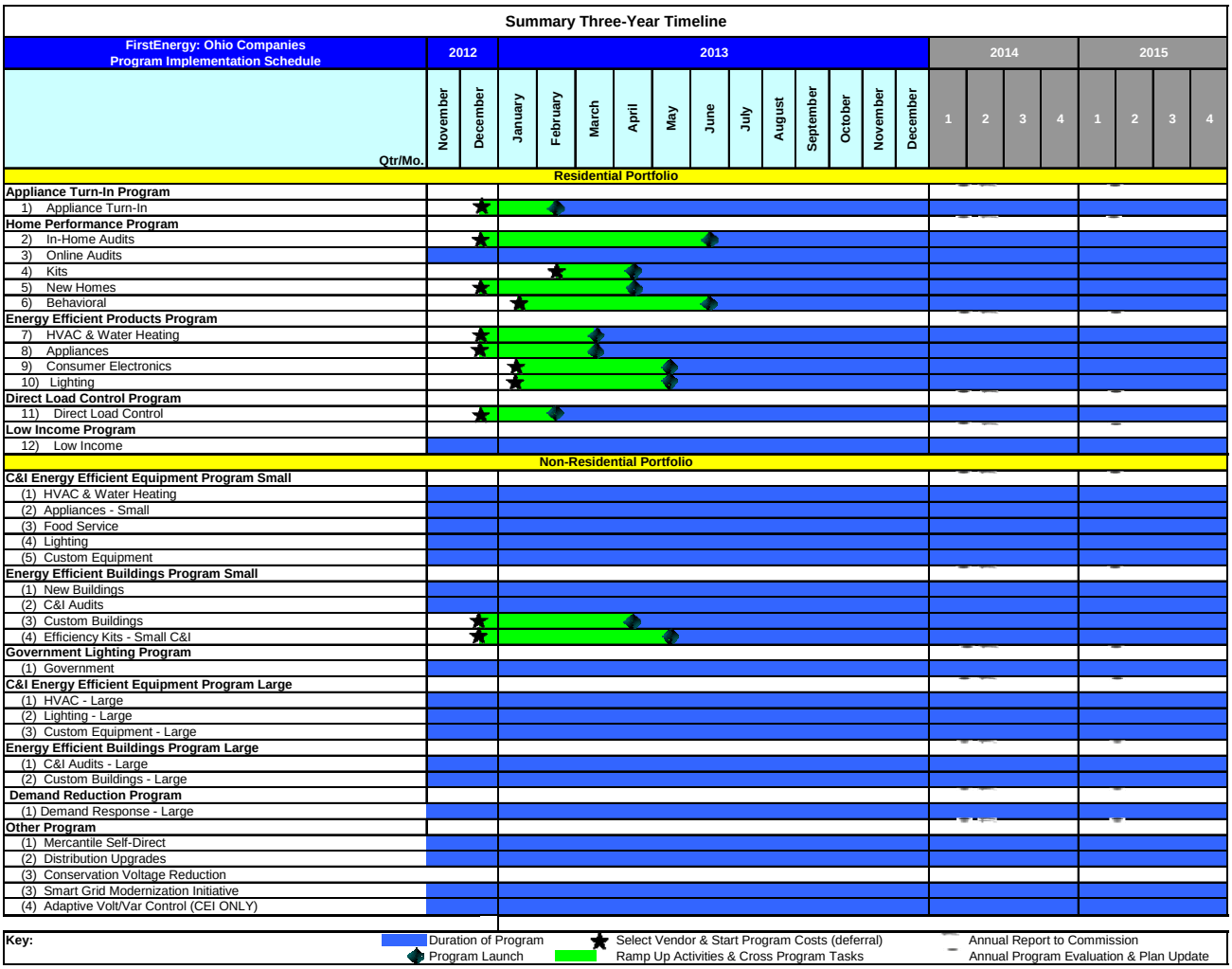
5.1.2.4. Describe any "early warning systems" that will be utilized to indicate a lack of progress towards the benchmarks and whether they are likely to be met.

The Company leverages tracking and reporting processes to monitor progress of each program toward its goals and for the portfolio toward benchmarks on a monthly basis, identifying performance issues, gaps and opportunities for improvement. Review meetings are performed at least monthly. Evaluation activities will also inform how well the programs are moving toward the achievement of goals, and will form the basis upon which any recommendations for adjustments to programs are made. The vast majority of this evaluation work will be done by the EM&V consultant hired by the Companies.

5.1.2.5. Provide individual program implementation schedules with milestones in the form of Gantt charts or similar format. Chart should differentiate activities and include dates for the launch, close, and major milestones for the three following years for all seven programs.

Section 1.4 describes the Company's current roll out plan for the various programs proposed in this Plan. The plan is based on an assumption that this filing will be fully litigated with a Commission order issued by mid-December 2012; and the Commission will approve the Programs as filed.

The Gantt chart below details this Plan's anticipated implementation schedule, based on Commission approval by mid-December 2012.



5.2. Executive Management Structure:

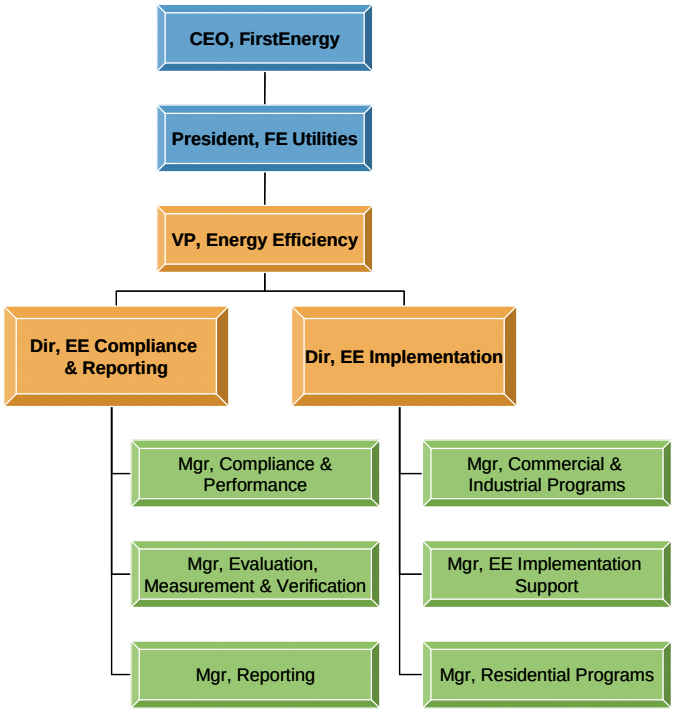
5.2.1. Describe Utility management structure for efficiency programs and include Utility organization chart for management team responsible for implementing this plan.

The Energy Efficiency Group is entrusted with ensuring that the Company complies with all statutory EE&PDR requirements and that the approved programs are successfully implemented. The group reports to the Vice President, Energy Efficiency, who in turn, reports to the President, FE Utilities, and has a working relationship with the Company's Regional Presidents. This group also has responsibility for similar activities for FirstEnergy's other Ohio utilities, as well as its Maryland, New Jersey, Pennsylvania, and West Virginia utility subsidiaries. The organization chart set forth below depicts the Program Portfolio Plan management team and their primary areas of responsibility as they currently exist.

The Energy Efficiency Program Implementation group is organized based on program management responsibilities across customer classes. Key activities include planning and executing marketing campaigns and acquiring and managing implementation vendors to ensure quality control and assurance over program

implementation. The Energy Efficiency Program Development, Compliance and Performance group is organized based on support functions that are common to all programs such as plan development, program evaluation, measurement and verification, and compliance tracking and reporting. Members from this group also coordinate Collaborative Group activities and manage the Administrator Group, both of which provide input and recommendations on program design and implementation, including customer communication/education.

Figure 2: Organization Chart



The above group also receives dedicated support from areas such as Rates and Regulatory Affairs, Legal, Customer Service, Customer Support, Information Technology ("IT") and Communications.

The Companies believe that it is particularly important for senior management to be visible in its oversight role and actively support the changes and adjustments needed in organizational structure, interdepartmental cooperation, staffing, and corporate-wide support for the EE&PDR initiatives. As a result, FirstEnergy has also created a steering committee that is comprised of senior management members from across the organization, including the President – FE Utilities, and Vice-Presidents representing Energy Efficiency, Customer Service, Legal, Rates and Regulatory Affairs, IT, Corporate Communications, Energy Policy and Supply Chain. The steering committee's primary purpose is to:

- Define strategies and provide governance over initiatives relating to EE&PDR and smart grid;
- Assure initiatives support corporate objectives integrating customer solutions with operational efficiencies; and

5.2.2. Describe administrative budget (i.e. those costs other than incentive payments to customers).

Explanation of Program Cost Elements: The model used for developing the EE&PDR programs involves a build-up of program costs based on program fixed costs and shares of costs at the measure level, which are then aggregated to the program level. Some program cost elements are fixed, one time expenses (such as marketing costs in the first year), whereas others are variable and are directly linked to the number of expected participants. The following terms are used in the Budget Tables located throughout the plan.

Operations includes all program operating expenses, including dedicated Utility Labor, Marketing, EM&V, Conservation Service Provider (CSP) Administration, Tracking and Reporting and All Other Costs. The Operations cost elements are defined as follows:

- Utility Labor - Costs incurred by the utility for incremental employee labor to manage the portfolio, oversee vendors and perform duties associated with activities such as regulatory reporting or meetings to support the Plan (Ex. Collaborative Group). It is assumed that utility program managers may oversee more than one program within a sector, thus tapping a share of each program's utility labor budget.

- Marketing – Costs associated with annual umbrella marketing for overall energy efficiency messaging and education campaigns. The budget is primary targeted to support the residential programs with some focus on the Small C&I Equipment Program.

- EM&V – Costs for work performed by the Company-hired EM&V Contractors. Each program includes a dollar amount associated with its evaluation in order to capture cost efficiencies across programs. These funds are spent on external resources, however some portion may be retained by the utility to cover data transfer responsibilities or attending statewide Independent Program Evaluator meetings.

- CSP Administration – Costs for the start-up and ongoing management and marketing of new and existing programs by CSPs, including staffing, development of website(s), program specific marketing/promotional strategies and materials, data collection and transfers, establish and maintain call centers, processing and approving incentives, packing and shipping measures as applicable, verifying invoices, incentive processing, quality assurance and control processes, and other activities supporting successful program implementation.

- Tracking and Reporting – Costs to develop and maintain a data collection, tracking and reporting system, develop and generate standard reports, and provide the functionality for program management ad hoc reporting. These funds are spent on external resources, however some portion may be retained by the utility to cover data transfer responsibilities, finalizing formal filed reports, and meeting attendance supporting these activities.

- All Other Costs – Costs associated with outside legal fees, plan development expenses including modeling software fees, market potential study, and employee travel expenses related to development and implementation of the Plan.

Incentives include costs for rebates paid as part of approved programs (other than those paid through the Mercantile Customer Program.) Incentives can also include costs associated with providing services or measures directly to customers (audits, programmable thermostats, etc.), or upstream payments to trade allies (retail stores, contractors, etc.) where applicable.

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6.0 UTILITY EVALUATION, MEASUREMENT AND VERIFICATION ACTIVITIES

6.1 Describe market evaluations and how results will be used to improve programs and update expected progress toward meeting the electric utility's benchmarks.

The Company engaged Black & Veatch Corp. to perform market evaluations informing program plans for each of the Company's five customer sectors. That market evaluation assesses existing and future practices supporting identification of program savings opportunities and program impacts. The general objective of market evaluation processes is to estimate program impacts on the behavior of customers and others, including contractors, developers, equipment distributors and retailers. The results of this study are included in the Market Potential Study which is included in Appendix D.

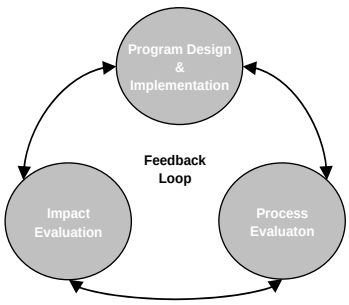
To update expected progress toward meeting benchmarks, the Companies will continue to engage its EM&V Consultant, who will review existing studies, and develop specific evaluation plans that document existing practices and support program impacts. In addition, the EM&V Consultant will continue to utilize established measurement and verification processes to support program improvements, verify program reports, and ascertain whether the programs included in this Plan have achieved the desired energy savings and load reduction impacts. The EM&V Consultant will also verify and submit the results achieved from completed programs to the Company for inclusion in any reports to the Commission. For a description of the program assessment activities to be performed by the EM&V Consultant, see the discussion in Sections 5.1.2.1 and 5.1.2.4 above, and Section 6.2 through 6.4 below.

6.2 Describe process evaluations and how results will be used to improve programs.

For purposes of this Plan, *process evaluation* is viewed as providing the explanatory depth to improve program processes, better understand market barriers and opportunities, and support identification of opportunities for improving program implementation, including marketing and promotion, delivery, tracking and verification. *Impact evaluations* quantify and validate the extent of energy saved and demand reduced as a result of a program. Thus, impact evaluation identifies how much of an impact a program has, while process evaluation tells you why.

There is a feedback loop among program design and implementation, impact evaluation, and process evaluation. Program design and implementation, and evaluation are elements in a cyclical feedback process, as shown in Figure 4. Initial program design is informed by prior baseline and market potential studies. Ongoing impact evaluation quantifies whether a program is meeting its goals and may raise questions related to program processes and design. Process evaluation tells the story behind how the impact was achieved, and points the way toward improving program impacts by providing insight into program operations. Thus, the three elements work together to create a better, more effective program.

Figure 3: Program Feedback Loop Process



6.3 Describe strategy for coordinating with the statewide Independent Program Evaluator.

A representative from the Companies' evaluation team, as well as the EM&V Consultant will attend scheduled meetings with the statewide Independent Program Evaluator to ensure compliance with statewide EM&V directives, share ideas and suggestions regarding the approach being taken at the Companies, and otherwise assist the Company in shaping and performing a prudent and effective evaluation strategy in coordination with the statewide Independent Program Evaluator directives.

Additionally, the EM&V Consultant will conduct evaluations on each program included in the approved Plan while coordinating efforts with the statewide Independent Program Evaluator to minimize duplication of work. Documentation required by the Independent Program Evaluator to fulfill its responsibilities will be provided as requested.

The EM&V planning process will also include the statewide Independent Program Evaluator to enable its advice and consent to enhance EM&V efforts. The EM&V Consultant will facilitate ongoing Company communications with the Independent Program Evaluator to ensure the highest practicable level of coordination, particularly for EM&V field activities and other time-sensitive EM&V tasks and processes.

6.4 Describe program-by-program utility evaluation, measurement and verification activities.

Overview

This section presents the outline for EM&V plans for the Company's EE&PDR programs that are being proposed in this Plan. EM&V efforts evolve over time and change as programs move from initial roll-out with few participants to full-scale implementation. The Companies also include a detailed EM&V report with their annual EE & PDR status reports that outlines in more detail the EM&V process followed for each approved program.

The Companies will continue to engage their EM&V Consultant who will develop and implement EM&V processes and procedures. While EM&V plans are written on a program-by-program basis, the Companies will utilize synergies among programs and between Companies to reduce redundant work. EM&V plans may be refined over time to include best practices and lessons learned. The EM&V Consultant will utilize the format required by the statewide Independent Program Evaluator for evaluation plans and will include the following topics:

Introduction and Program Background

Includes program description, measures covered, markets targeted, program implementation activities, applicable budgets and expected program participation.

Evaluation Objectives

The overall objective for the impact evaluation is to quantify and validate the extent of *ex post* energy saved and demand reduced as a result of a program. Process evaluation is viewed as providing the explanatory depth to improve program processes, better understand market barriers and opportunities, and support identification of opportunities for improving program implementation, including marketing and promotion, delivery, tracking and verification. Thus, impact evaluation identifies how much of an impact a program has, while process evaluation tells you why.

Overall Evaluation Approach

- Impact Evaluation

  Programs include documentation requirements supporting documentation of expected ("ex-ante") impact estimates that reside in tracking and reporting databases. Samples of participant applications are selected

for EM&V. After the samples of projects are selected, and the program implementation contractor provides documentation pertaining to the projects, the first step in the EM&V effort is to review the documentation. Documentation that is reviewed for all projects selected for the sample may include program forms, databases, reports, billing data, logger data, weather data, and any other potentially useful data.

Program-level gross ex post savings are calculated by applying achieved savings realization rates calculated for the analysis sample to program-level data for reported savings. Realization rates describe the relationship between verified savings and program expected savings estimates. The realization rates are calculated as the ratio of the EM&V Consultants' calculated measure savings to the ex ante reported savings.

- Process Evaluation

  As an initial step in the process evaluation, the EM&V Consultant will review program documentation pertaining to program development and implementation, marketing materials, program procedures manual, program websites, and other program documentation as it becomes available. This includes any application forms, databases, and tracking systems to verify relevant information needed for process interviews is collected.

  Additionally, where applicable the EM&V Consultant may also incorporate program manager interviews, participant (and in some cases non-participant) customer surveys, and trade alley surveys. Program manager interviews explore researchable issues and help inform the customer survey design. The interviews identify stated program goals and objectives, assess the effectiveness of the programs' operations relative to the defined program goals and objectives, capture program processes and flows, and explore potential ways to implement the programs more cost-effectively. Surveys are used to gather data on decision-making criteria and on the attitudes and behavior of decision-makers. Participants are questioned regarding their knowledge of the program, their level of interest in the program, and their reasons for participating, while non-participant surveys identify market barriers that could be addressed in program design. The survey of trade allies also allows the EM&V Consultant to gather information on the size of the market for energy efficiency measures that can be used in the assessment of market potential for the Companies' programs.

Sampling Plan

- Residential Programs

  Sampling of program participants (and in some cases non-participants) will vary among the programs according to participants, measures, and methods of installation. Where appropriate, the sample will be stratified by measure using proportional stratification. The advantage of a proportionally stratified random sample is that greater precision can be achieved than a simple random sample of the same size. Additionally, proportional stratification guards against an underrepresentation of any one particular measure. Sample stratification is particularly useful when there are clear differences in energy savings between each stratum, and when each stratum is relatively homogenous.

- Commercial & Industrial Programs

  EM&V sampling will occur concurrently with program implementation. Projects are added to the program tracking system as they are submitted and accumulate over time. As a result, sample selection is spread over the entire program year.

  Stratified sampling is performed to account for skewed distributions of savings and to reduce the sample sizes required to satisfy the desired precision requirements. By developing strata such that the projects within each stratum are relatively homogeneous with respect to expected kWh savings, a smaller sample is required from each stratum in order to arrive at desired precision estimates. When performing

sampling for a skewed population, stratified sampling methods are preferred because a group of projects with less variance in expected savings requires a relatively smaller sample size in order to reach a given precision and level of confidence.

Projects with high kWh savings contribute significantly to the variance in expected savings and are included in the sample with certainty. The EM&V Consultant will select a site-level ex ante kWh threshold above which all projects at a site will be selected for the sample with certainty. The remaining projects will then be assigned to a kWh stratum according to the level of the expected site-level kWh savings and are chosen at random within each stratum.

Reporting

The EM&V Consultant will facilitate ongoing communication with the Independent Program Evaluator to ensure the highest practicable level of coordination. As required, program evaluations will be submitted to the statewide Independent Program Evaluator for its review in conjunction with the Annual Portfolio Status Report.

Evaluation Schedule

The timing of EM&V activities and reporting can have a significant effect on the accuracy and usefulness of findings. Where applicable, EM&V sampling will occur concurrently with program implementation providing for early feedback to program implementers. This approach requires the EM&V and implementation staff to work closely together to develop methods to collect data as part of the standard program implementation practices. While evaluation activities are ongoing, evaluation reports will be included in the Annual Portfolio Status Report.

Evaluation elements that will vary with each program are discussed below.

EM&V processes are presented identifying activities that are likely to be performed for each program:

- Process Interviews: involve a form of qualitative research in which a group of people are asked about their attitude towards a product, service, or concept.
- Surveys (phone, mail or web-based): involve qualitative or quantitative research in which information is obtained from a sample of a population. References to surveys of “non-participants” will generally be based on market surveys related to program awareness that may include participants and non-participants.
- Billing Histories or Metered Data Analysis: involve use of historic energy usage as an input for energy savings or peak load reduction impacts, analysis of interval metered data or installation of data loggers to support estimates.
- File Reviews: involve processes associated with the collection and validation of application forms created by the Company and its program contractors in consultation with its EM&V Consultant for use by customers and their agents to document the energy efficiency measures performed in each program. Program applications document specific information required to estimate and verify program energy savings and peak demand reduction impacts.
- On-Site Verification: involves verification inspection processes (generally of samples of participants) to validate application information. Direct installation programs, in which a Company contractor delivers services, includes “on-site verification” by definition.

CEI Table 17: Program EM&V Activities

Program	Process Interview	Surveys (phone, mail or web-based)	Bill Histories or Metered Data Analysis	File Reviews	On-Site Verification
Appliance Turn-In Program	X	X		X	
Home Performance Program	X	X	X	X	X
Energy Efficient Products Program	X	X		X	X
Direct Load Control Program	X		X	X	
Community Connections Program	X	X	X	X	X
C&I Energy Efficient Equipment Program Small	X	X	X	X	X
Energy Efficient Buildings Program Small	X	X	X	X	X
Government Lighting (Tariff Lighting) Program	X	X	X	X	X
C&I Energy Efficient Equipment Program Large	X	X	X	X	X
Energy Efficient Buildings Program Large	X	X	X	X	X
Demand Reduction Program	X	X	X	X	
Mercantile Customer Program	X	X	X	X	X
T&D Improvements		X		X	X

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7.0 COST-RECOVERY MECHANISM

7.1 Provide and describe tariffs and a cost recovery mechanism.

Except for certain costs incurred through the Company's Mercantile Customer Program, T&D Improvements Program, and Smart Grid Modernization Initiative, the Company will continue to collect costs associated with demand side management, energy efficiency and peak demand reduction costs incurred to comply with the provisions set forth in R.C. 4928.66 through its current Demand Side Management and Energy Efficiency Rider (Rider DSE), which was approved in Case No. 08-935-EL-SSO.

The costs included for recovery through Rider DSE will be offset by any revenues received from PJM for Demand Resources (Energy Efficiency Resources or Demand Response Resources) bid into the Reliability Pricing Model Auctions for the ATSI zone, reduced by recovery of all PJM costs associated with participation in such Auctions, including but not limited to the cost of interest for credit associated with such Demand Resources and any applicable penalties. It is the Companies' policy to only bid those resources for which it has ownership rights at the time of the auction, either Base Residual Auctions or Incremental Auctions, when such offerings are of significant scale and consist of products that, in the Companies' sole discretion, will meet or can be adjusted to meet PJM EM&V standards, and are include in an EM&V plan approved by PJM. The Companies, as a condition of participating in EE&PDR Programs, will require participating customers to tender ownership of any energy credits owned by the customers, absent a change in policy approved by the Commission.

This Plan, unlike the Existing Plan, includes incentive mechanism that would encourage the Company, through financial incentives, to exceed its statutorily mandated EE & PDR goals ("Incentive Mechanism"). The amount of the incentive, as calculated below, will be recovered through the Company's Rider DSE as set forth in the Rider. The Incentive Mechanism is the result of discussions with interested parties (who have not yet agreed to all of the details) and includes the following key features:

- The incentive mechanism would be triggered only if the Company meets both its Annual and Cumulative energy saving targets as set forth in R.C. 4928.66(A)(1)(a) in any given year.
- The incentive mechanism will be calculated annually on an individual EDC basis, consistent with information presented in each EDC's annual compliance report.
    - The incentive mechanism will be calculated based upon discounted net lifetime benefits as calculated by the Utility Cost Test ("UCT"). The EDC will receive a percentage of discounted UCT net benefits based upon the amount of over compliance achieved by the Company.
    - The savings of all programs will contribute to the calculations of whether the Company has exceeded its benchmarks for any particular year.
    - The discounted net benefits of certain programs will be excluded from the calculation of the incentive mechanism.
- For purposes of determining if the Annual energy target in this mechanism has been met, the Companies may include only Annual savings that originate from the Company's Portfolio Status Report for the year in which the incentive mechanism is being calculated, and not banked energy efficiency savings from previous years. This mechanism shall in no way preclude the Company from applying banked energy efficiency savings from previous years towards the goals established in R.C. 4928.66(A)(1)(a).

- The amount of the incentive will be calculated as set forth in attached Appendix E. These calculations are intended to be examples only

8.0 COST EFFECTIVENESS

8.1. Explain and demonstrate how the proposed portfolio will be cost effective as defined by the Total Resource Cost Test (TRC) under proposed Rule 4901:1-39-01(W).

The savings generated through this Plan is based upon the requirements and guidance of the draft TRM that is being considered by the Commission in Docket No. 09-512-GE-UNC and other public sources, which have been used in developing the key inputs to the analysis of the EE&PDR technologies or measures proposed in this Plan, including but not limited to the following:

- Michigan Deemed Savings Database
- Pennsylvania Technical Reference Manual
- Northeast Energy Efficiency Partnerships, Mid-Atlantic Technical Reference Manual
- Energy Star
- ACEEE
- ASHRAE

The TRC method utilized by the Company takes into account the effects this Plan will have on both participating and non-participating customers. The sum of costs incurred by both the Company and any participating customers was used to calculate the costs. The benefits calculated in the TRC test include the avoided supply costs, including generation, transmission and distribution capacity costs and the avoided energy supply costs.

On the benefits side, avoided costs were determined as follows:

a. **Energy Costs** - the study team used Western PJM wholesale energy prices at the AD hub for the years 2013-2015, and escalated these costs for future years based on the escalation of the long term electric power projections in the Department of Energy, Energy Information Administration's 2012 Annual Energy Outlook Early Release, Reference Case, for the EMM Region, Reliability First Corporation / West.

b. **Capacity Costs** - the team used a combination of PJM Fixed Resource Requirement Auction prices for the ATSI region in 2013 and Base Residual Auction prices for the PJM RTO region for the years 2013-2016. Costs beyond 2016 were escalated in proportion to long term electric power projections in the Department of Energy, Energy Information Administration's 2012 Annual Energy Outlook Early Release, Reference Case, for the EMM Region, Reliability First Corporation / West.

c. **Transmission and Distribution Costs** - the team included marginal T&D of $20 per kW-yr as assumed in the Existing Plan.

The benefits were then calculated using the measure kWh and kW savings multiplied by the assumed number of measure units and the avoided capacity and energy costs. This value per year was discounted by taking a Net Present Value (NPV) over the measure life-time using the Companies' overall post-tax weighted average cost of capital ("WACC") of 8.48 percent.

On the costs side the TRC test includes the costs of the various programs incurred by the Company and the participating customers, including, incremental cost, operation and maintenance costs, cost of removal (less salvage value) for turn-in programs, implementation and administrative costs. Costs are assembled at the plan, program or sub-program level and assigned to all measures within the program and/or sub-

program. Program costs are budgeted by year in 2012 dollars, but operation and maintenance costs are based on measure life and are discounted using NPV back to the program year installed.
As a result, this Plan is cost-effective based on the TRC test as described above, and using the formula set forth in § 4901:1-39-01(Y). The results of the TRC test are presented in PUCO Table 1, which can be found in Appendix C-3 of this Plan, and are expressed as both a net present value and a benefit-cost ratio.

8.2. Provide background and describe the development and results contained in PUCO Tables 7A through 7G.

PUCO Tables 7A through 7G summarize TRC test results for each of the five customer segments on an individual program basis, plus the Mercantile Customer Program and the Companies' T&D Improvements Program. These tables are available in Appendix C-3.

9.0 PLAN COMPLIANCE INFORMATION AND OTHER KEY ISSUES

9.1. Summarize how programs in the portfolio meet the following design criteria (sub-sections may reference other chapters of the plan as they may restate what was included elsewhere in the plan, and are collected here only for convenience of review):

9.1.1. Potential for broad participation within the targeted customer class.

The portfolio of EE&PDR programs offers comprehensive participation opportunities to the customers and communities within the Company's service territory. While the basis of the Plan includes the Company's current EE&PDR program portfolio, most programs have been expanded, providing enhanced opportunities for additional customer participation and savings opportunities.

The residential customer base can be segmented into five program groups including 1) Low Use/General Service customers 2) Electric Heat customers 3) Central Air Conditioning customers 4) Low Income customers and 5) New Residential Construction. Each of these residential segments is targeted through the proposed suite of EE&PDR programs.

These programs contain measures designed for either the collective Residential customer base, or specific segments. As an example, all residential customers can participate in the Energy Efficient Products program and the Appliance Turn-In Program subject to program requirements, while Electric Heat customers are targeted for the Comprehensive Audit measure in the Home Performance Program and the Direct Load Control Program. Low Income residential customers can participate in any of the above, plus the Low Income (Community Connections) Program, which is specifically designed for income constrained customers. In addition, the new residential construction segment is targeted by the Home Performance Program at two levels of efficiency – 15 percent and 30 percent.

The business and government sectors have programs covering a broad range of energy efficiency opportunities. These programs include Energy Efficient Buildings and Energy Efficient Equipment which are included for both small and large enterprise customers. A New Construction measure is also included in the Energy Efficient Buildings Program and is targeted at contractors and architects, as well as other construction and building professionals. There is also a Government Tariff Lighting Program, targeting traffic, pedestrian, and street lighting owned by government entities served under the Companies' lighting tariffs.

9.1.2. Cost-effectiveness on a portfolio basis

The Plan is cost-effective, with a portfolio ratio of 1.7. Details are presented in PUCO Table 1 in Appendix C-3.

9.1.3. Benefit to all members of a customer class, including non-participants.

Benefits to all members of the customer class are outlined in Section 9.1.1.

Non-participants in all classes will also benefit by the educational services and marketing concerning the value of energy efficiency technologies and actions. Regardless of their level of program participation, community members will be made aware of the Company's programs. This awareness will help even non-participants to make more informed decisions regarding their energy usage.

9.1.4. Likely magnitude of aggregate energy savings or peak-demand reduction.

The magnitude of aggregate energy savings and peak-demand reduction is presented in PUCO Table 2, Table Summary of Portfolio Energy and Demand Savings, which can be found in Appendix C-3.

9.1.5. Non-energy benefits.

Residential and C&I customers receive a number of non-energy benefits through this Plan. Residential benefits may include:

- Increased comfort, both in businesses and in the home
- Improved quality of the housing stock
- Lower energy burden as a lower proportion of household income that is devoted to energy costs
- Increased ability to pay bills, both in terms of overall amount and timeliness

C&I non-energy benefits may include:

- Reduced operating costs
- Improved quality of building stock
- Increased knowledge about how to control energy costs
- Improved property values
- Ability to claim green status
- Increased employee satisfaction

Broader non-energy benefits to the service territory may include:

- Increased public safety and decreased community maintenance costs through the implementation of energy efficient technology
- Increased employment benefits through the potential creation of "green" jobs

9.1.6. Equity among customer classes.

PUCO Table 5, Rate Class Budget and Parity Analysis, included in Appendix C-3 demonstrates equity among customer classes.

9.2. Describe relative advantages or disadvantages of energy efficiency and peak-demand reduction programs for the construction of new facilities, replacement of retiring capital stock, or retrofitting existing capital stock.

In theory, energy efficiency and peak demand reduction programs can potentially postpone the construction of new generation. However, these programs will not become a substitute for such construction, especially if customers can opt out of, or override, a program. As generating stations age and the country's appetite for electricity grows, new generating stations and transmission facilities will still need to be constructed. In order to maximize the period in which EE&PDR programs postpone such construction, the Commission should encourage programs that are, in essence, a reliable substitution for the generation they displace.

The MW and MWh reductions associated with the substitution of older, less efficient appliances and end uses with newer, more efficient appliances and end uses for both the residential and non-residential sectors are the most reliable and enduring. This is so because the replacement of old, less efficient, electric consuming

devices with new, more efficient ones requires only one act by the consumer. The programs that foster such technology upgrades not only produce enduring energy savings over the measures' lives but they also contribute to peak-related savings since, often, this more efficient equipment generally has a lower system-coincident peak contribution than the equipment it replaces. The Plan demonstrates this dual benefit feature of energy efficiency programs.

Conversely, programs in which a customer can choose whether to actively participate are less predictable substitutions for the generation they displace. For example, if a customer has the option of over-riding a peak reduction device, the utility cannot rely on the program as a total substitution for the generation it is intended to replace. This ability to over-ride the program also makes it more difficult to accurately determine the actual amount of generation the program displaces and makes planning for resources more difficult.

9.3. Describe potential to integrate the proposed programs with similar programs offered by other utilities, if such integration produces the most cost-effective results and is in the public interest.

While the Companies are not opposed to working with the other Ohio utilities to develop cost effective state-wide EE&PDR programs, the Companies believe that any such initiative must be coordinated through the Commission. Consistent with this approach, the Companies have worked with the other Ohio utilities on the development of the TRM in Docket No. 09-0512-GE-UNC and are participating in workshops focused on alternative financing and comprehensive home retrofit programs.

9.4. Describe the degree to which measures may be bundled within a program so as to avoid lost opportunities to attain energy savings or peak reductions that would not be cost-effective or would be less cost-effective if installed individually.

A wide range of measures were considered or evaluated on an individual basis for potential inclusion in this portfolio, with those showing acceptable potential appearing in final program designs. This Plan incorporates all of the cost effective measures and programs from that analysis, as well as other measures and programs that may have been less cost effective on their own but were included to provide contributions to the program or portfolio of programs. There are several reasons why it is important to include a wide range of measure options for consumers and businesses when designing programs:

- Many less cost effective measures still produce sizeable energy savings and provide value to customers and the Company
- Less cost effective measures can become more cost effective when bundled with others, by sharing the administrative and program operations costs across many measures
- Several of the individually less cost effective measures can be obtained through lower cost program options, such as energy efficiency kits, thus keeping their cost benefit ratios as high as possible

The Company also revised the program portfolio which included the bundling of programs and measures, and leveraging common program costs to maximize program opportunities and cost-effectiveness. As an example, the new Home Performance program includes measures previously provided under the Comprehensive Residential Retrofit, Online Audit and Efficient New Homes programs. By combining these programs, administrative costs and program oversight costs should be reduced.

9.5. Describe the degree to which the program designs engage the energy efficiency supply chain and leverage partners in program delivery.

The Company will continue to coordinate programs with trade allies, community based organizations, and other local market participants through outreach, training and potential co-marketing to ensure that these partners are aware of the Company's programs, are able to articulate program features and benefits to potential customers and can support customers in their decision to undertake energy efficiency actions. The Company's implementation strategy relies on a broad range of contractors, partners, trade allies, community agencies, and other entities engaged in energy efficiency to promote, deliver, and support the effective deployment of programs. The Company will continue to use outside vendors to deliver services in support of many of its programs, with some vendors operating as turnkey program delivery contractors, and others providing specific functions across multiple programs. In addition, many of the Company's programs depend on trade allies and other market partners to engage customers, promote programs, evaluate projects, and install energy efficient equipment. The Company's objective is to strike a reasonable balance of costs, customer value, customer choice, quality of service and energy savings.

The Company's Supply Chain Group will be involved with external entities by utilizing bids and/or negotiating contract awards and extensions, as most appropriate, given the situation and the partner(s) involved. Supply Chain creates Purchase Orders, Contracts, or other written agreements with EE&PDR suppliers to ensure a control process is in place for appropriate financial terms, legal safeguards, compliance with FirstEnergy procurement and contracting policies and procedures, and management of these outside suppliers. This group deals with suppliers in a fair and impartial way so that no supplier is given an improper competitive advantage over another. Offers for goods and services are objectively evaluated, with buying decisions based on the best interests of FirstEnergy and its customers. In addition to cost, these decisions are based on terms that include:

- fair and equitable to buyer and seller;
- competitive to the maximum extent practicable;
- founded on a sound business basis; and
- appropriate financial terms and legal safeguards.

The Companies will continue to leverage their relationships throughout FirstEnergy's service territory when possible, in an effort to minimize costs by creating economies of scale and efficiencies through consistency. For example, ADM Associates Inc. which is the Companies' independent evaluation contractor for Ohio and Pennsylvania at the time of this filing, also assisted FirstEnergy's Pennsylvania and Maryland utilities with the development of EE&PDR Plans and programs during 2011. Much of this work, including program design, measure projections and cost analyses was utilized in the development of this Plan, thus providing the opportunity to leverage certain tasks and avoid the costs of duplicate efforts. Moreover, the Companies are carefully evaluating its third party service providers throughout the FirstEnergy footprint (including Ohio, Maryland, Pennsylvania, and West Virginia) for opportunities to maximize economies of scale that can translate into lower implementation costs. FirstEnergy is also developing systems that it plans to utilize in all states in which it utilities operate energy efficiency programs. Where applicable, costs for such systems are spread over larger customer bases across multiple jurisdictions, thus reducing costs for all on an individual customer basis.

9.6. Describe the degree to which the programs successfully address market barriers or market failures.

The programs in the Company's EE&PDR Plan address several barriers that face both consumers and businesses regarding energy efficiency actions they can take. The most common barriers identified through market research conducted as part of the Market Potential Study are addressed below:

- **Lack of adequate information about energy efficiency options** – This Plan addresses the potential for a lack of information in the Company's service territory through both broad-based marketing campaigns, and program-specific marketing elements. This Plan also includes a behavior program where the Company will provide Energy Usage Reports to residential customers including information about energy efficiency opportunities that are available to them. Additionally, both Residential and Non-Residential customers will have access to energy efficiency audits enabling customers to obtain customized information about their homes or businesses and available incentives for participating in Company programs.

- **Higher first cost of energy efficient equipment, appliances and building upgrades** - Several programs provide incentives that bring the first cost of equipment and projects down by covering some or all of the incremental costs over standard options. For low income customers, many measures and services are offered without direct additional incremental costs.

- **No comprehensive service to identify all savings opportunities in a home or building** - The Portfolio includes comprehensive programs for Residential and Non-Residential customers through various energy audit options.

- **Lack of experience with high efficiency technologies** – The Companies proposed programs include energy efficiency kits designed to introduce Residential and Non-Residential customers to common efficiency measures. These kits include information such as technology highlights, instructions for proper use of kit contents, and information on how to take advantage of the Companies' suite of EE&PDR programs.

- **Limited discretionary funds in low income households** - In recognition of this barrier, residential programs include either waiver of fees, significant rebates, and/or direct installation of measures to ensure that low income households can fully benefit from the portfolio of programs being offered.

- **High disposal cost and lack of knowledge of proper appliance disposal** - The Appliance Turn-In Program addresses the concerns of customers with outdated energy intensive appliances through: 1) incentives for relinquishing the unit(s); 2) lowered energy bills; 3) knowledge that the unit(s) are disposed of in an environmentally friendly manner; and 4) a program design that does not require the purchase of a new appliance to participate in this program.

9.7. Describe the degree to which the programs leverage knowledge gained from existing programs successes and failures.

There has been experience in the delivery of basic energy efficiency programs nationally for at least two decades, and a wide body of literature exists with findings related to successful implementation strategies and best practices for achieving results. This well-documented experience from elsewhere is augmented with the experience that the Company has gained from implementing its programs included in the Existing Plan over the past several years, all of which is embedded in this Plan, and the experience of the Company's affiliates from implementing programs over the past three years in other jurisdictions. The final set of programs

recommended in this Plan represents a combination of tried-and-true delivery approaches of commercially available technologies that have a high probability of being accepted by consumers and business customers during the Reporting Period, and to a lesser degree, newer and innovative programs and delivery approaches that expand the opportunities and savings of the portfolio to target additional customers and end uses.

The Company's experience through its and its affiliate program implementation activities across four states has revealed important lessons regarding implementation vendor expectations, consumer marketing and education, and the importance of gaining the support of local contractors. The aggressive targets established in SB 221 necessitate effective consumer marketing and education campaigns that engage local trade allies and contractors. These lessons are factored into the Company's EE&PDR Plan implementation activities. While many programs will transition from the existing Plan to the Proposed Plan, the Company will learn additional lessons from process evaluations as the portfolio of new programs and measures are launched and experience is gained. Importantly, the portfolio relies on a solid foundation of established program designs and vendor experiences spanning many jurisdictions. The Portfolio builds off of its existing successes, while newly introduced programs provide incremental savings opportunities.

9.8. Describe the degree to which the programs promote market transformation.

Market transformation occurs when the overall market for a product, such as high efficiency compact fluorescent light bulbs, becomes the new standard model, rather than the outlier. The primary ways in which the programs in this portfolio address market transformation are 1) by providing customers with unbiased customized information about the opportunities that exist in their homes and the specific types of products they can buy to achieve those savings; and 2) by promoting the products that customers can easily obtain so that customers can immediately experience the quality, hassle free nature of the products and test their claims for lowering utility bills. As customers experience these benefits, the demand for the offered products should increase until the higher efficient technology becomes the norm.

10.0 LIST OF APPENDICES

- Appendix A: Results of Existing Plan
- Appendix B: Portfolio Budget Detail
  - Appendix B-1: 2013 Budgets by Cost Category
  - Appendix B-2: 2014 Budgets by Cost Category
  - Appendix B-3: 2015 Budgets by Cost Category
  - Appendix B-4: 2013-2015 Budgets by Cost Category
  - Appendix B-5: Total Portfolio Annual Budget
- Appendix C: Program Assumptions & PUCO Tables
  - Appendix C-1: EE&C / DR Program Measure Assumptions
  - Appendix C-2: Forecasted Number of Units
  - Appendix C-3
    - PUCO 1: Portfolio Summary of Lifetime Costs and Benefits
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    - PUCO 7A-7G: TRC Benefits Table
  - Appendix C-4: Portfolio Rebate Schedule
- Appendix D: Market Potential Study
- Appendix E: Example Incentive Mechanism Calculations

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Appendix A:
Results of Existing Plan

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Appendix A: Summary of 2011 Annualized Actual and Potential Energy Results by Program

Approved Programs	Ohio Edison		Cleveland Electric		Toledo Edison		Program Totals	
	Participants / Units	MWh	Participants / Units	MWh	Participants / Units	MWh	Participants / Units	MWh
Residential								
Direct Load Control	3,669	0	3,517	0	1,023	0	8,209	0
Home Energy Analyzer	30,520	12,363	20,234	7,831	8,858	3,151	59,612	23,345
Appliance Turn-In	7,617	12,252	5,045	8,132	1,547	2,503	14,209	22,887
Energy Efficient Products	4,810	800	4,380	582	2,499	258	11,689	1,640
Comprehensive Residential Retrofit	103	25	38	15	19	2	160	43
CFL	1,209,158	94,707	1,231,561	96,462	447,222	35,029	2,887,941	226,197
Residential Low-Income								
Community Connections	2,566	2,788	3,076	3,057	1,036	878	6,678	6,723
Small Enterprise								
Equipment (Lighting)	929	70,277	909	82,967	129	9,701	1,967	162,945
New Construction	0	0	0	0	0	0	0	0
Government Lighting	0	0	0	0	0	0	0	0
Mercantile Utility (Large Enterprise)								
Equipment (Lighting)	102	52,488	56	28,461	28	22,940	186	103,889
Motors	1	2,333	1	7	0	0	2	2,340
Interruptible Demand Reduction	16	0	2	0	3	0	21	0
Other								
Mercantile Customer	130	159,685	85	327,256	43	69,294	258	556,236
Transmission and Distribution	n/a	9,871	n/a	2,882	n/a	3,509	n/a	16,262
Subtotal Actual Results	**1,259,621**	**417,589**	**1,268,904**	**557,653**	**462,407**	**147,265**	**2,990,932**	**1,122,506**
Projects Pending PUCO Approval								
Mercantile Customer	65	87,799	45	64,601	26	119,595	136	271,995
Transmission and Distribution	n/a	7,889	n/a	2,324	n/a	3,867	n/a	14,080
Subtotal Potential Results	**65**	**95,688**	**45**	**66,925**	**26**	**123,462**	**136**	**286,075**
Total Portfolio	**1,259,686**	**513,277**	**1,268,949**	**624,578**	**462,433**	**270,726**	**2,991,068**	**1,408,582**

Notes:

(a) Excludes savings associated with AK Steel, LLC application denied by the Commission.*See* Finding and Order, Case No. 09-1231-EL-EEC (May 2, 2012).

Appendix A: Summary of 2011 Annualized Actual and Potential Demand Results by Program

Approved Programs	Ohio Edison		Cleveland Electric		Toledo Edison		Program Totals	
	Participants / Units	MW	Participants / Units	MW	Participants / Units	MW	Participants / Units	MW
Residential								
Direct Load Control	3,669	0.0	3,517	0.0	1,023	0.0	8,209	0.0
Home Energy Analyzer	30,520	1.9	20,234	1.2	8,858	0.5	59,612	3.6
Appliance Turn-In	7,617	2.8	5,045	1.9	1,547	0.6	14,209	5.3
Energy Efficient Products	4,810	0.2	4,380	0.2	2,499	0.1	11,689	0.4
Comprehensive Residential Retrofit	103	0.0	38	0.0	19	0.0	160	0.0
CFL	1,209,158	15.9	1,231,561	16.2	447,222	5.9	2,887,941	37.9
Residential Low-Income								
Community Connections	2,566	0.2	3,076	0.2	1,036	0.1	6,678	0.5
Small Enterprise								
Equipment (Lighting)	929	14.1	909	16.0	129	1.8	1,967	31.9
New Construction	0	0.0	0	0.0	0	0.0	0	0.0
Government Lighting	0	0.0	0	0.0	0	0.0	0	0.0
Mercantile Utility (Large Enterprise)								
Equipment (Lighting)	102	9.5	56	4.3	28	3.3	186	17.0
Motors	1	0.0	1	0.0	0	0.0	2	0.0
Interruptible Demand Reduction	16	129.2	2	85.3	3	127.6	21	342.1
Other								
Mercantile Customer	130	21.5	85	35.5	43	14.6	258	71.5
Transmission and Distribution	n/a	0.0	n/a	0.0	n/a	0.0	n/a	0.0
Subtotal Actual Results	**1,259,621**	**195.4**	**1,268,904**	**160.7**	**462,407**	**154.4**	**2,990,932**	**510.4**
Projects Pending PUCO Approval								
Mercantile Customer	65	9.2	45	9.2	26	21.4	136	39.8
Transmission and Distribution	n/a	0.0	n/a	0.0	n/a	0.0	n/a	0.0
Subtotal Potential Results	**65**	**9.2**	**45**	**9.2**	**26**	**21.4**	**136**	**39.8**
Total Portfolio	**1,259,686**	**204.6**	**1,268,949**	**169.9**	**462,433**	**175.7**	**2,991,068**	**550.2**

Notes:

(a) Excludes savings associated with AK Steel, LLC application denied by the Commission. *See* Finding and Order, Case No. 09-1231-EL-EEC (May 2, 2012).

Appendix B:
Portfolio Budget Detail

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Appendix B-1: 2013 Budgets by Cost Category

Cleveland Electric						
Sector	**Program**	**Segment**	**Measure**	**2013 Operations**	**2013 Incentives**	**2013 Total**
Residential	Appliance Turn-In Program	Appliance Turn-In	Freezer Recycling	354,767	130,500	485,267
			Refrigerator Recycling	746,234	274,500	1,020,734
			Room Air Conditioner Recycling	61,820	28,125	89,945
	Direct Load Control Program	Direct Load Control	DLC - CAC	666,966	316,769	983,736
			DLC - Pool Pump	-	-	-
			DLC - Water Heater	-	-	-
	Energy Efficient Products Program	Appliances	Clothes Washers	10,913	20,813	31,725
			Dehumidifiers	21,858	20,844	42,702
			Freezers	17,467	16,656	34,123
			Pool Pump Motors	1,245	950	2,195
			Refrigerators	54,629	52,094	106,723
		Consumer Electronics	Computer Monitors	10,386	-	10,386
			Computers	5,193	-	5,193
			Smart Strips	5,193	1,688	6,880
			Televisions	20,771	-	20,771
		HVAC & Water Heating	Air Source Heat Pump	40,071	48,000	88,071
			Central Air Conditioner	111,530	50,100	161,630
			Ductless Mini-Split AC & HP	9,016	10,125	19,141
			Electric Water Heaters	25,044	7,500	32,544
			Ground Source Heat Pump	8,348	15,000	23,348
			HVAC Maintenance	133,569	12,500	146,069
			Room Air Conditioner	200,353	15,000	215,353
			Whole House Fan	16,696	6,250	22,946
		Lighting	Ceiling Fan with Integral CFLs	249	1,688	1,937
			Emerging Technology	5	166,667	166,671
			Energy Efficient Lighting Products	1,178,202	765,843	1,944,045
			Torchiere Floor Lamps	166	360	526
	Home Performance Program	Audits	All Electric Home Audit	39,419	26,340	65,759
			Comprehensive Audit	250,967	152,036	403,003
			On-Line Audit	203,007	110,880	313,887
		Behavioral	Energy Usage Reports	216,080	-	216,080
		Kits	Efficiency Kit - All-Electric	61,067	312,639	373,706
			Efficiency Kit - Schools	-	-	-
			Efficiency Kit - Standard	359,694	1,841,495	2,201,189
		New Homes	New Construction	440,289	500,250	940,539
	Low Income Program	Low Income	Community Connections	247,220	1,820,947	2,068,168
Residential Total				5,518,434	6,726,557	12,244,991

Appendix B-1: 2013 Budgets by Cost Category

Cleveland Electric						
Sector	**Program**	**Segment**	**Measure**	**2013 Operations**	**2013 Incentives**	**2013 Total**
Small Enterprise	C&I Energy Efficient Equipment Program-Small	Appliances	Clothes Washer - Small C&I	4,472	14,438	18,910
			Freezer Recycling - Small C&I	4,131	1,750	5,881
			Freezers - Small C&I	678	1,094	1,771
			Refrigerator Recycling - Small C&I	24,789	10,500	35,289
			Refrigerators - Small C&I	4,066	6,563	10,628
			Room Air Conditioner Recycling - Small C&I	20,657	5,469	26,126
			Smart Strip (Load Sensing & Occupancy) - Small C&I	60,499	136,719	197,218
			Vending Equipment Controller (Remote Mount, Lighting)	11,906	19,219	31,125
			Window Film	19	1,250	1,269
		Custom Equipment	Custom	36,832	6,270	43,102
			VFDs greater than 200 HP	3,683	7,500	11,183
			VFDs up to 200 HP	44,011	192,188	236,199
		Food Service	Anti Sweat Heater Controls	788	13,160	13,948
			Combination & Convection Ovens	68	1,500	1,568
			Commercial Glass Door Refrigerators	6,191	34,375	40,566
			Efficient Refrigeration Condenser	901	1,000	1,901
			Fryers & Griddles	203	1,688	1,890
			LED Reach in Refrig / Freezer Lights	788	21,875	22,663
			Pre Rinse Sprayers	4,885	15,190	20,075
			Refrigerated Case Covers	371	24,750	25,121
			Steam Cookers	394	13,125	13,519
			Commercial Solid Door Freezers	5,066	28,125	33,191
			Commercial Solid Door Refrigerators	5,628	31,250	36,878
			Ice Machines	2,184	24,250	26,434
			Hot Food Holding Cabinet	203	5,625	5,828
			Strip curtains for walk-in Refrig/Freezer	56	250	306
		HVAC & Water Heating	Air Conditioning 65,000-760,000 BTU/Hr (5-65TN)	850	18,500	19,350
			Electric Chillers	46	4,158	4,204
			Electric Water Heaters - Small C&I	3,218	14,000	17,218
			Hotel Room HVAC/Receptacle Controls	6,413	27,900	34,313
			HVAC Maintenance - Small C&I	4,022	11,025	15,047
			Room Air Conditioners - Small C&I	4,022	5,469	9,491
			Dual Enthalpy Economizer	1,195	13,000	14,195
			Water-Cooled cent Chiller Upto 300 tn	23	5,000	5,023
		Lighting	Emerging Technology - Small C&I	10	83,333	83,344
			Energy Efficient Lighting Products - Small C&I	408,525	120,000	528,525
			LED Exit Signs (Retrofit Only)	19,180	23,475	42,655
			Lighting Controls (Occupancy & Daylight) - Small C&I	29,914	91,531	121,446
			Energy Efficient Exterior Lighting (Area & Prk Gar)	7,660	30,000	37,660
			Linear Fluorescent Retrofits (Stndrd & Non Stndrd)	714,919	1,456,000	2,170,919
	Energy Efficient Buildings Program-Small	Audits	On-Line Audit - Small C&I	32,330	2,352	34,682
			Audit - Small C&I	124,737	112,500	237,237
		Custom Buildings	Custom Buildings	7,808	627	8,435
		Kits	Efficiency Kits - Small C&I	394,111	670,000	1,064,111
		New Buildings	New Construction - Small C&I	-	-	-
Small Enterprise Total				2,002,453	3,307,990	5,310,444

Appendix B-1: 2013 Budgets by Cost Category

Cleveland Electric						
Sector	**Program**	**Segment**	**Measure**	**2013 Operations**	**2013 Incentives**	**2013 Total**
Government	Government Tariff Lighting Program	Government	LED Traffic Signals	5,464	16,900	22,364
			Energy Efficient Street Lighting	27,319	31,500	58,819
Government Total				32,782	48,400	81,182
Large Enterprise (Mercantile Utility)	Demand Reduction Program	Demand Response	Contracted Demand Resources	5,000	840,000	845,000
			Interruptible Tariff	-	-	-
	C&I Energy Efficient Equipment Program-Large	Custom Equipment	VFDs greater than 200 HP - Large C&I	5,127	7,500	12,627
			VFDs up to 200 HP - Large C&I	179,453	32,813	212,265
			Custom - Large C&I	41,018	392,440	433,458
		HVAC & Water Heating	Air Conditioning 65,000-760,000 BTU/Hr (5-65TN) - Large C&I	65,395	6,000	71,395
			Electric Chillers - Large C&I	10,899	8,316	19,215
			Water-Cooled cent Chiller Upto 300 tn - Large C&I	5,450	5,000	10,450
			Dual Enthalpy Economizer - Large C&I	5,450	250	5,700
			HVAC Maintenance - Large C&I	1,981	63	2,044
		Lighting	Emerging Technology - Large C&I	13	83,333	83,346
			Energy Efficient Lighting Products - Large C&I	18,786	4,500	23,286
			Lighting Controls (Occupancy & Daylight) - Large C&I	2,505	6,250	8,755
			LED Exit Signs (Retrofit Only) - Large C&I	125	125	250
			Energy Efficient Exterior Lighting (Area & Prk Gar) - Large C&I	3,920	12,520	16,440
			Linear Fluorescent Retrofits (Stndrd & Non Stndrd) - Large C&I	313,099	520,000	833,099
	Energy Efficient Buildings Program-Large	Audits	Audit - Large C&I	73,619	60,000	133,619
		Custom Buildings	Custom Buildings - Large C&I	50,657	61,320	111,977
			Retrocommissioning - Large C&I	40,526	7,848	48,374
Large Enterprise (Mercantile Utility) Total				823,022	2,048,278	2,871,300
Mercantile	Mercantile Customer Program	Mercantile	Mercantile Customer Projects	530,991	-	530,991
Mercantile Total				530,991	-	530,991
T&D	Conservation Voltage Reduction	CVR	Conservation Voltage Reduction	250,000	-	250,000
	T&D Improvements	T&D Improvements	Distribution Upgrades	-	-	-
	Smart Grid Modernization Initiative	Smart Grid	Smart Grid Modernization Initiative	-	-	-
T&D Total				250,000	-	250,000
Grand Total				**9,157,682**	**12,131,225**	**21,288,907**

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Appendix B-2: 2014 Budgets by Cost Category

Cleveland Electric						
Sector	**Program**	**Segment**	**Measure**	**2014 Operations**	**2014 Incentives**	**2014 Total**
Residential	Appliance Turn-In Program	Appliance Turn-In	Freezer Recycling	354,532	130,500	485,032
			Refrigerator Recycling	745,739	274,500	1,020,239
			Room Air Conditioner Recycling	60,370	28,125	88,495
	Direct Load Control Program	Direct Load Control	DLC - CAC	730,830	319,918	1,050,748
			DLC - Pool Pump	-	-	-
			DLC - Water Heater	-	-	-
	Energy Efficient Products Program	Appliances	Clothes Washers	11,381	20,813	32,193
			Dehumidifiers	22,796	20,844	43,639
			Freezers	18,216	16,656	34,872
			Pool Pump Motors	2,422	1,875	4,297
			Refrigerators	56,972	52,094	109,066
		Consumer Electronics	Computer Monitors	23,200	-	23,200
			Computers	11,600	-	11,600
			Smart Strips	6,098	3,375	9,473
			Televisions	46,401	-	46,401
		HVAC & Water Heating	Air Source Heat Pump	37,672	48,000	85,672
			Central Air Conditioner	104,855	50,100	154,955
			Ductless Mini-Split AC & HP	10,944	13,500	24,444
			Electric Water Heaters	43,833	14,900	58,733
			Ground Source Heat Pump	7,848	15,000	22,848
			HVAC Maintenance	125,574	12,500	138,074
			Room Air Conditioner	188,362	15,000	203,362
			Whole House Fan	20,357	8,375	28,732
		Lighting	Ceiling Fan with Integral CFLs	234	2,250	2,484
			Emerging Technology	3	166,667	166,670
			Energy Efficient Lighting Products	1,177,333	1,094,061	2,271,394
			Torchiere Floor Lamps	122	360	482
	Home Performance Program	Audits	All Electric Home Audit	39,083	26,340	65,423
			Comprehensive Audit	248,827	152,036	400,863
			On-Line Audit	222,231	207,900	430,131
		Behavioral	Energy Usage Reports	262,508	-	262,508
		Kits	Efficiency Kit - All-Electric	59,192	312,639	371,831
			Efficiency Kit - Schools	73,021	110,250	183,271
			Efficiency Kit - Standard	348,651	1,841,495	2,190,146
		New Homes	New Construction	451,443	500,250	951,693
	Low Income Program	Low Income	Community Connections	247,177	1,820,947	2,068,124
Residential Total				5,759,827	7,281,269	13,041,096

Appendix B-2: 2014 Budgets by Cost Category

Cleveland Electric						
Sector	**Program**	**Segment**	**Measure**	**2014 Operations**	**2014 Incentives**	**2014 Total**
Small Enterprise	C&I Energy Efficient Equipment Program-Small	Appliances	Clothes Washer - Small C&I	4,407	14,438	18,844
			Freezer Recycling - Small C&I	4,243	1,750	5,993
			Freezers - Small C&I	668	1,094	1,761
			Refrigerator Recycling - Small C&I	25,458	10,500	35,958
			Refrigerators - Small C&I	4,006	6,563	10,568
			Room Air Conditioner Recycling - Small C&I	21,215	5,469	26,684
			Smart Strip (Load Sensing & Occupancy) - Small C&I	59,613	136,719	196,331
			Vending Equipment Controller (Remote Mount, Lighting)	11,732	19,219	30,951
			Window Film	1,577	125,000	126,577
		Custom Equipment	Custom	38,062	6,270	44,332
			VFDs greater than 200 HP	3,806	7,500	11,306
			VFDs up to 200 HP	53,130	192,188	245,317
		Food Service	Anti Sweat Heater Controls	718	13,160	13,878
			Combination & Convection Ovens	205	5,000	5,205
			Commercial Glass Door Refrigerators	5,641	34,375	40,016
			Efficient Refrigeration Condenser	821	1,000	1,821
			Fryers & Griddles	185	1,688	1,872
			LED Reach in Refrig / Freezer Lights	718	21,875	22,593
			Pre Rinse Sprayers	4,451	15,190	19,641
			Refrigerated Case Covers	338	24,750	25,088
			Steam Cookers	359	13,125	13,484
			Commercial Solid Door Freezers	4,616	28,125	32,741
			Commercial Solid Door Refrigerators	5,128	31,250	36,378
			Ice Machines	1,990	24,250	26,240
			Hot Food Holding Cabinet	185	5,625	5,810
			Strip curtains for walk-in Refrig/Freezer	205	1,000	1,205
		HVAC & Water Heating	Air Conditioning 65,000-760,000 BTU/Hr (5-65TN)	4,951	112,500	117,451
			Electric Chillers	462	43,659	44,121
			Electric Water Heaters - Small C&I	3,081	14,000	17,081
			Hotel Room HVAC/Receptacle Controls	6,139	27,900	34,039
			HVAC Maintenance - Small C&I	3,851	11,025	14,876
			Room Air Conditioners - Small C&I	3,851	5,469	9,319
			Dual Enthalpy Economizer	1,144	13,000	14,144
			Water-Cooled cent Chiller Upto 300 tn	22	5,000	5,022
		Lighting	Emerging Technology - Small C&I	9	83,333	83,342
			Energy Efficient Lighting Products - Small C&I	518,644	175,833	694,477
			LED Exit Signs (Retrofit Only)	16,618	23,475	40,093
			Lighting Controls (Occupancy & Daylight) - Small C&I	25,918	91,531	117,450
			Energy Efficient Exterior Lighting (Area & Prk Gar)	9,822	44,400	54,222
			Linear Fluorescent Retrofits (Stndrd & Non Stndrd)	619,425	1,456,000	2,075,425
	Energy Efficient Buildings Program-Small	Audits	On-Line Audit - Small C&I	29,829	2,352	32,181
			Audit - Small C&I	69,258	112,500	181,758
		Custom Buildings	Custom Buildings	17,016	1,881	18,897
		Kits	Efficiency Kits - Small C&I	240,417	1,360,938	1,601,355
		New Buildings	New Construction - Small C&I	266,492	54,180	320,672
Small Enterprise Total				2,090,424	4,386,096	6,476,520

Appendix B-2: 2014 Budgets by Cost Category

Cleveland Electric						
Sector	**Program**	**Segment**	**Measure**	**2014 Operations**	**2014 Incentives**	**2014 Total**
Government	Government Tariff Lighting Program	Government	LED Traffic Signals	3,137	16,900	20,037
			Energy Efficient Street Lighting	31,367	63,000	94,367
Government Total				34,504	79,900	114,404
Large Enterprise (Mercantile Utility)	Demand Reduction Program	Demand Response	Contracted Demand Resources	5,000	5,400,000	5,405,000
			Interruptible Tariff	-	-	-
	C&I Energy Efficient Equipment Program-Large	Custom Equipment	VFDs greater than 200 HP - Large C&I	26,553	37,500	64,053
			VFDs up to 200 HP - Large C&I	185,874	32,813	218,686
			Custom - Large C&I	42,485	392,440	434,925
		HVAC & Water Heating	Air Conditioning 65,000-760,000 BTU/Hr (5-65TN) - Large C&I	64,081	6,000	70,081
			Electric Chillers - Large C&I	32,040	24,948	56,988
			Water-Cooled cent Chiller Upto 300 tn - Large C&I	5,340	5,000	10,340
			Dual Enthalpy Economizer - Large C&I	10,680	500	11,180
			HVAC Maintenance - Large C&I	3,586	126	3,712
		Lighting	Emerging Technology - Large C&I	12	83,333	83,345
			Energy Efficient Lighting Products - Large C&I	17,791	4,500	22,291
			Lighting Controls (Occupancy & Daylight) - Large C&I	2,372	6,250	8,622
			LED Exit Signs (Retrofit Only) - Large C&I	237	250	487
			Energy Efficient Exterior Lighting (Area & Prk Gar) - Large C&I	7,413	25,000	32,413
			Linear Fluorescent Retrofits (Stndrd & Non Stndrd) - Large C&I	296,520	520,000	816,520
	Energy Efficient Buildings Program-Large	Audits	Audit - Large C&I	43,050	60,000	103,050
		Custom Buildings	Custom Buildings - Large C&I	82,037	134,904	216,941
			Retrocommissioning - Large C&I	29,832	7,848	37,680
Large Enterprise (Mercantile Utility) Total				854,904	6,741,412	7,596,316
Mercantile	Mercantile Customer Program	Mercantile	Mercantile Customer Projects	435,318	-	435,318
Mercantile Total				435,318	-	435,318
T&D	Conservation Voltage Reduction	CVR	Conservation Voltage Reduction	-	-	-
	T&D Improvements	T&D Improvements	Distribution Upgrades	-	-	-
	Smart Grid Modernization Initiative	Smart Grid	Smart Grid Modernization Initiative	-	-	-
T&D Total				-	-	-
Grand Total				**9,174,977**	**18,488,677**	**27,663,654**

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Appendix B-3: 2015 Budgets by Cost Category

Cleveland Electric						
Sector	Program	Segment	Measure	2015 Operations	2015 Incentives	2015 Total
Residential	Appliance Turn-In Program	Appliance Turn-In	Freezer Recycling	361,102	130,500	491,602
			Refrigerator Recycling	759,560	274,500	1,034,060
			Room Air Conditioner Recycling	61,234	28,125	89,359
	Direct Load Control Program	Direct Load Control	DLC - CAC	753,374	323,119	1,076,493
			DLC - Pool Pump	-	-	-
			DLC - Water Heater	-	-	-
	Energy Efficient Products Program	Appliances	Clothes Washers	11,717	20,813	32,530
			Dehumidifiers	23,470	20,844	44,314
			Freezers	18,755	16,656	35,411
			Pool Pump Motors	2,494	1,875	4,369
			Refrigerators	58,657	52,094	110,751
		Consumer Electronics	Computer Monitors	23,833	-	23,833
			Computers	11,916	-	11,916
			Smart Strips	6,263	3,375	9,638
			Televisions	47,666	-	47,666
		HVAC & Water Heating	Air Source Heat Pump	38,443	48,000	86,443
			Central Air Conditioner	106,999	50,100	157,099
			Ductless Mini-Split AC & HP	11,167	13,500	24,667
			Electric Water Heaters	44,723	14,900	59,623
			Ground Source Heat Pump	8,009	15,000	23,009
			HVAC Maintenance	128,142	12,500	140,642
			Room Air Conditioner	192,213	15,000	207,213
			Whole House Fan	20,772	8,375	29,147
		Lighting	Ceiling Fan with Integral CFLs	239	2,250	2,489
			Emerging Technology	3	166,667	166,670
			Energy Efficient Lighting Products	1,199,427	1,094,061	2,293,488
			Torchiere Floor Lamps	124	360	484
	Home Performance Program	Audits	All Electric Home Audit	40,067	26,340	66,407
			Comprehensive Audit	255,096	152,036	407,132
			On-Line Audit	222,268	194,040	416,308
		Behavioral	Energy Usage Reports	267,672	-	267,672
		Kits	Efficiency Kit - All-Electric	74,732	429,638	504,369
			Efficiency Kit - Schools	137,742	220,500	358,242
			Efficiency Kit - Standard	440,411	2,532,098	2,972,508
		New Homes	New Construction	461,364	500,250	961,614
	Low Income Program	Low Income	Community Connections	252,752	1,820,947	2,073,699
Residential Total				6,042,407	8,188,462	14,230,869

Appendix B-3: 2015 Budgets by Cost Category

Cleveland Electric						
Sector	Program	Segment	Measure	2015 Operations	2015 Incentives	2015 Total
Small Enterprise	C&I Energy Efficient Equipment Program-Small	Appliances	Clothes Washer - Small C&I	4,525	14,438	18,962
			Freezer Recycling - Small C&I	4,342	1,750	6,092
			Freezers - Small C&I	686	1,094	1,779
			Refrigerator Recycling - Small C&I	26,051	10,500	36,551
			Refrigerators - Small C&I	4,113	6,563	10,676
			Room Air Conditioner Recycling - Small C&I	21,709	5,469	27,178
			Smart Strip (Load Sensing & Occupancy) - Small C&I	61,210	136,719	197,929
			Vending Equipment Controller (Remote Mount, Lighting)	12,046	19,219	31,265
			Window Film	1,621	125,000	126,621
		Custom Equipment	Custom	38,974	6,270	45,244
			VFDs greater than 200 HP	3,897	7,500	11,397
			VFDs up to 200 HP	55,363	192,188	247,550
		Food Service	Anti Sweat Heater Controls	735	13,160	13,895
			Combination & Convection Ovens	210	5,000	5,210
			Commercial Glass Door Refrigerators	5,775	34,375	40,150
			Efficient Refrigeration Condenser	840	1,000	1,840
			Fryers & Griddles	189	1,688	1,876
			LED Reach in Refrig / Freezer Lights	735	21,875	22,610
			Pre Rinse Sprayers	4,557	15,190	19,747
			Refrigerated Case Covers	346	24,750	25,096
			Steam Cookers	367	13,125	13,492
			Commercial Solid Door Freezers	4,725	28,125	32,850
			Commercial Solid Door Refrigerators	5,250	31,250	36,500
			Ice Machines	2,037	24,250	26,287
			Hot Food Holding Cabinet	189	5,625	5,814
			Strip curtains for walk-in Refrig/Freezer	210	1,000	1,210
		HVAC & Water Heating	Air Conditioning 65,000-760,000 BTU/Hr (5-65TN)	5,131	112,500	117,631
			Electric Chillers	502	45,738	46,240
			Electric Water Heaters - Small C&I	3,193	14,000	17,193
			Hotel Room HVAC/Receptacle Controls	6,363	27,900	34,263
			HVAC Maintenance - Small C&I	3,991	11,025	15,016
			Room Air Conditioners - Small C&I	3,991	5,469	9,460
			Dual Enthalpy Economizer	1,186	13,000	14,186
			Water-Cooled cent Chiller Upto 300 tn	23	5,000	5,023
		Lighting	Emerging Technology - Small C&I	9	83,333	83,342
			Energy Efficient Lighting Products - Small C&I	528,835	175,833	704,668
			LED Exit Signs (Retrofit Only)	16,945	23,475	40,420
			Lighting Controls (Occupancy & Daylight) - Small C&I	26,428	91,531	117,959
			Energy Efficient Exterior Lighting (Area & Prk Gar)	10,015	44,400	54,415
			Linear Fluorescent Retrofits (Stndrd & Non Stndrd)	631,596	1,456,000	2,087,596
	Energy Efficient Buildings Program-Small	Audits	On-Line Audit - Small C&I	30,792	2,352	33,144
			Audit - Small C&I	71,133	112,500	183,633
		Custom Buildings	Custom Buildings	17,316	1,881	19,197
		Kits	Efficiency Kits - Small C&I	244,694	1,360,938	1,605,632
		New Buildings	New Construction - Small C&I	273,130	54,180	327,310
Small Enterprise Total				2,135,974	4,388,175	6,524,148

Appendix B-3: 2015 Budgets by Cost Category

Cleveland Electric						
Sector	**Program**	**Segment**	**Measure**	**2015 Operations**	**2015 Incentives**	**2015 Total**
Government	Government Tariff Lighting Program	Government	LED Traffic Signals	3,224	16,900	20,124
			Energy Efficient Street Lighting	32,241	63,000	95,241
Government Total				35,465	79,900	115,365
Large Enterprise (Mercantile Utility)	Demand Reduction Program	Demand Response	Contracted Demand Resources	5,000	5,520,000	5,525,000
			Interruptible Tariff	-	-	-
	C&I Energy Efficient Equipment Program-Large	Custom Equipment	VFDs greater than 200 HP - Large C&I	32,507	45,000	77,507
			VFDs up to 200 HP - Large C&I	189,626	32,813	222,438
			Custom - Large C&I	43,343	392,440	435,783
		HVAC & Water Heating	Air Conditioning 65,000-760,000 BTU/Hr (5-65TN) - Large C&I	65,024	6,000	71,024
			Electric Chillers - Large C&I	32,512	24,948	57,460
			Water-Cooled cent Chiller Upto 300 tn - Large C&I	5,419	5,000	10,419
			Dual Enthalpy Economizer - Large C&I	16,256	750	17,006
			HVAC Maintenance - Large C&I	3,583	126	3,709
		Lighting	Emerging Technology - Large C&I	12	83,333	83,346
			Energy Efficient Lighting Products - Large C&I	18,272	4,500	22,772
			Lighting Controls (Occupancy & Daylight) - Large C&I	2,436	6,250	8,686
			LED Exit Signs (Retrofit Only) - Large C&I	244	250	494
			Energy Efficient Exterior Lighting (Area & Prk Gar) - Large C&I	7,613	25,000	32,613
			Linear Fluorescent Retrofits (Stndrd & Non Stndrd) - Large C&I	304,534	520,000	824,534
	Energy Efficient Buildings Program-Large	Audits	Audit - Large C&I	44,270	60,000	104,270
		Custom Buildings	Custom Buildings - Large C&I	84,095	134,904	218,999
			Retrocommissioning - Large C&I	30,580	7,848	38,428
Large Enterprise (Mercantile Utility) Total				885,326	6,869,162	7,754,488
Mercantile	Mercantile Customer Program	Mercantile	Mercantile Customer Projects	353,421	-	353,421
Mercantile Total				353,421	-	353,421
T&D	Conservation Voltage Reduction	CVR	Conservation Voltage Reduction	-	-	-
	T&D Improvements	T&D Improvements	Distribution Upgrades	-	-	-
	Smart Grid Modernization Initiative	Smart Grid	Smart Grid Modernization Initiative	-	-	-
T&D Total				-	-	-
Grand Total				**9,452,593**	**19,525,698**	**28,978,292**

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Appendix B-4: 2013-15 Budgets by Cost Category

Cleveland Electric						
Sector	Program	Segment	Measure	2013-15 Operations	2013-15 Incentives	2013-15 Total
Residential	Appliance Turn-In Program	Appliance Turn-In	Freezer Recycling	1,070,401	391,500	1,461,901
			Refrigerator Recycling	2,251,532	823,500	3,075,032
			Room Air Conditioner Recycling	183,424	84,375	267,799
	Direct Load Control Program	Direct Load Control	DLC - CAC	2,151,171	959,807	3,110,977
			DLC - Pool Pump	-	-	-
			DLC - Water Heater	-	-	-
	Energy Efficient Products Program	Appliances	Clothes Washers	34,011	62,438	96,448
			Dehumidifiers	68,124	62,531	130,655
			Freezers	54,438	49,969	104,406
			Pool Pump Motors	6,161	4,700	10,861
			Refrigerators	170,258	156,281	326,539
		Consumer Electronics	Computer Monitors	57,419	-	57,419
			Computers	28,710	-	28,710
			Smart Strips	17,555	8,438	25,992
			Televisions	114,838	-	114,838
		HVAC & Water Heating	Air Source Heat Pump	116,186	144,000	260,186
			Central Air Conditioner	323,383	150,300	473,683
			Ductless Mini-Split AC & HP	31,126	37,125	68,251
			Electric Water Heaters	113,599	37,300	150,899
			Ground Source Heat Pump	24,205	45,000	69,205
			HVAC Maintenance	387,285	37,500	424,785
			Room Air Conditioner	580,928	45,000	625,928
			Whole House Fan	57,826	23,000	80,826
		Lighting	Ceiling Fan with Integral CFLs	722	6,188	6,910
			Emerging Technology	11	500,000	500,011
			Energy Efficient Lighting Products	3,554,962	2,953,965	6,508,927
			Torchiere Floor Lamps	413	1,080	1,493
	Home Performance Program	Audits	All Electric Home Audit	118,569	79,020	197,589
			Comprehensive Audit	754,890	456,108	1,210,998
			On-Line Audit	647,506	512,820	1,160,326
		Behavioral	Energy Usage Reports	746,260	-	746,260
		Kits	Efficiency Kit - All-Electric	194,991	1,054,915	1,249,906
			Efficiency Kit - Schools	210,763	330,750	541,513
			Efficiency Kit - Standard	1,148,756	6,215,088	7,363,843
		New Homes	New Construction	1,353,096	1,500,750	2,853,846
	Low Income Program	Low Income	Community Connections	747,149	5,462,842	6,209,991
Residential Total				17,320,667	22,196,288	39,516,955

Appendix B-4: 2013-15 Budgets by Cost Category

Cleveland Electric						
Sector	**Program**	**Segment**	**Measure**	**2013-15 Operations**	**2013-15 Incentives**	**2013-15 Total**
Small Enterprise	C&I Energy Efficient Equipment Program-Small	Appliances	Clothes Washer - Small C&I	13,403	43,313	56,716
			Freezer Recycling - Small C&I	12,716	5,250	17,966
			Freezers - Small C&I	2,031	3,281	5,312
			Refrigerator Recycling - Small C&I	76,297	31,500	107,797
			Refrigerators - Small C&I	12,185	19,688	31,872
			Room Air Conditioner Recycling - Small C&I	63,581	16,406	79,987
			Smart Strip (Load Sensing & Occupancy) - Small C&I	181,322	410,156	591,478
			Vending Equipment Controller (Remote Mount, Lighting)	35,684	57,656	93,340
			Window Film	3,218	251,250	254,468
		Custom Equipment	Custom	113,867	18,810	132,677
			VFDs greater than 200 HP	11,387	22,500	33,887
			VFDs up to 200 HP	152,504	576,563	729,066
		Food Service	Anti Sweat Heater Controls	2,241	39,480	41,721
			Combination & Convection Ovens	483	11,500	11,983
			Commercial Glass Door Refrigerators	17,607	103,125	120,732
			Efficient Refrigeration Condenser	2,561	3,000	5,561
			Fryers & Griddles	576	5,063	5,639
			LED Reach in Refrig / Freezer Lights	2,241	65,625	67,866
			Pre Rinse Sprayers	13,894	45,570	59,464
			Refrigerated Case Covers	1,056	74,250	75,306
			Steam Cookers	1,120	39,375	40,495
			Commercial Solid Door Freezers	14,406	84,375	98,781
			Commercial Solid Door Refrigerators	16,006	93,750	109,756
			Ice Machines	6,211	72,750	78,961
			Hot Food Holding Cabinet	576	16,875	17,451
			Strip curtains for walk-in Refrig/Freezer	471	2,250	2,721
		HVAC & Water Heating	Air Conditioning 65,000-760,000 BTU/Hr (5-65TN)	10,932	243,500	254,432
			Electric Chillers	1,010	93,555	94,565
			Electric Water Heaters - Small C&I	9,491	42,000	51,491
			Hotel Room HVAC/Receptacle Controls	18,914	83,700	102,614
			HVAC Maintenance - Small C&I	11,864	33,075	44,939
			Room Air Conditioners - Small C&I	11,864	16,406	28,270
			Dual Enthalpy Economizer	3,525	39,000	42,525
			Water-Cooled cent Chiller Upto 300 tn	68	15,000	15,068
		Lighting	Emerging Technology - Small C&I	28	250,000	250,028
			Energy Efficient Lighting Products - Small C&I	1,456,005	471,666	1,927,671
			LED Exit Signs (Retrofit Only)	52,743	70,425	123,168
			Lighting Controls (Occupancy & Daylight) - Small C&I	82,261	274,594	356,854
			Energy Efficient Exterior Lighting (Area & Prk Gar)	27,497	118,800	146,297
			Linear Fluorescent Retrofits (Stndrd & Non Stndrd)	1,965,940	4,368,000	6,333,940
	Energy Efficient Buildings Program-Small	Audits	On-Line Audit - Small C&I	92,951	7,056	100,007
			Audit - Small C&I	265,129	337,500	602,629
		Custom Buildings	Custom Buildings	42,140	4,389	46,529
		Kits	Efficiency Kits - Small C&I	879,222	3,391,875	4,271,097
		New Buildings	New Construction - Small C&I	539,622	108,360	647,982
Small Enterprise Total				6,228,851	12,082,261	18,311,112

Appendix B-4: 2013-15 Budgets by Cost Category

Cleveland Electric						
Sector	**Program**	**Segment**	**Measure**	**2013-15 Operations**	**2013-15 Incentives**	**2013-15 Total**
Government	Government Tariff Lighting Program	Government	LED Traffic Signals	11,825	50,700	62,525
			Energy Efficient Street Lighting	90,927	157,500	248,427
Government Total				102,752	208,200	310,952
Large Enterprise (Mercantile Utility)	Demand Reduction Program	Demand Response	Contracted Demand Resources	15,000	11,760,000	11,775,000
			Interruptible Tariff	-	-	-
	C&I Energy Efficient Equipment Program-Large	Custom Equipment	VFDs greater than 200 HP - Large C&I	64,188	90,000	154,188
			VFDs up to 200 HP - Large C&I	554,953	98,438	653,390
			Custom - Large C&I	126,846	1,177,320	1,304,166
		HVAC & Water Heating	Air Conditioning 65,000-760,000 BTU/Hr (5-65TN) - Large C&I	194,500	18,000	212,500
			Electric Chillers - Large C&I	75,452	58,212	133,664
			Water-Cooled cent Chiller Upto 300 tn - Large C&I	16,208	15,000	31,208
			Dual Enthalpy Economizer - Large C&I	32,386	1,500	33,886
			HVAC Maintenance - Large C&I	9,150	315	9,465
		Lighting	Emerging Technology - Large C&I	37	250,000	250,037
			Energy Efficient Lighting Products - Large C&I	54,849	13,500	68,349
			Lighting Controls (Occupancy & Daylight) - Large C&I	7,313	18,750	26,063
			LED Exit Signs (Retrofit Only) - Large C&I	606	625	1,231
			Energy Efficient Exterior Lighting (Area & Prk Gar) - Large C&I	18,946	62,520	81,466
			Linear Fluorescent Retrofits (Stndrd & Non Stndrd) - Large C&I	914,153	1,560,000	2,474,153
	Energy Efficient Buildings Program-Large	Audits	Audit - Large C&I	160,939	180,000	340,939
		Custom Buildings	Custom Buildings - Large C&I	216,790	331,128	547,918
			Retrocommissioning - Large C&I	100,938	23,544	124,482
Large Enterprise (Mercantile Utility) Total				2,563,253	15,658,851	18,222,104
Mercantile	Mercantile Customer Program	Mercantile	Mercantile Customer Projects	1,319,730	-	1,319,730
Mercantile Total				1,319,730	-	1,319,730
T&D	Conservation Voltage Reduction	CVR	Conservation Voltage Reduction	250,000	-	250,000
	T&D Improvements	T&D Improvements	Distribution Upgrades	-	-	-
	Smart Grid Modernization Initiative	Smart Grid	Smart Grid Modernization Initiative	-	-	-
T&D Total				250,000	-	250,000
Grand Total				**27,785,253**	**50,145,600**	**77,930,853**

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Appendix B-5: Total Portfolio Annual Budget

Total Portfolio Annual Budget			
Company	Program Year 2013 ($)	Program Year 2014 ($)	Program Year 2015 ($)
Cleveland Electric	21,288,907	27,663,654	28,978,292

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Appendix C:
Program Assumptions & PUCO Tables

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Appendix C-1: EE&C / DR Program Measure Assumptions

Residential including Low Income - Measure Assumptions												
Program	**Sub Program**	**Measure Name**	**Annual kWh Savings**	**Annual kW Savings**	**Measure Life**	**Source of Savings**	**Eligibility / Description**	**Incremental Cost**	**Incremental Unit**	**Modeled Rebate**	**Modeled Unit**	**O&M Savings**
Appliance Turn-In Program	**Appliance Turn-In**	Refrigerator Recycling	1,004	0.16	8	Ohio TRM	Removal of an existing inefficient unit generally older than 10 years from service prior to end of useful life thru recycling	$0	Ea	$50	Ea	$0
		Freezer Recycling	908	0.15	8	Ohio TRM	Removal of an existing inefficient unit generally older than 10 years from service prior to end of useful life thru recycling	$0	Ea	$50	Ea	$0
		Room Air Conditioner Recycling	76	0.66	3	Ohio TRM	Removal of an existing inefficient unit from service prior to end of useful life thru recycling	$0	Ea	$31	Ea	$0
Home Performance Program	**Audits**	Comprehensive Audit	832	0.66	9	Ohio TRM	In-Home Audit w/ direct install measures. Also provides incentive for comprehensive measures including but not limited to: Windows, Duct Sealing, and Wall & Attic Insulation, etc., Eligible to customers w/ electric water heating, and/or central electric HVAC systems.	$876	Ea	$398	Ea	$0
		All Electric Home Audit	1,200	0.66	9	Ohio TRM	In-Home Audit w/ direct install measures. Also provides incentive for comprehensive measures including but not limited to: Windows, Duct Sealing, and Wall & Attic Insulation, etc., Eligible to customers w/ electric heat, electric water heating, and central electric HVAC systems.	$876	Ea	$439	Ea	$0
		On-Line Audit	233	0.01	1	Actuals	Energy education and awareness supporting installation of measures and behaviors that reduce consumption of energy and demand thru recommendations from the self performed on-line audit specific to the residence home.	$21	Ea	$84	Ea	$0
	Kits	Efficiency Kit - Standard	451	0.04	9	Ohio TRM	Opt In Kit with energy efficiency measures including but not limited to: CFLs, Night Lights etc. mailed at customers request	$37	Ea	$84	Ea	$0
		Efficiency Kit - All-Electric	510	0.05	8	Ohio TRM	Opt In Kit with energy efficiency measures including but not limited to: CFLs, Faucets Aerators, Low Flow Shower Head, Night Lights etc. mailed at customers request (Eligible to customers w/ electric heat, electric water heating, & central electric HVAC systems)	$49	Ea	$84	Ea	$0
		Efficiency Kit - Schools	132	0.02	9	Ohio TRM	Adoption of an energy efficiency school curriculum provided by teachers or districts which encourages efficient practices & installation of efficiency measures at home.	$21	Ea	$21	Ea	$0
	New Homes	New Construction	1,800	0.50	15	Actuals	Improvement in residence electric energy efficiency of 10 - 15% above present IECC code	$2,249	Ea	$750	Ea	$0

Appendix C-1: EE&C / DR Program Measure Assumptions

Residential including Low Income - Measure Assumptions (Continued)												
Program	**Sub Program**	**Measure Name**	**Annual kWh Savings**	**Annual kW Savings**	**Measure Life**	**Source of Savings**	**Eligibility / Description**	**Incremental Cost**	**Incremental Unit**	**Modeled Rebate**	**Modeled Unit**	**O&M Savings**
Home Performance Program	**Behavioral**	Energy Usage Reports CE	144.36	0.01	1	Company Assumption	Reports containing energy usage comparisons, recommendations and education emphasizing key points, general conservation tips and informatio on tools and resources supporting implementation of measures and efficiencies behaviors that reduces consumption of energy and demand.	$0	Ea	$0	Ea	$0
		Energy Usage Reports OE	176.09	0.02	1	Company Assumption	Reports containing energy usage comparisons, recommendations and education emphasizing key points, general conservation tips and informatio on tools and resources supporting implementation of measures and efficiencies behaviors that reduces consumption of energy and demand.	$0	Ea	$0	Ea	$0
		Energy Usage Reports TE	161	0.02	1	Company Assumption	Reports containing energy usage comparisons, recommendations and education emphasizing key points, general conservation tips and informatio on tools and resources supporting implementation of measures and efficiencies behaviors that reduces consumption of energy and demand.	$0	Ea	$0	Ea	$0
Energy Efficient Products Program	**HVAC & Water Heating**	Air Source Heat Pump	1,238	0.29	18	Ohio TRM	Replacement of ducted split central units prior to end of life or a new system w/ Energy Star qualifying units w/ SEER ratings > or = 14.5 or 12 EER or 8.2 HSPF	$822	Ea	$400	Ea	$0
		HVAC Maintenance	138	0.04	5	Ohio TRM	Check refrigerant levels and air flow across coils for CAC and HP units using standard industry tools with correction of any problems found and post-treatment re-measurement.	$85	Ea	$31	Ea	$0
		Central Air Conditioner	221	0.29	18	Ohio TRM	Replacement of ducted split central units prior to end of life w/ Energy Star qualifying units w/ SEER ratings > or = 14.5 or 12 EER	$714	Ea	$150	Ea	$0
		Ground Source Heat Pump	2,744	0.20	18	Ohio TRM	Replacement of air-air or air-water split central units that are Energy Star Rated, Tier 1-3 water-air or water-water unit	$10,000	Ea	$600	Ea	$0
		Whole House Fan	258	0.49	20	PA TRM	New installation of a whole house fan for customers w/ electric CAC and/o HP units	$250	Ea	$125	Ea	$0
		Room Air Conditioner	19	0.02	12	Ohio TRM	Purchase and installation of Energy Star (>=10.8 EER) or CEE Tier 1 (>=11.3 EER) qualifying units	$40	Ea	$25	Ea	$0
		Electric Water Heaters	316	0.04	14	Ohio and PA TRMs	Replacement of existing electric storage tank type units heated by Resistive Elec. w/ EF >.93, HP w/ EF >2.0 & Solar w/ EF >1.84	$397	Ea	$100	Ea	$0
		Ductless Mini-Split AC & HP	152	0.39	15	PA TRM	New installation of a Energy Star qualifying unit w/ SEER >= 14.5, EER >=12 or HSPF >= 8.2.	$600	Ea	$375	Ea	$0

Appendix C-1: EE&C / DR Program Measure Assumptions

Residential including Low Income - Measure Assumptions (Continued)												
Program	**Sub Program**	**Measure Name**	**Annual kWh Savings**	**Annual kW Savings**	**Measure Life**	**Source of Savings**	**Eligibility / Description**	**Incremental Cost**	**Incremental Unit**	**Modeled Rebate**	**Modeled Unit**	**O&M Savings**
Energy Efficient Products Program	**Appliances**	Clothes Washers	218	0.03	11	Ohio TRM	Purchase and installation of an Energy Star (MEF >=2.0) or CEE Tier 3 (MEF >=2.20) qualifying units	$315	Ea	$63	Ea	$0
		Dehumidifiers	207	0.05	12	Ohio TRM	Purchase and installation of an Energy Star qualifying units w/ L/kWh of 1.20 to 2.50 and greater	$45	Ea	$31	Ea	$0
		Refrigerators	134	0.02	17	Ohio TRM	Purchase and installation of a new unit meeting either Energy Star or CEE Tier 2, >=20% or >=25% respectively lower energy consumption than the federal standard.	$85	Ea	$31	Ea	$0
		Freezers	134	0.02	17	Ohio TRM	Purchase and installation of a new unit meeting either Energy Star or CEE Tier 2, >=20% or >=25% respectively lower energy consumption than the federal standard.	$85	Ea	$31	Ea	$0
		Pool Pump Motors	409	0.58	10	Ohio TRM	Replacement of an existing single speed pool pump motor with a higher efficiency single, two or variable speed motor of equivalent horsepower.	$175	Ea	$25	Ea	$0
	Consumer Electronics	Smart Strips	103	0.01	4	Ohio TRM	Purchase and installation of controlled power strip (occupancy sensing or load sensing) units w/ 5 or 7 outlets	$26	Ea	$13	Ea	$0
		Televisions	100	0.02	15	PA TRM	Purchase and installation of Energy Star qualifying units meeting version 5.1 (effective May 1,2012) requirements	$50	Ea	$0	Ea	$0
		Computers	50	0.01	4	Energy Star	Purchase and installation of Energy Star qualifying units	$50	Ea	$0	Ea	$0
		Computer Monitors	42	0.01	15	Energy Star	Purchase and installation of Energy Star qualifying units	$50	Ea	$0	Ea	$0

Appendix C-1: EE&C / DR Program Measure Assumptions

Residential including Low Income - Measure Assumptions (Continued)												
Program	**Sub Program**	**Measure Name**	**Annual kWh Savings**	**Annual kW Savings**	**Measure Life**	**Source of Savings**	**Eligibility / Description**	**Incremental Cost**	**Incremental Unit**	**Modeled Rebate**	**Modeled Unit**	**O&M Savings**
Energy Efficient Products Program	**Lighting**	Torchiere Floor Lamps	129	0.02	8	Ohio TRM	Purchase and installation of Energy Star qualifying units	$5	Ea	$10	Ea	$0
		Ceiling Fan with Integral CFLs	120	0.01	10	Ohio TRM	Purchase and installation of Energy Star qualifying units w/ energy efficiency motors and integral CFLs	$86	Ea	$31	Ea	$0
		Emerging Technology	N/A	N/A	N/A	N/A	Purchase and installation of higher efficiency emerging technology product	$0	Ea	N/A	Ea	$0
		Energy Efficient Lighting Products	34	0.004	9	Ohio TRM	Purchase and installation of CFLs, LEDs, EE Incandescent and Halogen screw in & pin base bulbs, single or multi packs replacing incandescents	$3	Ea	$3	Ea	$0
Direct Load Control Program	**Direct Load Control**	DLC - CAC	0	0.72	1	Appliance demand rating controlled as necessary	Cycles electric CAC or HP units during peak demand periods as necessary	$2	Ea	$52	Ea	$0
		DLC - Pool Pump	0	0.00	1	Appliance demand rating controlled as necessary	Cycles electric pool pump units during peak demand periods as necessary	$0	Ea	$52	Ea	$0
		DLC - Water Heater	0	0.00	1	Appliance demand rating controlled as necessary	Cycles electric water heater units during peak demand periods as necessary	$0	Ea	$52	Ea	$0
Low Income Program	**Low Income**	Community Connections CE	816	0.11	8	Historic Actuals	Weatherization services provided to customers who qualify within 200% of the Federal Poverty Income Guidelines	N/A	Ea	N/A	Ea	$0
		Community Connections OE	622	0.08	8	Historic Actuals	Weatherization services provided to customers who qualify within 200% of the Federal Poverty Income Guidelines	N/A	Ea	N/A	Ea	$0
		Community Connections TE	547	0.07	8	Historic Actuals	Weatherization services provided to customers who qualify within 200% of the Federal Poverty Income Guidelines	N/A	Ea	N/A	Ea	$0

Appendix C-1: EE&C / DR Program Measure Assumptions

Non-Residential, Small - Measure Assumptions												
Program	**Sub Program**	**Measure Name**	**Annual kWh Savings**	**Annual kW Savings**	**Measure Life**	**Source of Savings**	**Eligibility / Description**	**Incremental Cost**	**Incremental Unit**	**Modeled Rebate**	**Modeled Unit**	**O&M Savings**
C&I Energy Efficient Equipment Program-Small	**HVAC & Water Heating**	Air Conditioning 65,000-760,000 BTU/Hr (5-65TN)	3,266	2.82	15	Ohio TRM	Replacement or new Single Package or Split System AC or HP, (unitary air, water or evaporatively cooled) exceeding IECC 2006 Table 503.2.3 (1)	$100	Tn	$500	20 Tn	$0
		HVAC Maintenance - Small C&I	163	0.00	10	Ohio TRM	Check refrigerant levels and air flow across coils for CAC and HP units using standard industry tools with correction of any problems found and post-treatment re-measurement.	$129	Ea	$63	Ea	$0
		Hotel Room HVAC/Receptacle Controls / Room	348	0.06	7.5	PA and NEEP TRMs	New installation of occupancy and load sensing controls on lights, receptacles and individual room HVAC units (adjusted back to default settings)	$205	Room	$100	Room	$0
		Dual Enthalpy Economizer	724	0.00	10	Ohio TRM	Upgrade the outside air dry bulb economizer sensors and controls to a dual enthalpy controlled economizer. Upgrade provides continuous monitoring of both outside and return air which controlling system dampers.	$400	Ea	$250	Ea	$0
		Electric Chillers	20,789	10.11	20	Ohio TRM	Replacement or new installation of a single electric chiller w/o VSDs w/ efficiency exceeding IECC 2006, Table 503.2.3 (7) w/ IPLV based on COP	$177	Tn	$2,079	150 Tn	$0
		Room Air Conditioners - Small C&I	46	0.04	12	Ohio TRM	Purchase and installation of Energy Star (>=9.4 EER) or CEE SHEA Tier 1 (>=9.8 EER) qualifying units	$60	Ea	$31	Ea	$0
		Electric Water Heaters	316	0.04	14	Ohio and PA TRMs	Replacement of existing electric storage tank type units heated by Resistive Elec. w/ EF >.93, HP w/ EF >2.0 & Solar w/ EF >1.84	$397	Ea	$100	Ea	$0
		Water-Cooled cent Chiller Upto 300 tn	848	0.90	20	Ohio TRM	Replacement or new installation of a single electric chiller w/o VSDs w/ efficiency exceeding IECC 2006, Table 503.2.3 (7) w/ IPLV based on COP	$80	Tn	$5,000	200 Tn	$0

Appendix C-1: EE&C / DR Program Measure Assumptions

Non-Residential, Small - Measure Assumptions (Continued)												
Program	**Sub Program**	**Measure Name**	**Annual kWh Savings**	**Annual kW Savings**	**Measure Life**	**Source of Savings**	**Eligibility / Description**	**Incremental Cost**	**Incremental Unit**	**Modeled Rebate**	**Modeled Unit**	**O&M Savings**
C&I Energy Efficient Equipment Program-Small	**Appliances - Small**	Clothes Washer - Small C&I	542	0.00	10	Ohio TRM	Purchase and installation of Energy Star qualifying units meeting MEF >=1.8 w/ electric hot water heating only	$475	Ea	$63	Ea	$0
		Refrigerator Recycling - Small C&I	1,004	0.16	8	Ohio TRM	Removal of an existing inefficient unit generally older than 10 years from service prior to end of useful life thru recycling	$0	Ea	$50	Ea	$0
		Freezer Recycling - Small C&I	908	0.15	8	Ohio TRM	Removal of an existing inefficient unit generally older than 10 years from service prior to end of useful life thru recycling	$0	Ea	$50	Ea	$0
		Room Air Conditioner Recycling - Small C&I	76	0.66	3	Ohio TRM	Removal of an existing inefficient unit from service prior to end of useful life thru recycling	$0	Ea	$31	Ea	$0
		Refrigerators - Small C&I	135	0.02	17	Ohio TRM	Purchase and installation of a new unit meeting either Energy Star or CEE Tier 2, >=20% or >=25% respectively lower energy consumption than the federal standard.	$85	Ea	$31	Ea	$0
		Freezers - Small C&I	135	0.02	17	Ohio TRM	Purchase and installation of a new unit meeting either Energy Star or CEE Tier 2, >=20% or >=25% respectively lower energy consumption than the federal standard.	$85	Ea	$31	Ea	$0
		Vending Equipment Controller (Remote Mount, Lighting)	1,122	0.00	5	Ohio TRM	New installation of system controls on Non Energy Star rated refrigerated & non-refrigerated machines in addition to external mounted occupancy controls for lighting.	$162	Ea	$31	Ea	$0
		Window Film	3,303	1.30	10	Ohio TRM	Purchase and Installation of reflective window film w/ SHGC of .4 or less on double pane clear glass w/ SHGC of .73 and U Value of .72Btu/hr-SF-deg F	$3	SF	$1,250	1,000 SF	$0
		Smart Strip (Load Sensing & Occupancy) - Small C&I	124	0.01	5	PA TRM	Purchase and installation of controlled power strip (occupancy sensing or load sensing) units w/ 5 or 7 outlets	$26	Ea	$44	Ea	$0

Appendix C-1: EE&C / DR Program Measure Assumptions

Non-Residential, Small - Measure Assumptions (Continued)												
Program	**Sub Program**	**Measure Name**	**Annual kWh Savings**	**Annual kW Savings**	**Measure Life**	**Source of Savings**	**Eligibility / Description**	**Incremental Cost**	**Incremental Unit**	**Modeled Rebate**	**Modeled Unit**	**O&M Savings**
C&I Energy Efficient Equipment Program-Small	**Food Service**	Commercial Solid Door Freezers	2,432	0.28	12	Ohio TRM	Replacement or new installation of a Energy Star qualified reach-in commercial unit w/ solid or glass door (0 - 50CF and greater)	$220	Ea	$63	Ea	$0
		Commercial Solid Door Refrigerators	523	0.06	12	Ohio TRM	Replacement or new installation of a Energy Star qualified reach-in commercial unit w/ solid or glass door (0 - 50CF and greater)	$180	Ea	$63	Ea	$0
		Commercial Glass Door Refrigerators	412	0.05	12	Ohio TRM	Replacement or new installation of a Energy Star qualified reach-in commercial unit w/ solid or glass door (0 - 50CF and greater)	$180	Ea	$63	Ea	$0
		Ice Machines	315	0.07	9	Ohio TRM	Replacement or new installation of Energy Star qualified air cooled, cube-type machines including ice-making heads, self contained & remote-condenser units w/ capacity (100 to 1500lbs/day and greater)	$559	Ea	$125	Ea	$0
		Steam Cookers	7,497	1.44	12	Ohio TRM	Replacement or new installation of Energy Star qualified electric units w/ 3-6 pans	$2,000	Ea	$375	Ea	$0
		Hot Food Holding Cabinet	3,322	0.51	12	Ohio TRM	Replacement or new installation of Full, Three Qtr and Half sized Energy Star qualified units w/ idle energy rate of .04kW/CF	$1,110	Ea	$313	Ea	$0
		Fryers & Griddles	3,375	0.66	12	Ohio TRM	Replacement or new installation of Energy Star qualified electric units.	$1,295	Ea	$94	Ea	$0
		Combination & Convection Ovens	6,226	1.19	12	Ohio TRM	Replacement or new installation of: Combination ovens w/ a heavy load cooking affiance of 60% or greater, or Convection ovens meeting Energy Star qualifications	$1,619	Ea	$250	Ea	$0
		Refrigerated Case Covers / 60' Unit	45,738	0.00	5	Ohio TRM	New installation of continuous curtains over case openings put in place when not in use.	$42	LF	$750	60 LF	$0
		Anti Sweat Heater Controls / Door	6,838	0.00	12	Ohio TRM	New installation of door heater controls on glass door refrigerators or coolers, these on-off controls offer two eligible strategies utilizing relative humidity of indoor air or conductivity of the door	$300	Circuit	$188	10 Drs / Crt	$0
		LED Reach in Refrig / Freezer Lights	5,743	0.70	8	Ohio TRM	Replacement of T8 or T12 linear fluorescent refrigerator, cooler or freezer lighting w/ LED lighting. Occupancy sensing controls are optional.	$222	Fixture	$313	10 Fixture	$4 / Fixture
		Efficient Refrigeration Condenser	120	0.03	15	DS More MI Database	Replacement prior to end of useful life of condenser w/ efficient unit on No Energy Star qualified units	$50	Ea	$13	Ea	$0
		Pre Rinse Sprayers	30	0.00	5	Ohio TRM	Replacement of sprayer w/ a unit that uses 1.6GPM or less, On/Off squeeze lever, and cleanability performance of at least 26 seconds, electric water heating only	$52	Ea	$35	Ea	$0
		Strip curtains for walk-in Refrig/Freezer	1,698	0.20	6	Ohio TRM	Replacement or new installation of a polyethylene strip curtain on walk in freezers and coolers covering the entire door frame, eligible openings must be open a minimum of 2.5hrs/day	$10	SF	$50	48 SF	$0

Appendix C-1: EE&C / DR Program Measure Assumptions

Non-Residential, Small - Measure Assumptions (Continued)												
Program	**Sub Program**	**Measure Name**	**Annual kWh Savings**	**Annual kW Savings**	**Measure Life**	**Source of Savings**	**Eligibility / Description**	**Incremental Cost**	**Incremental Unit**	**Modeled Rebate**	**Modeled Unit**	**O&M Savings**
C&I Energy Efficient Equipment Program-Small	**Lighting**	Energy Efficient Exterior Lighting (Area & Prk Gar)	223	0.00	15	Ohio TRM	Replacement or new installation of lighting equipment to a greater efficiend than existing or designed	$34	Ea	$40	Ea	$0
		Linear Fluorescent Retrofits (Stndrd & Non Stndrd)	208	0.05	15	Ohio TRM	Replacement or new installation of linear fluorescent lighting equipment, including but not limited to T8 and T5, to a higher efficiency than existing or designed	$64	Ea	$21	Ea	$0
		LED Exit Signs (Retrofit Only)	83	0.01	16	Ohio TRM	Replacement of incandescent or fluorescent signs w/ LED	$30	Ea	$13	Ea	$6 / Ea
		Emerging Technology - Small C&I	N/A	N/A	N/A	N/A	Purchase and installation of higher efficiency emerging technology product	$0	Ea	N/A	Ea	$0
		Energy Efficient Lighting Products - Small C&I	137	0.03	3	Ohio TRM	Purchase and installation of CFLs, LEDs, EE Incandescent and Halogen screw in & pin base bulbs, single or multi packs replacing incandescents	$1	Ea	$3	Ea	$0
		Lighting Controls (Oc & Daylight)	114	0.02	8	Ohio TRM	New installation of lighting controls including but not limited to: daylight On/Off & dimming, occupancy sensors (wall plate, remote & fixture mounted), time clocks and switching controls.	$104	Ea	$31	Ea	$0
	Custom Equipment	VFDs up to 200 HP	11,008	6.59	15	PA TRM	New Installation on existing motors driving HVAC fans, cooling tower fans chilled water pumps, condenser water pumps, hot water pumps and air compressors. Other applications and larger VFDs will be considered as a Custom measure.	$125	HP	$938	25 HP	$0
		VFDs greater than 200 HP	63,410	21.20	15	PA TRM	New Installation on existing motors driving HVAC fans, cooling tower fans chilled water pumps, condenser water pumps, hot water pumps and air compressors. Other applications and larger VFDs will be considered as a Custom measure.	$125	HP	$7,500	200 HP	$0
		Custom	6,269	0.72	20	ACEEE 5-15% of Avg Usage, Co Assumption of 10%	Replacement or retrofit of existing equipment with greater efficient equipment or process changes, including motors.	$10,000	Project	$627	Project	$0

Appendix C-1: EE&C / DR Program Measure Assumptions

Non-Residential, Small - Measure Assumptions (Continued)												
Program	**Sub Program**	**Measure Name**	**Annual kWh Savings**	**Annual kW Savings**	**Measure Life**	**Source of Savings**	**Eligibility / Description**	**Incremental Cost**	**Incremental Unit**	**Modeled Rebate**	**Modeled Unit**	**O&M Savings**
Energy Efficient Buildings Program-Small	**New Buildings**	New Construction - Small C&I	15,045	1.72	15	24% > ASHRAE 90.1-2004,Green Bldg Approach w/ LEED Cert, Co Assumption 24% of Avg Usage	Improvement in building electric consumption of 24% better than ASHRAE 90.1-2004.	$2	SF	$1,505	10,000 SF	$0
	C&I Audits	Audit-Small	0	0.00	1	N/A	Customer completed energy audits recommending installation of efficient equipment or process changes. Eligible audits will recommend implementation of measures offered by the Company. The audit measure is dependent on implementation and approval of an audit recomended measure offered by the Company.	$0	Project	$3,750	Project	$0
		On-Line Audit - Small C&I	233	0.01	12	Actuals	Energy education and awareness supporting installation of measures and behaviors that reduce consumption of energy and demand thru recommendations from the self performed on-line audit specific to the residence home.	$12	EA	$84	EA	$0
	Custom Buildings	Custom Buildings	6,269	0.72	20	ACEEE 5-15% of Avg Usage, Co Assumption of 10%	Retrofit of existing building shell, electrical & electric mechanical retrofits to greater efficiency components and processes.	$10,000	Project	$627	Project	$0
	Kits	Efficiency Kits - Small C&I	873	0.18	3.4	Ohio TRM	Opt In Kit with energy efficiency measures including but not limited to, Compact Fluorescent Lights, Smart Strips, Faucet Aerators etc. mailed at customers request	$25	Ea	$84	Ea	$0

Government - Measure Assumptions												
Program	**Sub Program**	**Measure Name**	**Annual kWh Savings**	**Annual kW Savings**	**Measure Life**	**Source of Savings**	**Eligibility / Description**	**Incremental Cost**	**Incremental Unit**	**Modeled Rebate**	**Modeled Unit**	**O&M Savings**
Government Tariff Lighting Program	**Government**	LED Traffic Signals	575	0.08	10	Ohio TRM	Replace incandescent traffic & pedestrian signals with LED signals	$165	3 Sockets	$169	3 Sockets	$189 / 3 Sockets
		Energy Efficient Street Lighting	223	0.00	15	Ohio TRM	Replace streetlighting with higher efficient lighting	$17	Ea	$63	Ea	$0

Appendix C-1: EE&C / DR Program Measure Assumptions

Non-Residential, Large - Measure Assumptions												
Program	**Sub Program**	**Measure Name**	**Annual kWh Savings**	**Annual kW Savings**	**Measure Life**	**Source of Savings**	**Eligibility / Description**	**Incremental Cost**	**Incremental Unit**	**Modeled Rebate**	**Modeled Unit**	**O&M Savings**
C&I Energy Efficient Equipment Program-Large	**HVAC - Large**	Air Conditioning 65,000-760,000 BTU/Hr (5-65TN) - Large C&I	3266	2.82	15	Ohio TRM	Replacement or new Single Package or Split System AC or HP, (unitary air, water or evaporatively cooled) exceeding IECC 2006 Table 503.2.3 (1)	$100	Tn	$500	20 Tn	$0
		HVAC Maintenance - Large C&I	163	0.00	10	Ohio TRM	Check refrigerant levels and air flow across coils for CAC and HP units using standard industry tools with correction of any problems found and post-treatment re-measurement.	$129	Ea	$63	Ea	$0
		Dual Enthalpy Economizer - Large C&I	3618	0.00	10	Ohio TRM	Upgrade the outside air dry bulb economizer sensors and controls to a dual enthalpy controlled economizer. Upgrade provides continuous monitoring of both outside and return air which controlling system dampers.	$400	Ea	$250	Ea	$0
		Electric Chillers - Large C&I	41,579	20.23	20	Ohio TRM	Replacement or new installation of a single electric chiller w/o VSDs w/ efficiency exceeding IECC 2006, Table 503.2.3 (7) w/ IPLV based on COP	$177	Tn	$4,158	300 Tn	$0
		Water-Cooled cent Chiller Upto 300 tn - Large C&I	848	0.90	20	PA TRM	Replacement or new installation of a single electric chiller w/o VSDs w/ efficiency exceeding IECC 2006, Table 503.2.3 (7) w/ IPLV based on COP	$80	Tn	$5,000	200 Tn	$0
	Lighting - Large	Energy Efficient Exterior Lighting (Area & Prk Gar) - Large C&I	223	0.00	15	Ohio TRM	Replacement or new installation of lighting equipment to a greater efficienc than existing or designed	$34	Ea	$40	Ea	$0
		Linear Fluorescent Retrofits (Stndrd & Non Stndrd) - Large C&I	208	0.05	15	Ohio TRM	Replacement or new installation of linear fluorescent lighting equipment, including but not limited to T8 and T5, to a higher efficiency than existing or designed	$64	Ea	$21	Ea	$0
		LED Exit Signs (Retrofit Only) - Large C&I	83	0.01	16	Ohio TRM	Replacement of incandescent or fluorescent signs w/ LED	$30	Ea	$13	Ea	$6 / Ea
		Emerging Technology - Large C&I	N/A	N/A	N/A	N/A	Purchase and installation of higher efficiency emerging technology product	$0	Ea	N/A	Ea	$0
		Energy Efficient Lighting Products - Large C&I	137	0.03	3	Ohio TRM	Purchase and installation of CFLs, LEDs, EE Incandescent and Halogen screw in & pin base bulbs, single or multi packs replacing incandescents	$1	Ea	$3	Ea	$0
		Lighting Controls (Oc & Daylight) - Large	114	0.02	8	Ohio TRM	New installation of lighting controls including but not limited to: daylight On/Off & dimming, occupancy sensors (wall plate, remote & fixture mounted), time clocks and switching controls.	$104	Ea	$31	Ea	$0
	Custom Equipment - Large	VFDs up to 200 HP - Large C&I	11,008	6.59	15	PA TRM	New Installation on existing motors driving HVAC fans, cooling tower fans chilled water pumps, condenser water pumps, hot water pumps and air compressors. Other applications and larger VFDs will be considered as a Custom measure.	$125	HP	$938	25 HP	$0
		VFDs greater than 200 HP - Large C&I	63,410	21.20	15	PA TRM	New Installation on existing motors driving HVAC fans, cooling tower fans chilled water pumps, condenser water pumps, hot water pumps and air compressors. Other applications and larger VFDs will be considered as a Custom measure.	$125	HP	$7,500	200 HP	$0
		Custom - Large C&I	490,548	56.00	20	ACEEE 5-15% of Avg Usage, Co Assumption of 10%	Replacement or retrofit of existing equipment with greater efficient equipment or process changes, including motors.	$100,000	Project	$49,055	Project	$0

Appendix C-1: EE&C / DR Program Measure Assumptions

Non-Residential, Large - Measure Assumptions (Continued)												
Program	**Sub Program**	**Measure Name**	**Annual kWh Savings**	**Annual kW Savings**	**Measure Life**	**Source of Savings**	**Eligibility / Description**	**Incremental Cost**	**Incremental Unit**	**Modeled Rebate**	**Modeled Unit**	**O&M Savings**
Energy Efficient Buildings Program-Large	**C&I Audits - Large**	Audit - Large C&I	0	0.00	1	N/A	Customer completed energy audits recommending installation of efficient equipment or process changes. Eligible audits will recommend implementation of measures offered by the Company. The audit measure is dependent on implementation and approval of an audit recomended measure offered by the Company.	$0	Project	$3,750	Project	$0
	Custom Buildings - Large	Custom Buildings - Large C&I	122,637	14.00	20	ACEEE 5-15% (Bldg Shell & Operating System ONLY) , Co Assumption 25% of ACEEE 5% of avg customer usage	Retrofit of existing building shell, electrical & electric mechanical retrofits to greater efficiency components and processes.	$10,000	Project	$12,264	Project	$0
		Retrocommissioning - Large C&I	24,527	2.80	1	ACEEE 5-15% (Bldg Shell & Operating System ONLY) , Co Assumption 25% of ACEEE 1% of avg customer usage	Adjust Electrical, Electric Mechanical, & Control System set points to improve system performance to existing building conditions and use.	$8,000	Project	$1,962	Project	$0
Demand Response	**Demand Response**	Interruptible Tariff CE	0	31,778.00	1	Tariff	Opt in Tariff curtailment offering	N/A	N/A	N/A	N/A	N/A
		Interruptible Tariff OE	0	42,139.00	1	Tariff	Opt in Tariff curtailment offering	N/A	N/A	N/A	N/A	N/A
		Interruptible Tariff TE	0	125,671.00	1	Tariff	Opt in Tariff curtailment offering	N/A	N/A	N/A	N/A	N/A
		Contracted Demand Resources	0	1,000.00	1	Contract as needed	Contracted curtailment w/ curtailment providers and/or individual customers	N/A	N/A	$160	kw-yr	$0

Appendix C-1: EE&C / DR Program Measure Assumptions

Other - Measure Assumptions												
Program	**Sub Program**	**Measure Name**	**Annual kWh Savings**	**Annual kW Savings**	**Measure Life**	**Source of Savings**	**Eligibility / Description**	**Incremental Cost**	**Incremental Unit**	**Modeled Rebate**	**Modeled Unit**	**O&M Savings**
Mercantile Customer Program	**Mercantile**	Mercantile Customer Projects	Per Project			As Determined	Customer completed retrofit projects	N/A	N/A	N/A	N/A	N/A
T&D Improvements	**T&D Improvements**	Distribution Upgrades	Per Project			As Determined	Distribution system improvements that result in system energy savings	N/A	N/A	N/A	N/A	N/A
Smart Grid Modernization Initiative	**Smart Grid**	Smart Grid Modernization Initiative	N/A	N/A	1	As Determined	Advanced metering pilot	N/A	N/A	N/A	N/A	N/A
Conservation Voltage Reduction	**Conservation Voltage Reduction**	Conservation Voltage Reduction Study	N/A	N/A	1	As Determined	Advanced metering pilot	N/A	N/A	N/A	N/A	N/A

Appendix C-2: Forecasted Number of Units

Cleveland Electric					
Sector	**Program Name**	**Measure Name**	**2013 Units**	**2014 Units**	**2015 Units**
Residential	Appliance Turn-In Program	Freezer Recycling	2,610	2,610	2,610
		Refrigerator Recycling	5,490	5,490	5,490
		Room Air Conditioner Recycling	900	900	900
	Direct Load Control Program	DLC - CAC	6,036	6,096	6,157
		DLC - Pool Pump	-	-	-
		DLC - Water Heater	-	-	-
	Energy Efficient Products Program	Air Source Heat Pump	120	120	120
		Ceiling Fan with Integral CFLs	54	72	72
		Central Air Conditioner	334	334	334
		Clothes Washers	333	333	333
		Computer Monitors	270	1,080	1,080
		Computers	135	540	540
		Dehumidifiers	667	667	667
		Ductless Mini-Split AC & HP	27	36	36
		Electric Water Heaters	75	149	149
		Emerging Technology	1	1	1
		Energy Efficient Lighting Products	255,281	364,687	364,687
		Freezers	533	533	533
		Ground Source Heat Pump	25	25	25
		HVAC Maintenance	400	400	400
		Pool Pump Motors	38	75	75
		Refrigerators	1,667	1,667	1,667
		Room Air Conditioner	600	600	600
		Smart Strips	135	270	270
		Televisions	540	2,160	2,160
		Torchiere Floor Lamps	36	36	36
		Whole House Fan	50	67	67
	Home Performance Program	All Electric Home Audit	60	60	60
		Comprehensive Audit	382	382	382
		Efficiency Kit - All-Electric	3,733	3,733	5,130
		Efficiency Kit - Schools	-	5,250	10,500
		Efficiency Kit - Standard	21,988	21,988	30,234
		Energy Usage Reports	10,000	12,450	12,450
		New Construction	667	667	667
		On-Line Audit	1,320	2,475	2,310
	Low Income Program	Community Connections	958	958	958

Appendix C-2: Forecasted Number of Units

Cleveland Electric					
Sector	**Program Name**	**Measure Name**	**2013 Units**	**2014 Units**	**2015 Units**
Small Enterprise	C&I Energy Efficient Equipment Program-Small	Air Conditioning 65,000-760,000 BTU/Hr (5-65TN)	37	225	225
		Anti Sweat Heater Controls	70	70	70
		Clothes Washer - Small C&I	231	231	231
		Combination & Convection Ovens	6	20	20
		Commercial Glass Door Refrigerators	550	550	550
		Commercial Solid Door Freezers	450	450	450
		Commercial Solid Door Refrigerators	500	500	500
		Custom	10	10	10
		Dual Enthalpy Economizer	52	52	52
		Efficient Refrigeration Condenser	80	80	80
		Electric Chillers	2	21	22
		Electric Water Heaters - Small C&I	140	140	140
		Emerging Technology - Small C&I	1	1	1
		Energy Efficient Lighting Products - Small C&I	40,000	58,611	58,611
		Freezer Recycling - Small C&I	35	35	35
		Freezers - Small C&I	35	35	35
		Fryers & Griddles	18	18	18
		Hot Food Holding Cabinet	18	18	18
		Hotel Room HVAC/Receptacle Controls	279	279	279
		HVAC Maintenance - Small C&I	175	175	175
		Ice Machines	194	194	194
		LED Exit Signs (Retrofit Only)	1,878	1,878	1,878
		LED Reach in Refrig / Freezer Lights	70	70	70
		Lighting Controls (Occupancy & Daylight) - Small C&I	2,929	2,929	2,929
		Pre Rinse Sprayers	434	434	434
		Refrigerated Case Covers	33	33	33
		Refrigerator Recycling - Small C&I	210	210	210
		Refrigerators - Small C&I	210	210	210
		Room Air Conditioner Recycling - Small C&I	175	175	175
		Room Air Conditioners - Small C&I	175	175	175
		Smart Strip (Load Sensing & Occupancy) - Small C&I	3,125	3,125	3,125
		Steam Cookers	35	35	35
		Strip curtains for walk-in Refrig/Freezer	5	20	20
		Vending Equipment Controller (Remote Mount, Lighting)	615	615	615
		VFDs greater than 200 HP	1	1	1
		VFDs up to 200 HP	205	205	205
		Water-Cooled cent Chiller Upto 300 tn	1	1	1
		Window Film	1	100	100
		Energy Efficient Exterior Lighting (Area & Prk Gar)	750	1,110	1,110
		Linear Fluorescent Retrofits (Stndrd & Non Stndrd)	70,000	70,000	70,000
	Energy Efficient Buildings Program-Small	Audit - Small C&I	30	30	30
		Custom Buildings	1	3	3
		Efficiency Kits - Small C&I	8,000	16,250	16,250
		New Construction - Small C&I	-	36	36
		On-Line Audit - Small C&I	28	28	28

Appendix C-2: Forecasted Number of Units

Cleveland Electric					
Sector	**Program Name**	**Measure Name**	**2013 Units**	**2014 Units**	**2015 Units**
Government	Government Tariff Lighting Program	LED Traffic Signals	100	100	100
		Energy Efficient Street Lighting	500	1,000	1,000
Large Enterprise (Mercantile Utility)	Demand Reduction Program	Contracted Demand Resources	7	45	46
		Interruptible Tariff	1	-	-
	C&I Energy Efficient Equipment Program-Large	Air Conditioning 65,000-760,000 BTU/Hr (5-65TN) - Large C&I	12	12	12
		Custom - Large C&I	8	8	8
		Dual Enthalpy Economizer - Large C&I	1	2	3
		Electric Chillers - Large C&I	2	6	6
		Emerging Technology - Large C&I	1	1	1
		Energy Efficient Lighting Products - Large C&I	1,500	1,500	1,500
		HVAC Maintenance - Large C&I	1	2	2
		LED Exit Signs (Retrofit Only) - Large C&I	10	20	20
		Lighting Controls (Occupancy & Daylight) - Large C&I	200	200	200
		VFDs greater than 200 HP - Large C&I	1	5	6
		VFDs up to 200 HP - Large C&I	35	35	35
		Water-Cooled cent Chiller Upto 300 tn - Large C&I	1	1	1
		Energy Efficient Exterior Lighting (Area & Prk Gar) - Large C&I	313	625	625
		Linear Fluorescent Retrofits (Stndrd & Non Stndrd) - Large C&I	25,000	25,000	25,000
	Energy Efficient Buildings Program-Large	Audit - Large C&I	16	16	16
		Custom Buildings - Large C&I	5	11	11
		Retrocommissioning - Large C&I	4	4	4
Mercantile	Mercantile Customer Program	Mercantile Customer Projects	20	14	10
T&D	Conservation Voltage Reduction	Conservation Voltage Reduction	-		
	T&D Improvements	Distribution Upgrades	-	-	-
	Smart Grid Modernization Initiative	Smart Grid Modernization Initiative	-	-	-
Grand Total			474,997	624,906	639,695

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Appendix C-3

PUCO 1: Portfolio Summary of Lifetime Costs and Benefits

Cleveland Electric Portfolio Summary of Lifetime Costs and Benefits Net Lifetime Benefits, and TRC per the California Standard Practice Manual					
Portfolio	**Discount Rate**	**Total Discounted Lifetime Costs ($000)**	**Total Discounted Lifetime Benefits ($000)**	**Total Discounted Net Lifetime Benefits ($000)**	**Cost-Benefit Ratio (TRC)**
Residential (inclusive of Low-Income)	8.48%	35,816,668	39,410,671	3,594,003	1.1
Small Enterprise	8.48%	29,841,846	50,348,776	20,506,930	1.7
Mercantile	8.48%	1,232,605	19,969,774	18,737,168	16.2
Mercantile-Utility (Large Enterprise)	8.48%	10,815,352	26,275,392	15,460,040	2.4
Governmental	8.48%	179,075	632,138	453,063	3.5
Transmission & Distribution	8.48%	250,000	-	(250,000)	0.0
Total	**8.48%**	**78,135,546**	**136,636,750**	**58,501,204**	**1.7**

Appendix C-3

PUCO 2: Summary of Portfolio Energy and Demand Savings

Cleveland Electric Summary of Portfolio Energy and Demand Savings - Pro rata						
	Program Year 2013		Program Year 2014		Program Year 2015	
MWh Saved for Consumption Reductions kW Saved for Peak Load Reductions	MWh Saved	kW Saved	MWh Saved	kW Saved	MWh Saved	kW Saved
Residential Sector (inclusive of Low- Income) - Cumulative Projected Portfolio Savings	18,751	33,341	53,819	39,608	92,127	46,363
Small Enterprise - Cumulative Projected Portfolio Savings	20,125	37,463	68,367	49,776	121,185	62,100
Mercantile - Cumulative Projected Portfolio Savings	18,999	49,317	32,297	51,684	41,797	53,374
Mercantile-Utility (Large Enterprise)- Cumulative Projected Portfolio Savings	5,881	53,972	17,667	62,864	29,999	66,395
Government Sector - Cumulative Projected Portfolio Savings	93	9	351	18	659	27
Transmission & Distribution	0	0	0	0	0	0
Portfolio Plan Total - Cumulative Projected Savings	63,849	174,101	172,501	203,949	285,767	228,259

Appendix C-3

PUCO 3: Summary of Portfolio Costs

Cleveland Electric Summary of Portfolio Costs			
	Program Year 2013	**Program Year 2014**	**Program Year 2015**
	Portfolio Budget ($)	**Portfolio Budget ($)**	**Portfolio Budget ($)**
Residential Portfolio (inclusive of Low-Income) Annual Budget	12,244,991	13,041,096	14,230,869
Small Enterprise Portfolio Annual Budget	5,310,444	6,476,520	6,524,148
Mercantile Portfolio Annual Budget	530,991	435,318	353,421
Mercantile-Utility (Large Enterprise) Portfolio Annual Budget	2,871,300	7,596,316	7,754,488
Government Portfolio Annual Budget	81,182	114,404	115,365
Transmission & Distribution Portfolio Annual Budget	250,000	0	0
Total Portfolio Annual Budget	**21,288,907**	**27,663,654**	**28,978,292**

Appendix C-3

PUCO 4: Program Summaries

Cleveland Electric Program Summaries								
	EE Program (check box)	**PDR Program (check box)**	**Program Name**	**Program Market**	**Program Two Sentence Summary**	**Net Lifetime MWh Savings**	**Net Peak Demand kW Savings**	**Percentage of Portfolio and Total Lifetime MWh savings %**
Residential Portfolio Programs (inclusive of Low Income)		**X**	Direct Load Control Program	RES	The program consists of a customer having their central air conditioning compressor cycled during summer peak periods.	-	14,418	0.0%
	X		Appliance Turn-In Program	RES	The program consists of customers receiving a rebate for turning in a working refrigerator, freezer, or room air conditioner.	207,864	39,102	5.7%
	X		Energy Efficient Products Program	RES	The program provides rebates to consumers and financial incentives and support to retailers that sell energy efficient products, such as HVAC, appliances, lighting, home electronics, and other electricity conservation products.	387,297	58,824	10.6%
	X		Home Performance Program	RES	This program is a combination of the existing Comprehensive Residential Retrofit, Online Audit, and Efficient New Homes programs. In addition, this program also consists of energy efficiency kits and a behavioral program being offered to customers.	465,833	61,251	12.8%
	X		Low-Income Program	LI RES	The program consists of weatherization services being offered to low-income customers.	20,542	2,744	0.6%
			Totals for Residential Sector			***1,081,536***	***176,338***	*29.7%*

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PUCO 4: Program Summaries

Cleveland Electric Program Summaries								
	EE Program (check box)	**PDR Program (check box)**	**Program Name**	**Program Market**	**Program Two Sentence Summary**	**Net Lifetime MWh Savings**	**Net Peak Demand kW Savings**	**Percentage of Portfolio and Total Lifetime MWh savings %**
Small Enterprise	**X**		C&I Energy Efficiency Equipment Program-Small	Small C&I	Provides financial incentives (Prescriptive & Performance) and support to customers directly or through retialers for implementing energy efficient equipment and products. Other delivery mechanisms may include EE kits provided to participants.	1,162,177	310,390	31.9%
	X		Energy Efficient Buildings Program-Small	Small C&I	Provides financial incentives and support to customers for implementing energy efficient custom building shell or system improvements. Other delivery mechanisms include EE kits provided to participants and incentives towards energy efficiency audits.	150,634	29,285	4.1%
			Totals for Small Enterprise			***1,312,811***	***339,675***	*36.0%*

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PUCO 4: Program Summaries

Cleveland Electric Program Summaries								
	EE Program (check box)	PDR Program (check box)	Program Name	Program Market	Program Two Sentence Summary	Net Lifetime MWh Savings	Net Peak Demand kW Savings	Percentage of Portfolio and Total Lifetime MWh savings %
Mercantile	X		Mercantile Customer Program		Captures energy efficiency and peak demand reduction projects committed to the Company by Mercantile customers as provided for by O.R.C. 4928.01 and 4928.66	626,951	111,582	17.2%
			Totals for Mercantile			***626,951***	***111,582***	*17.2%*
Mercantile-Utility (Large Enterprise)		X	Demand Reduction Program	Large C&I	Captures load curtailment and curtailable capacity from the Companies' Interruptible Load Programs (Economic Load Response and Optional Load Response) and from additional demand resources including resources participating in the PJM market or through contracts for demand response attributes with customers or PJM CSPs.	-	133,765	0.0%
	X		C/I Energy Efficient Equipment Program-Large	Large C&I	Provides financial incentives (Prescriptive & Performance) and support to customers directly or through retialers for implementing energy efficient equipment and products. Other delivery mechanisms may include EE kits provided to participantsparticipants and incentives towards energy efficiency audits.	535,017	108,298	14.7%
	X		Energy Efficient Buildings Program-Large	Large C&I	Provides financial incentives and support to customers for implementing energy efficient custom building shell or system improvements. Other delivery mechanisms include EE kits provided to participants and audits coupled with direct installation of low cost measures.	74,326	8,485	2.0%
			Totals for Large Enterprise			***609,343***	***250,549***	*16.7%*

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PUCO 4: Program Summaries

Cleveland Electric Program Summaries								
	EE Program (check box)	**PDR Program (check box)**	**Program Name**	**Program Market**	**Program Two Sentence Summary**	**Net Lifetime MWh Savings**	**Net Peak Demand kW Savings**	**Percentage of Portfolio and Total Lifetime MWh savings %**
Government Portfolio Programs	**X**		Government Tariff Lighting Program	Gov't	Provides financial incentives and support to customers for implementing energy efficient street lighting or traffic lighting technologies.	11,060	269	0.3%
			Totals for Gov't Sector Programs			***11,060***	***269***	*0.3%*
Transmission & Distribution	**X**	**X**	Conservation Voltage Reduction	T&D	The Company is proposing to study a Conservation Voltage Reduction (CVR) Program by carefully analyzing their distribution circuit designs to identify operational changes that potentially could achieve additional energy savings and demand reductions.	-	-	0.0%
	X	**X**	T&D Improvements	T&D	Capture savings achieved through various T&D projects that reduce line losses, which in turn results in a more efficient delivery system.	-	-	0.0%
		X	Smart Grid Modernization Initiative	T&D	The intent of the project is to produce an an integrated system of protection, performance, efficiency and economy that extends across the energy delivery system for multiple stakeholder benefits.	-	-	0.0%
			Totals for T&D Sector Programs			-	-	*0.0%*
Total for Plan						**3,641,701**	**878,413**	**100.0%**

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PUCO 5: Budget and Parity Analysis Summary

Cleveland Electric						
Customer Class	**3 Year Budget**	**% of Total EDC Budget**	**% of Total Budget of Customer Programs**	**2011 Revenue by Customer Class**	**% of Total Customer Revenue**	**Difference**
Residential *(inclusive of Low-Income)*	39,516,955	50.7%				
Residential Subtotal	39,516,955	50.7%	50.7%	366,117,009	42.2%	8%
Small Enterprise	18,311,112	23.5%				
Small Enterprise Total	18,311,112	23.5%	23.5%	379,719,272	43.8%	-20%
Mercantile-Utility (Large Enterprise)	18,222,104	23.4%				
Mercantile	1,319,730	1.7%				
Mercantile Subtotal	19,541,834	25.1%	25.1%	100,703,628	11.6%	13%
Government	310,952	0.4%	0.4%	20,540,179	2.4%	-2%
Transmission & Distribution	250,000	0.3%	0.0%			
Other Expenditures Subtotal	-	0.0%	0.0%			
EDC TOTAL	**77,930,853**	**100%**	**100%**	**867,080,088**	**100%**	

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PUCO 5A: Energy Savings and Parity Analysis Summary

Cleveland Electric						
Customer Class	**3 Year Cumulative Energy Savings (MWh)**	**% of Total EDC Energy Savings**	**% of Total Energy Savings of Customer Programs**	**2011 Sales by Customer Class (MWh)**	**% of Total Customer Sales**	**Difference**
Residential	122,985	35.5%				
Residential Subtotal	122,985	35.5%	35.5%	5,709,987	30.2%	5%
Small Enterprise	145,487	42.0%				
Small Enterprise Total	145,487	42.0%	42.0%	6,774,190	35.8%	6%
Mercantile-Utility (Large Enterprise)	35,686	10.3%				
Mercantile	41,797	12.1%				
Mercantile Subtotal	77,483	22.3%	22.3%	6,283,629	33.2%	-11%
Government	800	0.2%	0.2%	148,340	0.8%	-1%
Transmission & Distribution	-	0.0%	0.0%			
Other Subtotal	-	0.0%	0.0%			
EDC TOTAL	**346,755**	**100%**	**100%**	**18,916,146**	**100%**	

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PUCO 6A: Portfolio-Specific Assignment of EE&C Costs

Cleveland Electric Residential Portfolio (including Low-Income)			
EE&C Program	**Cost Elements ($)**		
	Total Incentives	*Operations Costs*	*Total Budget (2013-2015)*
Peak Demand Reduction Programs			
Direct Load Control Program	959,807	1,679,472	2,639,279
Peak Demand Reduction Program Subtotal	***959,807***	***1,679,472***	***2,639,279***
Energy Efficiencys Programs			
Appliance Turn-In Program	1,299,375	2,781,739	4,081,114
Energy Efficient Products Program	4,324,814	4,550,397	8,875,210
Home Performance Program	10,149,451	4,134,821	14,284,271
Low-Income Program	5,462,842	607,804	6,070,646
EE Program Subtotal	***21,236,481***	***12,074,761***	***33,311,242***
Totals	**22,196,288**	**13,754,233**	**35,950,520**

Cleveland Electric Small Enterprise			
EE&C Program	**Cost Elements ($)**		
	Total Incentives	*Operations Costs*	*Total Budget (2013-2015)*
C&I Energy Efficiency Equipment Program-Small	8,233,081	3,901,343	12,134,424
Energy Efficient Buildings Program-Small	3,849,180	1,626,766	5,475,946
Totals	***12,082,261***	***5,528,109***	**17,610,370**

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PUCO 6A: Portfolio-Specific Assignment of EE&C Costs

Cleveland Electric Mercantile			
EE&C Program	**Cost Elements ($)**		
	Total Incentives	*Operations Costs*	*Total Budget (2013-2015)*
Mercantile Customer Program	0	1,169,298	1,169,298
Totals	**0**	**1,169,298**	**1,169,298**

Cleveland Electric Mercantile Utility (Large Enterprise)			
EE&C Program	**Cost Elements ($)**		
	Total Incentives	*Operations Costs*	*Total Budget (2013-2015)*
Peak Demand Reduction Programs			
Demand Reduction Program	11,760,000	1,831,489	13,591,489
Peak Demand Reduction Program Subtotal	11,760,000	1,831,489	13,591,489
Energy Efficiencys Programs			
C/I Energy Efficient Equipment Program-Large	3,364,179	0	3,364,179
Energy Efficient Buildings Program-Large	534,672	423,960	958,632
EE Program Subtotal	3,898,851	423,960	4,322,811
Totals	**15,658,851**	**2,255,449**	**17,914,301**

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PUCO 6A: Portfolio-Specific Assignment of EE&C Costs

Cleveland Electric Government			
EE&C Program	**Cost Elements ($)**		
	Total Incentives	*Operations Costs*	*Total Budget (2013-2015)*
Government Tariff Lighting Program	208,200	90,665	298,865
Totals	**208,200**	**90,665**	**298,865**

Cleveland Electric Transmission & Distribution			
EE&C Program	**Cost Elements ($)**		
	Total Incentives	*Operations Costs*	*Total Budget (2013-2015)*
Conservation Voltage Reduction	0	0	0
T&D Improvements	0	0	0
Smart Grid Modernization Initiative	0	0	0
Totals	**0**	**0**	**0**

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PUCO 6B: Allocation of Common Costs to Applicable Customer Sector

Cleveland Electric										
					Class Cost Allocaton ($)					
Common Cost Element	**EE Program (check box)**	**PDR Program (check box)**	**Total Cost ($)**	**Basis for Cost Allocation**	**Residential (Including Low-Income)**	**Small Enterprise (Small C&I)**	**Mercantile**	**Mercantile-Utility (Large C&I)**	**Transmission & Distribution**	**Government**
Tracking and Reporting	X	X	$ 263,737	EE Plan Budget	$147,892	$48,848	$18,960	$45,871	$0	$2,166
Labor	X	X	$ 2,423,362	EE Plan Budget	$1,315,276	$514,901	$109,705	$225,036	$250,000	$8,443
Annual Umbrella Marketing	X	X	$ 1,925,886	EE Plan Budget	$1,879,478	$46,408	$0	$0	$0	$0
Legal Fees, Plan Development Expenses, Employee Expenses	X	X	$ 374,514	EE Plan Budget	$223,788	$90,584	$21,767	$36,897	$0	$1,478
Totals					**$3,566,435**	**$700,742**	**$150,432**	**$307,804**	**$250,000**	**$12,087**

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PUCO 6C: Summary of Portfolio EE&C Costs

Cleveland Electric	Total Sector Portfolio-specific Costs	Total Common Costs	Total of All Costs
Residential (Including Low-Income)	$35,950,520	$3,566,435	$39,516,955
Small Enterprise	$17,610,370	$700,742	$18,311,112
Mercantile	$1,169,298	$150,432	$1,319,730
Mercantile-Utility (Large Enterprise)	$17,914,301	$307,804	$18,222,104
Transmission & Distribution	$0	$250,000	$250,000
Government	$298,865	$12,087	$310,952
Totals	**$72,943,354**	**$4,987,499**	**$77,930,853**

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PUCO 7A-B: TRC Benefits Table - Residential

Residential (inclusive of Low-Income)	Cleveland Electric TRC Benefits By Program Per Year ($000)											
					Capacity	Capacity	Energy	Energy	Load Reductions in kW		MWh Saved	
Program	Program Year	TRC	Program Costs	Program Benefits	Annual Benefits	Annual Gen/T&D	Annual Benefits	Annual On/Off Peak	Annual	Lifetime	Annual	Lifetime
Direct Load Control Program	2013		681,936	138,067	138,067	See footnote 1	-	See footnote 2	4,758		0	
	2014		745,948	245,293	245,293		-		4,806		0	
	2015		768,643	559,016	559,016		-		4,854		0	
	Total	*0.4*	*2,022,741*	*839,219*	*839,219*		-			*14,418*		*0*
Appliance Turn-In Program	2013		1,162,821	361,307	59,086		302,221		2,036		8,708	
	2014		1,160,640	859,439	207,881		651,558		4,073		17,415	
	2015		1,181,896	1,733,283	703,593		1,029,690		6,109		26,123	
	Total	*2.6*	*3,237,070*	*8,313,494*	*2,406,252*		*5,907,242*			*39,102*		*207,864*
Energy Efficient Products Program	2013		3,724,483	412,081	43,830		368,251		1,511		10,610	
	2014		4,290,336	1,140,914	183,384		957,529		3,593		25,593	
	2015		4,329,145	2,253,022	653,600		1,599,422		5,675		40,577	
	Total	*1.2*	*11,358,210*	*13,456,902*	*3,093,506*		*10,363,396*			*58,824*		*387,297*
Home Performance Program	2013		4,478,845	634,060	58,116		575,944		2,003		16,594	
	2014		4,747,434	1,427,533	203,632		1,223,902		3,989		32,713	
	2015		5,421,112	2,861,823	744,411		2,117,412		6,463		53,718	
	Total	*1.2*	*13,461,858*	*16,055,417*	*3,328,226*		*12,727,190*			*61,251*		*465,833*
Low-Income Program	2013		2,068,168	33,024	3,317		29,707		114		856	
	2014		2,068,124	75,717	11,672		64,045		229		1,712	
	2015		2,073,699	140,717	39,503		101,214		343		2,568	
	Total	*0.1*	*5,736,789*	*745,639*	*162,161*		*583,478*			*2,744*		*20,542*
Total		**1.1**	**35,816,668**	**39,410,671**	**9,829,364**		**29,581,307**			**176,338**		**1,081,536**

1: Generation, Transmission and Distribution Capacity costs are combined in a sum of avoided capacity costs. These costs are then NPV back to the year the measure unit was installed. The combined avoided capacity costs can not be identified by component; therefore, the total avoided capacity costs for Generation, Transmission and Distribution are displayed here.

2: The on and off peak energy costs are combined in a sum of avoided energy costs. These costs are then NPV back to the year the measure unit was installed. The combined avoided energy costs can not be identified by component; therefore, the total avoided energy costs for on and off peak energy costs are displayed here.

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PUCO 7C: TRC Benefits Table - Small Enterprise

Small Enterprise	Cleveland Electric TRC Benefits By Program Per Year ($000)											
					Capacity	Capacity	Energy	Energy	Load Reductions in kW		MWh Saved	
Program	Program Year	TRC	Program Costs	Program Benefits	Annual Benefits	Annual Gen/T&D	Annual Benefits	Annual On/Off Peak	Annual	Lifetime	Annual	Lifetime
C&I Energy Efficiency Equipment Program-Small	2013		8,544,747	1,347,265	216,911	See footnote 1	1,118,726	See footnote 2	7,476		32,190	
	2014		9,773,603	3,445,059	843,009		2,578,793		16,516		68,843	
	2015		9,831,648	7,143,720	2,944,612		4,164,224		25,567		105,518	
	Total	*1.7*	*25,908,962*	*43,484,445*	*14,716,992*		*28,469,794*			*310,390*		*1,162,177*
Energy Efficient Buildings Program-Small	2013		769,079	312,152	45,775		266,377		1,578		7,661	
	2014		1,779,108	1,140,163	247,577		892,586		4,850		23,815	
	2015		1,793,161	2,513,833	935,566		1,578,267		8,123		39,969	
	Total	*1.7*	*3,932,884*	*6,864,331*	*2,190,221*		*4,674,109*			*29,285*		*150,634*
Total		**1.7**	**29,841,846**	**50,348,776**	**16,907,213**		**33,143,903**			**339,675**		**1,312,811**

1: Generation, Transmission and Distribution Capacity costs are combined in a sum of avoided capacity costs. These costs are then NPV back to the year the measure unit was installed. The combined avoided capacity costs can not be identified by component; therefore, the total avoided capacity costs for Generation, Transmission and Distribution are displayed here.

2: The on and off peak energy costs are combined in a sum of avoided energy costs. These costs are then NPV back to the year the measure unit was installed. The combined avoided energy costs can not be identified by component; therefore, the total avoided energy costs for on and off peak energy costs are displayed here.

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PUCO 7D: TRC Benefits Table - Mercantile

Mercantile	Cleveland Electric TRC Benefits By Program Per Year ($000)											
					Capacity	Capacity	Energy	Energy	Load Reductions in kW		MWh Saved	
Program	Program Year	TRC	Program Costs	Program Benefits	Annual Benefits	Annual Gen/T&D	Annual Benefits	Annual On/Off Peak	Annual	Lifetime	Annual	Lifetime
Mercantile Customer Program	2013		530,991	758,694	98,111	See footnote 1	660,583	See footnote 2	3,381		18,999	
	2014		435,318	1,503,918	293,403		1,210,516		5,748		32,297	
	2015		353,421	2,507,198	856,746		1,650,452		7,439		41,797	
	Total	*16.2*	*1,232,605*	*19,969,774*	*5,097,098*		*14,872,676*			*111,582*		*626,951*
Total		**16.2**	**1,232,605**	**19,969,774**	**5,097,098**		**14,872,676**			**111,582**		**626,951**

1: Generation, Transmission and Distribution Capacity costs are combined in a sum of avoided capacity costs. These costs are then NPV back to the year the measure unit was installed. The combined avoided capacity costs can not be identified by component; therefore, the total avoided capacity costs for Generation, Transmission and Distribution are displayed here.

2: The on and off peak energy costs are combined in a sum of avoided energy costs. These costs are then NPV back to the year the measure unit was installed. The combined avoided energy costs can not be identified by component; therefore, the total avoided energy costs for on and off peak energy costs are displayed here.

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PUCO 7E: TRC Benefits Table - Mercantile Utility (Large Enterprise)

Mercantile Utility (Large Enterprise)	Cleveland Electric TRC Benefits By Program Per Year ($000)											
					Capacity	Capacity	Energy	Energy	Load Reductions in kW		MWh Saved	
Program	Program Year	TRC	Program Costs	Program Benefits	Annual Benefits	Annual Gen/T&D	Annual Benefits	Annual On/Off Peak	Annual	Lifetime	Annual	Lifetime
Demand Reduction Program	2013		5,000	1,159,738	1,159,738	See footnote 1	-	See footnote 2	39,969		0	
	2014		5,000	2,367,497	2,367,497		-		46,383		0	
	2015		5,000	5,460,714	5,460,714		-		47,413		0	
	Total	*576.0*	*13,858*	*7,982,509*	*7,982,509*		-			*133,765*		*0*
C/I Energy Efficient Equipment Program-Large	2013		3,367,565	417,126	62,026		355,039		2,138		10,294	
	2014		3,733,167	1,011,558	226,948		784,429		4,446		21,098	
	2015		3,784,963	2,033,241	780,485		1,252,454		6,777		31,970	
	Total	*1.6*	*10,025,249*	*16,451,424*	*4,720,337*		*11,728,531*			*108,298*		*535,017*
Energy Efficient Buildings Program-Large	2013		246,802	27,920	2,428		25,492		84		733	
	2014		296,919	96,347	12,963		83,383		254		2,225	
	2015		300,945	195,610	48,861		146,748		424		3,716	
	Total	*2.4*	*776,245*	*1,841,459*	*330,023*		*1,511,436*			*8,485*		*74,326*
Total		**2.4**	**10,815,352**	**26,275,392**	**13,032,869**		**13,239,967**			**250,549**		**609,343**

1: Generation, Transmission and Distribution Capacity costs are combined in a sum of avoided capacity costs. These costs are then NPV back to the year the measure unit was installed. The combined avoided capacity costs can not be identified by component; therefore, the total avoided capacity costs for Generation, Transmission and Distribution are displayed here.

2: The on and off peak energy costs are combined in a sum of avoided energy costs. These costs are then NPV back to the year the measure unit was installed. The combined avoided energy costs can not be identified by component; therefore, the total avoided energy costs for on and off peak energy costs are displayed here.

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PUCO 7F: TRC Benefits Table - Government

Government	Cleveland Electric TRC Benefits By Program Per Year ($000)											
					Capacity	Capacity	Energy	Energy	Load Reductions in kW		MWh Saved	
Program	Program Year	TRC	Program Costs	Program Benefits	Annual Benefits	Annual Gen/T&D	Annual Benefits	Annual On/Off Peak	Annual	Lifetime	Annual	Lifetime
Government Tariff Lighting Program	2013		57,782	25,210	261	See footnote 1	6,050	See footnote 2	9		185	
	2014		68,004	55,948	917		17,231		18		493	
	2015		68,965	89,248	3,102		29,446		27		800	
	Total	*3.5*	*179,075*	*632,138*	*14,624*		*244,331*			*269*		*11,060*
Total		**3.5**	**179,075**	**632,138**	**14,624**		**244,331**			**269**		**11,060**

1: Generation, Transmission and Distribution Capacity costs are combined in a sum of avoided capacity costs. These costs are then NPV back to the year the measure unit was installed. The combined avoided capacity costs can not be identified by component; therefore, the total avoided capacity costs for Generation, Transmission and Distribution are displayed here.

2: The on and off peak energy costs are combined in a sum of avoided energy costs. These costs are then NPV back to the year the measure unit was installed. The combined avoided energy costs can not be identified by component; therefore, the total avoided energy costs for on and off peak energy costs are displayed here.

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PUCO 7G: TRC Benefits Table - Transmission & Distribution

Transmission & Distribution	Cleveland Electric TRC Benefits By Program Per Year ($000)											
					Capacity	Capacity	Energy	Energy	Load Reductions in kW		MWh Saved	
Program	Program Year	TRC	Program Costs	Program Benefits	Annual Benefits	Annual Gen/T&D	Annual Benefits	Annual On/Off Peak	Annual	Lifetime	Annual	Lifetime
Conservation Voltage Reduction	2013		250,000	-	-	See footnote 1	-	See footnote 2	0		0	
	2014		-	-	-		-		0		0	
	2015		-	-	-		-		0		0	
	Total	*0.0*	*250,000*	-	-		-			*0*		*0*
T&D Improvements	2013		-	-	-		-		0		0	
	2014		-	-	-		-		0		0	
	2015		-	-	-		-		0		0	
	Total		-	-	-		-			*0*		*0*
Smart Grid Modernization Initiative	2013		-	-	-		-		0		0	
	2014		-	-	-		-		0		0	
	2015		-	-	-		-		0		0	
	Total		-	-	-		-			*0*		*0*
Total		**0.0**	**250,000**	**-**	**-**		**-**			**-**		**-**

1: Generation, Transmission and Distribution Capacity costs are combined in a sum of avoided capacity costs. These costs are then NPV back to the year the measure unit was installed. The combined avoided capacity costs can not be identified by component; therefore, the total avoided capacity costs for Generation, Transmission and Distribution are displayed here.

2: The on and off peak energy costs are combined in a sum of avoided energy costs. These costs are then NPV back to the year the measure unit was installed. The combined avoided energy costs can not be identified by component; therefore, the total avoided energy costs for on and off peak energy costs are displayed here.

Appendix C-4: Portfolio Rebate Schedule

Residential including Low Income					
Program	**Sub Program**	**Description**	**Incentive Strategy**	**Measure Name**	**Rebate Strategy**
Appliance Turn-In Program	**Appliance Turn-In**	The program consists of customers receiving a rebate for turning in a working refrigerator, freezer, or room air conditioner.	Incentives are available for measures qualifying under the program.	Refrigerator Recycling	Up to $50 per Unit
				Freezer Recycling	Up to $50 per Unit
				Room Air Conditioner Recycling	Up to $50 per Unit
Home Performance Program	**Audits**	This program is a combination of the existing Comprehensive Residential Retrofit, Online Audit, and Efficient New Homes programs. In addition, this program also consists of energy efficiency kits and a behavioral program being offered to customers.	On-site audits, at a subsidized cost to the participating customer, include installation of CFLs and other basic energy saving measures. Incentives are available for constructing homes to standards above present code. On Line, EE Kits and Behavioral are provided at no up front costs to the customer	Comprehensive Audit	Audit = $250 + Recommendations up to $.11/kWh
				All Electric Home Audit	Audit = $250 + Recommendations up to $.11/kWh
				On-Line Audit	N/A
	Kits			Efficiency Kit - Standard	Up to $100 in EE Measures
				Efficiency Kit - All-Electric	Up to $100 in EE Measures
				Efficiency Kit - Schools	N/A
	New Homes			New Construction	Up to $400 + Up to $.11/kWh savings per House
	Behavioral			Energy Usage Reports	N/A
Energy Efficient Products Program	**HVAC & Water Heating**	The program provides rebates to consumers and financial incentives and support to retailers that sell energy efficient products, such as HVAC, appliances, lighting, home electronics, and other electricity conservation products.	Rebates and incentives are available for measures qualifying under the program.	Air Source Heat Pump	Up to $400 per Unit
				HVAC Maintenance	Up to $45 per Unit
				Central Air Conditioner	Up to $150 per Unit
				Ground Source Heat Pump	Up to $600 per Unit
				Whole House Fan	Up to $188 per Unit
				Room Air Conditioner	Up to $30 per Unit
				Electric Water Heaters	Solar = Up to $500 Heat Pump = Up to $300 EE Resistive = Up to $125
				Ductless Mini-Split AC & HP	Up to $450 per Unit
	Appliances			Clothes Washers	Up to $236 per Unit
				Dehumidifiers	Up to $34 per Unit
				Refrigerators	Up to $64 per Unit
				Freezers	Up to $64 per Unit
				Pool Pump Motors	Up to $131 per Unit
	Consumer Electronics			Smart Strips	Up to $20 per Unit
				Televisions	N/A
				Computers	N/A
				Computer Monitors	N/A
	Lighting			Torchiere Floor Lamps	Up to $10 per Unit
				Ceiling Fan with Integral CFLs	Up to $65 per Unit
				Emerging Technology	N/A
				Energy Efficient Lighting Products	CFLs = Up to $3.00 NTE cost of bulb LED Products = Up to $30 NTE cost of bulb

Appendix C-4: Portfolio Rebate Schedule

Residential including Low Income (Continued)					
Program	**Sub Program**	**Description**	**Incentive Strategy**	**Measure Name**	**Rebate Strategy**
Direct Load ontrol Program	**Direct Load Control**	The program consists of a customer having their central air conditioning compressor cycled during summer peak periods.	The incentive has two components 1) the supply and direct installation of an appliance controling device and 2) an annual participation incentive.	DLC - CAC	$250 per appliance controller + Up to $50 per year for particpation
				DLC - Pool Pump	$250 per appliance controller + Up to $50 per year for particpation
				DLC - Water Heater	$250 per appliance controller + Up to $50 per year for particpation
Low Income Program	**Low Income**	The program consists of weatherization services being offered to low-income customers.	Participants receive education on energy efficiency and weatherization services which result in a reduction in electric usage.	Community Connections	As Determined

Appendix C-4: Portfolio Rebate Schedule

Non-Residential, Small					
Program	**Sub Program**	**Description**	**Incentive Strategy**	**Measure Name**	**Rebate Strategy**
C&I Energy Efficient Equipment Program-Small	**HVAC & Water Heating**	Provides financial incentives (Prescriptive & Performance) and support to customers directly or through retialers for implementing energy efficient equipment and products. Other delivery mechanisms may include EE kits provided to participants.	This program provides incentives for a portion of the incremental technology costs of higher efficiency measures. In addition, it will provide technical support, rebates, and support access to project financing. Incentives will also be available to customers and through distributors.	Air Conditioning 65,000-760,000 BTU/Hr (5-65TN)	Up to $75 / Ton
				HVAC Maintenance - Small C&I	Up to $10 per Ton
				Hotel Room HVAC/Receptacle Controls / Room	Up to $154 per Room
				Dual Enthalpy Economizer	Up to $300 per Unit
				Electric Chillers	Up to $.12/kWh saved NTE 50% of Project Cost
				Room Air Conditioners - Small C&I	Up to $45 per Unit
				Electric Water Heaters	Solar = Up to $500 Heat Pump = Up to $300 EE Resistive = Up to $125
				Water-Cooled cent Chiller Upto 300 tn	Up to $70 per Ton
	Appliances - Small			Clothes Washer - Small C&I	Up to $356 per Unit
				Refrigerator Recycling - Small C&I	Up to $50 per Unit
				Freezer Recycling - Small C&I	Up to $50 per Unit
				Room Air Conditioner Recycling - Small C&I	Up to $50 per Unit
				Refrigerators - Small C&I	Up to $64 per Unit
				Freezers - Small C&I	Up to $64 per Unit
				Vending Equipment Controller (Remote Mount, Lighting)	Up to $121 per Unit
				Window Film	Up to $2 per SF
				Smart Strip (Load Sensing & Occupancy) - Small C&I	Up to $50 per Unit
	Food Service			Commercial Solid Door Freezers	Up to $165 per Unit
				Commercial Solid Door Refrigerators	Up to $135 per Unit
				Commercial Glass Door Refrigerators	Up to $135 per Unit
				Ice Machines	0-500Lbs/Day =Up to $50 501-1000lbs/Day = Up to $100 1001lbs/Day < = Up to $200
				Steam Cookers	3 Pan =Up to $200, 4 Pan =Up to $275 5 Pan = Up to $325, 6 Pan = Up to $400
				Hot Food Holding Cabinet	Up to $833 per Unit
				Fryers & Griddles	Up to $971 per Unit
				Combination & Convection Ovens	Up to $1,214 per Unit
				Refrigerated Case Covers / 60' Unit	Up to $32 per LF of Unit
				Anti Sweat Heater Controls / Door	Up to $23 per Door
				LED Reach in Refrig / Freezer Lights	Up to $40 per Door
				Efficient Refrigeration Condenser	Up to $38 per Unit
				Pre Rinse Sprayers	Up to $35 per Unit
				Strip curtains for walk-in Refrig/Freezer	Up to $1 per SF
	Lighting			Energy Efficient Exterior Lighting (Area & Prk Gar)	NTE 75% of Incremental Costs
				Linear Fluorescent Retrofits (Stndrd & Non Stndrd)	Standard = NTE 75% of Incremental Cost Non Standard = Up to $.12/kWh
				LED Exit Signs (Retrofit Only)	Up to $23 per Unit
				Emerging Technology - Small C&I	N/A
				Energy Efficient Lighting Products - Small C&I	CFLs = Up to $3.00 NTE cost of bulb LED Products = Up to $30 NTE cost of bulb
				Lighting Controls (Oc & Daylight)	Up to $78 per Unit
	Custom Equipment			VFDs up to 200 HP	Up to $47 per HP
				VFDs greater than 200 HP	Up to $47 per HP
				Custom	Up to $.12/kWh saved NTE 50% of Project Cost

Appendix C-4: Portfolio Rebate Schedule

Non-Residential, Small (Continued)

Program	Sub Program	Description	Incentive Strategy	Measure Name	Rebate Strategy
Energy Efficient Buildings Program-Small	New Buildings	Provides financial incentives and support to customers for implementing energy efficient custom building shell or system improvements. Other delivery mechanisms include EE kits provided t participants and incentives towards energy efficiency audits.	This program provides incentives for a portion of the incremental technology costs of high efficiency measures. The On Line audit is provided at no up front cost to the customer. In addition, it will provide technical support.	New Construction - Small C&I	Up to $2 per SF
	C&I Audits			Audit-Small	Up to $4000 / Customer
				On-Line Audit - Small C&I	N/A
	Custom Buildings			Custom Buildings	Up to $.12/kWh saved NTE 50% of Project Cost
	Kits			Efficiency Kits - Small C&I	Up to $100 in EE Measures
Government Tariff Lighting Program	Government	Provides financial incentives and support to customers for implementing energy efficient street lighting or traffic lighting technologies.	This program provides incentives for a portion of the incremental technology costs of high efficiency measures. In addition, it will provide technical support, and rebates.	LED Traffic Signals	Up to $70 per Socket
				Energy Efficient Street Lighting	Up to $75 per Unit

Non-Residential, Large

Program	Sub Program	Description	Incentive Strategy	Measure Name	Rebate Strategy
C&I Energy Efficient Equipment Program-Large	HVAC - Large	Provides financial incentives (Prescriptive & Performance) and support to customers directly or through retialers for implementing energy efficient equipment and products. Other delivery mechanisms may include EE kits provided to participantsparticipants and incentives towards energy efficiency audits.	This program provides incentives for a portion of the incremental technology costs of higher efficiency measures. In addition, it will provide technical support, rebates, and support access to project financing. Incentives will also be available to customers and through distributors.	Air Conditioning 65,000-760,000 BTU/Hr (5-65TN) - Large C&I	Up to $75 / Ton
				HVAC Maintenance - Large C&I	Up to $10 per Ton
				Dual Enthalpy Economizer - Large C&I	Up to $300 per Unit
				Electric Chillers - Large C&I	Up to $.12/kWh saved NTE 50% of Project Cost
				Water-Cooled cent Chiller Upto 300 tn - Large C&I	Up to $70 per Ton
	Lighting - Large			Energy Efficient Exterior Lighting (Area & Prk Gar) - Large C&I	NTE 75% of Incremental Costs
				Linear Fluorescent Retrofits (Stndrd & Non Stndrd) - Large C&I	Standard = NTE 75% of Incremental Cost Non Standard = Up to $.12/kWh
				LED Exit Signs (Retrofit Only) - Large C&I	Up to $23 per Unit
				Emerging Technology - Large C&I	N/A
				Energy Efficient Lighting Products - Large C&I	CFLs = Up to $3.00 NTE cost of bulb LED Products = Up to $30 NTE cost of bulb
				Lighting Controls (Oc & Daylight) - Large	Up to $78 per Unit
	Custom Equipment - Large			VFDs up to 200 HP - Large C&I	Up to $47 per HP
				VFDs greater than 200 HP - Large C&I	Up to $47 per HP
				Custom - Large C&I	Up to $.12/kWh saved NTE 50% of Project Cost
Energy Efficient Buildings Program-Large	C&I Audits - Large	Provides financial incentives and support to customers for implementing energy efficient custom building shell or system improvements. Other delivery mechanisms include EE kits provided t participants and audits coupled with direct installation of low cost measures.	This program provides incentives for a portion of the incremental technology costs of high efficiency measures. In addition, it will provide technical support.	Audit - Large C&I	Up to $4000 / Customer
	Custom Buildings - Large			Custom Buildings - Large C&I	Up to $.12/kWh saved NTE 50% of Project Cost
				Retrocommissioning - Large C&I	Up to $.12/kWh saved NTE 50% of Project Cost
Demand Response	Demand Response	Captures load curtailment and curtailable capacity from the Companies' Interruptible Load Programs (Economic Load Response and Optional Load Response) and from additional demand resources including resources participating in the PJM market or through contracts for demand response attributes with customers or PJM CSPs	Incentives are provided through the tariff rate for Interruptable Tariff, additonally the Company will pay 3rd party CSPs or customers for contracted load reductions. Incentives will be based on indivdual contracts with CSPs or the Company.	Interruptible Tariff	N/A
				Contracted Demand Resources	N/A

Appendix C-4: Portfolio Rebate Schedule

Other					
Program	**Sub Program**	**Description**	**Incentive Strategy**	**Measure Name**	**Rebate Strategy**
Mercantile Customer Program	**Mercantile**	Captures energy efficiency and peak demand reduction projects committed to the Company by Mercantile customers as provided for b O.R.C. 4928.01 and 4928.66	N/A	Mercantile Customer Projects	N/A
T&D Improvments	**T&D Improvments**	Capture savings achieved through various T&D projects that reduce line losses, which in turn results in a more efficient delivery system.	No customer incentive is provided	Distribution Upgrades	N/A
Smart Grid Modernization Initiative	**Smart Grid**	The intent of the project is to produce an an integrated system of protection, performance, efficiency and economy that extends across the energy delivery system for multiple stakeholder benefits.	No customer incentive is provided	Smart Grid Modernization Initaitive	N/A
Conservation Voltage Reduction Study	**Conservation Voltage Reduction**	The Company is proposing to study a Conservation Voltage Reductio (CVR) Program by carefully analyzing their distribution circuit designs to identify operational changes that potentially could achieve additional energy savings and demand reductions.	No customer incentive is provided	Conservation Voltage Reduction	N/A

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Appendix D:
Market Potential Study

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Appendix D

MARKET POTENTIAL STUDY

Energy Savings and Demand Reduction for Ohio Edison, Toledo Edison, and The Illuminating Company

PREPARED FOR

FirstEnergy Corp.

22 JUNE 2012

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1.0 EXECUTIVE SUMMARY

The following report presents the results of an Energy Efficiency and Peak Demand Reduction Market Potential Study (hereinafter referred to as the "Market Study") which has been conducted by Black & Veatch (B&V) for the three FirstEnergy Ohio operating companies, Ohio Edison Company (OE), The Toledo Edison Company (TE) and The Cleveland Electric Illuminating Company (CEI or The Illuminating Company) (hereinafter collectively referred to as the "Companies"). The Market Potential Study is an important tool used to help design energy efficiency and peak demand reduction programs (hereinafter referred to as "EEPD") ultimately required under the Ohio law. The B&V study team worked with FirstEnergy staff in the development of this Market Study and used the Companies' Energy Optimization Plan ("EOP") budget information to determine measure utility costs.

Two scenarios were examined in this Market Study: 1) a Base Case that assumes a standard package of program incentives adopted by those customers who indicated high interest in participating according to surveys, and 2) a High Case that assumes a more aggressive package of program incentives and marketing to draw in additional customers who indicated that they were considering participating in programs. In the High Case, utility costs are increased to reflect the additional effort required to obtain the higher participation levels. Both scenarios produce cost effective portfolios based on a review of the Total Resource Cost tests. The High Case scenario comes closer to achieving the benchmarks established in R. C. 4928.66, Revised Code, as would be expected, but at a higher cost to implement the programs.

B&V calculated the maximum technical potential based on a top-down approach that builds on end-use intensities (EUIs) and unit energy consumptions (UECs) presented in Sections 8.8.1, 8.8.2, and 8.8.3. The maximum technical potential was estimated to be approximately 33% of current kWh consumption for each of the three utility customer classes (i.e. Residential, Commercial and Industrial).

The Base Case results from the study reveal an achievable potential for energy reductions over forecasted sales of 12.7% for OE, 11.1% for TE and 14.1% for CEI by 2026. The High Case results from the study reveal an achievable potential for energy reductions of 16.8% for OE, 13.1% for TE and 16.8% for CEI. These achievable potential estimates are the result of a careful analysis of commercially viable technologies, stated customer intentions as gathered from statistically valid surveys, and cost effectiveness testing. The percentage savings values shown above represent a conservative estimate by company of EEPD market potential. It is likely during the process of program design some of these estimates may change. Moreover, because these calculations forecast 15 years into the future, it is anticipated that technologies will evolve over time that will impact the projections.

While these estimates fall short of the 22% goal established by the PUCO for 2025, even in the High Case, the following must be noted:

1. The analysis was intentionally developed to be conservative by limiting customer adoption of high-efficiency technologies at the end of the useful life of appliances and equipment. In reality, this plan would give customers incentives to change out old inefficient appliances

before the end of their useful life. However, in this study B&V does not account for these actions which would serve to increase the timing and magnitude of efficiency savings.

2. The savings resulting from Transmission and Distribution upgrades are not included in this Market Study. These activities are expected to provide small additional savings to contribute to the EEPD savings goals, as allowed under SB 221.

Table 1-1 through Table 1-9 present the targets established by Senate Bill 221 for the Energy Optimization Plan, and, in the bold text columns, the results of the Market Study in terms of achievable energy savings in MWh and % of forecasts sales each year. Table 1-1 through Table 1-3 are for OE, Table 1-4 through Table 1-6 are for TE, and Table 1-7 through Table 1-9 are for CEI.

There is a Base Case and High Case table provided for each of the three Ohio Companies. The cumulative savings results are compared against the EEPD Case (i.e. Base, High) effected forecast to arrive at the percentage savings each year.

Table 1-1 State Energy Efficiency Targets under SB221 – OE – Base Case

YEAR	CUMULATIVE GOAL	THREE-YEAR AVERAGE ORIGINAL FIRSTENERGY SALES FORECAST	BASE CASE DSM/EE ADJUSTED FIRSTENERGY FORECAST	STATE GOAL CUMULATIVE (MWH)	POTENTIAL DSM/EE SAVINGS FROM BASE CASE (MWH)	PERCENT ACHIEVABLE OF ORIGINAL FIRST-ENERGY FORECAST
2012	2.3%	24,382,626	24,205,815	567,404	777,509	3.2%
2013	3.2%	24,533,207	24,097,226	784,279	1,065,425	4.4%
2014	4.2%	24,583,020	23,791,898	1,022,198	1,341,320	5.6%
2015	5.2%	24,877,090	23,815,672	1,260,355	1,608,480	6.8%
2016	6.2%	25,521,902	24,183,494	1,502,190	1,854,582	7.7%
2017	7.2%	25,958,945	24,357,484	1,745,765	1,984,163	8.1%
2018	8.2%	26,237,733	24,421,991	1,989,985	2,113,744	8.7%
2019	10.2%	26,286,159	24,301,997	2,476,025	2,243,325	9.2%
2020	12.2%	26,542,128	24,428,384	2,964,592	2,372,906	9.7%
2021	14.2%	26,744,446	24,501,121	3,454,615	2,502,487	10.2%
2022	16.2%	26,979,837	24,606,931	3,946,753	2,634,060	10.7%
2023	18.2%	27,156,407	24,653,256	4,439,818	2,765,633	11.2%
2024	20.2%	27,341,764	24,707,704	4,933,972	2,897,206	11.7%
2025	22.2%	27,538,922	24,773,289	5,429,438	3,028,779	12.2%
2026	24.2%	27,749,416	24,852,210	5,926,482	3,160,353	12.7%

Table 1-2 State Energy Efficiency Targets under SB221 – OE – High Case

YEAR	CUMULATIVE GOALS	HIGH CASE DSM/EE ADJUSTED FIRSTENERGY SALES FORECAST	STATE GOAL CUMULATIVE (MWH)	POTENTIAL DSM/EE SAVINGS FROM HIGH CASE (MWH)	PERCENT ACHIEVABLE OF ORIGINAL FIRST-ENERGY FORECAST
2012	2.3%	24,205,815	567,404	867,800	3.6%
2013	3.2%	24,067,129	784,008	1,246,007	5.2%
2014	4.2%	23,701,606	1,021,024	1,612,194	6.8%
2015	5.2%	23,635,090	1,257,375	1,969,644	8.3%
2016	6.2%	23,912,621	1,496,502	2,305,681	9.6%
2017	7.2%	23,996,438	1,736,466	2,477,751	10.3%
2018	8.2%	23,986,707	1,976,333	2,649,822	11.0%
2019	10.2%	23,808,408	2,452,501	2,821,892	11.9%
2020	12.2%	23,892,306	2,930,347	2,993,963	12.5%
2021	14.2%	23,922,553	3,408,798	3,166,033	13.2%
2022	16.2%	23,985,874	3,888,516	3,340,102	13.9%
2023	18.2%	23,989,708	4,368,310	3,514,171	14.6%
2024	20.2%	24,001,662	4,848,343	3,688,240	15.4%
2025	22.2%	24,024,751	5,328,838	3,862,309	16.1%
2026	24.2%	24,061,176	5,810,062	4,036,378	16.8%

Table 1-3 State Peak Reduction Targets Under SB221 – OE

YEAR	ORIGINAL FORECAST PEAK (MW)	STATE REQUIREMENT REDUCTIONS	BASE DSM/EE PEAK SAVINGS (MW)	HIGH DSM/EE PEAK SAVINGS (MW)	BASE DSM/EE PEAK SAVINGS	HIGH DSM/EE PEAK SAVINGS
2012	5,235	3.25%	226	247	4.3%	4.7%
2013	5,267	4.00%	287	328	5.4%	6.2%
2014	5,278	4.75%	346	407	6.6%	7.7%
2015	5,341	5.50%	403	486	7.6%	9.1%
2016	5,479	6.25%	457	560	8.3%	10.2%
2017	5,573	7.00%	489	603	8.8%	10.8%
2018	5,633	7.75%	521	645	9.2%	11.5%
2019	5,644	8.50%	553	688	9.8%	12.2%
2020	5,698	9.25%	584	730	10.3%	12.8%
2021	5,742	10.00%	616	773	10.7%	13.5%
2022	5,792	10.75%	648	816	11.2%	14.1%
2023	5,830	11.50%	681	859	11.7%	14.7%
2024	5,870	12.25%	713	902	12.1%	15.4%
2025	5,912	13.00%	745	945	12.6%	16.0%
2026	5,958	13.75%	777	988	13.0%	16.6%

Table 1-4 State Energy Efficiency Targets Under SB221 – CEI – Base Case

YEAR	CUMULATIVE GOALS	THREE YEAR AVERAGE ORIGINAL FIRST-ENERGY SALES FORECAST	BASE CASE DSM/EE ADJUSTED FIRSTENERGY FORECAST	STATE GOAL CUMULATIVE (MWH)	POTENTIAL DSM/EE SAVINGS FROM BASE CASE (MWH)	PERCENT ACHIEVABLE OF ORIGINAL FIRST-ENERGY FORECAST
2012	2.3%	18,598,775	18,405,618	431,099	759,056	4.1%
2013	3.2%	18,840,122	18,393,947	596,644	958,498	5.2%
2014	4.2%	19,045,439	18,279,765	779,442	1,151,740	6.3%
2015	5.2%	19,273,345	18,316,914	962,611	1,340,826	7.3%
2016	6.2%	19,553,731	18,403,376	1,146,645	1,519,705	8.3%
2017	7.2%	19,645,252	18,307,828	1,329,723	1,613,037	8.8%
2018	8.2%	19,607,671	18,116,482	1,510,888	1,706,368	9.4%
2019	10.2%	19,465,781	17,852,744	1,867,943	1,799,699	10.1%
2020	12.2%	19,439,194	17,732,826	2,222,599	1,893,031	10.7%
2021	14.2%	19,444,404	17,644,704	2,575,493	1,986,362	11.3%
2022	16.2%	19,498,615	17,605,584	2,927,605	2,080,540	11.8%
2023	18.2%	19,512,613	17,525,969	3,278,124	2,174,719	12.4%
2024	20.2%	19,539,835	17,459,294	3,627,310	2,268,897	13.0%
2025	22.2%	19,590,405	17,415,686	3,975,624	2,363,076	13.6%
2026	24.2%	19,636,028	17,367,131	4,322,966	2,457,254	14.1%

Table 1-5 State Energy Efficiency Targets under SB221 – CEI – High Case

YEAR	CUMULATIVE GOALS	HIGH CASE DSM/EE ADJUSTED FIRSTENERGY SALES FORECAST	STATE GOAL CUMULATIVE (MWH)	POTENTIAL DSM/EE SAVINGS FROM HIGH CASE (MWH)	PERCENT ACHIEVABLE OF ORIGINAL FIRST-ENERGY FORECAST
2012	2.3%	18,405,618	431,099	794,913	4.3%
2013	3.2%	18,381,995	596,536	1,030,212	5.6%
2014	4.2%	18,243,907	778,976	1,259,312	6.9%
2015	5.2%	18,245,199	961,428	1,484,255	8.1%
2016	6.2%	18,295,804	1,144,386	1,698,850	9.3%
2017	7.2%	18,164,446	1,326,030	1,806,095	9.9%
2018	8.2%	17,944,605	1,505,476	1,913,341	10.7%
2019	10.2%	17,659,686	1,858,670	2,020,586	11.4%
2020	12.2%	17,525,853	2,209,187	2,127,832	12.1%
2021	14.2%	17,423,817	2,557,663	2,235,077	12.8%
2022	16.2%	17,370,783	2,905,079	2,343,172	13.5%
2023	18.2%	17,277,253	3,250,624	2,451,268	14.2%
2024	20.2%	17,196,662	3,594,557	2,559,363	14.9%
2025	22.2%	17,139,137	3,937,340	2,667,458	15.6%
2026	24.2%	17,076,665	4,278,873	2,775,554	16.3%

Table 1-6 State Peak Reduction Targets under SB221 – CEI

YEAR	ORIGINAL FORECAST PEAK (MW)	STATE REQUIREMENT REDUCTIONS	BASE DSM/EE PEAK SAVINGS (MW)	HIGH DSM/EE PEAK SAVINGS (MW)	BASE DSM/EE PEAK SAVINGS	HIGH DSM/EE PEAK SAVINGS
2012	4,008	3.25%	139	215	3.5%	5.4%
2013	4,060	4.00%	168	250	4.1%	6.2%
2014	4,105	4.75%	196	284	4.8%	6.9%
2015	4,154	5.50%	225	319	5.4%	7.7%
2016	4,214	6.25%	254	353	6.0%	8.4%
2017	4,234	7.00%	283	387	6.7%	9.1%
2018	4,226	7.75%	311	422	7.4%	10.0%
2019	4,195	8.50%	340	456	8.1%	10.9%
2020	4,190	9.25%	369	490	8.8%	11.7%
2021	4,191	10.00%	397	525	9.5%	12.5%
2022	4,202	10.75%	426	559	10.1%	13.3%
2023	4,205	11.50%	455	593	10.8%	14.1%
2024	4,211	12.25%	483	628	11.5%	14.9%
2025	4,222	13.00%	483	628	11.4%	14.9%
2026	4,232	13.75%	483	628	11.4%	14.8%

Table 1-7 State Energy Efficiency Targets Under SB221 – TE – Base Case

YEAR	CUMULATIVE GOALS	THREE YEAR AVERAGE ORIGINAL FIRSTENERGY SALES FORECAST	BASE CASE DSM/EE ADJUSTED FIRSTENERGY FORECAST	STATE GOAL CUMULATIVE (MWH)	POTENTIAL DSM/EE SAVINGS FROM BASE CASE (MWH)	PERCENT ACHIEVABLE OF ORIGINAL FORECAST
2012	2.3%	9,967,059	9,888,759	230,497	338,540	3.4%
2013	3.2%	10,414,316	10,223,169	322,505	462,649	4.5%
2014	4.2%	10,880,584	10,535,221	427,857	580,198	5.5%
2015	5.2%	11,304,081	10,843,619	536,294	693,365	6.4%
2016	6.2%	11,662,816	11,084,079	647,134	796,594	7.2%
2017	7.2%	11,859,343	11,169,291	758,827	850,923	7.6%
2018	8.2%	11,972,293	11,191,999	870,747	905,252	8.1%
2019	10.2%	12,044,956	11,194,032	1,094,628	959,581	8.6%
2020	12.2%	12,233,289	11,328,037	1,321,189	1,013,910	9.0%
2021	14.2%	12,428,622	11,469,041	1,550,570	1,068,239	9.3%
2022	16.2%	12,630,574	11,616,664	1,782,903	1,123,232	9.7%
2023	18.2%	12,794,014	11,725,553	2,017,414	1,178,224	10.0%
2024	20.2%	12,958,685	11,835,453	2,254,123	1,233,217	10.4%
2025	22.2%	13,124,985	11,946,761	2,493,058	1,288,209	10.8%
2026	24.2%	13,294,813	12,061,596	2,734,290	1,343,202	11.1%

Table 1-8 State Energy Efficiency Targets under SB221 – TE – High Case

YEAR	CUMULATIVE GOALS	HIGH CASE DSM/EE ADJUSTED FIRSTENERGY SALES FORECAST	STATE GOAL CUMULATIVE (MWH)	POTENTIAL DSM/EE SAVINGS FROM HIGH CASE (MWH)	PERCENT ACHIEVABLE OF ORIGINAL FIRST-ENERGY FORECAST
2012	2.3%	9,888,759	230,497	360,715	3.6%
2013	3.2%	10,215,777	322,439	507,000	5.0%
2014	4.2%	10,513,046	427,569	646,724	6.2%
2015	5.2%	10,799,268	535,562	782,067	7.2%
2016	6.2%	11,017,553	645,737	907,385	8.2%
2017	7.2%	11,080,618	756,544	971,862	8.8%
2018	8.2%	11,085,188	867,395	1,036,340	9.3%
2019	10.2%	11,073,094	1,088,857	1,100,817	9.9%
2020	12.2%	11,196,949	1,312,796	1,165,295	10.4%
2021	14.2%	11,327,805	1,539,352	1,229,772	10.9%
2022	16.2%	11,465,280	1,768,658	1,294,915	11.3%
2023	18.2%	11,564,020	1,999,938	1,360,058	11.8%
2024	20.2%	11,663,769	2,233,214	1,425,201	12.2%
2025	22.2%	11,764,927	2,468,512	1,490,344	12.7%
2026	24.2%	11,869,611	2,705,905	1,555,487	13.1%

Table 1-9 State Peak Reduction Targets under SB221 – TE

YEAR	CUMULATIVE GOALS	HIGH CASE DSM/EE ADJUSTED FIRSTENERGY FORECAST	STATE GOAL ANNUAL (MWH)	STATE GOAL CUMULATIVE (MWH)	DSM/EE SAVINGS FROM HIGH CASE (MWH)	PERCENT ACHIEVED
2012	1,928	3.25%	154	159	8.0%	8.2%
2013	2,015	4.00%	180	189	8.9%	9.4%
2014	2,105	4.75%	204	218	9.7%	10.3%
2015	2,187	5.50%	227	246	10.4%	11.2%
2016	2,256	6.25%	249	272	11.0%	12.1%
2017	2,294	7.00%	262	287	11.4%	12.5%
2018	2,316	7.75%	274	302	11.8%	13.0%
2019	2,330	8.50%	287	317	12.3%	13.6%
2020	2,367	9.25%	299	332	12.7%	14.0%
2021	2,404	10.00%	312	347	13.0%	14.4%
2022	2,443	10.75%	325	363	13.3%	14.8%
2023	2,475	11.50%	338	378	13.6%	15.3%
2024	2,507	12.25%	350	393	14.0%	15.7%
2025	2,539	13.00%	363	408	14.3%	16.1%
2026	2,572	13.75%	376	424	14.6%	16.5%

Figure 1-1 EEPD Affected Sales Forecast (Base Case–High Case) – OE

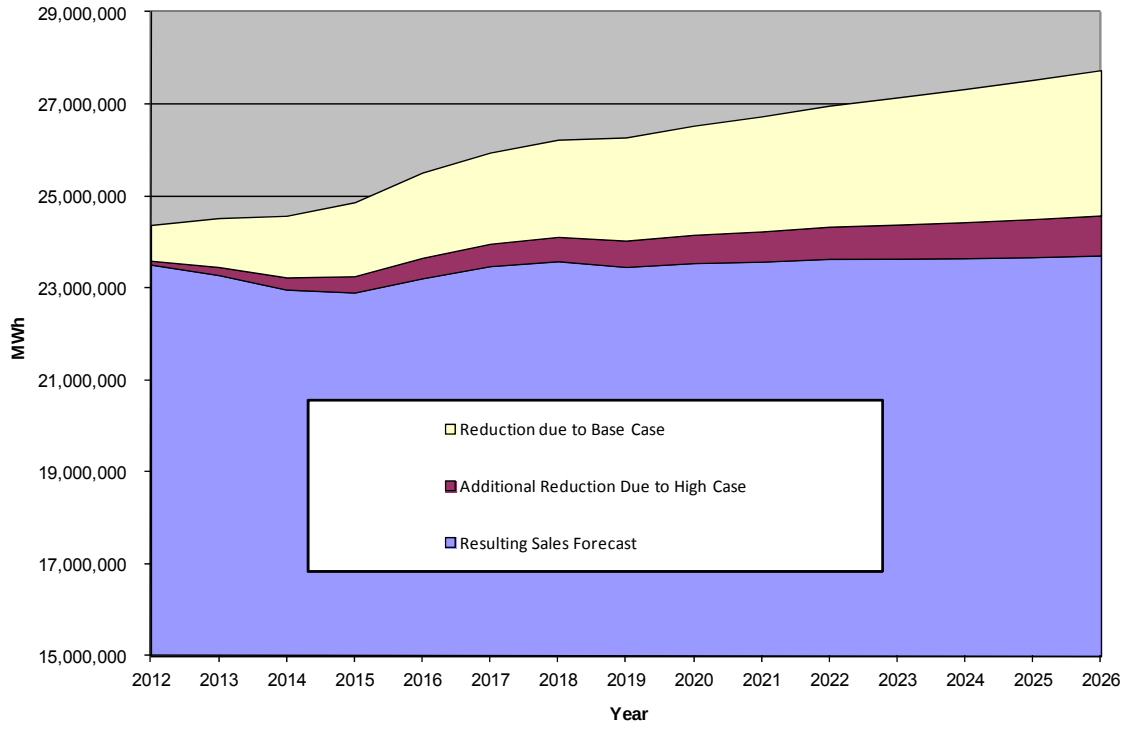


Figure 1-2 EEPD Affected Sales Forecast (Base Case–High Case) – CEI

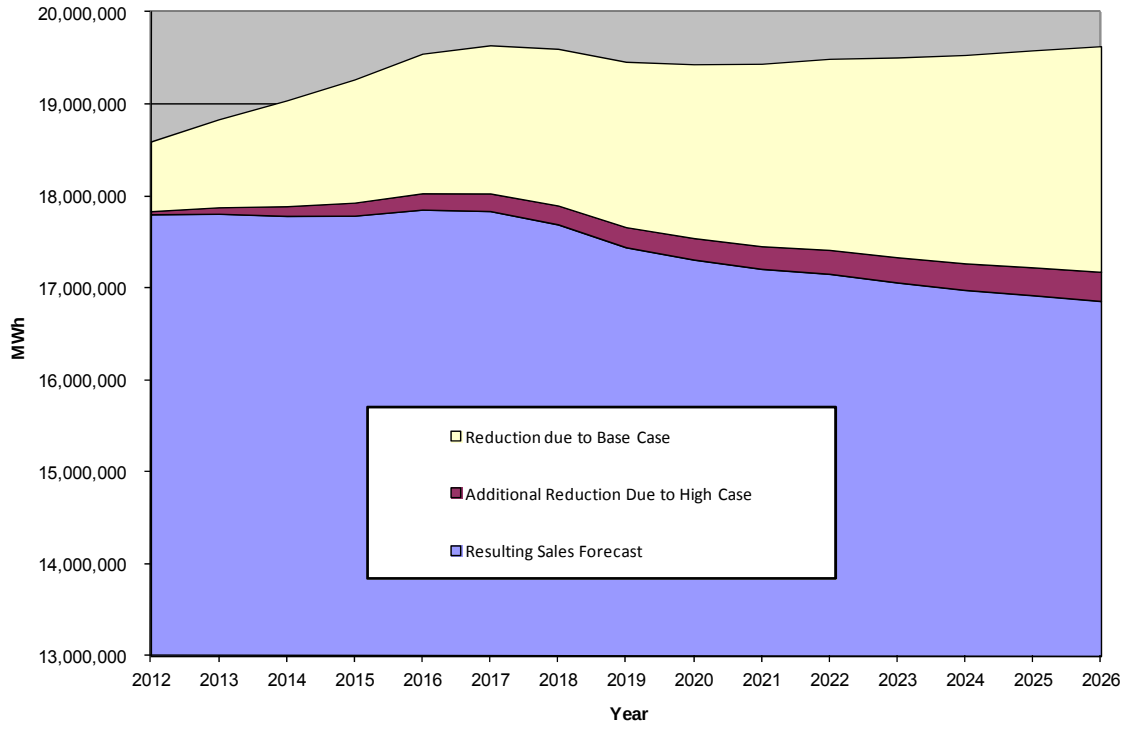


Figure 1-3 EEPD Affected Sales Forecast (Base Case–High Case) – TE

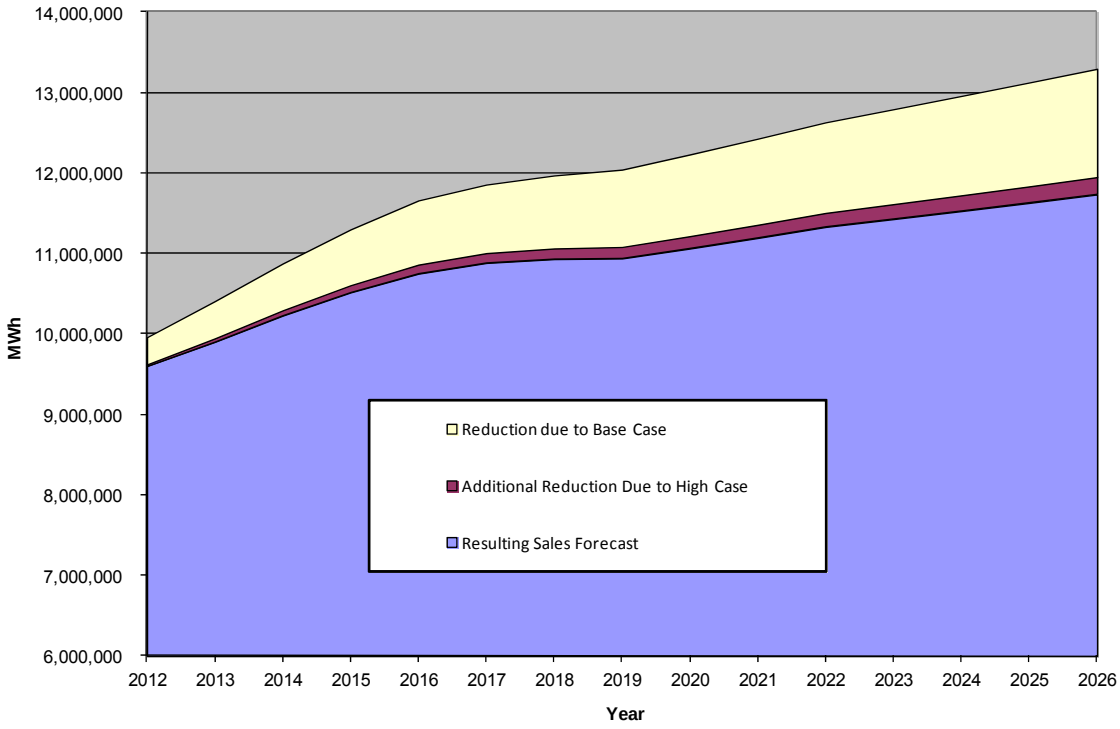


Figure 1-4 EEPD Affected Sales Forecast with Technical Economic and Achievable Energy Savings Decrements – OE

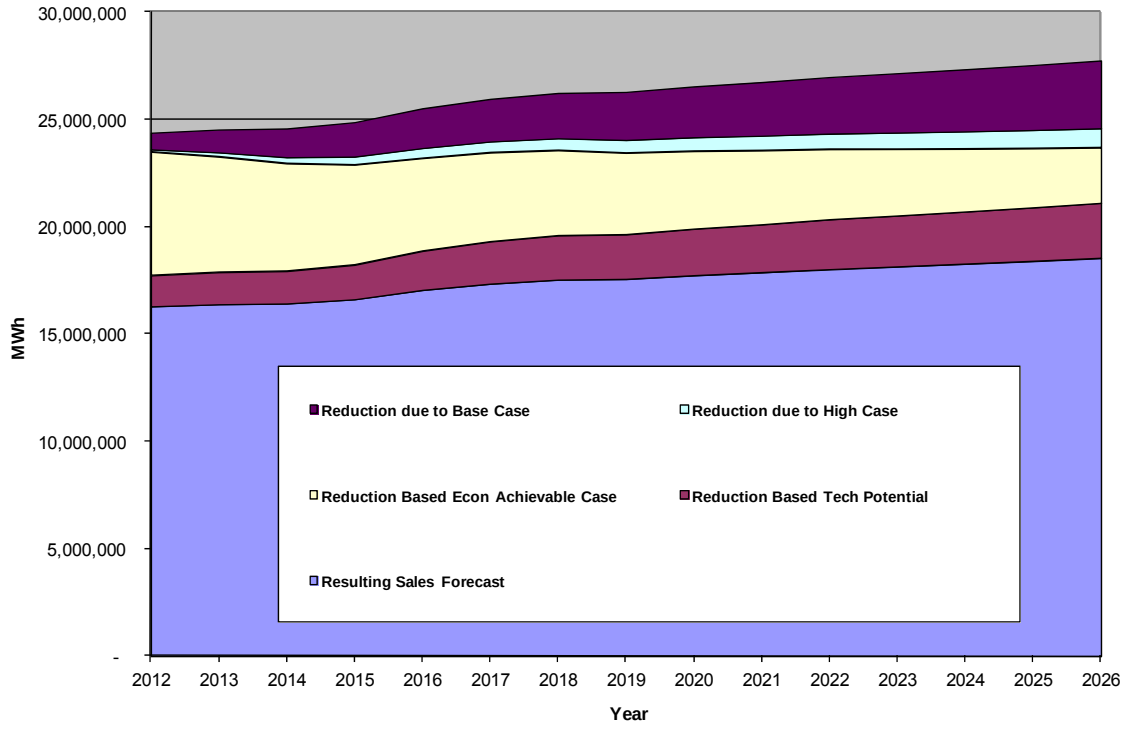


Figure 1-5 EEPD Affected Sales Forecast with Technical Economic and Achievable Energy Savings Decrements – CEI

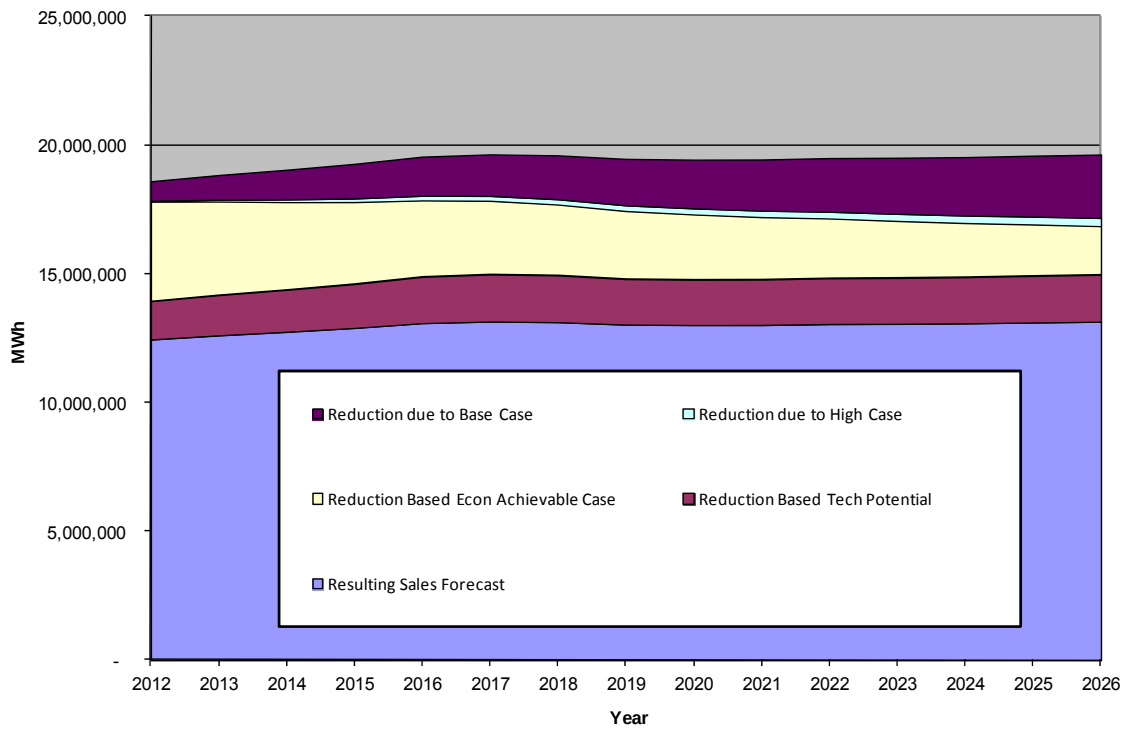
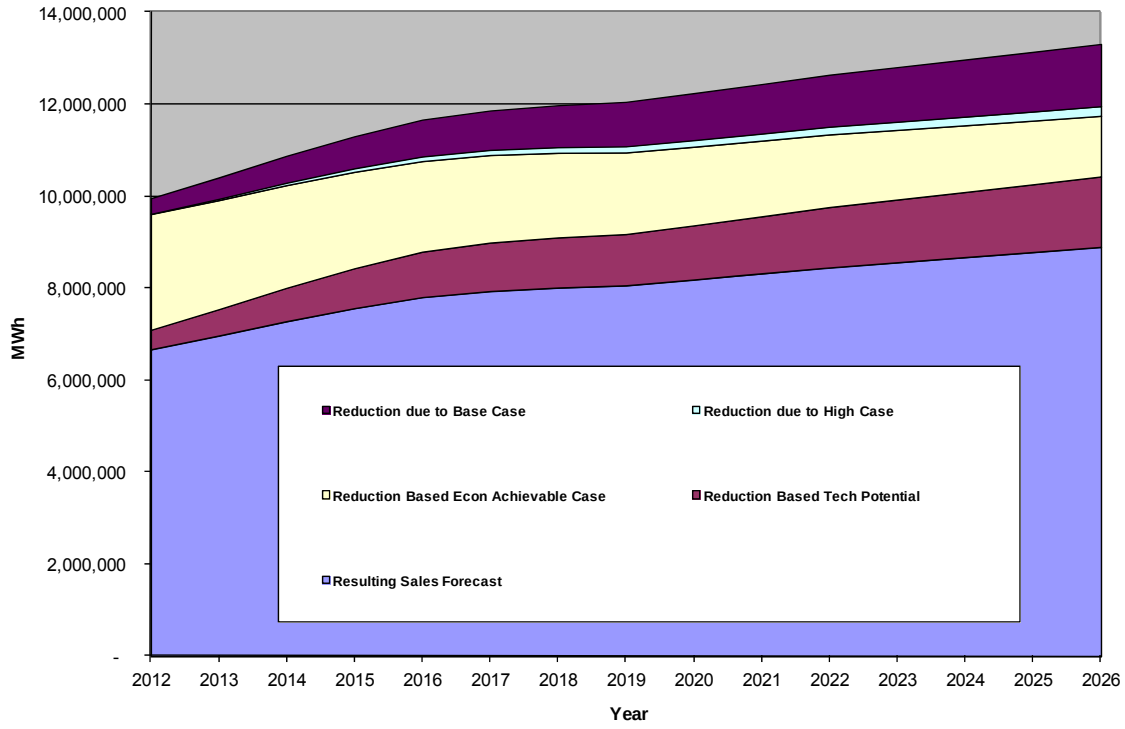


Figure 1-6 EEPD Affected Sales Forecast with Technical Economic and Achievable Energy Savings Decrements – TE



2.0 INTRODUCTION

2.1 PURPOSE OF THE STUDY

This report presents an analysis of energy efficiency and peak demand reduction (EEPD) potential for the Companies as of June 30.

Reliably estimating the economic potential for energy efficiency sets the upper success limit of the programs designed and implemented to achieve that potential. The new as well as current programs will be modified and designed in the next phase of work performed by First Energy.

Energy savings potential is generally defined by the nationwide energy efficiency community as consisting of technical, economic, and market or achievable potential.

This assessment includes, but is not limited to, the following:

1. Analysis of technical potential – Each electric utility shall survey and characterize the energy-using capital stock located within its certified territory and quantify its actual and projected energy use and peak demand. Based upon the survey and characterization, the utility shall conduct an analysis of the technical potential for energy efficiency and peak-demand reduction obtainable from applying alternate measures.

2. Analysis of economic potential – For each alternate measure identified in its assessment of technical potential, the electric utility shall conduct an assessment of cost-effectiveness using the total resource cost test.

3. Analysis of achievable potential – For each cost-effective alternate measure identified in its analysis of economic potential, the utility shall conduct an analysis of achievable potential. This analysis shall consider the ability of the program design to overcome barriers to customer adoption, including, but not limited to, appropriate bundling of measures.

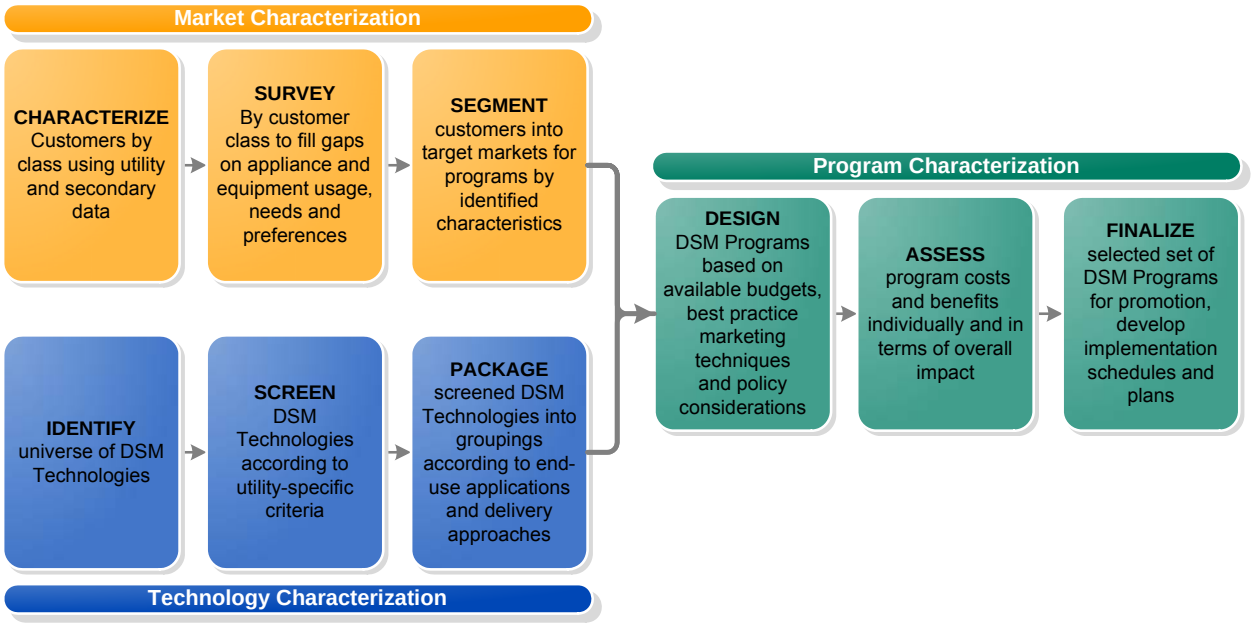
4. For each measure considered, the utility shall describe all attributes relevant to assessing its value, including, but not limited to potential energy savings or peak-demand reduction, cost, and non-energy benefits.[1]

2.2 APPROACH

The design of EEPD programs involves a parallel methodology that considers customer segments and preferences, appliance/end-use ownership and energy efficiency technologies and techniques that can be offered to customers to achieve energy savings. The left side of Figure 2-1 presents a generic schematic diagram of the analysis process that leads from this Market Study to actual program designs.

[1] Ohio Admin. Code No. 4901:1-03(A)(1)-(4)

Figure 2-1 Methodology Describing Progression from Market Study to Program Design



The right side of the diagram summarizes the second phase of work that will culminate in an EEPD Program Portfolio Plan to be filed by the Companies with the Public Utility Commission of Ohio ("PUCO") on or before July 31, 2012.

Black and Veatch employed a top-down approach for determining the technical potential and a bottom-up approach, on a measure-by-measure basis, for assessing the economic and market potential for energy efficiency and peak demand reduction.

2.3 OVERVIEW OF FIRSTENERGY CORP[2]

FirstEnergy is a diversified energy company dedicated to safety, reliability and operational excellence. Its 10 electric distribution companies comprise one of the nation's largest investor-owned electric systems. Its diverse generating fleet features non-emitting nuclear, scrubbed baseload coal, natural gas, and pumped-storage hydro and other renewables, and has a total generating capacity of nearly 23,000 megawatts.

FirstEnergy Corp. was formed in 1997 through the merger of Ohio Edison Company and Centerior Energy Corporation. Through this merger, FirstEnergy became the holding company for Ohio Edison and its Pennsylvania Power Company subsidiary, as well as The Cleveland Electric Illuminating Company and The Toledo Edison Company.

At that time, FirstEnergy was the 11th largest investor-owned electric system in the nation, based on annual electric sales of 64 billion kilowatt-hours, with total assets of nearly $20 billion. Based in Akron, Ohio, the new company employed some 10,000 employees, served 2.2 million customers

[2] Text from http://www.firstenergycorp.com/content/fecorp/about/company_history.html

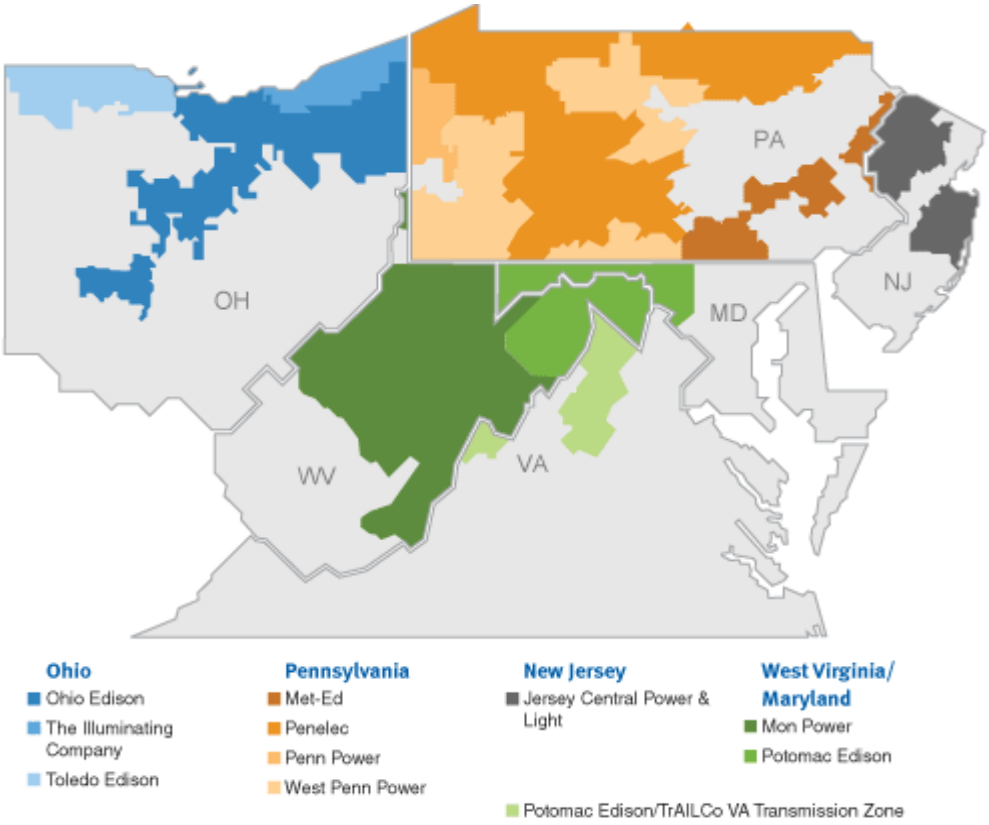
within 13,200 square miles of northern and central Ohio and western Pennsylvania, and had approximately 12,000 megawatts of generating capacity.

FirstEnergy nearly doubled its revenue to more than $12 billion and customers served to more than 4.3 million when it merged with the former GPU, Inc., based in Morristown, N.J., in 2001. GPU served 2.1 million customers in a 24,000 square-mile service area in Pennsylvania and New Jersey through its three operating companies: Metropolitan Edison Company, Pennsylvania Electric Company, and Jersey Central Power & Light Company.

In 2011, FirstEnergy completed a merger with Allegheny Energy, a Greensburg, Pa.-based company that served 1.6 million customers in Pennsylvania, West Virginia, Maryland and Virginia. The merger more than doubled FirstEnergy's highly efficient, supercritical coal capacity and provided opportunities for the company to grow and expand into new markets with a stronger, more focused competitive operation.

This Market Study covers the Ohio companies of FirstEnergy: OE, TE and CEI. Figure 2-2 depicts the corporate service territory.

Figure 2-2 FirstEnergy Service Territory Overview



2.4 MARKET STUDY FEATURES UNIQUE TO OHIO

The regulatory context for planning the Companies' EEPD programs includes several variations to the generic methodology described above. These features will be taken into consideration:

1. Mercantile Customer Sited Projects – R.C. 4928.66 allows for documented energy savings generated by large customers from customer self-directed projects to be counted toward the statutory benchmark targets. This Market Study therefore includes savings from the Mercantile Projects identified and projected by the Companies in their EOP.

2. Existing Programs – The Companies already have in place distribution system level programs that generate energy savings and achieve peak demand reductions. These programs are as follows:

    a. **T&D Improvements** – Distribution system improvements that result in system energy savings.
    b. **Interruptible Tariff** – An Opt-in Tariff curtailment offering.
    c. **Smart Grid Modernization Initiative** – A project including elements of Consumer Behavior research, Advanced Volt/Var controls, and Distribution system automation.
    d. **The Community Connections Program** – will continue during the term of the Companies' Electric Security Plan. Community Connections Program is a program that delivers comprehensive weatherization services to customers who qualify within 200% of the Federal Poverty Income Guidelines along with educational materials for maximum energy savings.

Figure 2-3 shows the components of programs and services that make up the building blocks of energy savings for the EEPD Plan. The bottom block of Figure 2-3 denotes programs that were projected by the Companies in their EOP plan.

Figure 2-3 Building Blocks of the FirstEnergy EEPD Plan

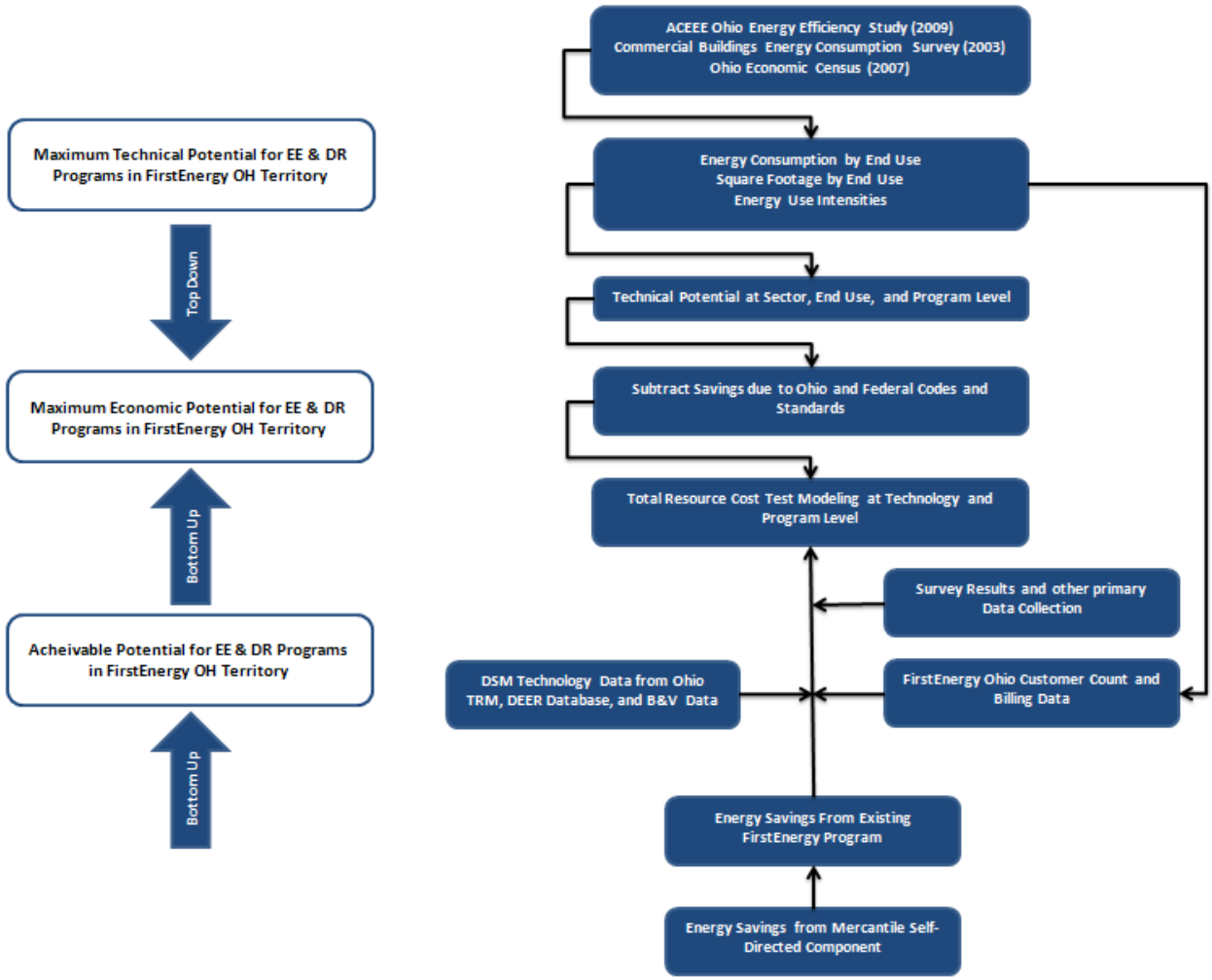
2.5 ORGANIZATION OF THE REPORT

Section 3.0 describes the methodology used to conduct the Market Study. Section 4.0 summarizes the characteristics of the Companies' customers as derived from Company data and surveys conducted by the study team. Section 5.0 presents information regarding a characterization of the market for energy efficiency services in the region based on research conducted in Ohio during March 2012. Section 6.0 presents detailed results of two surveys – a residential mail survey and a small and medium commercial business telephone survey. Section 8.0 presents the detailed results of the market potential for energy savings analyses resulting from the modeling of all data collected.

3.0 METHODOLOGY

The Market Study performed for the Companies consists of a top-down review of Technical Potential and a bottom-up analysis of Economic and Market Potential. Figure 3-1 summarizes the elements of the Market Study components.

Figure 3-1 Market Potential Study Diagram



3.1 HOW THE THREE LEVELS OF POTENTIAL ARE DETERMINED

The left side of the diagram in Figure 3-1 shows the three levels of energy efficiency potential, moving from largest to smallest, top to bottom. The right side of the diagram shows how the estimates of each of the three potential levels are estimated in this study.

Technical, economic and achievable potentials have already been estimated for the State of Ohio by the American Council for an Energy Efficient Economy (ACEEE) in a 2009 report entitled "Shaping Ohio's Energy Future: Energy Efficiency Works". This report also provides an important estimate of potentials that were used as a reference in this study for comparative purposes.

Economic and achievable market potentials are determined from a bottom-up analysis that considers appropriate cost-effective technologies, customer counts by sector, consumption levels by sector, measure lives, incremental costs of energy efficient options over standard equipment, and a range of other detailed assumptions and data. Critical to both of these estimates are the assumed participation rates – how many technologies can be predicted to be adopted each year by customer sector and end use? These figures were developed by the Companies' study team by surveying customers in each of the Companies to assess the following:

- Current levels of measure adoption.
- Likelihood of adoption of measures in the near term.
- Interest levels and intentions regarding program participation.

Data from residential mail surveys, commercial telephone surveys and large customer account interviews were used to assess likely participation levels for each sector by company. This method takes into account current economic conditions, customer self-reported actions already taken, and expressions of interest and intent.

All data on characteristics, technologies and likely participation or adoption behaviors were combined with actual energy usage data from the Companies for samples of customers by sector – Residential, Commercial, Industrial and Street Lighting.

Actual program participation, cost and savings data for FirstEnergy operating companies was also incorporated into the study.

3.2 EEPD TECHNOLOGY DATA SOURCES

The following data sources have been used in developing the key inputs to the analysis on energy efficiency and demand reduction technologies or measures:

- California Deemed Energy Database (DEER)
- ACEEE Market Potential Study for Ohio
- Department of Energy QUick Energy Simulation Tool (eQUEST)
- B&V Energy Efficiency Technologies Database
- Ohio Technical Reference Manual (TRM)
- Pennsylvania Technical Reference Manual

Cost and savings data were considered from these sources for non-weather sensitive measures; data for weather-sensitive measures were simulated through eQUEST using building parameters outlined in TRM Appendix A, "Prototypical Building Energy Simulation Model Development". Savings from some measures were extracted from the ACEEE Market Potential Study; a regression analysis on heating and cooling degree days was used to transfer measure data from other sources to Ohio.

Customer Usage Data – The Companies provided energy consumption data by customer sector for survey and analysis purposes to assess baseline usage levels from which energy savings could take place. Forecasts of usage were also provided and used as consistent with the baseline forecast filed

for Ohio. Black & Veatch also performed a detailed analysis of energy consumption, square footage and energy use intensity by end use. The primary data sources for this analysis were U.S. Energy Information Administration's Commercial Building Energy Database (CBECS), State of Ohio Economic Census Data (2007) and company customer data.

Customer Characteristics, Behavior and Intentions – Surveys were conducted of random statistical samples of residential and business customers. Approximately 500 surveys were received from residential customers of each Company and 100 commercial customers responded to phone surveys from each of the Companies (300 total). Thirteen large managed account customers were represented in the Industrial sector analysis and a census of street lights and estimates of traffic and pedestrian signals were combined to characterize the municipal lighting sector.

3.3 MERCANTILE SAVINGS

The energy savings identified and validated from these Mercantile customers will be applied to meet benchmark targets. An estimated forecasting of EEPD savings from these customers is included in the Market Study as part of the first three years of savings.

3.4 SAVINGS FROM PROGRAMS PREVIOUSLY FILED BY FIRSTENERGY

Programs were filed by FirstEnergy and approved by the PUCO. The existing FirstEnergy Ohio residential and commercial programs are addressed in the study by taking the Companies' estimates of existing kWh and kW saving for the 2009-2011 timeframe and including them in the cumulative savings estimates.

B&V has conducted surveys in the beginning of 2012 that address the issue of current and past customer EEPD activities. Therefore the B&V estimates of market potential going forward remove the EEPD savings prior to 2012.

3.5 KEY PARAMETERS USED IN THIS STUDY

The study team examined all PUCO documents and Ohio Legislative directives regarding the Market Study and lists below the assumptions used for the key study parameters.

1. **Template for the Filing**. The filing document for the Market Study contains sections consistent with the required elements as shown in Section 4901:1-39-03 Ohio Administrative Code.

2. **Study time period**. The legislated target for the EEPD programs is 22% energy savings by 2025. The Market Study is carried out through 2026 or for fifteen years from 2012. The energy savings resulting from measures installed that extend beyond 2026 are accounted for until the end of each measure's useful life. This represents the full value of the cumulative savings over the useful life of those measures.

3. **Budget Cap**. There is no budget cap or constraint for the EEPD budgets either annually or in total over the period. Therefore, the avoided costs provide the only economic throttle on the cost effectiveness of the study.

4. **Renewables** and Customer Renewable energy measures are not part of the Market Study as they are addressed in other proceedings.

5. **List of measures**. Our analysis covers a comprehensive list of practically implementable measures covered in the Ohio Technical Reference Manual. In addition to this, B&V also examined a number of emerging technologies not included in the Technical Reference Manual. For this purpose, B&V used its own list of EEPD measures as well as DEER Database in the analysis. This list is generally consistent with lists previously used by B&V in the Companies' 2009 EEPD Program Plan.

6. **Program time period**. The EEPD program plan consists of a three-year portfolio of programs. The directives, however, do not limit the Market Study just to three years, and the Market Potential Study extends out to 2026.

7. **Economic tests**. The Total Resource Cost test was applied to the measures, programs and portfolio of programs in the Market Study as part of the Economic Potential. The Utility Cost test and the Participant tests are also included to provide reference.

8. **Avoided Costs**. Avoided generation costs are derived from the following sources:

    a. The avoided energy costs were provided by the Companies to be consistent with their current EOP plan.

    b. The avoided capacity costs were provided by the Companies to be consistent with their current EOP plan.

    c. For transmission and distribution (T&D), marginal T&D costs were provided to BV by the Companies. These values are a sum of on PJM cost of transmission capacity of approximately $15 per kW per year and distribution avoided cost of approximately $5 per kW per year.

4.0 CUSTOMER CHARACTERIZATION

The following elements of the scope of work are addressed in this section:

4.1 CHARACTERIZATION OF FIRSTENERGY OHIO

This section describes characteristics of the Companies' customers based upon data from FirstEnergy and from surveys conducted by the study team. The analysis determined the numbers and types of customers by Company that are available to participate in energy efficiency programs. In addition, some commentary is made regarding the existing market for energy efficiency services in the FirstEnergy service territories as a context within which the Market Study analysis is conducted.

4.2 DATA SOURCES

Black & Veatch utilized the Companies' data and primary data collected from customer surveys and interviews as the basis for the information in this chapter. B&V received a sample download of the Companies' customer databases with data on all customers including billed sales and consumption, demand and revenue. Table 4-1 provides an overview of the Companies' 2011 combined customer and sales information.

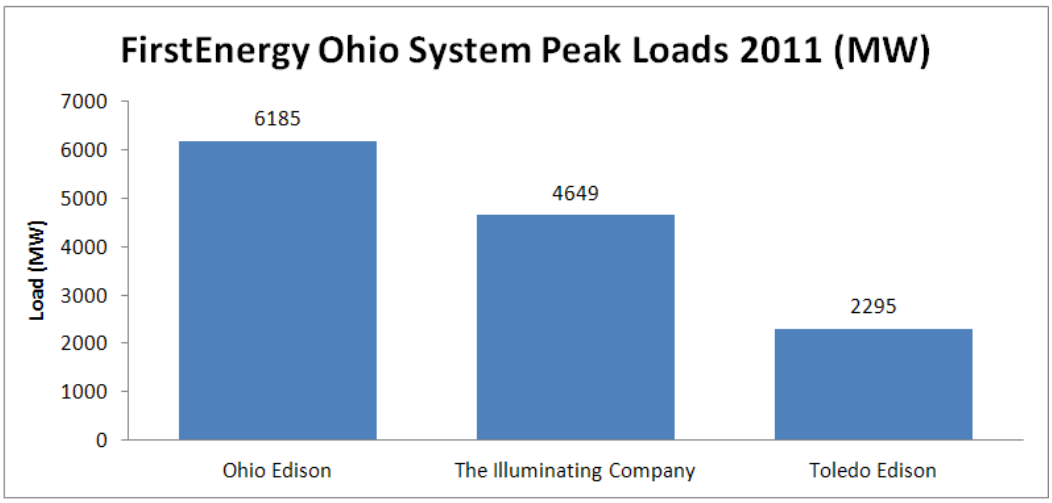
Table 4-1 FirstEnergy 2011 Ohio Customer & Sales Information

FIRSTENERGY OHIO OPERATING INFORMATION	VALUES
Residential	**1,863,820**
Residential % of Total Customers	88.65%
Residential MWh per Customer	9.2
Commercial	**233,359**
Commercial % of Total Customers	11.10%
Commercial MWh per Customer	66.0
Industrial	**2,436**
Industrial % of Total Customers	0.12%
Industrial MWh per Customer	8,209
Street Lighting	**2,835**
Street Lighting % of Total	0.13%
Street Lighting MWh per Customer	125.0
2011 Electric Sales (MWh)	**52,994,319**
Total Customers (2011 Average)	**2,102,450**

Source: FirstEnergy

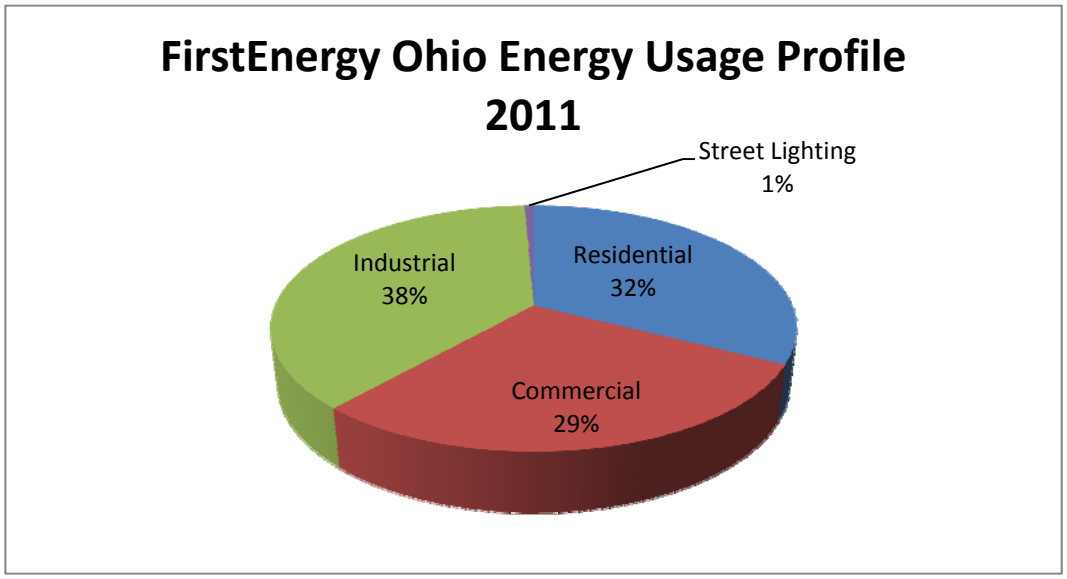
The peak loads for 2011 can be found in Figure 4-1.

Figure 4-1 FirstEnergy Ohio Combined 2011 Peak Loads



The percentage contribution of the Companies' major classes can be found in Figure 4-2.

Figure 4-2 FirstEnergy Ohio Combined 2011 MWh Usage



For large commercial and industrial customers with demands more than 700kW, B&V interviewed the account representatives who manage these accounts. The account representatives generally have a very good understanding of their customers' energy consumption and usage patterns. The account managers provided valuable on-point information that we have incorporated into our analyses.

For the Companies' National Account customers, we chose a two-pronged approach. These customers are typically commercial customers in terms of demand and energy consumption, and were eligible for inclusion in B&V's telephone surveys. In addition to the surveys, and since the Companies have National Account representatives who provide a single point of contact for the

customer and are knowledgeable of the customer's energy-related information, B&V also interviewed these Company representatives.

4.3 CUSTOMERS AND MWH SALES

The following tables and charts identify the number of customers, and sales by operating company.

Table 4-2 Ohio Edison Operating Information

Ohio Edison Operating Information	
Total Customers (2011 Average)	**1,034,534**
Residential	921,314
Residential % of Total Customers	89.06%
Residential MWh per Customer	10.3
Commercial	109,747
Commercial % of Total Customers	10.61%
Commercial MWh per Customer	61.3
Industrial	1,423
Industrial % of Total Customers	0.14%
Industrial MWh per Customer	5,813
Street Lighting	2,050
Street Lighting % of Total	0.20%
Street Lighting MWh per Customer	71.2
2011 Electric Sales (MWh)	**24,656,346**
Source: FirstEnergy	

Figure 4-3 Ohio Edison Electricity Use (MWh)

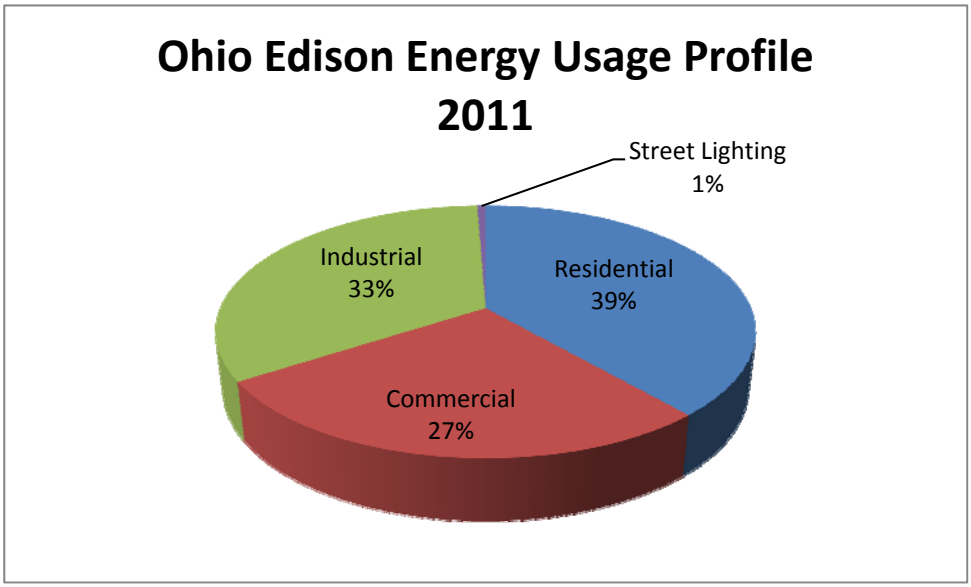


Table 4-3 Toledo Edison Operating Information

Toledo Edison Operating Information	
Total Customers (2011 Average)	**309,020**
Residential	272,771
Residential % of Total Customers	88.27%
Residential MWh per Customer	9.5
Commercial	34,781
Commercial % of Total Customers	11.26%
Commercial MWh per Customer	58.6
Industrial	459
Industrial % of Total Customers	0.15%
Industrial MWh per Customer	12,527
Street Lighting	1,009
Street Lighting % of Total	0.33%
Street Lighting MWh per Customer	50.9
2011 Electric Sales (MWh)	**10,436,973**
Source: FirstEnergy	

Figure 4-4 Toledo Edison Electricity Use (MWh)

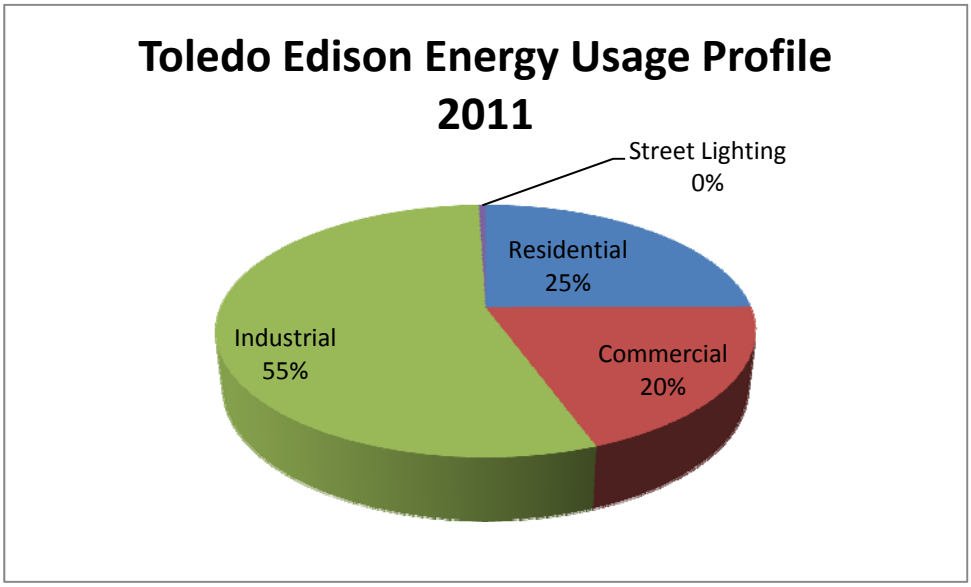
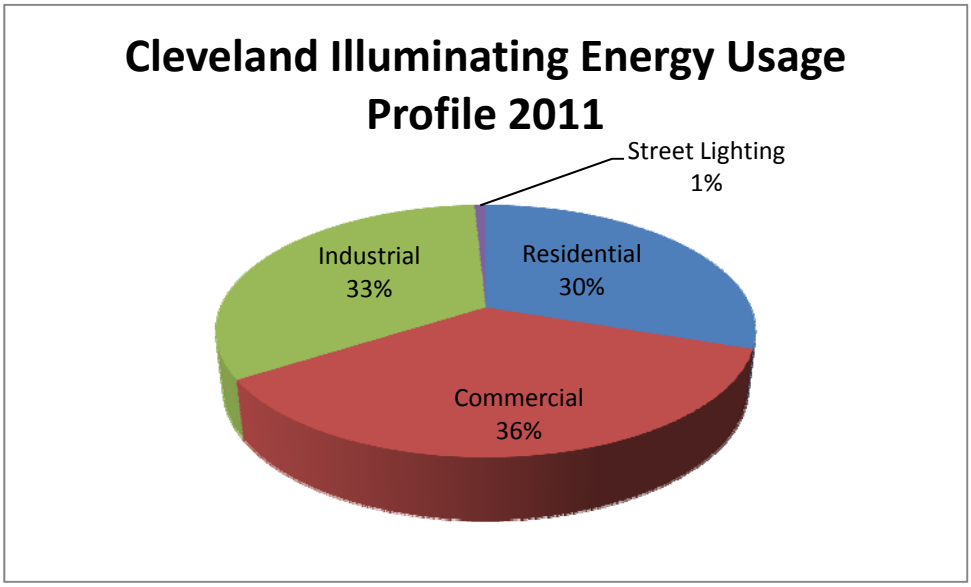


Table 4-4 The Illuminating Company Operating Information

Cleveland Illuminating Operating Information	
Total Customers (2008 Average)	**748,935**
Residential	664,170
Residential % of Total Customers	88.68%
Residential MWh per Customer	8.6
Commercial	83,728
Commercial % of Total Customers	11.18%
Commercial MWh per Customer	80.9
Industrial	650
Industrial % of Total Customers	0.09%
Industrial MWh per Customer	9,667
Street Lighting	387
Street Lighting % of Total	0.05%
Street Lighting MWh per Customer	383.3
2008 Electric Sales (MWh)	**18,916,146**
Source: FirstEnergy	

Figure 4-5 The Illuminating Company Electricity Use (MWh)

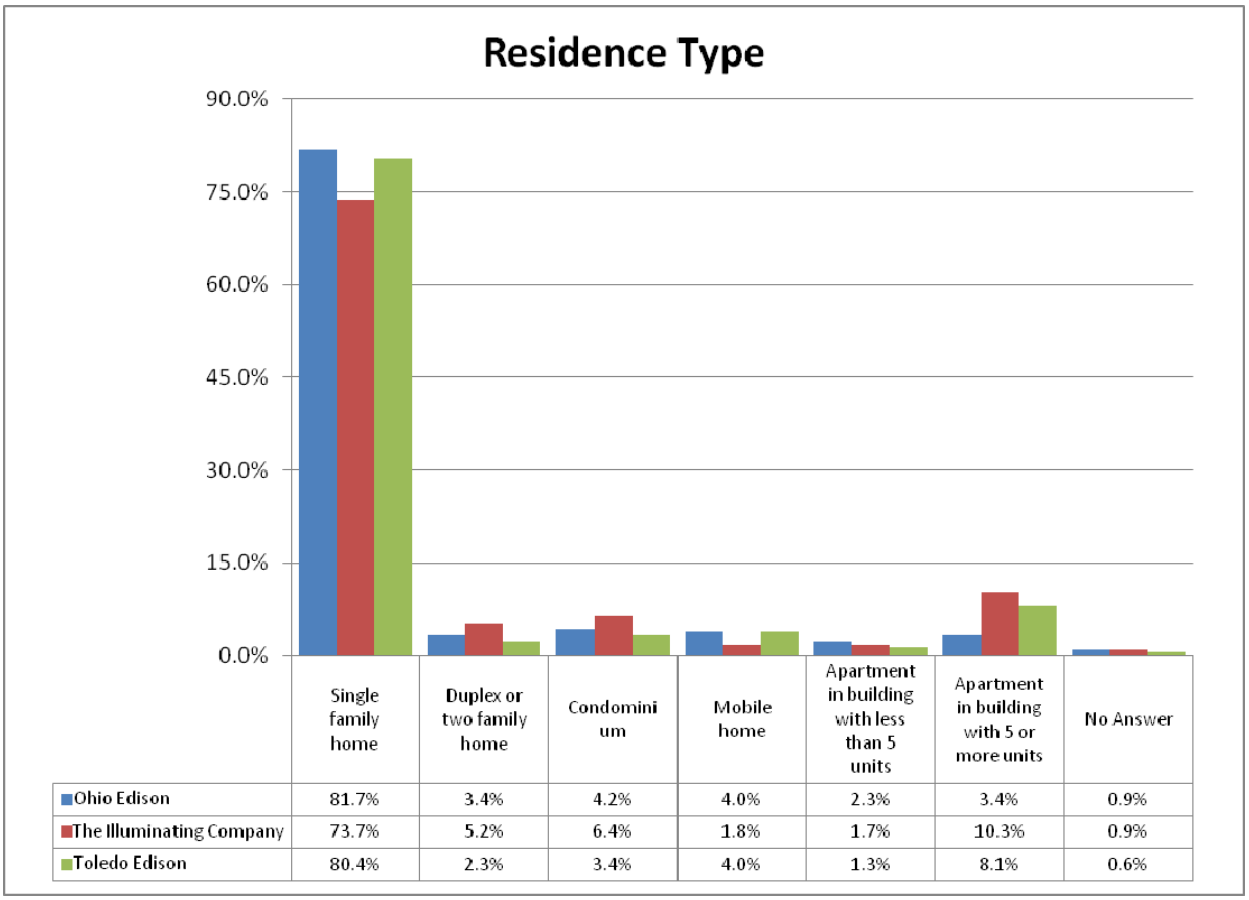


4.4 RESIDENTIAL SECTOR DESCRIPTION

The Residential section of the Market Study presents a high-level overview of the sector in the Companies' service territories informed by two studies: (1) the 2012 survey conducted by B&V in March 2012, which included more than 500 responses from each of the Companies, attached in Appendix D-1, and (2) the 2010 Residential Survey done by FirstEnergy, which included more than 900 responses from each Company. For the questions common between the two surveys, the results are similar, within a few percentage points and with similar distributions.

The 2012 survey showed that 78.7% of the homes in FirstEnergy's Ohio service territories are single family homes, with the remaining distributed among duplexes, condominiums, mobile homes and apartment buildings. The distribution is relatively consistent between the three operating companies (Figure 4-6).

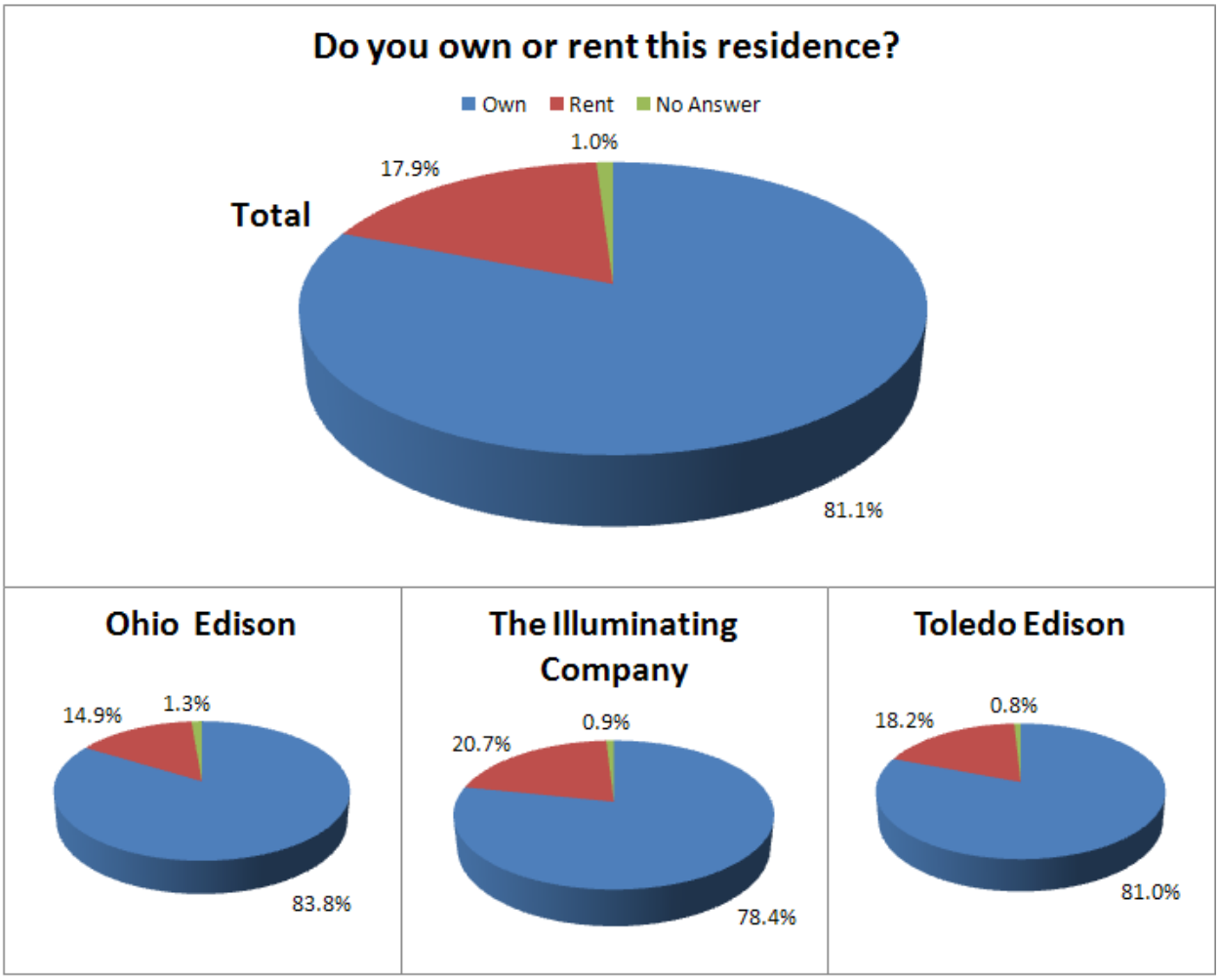
Figure 4-6 Type of Housing 2012 B&V Survey



	Single family home	Duplex or two family home	Condominium	Mobile home	Apartment in building with less than 5 units	Apartment in building with 5 or more units	No Answer
Ohio Edison	81.7%	3.4%	4.2%	4.0%	2.3%	3.4%	0.9%
The Illuminating Company	73.7%	5.2%	6.4%	1.8%	1.7%	10.3%	0.9%
Toledo Edison	80.4%	2.3%	3.4%	4.0%	1.3%	8.1%	0.6%

On average, 81.1% of respondents own their residence. Of the remainder, 17.9% rent a home and 1.0% did not provide an answer (Figure 4-7).

Figure 4-7 Home Ownership 2012 B&V Survey



The primary space heating fuel/energy for homes in FirstEnergy's Ohio service territories is natural gas (73.5%), followed by electricity (14.7%) (Table 4-5). Electric heaters take the lead in secondary space heating, constituting more than half (55%) of the secondary heaters used by respondents who had a second heater.

Natural gas is also the dominant fuel (66.0%) for residential water heating, followed by just over a quarter of respondents who have electric water heaters (26.9%) (Table 4-5).

Table 4-5 Primary Heating Fuel Usage 2012 B&V Survey

	OHIO EDISON	TOLEDO EDISON	THE ILLUMINATING COMPANY
Space Heating Fuel/Energy			
Natural Gas	72.9%	69.0%	79.1%
Electricity	14.8%	16.2%	12.9%
Oil	3.5%	1.9%	1.5%
Other	7.3%	11.3%	3.6%
None	0.6%	0.1%	0.8%
No Answer	0.9%	1.4%	2.1%
Water Heating Fuel/Energy			
Natural Gas	64.3%	62.4%	71.9%
Electricity	31.3%	27.2%	21.5%
Other	2.7%	7.4%	1.2%
None	0.4%	0.4%	1.2%
No Answer	1.3%	2.7%	4.3%
Natural Gas	64.3%	62.4%	71.9%

According to FirstEnergy's 2010 Residential Survey, the median age of homes in the FirstEnergy Ohio territories range from 41 to 50 years. The distribution is shown in Figure 4-8. Given the average age of the homes, there may be an opportunity to improve their overall efficiency.

Figure 4-8 Average Home Age 2010 Residential Survey

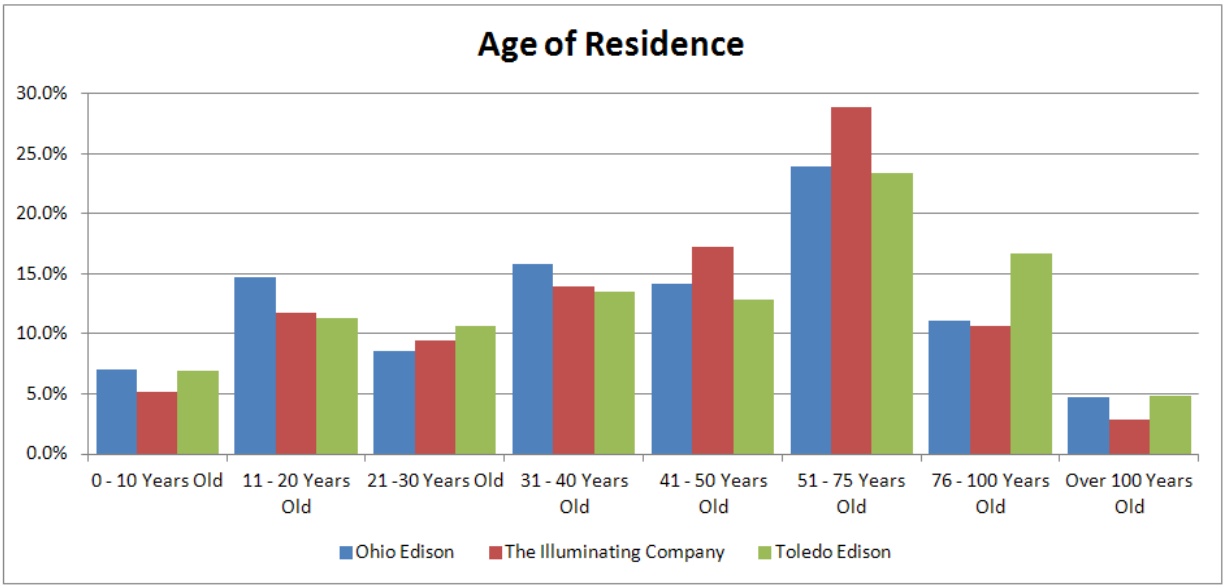


Table 4-6 provides a summary of the 2010 residential appliance saturation results for several common household appliance or end-uses. Note that percentages are calculated using the total number of appliances in households, rather than the number of households with these appliances.

Table 4-6 Appliance and End Use Saturation Rates 2010 Residential Survey

APPLIANCE TYPE	OHIO EDISON	TOLEDO EDISON	THE ILLUMINATING COMPANY
Clothes washer (in residence)	93.5%	88.9%	92.6%
Dishwasher	57.3%	55.6%	62.9%
Well pump	28.8%	21.5%	11.6%
Coffee maker	73.2%	67.6%	75.7%
Dehumidifier	42.4%	32.0%	37.2%
Heated water bed	1.9%	4.1%	2.0%
Hot tub/whirlpool tub	6.4%	7.0%	5.8%
Heated swimming pool	1.6%	3.6%	2.6%
High efficiency air cleaner, whole house	6.6%	5.5%	7.1%
Home security system	13.8%	17.4%	16.7%
Stereo system / home theater	34.4%	37.7%	35.6%
TiVo / DVR / Hard drive video recorder	41.5%	38.6%	43.2%
Large screen (40" or larger) TV – Plasma	17.4%	17.3%	18.8%
Large screen (40" or larger) TV – Rear Projector	9.6%	9.3%	7.2%
Large screen (40" or larger) TV – LCD	23.5%	26.4%	22.2%
Other televisions	138.6%	134.7%	133.1%
Satellite dish / Cable TV service	86.6%	84.6%	80.6%
Personal computer - no Internet connection	23.1%	22.4%	23.8%
Personal computer with dial-up modem	14.3%	15.9%	14.2%
Personal computer with broadband connection	69.5%	65.2%	73.1%

4.4.1 Low Income Residential

Low income households represent an important segment of the residential customer market in that they can experience different barriers to the adoption of efficiency technologies than typical

residential customers. While the modeling for the Market Study does not recognize differences in participant characteristics (i.e., a CFL saves the same amount of energy in a low income household as it does in a general residential household), the next phase of the study – program design – will take such information into consideration.

Table 4-7 identifies the Percentage of Income Payment Plan (PIPP) customers by operating company as a proxy for low income. It shows that TE has the largest percentage of low income customers as defined by this metric.

Table 4-7 Number of PIPP Customer by Operating Company

	PIPP	TOTAL RESIDENTIAL	PIPP AS % TOTAL
Ohio Edison			
Number of Customers	75,022	921,314	8.14%
Toledo Edison			
Number of Customers	25,710	272,771	9.43%
The Illuminating Company			
Number of Customers	52,560	664,170	7.91%

4.5 COMMERCIAL CUSTOMERS

4.5.1 Commercial and Small Manufacturing Class (<700 kW)

Table 4-8 shows the types of small businesses that responded to the 2012 B&V survey by company, in terms of percentages of respondents.

Table 4-8 Principal Industry of Survey Respondents 2012 B&V Survey

INDUSTRY TYPE	OHIO EDISON	TOLEDO EDISON	THE ILLUMINATING COMPANY
Agriculture, Forestry, Fishing and Hunting	2.0%	1.0%	1.0%
Mining, Quarrying, and Oil and Gas Extraction	0%	1.0%	0%
Utilities	1.0%	2.0%	4.0%
Construction	4.0%	4.0%	7.0%
Manufacturing	8.0%	12.0%	14.0%
Wholesale Trade	7.0%	5.0%	2.0%
Retail Trade	14.0%	13.0%	12.0%
Transportation and Warehousing	0%	3.0%	1.0%
Information	2.0%	1.0%	1.0%
Finance and Insurance	2.0%	3.0%	4.0%
Real Estate and Rental and Leasing	13.0%	15.0%	10.0%
Professional, Scientific,	6.0%	4.0%	5.0%

and Technical Services			
Management of Companies and Enterprises	1.0%	0%	1.0%
Administrative and Support and Waste Management and Remediation Services	1.0%	1.0%	3.0%
Educational Services	1.0%	2.0%	3.0%
Health Care and Social Assistance	7.0%	11.0%	6.0%
Arts, Entertainment, and Recreation	4.0%	1.0%	1.0%
Accommodation and Food Services	10.0%	2.0%	7.0%
Other Services (except Public Administration)	10.0%	12.0%	14.0%
Public Administration	7.0%	7.0%	4.0%

Table 4-9 shows that the majority of businesses represented in the surveys have fewer than 100 employees, with the overall median number of employees in Ohio locations between five and nine.

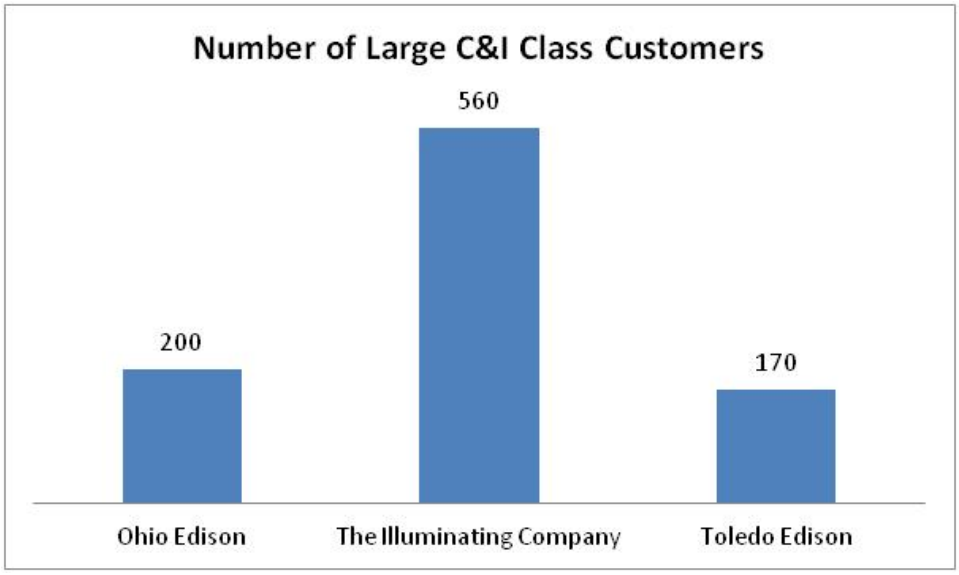
Table 4-9 Number of Ohio Employees 2012 B&V Survey

NUMBER OF EMPLOYEES	OHIO EDISON	TOLEDO EDISON	THE ILLUMINATING COMPANY
One	6.0%	10.0%	8.0%
2-4	19.0%	25.0%	19.0%
5-9	23.0%	18.0%	25.0%
10-19	21.0%	19.0%	20.0%
20-99	22.0%	18.0%	17.0%
100-499	6.0%	7.0%	7.0%

4.5.2 Large Commercial and Industrial Class (>700 kW)

The large commercial and industrial class of customers is characterized by having a billed demand of greater than 700kW. Figure 4-9 below shows the number of Large C&I Class customers that were in each operating company, based on FirstEnergy data.

Figure 4-9 Number of Large C&I Class Customers [3]



Each of the Companies dedicates a group of individuals to manage accounts that are typically greater than 700kW of billed peak demand. These individuals advocate for their customers within FirstEnergy and handle a wide range of requests from their customers. Often, they work directly with the customers, or arrange for individuals with the necessary technical expertise to assist the customer in troubleshooting and discussing potential EEPD savings.

The managed account representatives are viewed by the customer as a trusted source of FirstEnergy's EEPD program information and available rebates. They are a key element of FirstEnergy's efforts to help the large C&I accounts become more active in investigating and implementing EEPD measures. To provide additional information regarding the 2012 market potential study, B&V conducted telephone interviews with 10 account representatives and surveyed 14 FirstEnergy large C&I customers across the three operating companies during March and April 2012.

While each of the customers in the greater than 700kW segment are unique in the products they manufacture or the services that they provide to other businesses or end-use customers, they have a number of common characteristics regarding their approach and behavior toward energy efficiency investment decision making.

The top business categories in terms of peak demand were metals fabrication, including automobile manufacturing, primary metals, chemical manufacturing, medical centers, food processing and other manufacturing. It is likely that these categories of businesses continue to have high peak demand. In the 2012 interviews, most account representatives stated that they were seeing improvement in the economy based on the activities of their customers. Positive signs included the hiring of additional staff, adding a new production run, adding another shift, and vacant commercial properties being investigated for development. As companies are more likely to invest in energy efficient technologies for new construction or renovation, this may be an opportunity for FirstEnergy to focus on as its large customers consider expansion of their facilities.

[3] Data from FirstEnergy, 2009.

The major business categories representing these large C&I customers are listed in Table 4-10.

Table 4-10 Customer Business Categories

CUSTOMER BUSINESS CATEGORIES
Chemical & Allied Prod
Education
Electronic Mg
Entertainment
Food and Kindred Products
Health
Mining & Oil Gas Extract
Paper Mills & Products
Primary Metals & Hvy Mfg
Refining & Plastics
Transport Mfg

Given the very significant levels of energy usage across the large commercial and industrial class, such customers may be very receptive to EEPD initiatives, particularly when factoring in the potential cost savings to the individual companies. In addition to the incentives offered through FirstEnergy's prescriptive rebate programs, large customers are concerned with the impact of Ohio Senate Bill 221 and the DSE2 Rider can have on their annual electric utility costs.

Large C&I companies will typically look for the shortest payback periods and often accept no more than a year of payback time for their capital investment in energy efficient technologies. Small to medium-sized customers were more flexible, accepting technologies with payback periods in the one to two year range, though still favoring the one-year payback. Municipals, hospitals, and schools were the most flexible, and were willing to accept a payback of three to five years in their energy efficiency investments.

Programs that help educate customers about EEPD benefits, along with the purchase of more efficient products and financial incentives, aid in reducing peak demand in this class because of the short payback times that are desired for energy efficiency installations. FirstEnergy account representatives, the monthly *Questline* electronic newsletter, program administrators and trade organizations are historically effective mediums for conveying information about programs.

Generally large C&I customers tend to be aware that energy efficiency programs exist, but may not immediately recall specific program details.

Most of these companies do not have an internal dedicated energy manager, so the importance of FirstEnergy's outreach is critical to helping educate and guide customers to making informed decisions regarding investing in energy efficiency (EE) measures. This is especially likely given that the Companies' account representatives have assisted with such measures in the past, and some initiatives, such as lighting modifications and motor upgrades, could be relatively easy to implement.

Large industrial customers likely have people on staff to focus on the company's processes and cost of operating the business. Still, they, too, need the guidance of EE professionals to investigate potential savings with changes to the process and equipment. In some cases there may not be adequate electrical consumption data by key points of usage – such as 15-minute interval data and software to enhance the understanding of the data.

There are customers in this group that have already installed EE measures, (the upgrades and efficiency improvements that they are capable of within their cost or time constraints), but cannot afford the time and trouble to go back and research, prepare and submit the paperwork to receive credit (exemptions or rebates). If the rebates from implementing EE measures are significant, they will make the effort to submit their information to get credit.

Based on our conversations interviews with the account representatives, the key most common findings among these business categories regarding energy efficiency are:

- Opportunities
  - There continue to be opportunities for improvements in manufacturing process and behavioral improvements, particularly for the largest customers who are looking for higher potential EE savings. A key driver is their current electric bill and their desire to minimize or eliminate the negative impact on their bill of the DSE2 Rider[4].
  - As the economy slowly improves and large C&I customers respond to increased demand for their products and services, the opportunity exists for improvements in energy efficiency, in new developments and in existing equipment, such as in lighting modifications and motor upgrades.
  - Companies experiencing an uptick in their business may be adding additional staff, extending shift hours or adding additional shifts, adding new production runs or expanding their physical facilities. All of these companies need to be continually reached to help them be better informed and educated on the benefits of implementing EE measures to reduce their energy costs and FirstEnergy's EE incentive programs.
  - As the economy improves and industry responds, architects, engineers, equipment vendors and other facility and equipment influencers, all need to be continually reached to help them be better informed and educated on FirstEnergy's EE incentive programs.
- Program Design
  - Utility account managers are a primary vehicle for introducing new energy efficiency programs to Large C&I customers.
  - Large C&I customers are generally aware that FirstEnergy EEPD programs exist, but because they have seen changes in the programs over the past two years, in general they do not know the details.

[4]The Companies have implemented a Rider to their existing Rate Structure known as the Demand Side Management and Energy Efficiency Rider, or DSE2. The DSE2 "Rider DSE". Rider DSE has two parts, and the second part ("DSE2") will charge an additional cost for each recover costs by kilowatt-hour of electricity consumed by non-residential customers applicable rate schedule in order to recover the costs associated with peak demand reduction and energy efficiency programs.

- All proposed EEPD programs should have processes and participation requirements that are simple and don't create a disincentive to those wishing to participate in the program.

Appendix B presents a table with additional insight into each of the business categories with regard to the following: 1) the energy efficiency behavior characteristics of each group, 2) the potential opportunities for improvements in energy efficiency, 3) the barriers to investing in energy efficiency improvements and 4) operations.

4.5.3 National Accounts

FirstEnergy's national accounts are managed across the FirstEnergy Companies by a group of national account managers that work across individual utility boundaries. These individuals are the primary, and trusted, source of FirstEnergy's EEPD program information for the national accounts.

There are approximately 250 customers that are designated as FirstEnergy national account customers and each is managed by a FirstEnergy national account representative. The commonality among national accounts is that they are businesses that have a national presence and operate under the guidance of a corporate headquarters. National account businesses within FirstEnergy service territory are either owned and operated by corporate headquarters or owned and operated by a franchisee. FirstEnergy national account representatives focus their efforts on EEPD related staff and decision makers at the national account's corporate headquarters.

In cases where the local customer site is owned and operated by corporate headquarters, all energy efficiency related decisions are made for and funded by headquarters. Typically the focus of energy efficiency investments in local sites by corporate headquarters will be targeted on a priority basis to those locations where energy costs are higher and where the utility or State offers energy efficiency improvement programs and financial incentives.

In cases where the local customer site is owned by a franchisee, the corporate headquarters will typically offer the local owner the same energy efficiency information as it does to its corporate sites, however, all decisions and investments will be funded and made by the local owner. It is our opinion that these customers may react more favorably to energy efficiency programs and incentives and will seek to implement energy efficiency measures that will improve their energy efficiency.

As with most C&I accounts, whether they are a location owned by corporate or a franchisee, decisions to invest the capital and time in pursuing and implementing energy efficiency measures will be based on economics - specifically, costs and reasonable paybacks. As with other small commercial customers, this group of customers requires that the process for implementing energy efficiency improvements be simple enough to understand and act on while running their businesses including:

- Getting informed about what can be done to improve their energy efficiency.
- Understanding their energy usage and potential savings.
- Knowing how to get into the utility programs.
- Knowing how to get improvements implemented.
- Knowing how to obtain their rebates.

FirstEnergy's managed account representatives explain that there are three tiers of awareness and EEPD implementation activity among the national accounts.

The first tier consists of those companies that are the most involved in making their properties as energy efficient as possible. They understand that EEPD measures will help their bottom line in the long run. These accounts typically have a dedicated energy manager, or a person who is accountable for energy budgets and reducing operating costs. They may have funds budgeted for EEPD related capital improvements, perform energy audits and will include the impact on improving the environment in their EEPD decision making process. While they may have already upgraded lighting and HVAC applications, there are still opportunities to upgrade motors and install energy optimizer support tools. These accounts have often chosen to implement EEPD measures even when no utility supported rebate programs were available, since their usage is large enough to make their action justifiable, without additional rebates. The offer of utility EE rebates is a key tool for FE in capturing additional EE savings among these customers. These accounts include combination gas station and convenience stores, high-end grocery stores, large department and box stores.

The second tier national account customers are beginning to further investigate what EEPD measures can do for them. While they may have corporate management backing, they typically don't have the capital funding for EEPD projects. They need to be convinced that each project will provide a quick payback and it needs to be shown in a strong business case. These customers may have implemented some lighting upgrades. Customers in this category include the full range of national account business categories. Opportunities exist for EE savings in motors, HVAC, compressors and energy monitoring applications.

The third tier national account customers are typically not actively pursuing the investigation of the benefits of EEPD measures. Similar to the second tier, customers in this category include the full range of national account business categories. Often these companies may not have funds available to invest in EEPD measures and are focused on the continuation of their businesses. These customers will be a difficult group of customers to convince to invest in EEPD measures. FirstEnergy's program rebates will be an important tool to move some of these companies to consider investing in EE measures. Opportunities exist for EEPD savings in interior and exterior lighting, motors, HVAC, compressors and energy monitoring applications.

4.5.4 Regional Governmental Accounts

Each of the Companies' also has area managers that are the primary point of contact for officials representing Counties, Cities, Townships, Boroughs and towns located in each Company's service territory. These individuals are also a trusted source of the Companies' EEPD program information for their customers.

There are literally hundreds of governmental entities within the service territories of the Companies. While just a few years ago they typically did not have a dedicated individual whose job it is to manage energy efficiency related issues, today many have hired an individual whose responsibilities include reducing and monitoring energy costs. In organizations where no one formally is assigned to manage EEPD issues, these issues generally are the responsibility of a public works director or similar position. Townships, boroughs and towns often have only a few full time

employees and EEPD issues or initiatives are typically handled by a town supervisor or town manager along with all of the other demands of managing a small government, such as struggling to cover their current costs without raising taxes or reducing the services they provide.

Townships, boroughs and towns may lack the resources (knowledge, staff, and funding) to fully investigate EEPD opportunities. Some have worked with consultants who specialize in EEPD services and may offer a shared savings program. Typically, governmental entities seek to fund EEPD programs through grants. Rebates are less attractive since, the local government still needs to raise money to make the improvements. Once EEPD opportunities are identified and planned for, the EEPD program needs to then be included in the appropriate future government capital budget cycle.

Townships, boroughs and towns may differ in their levels of interest and activities regarding EEPD. While some are investigating and pursuing new technologies to reduce energy costs, others may simply not have focused much effort on EEPD initiatives to date.

We believe that typically street lighting represents the biggest element on the local Townships, Boroughs, and Counties' utility electric bill. An exception to this is if the government also operates a water/wastewater treatment facility. Typically the amount of electrical energy utilized in local government buildings is small compared to street lighting and treatment plants. Counties and cities will have many more governmental buildings and treatment plants, etc. than Townships, Boroughs and towns. Significant EEPD opportunities may exist at treatment plants and other large governmental facilities, but it may also require an EEPD audit to bring them to light.

5.0 MARKET CHARACTERIZATION

5.1 CHARACTERIZATION OF THE MARKET FOR ENERGY EFFICIENCY

An important aspect of determining the potential for energy efficiency and EEPD initiatives in a given region is to understand the market for available energy efficient products and services. B&V conducted research of major appliance and lighting retailers in FirstEnergy regional service territories posing as residential customers. B&V also conducted Internet research of on-line store sites, and reviewed periodicals and print sources of current energy efficiency messaging to consumers. This included searches and summarization of local and national energy efficiency programs, energy audit programs, and other resources that a consumer in the specified area may access when looking to conserve energy.

While the Companies' customers have had access to certain limited energy efficiency programs to date, the potential market for energy efficient technologies in the Companies' territories remains considerable, based on the following conclusions:

1. Customers of the Companies enjoy relatively low electricity prices compared to other areas of the U.S. This tends to dampen interest in more EEPD technology options.

2. Ohio continues to experience a relatively high unemployment rate (7.5% as of March 2012[5]) which affects residential as well as business customers and may limit their ability to invest in new equipment.

While these conditions are important, they have more bearing on the design of programs rather than the assessment of potential.

5.2 SUMMARY OF FINDINGS

The research discussed in this section was conducted in March 2012 in FirstEnergy's Ohio service territory. The research suggests that consumers in the region have relatively straightforward access to EEPD information and high-efficiency appliances, both in-store and online. For example, all of the big box stores that carry large appliances had Energy Star qualified versions. It is likely that most also carry some Consortium for Energy Efficiency (CEE) Tier 2/Tier 3 rated appliances. Electric water heaters are the exception. There are no Energy Star-qualified purely electric water heaters; the only Energy Star-qualified water heaters are powered by gas, heat pump, or hybrid electric and heat pump. In many cases, stores said that the vast majority of their large appliance inventory, except the cheapest few models, was Energy Star-qualified. A few stores even claimed that all their appliances were Energy Star-qualified. Most of the big box stores that carried large appliances also had current or upcoming sales on their appliances of an additional 10% off of the current sale price, or offered financing or cash options for their customers. Many also have free delivery and/or haul-away promotions. Not all box store chains called out the CEE Tier Certification on their appliances. It is likely, however, that the high-efficiency Energy Star units that stores carry are also qualified as CEE Tier 2 and Tier 3, but this rating system is simply not advertised on the product datasheets.

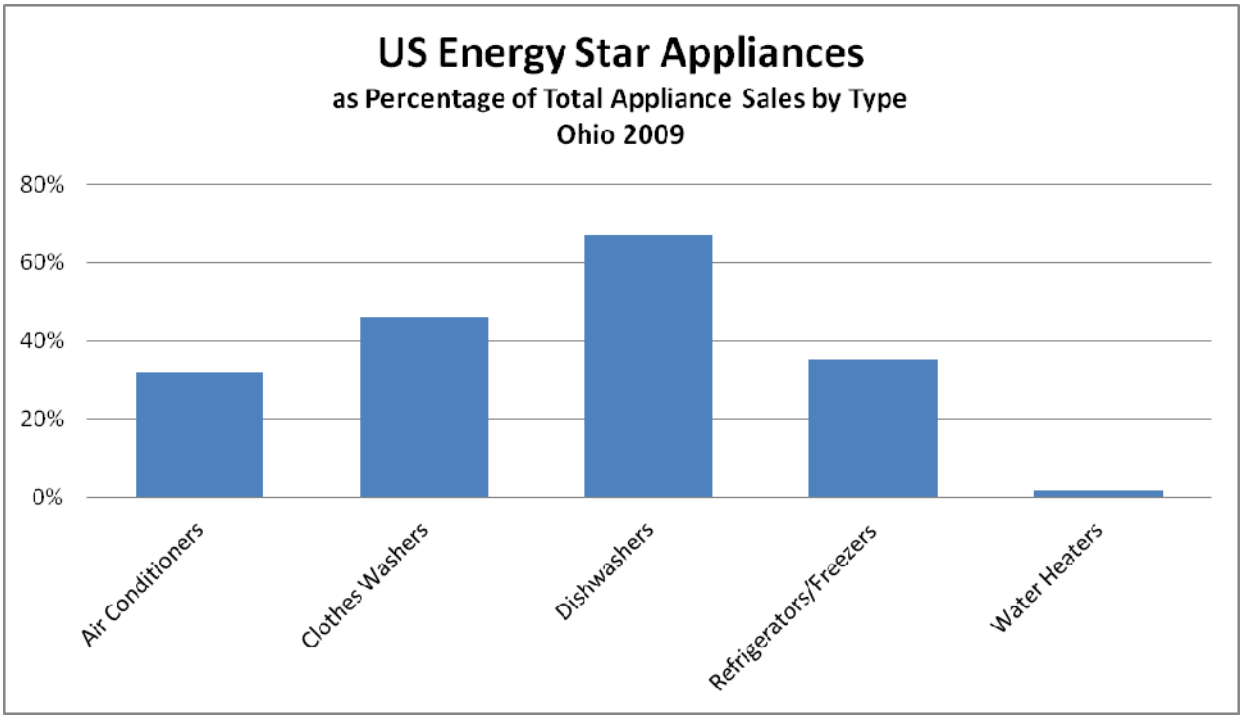
[5] Seasonally adjusted unemployment rate. U.S. Bureau of Labor Statistics.

Further, in-store sales representatives are, on the whole, more knowledgeable about energy efficient technology options compared to the previous market characterization study conducted by B&V in 2009. Most store representatives recognized the Energy Star rating system as a measure for appliance energy efficiency; fewer store representatives recognized the CEE Tier Certification system. Although their knowledge about the product offerings of their individual store varied, many voluntarily offered energy efficiency advice to the interviewer as part of the discussion, suggesting what products would be suitable and where to go for more information. However, there were still sales representatives who did not know about any energy efficiency incentive programs and only directed the interviewer toward the store sales and special offers. The interviewers also asked sales representatives about energy audits. Although some representatives did not know what energy audits are, the majority of those working in the appliance departments did know and provided some explanation of why it was not offered at the store. Many also suggested that the local FirstEnergy electric company or local natural gas company might provide this service.

5.3 MARKET PENETRATION OF EE APPLIANCES

The following chart (Figure 5-1) illustrates the 2009 U.S. Department of Energy's estimate of Energy Star appliance market share for Ohio based on sales data received from Energy Star national retail partners[6]. The chart depicts sales of Energy Star qualified appliances (Air Conditioners, Clothes Washers, Dishwashers, Refrigerator/Freezers, and Water Heaters) as a fraction of all appliance sales in Ohio in 2009.

Figure 5-1 Ohio Energy Star Ohio 2009 Sales as Percentage of Total



While this U.S. DOE data illustrates that Ohio consumers are already purchasing Energy Star appliances to a varying degree, there was still significant room for many more Ohio consumers to

[6] Energy Star. http://www.Energy Star.gov/index.cfm?c=manuf_res.pt_appliances#asd.

enjoy the benefits of these higher efficiency appliances. It should be noted that these data are for the state overall and are not available specific to the Companies' territory. It is likely that a high percentage of these sales are in Columbus and other areas outside the company's territory, where the electric rates are higher and Energy Star Equipment is more readily available. Furthermore, since these data are from 2009, it is likely that the sales penetration of Energy Star appliances has changed as the 2012 market characterization study shows that retailer offerings now tend more heavily toward Energy Star qualified products.

Similar penetration data are not available for CEE products in Ohio.

Taken together, these factors collectively imply that well-designed energy efficiency programs could capture large blocks of economically achievable EEPD savings over the next few years.

5.4 AVAILABILITY OF EEPD MEASURES AND SERVICES

5.4.1 Energy Audit Services

FirstEnergy's Ohio customers previously had access to home energy audit services through Home Performance with Energy Star; however, program did not achieve significant activity levels.

5.4.2 Energy Efficiency Loans

There are no major statewide programs such as those offered to households and businesses in Wisconsin or New York State, and Ohio does not offer a loan program for residential customers, like Pennsylvania's Keystone Loan Program, that can help finance household energy efficiency improvements.

5.4.3 Lighting

Since lighting is such a major end use among residential customers, it is worth additional consideration. U.S. Department of Energy's (DOE) "CFL Market Profile | March 2010"[7] reports that "the CFL market has changed dramatically"[8] since 2000. In summary:

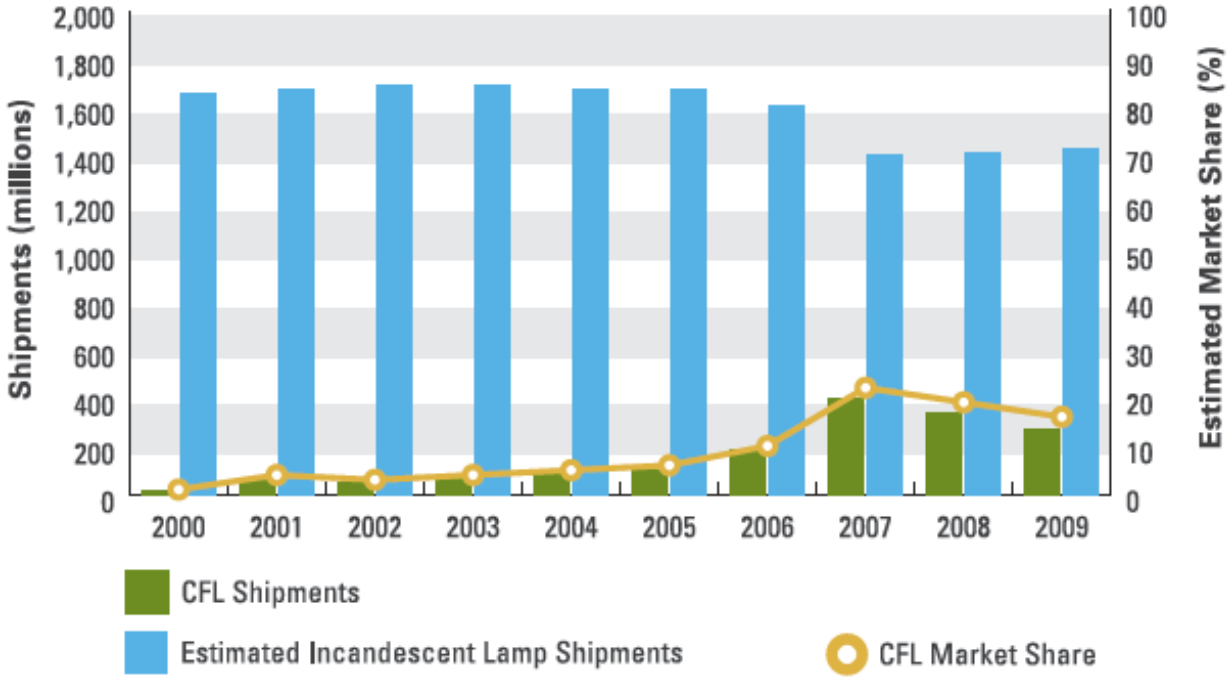
- **CFLs have become a significant part of energy saving programs across the country** and contribute anywhere between 25 to 50 percent of total energy efficiency program portfolio savings in various programs. However, **CFLs can still deliver considerable residential lighting energy savings**, as most light sockets in America still hold incandescent lamps.
- **CFLs are not preferentially installed in either high-use or low-use sockets**. Hence, CFLs are used at the same rate as average household light sockets, which suggest education may also be helpful.
- **In 2009, the market was seeing fewer CFL shipments following a peak in CFL shipments in 2007**. By 2009, the shipments had declined by 31 percent from 2007.
- **The majority of customers are satisfied with CFLs**, as evidenced by more than 85 percent of survey respondents reporting satisfaction.

[7] Energy Star. http://www.energystar.gov/ia/products/downloads/CFL_Market_Profile_2010.pdf.
[8] This market profile is focused on the general market for medium screw-based CFLs, which DOE considers to provide a reasonable assessment of the market for ENERGY STAR qualified CFLs. The market for pin-based CFLs is not covered because comprehensive data for these types of CFLs are not readily available.

In the 2010 report, the DOE reported a theoretical residential CFL saturation level of 80 percent, based on all sockets other than pin-based sockets being filled with CFLs. At the same time, the DOE reported a practical saturation level of 60 percent, the achievable level of saturation based on current (2010) CFL availability in the marketplace and from manufacturers. In Ohio, the overall mean saturation level of CFL light bulbs in the residential market was approximately 20 percent, and the overall median saturation level is about 10 percent. The lower median saturation level is due to the skewed distribution of households that have CFLs installed – approximately 18 percent of Ohio households had no CFLs installed in 2010. These data confirm that, based on 2010 levels of CFL saturation, there is a lot of remaining potential for energy savings in the overall Ohio residential market.

The following chart (Figure 5-2) illustrates the general increase in CFL market share and estimated decrease in incandescent light bulb market share until 2007, at which point the trend reversed and CFL shipments decreased through 2009.

Figure 5-2 CFL and Incandescent Lamp Shipments Plus CFL Market Share, by Year [9]



Reasons for the decline of CFL shipments following 2007 may include the recession, the dropping off of promotion and marketing of CFLs beginning in 2008, or that CFLs are lasting longer and therefore customers are not replacing and buying new bulbs as often.

Prices of CFL bulbs varied based on retail channel and package size, as seen in the following tables. As might be expected, the prices of bulbs was inversely related to the quantity of bulbs purchased, and mass market stores and hardware stores tend to have some of the lowest prices for CFL bulbs.

[9] Energy Star. http://www.energystar.gov/ia/products/downloads/CFL_Market_Profile_2010.pdf.

Figure 5-3 CFL Prices by Retail Channel [10]

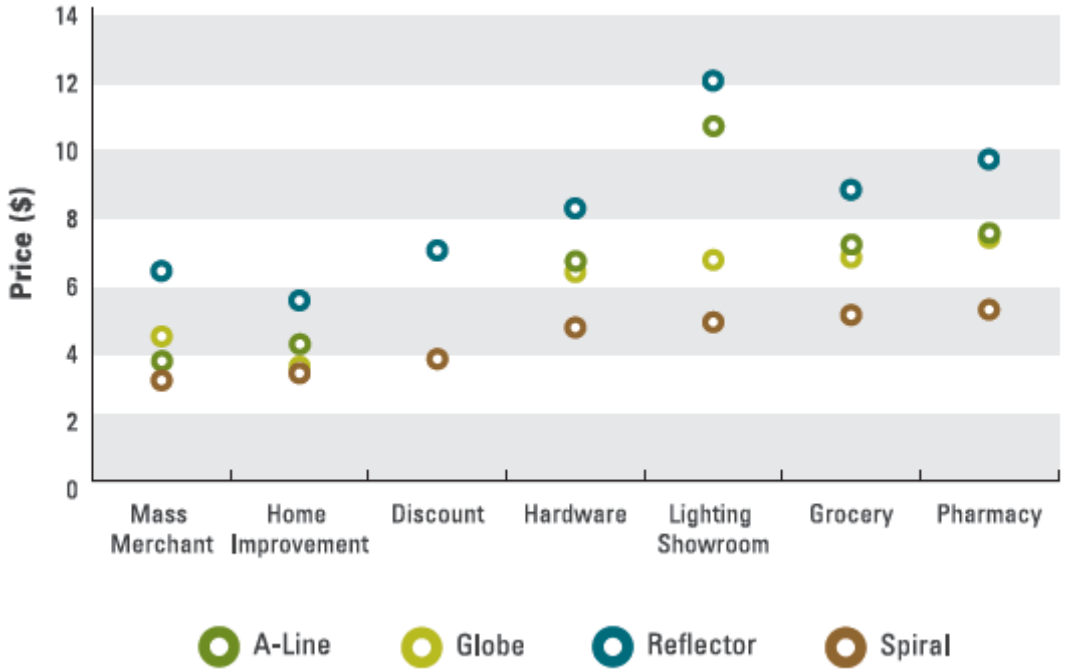
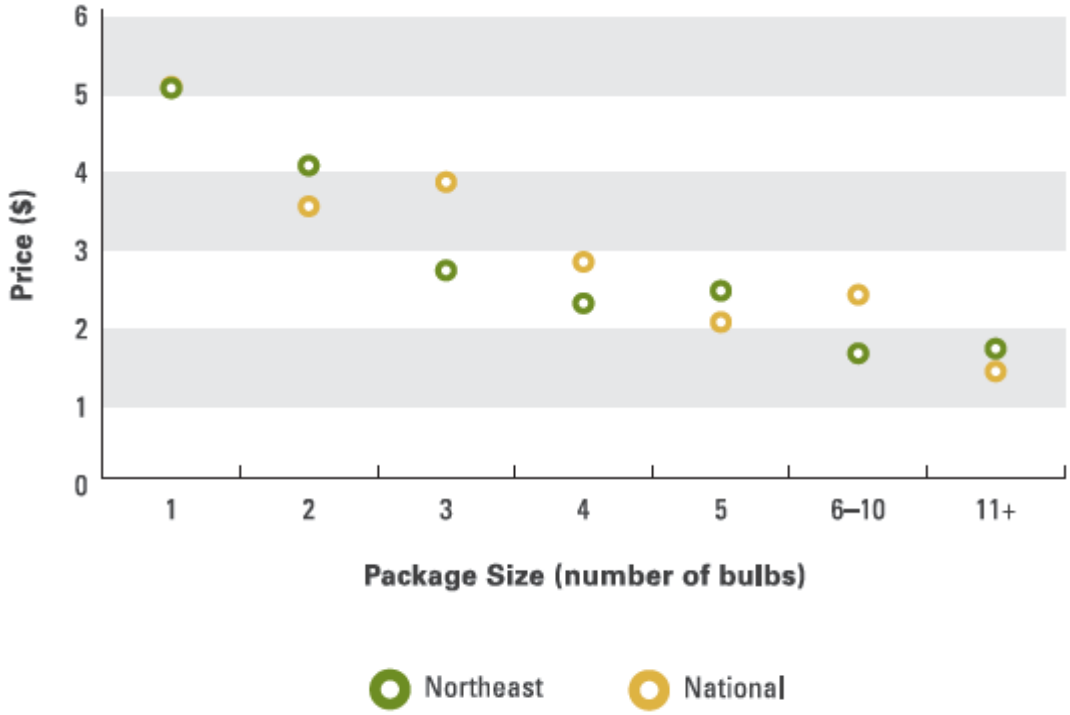


Figure 5-4 Median Price per Lamp: 10-W to 19-W Spiral CFLs [11]



[10] Energy Star. http://www.energystar.gov/ia/products/downloads/CFL_Market_Profile_2010.pdf.
[11] Energy Star. http://www.energystar.gov/ia/products/downloads/CFL_Market_Profile_2010.pdf.

5.5 PRODUCT AVAILABILITY IN STORES

The following is a summary of Energy Star product availability in stores:

- Energy Star seems to have a comprehensive partnership program. Many of these stores also had Energy Star sections posted on their web sites or allow the user to search for Energy Star qualified versions of products.
- Consortium for Energy Efficiency (CEE) Tier Certification is not consistently advertised across box stores. Of the store chains that do advertise it, their sales representatives were knowledgeable about the rating system and their web sites make reference to the CEE Tier certification on applicable products. In other store chains, the knowledge of store representatives varied on this certification system.
- Most of the big box stores were offering an additional 10% or more off the price of their large appliances, either during the time of the study or within a week's time. Some also offer price matching, delivery promotions, or financing offers.
- There were no local energy audits or EEPD programs currently being marketed at box stores (beyond those through purchase of high efficiency products). This seems like it could be a good opportunity.
- Perhaps not surprisingly, there was a broad range in helpfulness across customer service representatives and the information they were able to share. Generally, the knowledge of store representatives was consistent within one box store chain.
- The majority of the companies consulted had many options for Energy Star-qualified appliances in stock at their locations. Most stores did not have air conditioners in stock at the time of the survey, but anticipated that energy efficient options would be available when the air conditioning units arrived in April. Of the stores that did have air conditioners in stock already, most had at least one Energy Star qualified model.

5.5.1 Prices of EEPD Measures

The appliance prices listed in this report are based on State of Ohio Technical Reference Manual (TRM), Internet, and telephone research. It is important to note that discounts associated with in-store credit card use, on-line sales, and temporary price reductions, were not factored into these totals. Black & Veatch notes that stores generally had more permanent discount prices in addition to temporary sales and offers, and it was not always easy to distinguish these long-term discount prices from the original base price as store representatives tend to quote the current available price rather than the original manufacturer or store-recommended price. It is also not always clear how long-term these discount prices are. Another pricing factor is that certain stores will commit to matching or beating the price of the same unit from other stores. Stores that have these types of offers include Best Buy and H.H. Gregg. As a result of these offers, customers in the area might be able to get a lower price than those listed in this report. However, it made sense to use the directly quoted price as a baseline measurement in terms of a relative average. Because many stores now refer to their online stores for a greater selection of products from what they have in-stock, Black & Veatch also included online store options in the report.

It is also worth noting that not every location is home to the same stores. This research was conducted in FirstEnergy's Ohio service territories, with the assumption that demographics and

markets are similar in Ohio. While OE and CEI have, in general, similar and larger quantities of store offerings, the TE area has fewer store options. B&V notes that many of the major box store retailers carry their large appliances in their online stores, some with online discounts and/or offers such as free shipping and haul away. Furthermore, Home Depot's website and stores offer a permanent promotion for free shipping and haul-away for large appliances (with limited free installation aid). Conversely, if a store does not offer any delivery, installation, and/or haul-away discounts, then these costs can significantly add to the overall cost of the appliance purchase. Many store representatives cited their online stores as having more options to choose from and also offered to order in other appliances for the store if a specific model is requested.

5.5.2 Energy Star Air Conditioners

Several local Ohio HVAC contractors and some retailers were consulted for energy efficient cooling options for both a 150 square foot room and a 1,000 square foot residential property on a single floor. Most HVAC contractors were reluctant to offer price estimates without inspecting the actual place where the work was going to be done. Only three HVAC contractors offered price ranges for the proposed hypothetical spaces. To get a better sense of what these prices might turn out to be, Black & Veatch also conducted online research for HVAC pricing of cooling options.

For the 1,000 square foot residential space, one contractor offered a central air system consisting of combination of a 1.5 to 2.5 ton, 13 to 16 SEER AC unit. The other contractors did not provide specifications for the systems they were considering. Prices for the 1,000 square foot solution ranged from $10,000 to $20,000 with duct installation and from $3,000 to $3,500 without ductwork. Delivery and installation costs are included in the price estimates. Average prices from online sources for systems covering approximately 2,000 square feet range from $8,100 to $14,400 for systems including ducts or $5,000 to $8,000 for systems not including duct installation.

HVAC contractors that were contacted exhibited a wide variation in their knowledge of available incentive programs. It is likely, however, that this is due to a combination of recently changing tax credits and regional incentive programs that are available in the various areas where they work. It seems that they differentiate themselves based on the quality of service that they offer, in terms of quality of worker and punctuality, and any follow-up regime (maintenance and tuning) and/or guarantee that is included with the price.

For the 150 square foot Room Solution: The two HVAC contractors who responded offered a Mitsubishi ductless central air system as the best solution for a residential room with these dimensions, or simply a room air conditioner. Prices ranged from $2,800 to $3,500, including installation charges.

Local retailers were also consulted for single room air conditioning window units. Prices excluding installation fees ranged from $140 to $500 across the stores consulted. In the online survey, searches in these same stores for air conditioning units of 8000 Btu capacity, advertised to cool an area of more than 250 square feet, were found in a range between $154 and $565, with an average price of $242. Most air conditioners were not on sale, either online or in the store.

5.5.3 Energy Star Refrigerators

In conversation with a Lowe's customer service representative in 2009, it was discovered that refrigerator manufacturers will often sell the same refrigerator under a different manufacturer's brand. This makes it difficult for consumers to make direct comparisons of similar products across retailers. Manufacturers do this in order to avoid price wars, where stores are forced to compete on the lowest price.

As such, it was not easy to discern one baseline refrigerator to compare across towns and retailers, and our research instead compared different refrigerators with similar features. All refrigerators compared were Energy Star 21.0/21.1 cubic foot top-freezer refrigerators in white.

Most of the stores contacted had full size refrigerators in stock in multiple styles and configurations. During the call the interviewer requested an Energy Star 21 cubic foot top-freezer refrigerator in white. Occasionally, stores did not stock top-freezer refrigerators with such a high capacity; however, most had one unit of that size on display. Most of these refrigerators were Energy Star and CEE Tier 1. Some of the stores had Tier 2 units; however, one store representative said that since top-freezer refrigerators tended to be cheaper, they also tended to not have Tier 2/Tier 3 ratings, since those more efficient units are more expensive to manufacture. The most expensive of these offerings was found at Best Buy, which charged $1,030 (online). On the opposite end of the spectrum was a Sears refrigerator of similar capacity at $850 (online). The average price of this specified refrigerator was $945. Both of these stores had offerings at the bottom and top end of the range offer to ship refrigerators to the store. Of the Energy Star top-mount refrigerators that retailers had in-stock, prices ranged from $400 to $3,000.

Only the Lowe's website called out CEE Tier Certification for refrigerators, and they only offered Tier 3 for the type of refrigerator being surveyed. These were priced in a base price range of $849 to $1,049, and all units had a sale price that brought the cost down from list prices.

5.5.4 Energy Star Dishwashers

Most stores surveyed had a sizable stock of dishwashers, most of which were Energy Star and likely to be CEE Tier 2 rated. Furthermore, stores were typically willing to order any other unit that the customer requested. The target unit was a 24-inch white Energy Star tall tub with built-in dishwasher. Online prices for units of the specified dimensions ranged from $250 at Sears to $1,550 at Best Buy. The average list online price for this appliance across retailers was $645. Of the Energy Star dishwashers that retailers had in-stock, prices ranged from $200 to $1,500.

Only the Lowe's website called out CEE Tier Certification for dishwashers, and they only offered Tier 2 for the type of dishwasher being surveyed. These were priced in a base price range of $309 to $1,339, and all units had a sale price that brought the cost down from list prices.

5.5.5 Energy Star Clothes Washers

The type of clothes washer researched for this project was an Energy Star 3.5/3.6 cubic foot front load unit. One store representative at Lowe's informed the customer that this is likely to be equivalent to a previously 4.0 cubic foot rated unit (as studied in the 2009 report) as manufacturers had recently changed their definition of washer capacities to comply with a U.S. Department of Energy (DOE) definition rather than the International Electrotechnical Commission (IEC) definition.

Available brands included Whirlpool, LG, GE Profile, Samsung, and Maytag. Online prices for units with the specified capacity ranged from $699 at Home Depot to $1,149 at Sears. The average base online price for this appliance across retailers is $872. For units that also had a visible CEE Tier 2 or Tier 3 rating on the website, the prices ranged from $699 at Home Depot to $899 at Home Depot and Lowe's. It is noted that only Home Depot and Lowe's websites specify the CEE Tier rating of their clothes washers in addition to Energy Star rating. However, Sears store representatives also recognized the CEE Tier rating system and were surprised that it was not included in the online specifications viewable to the customer. Other chain store representatives were not aware of this additional energy efficiency rating system. Of the Energy Star clothes washers that retailers had in-stock, prices ranged from $350 to $1,300. These may include sales prices, however, as store representatives were more informed about the current price of an item, rather than the originally marked price.

5.5.6 Energy Star Electric Water Heaters

The availability of water heaters in the stores surveyed varied across the different box store chains. Only Home Depot and Sears offered Energy Star qualified electric water heaters at all. All of these were units that were a hybrid between electric and heat pump water heaters. Brands that were sold for this type of unit were GE at Sears and Rheem at Home Depot. Their stores did not always have these in stock in addition to having them available online. Most physical stores that were surveyed did have Energy Star qualified gas water heaters and non-Energy Star electric heaters available. Online base prices of Energy Star qualified water heaters ranged from $1,298 to $1,400. In-store prices of non-Energy Star qualified water heaters ranged from $208 to $649.

5.5.7 Compact Florescent Lights (CFLs)

Not all stores offered the exact same light bulb selection. Our research therefore approached shopping as an average consumer would – making the best of a standardized available option. The suppliers were asked about CFLs to replace indoor incandescent bulbs of 75W, 60W, and 40W. As an example, 13W and 14W compact florescent lights were recommended to replace 60W indoor incandescent lights. Notably, many of these store chains do not stock light bulbs at all: Best Buy, Sears, and H.H. Gregg are among these. Sam's Club, Walmart, and Costco offer a very limited selection in their online store; generally, their store representatives could only speak to the options they offered (and relevant promotions). Only the do-it-yourself hardware stores, Home Depot and Lowe's, offer a wider variety of light bulbs. Their store representatives (even from different departments) were also generally more educated about their store offerings and about different lighting options.

5.6 IMPLICATIONS OF THE MARKET CHARACTERIZATION

The variance among retailers and products in the market gives some perspective into the market and the possibility for area FirstEnergy program opportunities, either for partnership or further market penetration with new energy efficiency programs. The information that was available indicates that there could be a large difference in terms of potential outreach with energy efficiency programs and local stores.

Although it seems like Energy Star appliances have become pervasive in the market, there continues to be a range of efficiencies in the products that are available to customers. There may be an opportunity here for FirstEnergy to incentivize products that are at the more efficient end of the

range. This can be marketed either through products' CEE Tier Certifications or Energy Efficiency Ratio (EER), both of which are already publicly known for most products, though not necessarily advertised yet at every store.

Store representatives varied in their ability to discuss available incentives for appliances beyond what was available from their stores and perhaps from their competitors. Some programs had recently ended, and it also seemed like there may have been a variation by geography in incentive availability. Because their service area covers a large part of the state, FirstEnergy may have an opportunity to improve collaboration with stores as an additional marketing tool for their energy efficiency programs.

6.0 CUSTOMER SURVEY RESULTS

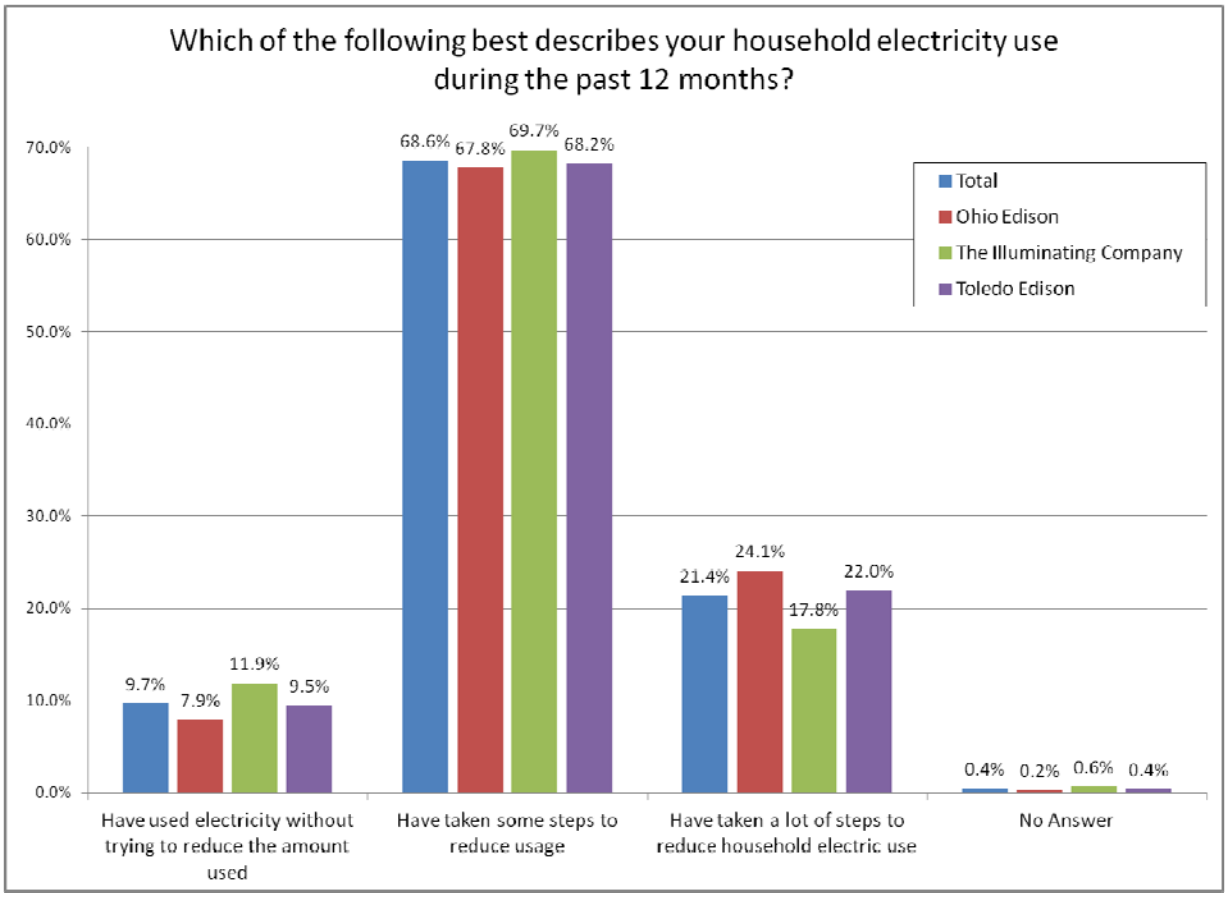
This chapter summarizes the highlights of the Residential Mail Survey (Appendix D-1) and the Commercial Telephone Surveys (Appendix D-2) conducted by Triad. Both surveys were conducted in March 2012. Where significant differences appear from the 2009 B&V market potential study, these differences are described and an explanation is sought. The residential mail surveys provide the market study with a set of baseline estimates of the current level of end-use DSM/EE in the market by customer class, housing stock, business type, etc.

6.1 RESIDENTIAL MAIL SURVEY RESULTS

6.1.1 Level of Energy Efficiency Actions Taken and Intentions

Most respondents across all FirstEnergy operating companies have taken steps to conserve energy. Just over two thirds of all the respondents (68.6%) have taken some steps to reduce usage during the past 12 months and nearly the same percentage (61.9%) plan to do a little more over the next year.

Figure 6-1 Residential – Household Electricity Use

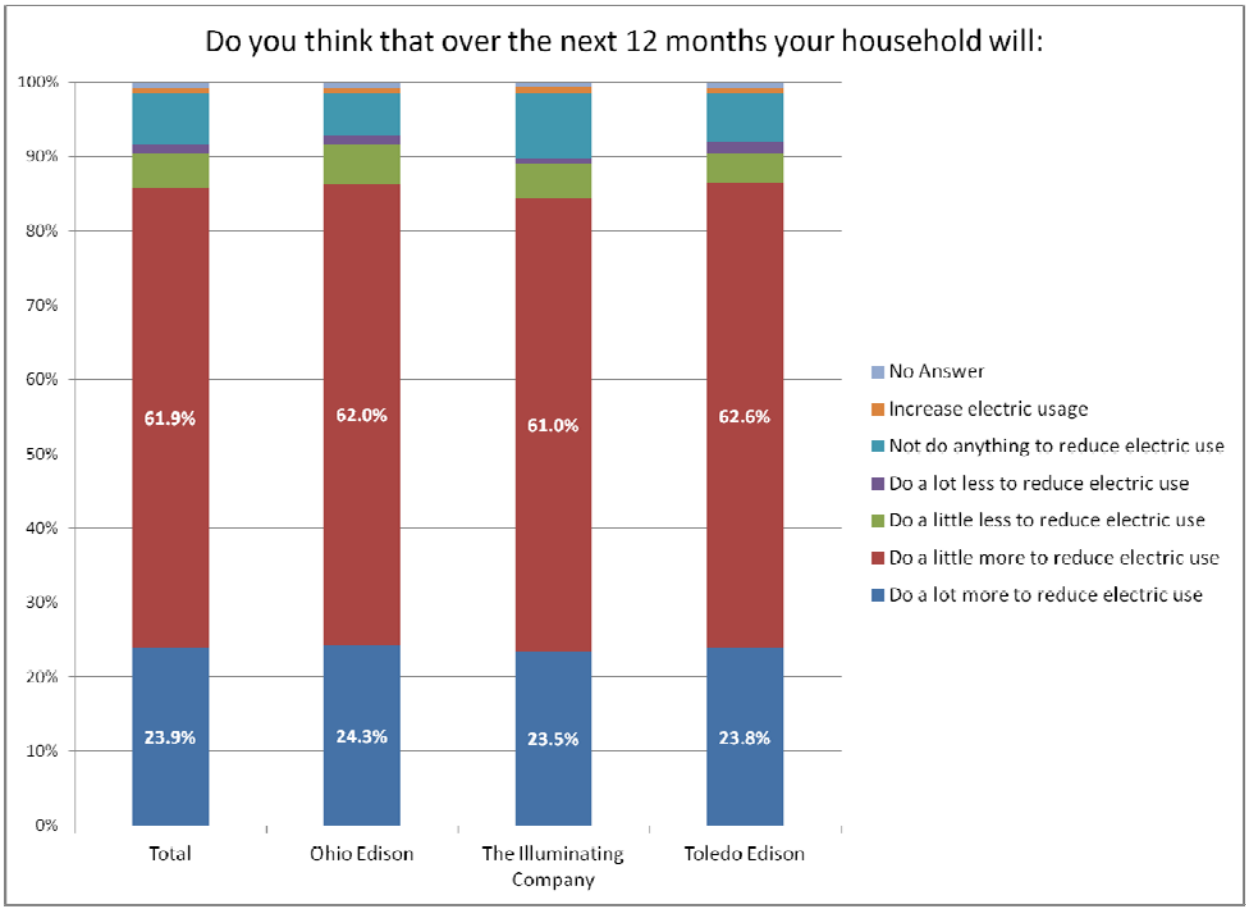


Additionally, almost a fifth of respondents (21.4%) "have taken a lot of steps to reduce" their use of electricity in the past 12 months. This is about 7% less compared to 2009 survey results. The change is primarily from CEI and TE operating companies. This difference may be because

customers feel that they have already exhausted all the energy efficiency options that are available or that they can afford.

Compared to the share of households who have taken a lot of steps in the past 12 months, a comparable share of the total respondents (23.9%) reported they would "do a lot more to reduce electric use" over the next year as well. This represents a drop (overall and among each of the operating companies) from the 2009 study results, and may be a result of households feeling that they have already exhausted the available energy efficiency options or the options that they consider affordable at this time.

Figure 6-2 Residential – Future Energy Behavior



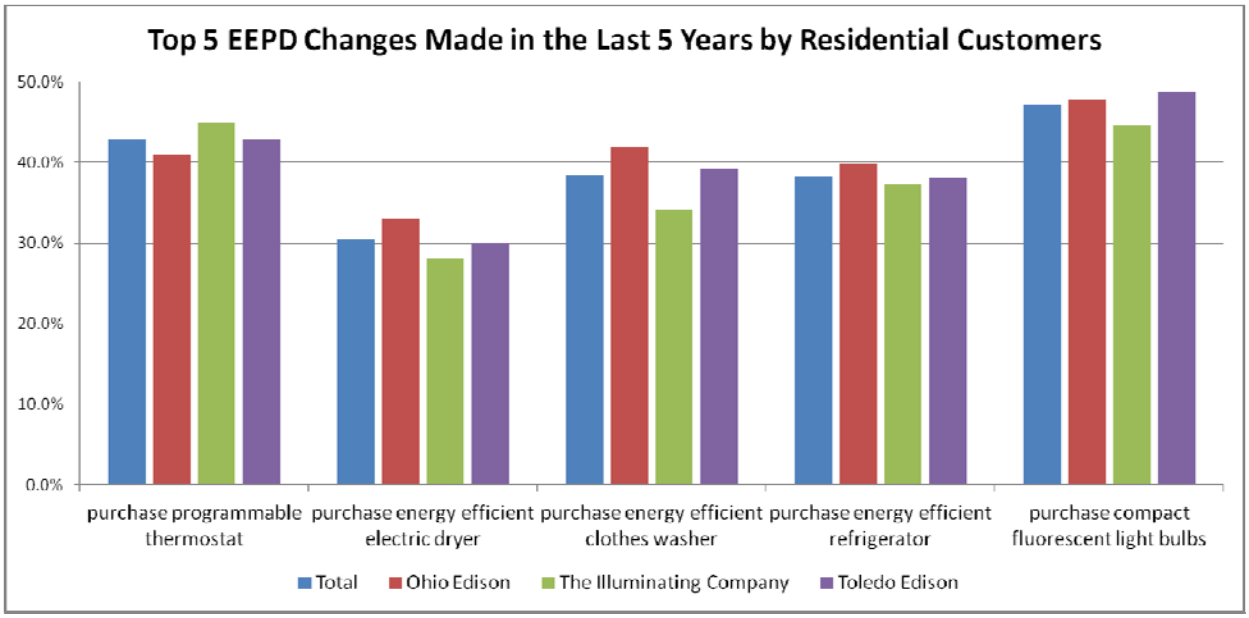
In fact, a combined 85.8% of respondents plan to do more over the next 12 months to use less electricity. Anxiety about the economy, concerns about the increasing cost of electricity, job stability and other economic factors are provided as reasons for doing so.

The survey explored the specific types of changes, replacements, or modifications that the Companies' customers have already made, plan to make, or might consider making in terms of their home energy usage behaviors.

Overall, more respondents reported purchasing CFL bulbs (47.1%), programmable thermostats (42.9%), energy efficient refrigerators (38.4%), energy efficient clothes washers (38.5%), and energy efficient electric dryers (30.5%), compared to implementing other EEPD measures in the

last five years. These measures are included as key components in several utility DSM programs across the country.

Figure 6-3 Residential – DSM/EE Changes Made



6.1.2 Energy Attitudes, Opinions and Behaviors

Customer perceptions about the cost of electricity have driven "organic" conservation efforts in the absence of any formal utility driven programs. The cost of electricity and the environment are a concern to a majority of the respondents in the sample. Respondents were asked to rate their concerns about the cost of electricity and the environment using a 5 point scale where 1 equaled "Not At All Concerned" and 5 equaled "Very Concerned". A combined 79.0% expressed some level of concern about the cost of electricity and 66.4% indicated concern about the environment. This is comparable to the results from the 2009 B&V market study.

Figure 6-4 Residential – Concern about the Cost of Electricity

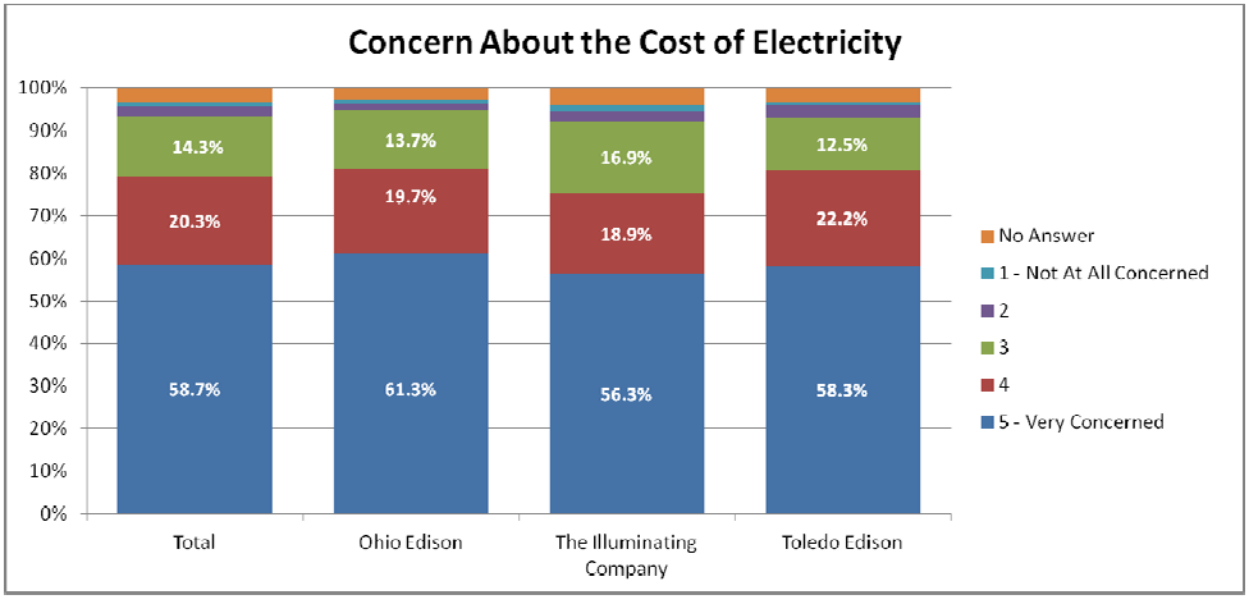
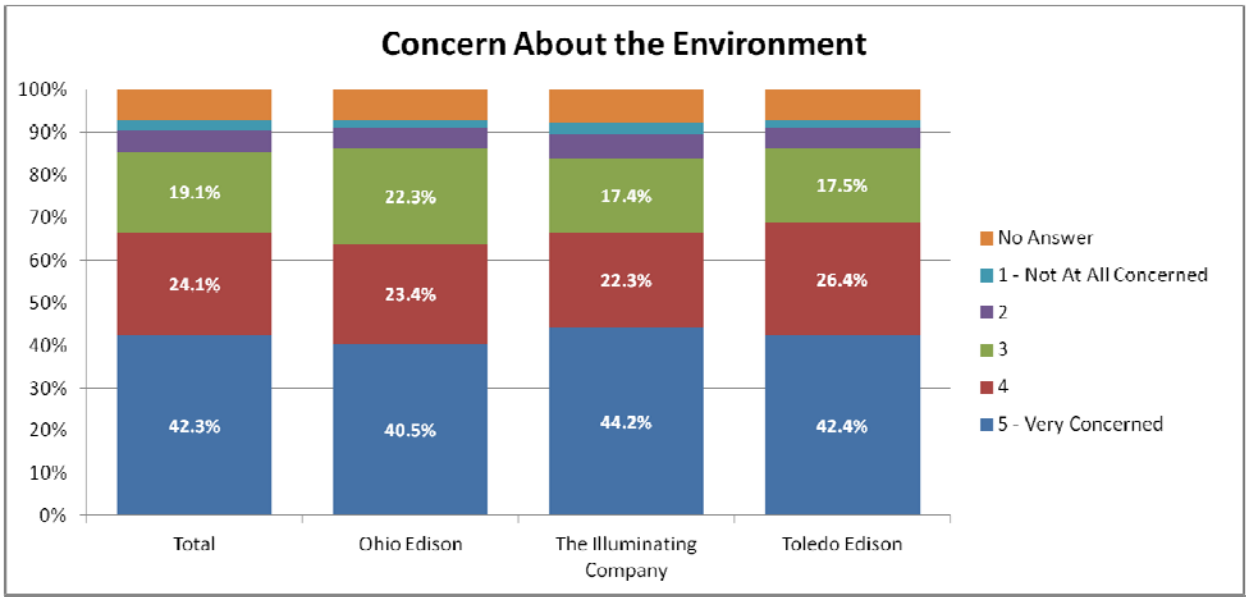


Figure 6-5 Residential – Concern about the Environment



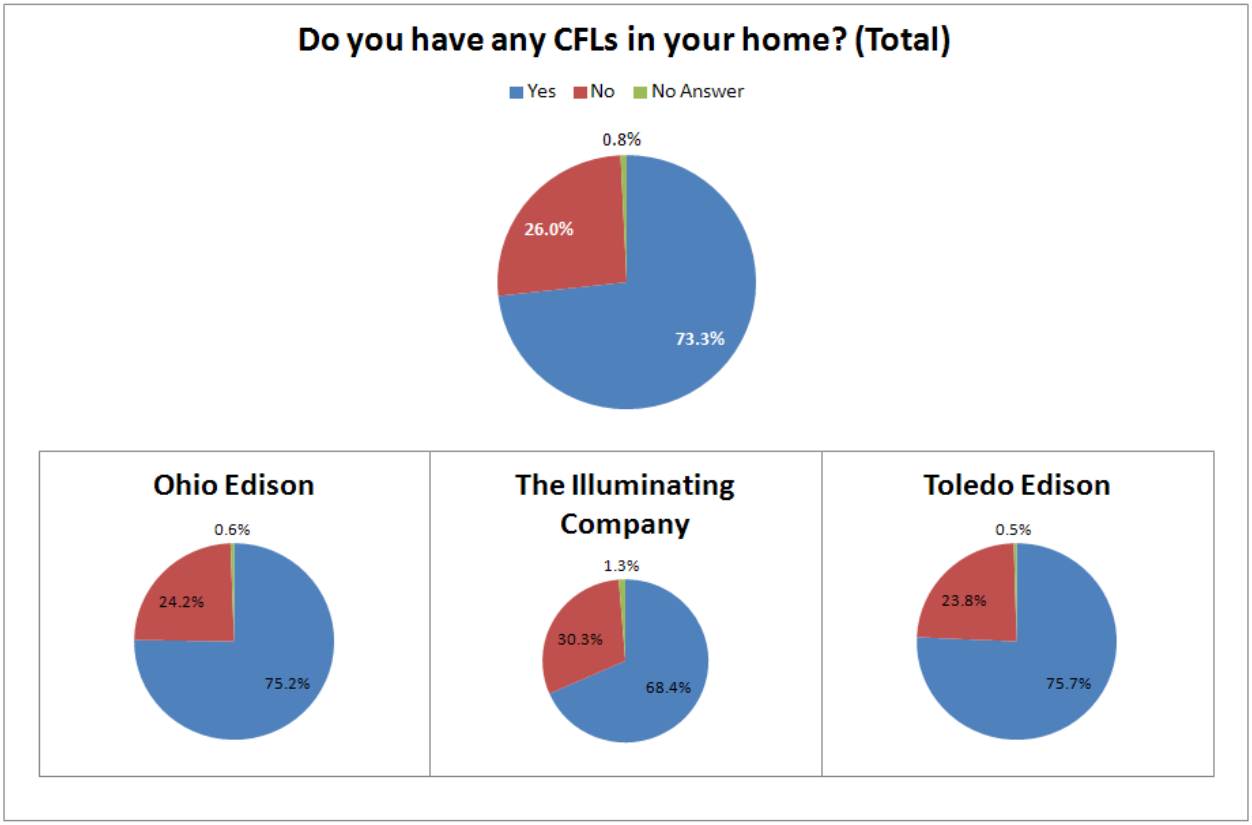
The data also suggests that respondent concern about the cost of electricity is causing a change in behavior. Seventy percent of total respondents (69.6%) reported that the cost of electricity caused them to use it differently over the past year. B&V notes that this is about 9% less than was reported by respondents in the 2009 study; however, it is still a significant share.

6.1.3 Appliance and Equipment Holdings and Information on Times of Use

Indoor and Outdoor/Security Lighting

Nearly three quarters of the respondents in each operating company have compact fluorescent light (CFL) bulbs installed in their homes. The median number of CFL bulbs installed in respondents' homes is six.

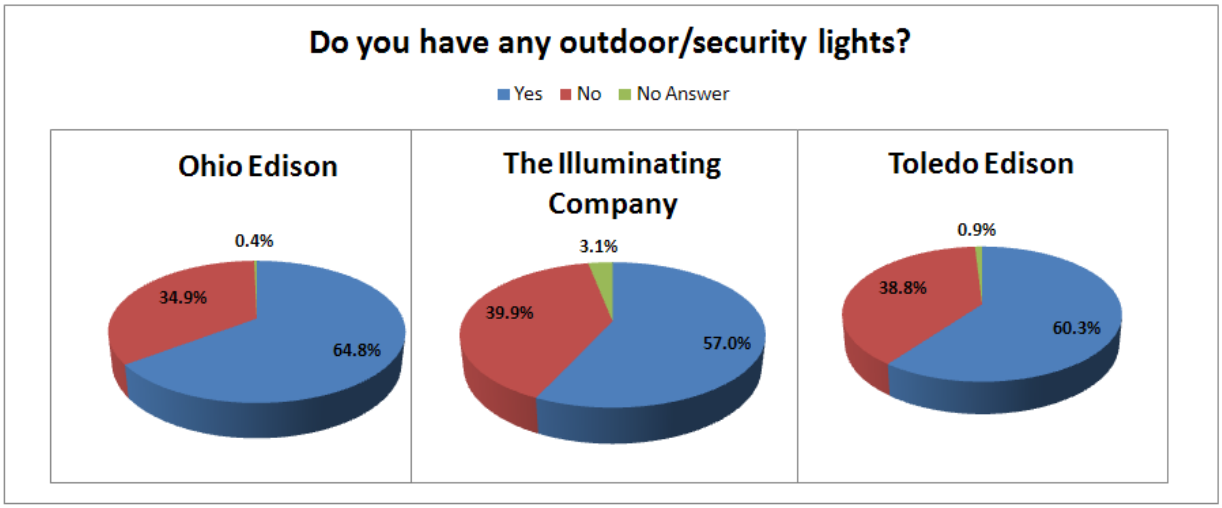
Figure 6-6 Residential – Percentage of CFL Ownership



On average, 4.5 lights are on for more than four hours per day in respondent homes. This is about two more light bulbs than the 2009 average. This suggests that nighttime use of light is increasing. This could be due to a variety of factors, such as more individual activities at night rather than group activities, or having more efficient lights leading customers to be more careless about turning lights off.

More than half of the respondents overall in the operating companies have outdoor/security lights. More respondents have outdoor security lighting in the Ohio Edison service territory (64.8%) than in Toledo Edison (60.3%) or the Illuminating Company (57.0%) service areas. The majority of customers with security lights have some combination of security lights that are operated by motion sensor (42.7%), switch (36.4%), and/or photocell (27.4%).

Figure 6-7 Residential – Percentage of Security Lights



Refrigerators

Seventy-one percent (70.5%) of respondents have a refrigerator that is 10 years old or less, which is a slightly lower percentage than the 2009 report. Although the majority of respondents do not own a second one, one third reported that they have a second refrigerator. Eighty-two percent (81.6%) are used all year, 13.5% are used part time and 4.5% are unplugged and not in use. There was approximately a 5% increase in respondents who have a second refrigerator and reported using their second refrigerator year-round.

Figure 6-8 Residential – Age of Primary Refrigerator

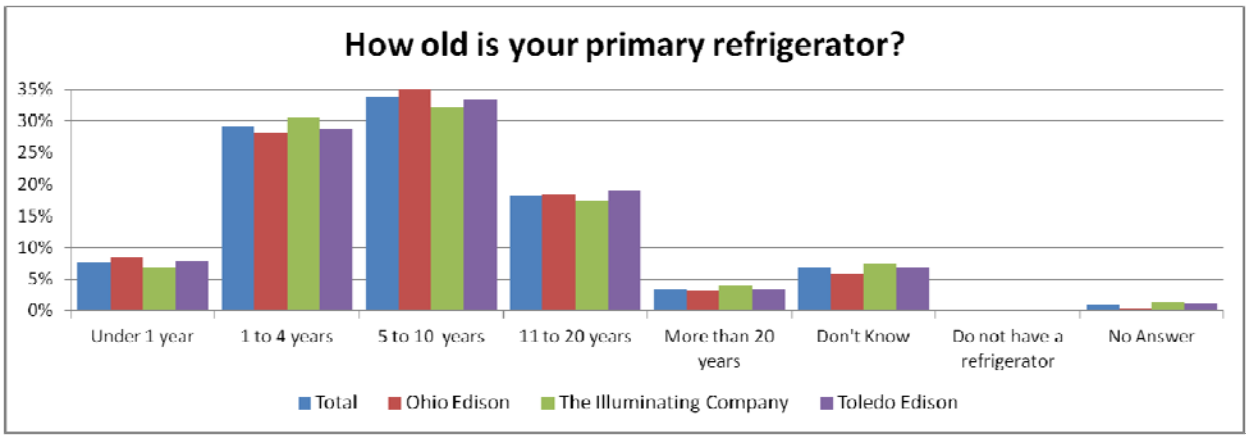
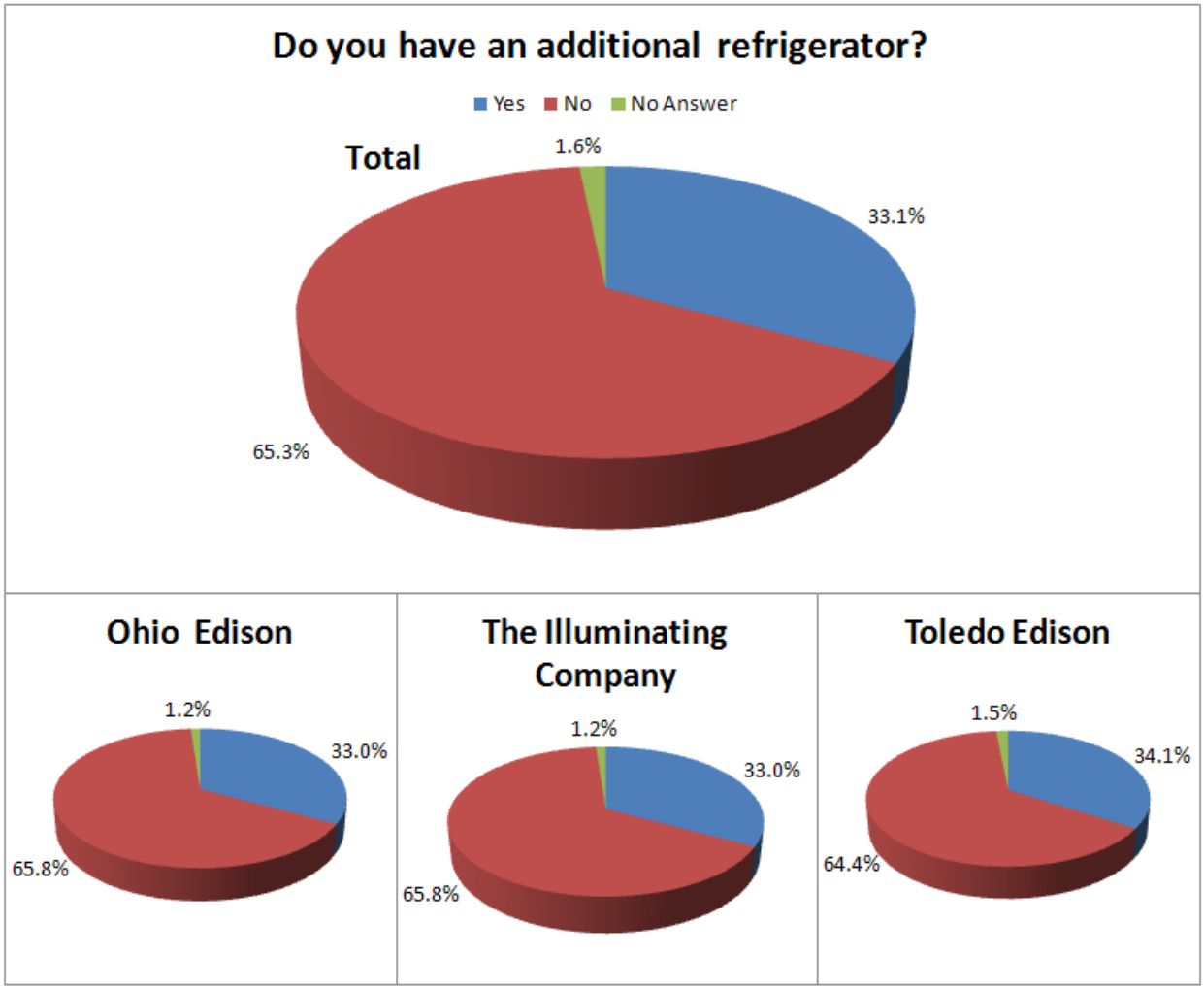


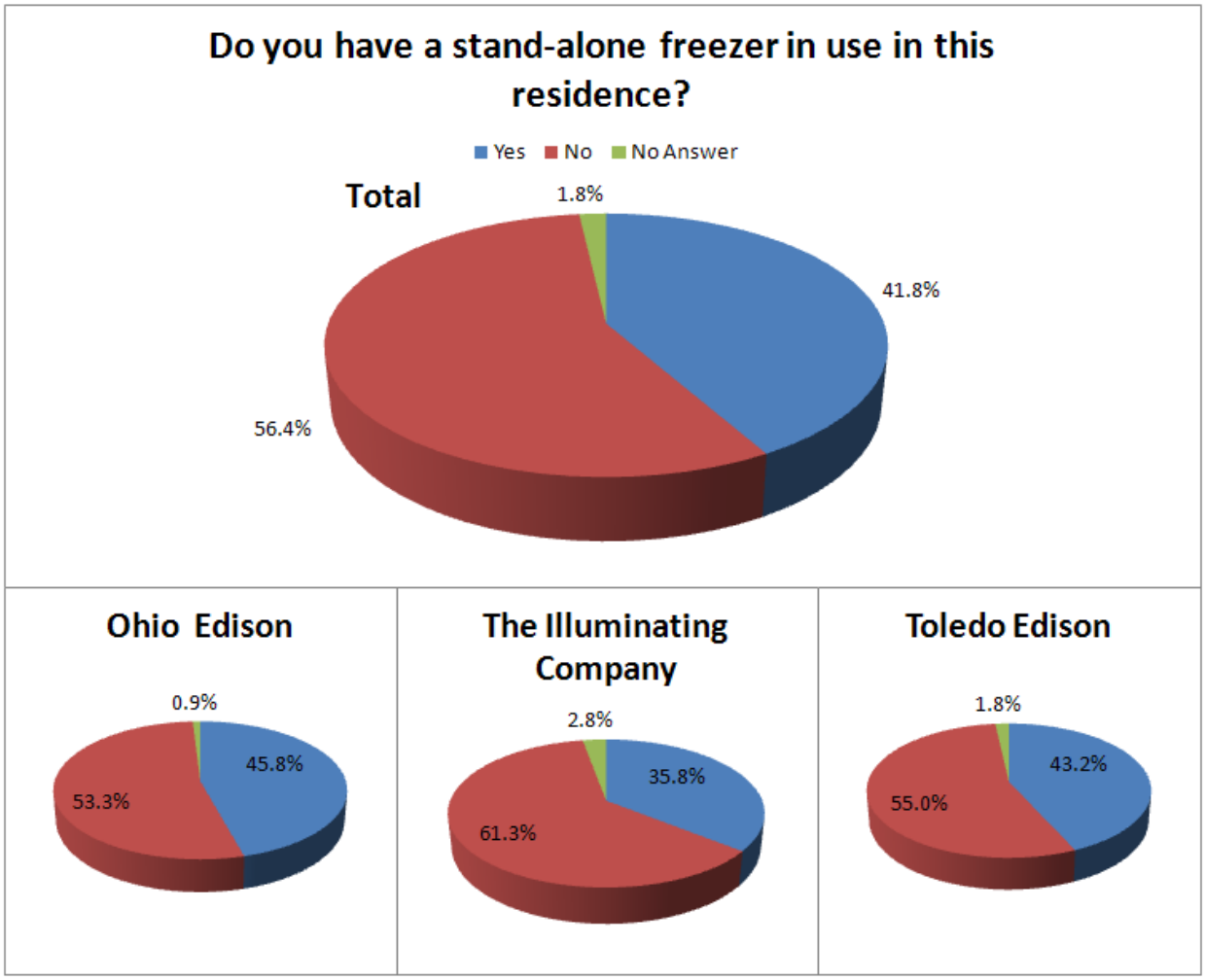
Figure 6-9 Residential – 2nd Refrigerator Ownership



Stand-Alone Freezers

Forty-two percent (41.8%) of surveyed customers indicated that they own a stand-alone freezer. A higher percentage of customers in the Ohio Edison (45.8%) and Toledo Edison (43.2%) service areas have stand-alone freezers compared to The Illuminating Company (35.8%). Of customers who have a stand-alone freezer, the vast majority operate it year-round (90.3% overall). Ensuring that these freezers are run efficiently could be an important point for FirstEnergy.

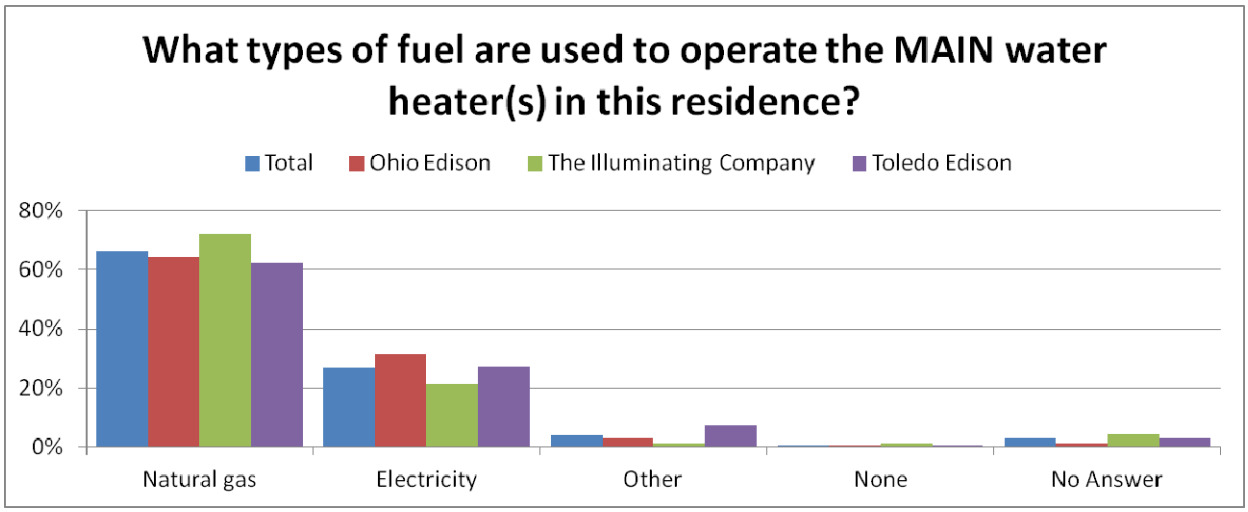
Figure 6-10 Residential – Stand-Alone Freezer Ownership



Water Heating

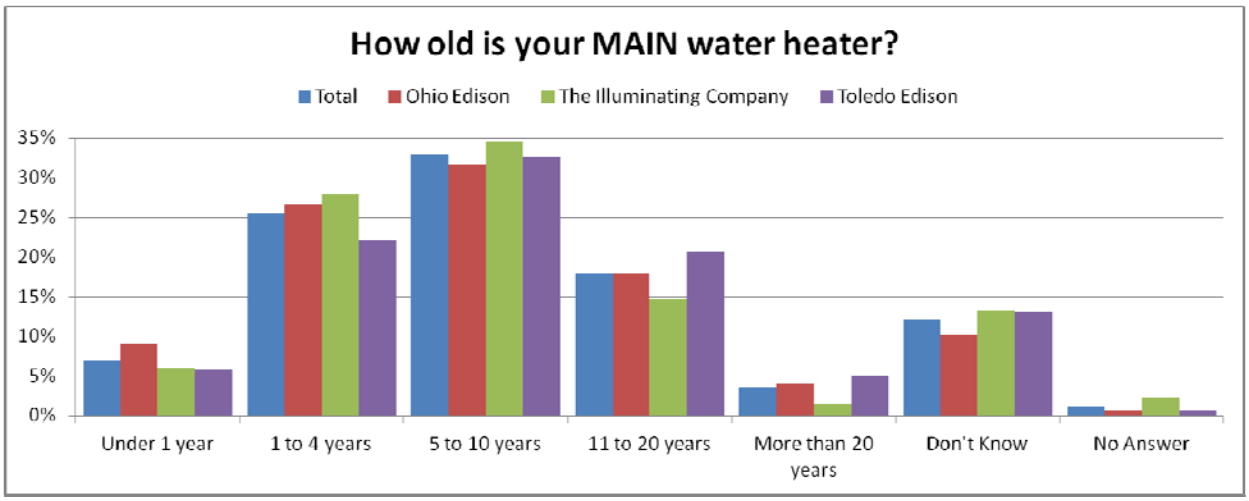
Natural gas and electricity are the two fuels cited most often for water heating. Overall, more respondents (66.0%) heat their water with natural gas than electricity (26.9%), although electricity has gained popularity since the previous report in 2009. FirstEnergy may be able to improve the efficiency of the stock of electric water heaters in its Ohio service territories by incentivizing the purchase of both high efficiency and hybrid electric water heaters.

Figure 6-11 Residential – Main Water Heating Fuel



Sixty-five percent (65.3%) of respondents said their water heater was 10 years old or less. This value has dropped from the previous report, as a share of the respondents who were in the 5 to 10 year bracket now have water heaters that are 11 to 20 years old that have not yet been replaced.

Figure 6-12 Residential – Age of Primary Water Heater



Heating and Air Conditioning

System-wide, more respondents heat their homes with natural gas (73.5%) than any other fuel. However, it is noteworthy that this share has dropped since the 2009 study, when 81% of homes were heated with natural gas. Sixty-four percent (63.8%) of respondents reported that their

primary heating system is a gas furnace (hot air). Less than half of respondent's main heating systems (47.2%) are 10 years old or less, 38.7 percent are over 10 years old, and 13.0 percent of residents do not know how old their primary heating systems are.

Figure 6-13 Residential – Fuel and Type of Heating System

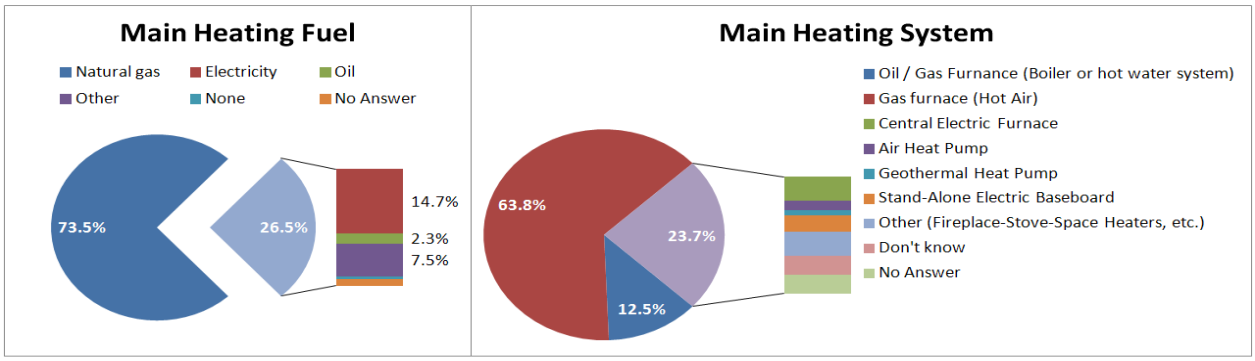
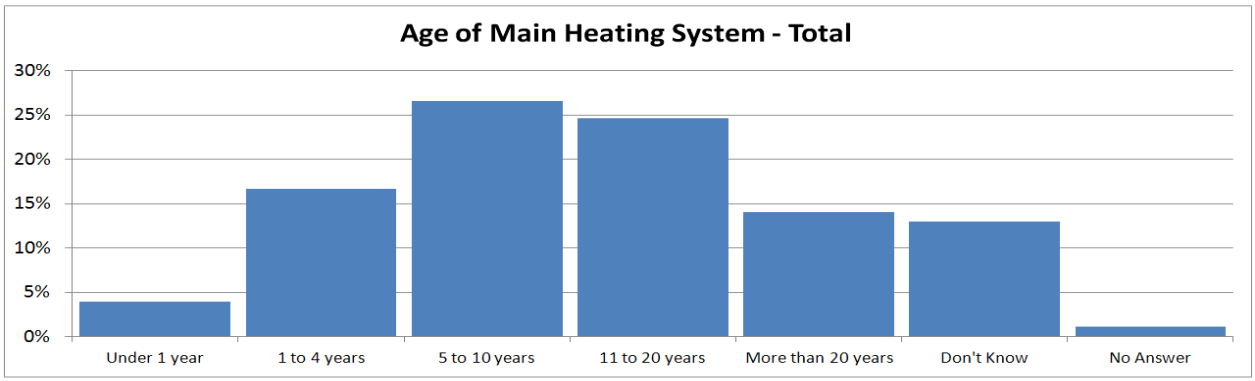


Figure 6-14 Residential – Age of Heating System



Nearly three quarters of respondents (70.2%) have central air conditioning. The vast majority of these (87.7%) are electric whole house AC units. Nearly a third of all respondents CAC units are 5 to 10 years old (29.5%) and another close third are over 10 years old (29.7%).

Figure 6-15 Residential – Percentage of CAC

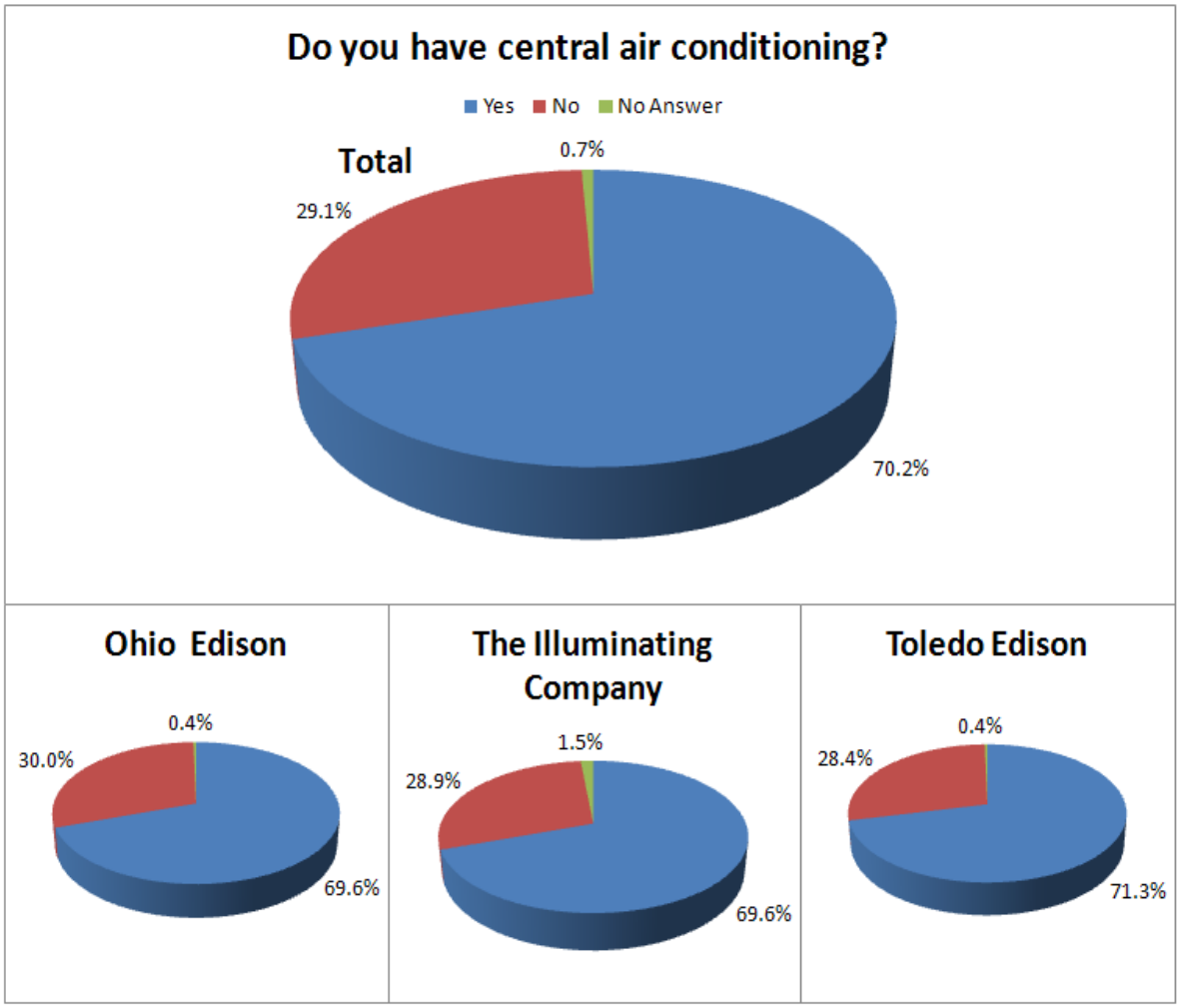
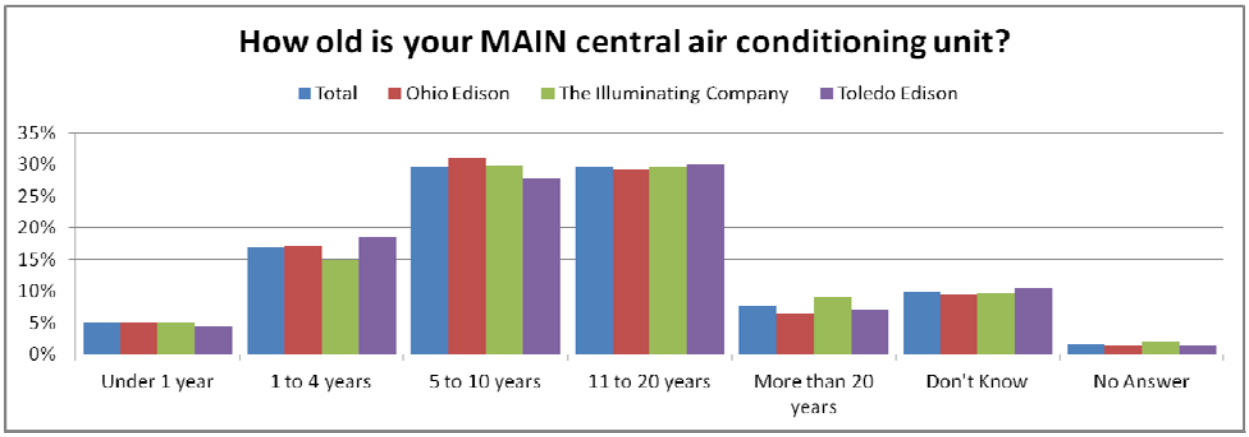
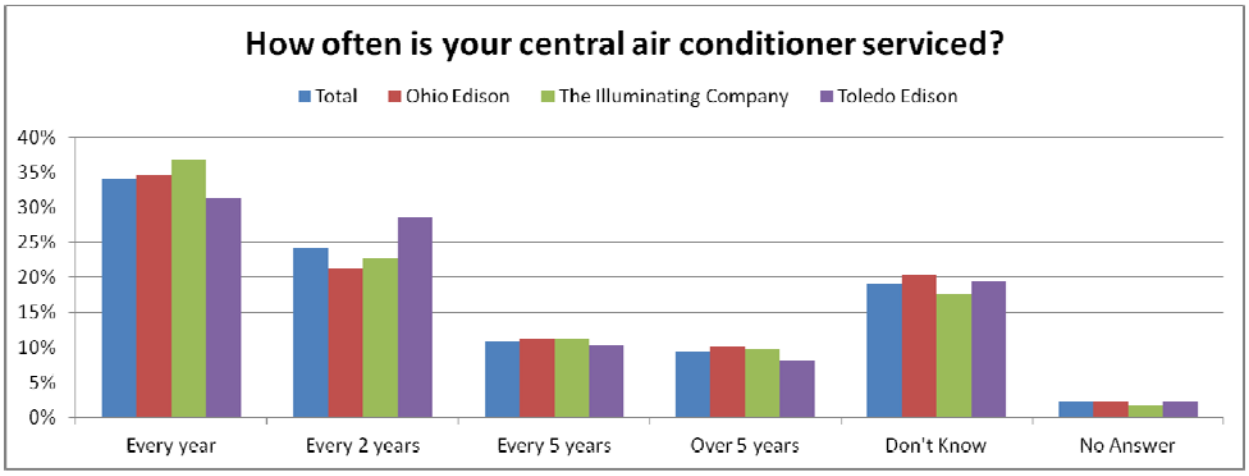


Figure 6-16 Residential – Age of Main CAC



Thirty-four (34.1%) percent of the respondents with central air conditioning have their units serviced every year, with more customers in Ohio Edison and the Illuminating Company servicing their units annually compared to customers in Toledo Edison.

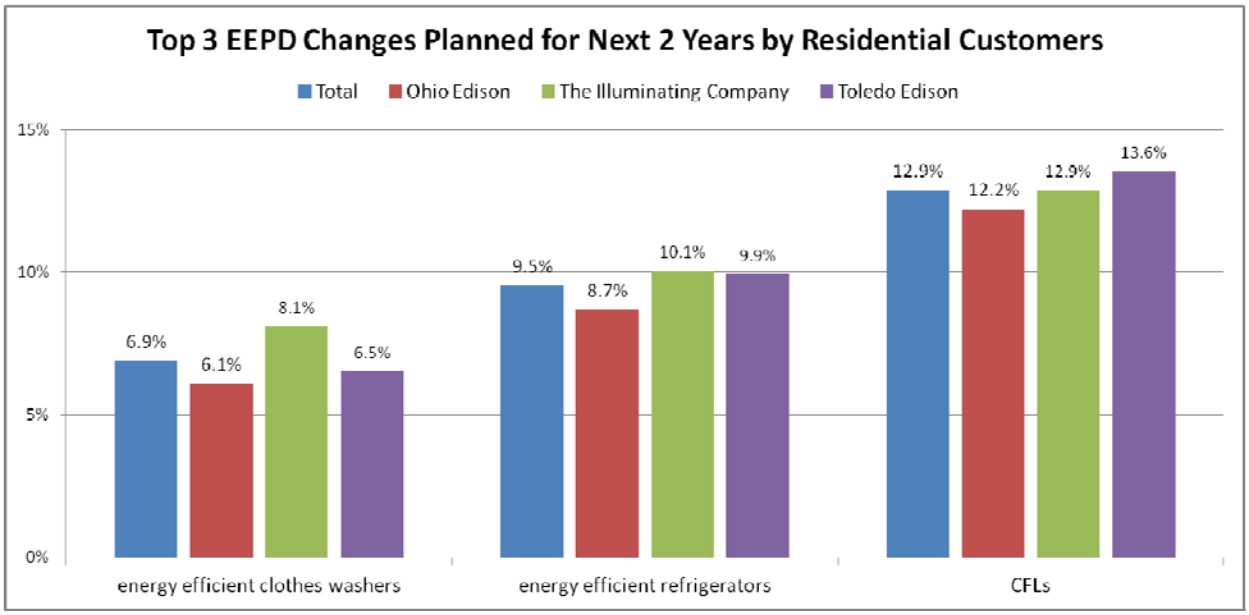
Figure 6-17 Residential – CAC Service Schedule



Intentions to Purchase New Appliances or Equipment in Near Term

In general, survey respondents did not anticipate purchasing any major new appliances or energy efficient equipment in the near future. Of the ones who expressed intent to purchase, however, CFLs, energy efficient refrigerators and energy efficient clothes washers were the most popular, as seen in Figure 6-18.

Figure 6-18 Residential – Intentions to Purchase New Appliances



Needs and Preferences Regarding Energy Use, Energy Conservation

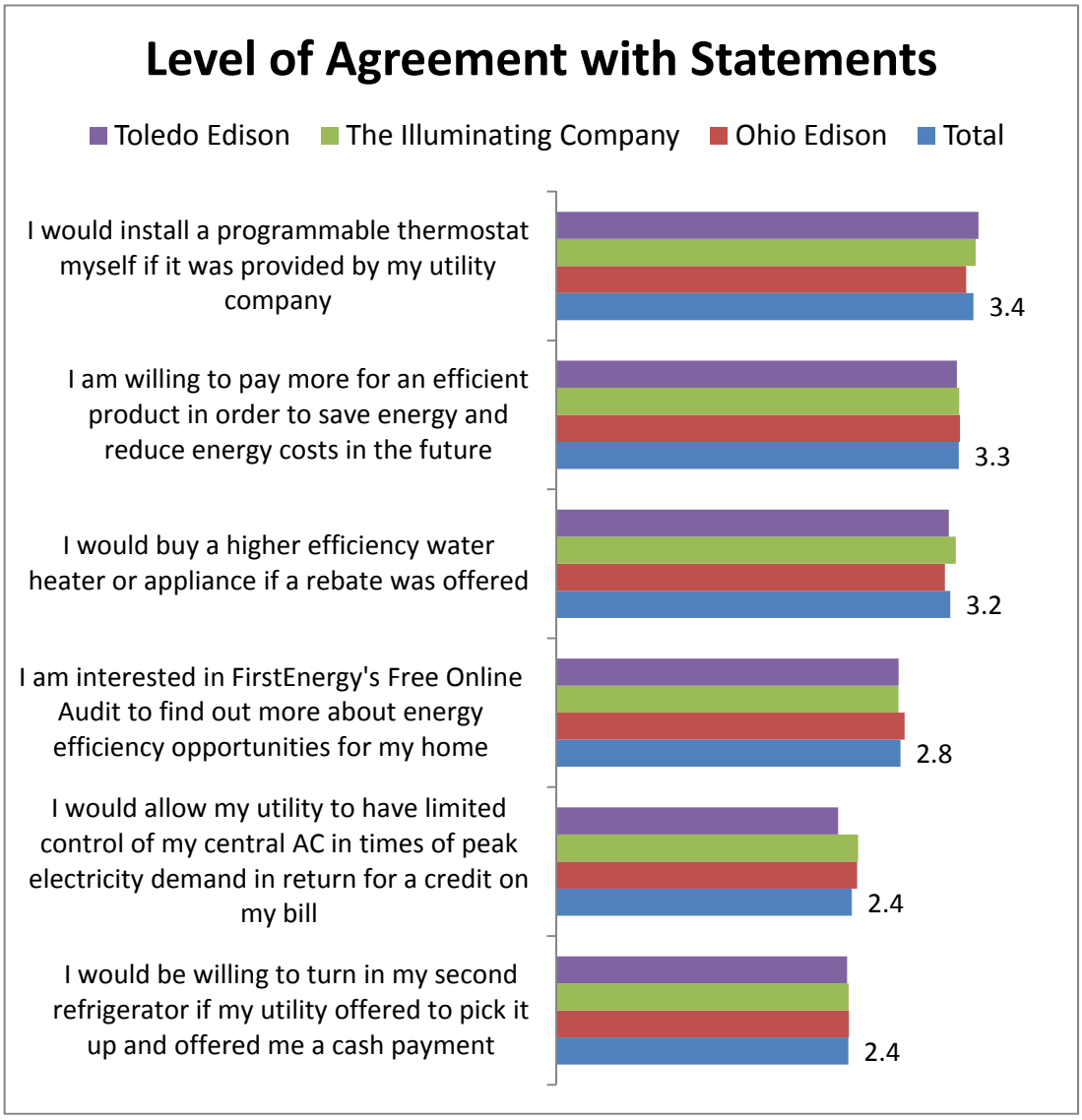
Respondents demonstrated varying attitudes and opinions about energy conservation and demand side management measures. The survey asked respondents to rate their level of agreement with a series of statements using a 5 point scale where 1 = Completely Disagree and 5 = Completely Agree.

Respondents were presented with statements related to their acceptance of and willingness to adopt several DSM program measures.

- "I am willing to pay more for an efficient product in order to save energy and reduce energy costs in the future."
- "I would install a programmable thermostat myself if was provided by my utility company."
- "I would buy a higher efficiency water heater or appliance if a rebate was offered."
- "I would allow my utility to have limited control of my central AC in times of peak electricity demand in return for a credit on my bill."
- "I would be willing to turn in my second refrigerator if my utility offered to pick it up and offered me a cash payment."
- "I am interested in FirstEnergy's Free Online Audit to find out more about energy efficiency opportunities for my home."

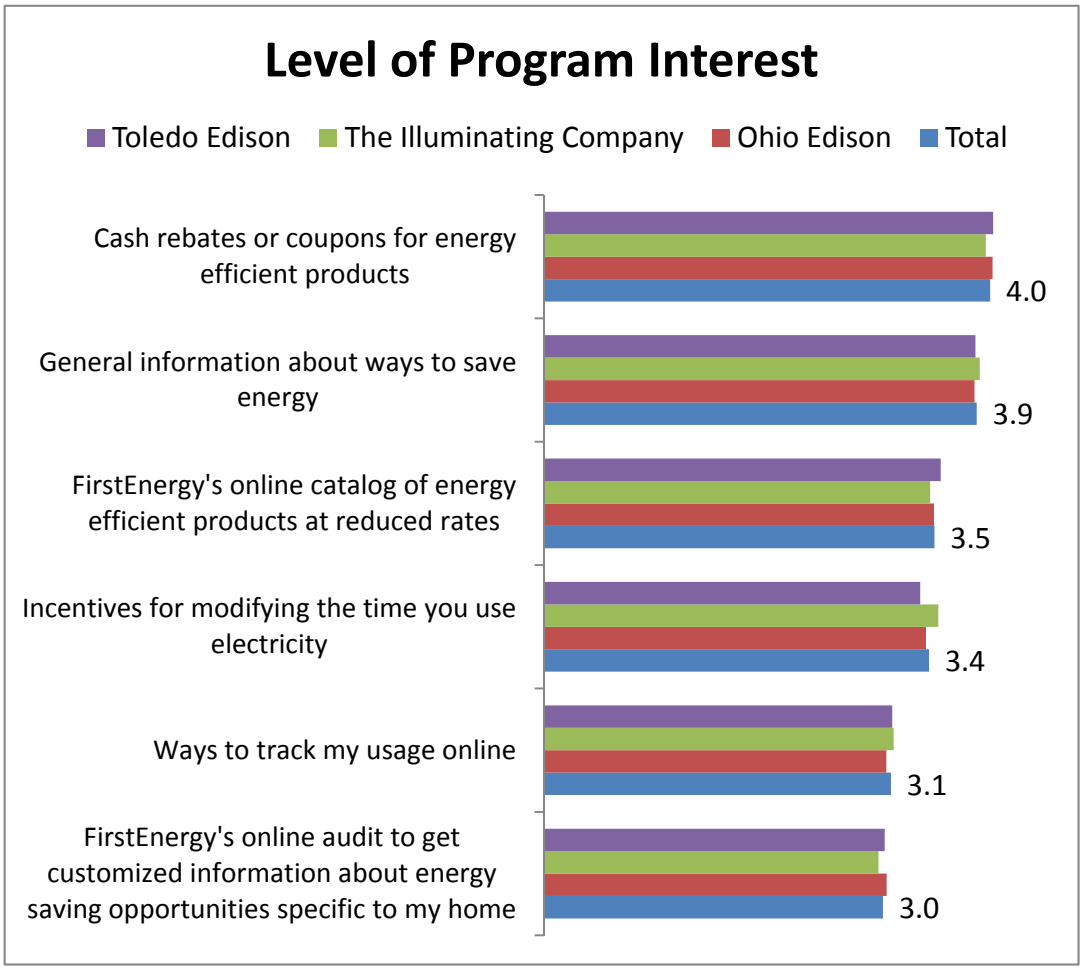
Respondents showed the least agreement about programs for refrigerator pick-up, utility control of their central air conditioners and online audits. On the other hand, program measures related to programmable thermostats and energy efficient water heater rebates, received higher levels of agreement (Figure 6-19).

Figure 6-19 Residential – Level of Agreement



The survey also assessed respondents' interest levels in several program delivery methods. Cash rebates, coupons, and general information received the highest mean interest ratings (Figure 6-20).

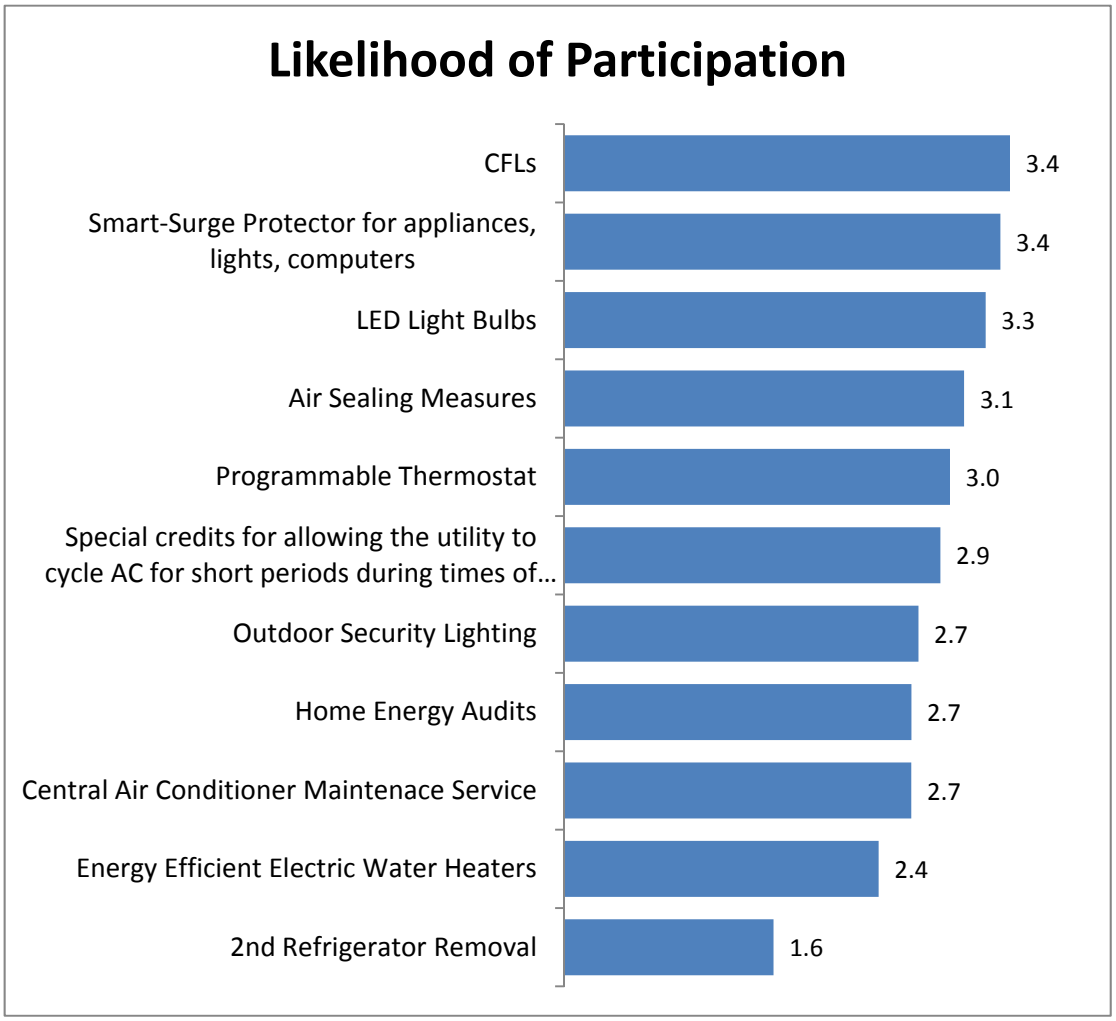
Figure 6-20 Residential – Likelihood of Customer Participation



Reactions to Load Management and Rate Concepts

The data suggests that respondents would be more likely to participate in programs that provide CFL light bulbs, programmable thermostats and air sealing measures. Refrigerator removal, energy audits and water heater programs may be less popular, based on this initial respondent feedback.

Figure 6-21 Residential – Response to Load Management & Rate Concepts



6.2 COMMERCIAL CUSTOMER SURVEY RESULTS

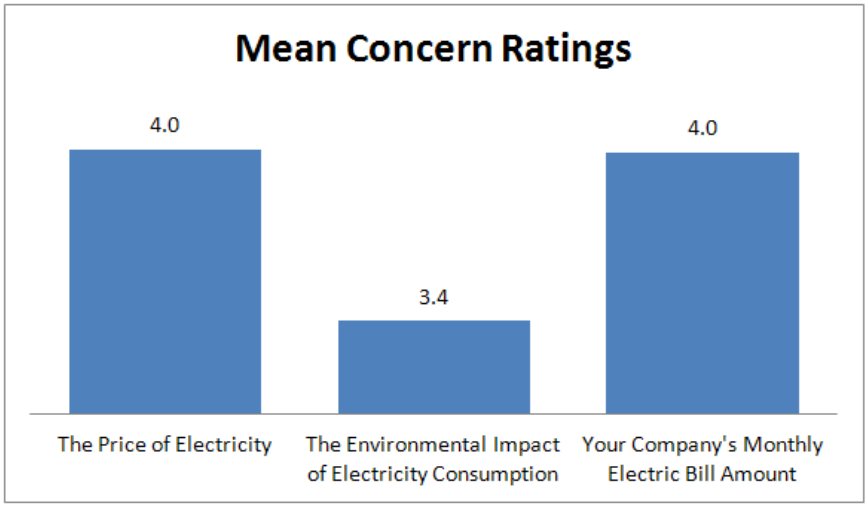
This section covers highlights from the telephone survey of 300 small to medium sized commercial and small manufacturing customers of the three Ohio companies (100 each).

6.2.1 Findings

Energy Attitudes, Opinions and Behaviors

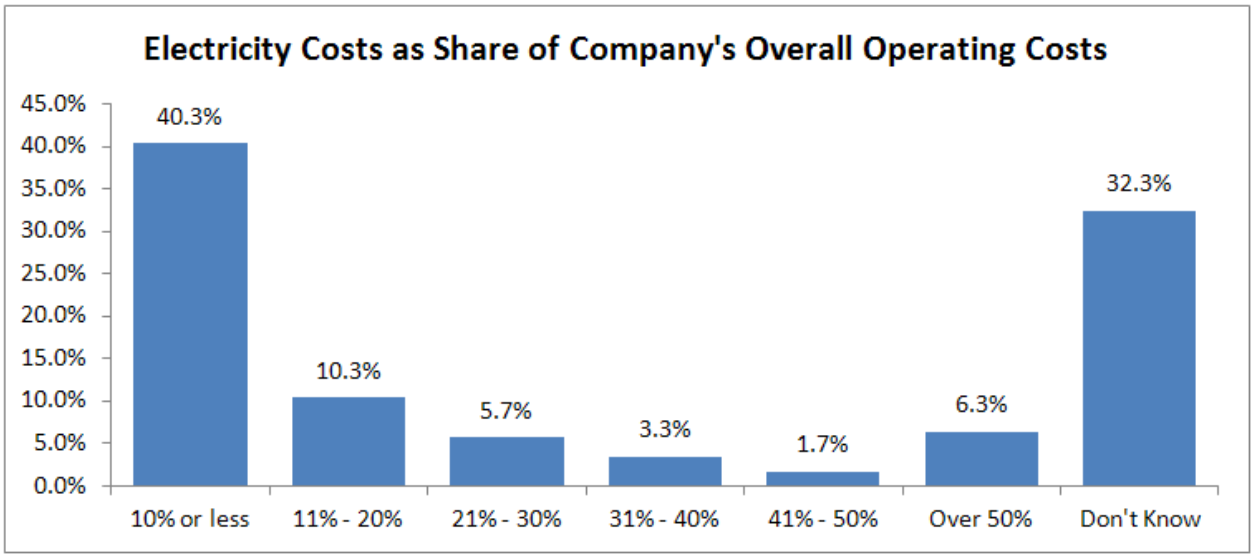
Using a 5 point scale where 1 equaled "Not At All Concerned" and 5 equaled "Very Concerned", respondents were asked to rate their concerns about the cost of electricity, the environmental impact of electricity consumption and their monthly electric bill.

Figure 6-22 Commercial – Customer Concerns



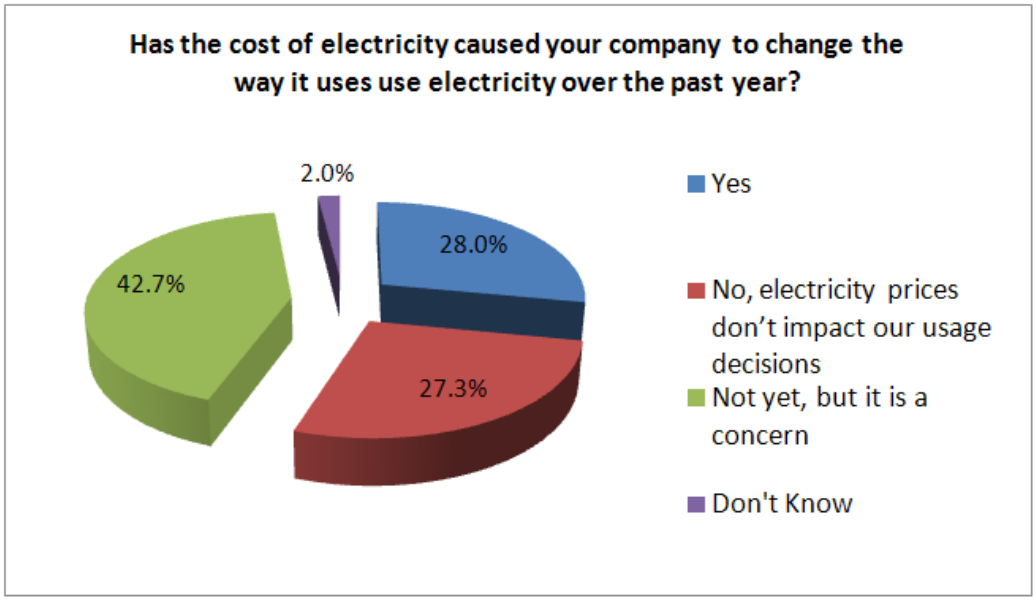
On average, commercial respondents are more concerned with the price of electricity and their monthly electric bill than they seem to be about the environment. Less than half of the respondents (40.3%) indicated that electricity accounts for 10% or less of their operating costs. Compared to the 2009 survey, many more respondents (32.3%) did not know what share electricity costs constituted of their operating costs.

Figure 6-23 Commercial – Customer Electricity Operating Costs



The highest single percentage of respondents reported that the cost of electricity has not yet caused them to use it differently, but that it is a concern for them. Almost a third (28.0%) of respondents reported that electricity prices have had an impact on their use of electricity in the past year and another 27.3% responded that electricity costs do not impact their usage decisions.

Figure 6-24 Commercial – Impact of Electricity Prices on Usage

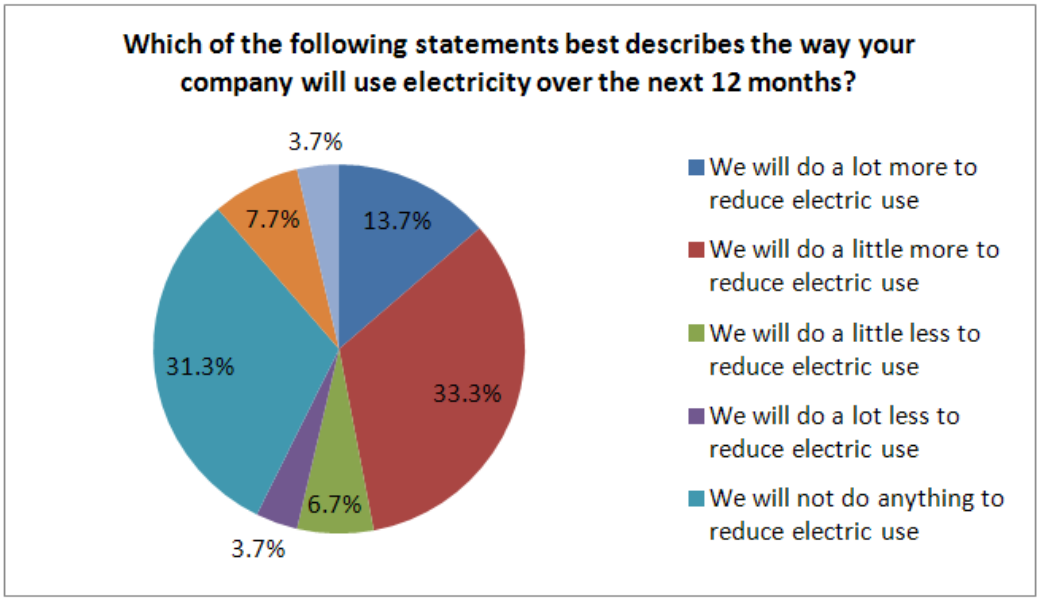


The question then becomes, what have commercial respondents done over the last 12 months? A combined 79.3% of the respondents have done something to reduce their electric use. Of this group, 61% have taken some steps to reduce their use, while 18.3% said they have done a lot. The overall percentage of customers who have tried to reduce their electricity consumption over the past year is comparable to the 2009 study, though the share is now shifted more toward taking "some steps" to reduce electric use instead of "a lot of steps".

Figure 6-25 Commercial – Electricity Usage for Past 12 Months

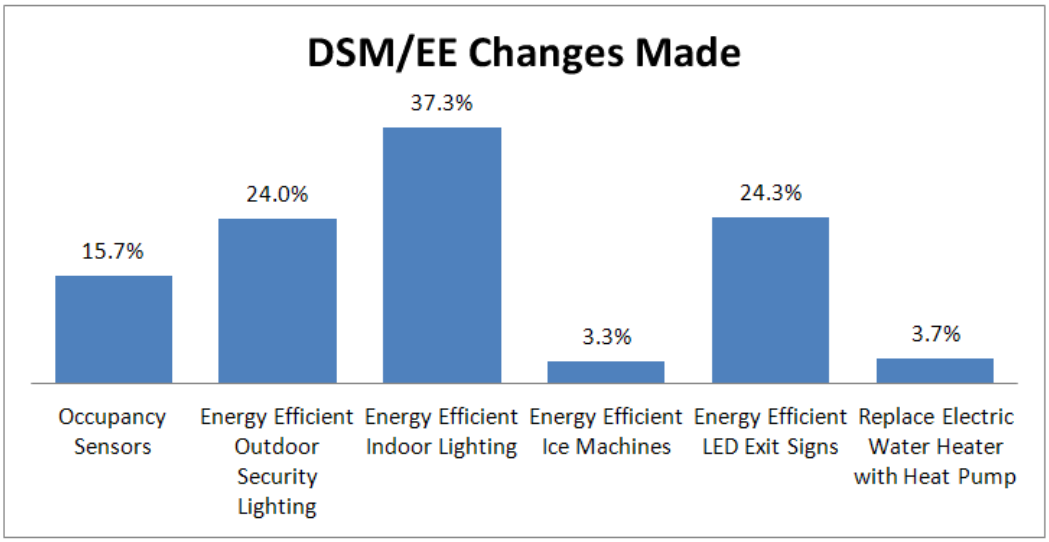
Going forward, three-quarters of the respondents (75%) reported that they would do something to save electricity. Of this group, 55% will do a little more and 20% said they would do a lot more.

Figure 6-26 Commercial – Electricity Usage for Next 12 Months



While a majority of the survey respondents have not made any changes to their business, some commercial respondents have already installed energy efficient indoor lighting (37.3%), outdoor security lighting (24%), and energy efficient LED exit signs (24.3%).

Figure 6-27 Commercial – DSM/EE Changes Made

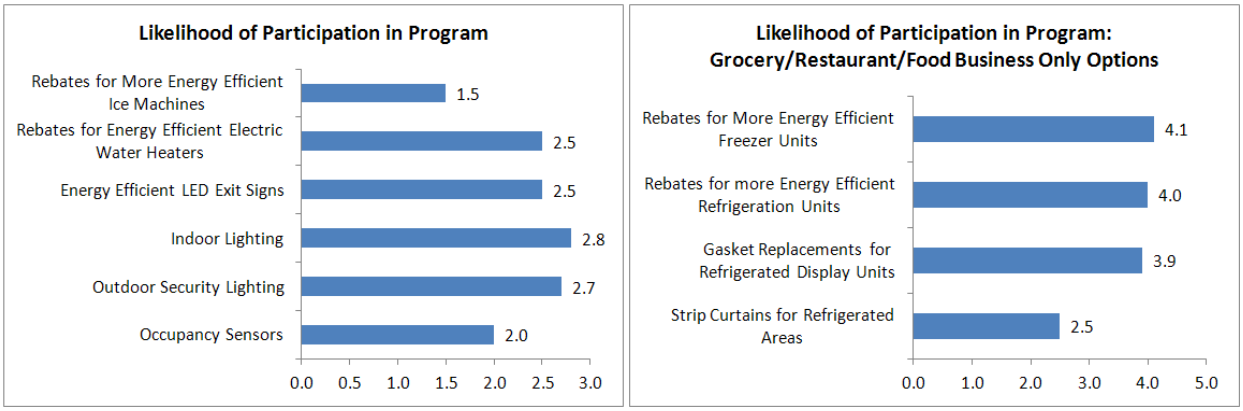


Few respondents plan to make efficiency changes in the future. Just nine percent (8.7%) reported they would install energy efficient outdoor lighting in the next two years. Similarly for energy efficient LED exit signs, nine percent (8.7%) of the commercial respondents indicated that they planned to install energy efficient LED exit signs in their buildings. Seven percent (6.7%) of respondents answered that they planned to install occupancy sensors, which is an increase from 1% in the 2009 study. Very few commercial customers had plans to replace their electric water heater with a heat pump water heater (3.7%), and this has not changed significantly since the 2009 report.

Program Participation

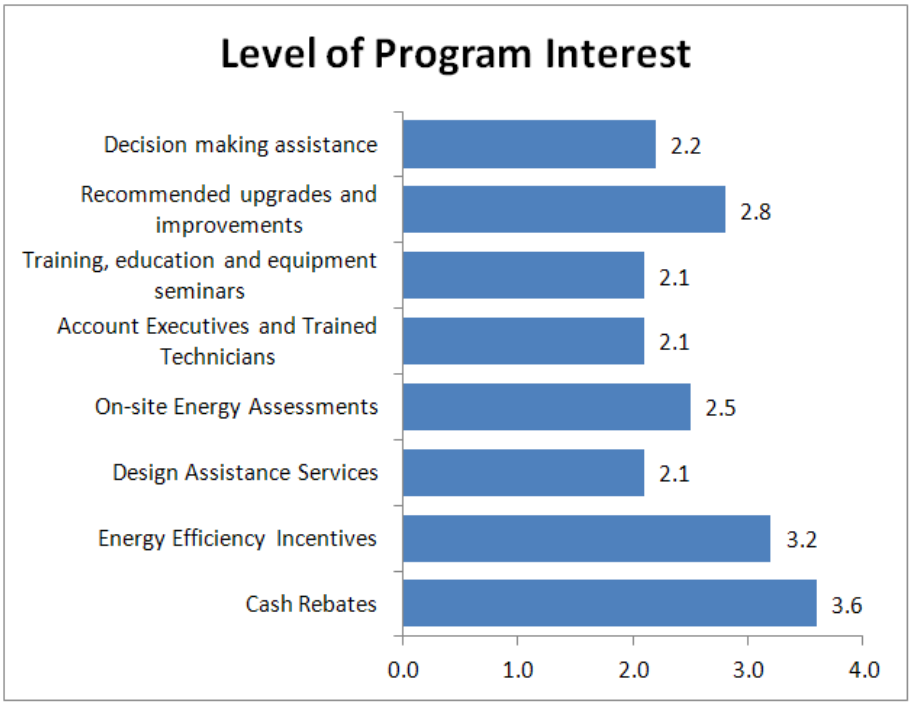
Respondents were asked to rate the likelihood that they would participate in selected energy conservation programs. They were asked to use a five point scale where 1= Not At All Likely and 5=Very Likely. Based on the mean likelihood to participate ratings we find that there is lukewarm receptivity to the programs suggested.

Figure 6-28 Commercial – Likelihood of Program Participation



The survey assessed respondents' interest levels in several program delivery methods. Cash rebates received the highest interest ratings.

Figure 6-29 Commercial – Mean Interest Levels in Select DSM/EE Program Types



7.0 ENERGY EFFICIENT TECHNOLOGIES

The Market Study started with consideration of a large span of EEPD measures for reducing electricity consumption that is applicable to residential and non-residential end-users. Table 7-1 lists the number of technologies by end-use initially considered by the study team as the original universe of options.

Table 7-1 EEPD Technologies Considered

RATE CLASS	NUMBER CONSIDERED	NUMBER ECONOMIC
Residential	40	19
Commercial	43	16
Industrial	32	10

The list was screened by the study team, a combination of FirstEnergy professionals and senior B&V DSM staff and resulted in an abbreviated list deemed most relevant to the Companies and their customers. The screening process considered commercial availability, contribution to coincident summer peak load reduction, cost per kWh and/or kW saved as the primary considerations. The resultant list of technologies considered in the model is as follows:

TECHNOLOGY/MEASURE	PROGRAM CATEGORY	MARKET SEGMENT
DLC-CAC	Direct Load Control	Res
DLC-Pool Pumps	Direct Load Control	Res
DLC-Water Heat	Direct Load Control	Res
Residential Online Audit	On-Line Audit	Res
Energy Efficiency Kit	Comprehensive Residential	Res
Schools Children Education	Comprehensive Residential	Res
Refrigerator/Freezer recycling	Appliance Turn-In Program	Res
Room Air Conditioners recycling	Appliance Turn-In Program	Res
Room Air Conditioners CEE TIER 3	Energy Efficient Products Program	Res
ASHP - SEER 15	Energy Efficient Products Program	Res
CAC - SEER 15	Energy Efficient Products Program	Res
CAC - Maintenance	Energy Efficient Products Program	Res
EE Ground Source Heat Pump	Energy Efficient Products Program	Res
Solar Water Heating	Energy Efficient Products Program	Res
HP Water Heater	Energy Efficient Products Program	Res
EE Water Heater	Energy Efficient Products Program	Res
Programmable Thermostat_Heat	Energy Efficient Products Program	Res
Programmable Thermostat_Heat	Energy Efficient Products Program	Res
Programmable Thermostat_CAC	Energy Efficient Products Program	Res

Clothes Washer Energy Star, Electric Water heater, Electric Dryer	Energy Efficient Products Program	Res
Clothes Washer CEE TIER 3, Electric Water heater, Electric Dryer	Energy Efficient Products Program	Res
Dehumidifiers 25-35 pints/day	Energy Efficient Products Program	Res
Pump and Motor Single Speed	Energy Efficient Products Program	Res
Pump and Motor 2 Speed	Energy Efficient Products Program	Res
Pump and Motor Variable Speed	Energy Efficient Products Program	Res
Refrigerators-Freezers CEE TIER 2 - Side	Energy Efficient Products Program	Res
Refrigerators-Freezers CEE TIER 2 - Top Freezer	Energy Efficient Products Program	Res
Refrigerators-Freezers CEE TIER 2 - Bottom Freezer	Energy Efficient Products Program	Res
Smart Strip plug outlet 5 plug	Energy Efficient Products Program	Res
Torchiere Floor Lamps	Energy Efficient Products Program	Res
Residential New Construction - 15%	Residential New Construction	Res
Residential New Construction - 30%	Residential New Construction	Res
Ceiling Fans	Comprehensive Residential-Home Performance	Res
Ceiling Fans 2014 onwards	Comprehensive Residential-Home Performance	Res
Duct sealing 20 leakage base	Comprehensive Residential-Home Performance	Res
Low Flow Showerheads	Comprehensive Residential-Home Performance	Res
Kitchen Aerator	Comprehensive Residential-Home Performance	Res
Bathroom Aerator	Comprehensive Residential-Home Performance	Res
Pipe Wrap	Comprehensive Residential-Home Performance	Res
Whole Building	Comprehensive Residential-Home Performance	Res

Commercial and industrial technologies used in the model are listed in Table 7-2.

Table 7-2 DSM Technologies – Commercial and Industrial

TECHNOLOGY/MEASURE	PROGRAM CATEGORY	MARKET SEGMENT
Commercial, Industrial Audit - Sm&Md	C&I Audits & C/I Equipment (expanded)	COM
Commercial, Industrial Audit - Large	C&I Audits & C/I Equipment (expanded)	IND
Commercial New Construction	Commercial New Construction	COM

Exterior HID replacement above 175W to 100 HPS retrofit	C/I Equipment (Comm Lighting)	COM
HPT8 4ft 4 lamp, T12 to HPT8 Food Service	C/I Equipment (Comm Lighting)	COM
HPT8 4ft 4 lamp, T12 to HPT8 Health Care	C/I Equipment (Comm Lighting)	COM
HPT8 4ft 4 lamp, T12 to HPT8 Hotel	C/I Equipment (Comm Lighting)	COM
HPT8 4ft 4 lamp, T12 to HPT8 Office	C/I Equipment (Comm Lighting)	COM
HPT8 4ft 4 lamp, T12 to HPT8 Service	C/I Equipment (Comm Lighting)	COM
HPT8 4ft 4 lamp, T12 to HPT8 Edu	C/I Equipment (Comm Lighting)	COM
HPT8 4ft 4 lamp, T12 to HPT8 Other	C/I Equipment (Comm Lighting)	COM
LED Exit Signs Electronic Fixtures (Retrofit Only)	C/I Equipment (Comm Lighting)	COM
Occupancy Sensors under 500 W	C/I Equipment (Comm Lighting)	COM
Daylight Dimming Sensors	C/I Equipment (Comm Lighting)	COM
Switching Controls Multi Level Lighting	C/I Equipment (Comm Lighting)	COM
Central Lighting Control - Timelocks	C/I Equipment (Comm Lighting)	COM
Exterior HID replacement above 175W to 250W HID retrofit	C/I Equipment (Comm Lighting)	IND
High Bay T-* 48" Four Lamps Industrial	C/I Equipment (Comm Lighting)	IND
High Bay T-* 48" Four Lamps Food Sale	C/I Equipment (Comm Lighting)	COM
High Bay T-* 48" Four Lamps Public Assembly	C/I Equipment (Comm Lighting)	COM
High Bay T-* 48" Four Lamps Retail	C/I Equipment (Comm Lighting)	COM
High Bay T-* 48" Four Lamps Warehouse	C/I Equipment (Comm Lighting)	COM
LED Exit Signs Electronic Fixtures (Retrofit Only)	C/I Equipment (Comm Lighting)	IND
Occupancy Sensors under 500 W	C/I Equipment (Comm Lighting)	IND
Daylight Dimming Sensors	C/I Equipment (Comm Lighting)	IND
Switching Controls Multi Level Lighting	C/I Equipment (Comm Lighting)	IND
Central Lighting Control - Timelocks	C/I Equipment (Comm Lighting)	IND
LED Auto Traffic Signals 8"	Government Lighting	GOV
LED Pedestrian Signals	Government Lighting	GOV
Street Lighting - 175 Mercury to 100 HPS	Government Lighting	GOV
AC 65,000 - 135,000 (10 Ton)	C&I Audits & C/I Equipment (expanded)	COM
AC 240,000 - 760,000 (25 Ton)	C&I Audits & C/I Equipment (expanded)	IND

Clothes Washer CEE Tier1, Electric Water heater, Electric Dryer	C&I Audits & C/I Equipment (expanded)	COM
Efficient Refrigeration Condenser	C&I Audits & C/I Equipment (expanded)	COM
ENERGY STAR Commercial Solid Door Freezers 15 to 30 ft3	C&I Audits & C/I Equipment (expanded)	COM
ENERGY STAR Commercial Solid Door Freezers 30 to 50 ft3	C&I Audits & C/I Equipment (expanded)	COM
ENERGY STAR Commercial Glass Door Freezers 15 to 30 ft3	C&I Audits & C/I Equipment (expanded)	COM
ENERGY STAR Commercial Glass Door Freezers 30 to 50 ft3	C&I Audits & C/I Equipment (expanded)	COM
ENERGY STAR Commercial Solid Door Refrigerators 15 to 30 ft3	C&I Audits & C/I Equipment (expanded)	COM
ENERGY STAR Commercial Solid Door Refrigerators 30 to 50 ft3	C&I Audits & C/I Equipment (expanded)	COM
ENERGY STAR Commercial Glass Door Refrigerators 15 to 30 ft3	C&I Audits & C/I Equipment (expanded)	COM
ENERGY STAR Commercial Glass Door Refrigerators 30 to 50 ft3	C&I Audits & C/I Equipment (expanded)	COM
ENERGY STAR Ice Machines less than 500 lbs RC	C&I Audits & C/I Equipment (expanded)	COM
ENERGY STAR Ice Machines 500 to 1000 lbs RC	C&I Audits & C/I Equipment (expanded)	COM
ENERGY STAR Ice Machines more than 1000 lbs RC	C&I Audits & C/I Equipment (expanded)	COM
ENERGY STAR Steam Cookers 3 Pan	C&I Audits & C/I Equipment (expanded)	COM
Hot Food Holding Cabinets	C&I Audits & C/I Equipment (expanded)	COM
EE Water Heater	C&I Audits & C/I Equipment (expanded)	COM
HP Water Heater (Base Usage 22831)	C&I Audits & C/I Equipment (expanded)	COM
Plug Load Occupancy Sensors Document Stations	C&I Audits & C/I Equipment (expanded)	COM
Commercial Smart Strip plug outlet	C&I Audits & C/I Equipment (expanded)	COM
Pre Rinse Sprayers	C&I Audits & C/I Equipment (expanded)	COM
Strip curtains for walk-ins - freezer	C&I Audits & C/I Equipment (expanded)	COM
Vending Machine Occupancy Sensors	C&I Audits & C/I Equipment (expanded)	COM
Window Film	C&I Audits & C/I Equipment (expanded)	COM
Plug Load Occupancy Sensors Document Stations	C&I Audits & C/I Equipment (expanded)	IND
Water-Cooled cent Chiller 150 - 300 ton 0.57 kW/ton with 0.46 kW/ton IPLV	C&I Audits & C/I Equipment (expanded)	IND
Water-Cooled Centrifugal Chiller < 150 ton 0.56 kW/ton with 0.53 kW/ton	C&I Audits & C/I Equipment (expanded)	IND

IPLV		
Window Film	C&I Audits & C/I Equipment (expanded)	IND
Commercial Smart Strip plug outlet	C&I Audits & C/I Equipment (expanded)	IND
Motors 1 HP 1200	C/I Equipment (Industrial Motors)	IND
Motors 5 HP 1200	C/I Equipment (Industrial Motors)	IND
Motors 10 HP 1200	C/I Equipment (Industrial Motors)	IND
Motors 20 HP 1200	C/I Equipment (Industrial Motors)	IND
Motors 1 HP 3600	C/I Equipment (Industrial Motors)	IND
Motors 5 HP 3600	C/I Equipment (Industrial Motors)	IND
Motors 10 HP 3600	C/I Equipment (Industrial Motors)	IND
Motors 20 HP 3600	C/I Equipment (Industrial Motors)	IND
Water Pumps with VFD's 1	C/I Equipment (Industrial Motors)	IND
HVAC Fans with VFD's 1	C/I Equipment (Industrial Motors)	IND
Air Compressors with VFD's 1	C/I Equipment (Industrial Motors)	IND
Water Pumps with VFD's 5	C/I Equipment (Industrial Motors)	IND
HVAC Fans with VFD's 5	C/I Equipment (Industrial Motors)	IND
Air Compressors with VFD's 5	C/I Equipment (Industrial Motors)	IND
Water Pumps with VFD's 10	C/I Equipment (Industrial Motors)	IND
HVAC Fans with VFD's 10	C/I Equipment (Industrial Motors)	IND
Air Compressors with VFD's 10	C/I Equipment (Industrial Motors)	IND
Commercial Skylight 14"	C/I Equipment (Industrial Motors)	IND

8.0 TECHNICAL POTENTIAL FOR ENERGY SAVINGS AND DEMAND REDUCTIONS

This section addresses the outputs to B&V's program modeling activities which provide the following:

1. Estimates the demand reduction and energy savings for 15 years in FirstEnergy's Ohio service territory.
2. Produces the test results for cost-effectiveness for a wide variety of DSM/EE measures.
3. Provides the generally used methodologies for determining cost-effectiveness of individual measures.
4. Estimates the costs of implementing all cost-effective demand reduction / energy savings measures.
5. Identifies the technical data used to support estimated energy and demand savings attributed to each customer class.

8.1 METHODOLOGY

This report provides EEPD evaluation for the three Ohio FirstEnergy service territories OE, TE, and CEI. The following section outlines the common studies performed for all three of these service territories.

B&V calculated the maximum technical potential based on a top-down approach, which will be discussed further in this section. B&V also created three model-based bottom-up scenarios: Economically Achievable Scenario (Economic Potential) and two Actual Achievable Scenarios, (Market Potential Base Case, Market Potential High Case). The three scenarios will be discussed further in this section.

The EEPD technologies and measures evaluated for the Companies were based on the various sources listed in Section 3.2[12]. Further, the EEPD technologies and measures were evaluated using the B&V EEPD Model (EE Model)[13]. The EE Model requires that inputs be formatted into unique measures and not in combined programs. Once the results of each measure are calculated, B&V combines these measures evaluated into groups/end-use types, which are then presented as programs. This section also contains the EE model outputs and resulting targeted savings and budgets per measure.

8.2 MEASURE DATA

All energy and demand savings are based on the various databases including: CA DEER, ACEEE, OH TRM, and PA TRM. All equipment costs and equipment lives are based on the TRM, publicly available data, and/or information provided by FirstEnergy. The residential and commercial weather sensitive load savings are based on Ohio sources such as the OHIO TRM or ACEEE OH Report or are calculated using eQuest simulations in accordance to TRM Appendix A.

Customer costs are based on the full incremental costs of a measure. Most measures are assumed to be replacements and not retrofitted; therefore, only the equipment costs are included. The installation costs are assumed to be the same for either the base equipment or the more efficient equipment, so the customer is not compensated for the install costs. In cases where the measure is an energy savings addition only (such as pipe wrap), both the equipment costs and the labor to install were included in the full incremental costs. In commercial lighting measures, installation costs were excluded from the incremental costs, due to the fact that PUCO had ruled to exclude labor costs from the commercial lighting measures.

The evaluation started with a high-level screening process of B&V's measure database to find the most applicable measures to screen in the EE Model. This preliminary screening was based on the previous Market Potential study plus additional measures that were identified as having potential in OH.

B&V reviewed different energy efficiency and demand-side management programs for residential, commercial and industrial classes with various end uses for a total of 115 measures. See Table 8-1

[12] The measure savings sources by measures will be included in Appendix C.

[13] The model is licensed to FirstEnergy and remains the property of Black & Veatch. FirstEnergy has full rights to obtain values from and utilize this model.

for a summary by class. These 115 measures are considered for each of the three service territories.

Table 8-1 Programs Evaluated (By Class & Type)[14]

RATE CLASS	NUMBER CONSIDERED	NUMBER ECONOMIC
Residential	40	19
Commercial	43	16
Industrial	32	10

8.3 MAX TECHNICAL POTENTIAL

There are a number of approaches to determine maximum technical potential. Black & Veatch uses a top-down approach that builds on end-use intensities (EUIs) and unit energy consumptions (UECs) presented in Sections 8.8.1, 8.8.2, and 8.8.3.

This approach determines three levels of energy consumption.

1. Assuming that every unit in the service area was a baseline unit, the resulting consumption would lead to Baseline EUIs/UECs.
2. Assuming Current Market Average EUIs/UECs. This average reflects the stock of units of all vintages and efficiency levels in the market today.
3. Assuming every unit in the service area was converted to the most energy-efficient technology available, the resulting consumption would be Most Efficient EUIs/UECs

$$Max.\ Savings\ (\%) = \frac{\text{Baseline EUI (or UEC)} - \text{Efficient EUI(or UEC)}}{\text{Baseline EUI (or UEC)}}$$

[14] All measures considered in the EEPD Plan, but not all passed the TRC test.

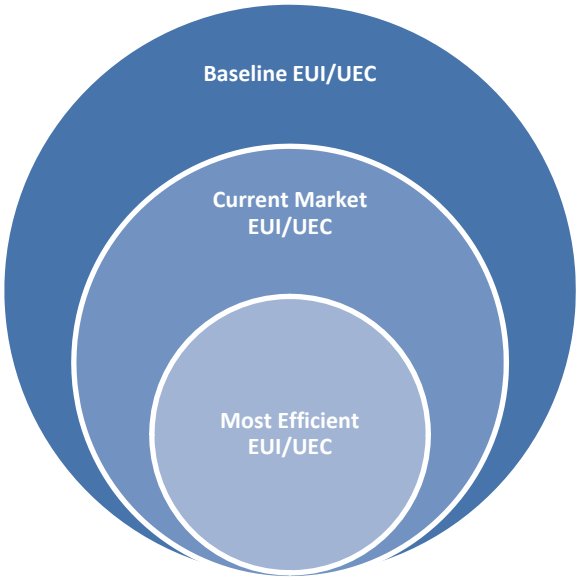


Figure 8-1 Energy Consumption Levels

The analysis of technical potential is based on the premise that at any point, market energy consumption lies in between the baseline consumption and most efficient consumption. Hence, the current state of market (λ) can be assessed by solving one of the following equations for λ.

$$\text{Market Average EUI} = \lambda * \text{Efficient EUI} + (1-\lambda) * \text{Baseline EUI}$$

Or

$$\text{Market Average UEC} = \lambda * \text{Efficient UEC} + (1-\lambda) * \text{Baseline UEC}$$

Where λ: Proportion of fixtures/units in market that can be considered to be efficient.

Note that λ is a notional proportion calculated considering only two levels of efficiencies in the market, i.e. baseline and most efficient.

Once the current state of market is known, technical potential can be calculated using a simple formula.

$$\text{Technical Potential (\%)} = (1-\lambda) * \text{Max. Savings (\%)}$$

8.3.1 Residential Technical Potential

Table 8-2 represents our estimates of the current market state and technical potential for major end uses. Residential technical potential calculations were performed using unit energy consumptions (UECs) by end use. A blanket potential of 33% of current kWh usage is used for miscellaneous loads. This is consistent with B&V's and ACEEE 2009 market potential studies.

Table 8-2 Residential Technical Potential (%) by End Use

END USE	MAXIMUM SAVINGS (%)	CURRENT MARKET STATE λ (%)	1- λ (%)	TECHNICAL POTENTIAL (%)
Lighting	70.0%	16.2%	83.8%	58.7%
Elec. Space Heating	77.9%	85.6%	14.4%	11.2%
Air Conditioning	38.1%	14.6%	85.4%	32.5%
Refrigerators	36.7%	6.0%	94.0%	34.5%
Electric Water Heating	37.5%	35.5%	64.5%	24.2%
Dish washer	16.9%	0.6%	99.4%	16.8%
Freezers	10.1%	52.3%	47.7%	4.8%
Clothes Washer	63.2%	42.0%	58.0%	36.6%
Clothes Dryers	63.2%	81.9%	18.1%	11.4%
Misc Appliances / Plug Loads	N/A	N/A	N/A	33.0%

B&V identifies residential lighting, air conditioning and refrigeration as the biggest saving opportunities on the residential side with a technical potential 7.23%, 5.25% and 4.88% of total Ohio residential sales, respectively.

Table 8-3 Residential Technical Potential by Company

END USE	CE	OE	TE	OH TOTAL	% OF RES SALES
Lighting	411,863	691,865	184,677	1,288,406	7.23%
Elec Space Heating	74,730	114,016	33,212	221,958	1.25%
Air Conditioning	286,052	496,178	153,652	935,881	5.25%
Refrigerators	310,009	431,067	128,575	869,652	4.88%
Elec Water Heating	99,370	212,757	52,688	364,815	2.05%
Dishwasher	30,363	38,701	11,334	80,397	0.45%
Freezers	10,756	17,977	4,776	33,509	0.19%
Clothes Washer	144,079	204,624	58,210	406,913	2.28%
Clothes Dryers	31,916	44,378	13,444	89,738	0.50%
Misc Appliances/Plug Loads	526,184	971,114	235,999	1,733,297	9.73%
Total Technical Potential	**1,925,322**	**3,222,677**	**876,566**	**6,024,565**	**33.81%**
% of Total Sales	**33.72%**	**33.88%**	**33.76%**	**33.81%**	

8.3.2 Small Commercial Customer Technical Potential

Table 8-4 represents our technical potential estimate for small commercial customers by end use. The commercial sector calculations are performed using Energy Use Intensities (EUIs). Again, a blanket potential of 33% of current kWh usage is used for miscellaneous loads.

Table 8-4 Commercial Technical Potential by End-Use

END USE	MAXIMUM SAVINGS (%)	CURRENT MARKET STATE (%)	TECHNICAL POTENTIAL (%)	TECHNICAL POTENTIAL (MWH)	% OF OH COMMERCIAL SALES
Space Heating	46.6%	17.4%	38.5%	264,996	1.7%
Cooling	53.9%	15.4%	45.6%	905,524	5.9%
Ventilation	59.5%	17.7%	49.0%	852,911	5.5%
Water Heat	29.5%	15.9%	24.8%	85,519	0.6%
Lighting	39.7%	26.3%	29.2%	1,758,911	11.4%
Cooking	66.7%	13.4%	57.8%	52,125	0.3%
Refrigeration	25.0%	40.7%	14.8%	263,473	1.7%
Computers	36.8%	11.3%	32.6%	229,536	1.5%
Misc / Other	33.0%	6.8%	30.8%	634,508	4.1%
Total	--	--	**32.8%**	**5,047,503**	**32.8%**

The study indicates large opportunities in lighting and HVAC (space cooling and ventilation) programs. Together, these two end-uses have a technical potential amounting to 23% of present sales.

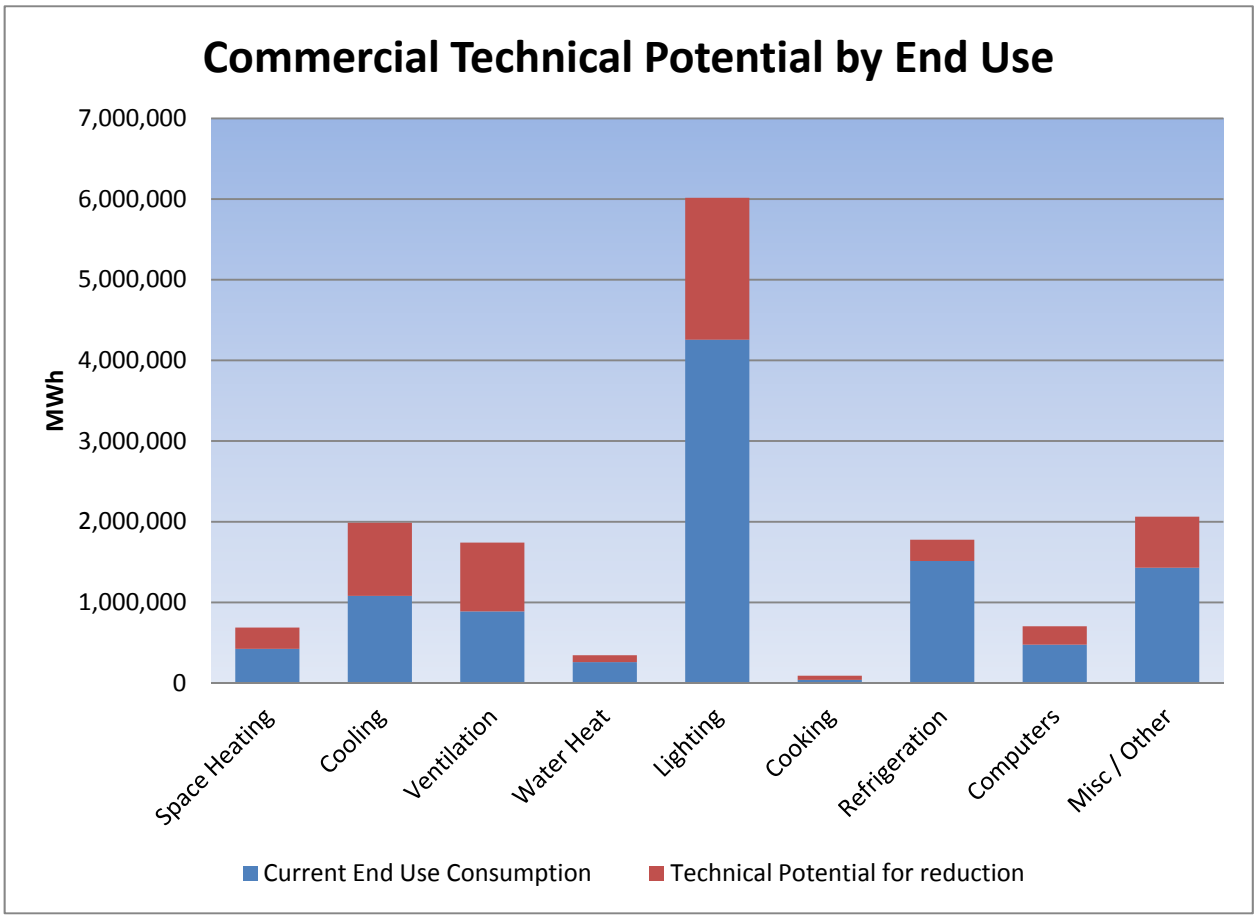


Table 8-5 represents technical potential by building type. The highest potential opportunities for reduction in energy consumption were found in public assembly and educational buildings, at 40% and 37% respectively. However, a comparatively small number of such facilities translate to savings of only 1.27% and 3.4% of total sales. Major savings can be achieved in office buildings and mercantile buildings at 7.76% and 5.45%, respectively, of total small commercial sales.

Table 8-5 Commercial Technical Potential by Building Type

COMMERCIAL BUILDING TYPES (CBECS)	TECHNICAL POTENTIAL (%)	TECHNICAL POTENTIAL (MWH)	% OF OH COMMERCIAL SALES
Education	37.1%	523,466	3.40%
Food Sales	23.2%	272,160	1.77%
Food Service	31.0%	228,040	1.48%
Health Care	35.0%	387,124	2.51%
- Inpatient	36.0%	265,228	1.72%
- Outpatient	32.7%	120,416	0.78%
Lodging	32.2%	414,726	2.69%
Mercantile	33.4%	839,315	5.45%
- Retail (Other Than Mall)	31.6%	194,159	1.26%

- Enclosed and Strip Malls	34.0%	647,140	4.20%
Office	33.6%	1,195,721	7.76%
Public Assembly	39.8%	195,636	1.27%
Religious Worship	33.2%	102,016	0.66%
Service	33.9%	229,073	1.49%
Warehouse & Storage	30.0%	442,252	2.87%
Other	32.3%	217,975	1.41%
Total	**32.8%**	**5,047,503**	**32.75%**

8.3.3 FirstEnergy Ohio Total Technical Potential

Table 8-6 represents FirstEnergy Ohio technical potential as a sales weighted average of individual class technical potentials.

Table 8-6 FirstEnergy Ohio Technical Potential

CLASS	SALES (MWH)	TECHNICAL POTENTIAL
Residential	17,818,825	33.81%
Commercial	15,539,786	32.75%
Industrial	20,305,103	32.75%
Street Lighting	345,751	29.24%
Total		**33.08%**

8.4 ECONOMIC POTENTIAL

The Economic Potential scenario estimates the economically achievable potential and will accompany our Maximum Technical potential presentation as a bottom-up confirmation. Economic Potential took our 115 measures and used a premise base on obtaining all savings that are economically achievable for all of the Companies' customers. This scenario has a one-year time horizon where all savings are deemed theoretically obtainable from all subscribing customers. The scenario also takes into account the Companies' customers who have already taken energy saving actions.

The number of assumed program recipients (participants) under the Economic Potential scenario is based on survey data, which accounts for those who stated they have already made the EEPD change. This approach does not take into account equipment life but rather simulates that all equipment would be changed in the first year. Budgets are based on a cost per measure item using Base Achievable Case Assumptions.[15] The full results, by measure, are presented in Appendix C.

[15] This study has two Market Achievable cases, Base and High. In the high case utility budgets for marketing and customer incentives are increased by measure unit to achieve the higher penetration. The Economic Potential study used the base case per measure utility costs.

For OE, there is a potential to save 6,629 GWh and 1,849MW. For CEI, there is a potential to save 4,654 GWh and 1,207 MW. For TE, there is a potential to save 2,870 GWh and 710 MW.

8.5 ACHIEVABLE POTENTIAL (BASE & HIGH CASE)

These scenarios have study periods from 2012-2026, the years in which the savings will be obtainable from all subscribing customers when they either need to replace equipment or have shown interest in installing an energy saving measure. These scenarios apply the results of the Companies' mail and phone surveys. The residential achievable numbers were based on mail survey data, including the number of people who have a particular end-use, plus those who have indicated an interest in a particular program. There are two levels of interest based on the program parameters that follow: Option 1 includes people who responded "I plan to change" or responded "5 out of 5" in interest in a measure when asked on the survey. This option envisions programs that are designed to contribute to all measures, such that all measures have a positive payback period for the participants and have incentives that are also reasonable for the utility. Option 2, includes people who responded "I am considering changing" and includes people who responded "4 out of 5" in interest in a measure. In this second option, the utility will need to spend more money on both marketing and incentives.

For the commercial measures there are many repetitive programs such as the various types of lights that can be installed in an office building. Only some of the programs are used to evaluate the quantity of kWh and kW savings that a program can produce. These programs were chosen based on their general representation of the amount of savings that each can yield. These representative programs were matched to the survey data to quantify the number of items/equipment that could be installed. For example, there are many lighting variations, but only one indoor measure and one outdoor measure contains all the participants to calculate savings. This is due to the fact that the inventory of lights cannot be known to this level of detail. The number of light fixtures can be calculated based on lumens required but there is no inventory of lights by type. All indoor office building lighting savings, therefore, are associated with one type of lighting: a four-bulb fixture. The other lighting measures will be offered in programs, but are not specifically evaluated.

8.6 GLOBAL ASSUMPTIONS:

B&V's approach uses global assumptions within the EE Model. There are two types of inputs, for example, one-time inputs, such as inflation and annual inputs such as the forecasted number of residential customers.

Some of the global assumptions were as follows:

1. Number of Residential Customers as forecasted by the Company.
2. Number of Commercial and Industrial Customers as forecasted by the Company.
3. Number of Motors is based the large commercial survey's inventory and input from FirstEnergy based on existing programs in other states.
4. Free Riders and Spill Over percentages were set to cancel each other out.
5. Discount Rate = 8.48%
6. Average Retail Rate: 11 cents (Supply and Distribution costs per kWh)

8.7 SURVEY DATA

The survey results for the residential and commercial classes are presented in Section 6.0. There were specific questions asked in the surveys to identify customer participation in programs. The residential survey was conducted by mail and the small and mid-commercial survey was conducted by phone. The two surveys were utilized in both of the achievable scenarios and applied to the appropriate customer groups. Some survey questions were more complex, such as: "how many CFL light bulbs do you have in service and how many hours are they on?" This information is used to identify how many CFL light bulbs exist in the service territory in order to exclude them from both the economically achievable and achievable scenarios as well as identify how many CFL lights will be beneficial to install.

8.8 ESTIMATION OF SQUARE FOOTAGE & ENERGY CONSUMPTION BY END USE

Understanding of Energy Consumption by end use is an important first step in the calculation of technical and achievable market potential. B&V used a top-down approach for this purpose. This section describes the steps taken to estimate energy consumption profiles for the residential and commercial sectors of FirstEnergy's operating companies in Ohio.

8.8.1 Residential Energy Consumption by End Use

This section presents baseline estimates of energy consumption profiles for residential customers served by the FirstEnergy companies in 2011.

For this purpose, residential appliance saturation data provided by FirstEnergy was combined with estimates of unit energy consumption parameters (UECs) for each appliance category. This was then multiplied with Residential Average Annual kWh use in 2011 to obtain estimates of energy use by major appliance category. Multiplying this by the number of customers in each service area yields an estimate for total energy sales by end-use, which can be found in Table 8-7.

Table 8-7 2011 Estimates of Residential Energy Consumption by End Use and Operating Company (MWh)

	RESIDENTIAL ENERGY CONSUMPTION (MWH)			
End Use	Ohio Edison	The Illuminating Company	Toledo Edison	Total
Lighting	658,285,339	1,105,814,399	295,171,568	2,059,271,306
Elec Space Heating	601,391,385	917,548,765	267,271,548	1,786,211,698
Air Conditioning	793,947,448	1,377,160,811	426,467,360	2,597,575,619
1st Refrigerators	813,550,645	1,131,240,176	337,416,201	2,282,207,022
Elec Water Heating	362,646,468	776,444,291	192,280,233	1,331,370,992
Elec Cooking Range	213,878,996	323,757,214	102,720,373	640,356,583
Dish washer	148,355,373	189,097,134	55,376,707	392,829,214
Freezers	129,192,804	215,933,646	57,370,724	402,497,174

Clothes Washer	366,355,351	520,303,628	148,013,051	1,034,672,030
Clothes Dryers	241,764,311	336,172,682	101,837,308	679,774,301
Misc Appliances / Plug Loads	1,380,618,879	2,619,013,254	612,426,926	4,612,059,060

UEC estimates for electric space heating and air conditioning loads were obtained from an analysis of average monthly energy use in both the summer and winter months, by comparing summer/winter use against average monthly use in shoulder months (October and May). In shoulder months, both cooling and heating loads are assumed to be no more than 5% of overall monthly energy use. After adjusting for estimated lighting use above what is in the shoulder months, UEC estimates were obtained for electric space heating loads for winter months (November through April).

Similarly, air conditioning loads were estimated by correcting baseload energy use in the shoulder months downward, to reflect lower indoor lighting during the shorter nighttime hours in the summer, and then taking the difference between overall energy use between summer and winter months to obtain estimates of AC use during summer months (June through September).

The following figures provide additional perspectives on estimates of household energy use across major end-uses in each of FirstEnergy's Ohio service territories.

Figure 8-2 FirstEnergy Ohio Residential Energy Consumption by End Use

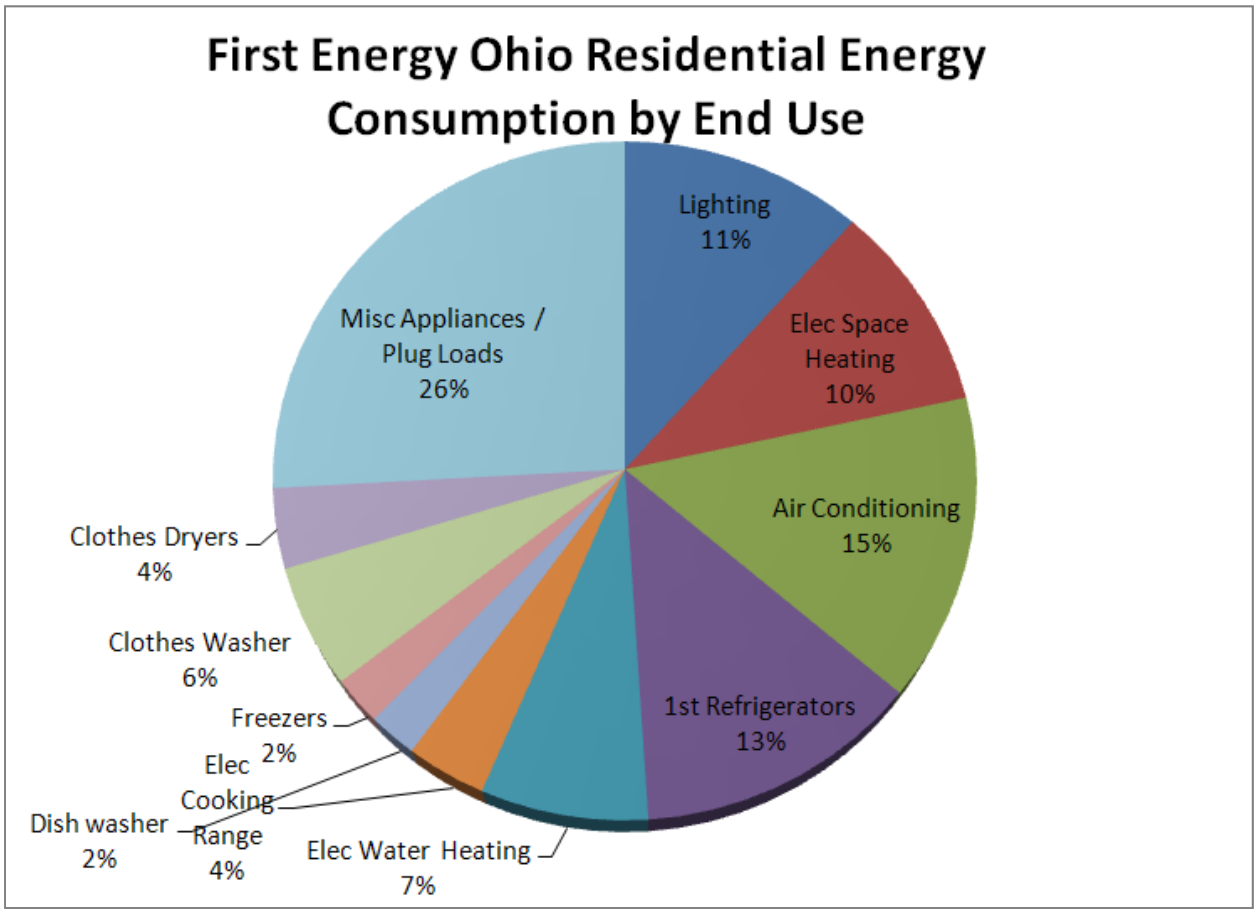
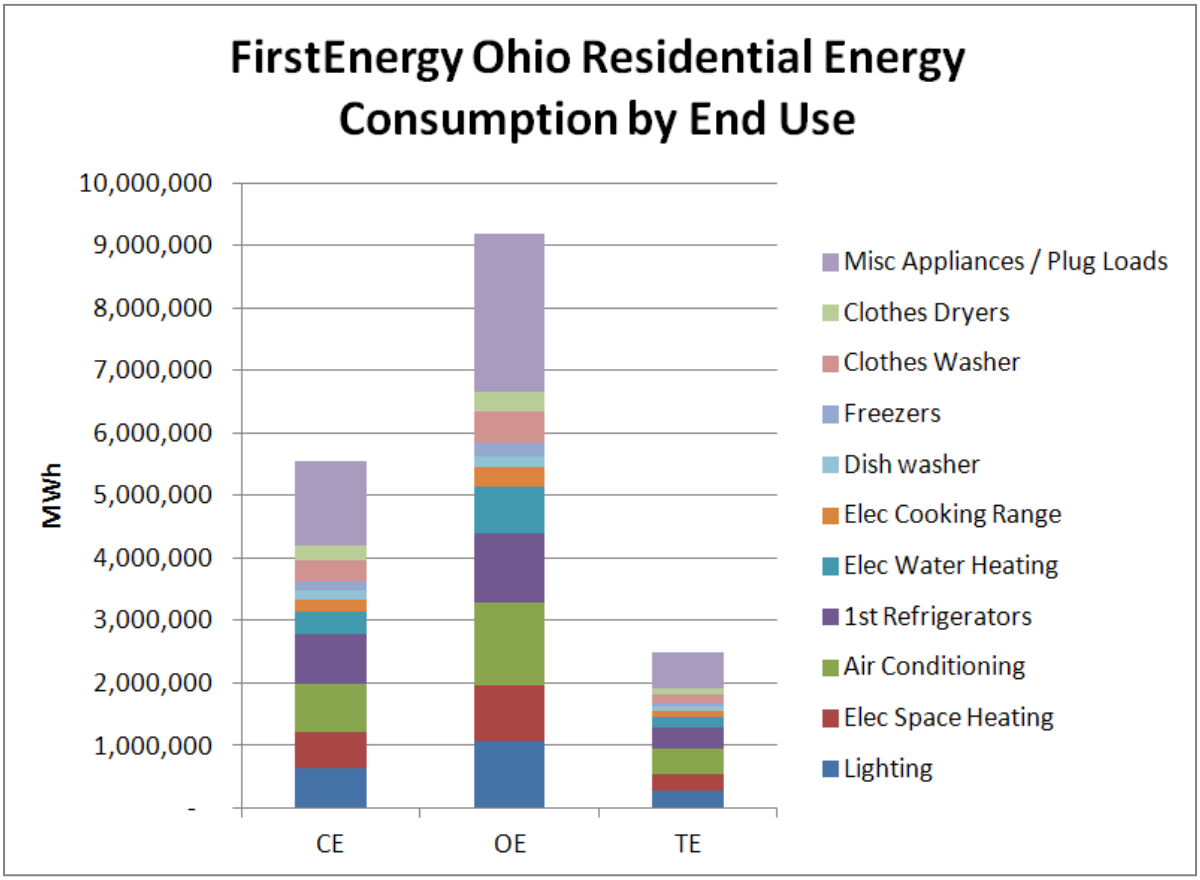


Figure 8-3 FirstEnergy Ohio Commercial Energy Consumption by End Use



Note that there is a large residual usage that includes plug loads (entertainment systems, PCs, etc.) that is estimated to be about one-quarter of household energy use in 2011.

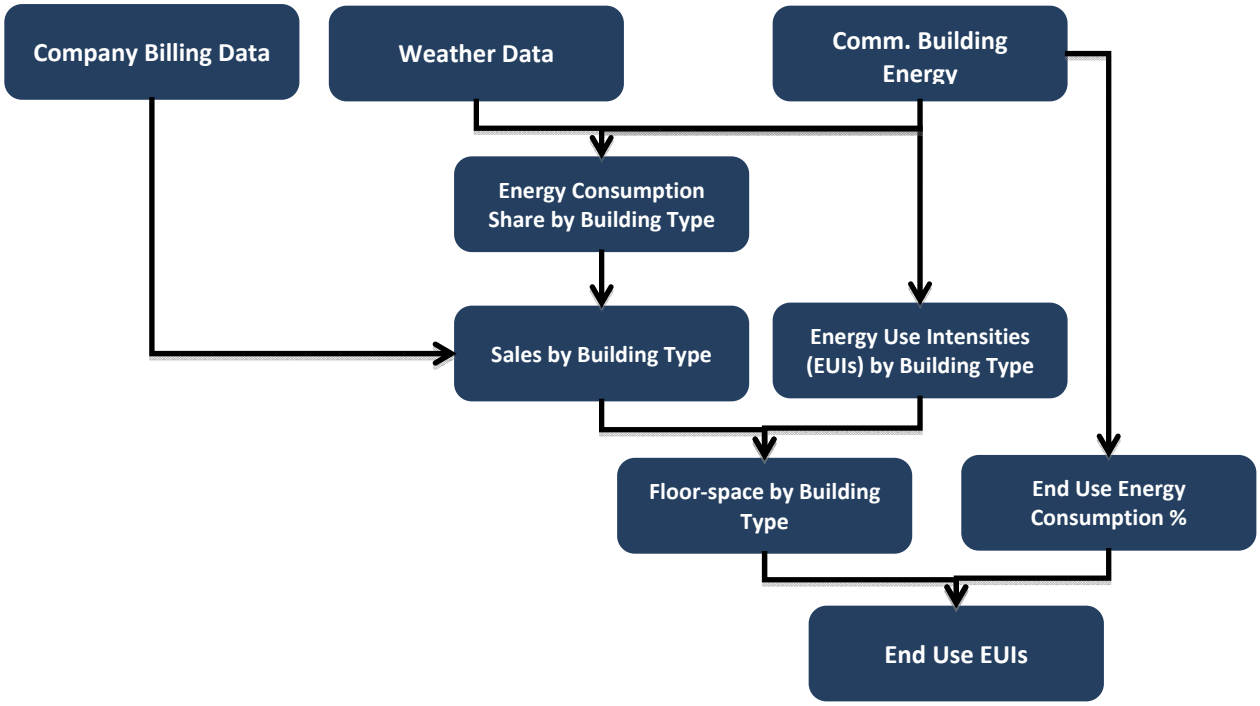
8.8.2 Commercial Energy Use Intensity

Our primary data points to generate baseline estimates for energy consumption profiles for commercial customers are as listed below:

- Company Billing Data (2011)
- Service Area Weather Data
- EIA's Commercial Building Energy Consumption Survey (2003 CBECS)

Figure 8-4 summarizes Black and Veatch's methodology for estimating EUIs by end use for commercial customers. Please note that EUIs are calculated at both building type level and end use level. This process also yields estimates of square footage by building type, which were used in calculations for the potential for lighting measures.

Figure 8-4 Energy Use Intensity Diagram



FirstEnergy's Ohio service territory falls in weather Zone 2 defined in the EIA's Commercial Building Energy Consumption Survey (CBECS). Zone 2 Building level EUIs were adjusted to reflect heating and cooling degree days in FirstEnergy Ohio service region. Combining the building level EUIs with FirstEnergy's Ohio kWh sales, yields estimates of floor-stock square footage (ft^2) by building type reported in Table 8-8 below.[16]

Application of this methodology reveals that total commercial floor-space (ft^2) within FirstEnergy utilities in Ohio is estimated to be about 1.09 billion ft^2.

Table 8-8 Estimates of Commercial Building Square Footage by Building Type

COMMERCIAL BUILDING TYPES	COMMERCIAL SALES (1000 GWH)	EST. % FIRST ENERGY KWH SHARES	EUIs (KWH/FT^2)	ESTIMATES OF SQUARE FOOTAGE (MILLIONS OF FT^2)
Education	1.42	9.16%	8	176.5
Food Sales	1.18	7.61%	40.68	28.8
Food Service	0.74	4.78%	30.6	24.1
Health Care	1.11	7.17%	23.3	47.4
- Inpatient	0.74	4.78%	27.7	26.6
- Outpatient	0.37	2.39%	17.4	21.2
Lodging	1.30	8.36%	15.9	81.1

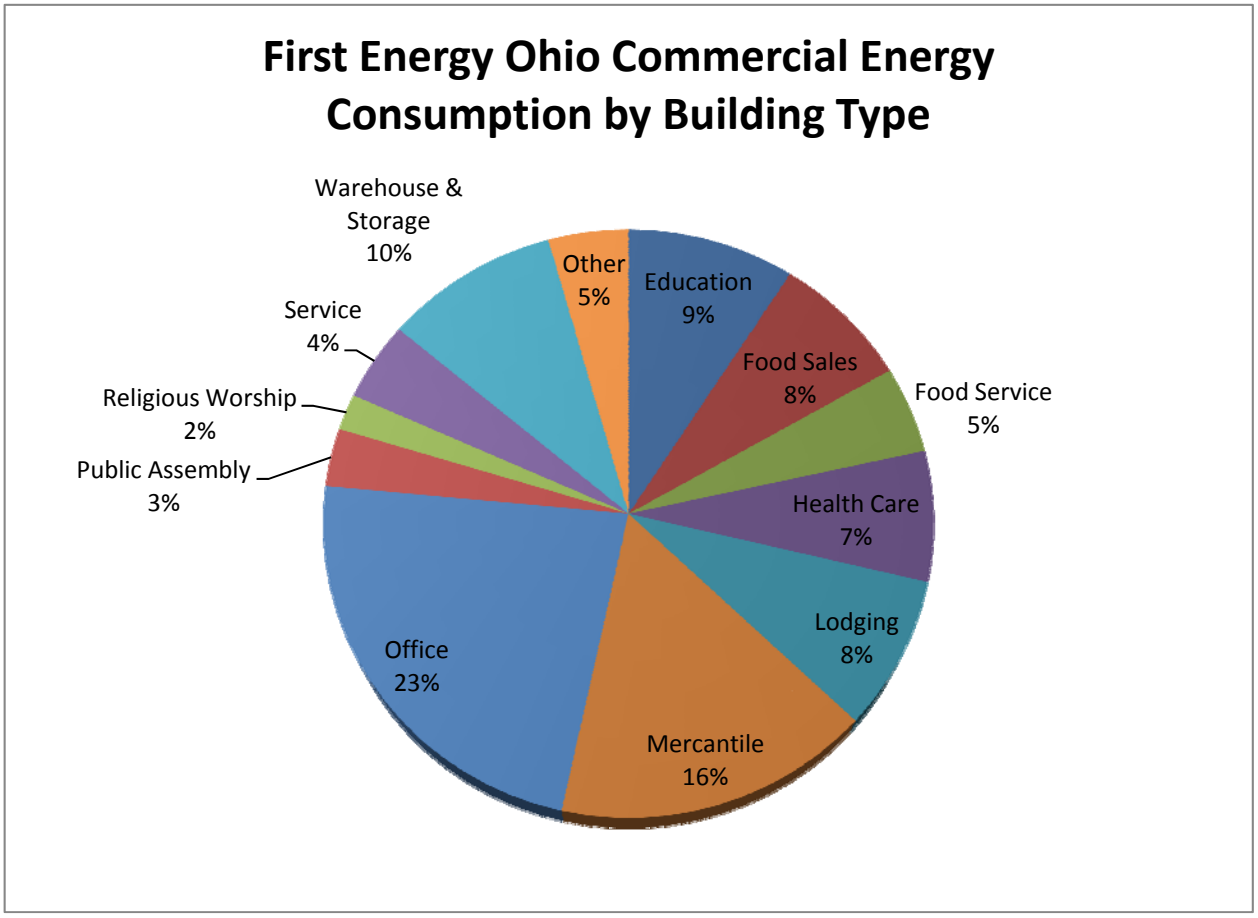
[16] Note that because of missing or incomplete data in climate zone 2, the EUI estimate for *Food Sales* establishments was derived from the EUI in climate zone 1 for that building category. The EUI for Food Sales establishments in climate zone 1 was adjusted using a ratio adjustment factor (Total EUI Zone 2/ Total EUI Zone 1), yielding the estimate reported in Table 8-8.

Mercantile	2.54	16.33%	17.2	146.3
- Retail (Other Than Mall)	0.62	3.98%	11	55.8
- Enclosed and Strip Malls	1.92	12.35%	20.8	91.5
Office	3.59	23.10%	18.2	195.6
Public Assembly	0.50	3.19%	9.5	51.7
Religious Worship	0.31	1.99%	3.5	87.7
Service	0.68	4.38%	9.6	70.3
Warehouse and Storage	1.49	9.56%	9.6	153.4
Other	0.68	4.38%	24.6	27.4
Total	**15.5**	**100%**	**--**	**1,090.30**

8.8.3 Commercial Energy Use Intensity

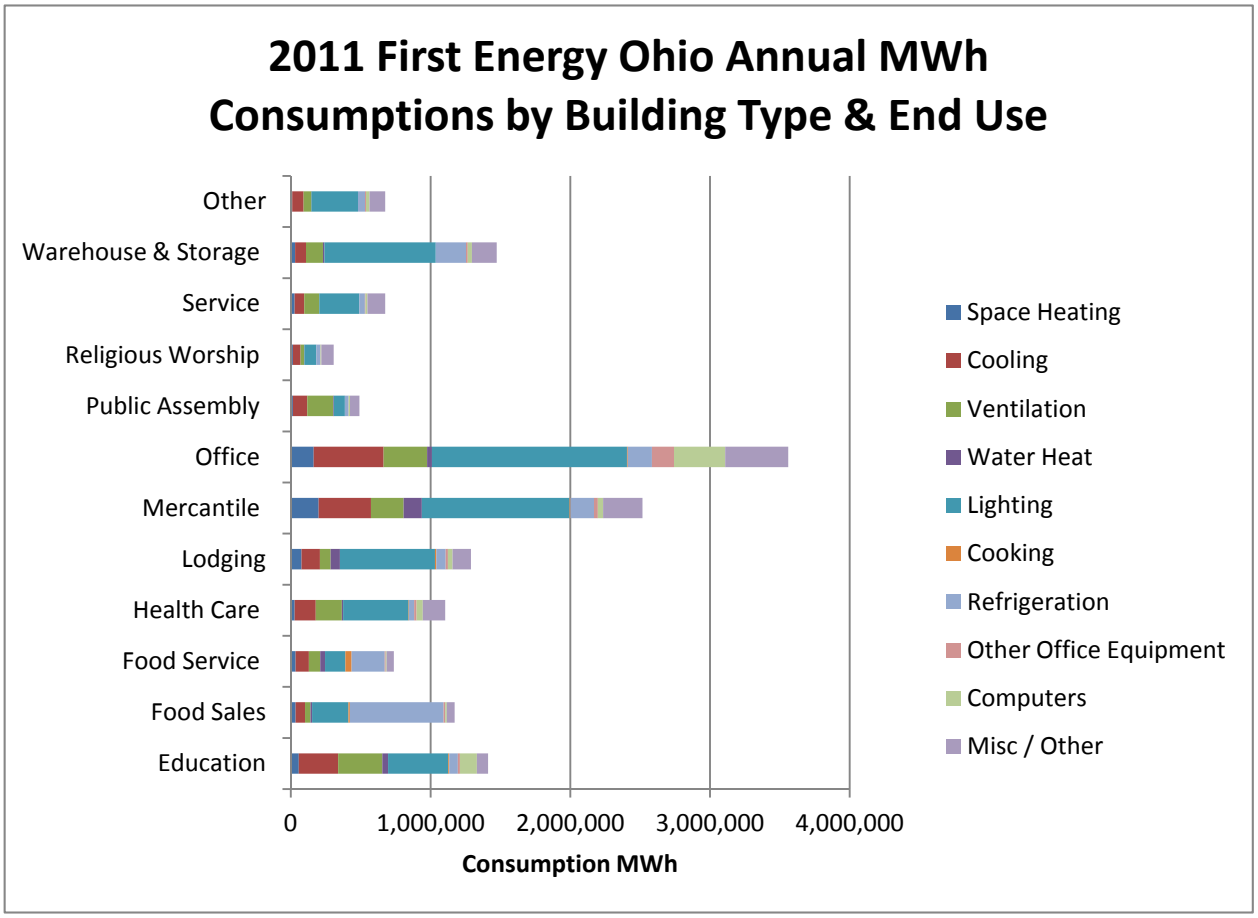
This section presents baseline estimates of energy consumption profiles for commercial customers served by the First Energy companies in 2011.

Figure 8-5 FirstEnergy Ohio Commercial Energy Consumption by Building Type



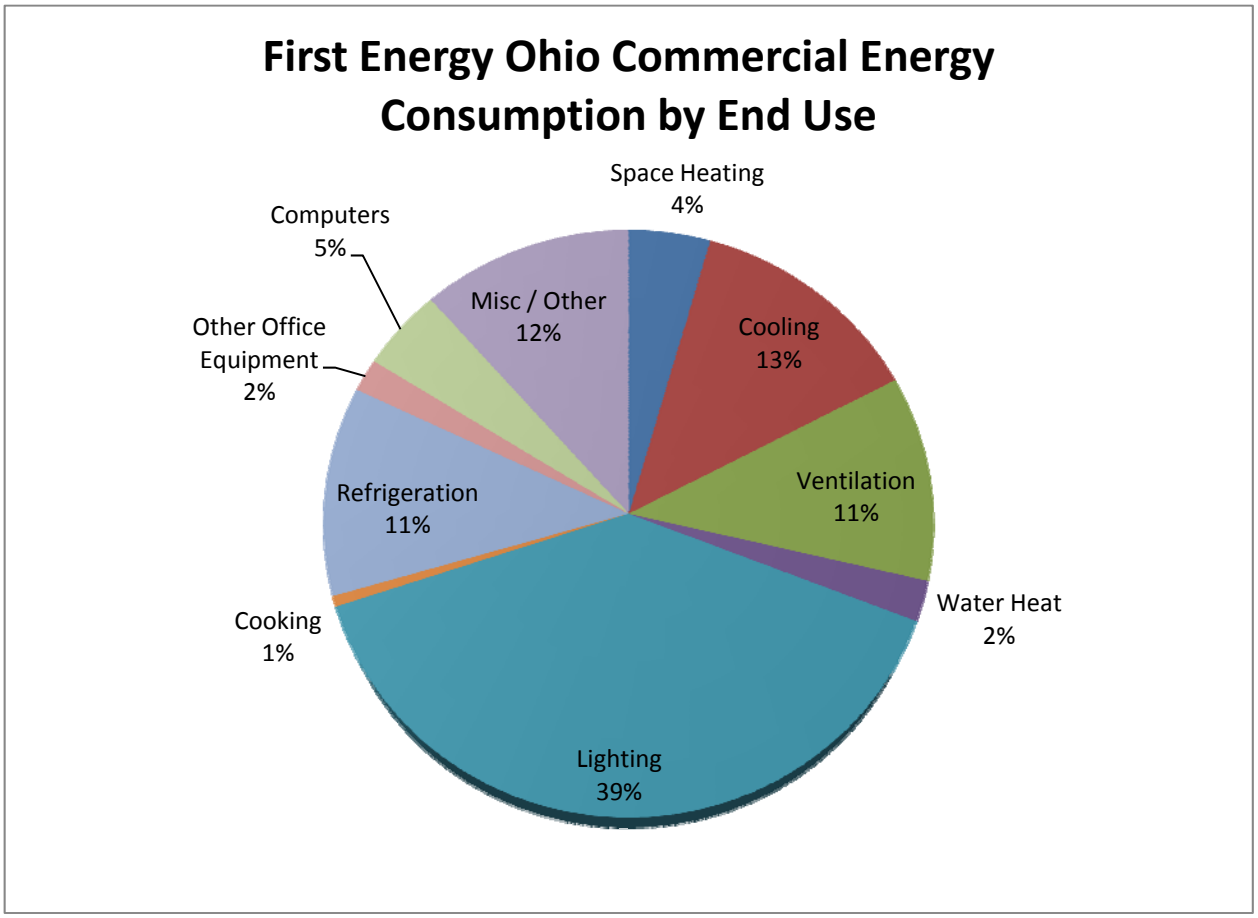
Each Building Level EUI was then further allocated to different end uses based on CBECS Zone 2 percentage share of energy usage in each building type adjusted to FirstEnergy service area weather. This process yields end use EUIs for each building type. A detailed table of commercial EUIs is presented in Appendix A.

Figure 8-6 2011 FirstEnergy Ohio Annual MWh Consumptions by Building Type & End Use



The following chart shows our estimates of commercial energy usage by end use. This analysis was used in top-down analysis of technical market potential. A detailed table of commercial end use energy consumption can be found in Appendix A.

Figure 8-7 FirstEnergy Ohio Commercial Energy Consumption by End Use



Some measures, such as lighting, required a calculation of current inventory. Some items have no relationship to the number of customers, and therefore the number of these items must be calculated. To calculate the number of four-foot light bulbs in the Companies' territories, a proxy was needed. B&V used an Energy Information Administration Energy Consumption Series: Lighting in Commercial Buildings Study. The study identifies the proper number of lumens needed to light commercial space. This, along with the number of square feet of commercial space identified by the study, B&V was able to calculate the required number of four-foot bulbs. Next, a count of T8 and T12 bulbs from the industrial survey was used to estimate the number of T12 bulbs. This became the basis for the number of bulbs that could be replaced in the Economic Potential study. This number also became the benchmark used to identify the number of bulbs per year that could be replaced in the Market Potential Study.

8.9 MEASURE BUDGETS

Budgets were determined for each measure based on implementation, and administrative & general costs. The Implementation budget has both a base cost and a per unit cost. The base costs range from $0 to $158,800 based on whether a measure is stand alone or part of a collection of measures that will be grouped into a large program. The base cost includes annual program costs, such as marketing costs that are repeated, and utility program costs. The measure per unit cost is based upon costs such as; utility personnel, supplies, vendor costs, and sales incentives paid to retailers. This number ranges from around $2 per Torchiere lamp to $7,146 for the large industrial audit program. The budget tables are presented in Appendix C on a per measure basis.

8.10 AVOIDED COSTS

Avoided generation costs are derived from the following sources:

a. **Energy Costs** - the study team used Western PJM wholesale energy prices at the AD hub for the years 2013-2015, and escalated these costs for future years based on the escalation of the long term electric power projections in the Department of Energy, Energy Information Administration's 2012 Annual Energy Outlook Early Release, Reference Case, for the EMM Region, Reliability First Corporation / West.

b. **Capacity Costs** - the team used a combination of PJM Fixed Resource Requirement Auction prices for the ATSI region in 2013 and Base Residual Auction prices for the PJM RTO region for the years 2013-2016. Costs beyond 2016 were escalated in proportion to long term electric power projections in the Department of Energy, Energy Information Administration's 2012 Annual Energy Outlook Early Release, Reference Case, for the EMM Region, Reliability First Corporation / West.

c. **Transmission and Distribution Costs** - the team included marginal T&D of $20 per kW-yr as assumed in the Existing Plan.

8.11 SAVINGS TARGETS

The study is required to meet various incremental kWh and kW saving per year until 2026. These savings are based on the three previous years' sales and continue to grow until they reach 2% of the average of the three previous years of sales. This target is incremental, meaning that another "X"[17] percent of sales will be needed each year. The source of the calculations for the savings was the FirstEnergy Sales and Peak Forecast provided by the Company for each service territory. This was the basis for the EEPD requirement calculations.

8.12 ECONOMICALLY ACHIEVABLE RESULTS

Economically achievable potential starts with the programs that have passed the Total Resource Cost Test (TRC) and uses a one-year time horizon where all savings are assumed to be obtainable from all participating customers. The following tables provide the results of the EE Models by Company.

For the three companies, economic potential ranges between 30% and 37% of peak demand. The largest of the three companies, OE, could reduce its peak demand by 35%, with the smallest

[17] "X" indicates the percentage changes by year.

company, TE, reaching 37% reduction of its peak load. The energy savings associated with the economic potential programs varied between 25% for CE to 29% for TE. While these reductions reflect programs that passed the TRC test, it does not reflect customer choice budgetary considerations or plan timeframe. In other words, while the programs are cost-effective, not all eligible customers will likely elect to participate.

Table 8-9 kW and MWh Savings – OE

Economically Achievable Results		
Electric Impacts/Savings		
	Peak MW	Usage MWh
Actual Sales & Peak	5,235	24,382,626
Economically Achievable	1,849	6,629,562
% Economically Achievable	35%	27.2%

Table 8-10 kW and MWh Savings – CEI

Economically Achievable Results		
Electric Impacts/Savings		
	Peak MW	Usage MWh
Actual Sales & Peak	4,008	18,598,775
Economically Achievable	1,207	4,654,599
% Economically Achievable	30%	25%

Table 8-11 kW and MWh Savings – TE

Economically Achievable Results		
Electric Impacts/Savings		
	Peak MW	Usage MWh
Actual Sales & Peak	1,928	9,967,059
Economically Achievable	710	2,869,953
% Economically Achievable	37%	29%

While the details of the program measures across the Companies varied, the average cost per participant unit was similar ranging from $82 for CEI to just under $87 for the other two companies. The following tables show the costs by company.

Table 8-12 Participation and Total Participant Costs – OE

Participation and Total Participant Costs	
Participation	
Total Participants Units (Customer - Items)	Total Participant Costs
21,721,743	$1,883,413,010

Table 8-13 Participation and Total Participant Costs – CEI

Participation and Total Participant Costs	
Participation	
Total Participants Units (Customer - Items)	Total Participant Costs
15,896,889	$1,305,606,226

Table 8-14 Participation and Total Participant Costs – TE

Participation and Total Participant Costs	
Participation	
Total Participants Units (Customer - Items)	Total Participant Costs
8,627,146	$750,340,065

The following tables present the costs associated the programs included in the economic potential estimates for each company. The implementation costs will vary and are a function of the unique programs for each company. Similarly, the incentives reflect the specific measures and the number of participants in the program. Savings costs (program costs divided by savings) are similar for both OE and CEI. However, costs are slightly lower for TE at $0.082/kWh. Cost of capacity savings vary between $329/kW for TE and $376/kW for CEI.

Table 8-15 Utility Program Costs – OE

Utility Program Costs	
Overall Costs	
Category	Total
Implementation	$169,662,278
Incentives	$486,680,534
Total	$656,342,812
Total Costs per kW & kWh Saved	Total
$/kW	$355.00
$/kWh	$0.099

Table 8-16 Utility Program Costs – CEI

Utility Program Costs	
Overall Costs	
Category	Total
Implementation	$121,455,377
Incentives	$332,665,513
Total	$454,120,891
Total Costs per kW & kWh Saved	Total
$/kW	$376.12
$/kWh	$0.098

Table 8-17 Utility Program Costs – TE

Utility Program Costs	
Overall Costs	
Category	Total
Implementation	$65,385,127
Incentives	$168,853,616
Total	$234,238,743
Total Costs per kW & kWh Saved	Total
$/kW	$329.79
$/kWh	$0.082

The avoided energy costs from the first-year installations are expected to yield more than $3.3 billion in avoided energy costs accounting for nearly 68% of total avoided costs of $4.9 billion across the three companies.

Table 8-18 Avoided Costs – OE

Avoided Costs (Cumulative Electric)			
	Energy	Capacity	Total Benefits
Cumulative Total	$1,548,778,472	$757,052,600	$2,305,831,072

Table 8-19 Avoided Costs – CEI

Avoided Costs (Cumulative Electric)			
	Energy	Capacity	Total Benefits
Cumulative Total	$1,113,783,242	$510,601,600	$1,624,384,843

Table 8-20 Avoided Costs – TE

Avoided Costs (Cumulative Electric)			
	Energy	Capacity	Total Benefits
Cumulative Total	$711,082,723	$306,757,411	$1,017,840,134

On an aggregate basis, all programs pass the TRC requirements with ratios for companies ranging between 1.02 for OE and 1.13 for TE. The incentive costs and program cost levels make the programs cost-effective from both the participant and utility perspectives.

Table 8-21 Cost Test Results – OE

Cost Test Results	
Tests	Total (All Years)
Utility Test	1.86
TRC Test	1.02
Participant Test	4.46

Table 8-22 Cost Test Results – CEI

Cost Test Results	
Tests	Total (All Years)
Utility Test	1.95
TRC Test	1.04
Participant Test	4.55

Table 8-23 Cost Test Results – TE

Cost Test Results	
Tests	Total (All Years)
Utility Test	2.31
TRC Test	1.13
Participant Test	5.02

The following tables show the cost-effectiveness of the programs included in the economic potential analysis. Any areas in the tables that are grayed out indicate that the information was not applicable and therefore there is no value. The Appliance Turn-in Program has the highest TRC values of all of the residential programs and this result was consistent across the three companies. Similarly, the cost-benefit analysis for the commercial and industrial programs shows Commercial Lighting Program as having highest TRC.

Table 8-24 Summary of Measure Tests by Program – OE

Summary of Measure Tests by Program				
Program Name	Class	Today's Value Utility Test	Today's Value TRC Test	Today's Value Participant Test
Comprehensive Residential	Res	0.67	1.30	0.00

Comprehensive Residential-Home Performance	Res	1.49	1.05	3.62
Direct Load Control	Res	0.50	0.61	
On-Line Audit	Res	1.11	1.11	
Appliance Turn-In Program	Res	2.46	7.64	
Energy Efficient Products Program	Res	1.04	0.67	2.37
Residential New Construction	Res	1.04	1.01	2.70
Comm Connect	LI RES	0.04	0.06	1.24
C/I Equipment (Comm Lighting)	COM	3.63	1.24	5.57
Commercial New Construction	COM	0.72	0.47	4.11
C&I Audits & C/I Equipment (expanded)	IND	1.23	0.72	2.34
Mercantile Self Directed Projects	IND	NA	NA	NA
C/I Equipment (Industrial Motors)	IND	2.10	0.98	4.72

Table 8-25 Summary of Measure Tests by Program – CEI

Summary of Measure Tests by Program				
Program Name	Class	Today's Value Utility Test	Today's Value TRC Test	Today's Value Participant Test
Comprehensive Residential	Res	0.67	1.29	0.00
Comprehensive Residential-Home Performance	Res	1.41	1.02	3.28
Direct Load Control	Res	0.47	0.58	
On-Line Audit	Res	0.82	0.82	
Appliance Turn-In Program	Res	1.51	4.68	
Energy Efficient Products Program	Res	1.08	0.69	2.30
Residential New Construction	Res	1.09	1.08	2.87
Comm Connect	LI RES	0.05	0.08	1.63
C/I Equipment (Comm Lighting)	COM	3.54	1.23	5.52
Commercial New Construction	COM	0.88	0.54	4.11
C&I Audits & C/I Equipment (expanded)	IND	1.33	0.75	2.38
Mercantile Self Directed Projects	IND	NA	NA	NA
C/I Equipment (Industrial Motors)	IND	1.82	1.05	5.66

Table 8-26 Summary of Measure Tests by Program – TE

Summary of Measure Tests by Program				
Program Name	Class	Today's Value Utility Test	Today's Value TRC Test	Today's Value Participant Test
Comprehensive Residential	Res	0.66	1.26	0.00
Comprehensive Residential-Home Performance	Res	1.45	1.04	3.45
Direct Load Control	Res	0.46	0.55	

On-Line Audit	Res	0.86	0.86	
Appliance Turn-In Program	Res	1.59	4.84	
Energy Efficient Products Program	Res	1.08	0.68	2.27
Residential New Construction	Res	1.03	0.99	2.70
Comm Connect	LI RES	0.03	0.05	1.09
C/I Equipment (Comm Lighting)	COM	4.10	1.35	6.07
Commercial New Construction	COM	0.75	0.49	4.11
C&I Audits & C/I Equipment (expanded)	IND	1.35	0.76	2.40
Mercantile Self Directed Projects	IND	NA	NA	NA
C/I Equipment (Industrial Motors)	IND	2.18	1.02	4.85

Table 8-27 through Table 8-29 summarize the measure costs by program.

Table 8-27 Summary of Measure Costs by Program – OE

Summary of Measure Costs by Program								
Program Name	Class	Lost Revenue (Electric)	Participant Costs	Program Benefits	Total Avoid Costs Energy Costs	Total Avoid Costs Capacity	Implementation Costs	Incentive Costs
Comprehensive Residential	Res	244,124,705	0	66,218,365	61,189,800	5,028,565	3,431,246	47,513,452
Comprehensive Residential-Hor	Res	466,547,336	128,733,324	215,597,320	118,183,970	97,413,349	10,003,868	67,455,891
Direct Load Control	Res	10,088,167	0	43,176,908	4,981,121	38,195,787	55,332,487	15,714,723
On-Line Audit	Res	15,648,668	0	4,476,035	4,139,887	336,148	4,038,954	0
Appliance Turn-In Program	Res	115,142,579	-7,843,043	57,018,421	28,651,663	28,366,759	7,465,050	7,843,043
Energy Efficient Products Progra	Res	715,608,957	301,458,975	316,048,967	173,942,911	142,106,056	41,017,153	131,491,092
Residential New Construction	Res	62,971,072	23,340,629	58,292,775	12,735,947	45,556,828	13,249,307	21,274,011
Comm Connect	LI RES	995	800	301	242	60	515	3,802
C/I Equipment (Comm Lighting)	COM	5,650,046,251	1,014,689,158	1,545,001,979	1,144,952,931	400,049,047	35,123,699	195,384,520
Commercial New Construction	COM	71,020,747	17,292,966	17,438,147	14,363,999	3,074,148	14,792,141	4,736,290
C&I Audits & C/I Equipment (exp	IND	851,793,068	364,645,424	384,486,098	218,205,974	166,280,124	32,582,915	140,446,293
Mercantile Self Directed Project	IND	2,452,800	0	11,883,681	8,646,120	3,237,561	817,278	0
C/I Equipment (Industrial Motor	IND	193,808,628	41,094,778	56,191,988	39,194,374	16,997,614	5,605,725	10,582,277

Table 8-28 Summary of Measure Costs by Program – CEI

Summary of Measure Costs by Program								
Program Name	Class	Lost Revenue (Electric)	Participant Costs	Program Benefits	Total Avoid Costs Energy Costs	Total Avoid Costs Capacity	Implementation Costs	Incentive Costs
Comprehensive Residential	Res	199,112,478	0	54,029,457	49,909,014	4,120,442	3,154,657	38,776,607
Comprehensive Residential-Hor	Res	255,690,604	77,977,555	129,739,876	66,026,699	63,713,177	6,232,043	42,847,961
Direct Load Control	Res	6,583,608	0	28,177,552	3,250,714	24,926,838	38,219,620	10,702,819
On-Line Audit	Res	10,444,408	0	2,987,445	2,763,089	224,356	3,659,292	0
Appliance Turn-In Program	Res	76,246,365	-5,593,037	24,844,031	19,077,353	5,766,677	5,312,234	5,593,037
Energy Efficient Products Progra	Res	467,345,464	203,380,914	221,272,362	117,299,910	103,972,452	30,069,930	87,773,815
Residential New Construction	Res	3,330	1,160	3,083	673	2,409	567	1,125
Comm Connect	LI RES	1,306	800	397	317	80	464	3,802
C/I Equipment (Comm Lighting)	COM	4,225,799,375	765,915,996	1,163,330,640	855,455,471	307,875,169	34,806,571	146,966,349
Commercial New Construction	COM	22,568	5,495	5,541	4,564	977	3,306	1,505
C&I Audits & C/I Equipment (exp	IND	579,350,503	243,036,644	261,894,673	148,426,127	113,468,546	19,961,458	88,469,238
Mercantile Self Directed Project	IND	6,691,200	0	33,411,460	23,586,480	9,824,980	501,603	0
C/I Equipment (Industrial Motor	IND	118,252,454	20,880,697	34,676,234	23,909,162	10,767,072	4,951,807	7,054,018

Table 8-29 Summary of Measure Costs by Program – TE

Summary of Measure Costs by Program								
Program Name	Class	Lost Revenue (Electric)	Participant Costs	Program Benefits	Total Avoid Costs Energy Costs	Total Avoid Costs Capacity	Implementation Costs	Incentive Costs
Comprehensive Residential	Res	66,891,290	0	18,225,143	16,772,266	1,452,877	1,295,023	13,112,556
Comprehensive Residential-Hor	Res	124,481,606	36,109,291	60,601,120	31,785,939	28,815,181	2,890,063	19,495,921
Direct Load Control	Res	2,639,943	0	11,298,838	1,303,495	9,995,343	16,539,301	4,135,857
On-Line Audit	Res	4,416,038	0	1,263,132	1,168,272	94,861	1,460,928	0
Appliance Turn-In Program	Res	36,932,924	-2,519,800	11,970,600	9,191,316	2,779,284	2,473,434	2,519,800
Energy Efficient Products Progra	Res	199,987,370	87,955,899	95,432,439	50,103,935	45,328,504	14,265,476	37,243,244
Residential New Construction	Res	16,950,175	6,282,690	15,690,899	3,428,186	12,262,713	3,813,522	5,726,410
Comm Connect	LI RES	875	800	266	213	54	337	3,802
C/I Equipment (Comm Lighting)	COM	2,951,146,166	486,238,820	803,357,695	597,329,101	206,028,595	22,647,045	86,616,025
Commercial New Construction	COM	4,653,342	1,133,050	1,142,563	941,142	201,421	907,329	310,326
C&I Audits & C/I Equipment (exp	IND	291,597,076	121,605,158	133,465,837	72,861,950	60,603,887	9,672,555	44,774,868
Mercantile Self Directed Project	IND	3,079,200	0	14,918,555	11,112,822	3,805,733	148,359	0
C/I Equipment (Industrial Motor	IND	65,631,732	13,534,155	19,072,414	13,273,155	5,799,258	1,469,252	3,646,486

For the Company, the economic potential represents energy savings of more than 14,154 GWh and nearly 3.7 GW of capacity savings. Roughly 77% of the total savings are produced by the Residential Energy Efficient Products and the Commercial Lighting Programs.

Table 8-30 Summary of Lifetime Measure Savings for Total Economically Achievable by Program – OE

Summary of Lifetime Measure Savings for Total Economically Achievable by Program			
Program	Class	kW	MWh
Comprehensive Residential	Res	12,498	2,651,991
Comprehensive Residential-Home Performance	Res	170,967	4,665,473
Direct Load Control	Res	71,761	100,882
On-Line Audit	Res	1,792	156,487
Appliance Turn-In Program	Res	110,970	1,151,426
Energy Efficient Products Program	Res	273,051	7,156,090
Residential New Construction	Res	85,591	629,711
Comm Connect	LI RES	0	10
C/I Equipment (Comm Lighting)	COM	755,023	56,500,463
Commercial New Construction	COM	5,776	710,207
C&I Audits & C/I Equipment (expanded)	IND	327,056	8,517,931
Mercantile Self Directed Projects	IND	236,948	1,480,934
C/I Equipment (Industrial Motors)	IND	31,925	1,938,086

Table 8-31 Summary of Lifetime Measure Savings for Total Economically Achievable by Program – CEI

Summary of Lifetime Measure Savings for Total Economically Achievable by Program			
Program	Class	kW	MWh
Comprehensive Residential	Res	10,271	2,162,727
Comprehensive Residential-Home Performance	Res	111,582	2,556,906
Direct Load Control	Res	46,832	65,836
On-Line Audit	Res	1,196	104,444

Appliance Turn-In Program	Res	17,340	762,464
Energy Efficient Products Program	Res	196,031	4,673,455
Residential New Construction	Res	5	33
Comm Connect	LI RES	0	13
C/I Equipment (Comm Lighting)	COM	579,675	42,257,994
Commercial New Construction	COM	2	226
C&I Audits & C/I Equipment (expanded)	IND	221,812	5,793,505
Mercantile Self Directed Projects	IND	247,259	1,389,257
C/I Equipment (Industrial Motors)	IND	20,208	1,182,525

Table 8-32 Summary of Lifetime Measure Savings for Total Economically Achievable by Program – TE

Summary of Lifetime Measure Savings for Total Economically Achievable by Program			
Program	**Class**	**kW**	**MWh**
Comprehensive Residential	Res	3,732	725,540
Comprehensive Residential-Home Performance	Res	50,431	1,244,816
Direct Load Control	Res	18,779	26,399
On-Line Audit	Res	506	44,160
Appliance Turn-In Program	Res	8,303	369,329
Energy Efficient Products Program	Res	86,979	1,999,874
Residential New Construction	Res	23,039	169,502
Comm Connect	LI RES	0	9
C/I Equipment (Comm Lighting)	COM	387,762	29,511,462
Commercial New Construction	COM	378	46,533
C&I Audits & C/I Equipment (expanded)	IND	117,025	2,915,971
Mercantile Self Directed Projects	IND	153,558	959,753
C/I Equipment (Industrial Motors)	IND	10,893	656,317

8.13 EEPD ACHIEVABLE RESULTS

Achievable potential has been estimated by including measures that either passed the TRC or are important based on their potential impacts. The following tables present the Base and High Case results of this analysis by Company. The results are calculated on a year-by-year basis. However, the tables below only display the years 2012, 2016, 2021 and 2026.

For the Base Case achievable market potential, defined to include only customers who indicated that they would participate or install efficient equipment, the Energy Efficient Products Program accounts for the largest share of residential energy savings. However, for economic potential, the Energy Efficient Products Program generates the most energy savings. Among the commercial and industrial programs, the Commercial Lighting Program is expected to have the largest savings impact.

Table 8-33 Base Case Summary of Measure Energy Lifetime Savings by Program – OE

Base Case Summary of Measure Energy Lifetime Savings by Program					
Program Name	Class	2012 MWh	2016 MWh	2021 MWh	2026 MWh
Comprehensive Residential	Res	7,821	39,076	40,111	41,145
Comprehensive Residential-Home Performance	Res	1,571	7,847	16,416	24,985
Direct Load Control	Res	492	2,459	3,685	4,911
On-Line Audit	Res	3,654	18,255	18,255	18,255
Appliance Turn-In Program	Res	12,885	64,375	85,765	107,156
Energy Efficient Products Program	Res	11,655	58,229	110,953	162,401
Residential New Construction	Res	845	4,220	8,427	12,634
Comm Connect	LI RES	0	1	1	1
C/I Equipment (Comm Lighting)	COM	174,934	873,981	1,309,592	1,745,203
Commercial New Construction	COM	2,021	10,096	10,096	10,096
C&I Audits & C/I Equipment (expanded)	IND	22,546	112,641	188,646	264,652
Mercantile Self Directed Projects	IND	20,440	109,229	109,229	109,229
C/I Equipment (Industrial Motors)	IND	6,267	31,311	72,511	124,947

Table 8-34 Base Case Summary of Measure Energy Lifetime Savings by Program – CEI

Base Case Summary of Measure Energy Lifetime Savings by Program					
Program Name	Class	2012 MWh	2016 MWh	2021 MWh	2026 MWh
Comprehensive Residential	Res	5,765	28,801	29,835	30,869
Comprehensive Residential-Home Performance	Res	578	2,889	6,152	9,415
Direct Load Control	Res	308	1,541	2,309	3,077
On-Line Audit	Res	2,154	10,760	10,760	10,760
Appliance Turn-In Program	Res	8,112	40,529	53,997	67,464
Energy Efficient Products Program	Res	6,629	33,121	62,778	91,536
Residential New Construction	Res	0	1	2	2
Comm Connect	LI RES	0	2	2	2
C/I Equipment (Comm Lighting)	COM	134,227	670,605	1,004,849	1,339,092
Commercial New Construction	COM	3	16	16	16
C&I Audits & C/I Equipment (expanded)	IND	16,561	82,739	142,194	201,649
Mercantile Self Directed Projects	IND	55,760	97,557	97,557	97,557
C/I Equipment (Industrial Motors)	IND	2,864	14,309	33,138	57,101

Table 8-35 Base Case Summary of Measure Energy Lifetime Savings by Program – TE

Base Case Summary of Measure Energy Lifetime Savings by Program					
Program Name	Class	2012	2016	2021	2026

		MWh	MWh	MWh	MWh
Comprehensive Residential	Res	2,089	10,435	11,469	12,503
Comprehensive Residential-Home Performance	Res	320	1,598	3,364	5,129
Direct Load Control	Res	127	635	951	1,267
On-Line Audit	Res	840	4,197	4,197	4,197
Appliance Turn-In Program	Res	4,403	21,999	29,309	36,619
Energy Efficient Products Program	Res	3,054	15,259	29,212	42,856
Residential New Construction	Res	227	1,136	2,268	3,401
Comm Connect	LI RES	0	1	1	1
C/I Equipment (Comm Lighting)	COM	79,593	397,651	595,848	794,045
Commercial New Construction	COM	132	661	661	661
C&I Audits & C/I Equipment (expanded)	IND	8,445	42,190	70,886	99,583
Mercantile Self Directed Projects	IND	25,660	69,065	69,065	69,065
C/I Equipment (Industrial Motors)	IND	2,023	10,108	23,409	40,337

When the market potential for demand savings are analyzed for the residential programs, the Energy Efficient Products Program is expected to produce the greatest level of savings. Again, for the commercial and industrial programs, the Commercial Lighting Program will generate the largest demand savings of the programs in that sector.

Table 8-36 Base Case Summary of Measure Demand Lifetime Savings by Program – OE

Base Case Summary of Measure Demand Lifetime Savings by Program					
Program Name	Class	2012 kW	2016 kW	2021 kW	2026 kW
Comprehensive Residential	Res	358	1,791	1,959	2,127
Comprehensive Residential-Home Performance	Res	680	3,398	6,884	10,370
Direct Load Control	Res	4,923	24,594	36,853	49,111
On-Line Audit	Res	157	783	783	783
Appliance Turn-In Program	Res	2,697	13,474	17,952	22,429
Energy Efficient Products Program	Res	4,268	21,324	42,394	63,304
Residential New Construction	Res	1,614	8,064	16,102	24,140
Comm Connect	LI RES	0	0	0	0
C/I Equipment (Comm Lighting)	COM	32,589	162,819	243,971	325,123
Commercial New Construction	COM	231	1,154	1,154	1,154
C&I Audits & C/I Equipment (expanded)	IND	5,133	25,645	43,765	61,885
Mercantile Self Directed Projects	IND	3,270	17,476	17,476	17,476
C/I Equipment (Industrial Motors)	IND	1,429	7,140	16,536	28,494

Table 8-37 Base Case Summary of Measure Demand Lifetime Savings by Program – CEI

Base Case

Summary of Measure Demand Lifetime Savings by Program					
Program Name	Class	2012 kW	2016 kW	2021 kW	2026 kW
Comprehensive Residential	Res	271	1,352	1,520	1,688
Comprehensive Residential-Home Performance	Res	315	1,573	3,192	4,810
Direct Load Control	Res	3,084	15,408	23,088	30,767
On-Line Audit	Res	92	462	462	462
Appliance Turn-In Program	Res	1,301	6,500	8,660	10,819
Energy Efficient Products Program	Res	2,740	13,687	27,201	40,602
Residential New Construction	Res	0	1	3	4
Comm Connect	LI RES	0	0	0	0
C/I Equipment (Comm Lighting)	COM	25,957	129,683	194,319	258,956
Commercial New Construction	COM	0	2	2	2
C&I Audits & C/I Equipment (expanded)	IND	3,331	16,642	28,775	40,908
Mercantile Self Directed Projects	IND	9,924	17,363	17,363	17,363
C/I Equipment (Industrial Motors)	IND	653	3,264	7,559	13,025

Table 8-38 Base Case Summary of Measure Demand Lifetime Savings by Program – TE

Base Case Summary of Measure Demand Lifetime Savings by Program					
Program Name	Class	2012 kW	2016 kW	2021 kW	2026 kW
Comprehensive Residential	Res	114	569	737	905
Comprehensive Residential-Home Performance	Res	156	780	1,581	2,382
Direct Load Control	Res	1,270	6,345	9,508	12,670
On-Line Audit	Res	36	180	180	180
Appliance Turn-In Program	Res	706	3,527	4,699	5,870
Energy Efficient Products Program	Res	1,510	7,543	15,019	22,455
Residential New Construction	Res	434	2,171	4,334	6,498
Comm Connect	LI RES	0	0	0	0
C/I Equipment (Comm Lighting)	COM	14,750	73,694	110,425	147,156
Commercial New Construction	COM	15	76	76	76
C&I Audits & C/I Equipment (expanded)	IND	2,278	11,383	18,922	26,462
Mercantile Self Directed Projects	IND	4,105	11,050	11,050	11,050
C/I Equipment (Industrial Motors)	IND	462	2,306	5,341	9,203

The program and participant costs are shown for each company in the tables below. The number of participants represents the total number of customers or the total number of items (i.e. CFL kits, Commercial Lighting Fixtures) in each program. Also, customers may participate in multiple programs in the year and will be counted in each program. Participant costs are derived based upon the expected mix of measures installed under the programs. Utility costs are higher in the first five years due to the initial use of direct load control programs to meet peak reduction goals. Also, utility costs are higher in the first-year of the program reflecting the one-time program start-

up costs. Table 8-39 through Table 8-41 show the total costs by company. Table 8-42 through Table 8-44 show the breakdown of the utility costs by incentive and program costs.

Table 8-39 Base Case Achievable Results and Costs – OE

Base Case Achievable Results and Costs					
YEAR	2012	2016	2021	2026	Total of All Years
New Participants	714,467	714,467	362,487	360,810	NA
Participant Costs	57,330,397	57,330,397	34,662,291	35,335,344	638,965,900
Utility Costs	32,767,161	34,625,603	17,356,063	16,859,756	335,569,977
Total Costs ($)	**90,097,558**	**91,955,999**	**52,018,354**	**52,195,100**	**974,535,877**

Table 8-40 Base Case Achievable Results and Costs – CEI

Base Case Achievable Results and Costs					
YEAR	2012	2016	2021	2026	Total of All Years
New Participants	554,570	554,570	280,735	279,452	NA
Participant Costs	41,763,468	41,763,468	24,492,497	24,789,921	457,046,778
Utility Costs	21,943,304	23,498,669	11,553,094	11,141,435	224,003,382
Total Costs ($)	**63,706,771**	**65,262,136**	**36,045,591**	**35,931,356**	**681,050,160**

Table 8-41 Base Case Achievable Results and Costs – TE

Base Case Achievable Results and Costs					
YEAR	2012	2016	2021	2026	Total of All Years
New Participants	276,879	276,879	141,197	140,826	NA
Participant Costs	22,886,612	22,886,612	13,443,549	13,665,260	250,774,797
Utility Costs	11,148,378	11,903,118	6,146,835	5,999,992	117,150,653
Total Costs ($)	**34,034,990**	**34,789,730**	**19,590,384**	**19,665,252**	**367,925,450**

Table 8-42 Base Case Utility Program Costs – OE

Base Case Utility Program Costs ($)				
Utility Program Costs ($)	2012	2016	2021	2026
Implementation	15,229,879	17,088,320	7,002,601	6,364,048
Incentives	17,537,283	17,537,283	10,353,462	10,495,708
Total	**32,767,161**	**34,625,603**	**17,356,063**	**16,859,756**

Table 8-43 Base Case Utility Program Costs – CEI

Base Case Utility Program Costs ($)				
Utility Program Costs ($)	2012	2016	2021	2026
Implementation	10,135,318	11,690,683	4,879,821	4,409,046
Incentives	11,807,985	11,807,985	6,673,273	6,732,388
Total	**21,943,304**	**23,498,669**	**11,553,094**	**11,141,435**

Table 8-44 Base Case Utility Program Costs – TE

Base Case Utility Program Costs ($)				
Utility Program Costs ($)	2012	2016	2021	2026
Implementation	5,113,643	5,868,383	2,608,756	2,414,063
Incentives	6,034,735	6,034,735	3,538,078	3,585,929
Total	**11,148,378**	**11,903,118**	**6,146,835**	**5,999,992**

Across the three companies, the savings associated with the market potential programs will result in over $146 million in avoided cost benefits with nearly 70% of the benefits occurring from avoided energy consumption.

Table 8-45 Base Case Avoided Costs – OE

Base Case Avoided Costs (Cumulative Electric)				
Year	2012	2016	2021	2026
Energy $	74,168,226	92,610,063	42,918,627	48,506,815
Capacity $	31,114,023	37,904,634	19,086,484	20,926,886
Total	**105,282,249**	**130,514,697**	**62,005,112**	**69,433,701**

Table 8-46 Base Case Avoided Costs – CEI

Base Case Avoided Costs (Cumulative Electric)				
Year	2012	2016	2021	2026
Energy $	71,362,701	70,883,978	30,853,283	34,646,651
Capacity $	29,467,678	28,923,110	12,874,956	14,042,406
Total	**100,830,379**	**99,807,088**	**43,728,239**	**48,689,057**

Table 8-47 Base Case Avoided Costs – TE

Base Case Avoided Costs (Cumulative Electric)				
Year	2012	2016	2021	2026
Energy $	38,751,390	43,370,139	17,908,444	20,171,297

Capacity $	15,167,103	17,170,729	7,574,226	8,282,141
Total	**53,918,493**	**60,540,868**	**25,482,670**	**28,453,438**

The tables below show the results for the cost-benefit analysis for the individual programs.

Table 8-48 Base Case Summary of Measure Tests by Program – OE

Summary of Measure Tests by Program for Base Case Year 2026				
Program Name	**Class**	**Utility Test**	**TRC Test**	**Participant Test**
Comprehensive Residential	Res	0.64	1.26	0.00
Comprehensive Residential-Home Performance	Res	1.67	1.15	3.23
Direct Load Control	Res	0.81	0.71	
On-Line Audit	Res	0.00	0.53	
Appliance Turn-In Program	Res	1.44	2.56	
Energy Efficient Products Program	Res	1.16	0.74	3.35
Residential New Construction	Res	0.98	0.83	2.79
Comm Connect	LI RES	0.00	0.07	0.00
C/I Equipment (Comm Lighting)	COM	4.09	1.30	5.63
Commercial New Construction	COM	0.00	0.35	0.00
C&I Audits & C/I Equipment (expanded)	IND	1.85	0.86	3.21
Mercantile Self Directed Projects	IND	0.00	12.14	
C/I Equipment (Industrial Motors)	IND	3.28	1.03	4.42

Table 8-49 Base Case Summary of Measure Tests by Program – CEI

Summary of Measure Tests by Program for Base Case Year 2026				
Program Name	**Class**	**Utility Test**	**TRC Test**	**Participant Test**
Comprehensive Residential	Res	0.63	1.25	0.00
Comprehensive Residential-Home Performance	Res	1.56	1.15	2.86
Direct Load Control	Res	1.19	0.67	
On-Line Audit	Res	0.00	0.40	
Appliance Turn-In Program	Res	1.32	2.36	
Energy Efficient Products Program	Res	1.19	0.73	3.01
Residential New Construction	Res	0.00	0.00	2.87
Comm Connect	LI RES	0.00	0.09	0.00
C/I Equipment (Comm Lighting)	COM	3.91	1.27	5.53
Commercial New Construction	COM	0.00	0.42	0.00
C&I Audits & C/I Equipment (expanded)	IND	2.09	0.95	3.78
Mercantile Self Directed Projects	IND	0.00	14.30	
C/I Equipment (Industrial Motors)	IND	2.77	1.02	4.41

Table 8-50 Base Case Summary of Measure Tests by Program – TE

Summary of Measure Tests by Program for Base Case Year 2026				
Program Name	Class	Utility Test	TRC Test	Participant Test
Comprehensive Residential	Res	0.60	1.18	0.00
Comprehensive Residential-Home Performance	Res	1.61	1.15	3.06
Direct Load Control	Res	1.01	0.60	
On-Line Audit	Res	0.00	0.41	
Appliance Turn-In Program	Res	1.48	2.54	
Energy Efficient Products Program	Res	1.21	0.71	2.68
Residential New Construction	Res	0.96	0.81	2.79
Comm Connect	LI RES	NA	NA	NA
C/I Equipment (Comm Lighting)	COM	4.62	1.41	6.11
Commercial New Construction	COM	0.00	0.36	0.00
C&I Audits & C/I Equipment (expanded)	IND	2.02	0.95	3.61
Mercantile Self Directed Projects	IND	0.00	22.37	
C/I Equipment (Industrial Motors)	IND	3.02	1.05	4.40

The costs and benefits for the programs are shown below. These were the components used in the cost-effectiveness analysis to calculate the cost-benefit ratios described above.

Table 8-51 Base Case Summary of Measure Costs & Benefits – OE

Base Case Summary of Measure Costs and Benefits by Class and Program								
RESIDENTIAL PROGRAMS	Year	Lost Revenue (Electric)	Participant Costs	Program Benefits	Total Avoided Energy	Total Avoided Capacity	Total Utility Budget Costs	Incentive Costs
Comprehensive Residential	2012	6,681,519	0	1,816,660	1,675,039	141,620	1,513,558	1,305,393
	2016			2,006,908	1,852,012	154,896	1,596,817	1,305,393
	2021			47,265	36,448	10,817	49,663	31,185
	2026	116,802	0	51,614	40,041	11,572	49,663	31,185
Home Performance	2012	1,966,610	450,641	848,662	467,498	381,165	352,037	260,846
	2016			927,439	515,137	412,303	352,597	260,846
	2021			1,053,989	604,632	449,356	402,445	307,791
	2026	2,107,013	653,069	1,185,496	699,579	485,917	402,445	307,791
Thermostat Direct Load Control	2012	692,038	0	2,961,894	341,700	2,620,194	5,029,172	1,078,015
	2016			3,212,270	375,207	2,837,063	4,515,470	1,078,015
	2021			1,713,362	205,830	1,507,532	1,748,228	539,007
	2026	346,019	0	1,855,970	228,587	1,627,383	898,585	539,007
On-Line Audit	2012	1,369,756	0	391,795	362,372	29,424	785,638	0
	2016			452,060	418,028	34,032	848,352	0
	2021			0	0	0	0	0
	2026	0	0	0	0	0	0	0
Appliance Turn-in	2012	9,639,890	-457,257	3,203,384	2,346,603	856,781	1,534,523	457,257
	2016			3,556,680	2,609,311	947,369	1,845,855	457,257
	2021			1,283,155	949,509	333,645	822,839	152,419
	2026	3,213,297	-152,419	1,401,059	1,044,037	357,022	822,839	152,419
Efficient Appliances	2012	16,444,762	4,626,708	5,757,312	3,576,975	2,180,337	3,728,164	2,594,113
	2016			6,295,770	3,931,981	2,363,789	3,859,108	2,594,113
	2021			6,543,814	4,036,344	2,507,471	3,702,036	2,518,556
	2026	15,194,155	4,535,896	7,159,937	4,466,437	2,693,500	3,650,889	2,494,683
New Homes	2012	1,187,455	425,237	1,099,235	240,164	859,072	878,142	401,167
	2016			1,193,889	263,714	930,176	1,017,539	401,167
	2021			1,277,871	289,335	988,536	1,017,539	401,167
	2026	1,187,455	425,237	1,388,450	321,325	1,067,126	1,017,539	401,167
Comm Connect	2012	199	160	60	48	12	863	760
	2016			67	54	13	863	760
	2021			0	0	0	0	0
	2026	0	0	0	0	0	0	0
COMMERCIAL PROGRAMS								
Efficient Equipment	2012	244,159,314	43,398,372	66,740,631	49,458,159	17,282,472	12,747,034	8,366,582
	2016			73,029,684	54,314,692	18,714,992	12,858,091	8,366,582
	2021			39,738,973	29,794,683	9,944,290	6,529,409	4,183,291
	2026	122,079,657	21,699,186	43,819,519	33,085,266	10,734,253	6,680,182	4,183,291
New Construction	2012	199	160	60	48	12	863	760
	2016			67	54	13	863	760
	2021			0	0	0	0	0
	2026	0	0	0	0	0	0	0
INDUSTRIAL PROGRAMS								
Efficient Equipment	2012	20,963,048	6,203,843	7,338,980	4,697,218	2,641,762	3,171,695	2,422,257
	2016			8,071,167	5,207,567	2,863,600	3,195,586	2,422,257
	2021			6,357,818	4,168,367	2,189,451	2,153,110	1,610,943
	2026	15,493,706	4,829,537	6,979,306	4,616,586	2,362,719	2,153,110	1,610,943
Motors	2012	8,809,563	1,990,975	2,542,427	1,781,770	760,657	704,749	461,441
	2016			2,780,108	1,956,491	823,617	705,274	461,441
	2021			3,988,865	2,833,478	1,155,386	930,794	609,102
	2026	14,800,066	3,344,838	5,592,351	4,004,957	1,587,395	1,184,503	775,221

Table 8-52 Base Case Summary of Measure Costs & Benefits – CEI

Base Case Summary of Measure Costs and Benefits by Class and Program								
RESIDENTIAL PROGRAMS	Year	Lost Revenue (Electric)	Participant Costs	Program Benefits	Total Avoided Energy	Total Avoided Capacity	Total Utility Budget Costs	Incentive Costs
Comprehensive Residential	2012	4,908,128	0	1,336,441	1,230,599	105,842	1,135,031	961,178
	2016			1,476,581	1,360,759	115,822	1,178,922	961,178
	2021			47,265	36,448	10,817	51,168	31,185
	2026	116,802	0	51,614	40,041	11,572	51,168	31,185
Home Performance	2012	745,630	181,723	357,174	180,221	176,952	155,581	115,484
	2016			389,866	198,483	191,382	156,136	115,484
	2021			447,115	238,057	209,058	182,722	139,608
	2026	817,778	285,743	502,639	276,598	226,041	182,722	139,608
Thermostat Direct Load Control	2012	433,555	0	1,855,595	214,071	1,641,523	3,342,729	704,820
	2016			2,012,453	235,063	1,777,390	3,015,741	704,820
	2021			1,073,403	128,950	944,452	1,179,713	352,410
	2026	216,777	0	1,162,745	143,208	1,019,538	625,976	352,410
On-Line Audit	2012	807,388	0	230,940	213,596	17,343	628,612	0
	2016			266,462	246,402	20,060	669,972	0
	2021			0	0	0	0	0
	2026	0	0	0	0	0	0	0
Appliance Turn-in	2012	6,066,974	-289,798	1,924,739	1,477,389	447,351	979,327	289,798
	2016			2,135,137	1,642,818	492,320	1,192,699	289,798
	2021			771,319	597,807	173,512	539,814	96,599
	2026	2,022,325	-96,599	842,973	657,321	185,653	539,814	96,599
Efficient Appliances	2012	9,170,607	2,854,990	3,486,812	2,063,442	1,423,370	2,268,650	1,476,899
	2016			3,811,446	2,269,049	1,542,397	2,364,028	1,476,899
	2021			3,955,556	2,319,398	1,636,158	2,253,130	1,427,478
	2026	8,396,736	2,791,172	4,329,060	2,571,224	1,757,835	2,214,423	1,410,674
New Homes	2012	220	77	203	44	159	153	74
	2016			221	49	172	106,593	74
	2021			237	54	183	106,593	74
	2026	220	77	257	59	198	106,593	74
Comm Connect	2012	261	160	79	63	16	853	760
	2016			88	71	18	853	760
	2021			0	0	0	0	0
	2026	0	0	0	0	0	0	0
COMMERCIAL PROGRAMS								
Efficient Equipment	2012	187,817,693	33,981,590	51,809,430	38,025,036	13,784,394	10,637,062	6,506,924
	2016			56,683,413	41,757,078	14,926,335	10,680,791	6,506,924
	2021			30,837,656	22,906,397	7,931,258	5,379,914	3,253,462
	2026	93,908,847	16,990,795	33,998,730	25,437,237	8,561,493	5,439,281	3,253,462
New Construction	2012	261	160	79	63	16	853	760
	2016			88	71	18	853	760
	2021			0	0	0	0	0
	2026	0	0	0	0	0	0	0
INDUSTRIAL PROGRAMS								
Efficient Equipment	2012	15,916,928	4,121,579	5,254,558	3,556,665	1,697,894	1,954,660	1,540,859
	2016			5,779,344	3,938,517	1,840,827	1,976,016	1,540,859
	2021			4,772,859	3,331,412	1,441,447	1,414,319	1,094,087
	2026	12,417,584	3,286,492	5,245,457	3,690,896	1,554,561	1,414,319	1,094,087
Motors	2012	4,025,353	912,048	1,161,839	814,181	347,657	337,270	210,886
	2016			1,270,457	894,022	376,435	337,795	210,886
	2021			1,822,831	1,294,761	528,070	445,722	278,370
	2026	6,762,593	1,532,241	2,555,582	1,830,066	725,516	567,139	354,289

Table 8-53 Base Case Summary of Measure Costs & Benefits – TE

Base Case Summary of Measure Costs and Benefits by Class and Program								
RESIDENTIAL PROGRAMS	Year	Lost Revenue (Electric)	Participant Costs	Program Benefits	Total Avoided Energy	Total Avoided Capacity	Total Utility Budget Costs	Incentive Costs
Comprehensive Residential	2012	1,738,506	0	478,136	436,241	41,895	421,458	345,957
	2016			528,714	482,731	45,983	448,388	345,957
	2021			47,265	36,448	10,817	54,931	31,185
	2026	116,802	0	51,614	40,041	11,572	54,931	31,185
Home Performance	2012	405,252	96,488	184,812	96,984	87,829	78,940	58,415
	2016			201,837	106,844	94,992	79,484	58,415
	2021			229,839	126,306	103,533	91,722	69,215
	2026	437,553	143,059	258,356	146,402	111,955	91,722	69,215
Thermostat Direct Load Control	2012	178,539	0	764,141	88,155	675,986	1,500,183	279,708
	2016			828,736	96,800	731,936	1,370,489	279,708
	2021			442,031	53,102	388,929	554,906	139,854
	2026	89,270	0	478,823	58,973	419,850	334,671	139,854
On-Line Audit	2012	314,904	0	90,073	83,309	6,764	231,506	0
	2016			103,928	96,104	7,824	253,235	0
	2021			0	0	0	0	0
	2026	0	0	0	0	0	0	0
Appliance Turn-in	2012	3,294,227	-156,354	1,044,754	801,926	242,828	533,490	156,354
	2016			1,158,936	891,705	267,231	612,016	156,354
	2021			418,668	324,485	94,183	256,356	52,118
	2026	1,098,076	-52,118	457,561	356,789	100,773	256,356	52,118
Efficient Appliances	2012	4,317,125	1,523,606	1,773,290	983,841	789,449	1,146,529	724,121
	2016			1,936,754	1,081,484	855,271	1,199,191	724,121
	2021			2,030,383	1,121,689	908,694	1,161,134	706,183
	2026	4,021,896	1,501,661	2,231,937	1,253,897	978,040	1,148,042	700,401
New Homes	2012	319,632	114,463	295,886	64,646	231,240	245,271	107,984
	2016			321,364	70,985	250,379	282,275	107,984
	2021			343,970	77,881	266,088	282,275	107,984
	2026	319,632	114,463	373,735	86,492	287,242	282,275	107,984
Comm Connect	2012	175	160	53	43	11	828	760
	2016			59	47	12	828	760
	2021			0	0	0	0	0
	2026	0	0	0	0	0	0	0
COMMERCIAL PROGRAMS								
Efficient Equipment	2012	111,587,078	18,274,047	30,422,562	22,582,304	7,840,258	5,352,983	3,248,963
	2016			33,287,398	24,797,861	8,489,537	5,361,956	3,248,963
	2021			18,114,359	13,603,325	4,511,033	2,689,087	1,624,481
	2026	55,793,539	9,137,023	19,976,318	15,106,760	4,869,558	2,701,269	1,624,481
New Construction	2012	175	160	53	43	11	828	760
	2016			59	47	12	828	760
	2021			0	0	0	0	0
	2026	0	0	0	0	0	0	0
INDUSTRIAL PROGRAMS								
Efficient Equipment	2012	8,636,417	2,343,423	3,079,819	1,888,374	1,191,445	1,189,368	951,084
	2016			3,379,290	2,088,498	1,290,793	1,197,581	951,084
	2021			2,568,529	1,650,647	917,882	783,451	610,408
	2026	6,262,360	1,736,805	2,819,865	1,829,269	990,596	783,451	610,408
Motors	2012	2,843,226	645,457	820,710	575,100	245,610	206,399	148,977
	2016			897,439	631,498	265,941	206,924	148,977
	2021			1,287,627	914,560	373,067	272,972	196,650
	2026	4,776,620	1,084,367	1,805,229	1,292,674	512,555	347,275	250,281

The costs and benefits for each program were aggregated to create an overall cost-effective metric for the utility, TRC and participant tests. Again, given the cost-effectiveness of the underlying programs, the portfolio of energy efficiency programs are clearly cost effective.

Table 8-54 Base Case Comparison of TRC Results – OE

Base Case Comparison of TRC Results by Type of Test	
Utility Test	2.1
TRC Test	1.2
Participant Test	5.5

Table 8-55 Base Case Comparison of TRC Results – CEI

Base Case Comparison of TRC Results by Type of Test	
Utility Test	3.0
TRC Test	1.6
Participant Test	5.7

Table 8-56 Base Case Comparison of TRC Results – TE

Base Case Comparison of TRC Results by Type of Test	
Utility Test	3.1
TRC Test	1.6
Participant Test	6.0

The Base Case market potential analysis is repeated for the High Case Scenario. For the High Case Scenario, the assumption of participation levels is broadened to also include customers who indicated that they were likely to participate in the program or install the equipment. In addition, the program budgets are increased to reflect greater marketing requirements and higher incentive rates (in order to lure the "likely to participate" to actually participate in programs).

Not surprisingly, the higher participation assumptions lead to greater savings than the Base Case and an increase of roughly 15% to 35%. However, the relative magnitude of the program energy savings across programs does not change the Residential Efficient Appliance and the Commercial Lighting Program produce the largest savings. The tables below show the energy savings by company.

Table 8-57 High Case Summary of Measure Energy Lifetime Savings by Program – OE

High Case Summary of Measure Energy Lifetime Savings by Program					
Program Name	Class	2012 MWh	2017 MWh	2022 MWh	2025 MWh
Comprehensive Residential	Res	18,668	93,268	94,303	95,337
Comprehensive Residential-Home Performance	Res	3,538	17,677	37,258	56,839
Direct Load Control	Res	718	3,585	5,372	7,159
On-Line Audit	Res	4,385	21,906	21,906	21,906
Appliance Turn-In Program	Res	15,350	76,687	102,169	127,651
Energy Efficient Products Program	Res	15,029	75,085	144,613	212,865
Residential New Construction	Res	845	4,220	8,427	12,634
Comm Connect	LI RES	0	1	1	1
C/I Equipment (Comm Lighting)	COM	243,904	1,218,556	1,825,910	2,433,264
Commercial New Construction	COM	2,021	10,096	10,096	10,096
C&I Audits & C/I Equipment (expanded)	IND	24,241	121,110	205,236	289,361
Mercantile Self Directed Projects	IND	20,440	109,229	109,229	109,229
C/I Equipment (Industrial Motors)	IND	6,285	31,399	72,715	125,299

Table 8-58 High Case Summary of Measure Energy Lifetime Savings by Program – CEI

High Case Summary of Measure Energy Lifetime Savings by Program					
Program Name	Class	2012 MWh	2017 MWh	2022 MWh	2025 MWh
Comprehensive Residential	Res	14,725	73,568	74,602	75,637
Comprehensive Residential-Home Performance	Res	1,492	7,452	16,095	24,738
Direct Load Control	Res	468	2,340	3,506	4,672
On-Line Audit	Res	2,584	12,912	12,912	12,912
Appliance Turn-In Program	Res	11,755	58,728	78,243	97,757
Energy Efficient Products Program	Res	8,748	43,703	83,910	123,217
Residential New Construction	Res	0	1	2	2
Comm Connect	LI RES	0	2	2	2
C/I Equipment (Comm Lighting)	COM	154,507	771,925	1,156,668	1,541,412
Commercial New Construction	COM	3	16	16	16
C&I Audits & C/I Equipment (expanded)	IND	15,905	79,460	135,558	191,656
Mercantile Self Directed Projects	IND	55,760	97,557	97,557	97,557
C/I Equipment (Industrial Motors)	IND	2,872	14,349	33,231	57,262

Table 8-59 High Case Summary of Measure Energy Lifetime Savings by Program – TE

High Case Summary of Measure Energy Lifetime Savings by Program

Program Name	Class	2012 MWh	2017 MWh	2022 MWh	2025 MWh
Comprehensive Residential	Res	4,939	24,677	25,711	26,745
Comprehensive Residential-Home Performance	Res	760	3,797	8,068	12,338
Direct Load Control	Res	188	938	1,406	1,873
On-Line Audit	Res	1,008	5,036	5,036	5,036
Appliance Turn-In Program	Res	5,548	27,719	36,929	46,140
Energy Efficient Products Program	Res	4,083	20,400	39,479	58,247
Residential New Construction	Res	227	1,136	2,268	3,401
Comm Connect	LI RES	0	1	1	1
C/I Equipment (Comm Lighting)	COM	96,032	479,783	718,917	958,051
Commercial New Construction	COM	132	661	661	661
C&I Audits & C/I Equipment (expanded)	IND	8,482	42,375	71,158	99,941
Mercantile Self Directed Projects	IND	25,660	69,065	69,065	69,065
C/I Equipment (Industrial Motors)	IND	2,029	10,137	23,475	40,451

As with energy savings, the High Case Scenario yields significantly higher demand savings while the relative rank among programs with respect to demand savings levels does not change from the Base Case.

Table 8-60 High Case Summary of Measure Demand Lifetime Savings by Program – OE

High Case Summary of Measure Demand Lifetime Savings by Program					
Program Name	Class	2012 kW	2016 kW	2021 kW	2026 kW
Comprehensive Residential	Res	821	4,102	4,270	4,438
Comprehensive Residential-Home Performance	Res	1,501	7,498	15,221	22,944
Direct Load Control	Res	7,176	35,852	53,722	71,591
On-Line Audit	Res	188	940	940	940
Appliance Turn-In Program	Res	5,002	24,988	33,291	41,594
Energy Efficient Products Program	Res	4,917	24,564	48,864	73,004
Residential New Construction	Res	1,614	8,064	16,102	24,140
Comm Connect	LI RES	0	0	0	0
C/I Equipment (Comm Lighting)	COM	45,847	229,055	343,221	457,387
Commercial New Construction	COM	231	1,154	1,154	1,154
C&I Audits & C/I Equipment (expanded)	IND	5,916	29,556	51,547	73,537
Mercantile Self Directed Projects	IND	3,270	17,476	17,476	17,476
C/I Equipment (Industrial Motors)	IND	1,436	7,174	16,614	28,629

Table 8-61 High Case Summary of Measure Demand Lifetime Savings by Program – CEI

High Case Summary of Measure Demand Lifetime Savings by Program					
Program Name	Class	2012 kW	2016 kW	2021 kW	2026 kW
Comprehensive Residential	Res	653	3,262	3,430	3,598
Comprehensive Residential-Home Performance	Res	799	3,990	8,121	12,252
Direct Load Control	Res	4,683	23,397	35,059	46,721
On-Line Audit	Res	111	554	554	554
Appliance Turn-In Program	Res	1,895	9,469	12,615	15,761
Energy Efficient Products Program	Res	3,172	15,848	31,517	47,072
Residential New Construction	Res	0	1	3	4
Comm Connect	LI RES	0	0	0	0
C/I Equipment (Comm Lighting)	COM	29,912	149,441	223,925	298,409
Commercial New Construction	COM	0	2	2	2
C&I Audits & C/I Equipment (expanded)	IND	3,666	18,315	32,106	45,897
Mercantile Self Directed Projects	IND	9,924	17,363	17,363	17,363
C/I Equipment (Industrial Motors)	IND	656	3,280	7,595	13,087

Table 8-62 High Case Summary of Measure Demand Lifetime Savings by Program – TE

High Case Summary of Measure Demand Lifetime Savings by Program					
Program Name	Class	2012 kW	2016 kW	2021 kW	2026 kW
Comprehensive Residential	Res	236	1,177	1,345	1,513
Comprehensive Residential-Home Performance	Res	364	1,818	3,692	5,567
Direct Load Control	Res	1,878	9,382	14,058	18,734
On-Line Audit	Res	43	216	216	216
Appliance Turn-In Program	Res	895	4,469	5,954	7,439
Energy Efficient Products Program	Res	1,709	8,537	17,002	25,428
Residential New Construction	Res	434	2,171	4,334	6,498
Comm Connect	LI RES	0	0	0	0
C/I Equipment (Comm Lighting)	COM	17,808	88,969	133,313	177,657
Commercial New Construction	COM	15	76	76	76
C&I Audits & C/I Equipment (expanded)	IND	2,472	12,349	20,843	29,337
Mercantile Self Directed Projects	IND	4,105	11,050	11,050	11,050
C/I Equipment (Industrial Motors)	IND	464	2,317	5,366	9,247

The program and participant data sheds some light on some inter-utility differences. For both CEI and TE, participant and utility costs increased between 25% and 27% over the Base Case, while for OE the same costs increased by 38%. This finding indicates that more customers in the CEI and TE service territories fall into the "likely to participate" category than OE customers.

Table 8-63 High Case Achievable Results and Costs – OE

High Case Achievable Results and Costs					
YEAR	2012	2016	2021	2026	Total of All Years
New Participants (Units)	1,002,341	1,002,341	511,934	510,283	NA
Participant Costs	77,099,226	77,099,226	46,679,440	47,353,339	857,985,770
Utility Costs	48,590,095	50,164,212	25,138,512	24,259,885	491,305,874
Total Costs ($)	**125,689,322**	**127,263,439**	**71,817,952**	**71,613,224**	**1,349,291,643**

Table 8-64 High Case Achievable Results and Costs – CEI

High Case Achievable Results and Costs					
YEAR	2012	2016	2021	2026	Total of All Years
New Participants (Units)	669,328	669,328	338,303	337,031	NA
Participant Costs	48,474,615	48,474,615	29,030,338	29,328,149	535,982,862
Utility Costs	31,666,927	33,011,682	15,919,733	15,223,992	315,392,169
Total Costs ($)	**80,141,542**	**81,486,297**	**44,950,071**	**44,552,141**	**851,375,031**

Table 8-65 High Case Achievable Results and Costs – TE

High Case Achievable Results and Costs					
YEAR	2012	2016	2021	2026	Total of All Years
New Participants (Units)	344,439	344,439	176,696	176,334	NA
Participant Costs	27,549,732	27,549,732	16,367,618	16,589,602	303,332,446
Utility Costs	15,820,811	16,498,211	8,526,226	8,275,346	163,979,219
Total Costs ($)	**43,370,543**	**44,047,943**	**24,893,844**	**24,864,948**	**467,311,666**

The breakout of the utility costs for the High Case Scenario is shown in the tables below. The increase in program costs reflects the need for higher spending in order to capture the likely participants. The extended marketing campaigns and collateral necessary to reach this customer segment increases program costs.

Table 8-66 High Case Utility Program Costs – OE

High Case Utility Program Costs ($)				
Utility Program Costs ($)	2012	2016	2021	2026
Implementation	24,303,344	25,877,461	11,595,144	10,573,317
Incentives	24,286,751	24,286,751	13,543,368	13,686,568
Total	**48,590,095**	**50,164,212**	**25,138,512**	**24,259,885**

Table 8-67 High Case Utility Program Costs – CEI

High Case Utility Program Costs ($)				
Utility Program Costs ($)	2012	2016	2021	2026
Implementation	16,184,905	17,529,660	7,781,480	7,026,189
Incentives	15,482,022	15,482,022	8,138,252	8,197,803
Total	**31,666,927**	**33,011,682**	**15,919,733**	**15,223,992**

Table 8-68 High Case Utility Program Costs – TE

High Case Utility Program Costs ($)				
Utility Program Costs ($)	2012	2016	2021	2026
Implementation	8,084,862	8,762,262	4,177,097	3,878,059
Incentives	7,735,949	7,735,949	4,349,129	4,397,287
Total	**15,820,811**	**16,498,211**	**8,526,226**	**8,275,346**

Table 8-69 High Case Avoided Costs – OE

High Case Avoided Costs (Cumulative Electric)				
Year	2012	2016	2021	2026
Energy $	98,911,993	119,812,073	57,611,259	64,861,117
Capacity $	41,360,776	49,025,295	25,485,722	27,835,179
Total	**140,272,768**	**168,837,368**	**83,096,981**	**92,696,296**

Table 8-70 High Case Avoided Costs – CEI

High Case Avoided Costs (Cumulative Electric)				
Year	2012	2016	2021	2026
Energy $	80,725,451	81,191,201	35,721,613	40,073,304
Capacity $	33,483,298	33,275,752	15,469,477	16,844,246
Total	**114,208,749**	**114,466,953**	**51,191,090**	**56,917,550**

Table 8-71 High Case Avoided Costs – TE

High Case Avoided Costs (Cumulative Electric)				
Year	2012	2016	2021	2026
Energy $	44,790,360	50,010,443	21,428,819	24,089,824
Capacity $	17,561,803	19,765,204	9,104,781	9,935,000
Total	**62,352,163**	**69,775,647**	**30,533,600**	**34,024,824**

Higher program costs serve to reduce the cost-effectiveness of all programs across the utilities. The Residential Efficient Equipment Program, while producing the largest energy savings within the portfolio of programs, is not cost-effective based on the TRC. This is a consistent finding for each of the three companies. The Commercial Lighting Program, which also produces significant energy and demand savings, however, remains cost-effective based on the TRC.

Table 8-72 High Case Summary of Measure Test by Program – OE

Summary of Measure Tests by Program for High Case Year 2026				
Program Name	Class	Utility Test	TRC Test	Participant Test
Comprehensive Residential	Res	0.64	1.04	0.00
Comprehensive Residential-Home Performance	Res	1.50	1.05	3.19
Direct Load Control	Res	0.82	0.71	
On-Line Audit	Res	0.00	0.42	
Appliance Turn-In Program	Res	1.33	2.00	
Energy Efficient Products Program	Res	0.95	0.59	2.94
Residential New Construction	Res	0.98	0.83	2.79
Comm Connect	LI RES	0.00	0.07	0.00
C/I Equipment (Comm Lighting)	COM	4.01	1.30	5.71
Commercial New Construction	COM	0.00	0.35	0.00
C&I Audits & C/I Equipment (expanded)	IND	1.85	0.85	3.09
Mercantile Self Directed Projects	IND	0.00	12.14	
C/I Equipment (Industrial Motors)	IND	3.25	1.03	4.43

Table 8-73 High Case Summary of Measure Test by Program – CEI

Summary of Measure Tests by Program for High Case Year 2026				
Program Name	Class	Utility Test	TRC Test	Participant Test
Comprehensive Residential	Res	0.63	1.24	0.00
Comprehensive Residential-Home	Res	1.43	1.06	2.79

Performance				
Direct Load Control	Res	1.20	0.66	
On-Line Audit	Res	0.00	0.31	
Appliance Turn-In Program	Res	1.17	1.73	
Energy Efficient Products Program	Res	0.95	0.59	2.83
Residential New Construction	Res	0.00	0.00	2.87
Comm Connect	LI RES	0.00	0.09	0.00
C/I Equipment (Comm Lighting)	COM	3.75	1.25	5.55
Commercial New Construction	COM	0.00	0.42	0.00
C&I Audits & C/I Equipment (expanded)	IND	1.99	0.89	3.21
Mercantile Self Directed Projects	IND	0.00	14.30	
C/I Equipment (Industrial Motors)	IND	2.75	1.01	4.42

Table 8-74 High Case Summary of Measure Test by Program – TE

Summary of Measure Tests by Program for High Case Year 2026				
Program Name	**Class**	**Utility Test**	**TRC Test**	**Participant Test**
Comprehensive Residential	Res	0.60	1.21	0.00
Comprehensive Residential-Home Performance	Res	1.46	1.05	3.01
Direct Load Control	Res	1.00	0.60	
On-Line Audit	Res	0.00	0.33	
Appliance Turn-In Program	Res	1.22	1.75	
Energy Efficient Products Program	Res	0.94	0.57	2.55
Residential New Construction	Res	0.96	0.81	2.79
Comm Connect	LI RES	0.00	0.06	0.00
C/I Equipment (Comm Lighting)	COM	4.42	1.39	6.13
Commercial New Construction	COM	0.00	0.36	0.00
C&I Audits & C/I Equipment (expanded)	IND	1.90	0.90	3.19
Mercantile Self Directed Projects	IND	0.00	22.37	
C/I Equipment (Industrial Motors)	IND	3.00	1.05	4.41

The cost-effectiveness analysis was based upon program level costs and benefits. The data used for the analysis are shown by program in the following tables.

Table 8-75 High Case Summary of Measure Costs & Benefits – OE

High Case Summary of Measure Costs and Benefits by Class and Program								
RESIDENTIAL PROGRAMS	Year	Lost Revenue (Electric)	Participant Costs	Program Benefits	Total Avoided Energy	Total Avoided Capacity	Total Utility Budget Costs	Incentive Costs
Comprehensive Home	2012	16,033,994	0	4,349,226	4,018,919	330,307	3,737,084	3,120,702
	2016			4,803,740	4,442,774	360,966	3,820,344	3,120,702
	2021			47,265	36,448	10,817	49,663	31,185
	2026	116,802	0	51,614	40,041	11,572	49,663	31,185
Comprehensive Residential-Home Perfc	2012	4,494,146	1,006,309	1,928,553	1,068,716	859,837	992,993	562,775
	2016			2,106,954	1,177,422	929,532	993,552	562,775
	2021			2,411,526	1,395,539	1,015,986	1,121,535	683,306
	2026	4,862,956	1,526,035	2,715,493	1,616,362	1,099,131	1,121,535	683,306
Thermostat Direct Load Control	2012	1,008,817	0	4,317,691	498,112	3,819,579	7,403,400	1,571,472
	2016			4,682,676	546,956	4,135,719	6,603,226	1,571,472
	2021			2,497,647	300,048	2,197,599	2,533,218	785,736
	2026	504,408	0	2,705,534	333,222	2,372,311	1,294,654	785,736
On-Line Audit	2012	1,643,707	0	470,155	434,846	35,308	1,225,595	0
	2016			542,472	501,634	40,838	1,288,309	0
	2021			0	0	0	0	0
	2026	0	0	0	0	0	0	0
Appliance Turn-In Program	2012	11,425,046	-596,517	4,226,504	2,795,435	1,431,069	2,639,588	596,517
	2016			4,702,425	3,109,250	1,593,175	2,950,920	596,517
	2021			1,691,864	1,131,364	560,500	1,191,194	198,839
	2026	3808348.82	-198838.99	1,843,835	1,243,989	599,846	1,191,194	198,839
Efficient Appliances	2012	21,008,555	6,803,041	7,046,479	4,534,963	2,511,515	6,053,774	3,420,581
	2016			7,707,235	4,984,444	2,722,791	6,184,719	3,420,581
	2021			8,080,203	5,191,039	2,889,164	6,027,646	3,345,024
	2026	19,757,947	6,712,229	8,852,451	5,747,486	3,104,965	5,976,499	3,321,151
New Homes	2012	1,187,455	425,237	1,099,235	240,164	859,072	878,142	401,167
	2016			1,193,889	263,714	930,176	1,017,539	401,167
	2021			1,277,871	289,335	988,536	1,017,539	401,167
	2026	1,187,455	425,237	1,388,450	321,325	1,067,126	1,017,539	401,167
Comm Connect	2012	199	160	60	48	12	863	760
	2016			67	54	13	863	760
	2021			0	0	0	0	0
	2026	0	0	0	0	0	0	0
COMMERCIAL PROGRAMS								
Efficient Equipment	2012	341,116,299	59,702,529	93,406,882	69,067,782	24,339,101	18,977,315	11,305,255
	2016			102,202,898	75,847,212	26,355,686	19,090,520	11,305,255
	2021			55,611,274	41,606,944	14,004,330	9,647,565	5,652,627
	2026	170,558,150	29,851,264	61,320,599	46,203,529	15,117,070	9,801,254	5,652,627
New Construction	2012	2,840,830	691,719	697,526	574,560	122,966	1,504,309	189,452
	2016			764,044	630,901	133,144	1,504,309	189,452
	2021			0	0	0	0	0
	2026	0	0	0	0	0	0	0
INDUSTRIAL PROGRAMS								
Efficient Equipment	2012	23,060,723	7,073,424	8,295,706	5,245,522	3,050,183	3,644,768	2,653,981
	2016			9,116,815	5,810,727	3,306,089	3,668,659	2,653,981
	2021			7,476,979	4,819,057	2,657,921	2,605,846	1,832,886
	2026	17,559,391	5,688,627	8,207,120	5,338,891	2,868,230	2,605,846	1,832,886
Motors	2012	8,834,484	1,993,325	2,551,071	1,786,804	764,266	714,986	464,090
	2016			2,789,543	1,962,018	827,525	715,511	464,090
	2021			4,002,353	2,841,484	1,160,869	944,306	612,598
	2026	14,841,933	3,348,786	5,611,200	4,016,272	1,594,928	1,201,701	779,671

Table 8-76 High Case Summary of Measure Costs & Benefits – CEI

High Case Summary of Measure Costs and Benefits by Class and Program								
RESIDENTIAL PROGRAMS	Year	Lost Revenue (Electric)	Participant Costs	Program Benefits	Total Avoided Energy	Total Avoided Capacity	Total Utility Budget Costs	Incentive Costs
Comprehensive Home	2012	12,634,142	0	3,428,577	3,166,862	261,715	3,003,357	2,460,793
	2016			3,787,024	3,500,969	286,055	3,047,248	2,460,793
	2021			47,265	36,448	10,817	51,168	31,185
	2026	116,802	0	51,614	40,041	11,572	51,168	31,185
Comprehensive Residential-Home Perfo	2012	1,980,241	469,741	944,030	479,364	464,667	498,965	282,129
	2016			1,029,860	527,761	502,099	499,520	282,129
	2021			1,194,137	643,383	550,754	581,618	356,623
	2026	2,208,739	790,960	1,344,967	749,074	595,893	581,618	356,623
Thermostat Direct Load Control	2012	658,361	0	2,817,755	325,071	2,492,684	5,134,513	1,070,282
	2016			3,055,947	356,948	2,698,999	4,596,036	1,070,282
	2021			1,629,982	195,813	1,434,169	1,778,735	535,141
	2026	329,180	0	1,765,650	217,463	1,548,187	937,874	535,141
On-Line Audit	2012	968,865	0	277,127	256,315	20,812	980,635	0
	2016			319,754	295,682	24,072	1,021,995	0
	2021			0	0	0	0	0
	2026	0	0	0	0	0	0	0
Appliance Turn-In Program	2012	8,752,207	-454,425	2,788,833	2,140,791	648,042	2,034,241	454,425
	2016			3,094,492	2,381,076	713,416	2,247,612	454,425
	2021			1,117,828	866,406	251,422	891,452	151,475
	2026	2917402.45	-151475.09	1,221,671	952,656	269,016	891,452	151,475
Efficient Appliances	2012	12,126,905	4,077,264	4,330,696	2,682,473	1,648,224	3,819,132	1,996,206
	2016			4,734,845	2,948,834	1,786,011	3,914,510	1,996,206
	2021			4,960,782	3,065,557	1,895,225	3,803,612	1,946,785
	2026	11,353,034	4,013,446	5,436,414	3,399,156	2,037,258	3,764,905	1,929,981
New Homes	2012	220	77	203	44	159	153	74
	2016			221	49	172	106,593	74
	2021			237	54	183	106,593	74
	2026	220	77	257	59	198	106,593	74
Comm Connect	2012	261	160	79	63	16	853	760
	2016			88	71	18	853	760
	2021			0	0	0	0	0
	2026	0	0	0	0	0	0	0
COMMERCIAL PROGRAMS								
Efficient Equipment	2012	216,327,269	38,976,436	59,680,444	43,791,119	15,889,325	13,225,122	7,437,930
	2016			65,294,064	48,088,577	17,205,487	13,269,730	7,437,930
	2021			35,522,049	26,379,716	9,142,333	6,675,178	3,718,965
	2026	108,163,634	19,488,218	39,163,427	29,294,578	9,868,849	6,735,739	3,718,965
New Construction	2012	4,514	1,099	1,108	913	195	1,770	301
	2016			1,214	1,002	212	1,770	301
	2021			0	0	0	0	0
	2026	0	0	0	0	0	0	0
INDUSTRIAL PROGRAMS								
Efficient Equipment	2012	15,235,936	4,491,143	5,362,649	3,479,474	1,883,174	2,124,178	1,567,024
	2016			5,894,270	3,853,021	2,041,250	2,145,535	1,567,024
	2021			4,889,819	3,235,817	1,654,002	1,578,880	1,118,037
	2026	11,727,527	3,652,880	5,369,358	3,585,041	1,784,317	1,578,880	1,118,037
Motors	2012	4,036,736	913,121	1,165,787	816,481	349,306	342,403	212,096
	2016			1,274,767	896,547	378,220	342,928	212,096
	2021			1,828,992	1,298,418	530,574	452,497	279,967
	2026	6,781,717	1,534,044	2,564,192	1,835,235	728,957	575,762	356,322

Table 8-77 High Case Summary of Measure Costs & Benefits – TE

High Case Summary of Measure Costs and Benefits by Class and Program								
RESIDENTIAL PROGRAMS	Year	Lost Revenue (Electric)	Participant Costs	Program Benefits	Total Avoided Energy	Total Avoided Capacity	Total Utility Budget Costs	Incentive Costs
Comprehensive Home	2012	4,196,402	0	1,143,712	1,052,229	91,483	1,016,035	823,033
	2016			1,263,741	1,163,601	100,140	1,042,964	823,033
	2021			47,265	36,448	10,817	54,931	31,185
	2026	116,802	0	51,614	40,041	11,572	54,931	31,185
Comprehensive Residential-Home Perfo	2012	981,894	228,458	445,366	235,151	210,215	233,965	132,352
	2016			486,199	259,000	227,199	234,508	132,352
	2021			558,280	309,853	248,427	268,272	162,149
	2026	1,073,161	356,943	628,444	359,666	268,778	268,272	162,149
Thermostat Direct Load Control	2012	263,994	0	1,129,884	130,349	999,534	2,266,213	413,586
	2016			1,225,396	143,131	1,082,264	2,058,874	413,586
	2021			653,602	78,519	575,083	828,931	206,793
	2026	131,997	0	708,003	87,200	620,803	503,284	206,793
On-Line Audit	2012	377,885	0	108,088	99,970	8,117	361,149	0
	2016			124,713	115,325	9,389	382,878	0
	2021			0	0	0	0	0
	2026	0	0	0	0	0	0	0
Appliance Turn-In Program	2012	4,130,853	-214,508	1,316,279	1,010,414	305,865	969,619	214,508
	2016			1,460,546	1,123,825	336,721	1,048,145	214,508
	2021			527,595	408,928	118,667	401,732	71,503
	2026	1376951.08	-71502.76	576,607	449,636	126,971	401,732	71,503
Efficient Appliances	2012	5,732,921	2,153,775	2,172,738	1,280,125	892,612	1,991,827	975,019
	2016			2,373,954	1,406,907	967,047	2,044,489	975,019
	2021			2,506,377	1,478,818	1,027,559	2,006,432	957,081
	2026	5,437,693	2,131,830	2,756,376	1,650,137	1,106,239	1,993,339	951,299
New Homes	2012	319,632	114,463	295,886	64,646	231,240	245,271	107,984
	2016			321,364	70,985	250,379	282,275	107,984
	2021			343,970	77,881	266,088	282,275	107,984
	2026	319,632	114,463	373,735	86,492	287,242	282,275	107,984
Comm Connect	2012	175	160	53	43	11	828	760
	2016			59	47	12	828	760
	2021			0	0	0	0	0
	2026	0	0	0	0	0	0	0
COMMERCIAL PROGRAMS								
Efficient Equipment	2012	134,697,687	21,986,922	36,724,035	27,256,442	9,467,593	6,960,525	3,897,599
	2016			40,181,904	29,930,340	10,251,564	6,969,803	3,897,599
	2021			21,866,212	16,418,889	5,447,323	3,493,286	1,948,799
	2026	67,348,844	10,993,461	24,113,905	18,233,622	5,880,283	3,505,883	1,948,799
New Construction	2012	186,134	45,322	45,703	37,646	8,057	93,064	12,413
	2016			50,061	41,337	8,724	93,064	12,413
	2021			0	0	0	0	0
	2026	0	0	0	0	0	0	0
INDUSTRIAL PROGRAMS								
Efficient Equipment	2012	8,690,507	2,588,926	3,228,368	1,933,799	1,294,569	1,324,890	1,008,864
	2016			3,540,877	2,138,418	1,402,458	1,333,102	1,008,864
	2021			2,738,321	1,702,340	1,035,981	913,874	665,858
	2026	6,306,462	1,978,767	3,004,832	1,886,706	1,118,125	913,874	665,858
Motors	2012	2,851,264	646,215	823,498	576,724	246,774	209,066	149,831
	2016			900,482	633,280	267,202	209,591	149,831
	2021			1,291,978	917,143	374,835	276,492	197,777
	2026	4,790,124	1,085,640	1,811,309	1,296,324	514,985	351,756	251,717

Finally, the cost-effectiveness analysis is conducted on the portfolio of programs for each company. The detailed program cost and benefit data are aggregated and the utility, TRC and participant test ratios are calculated. Again, given the higher program costs and participation costs due to larger participant rates, the overall cost/benefit ratios for the High Case Scenario are lower than in the Base Case Scenario.

Table 8-78 High Case Comparison of TRC Results – OE

High Case Comparison of TRC Results by Type of Test	
Utility Test	1.9
TRC Test	1.1
Participant Test	5.6

Table 8-79 High Case Comparison of TRC Results – CEI

High Case Comparison of TRC Results by Type of Test	
Utility Test	2.4
TRC Test	1.4
Participant Test	5.8

Table 8-80 High Case Comparison of TRC Results – TE

High Case Comparison of TRC Results by Type of Test	
Utility Test	2.6
TRC Test	1.4
Participant Test	6.0

9.0 PROGRAM DESIGN CRITERIA

The rules as adopted by the Commission indicate that the following criteria shall be used in designing programs to achieve the energy efficiency targets established by the legislation and PUCO directives.

(1) Relative cost-effectiveness.
(2) Benefit to all members of a customer class, including non-participants.
(3) Potential for broad participation within the targeted customer class.
(4) Likely magnitude of aggregate energy savings or peak-demand reduction.
(5) Non-energy benefits.
(6) Equity among customer classes.
(7) Relative advantages or disadvantages of energy efficiency and peak-demand reduction programs for the construction of new facilities, replacement of retiring capital stock, or retrofitting existing capital stock.
(8) Potential to integrate the proposed program with similar programs offered by other utilities, if such integration produces the most cost-effective result and is in the public interest.
(9) The degree to which a program bundles measures so as to avoid lost opportunities to attain energy savings or peak reductions that would not be cost-effective or would be less cost-effective if installed individually.
(10) The degree to which the program design engages the energy efficiency supply chain and leverages partners in program delivery.
(11) The degree to which the program successfully addresses market barriers or market failures.
(12) The degree to which the program leverages knowledge gained from existing program successes and failures.
(13) The degree to which the program promotes market transformation.

10.0 CONCLUSIONS

This report has demonstrated that Achievable Potential for EEPD in the 2026 timeframe is as follows for the FirstEnergy Ohio Companies:

- Using Base Case assumptions:
  - 12.7% for Ohio Edison
  - 11.1% for Toledo Edison
  - 14.1% for Cleveland Electric Illuminating
- Using High Case assumptions:
  - 16.8% for Ohio Edison
  - 13.1% for Toledo Edison
  - 16.3% for Cleveland Electric Illuminating

It should be noted that the achievable potential estimates shown above, even in the High Case scenario, do not reach the Ohio state benchmark of 22% as prescribed in R.C. 4928.66. Black & Veatch agrees with ACEEE report[18] that a suite of innovative energy efficiency policies will need to contribute 10% of the EERS targets in order to satisfy the State's savings goal of 22% by 2025.

It should also be noted that the measure savings identified in this study do not take into account replacement of appliances or end-uses before the end of their useful lives. If this assumption would be identified in the upcoming Technical Resource Manual, additional savings would accrue.

The next step in the process is the development of the Program Portfolio Plan. The Companies currently anticipate filing the Program Portfolio Plan prior to August 1, 2012, as required by the PUCO rules.

[18] Shaping Ohio's Energy Future: Energy Efficiency Works, ACEEE; March 2009

11.0 APPENDICES

APPENDIX A: RESIDENTIAL AND COMMERCIAL ENERGY USE DATA TABLES

Table 11-1 2011 Estimates of Commercial Sales for FirstEnergy Ohio Companies (MWh)

	Energy Consumption (MWh)										
Commercial Building Types (CBECS)	Space Heating	Cooling	Ventilation	Water Heat	Lighting	Cooking	Refrigeration	Other Office Equipment	Computers	Misc / Other	2011 Commercial MWh by Building Types (Ext.):
Education	57,550	283,915	318,445	42,204	433,545	7,673	61,387	15,346	122,774	80,570	1,423,409
Food Sales	34,094	68,188	39,776	11,347	261,385	11,365	676,192	11,365	11,365	56,823	1,181,899
Food Service	34,223	95,826	82,136	34,223	147,155	44,491	239,564	6,844	6,844	51,335	742,641
Health Care	26,951	152,723	188,657	8,984	471,642	4,492	35,934	17,967	44,918	161,706	1,113,973
- Inpatient	12,516	104,305	158,543	8,345	317,086	4,172	16,689	8,345	29,206	83,457	742,662
- Outpatient	16,144	48,433	21,526	3,564	150,683	1,819	21,526	10,763	16,144	80,722	371,325
Lodging	77,425	132,729	77,425	66,364	685,765	11,061	66,364	16,635	33,182	132,729	1,299,680
Mercantile	200,776	377,318	235,392	131,542	1,066,185	6,923	169,621	27,693	38,078	283,763	2,537,292
- Retail (Other Than Mall)	17,598	73,326	46,929	5,866	325,569	-	64,527	8,800	11,733	64,527	618,874
- Enclosed and Strip Malls	190,750	308,135	187,082	132,058	722,650	7,336	99,043	18,341	29,346	223,765	1,918,507
Office	164,746	504,223	314,515	34,946	1,407,863	4,992	174,731	159,754	369,430	454,300	3,589,500
Public Assembly	14,823	103,763	186,774	4,753	80,046	-	26,682	1,188	8,894	68,187	495,110
Religious Worship	14,972	54,900	24,955	3,095	84,845	-	29,946	1,888	4,991	89,836	309,428
Service	27,413	68,533	109,653	-	287,839	-	41,120	4,569	13,707	127,928	680,761
Warehouse & Storage	30,437	79,135	121,745	10,393	803,522	-	219,142	12,174	30,437	178,311	1,485,296
Other	10,237	81,896	56,304	136	336,030	-	51,185	6,808	25,593	112,607	680,796
Com MWh by End-Use	**693,647**	**2,003,149**	**1,755,776**	**347,986**	**6,065,822**	**90,997**	**1,791,868**	**282,231**	**710,214**	**1,798,096**	**15,539,785**

Table 11-2 2011 Estimates of Energy Use Intensities (EUIs) for FirstEnergy Ohio Companies (kWh/ft^2)

	EUIs (kWh/FT2)										
Commercial Building Types (CBECS):	**Space Heating**	**Cooling**	**Ventilation**	**Water Heat**	**Lighting**	**Cooking**	**Refrigeration**	**Other Office Equipment**	**Computers**	**Misc / Other**	**Avg Bldg EUI (kWh/FT2) Across all End Uses:**
Education	0.32	1.60	1.79	0.24	2.44	0.04	0.35	0.09	0.69	0.45	8.00
Food Sales	1.17	2.35	1.37	0.39	9.00	0.39	23.28	0.39	0.39	1.96	40.68
Food Service	1.41	3.95	3.38	1.41	6.06	1.83	9.87	0.28	0.28	2.12	30.60
Health Care	0.56	3.19	3.95	0.19	9.86	0.09	0.75	0.38	0.94	3.38	23.30
Inpatient	0.47	3.89	5.91	0.31	11.83	0.16	0.62	0.31	1.09	3.11	27.70
Outpatient	0.76	2.27	1.01	0.17	7.06	0.09	1.01	0.50	0.76	3.78	17.40
Lodging	0.95	1.62	0.95	0.81	8.39	0.14	0.81	0.20	0.41	1.62	15.90
Mercantile	1.36	2.56	1.60	0.89	7.23	0.05	1.15	0.19	0.26	1.92	17.20
Retail (Other Than Mall)	0.31	1.30	0.83	0.10	5.79	-	1.15	0.16	0.21	1.15	11.00
Enclosed and Strip Malls	2.07	3.34	2.03	1.43	7.83	0.08	1.07	0.20	0.32	2.43	20.80
Office	0.84	2.56	1.59	0.18	7.14	0.03	0.89	0.81	1.87	2.30	18.20
Religious Worship	0.17	0.62	0.28	0.04	0.96	-	0.34	0.02	0.06	1.02	3.50
Service	0.39	0.97	1.55	-	4.06	-	0.58	0.06	0.19	1.80	9.60
Warehouse and Storage	0.20	0.51	0.79	0.07	5.19	-	1.42	0.08	0.20	1.15	9.60
Other	0.37	2.96	2.03	0.00	12.14	-	1.85	0.25	0.92	4.07	24.60
Avg EUI (kWh/FT2) by End	**0.63**	**1.82**	**1.60**	**0.32**	**5.52**	**0.08**	**1.63**	**0.26**	**0.65**	**1.64**	**14.14**

APPENDIX B: ATTITUDES AND DECISION MAKING CHARACTERISTICS OF LARGE MANAGED ACCOUNTS CUSTOMERS

	Large Commercial & Industrial Customer Characteristics (>700kW)	Chemical & Allied Prod	Education	Electronic Mfg	Entertainment	Food and Kindred Products	Health	Mining & Oil Gas Extract	Paper Mills & Products	Primary Metals & Hvy Mfg	Refining & Plastics	Transport Mfg
1	These customers may have a dedicated energy manager.	√	√			√	√			√	√	√
2	These customers may not have the luxury of having a dedicated energy manager and such duties are the responsibility of the facilities or plant manager. In these cases opportunities for energy efficiency improvements are not the primary focus of these individuals.	√	√	√	√	√		√	√	√	√	
3	The customers need to have easy and timely access to their energy demand and consumption data in order to better understand the costs associated with various production runs and the timing and use of electrical equipment.	√	√	√	√	√		√	√	√	√	√
4	I&M-MI's account representatives have frequent contact with all managed accounts and some customers have sought out and implemented some energy efficiency measures in the past.	√	√	√	√	√	√	√	√	√	√	√
5	These customers may be in operation 24 hours per day, 7 days a week.	√		√	√	√	√	√	√	√	√	√
6	These customers are in operation more than 10 hours per day, 5 - 6 days a week.		√					√				
7	While these customers have implemented some energy efficiency measures in the past, they would benefit from having an energy audit of their facilities.	√	√	√	√	√	√		√	√	√	√
8	Typically a financial payback of ~ 1year is necessary in order to get the interest of the customer.	√		√	√			√	√	√	√	√
9	Typically a financial payback of 2 - 4years is necessary in order to get the interest of the customer.		√			√	√					
10	Typically customers need to be further educated in potential energy saving opportunities and measures	√	√	√		√	√		√	√	√	√
11	Typical barriers to investing in energy efficiency improvements are first costs, adequate payback, lack of capital and today's uncertainty regarding general economic conditions.	√	√	√	√	√	√		√	√	√	√
12	Potential leverage points to help encourage the customer's decision to investigate and implement energy efficiency measures include education, energy audits, cost savings (payback), cash incentives, low interest loans, and environmental benefits.	√	√	√	√	√	√	√	√	√	√	√
13	Major energy efficiency improvement opportunities include interior and exterior lighting improvements.	√	√	√	√	√	√		√	√	√	√
	Major energy efficiency improvement opportunities include motor improvements.	√	√	√		√	√	√	√	√	√	√
14	Major energy efficiency improvement opportunities include HVAC improvements.		√	√	√	√	√					
15	Major energy efficiency improvement opportunities include a demand / energy management system.	√	√	√		√			√	√	√	√

APPENDIX C: DETAILED MEASURE RESULTS BY OPERATING COMPANY

Appendix C-1 Ohio Edison Detailed Measure Results

Measure Name	Program	Rate Class	Total Measure TRC Test	Total Discounted Lifetime Costs ($000)	Total Discounted Utility Lifetime Costs	Total Discounted Lifetime Benefits ($000)	Program Year 2012		Program Year 2016		Program Year 2021		Program Year 2026	
							MWh Saved	kW Saved	MWh Saved	kW Saved	MWh Saved	kW Saved	MWh Saved	kW Saved
Test	Test	Test	1.32	$773,924	$673,924	$1,023,714	3,201	213	0		0		0	
DLC-CAC	Direct Load Control	Res	0.55	$53,660,282	$53,660,282	$29,558,159	4,913	49,126	0		0		0	
DLC-Pool Pumps	Direct Load Control	Res	1.03	$7,210,632	$7,210,632	$7,413,873	1,232	12,322	0		0		0	
DLC-Water Heat	Direct Load Control	Res	0.61	$10,176,295	$10,176,295	$6,204,877	1,031	10,313	0		0		0	
Residential Online Audit	On-Line Audit	Res	1.11	$4,038,954	$4,038,954	$4,476,035	41,743	1,792	0		0		0	
Energy Efficiency Kit	Comprehensive Residential	Res	1.31	$50,192,227	$50,192,227	$65,627,559	281,081	11,986	0		0		0	
Schools Childern Education	Comprehensive Residential	Res	0.79	$752,471	$752,471	$590,806	3,147	511	0		0		0	
Refrigerator/Freezer recycling	Appliance Turn-In Program	LI RES	2.91	$120	$170	$348	1	0	0		0		0	
Room Air Conditioners recycling	Appliance Turn-In Program	LI RES	0.51	$51	$82	$26	0	0	0		0		0	
Room Air Conditioners recycling	Appliance Turn-In Program	LI RES	0.31	$51	$82	$16	0	0	0		0		0	
Refrigerator/Freezer recycling	Appliance Turn-In Program	Res	6.48	$5,398,355	$10,415,497	$34,955,494	147,324	23,555	0		0		0	
Room Air Conditioners recycling	Appliance Turn-In Program	Res	10.68	$2,066,473	$4,892,262	$22,062,538	9,996	87,415	0		0		0	
Room Air Conditioners CEE TIEI	Energy Efficient Products Program	Res	0.66	$3,245,892	$2,392,686	$2,158,292	3,239	2,096	0		0		0	
ASHP - SEER 15	Energy Efficient Products Program	Res	0.67	$49,003,901	$25,835,281	$32,938,232	72,523	16,988	0		0		0	
CAC - SEER 15	Energy Efficient Products Program	Res	0.70	$189,431,832	$57,807,943	$131,881,059	103,460	135,762	0		0		0	
CAC - Maintenance	Energy Efficient Products Program	Res	0.48	$19,623,368	$12,302,661	$9,348,025	37,494	10,868	0		0		0	
EE Ground Source Heat Pump	Energy Efficient Products Program	Res	0.33	$15,621,729	$3,303,985	$5,181,133	14,426	1,051	0		0		0	
Solar Water Heating	Energy Efficient Products Program	Res	0.32	$2,683,067	$451,297	$849,529	2,217	175	0		0		0	
HP Water Heater	Energy Efficient Products Program	Res	0.74	$7,127,523	$3,448,679	$5,247,843	14,651	2,033	0		0		0	
EE Water Heater	Energy Efficient Products Program	Res	0.27	$31,790,562	$8,987,881	$8,723,067	25,887	3,277	0		0		0	
Programable Thermostat_Heat	Energy Efficient Products Program	Res	5.23	$983,380	$983,380	$5,139,316	18,076		0		0		0	
Programable Thermostat_Heat	Energy Efficient Products Program	Res	4.99	$86	$86	$427	2		0		0		0	
Programable Thermostat_CAC	Energy Efficient Products Program	Res	3.70	$6,498,615	$3,071,527	$24,066,112	24,107	26,008	0		0		0	
Clothes Washer Energy Star, Ele	Energy Efficient Products Program	Res	0.21	$41,689,862	$9,632,634	$8,609,992	29,532	4,064	0		0		0	
Clothes Washer CEE TIER 3, El	Energy Efficient Products Program	Res	0.19	$12,231,636	$2,408,159	$2,314,433	7,891	1,118	0		0		0	
Dehumidifiers 25-35 pints/day	Energy Efficient Products Program	Res	1.81	$3,883,204	$2,968,481	$7,033,112	14,693	3,549	0		0		0	
Pump and Motor Single Speed	Energy Efficient Products Program	Res	3.90	$4,074,322	$1,147,215	$15,871,068	17,619	24,986	0		0		0	
Pump and Motor 2 Speed	Energy Efficient Products Program	Res	3.41	$2,028,544	$413,588	$6,924,433	5,055	12,981	0		0		0	
Pump and Motor Variable Speed	Energy Efficient Products Program	Res	1.51	$2,054,802	$237,977	$3,109,737	3,360	4,968	0		0		0	
Refrigerators-Freezers CEE TIEI	Energy Efficient Products Program	Res	0.57	$17,932,040	$8,134,070	$10,205,652	26,063	3,890	0		0		0	
Refrigerators-Freezers CEE TIEI	Energy Efficient Products Program	Res	0.57	$17,932,040	$8,134,070	$10,205,652	26,063	3,890	0		0		0	
Refrigerators-Freezers CEE TIEI	Energy Efficient Products Program	Res	0.57	$17,932,040	$8,134,070	$10,205,652	26,063	3,890	0		0		0	
Smart Strip plug outlet 5 plug	Energy Efficient Products Program	Res	0.36	$14,679,091	$9,113,335	$5,319,035	45,310	4,399	0		0		0	
Torchiere Floor Lamps	Energy Efficient Products Program	Res	0.79	$13,519,686	$3,599,242	$10,717,165	45,481	7,057	0		0		0	
Residential New Construction - 1	Residential New Construction	Res	0.96	$43,460,492	$26,036,064	$41,637,696	31,996	61,136	0		0		0	
Residential New Construction - 3	Residential New Construction	Res	1.16	$14,403,455	$8,487,254	$16,655,079	12,798	24,454	0		0		0	
Ceiling Fans	Comprehensive Residential-Home Performance	Res	0.19	$918,756	$176,845	$176,300	705	59	0		0		0	
Ceiling Fans 2014 onwards	Comprehensive Residential-Home Performance	Res	0.17	$38,226,608	$7,196,274	$6,352,996	23,834	2,949	0		0		0	
Duct sealing 20 leakage base	Comprehensive Residential-Home Performance	Res	1.50	$99,090,089	$45,631,081	$148,335,470	122,014	131,634	0		0		0	
Low Flow Showerheads	Comprehensive Residential-Home Performance	Res	1.30	$6,672,744	$6,672,744	$8,680,652	60,125	5,769	0		0		0	
Kitchen Aerator	Comprehensive Residential-Home Performance	Res	1.25	$1,852,523	$1,852,523	$2,310,075	15,288	1,911	0		0		0	
Bathroom Aerator	Comprehensive Residential-Home Performance	Res	0.62	$1,852,523	$1,852,523	$1,155,038	7,644	956	0		0		0	
Pipe Wrap	Comprehensive Residential-Home Performance	Res	0.81	$48,815,057	$7,396,367	$39,355,486	114,046	13,019	0		0		0	
Whole Building	Comprehensive Residential-Home Performance	Res	1.05	$8,764,783	$6,681,402	$9,231,303	18,495	14,672	0		0		0	
Low Income Whole House (PA V	Comm Connect	LI RES	0.06	$2,558	$2,158	$151	1	0	0		0		0	
Current Community Connections	Comm Connect	LI RES	0.06	$2,558	$2,158	$151	1	0	0		0		0	
Commercial, Industrial Audit - Sr	C&I Audits & C/I Equipment (expanded)	COM	0.00	$10,256	$10,006	$6	0	0	0		0		0	
Commercial, Industrial Audit - La	C&I Audits & C/I Equipment (expanded)	IND	0.00	$25,080	$6,330	$0	0		0		0		0	
Commercial New Construction	Commercial New Construction	COM	0.47	$36,821,397	$19,528,431	$17,438,147	50,520	5,776	0		0		0	
Exterior HID replacement above	C/I Equipment (Comm Lighting)	COM	0.79	$36,812,753	$12,612,390	$29,236,146	102,827		0		0		0	
HPT8 4ft 4 lamp, T12 to HPT8 F	C/I Equipment (Comm Lighting)	COM	0.95	$14,811,262	$3,674,102	$14,133,007	36,022	7,310	0		0		0	
HPT8 4ft 4 lamp, T12 to HPT8 H	C/I Equipment (Comm Lighting)	COM	0.81	$39,657,191	$9,837,416	$32,288,210	79,126	18,395	0		0		0	
HPT8 4ft 4 lamp, T12 to HPT8 H	C/I Equipment (Comm Lighting)	COM	0.63	$57,661,368	$14,303,557	$36,608,379	105,005	12,687	0		0		0	
HPT8 4ft 4 lamp, T12 to HPT8 O	C/I Equipment (Comm Lighting)	COM	0.78	$129,926,070	$32,229,636	$101,934,263	248,590	58,719	0		0		0	
HPT8 4ft 4 lamp, T12 to HPT8 S	C/I Equipment (Comm Lighting)	COM	0.73	$24,202,420	$6,003,685	$17,691,754	44,980	9,211	0		0		0	
HPT8 4ft 4 lamp, T12 to HPT8 E	C/I Equipment (Comm Lighting)	COM	0.67	$36,453,917	$9,042,808	$24,248,325	61,341	12,790	0		0		0	
HPT8 4ft 4 lamp, T12 to HPT8 O	C/I Equipment (Comm Lighting)	COM	0.77	$28,254,498	$7,008,849	$21,819,938	56,298	10,921	0		0		0	
LED Exit Signs Electronic Fixture	C/I Equipment (Comm Lighting)	COM	1.05	$13,087,795	-$9,438,823	$13,763,198	38,000	4,578	0		0		0	
Occupancy Sensors under 500 V	C/I Equipment (Comm Lighting)	COM	0.21	$37,659,115	$9,248,044	$7,782,118	32,073	5,627	0		0		0	
Daylight Dimming Sensors	C/I Equipment (Comm Lighting)	COM	0.21	$12,427,508	$3,051,854	$2,568,099	10,584	1,857	0		0		0	
Switching Controls Mutli Level Li	C/I Equipment (Comm Lighting)	COM	0.21	$12,427,508	$3,051,854	$2,568,099	10,584	1,857	0		0		0	
Central Lighting Control - Timelo	C/I Equipment (Comm Lighting)	COM	0.33	$12,427,508	$3,051,854	$4,051,415	22,246		0		0		0	

OE Economic Potential Results

Measure Name	Program Year 2012 Cumulative		Program Year 2016 Cumulative		Program Year 2021 Cumulative		Program Year 2026 Cumulative		Life Time Savings		Program Year 2012	Program Year 2016	Program Year 2021	Program Year 2026	Program Year 2012	Program Year 2016
	MWh Saved	kW Saved	MWh Saved	kW Saved	MWh Saved	kW Saved	MWh Saved	kW Saved	MWh Saved	kW Saved	Portfolio Budget	Portfolio Budget	Portfolio Budget	Portfolio Budget	Total Incentives	Total Incentives
Test	3,201	213	3,201	$213	3,201	$213	3,201	$213	45,000	$213	$673,924	$0	$0	$0	$100,000	$0
DLC-CAC	4,913	49,126	4,913	$49,126	4,913	$49,126	4,913	$49,126	69,062	$49,126	$53,660,282	$0	$0	$0	$11,893,982	$0
DLC-Pool Pumps	1,232	12,322	1,232	$12,322	1,232	$12,322	1,232	$12,322	17,322	$12,322	$7,210,632	$0	$0	$0	$1,584,521	$0
DLC-Water Heat	1,031	10,313	1,031	$10,313	1,031	$10,313	1,031	$10,313	14,498	$10,313	$10,176,295	$0	$0	$0	$2,236,220	$0
Residential Online Audit	41,743	1,792	41,743	$1,792	41,743	$1,792	41,743	$1,792	156,487	$1,792	$4,038,954	$0	$0	$0	$0	$0
Energy Efficiency Kit	281,081	11,986	281,081	$11,986	281,081	$11,986	281,081	$11,986	2,634,293	$11,986	$50,192,227	$0	$0	$0	$47,040,952	$0
Schools Childern Education	3,147	511	3,147	$511	3,147	$511	3,147	$511	17,697	$511	$752,471	$0	$0	$0	$472,500	$0
Refrigerator/Freezer recycling	1	0	1	$0	1	$0	1	$0	11	$0	$170	$0	$0	$0	$50	$0
Room Air Conditioners recycling	0	0	0	$0	0	$0	0	$0	0	$0	$82	$0	$0	$0	$31	$0
Room Air Conditioners recycling	0	0	0	$0	0	$0	0	$0	0	$0	$82	$0	$0	$0	$31	$0
Refrigerator/Freezer recycling	147,324	23,555	147,324	$23,555	147,324	$23,555	147,324	$23,555	1,104,574	$23,555	$10,415,497	$0	$0	$0	$5,017,142	$0
Room Air Conditioners recycling	9,996	87,415	9,996	$87,415	9,996	$87,415	9,996	$87,415	46,840	$87,415	$4,892,262	$0	$0	$0	$2,825,789	$0
Room Air Conditioners CEE TIE	3,239	2,096	3,239	$2,096	3,239	$2,096	3,239	$2,096	36,422	$2,096	$2,392,686	$0	$0	$0	$1,422,010	$0
ASHP - SEER 15	72,523	16,988	72,523	$16,988	72,523	$16,988	72,523	$16,988	1,223,435	$16,988	$25,835,281	$0	$0	$0	$21,960,777	$0
CAC - SEER 15	103,460	135,762	103,460	$135,762	103,460	$135,762	103,460	$135,762	1,745,333	$135,762	$57,807,943	$0	$0	$0	$43,874,630	$0
CAC - Maintenance	37,494	10,868	37,494	$10,868	37,494	$10,868	37,494	$10,868	175,697	$10,868	$12,302,661	$0	$0	$0	$7,957,290	$0
EE Ground Source Heat Pump	14,426	1,051	14,426	$1,051	14,426	$1,051	14,426	$1,051	243,359	$1,051	$3,303,985	$0	$0	$0	$2,956,258	$0
Solar Water Heating	2,217	175	2,217	$175	2,217	$175	2,217	$175	41,546	$175	$451,297	$0	$0	$0	$429,187	$0
HP Water Heater	14,651	2,033	14,651	$2,033	14,651	$2,033	14,651	$2,033	205,962	$2,033	$3,448,679	$0	$0	$0	$3,175,980	$0
EE Water Heater	25,887	3,277	25,887	$3,277	25,887	$3,277	25,887	$3,277	339,660	$3,277	$8,987,881	$0	$0	$0	$7,677,670	$0
Programable Thermostat_Heat	18,076	0	18,076	$0	18,076	$0	18,076	$0	254,106	$0	$983,380	$0	$0	$0	$842,878	$0
Programable Thermostat_Heat	2	0	2	$0	2	$0	2	$0	21	$0	$86	$0	$0	$0	$70	$0
Programable Thermostat_CAC	24,107	26,008	24,107	$26,008	24,107	$26,008	24,107	$26,008	338,896	$26,008	$3,071,527	$0	$0	$0	$2,570,316	$0
Clothes Washer Energy Star, Ele	29,532	4,064	29,532	$4,064	29,532	$4,064	29,532	$4,064	304,448	$4,064	$9,632,634	$0	$0	$0	$7,934,957	$0
Clothes Washer CEE TIER 3, El	7,891	1,118	7,891	$1,118	7,891	$1,118	7,891	$1,118	81,349	$1,118	$2,408,159	$0	$0	$0	$1,983,739	$0
Dehumidifiers 25-35 pints/day	14,693	3,549	14,693	$3,549	14,693	$3,549	14,693	$3,549	165,249	$3,549	$2,968,481	$0	$0	$0	$2,078,916	$0
Pump and Motor Single Speed	17,619	24,986	17,619	$24,986	17,619	$24,986	17,619	$24,986	165,129	$24,986	$1,147,215	$0	$0	$0	$605,609	$0
Pump and Motor 2 Speed	5,055	12,981	5,055	$12,981	5,055	$12,981	5,055	$12,981	47,372	$12,981	$413,588	$0	$0	$0	$269,159	$0
Pump and Motor Variable Speed	3,360	4,968	3,360	$4,968	3,360	$4,968	3,360	$4,968	31,492	$4,968	$237,977	$0	$0	$0	$201,870	$0
Refrigerators-Freezers CEE TIE	26,063	3,890	26,063	$3,890	26,063	$3,890	26,063	$3,890	415,252	$3,890	$8,134,070	$0	$0	$0	$5,696,494	$0
Refrigerators-Freezers CEE TIE	26,063	3,890	26,063	$3,890	26,063	$3,890	26,063	$3,890	415,252	$3,890	$8,134,070	$0	$0	$0	$5,696,494	$0
Refrigerators-Freezers CEE TIE	26,063	3,890	26,063	$3,890	26,063	$3,890	26,063	$3,890	415,252	$3,890	$8,134,070	$0	$0	$0	$5,696,494	$0
Smart Strip plug outlet 5 plug	45,310	4,399	45,310	$4,399	45,310	$4,399	45,310	$4,399	169,859	$4,399	$9,113,335	$0	$0	$0	$5,153,478	$0
Torchiere Floor Lamps	45,481	7,057	45,481	$7,057	45,481	$7,057	45,481	$7,057	340,999	$7,057	$3,599,242	$0	$0	$0	$3,306,815	$0
Residential New Construction - 1	31,996	61,136	31,996	$61,136	31,996	$61,136	31,996	$61,136	449,793	$61,136	$26,036,064	$0	$0	$0	$15,195,722	$0
Residential New Construction - 3	12,798	24,454	12,798	$24,454	12,798	$24,454	12,798	$24,454	179,917	$24,454	$8,487,254	$0	$0	$0	$6,078,289	$0
Ceiling Fans	705	59	705	$59	705	$59	705	$59	6,607	$59	$176,845	$0	$0	$0	$172,057	$0
Ceiling Fans 2014 onwards	23,834	2,949	23,834	$2,949	23,834	$2,949	23,834	$2,949	223,372	$2,949	$7,196,274	$0	$0	$0	$7,196,274	$0
Duct sealing 20 leakage base	122,014	131,634	122,014	$131,634	122,014	$131,634	122,014	$131,634	2,287,031	$131,634	$45,631,081	$0	$0	$0	$38,185,005	$0
Low Flow Showerheads	60,125	5,769	60,125	$5,769	60,125	$5,769	60,125	$5,769	281,743	$5,769	$6,672,744	$0	$0	$0	$6,260,965	$0
Kitchen Aerator	15,288	1,911	15,288	$1,911	15,288	$1,911	15,288	$1,911	71,640	$1,911	$1,852,523	$0	$0	$0	$1,685,644	$0
Bathroom Aerator	7,644	956	7,644	$956	7,644	$956	7,644	$956	35,820	$956	$1,852,523	$0	$0	$0	$1,685,644	$0
Pipe Wrap	114,046	13,019	114,046	$13,019	114,046	$13,019	114,046	$13,019	1,603,256	$13,019	$7,396,367	$0	$0	$0	$6,020,158	$0
Whole Building	18,495	14,672	18,495	$14,672	18,495	$14,672	18,495	$14,672	156,004	$14,672	$6,681,402	$0	$0	$0	$6,250,142	$0
Low Income Whole House (PA	1	0	1	$0	1	$0	1	$0	5	$0	$2,158	$0	$0	$0	$1,901	$0
Current Community Connections	1	0	1	$0	1	$0	1	$0	5	$0	$2,158	$0	$0	$0	$1,901	$0
Commercial, Industrial Audit - S	0	0	0	$0	0	$0	0	$0	0	$0	$10,006	$0	$0	$0	$3,750	$0
Commercial, Industrial Audit - La	0	0	0	$0	0	$0	0	$0	0	$0	$6,330	$0	$0	$0	$0	$0
Commercial New Construction	50,520	5,776	50,520	$5,776	50,520	$5,776	50,520	$5,776	710,207	$5,776	$19,528,431	$0	$0	$0	$4,736,290	$0
Exterior HID replacement above	102,827	0	102,827	$0	102,827	$0	102,827	$0	1,445,540	$0	$12,612,390	$0	$0	$0	$10,803,734	$0
HPT8 4ft 4 lamp, T12 to HPT8 F	36,022	7,310	36,022	$7,310	36,022	$7,310	36,022	$7,310	506,398	$7,310	$3,674,102	$0	$0	$0	$2,838,884	$0
HPT8 4ft 4 lamp, T12 to HPT8 H	79,126	18,395	79,126	$18,395	79,126	$18,395	79,126	$18,395	1,112,356	$18,395	$9,837,416	$0	$0	$0	$7,601,119	$0
HPT8 4ft 4 lamp, T12 to HPT8 H	105,005	12,687	105,005	$12,687	105,005	$12,687	105,005	$12,687	1,476,166	$12,687	$14,303,557	$0	$0	$0	$11,051,991	$0
HPT8 4ft 4 lamp, T12 to HPT8 C	248,590	58,719	248,590	$58,719	248,590	$58,719	248,590	$58,719	3,494,675	$58,719	$32,229,636	$0	$0	$0	$24,903,013	$0
HPT8 4ft 4 lamp, T12 to HPT8 S	44,980	9,211	44,980	$9,211	44,980	$9,211	44,980	$9,211	632,335	$9,211	$6,003,685	$0	$0	$0	$4,638,893	$0
HPT8 4ft 4 lamp, T12 to HPT8 E	61,341	12,790	61,341	$12,790	61,341	$12,790	61,341	$12,790	862,331	$12,790	$9,042,808	$0	$0	$0	$6,987,145	$0
HPT8 4ft 4 lamp, T12 to HPT8 C	56,298	10,921	56,298	$10,921	56,298	$10,921	56,298	$10,921	791,441	$10,921	$7,008,849	$0	$0	$0	$5,415,558	$0
LED Exit Signs Electronic Fixtur	38,000	4,578	38,000	$4,578	38,000	$4,578	38,000	$4,578	569,816	$4,578	-$9,438,823	$0	$0	$0	$5,363,480	$0
Occupancy Sensors under 500	32,073	5,627	32,073	$5,627	32,073	$5,627	32,073	$5,627	240,472	$5,627	$9,248,044	$0	$0	$0	$8,239,870	$0
Daylight Dimming Sensors	10,584	1,857	10,584	$1,857	10,584	$1,857	10,584	$1,857	79,356	$1,857	$3,051,854	$0	$0	$0	$2,719,157	$0
Switching Controls Mutli Level Li	10,584	1,857	10,584	$1,857	10,584	$1,857	10,584	$1,857	79,356	$1,857	$3,051,854	$0	$0	$0	$2,719,157	$0
Central Lighting Control - Timelo	22,246	0	22,246	$0	22,246	$0	22,246	$0	166,793	$0	$3,051,854	$0	$0	$0	$2,719,157	$0

OE Economic Potential Results

Measure Name	Program Year 2021	Program Year 2026	Program Year 2012	Program Year 2016	Program Year 2021	Program Year 2026	Program Year 2012	Program Year 2016	Program Year 2021	Program Year 2026	Program Year 2012	Program Year 2016	Program Year 2021	Program Year 2026	Program Year 2012	Program Year 2016	Program Year 2021
	Total Incentives	Total Incentives	Benefits	Benefits	Benefits	Benefits	Costs	Costs	Costs	Costs	O&M	O&M	O&M	O&M	Avoided Capacity	Avoided Capacity	Avoided Capacity
Test	$0	$0	$1,023,714	$0	$0	$0	$773,924	$0	$0	$0	$73,924	$0	$0	$0	$113,586	$0	$0
DLC-CAC	$0	$0	$29,558,159	$0	$0	$0	$53,660,282	$0	$0	$0	$37,817,175	$0	$0	$0	$26,148,170	$0	$0
DLC-Pool Pumps	$0	$0	$7,413,873	$0	$0	$0	$7,210,632	$0	$0	$0	$5,211,469	$0	$0	$0	$6,558,568	$0	$0
DLC-Water Heat	$0	$0	$6,204,877	$0	$0	$0	$10,176,295	$0	$0	$0	$7,354,896	$0	$0	$0	$5,489,049	$0	$0
Residential Online Audit	$0	$0	$4,476,035	$0	$0	$0	$4,038,954	$0	$0	$0	$0	$0	$0	$0	$336,148	$0	$0
Energy Efficiency Kit	$0	$0	$65,627,559	$0	$0	$0	$50,192,227	$0	$0	$0	$0	$0	$0	$0	$4,889,517	$0	$0
Schools Childern Education	$0	$0	$590,806	$0	$0	$0	$752,471	$0	$0	$0	$0	$0	$0	$0	$139,048	$0	$0
Refrigerator/Freezer recycling	$0	$0	$348	$0	$0	$0	$120	$0	$0	$0	$0	$0	$0	$0	$81	$0	$0
Room Air Conditioners recycling	$0	$0	$26	$0	$0	$0	$51	$0	$0	$0	$0	$0	$0	$0	$14	$0	$0
Room Air Conditioners recycling	$0	$0	$16	$0	$0	$0	$51	$0	$0	$0	$0	$0	$0	$0	$10	$0	$0
Refrigerator/Freezer recycling	$0	$0	$34,955,494	$0	$0	$0	$5,398,355	$0	$0	$0	$0	$0	$0	$0	$8,125,383	$0	$0
Room Air Conditioners recycling	$0	$0	$22,062,538	$0	$0	$0	$2,066,473	$0	$0	$0	$0	$0	$0	$0	$20,241,271	$0	$0
Room Air Conditioners CEE TIEI	$0	$0	$2,158,292	$0	$0	$0	$3,245,892	$0	$0	$0	$0	$0	$0	$0	$970,179	$0	$0
ASHP - SEER 15	$0	$0	$32,938,232	$0	$0	$0	$49,003,901	$0	$0	$0	$0	$0	$0	$0	$10,003,940	$0	$0
CAC - SEER 15	$0	$0	$131,881,059	$0	$0	$0	$189,431,832	$0	$0	$0	$0	$0	$0	$0	$79,946,014	$0	$0
CAC - Maintenance	$0	$0	$9,348,025	$0	$0	$0	$19,623,368	$0	$0	$0	$0	$0	$0	$0	$2,516,489	$0	$0
EE Ground Source Heat Pump	$0	$0	$5,181,133	$0	$0	$0	$15,621,729	$0	$0	$0	$0	$0	$0	$0	$619,165	$0	$0
Solar Water Heating	$0	$0	$849,529	$0	$0	$0	$2,683,067	$0	$0	$0	$0	$0	$0	$0	$108,647	$0	$0
HP Water Heater	$0	$0	$5,247,843	$0	$0	$0	$7,127,523	$0	$0	$0	$0	$0	$0	$0	$1,082,240	$0	$0
EE Water Heater	$0	$0	$8,723,067	$0	$0	$0	$31,790,562	$0	$0	$0	$0	$0	$0	$0	$1,673,177	$0	$0
Programable Thermostat_Heat	$0	$0	$5,139,316	$0	$0	$0	$983,380	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Programable Thermostat_Heat	$0	$0	$427	$0	$0	$0	$86	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Programable Thermostat_CAC	$0	$0	$24,066,112	$0	$0	$0	$6,498,615	$0	$0	$0	$0	$0	$0	$0	$13,842,885	$0	$0
Clothes Washer Energy Star, Ele	$0	$0	$8,609,992	$0	$0	$0	$41,689,862	$0	$0	$0	$0	$0	$0	$0	$1,773,147	$0	$0
Clothes Washer CEE TIER 3, El	$0	$0	$2,314,433	$0	$0	$0	$12,231,636	$0	$0	$0	$0	$0	$0	$0	$487,615	$0	$0
Dehumidifiers 25-35 pints/day	$0	$0	$7,033,112	$0	$0	$0	$3,883,204	$0	$0	$0	$0	$0	$0	$0	$1,642,552	$0	$0
Pump and Motor Single Speed	$0	$0	$15,871,068	$0	$0	$0	$4,074,322	$0	$0	$0	$0	$0	$0	$0	$10,192,329	$0	$0
Pump and Motor 2 Speed	$0	$0	$6,924,433	$0	$0	$0	$2,028,544	$0	$0	$0	$0	$0	$0	$0	$5,295,325	$0	$0
Pump and Motor Variable Speed	$0	$0	$3,109,737	$0	$0	$0	$2,054,802	$0	$0	$0	$0	$0	$0	$0	$2,026,750	$0	$0
Refrigerators-Freezers CEE TIEI	$0	$0	$10,205,652	$0	$0	$0	$17,932,040	$0	$0	$0	$0	$0	$0	$0	$2,221,969	$0	$0
Refrigerators-Freezers CEE TIEI	$0	$0	$10,205,652	$0	$0	$0	$17,932,040	$0	$0	$0	$0	$0	$0	$0	$2,221,969	$0	$0
Refrigerators-Freezers CEE TIEI	$0	$0	$10,205,652	$0	$0	$0	$17,932,040	$0	$0	$0	$0	$0	$0	$0	$2,221,969	$0	$0
Smart Strip plug outlet 5 plug	$0	$0	$5,319,035	$0	$0	$0	$14,679,091	$0	$0	$0	$0	$0	$0	$0	$825,390	$0	$0
Torchiere Floor Lamps	$0	$0	$10,717,165	$0	$0	$0	$13,519,686	$0	$0	$0	$0	$0	$0	$0	$2,434,303	$0	$0
Residential New Construction - 1	$0	$0	$41,637,696	$0	$0	$0	$43,460,492	$0	$0	$0	$0	$0	$0	$0	$32,540,592	$0	$0
Residential New Construction - 3	$0	$0	$16,655,079	$0	$0	$0	$14,403,455	$0	$0	$0	$0	$0	$0	$0	$13,016,237	$0	$0
Ceiling Fans	$0	$0	$176,300	$0	$0	$0	$918,756	$0	$0	$0	$0	$0	$0	$0	$23,964	$0	$0
Ceiling Fans 2014 onwards	$0	$0	$6,352,996	$0	$0	$0	$38,226,608	$0	$0	$0	$0	$0	$0	$0	$1,202,773	$0	$0
Duct sealing 20 leakage base	$0	$0	$148,335,470	$0	$0	$0	$99,090,089	$0	$0	$0	$0	$0	$0	$0	$81,718,606	$0	$0
Low Flow Showerheads	$0	$0	$8,680,652	$0	$0	$0	$6,672,744	$0	$0	$0	$0	$0	$0	$0	$1,335,909	$0	$0
Kitchen Aerator	$0	$0	$2,310,075	$0	$0	$0	$1,852,523	$0	$0	$0	$0	$0	$0	$0	$442,502	$0	$0
Bathroom Aerator	$0	$0	$1,155,038	$0	$0	$0	$1,852,523	$0	$0	$0	$0	$0	$0	$0	$221,251	$0	$0
Pipe Wrap	$0	$0	$39,355,486	$0	$0	$0	$48,815,057	$0	$0	$0	$0	$0	$0	$0	$6,929,503	$0	$0
Whole Building	$0	$0	$9,231,303	$0	$0	$0	$8,764,783	$0	$0	$0	$0	$0	$0	$0	$5,538,841	$0	$0
Low Income Whole House (PA V	$0	$0	$151	$0	$0	$0	$2,558	$0	$0	$0	$0	$0	$0	$0	$30	$0	$0
Current Community Connections	$0	$0	$151	$0	$0	$0	$2,558	$0	$0	$0	$0	$0	$0	$0	$30	$0	$0
Commercial, Industrial Audit - Sr	$0	$0	$6	$0	$0	$0	$10,256	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Commercial, Industrial Audit - La	$0	$0	$0	$0	$0	$0	$25,080	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Commercial New Construction	$0	$0	$17,438,147	$0	$0	$0	$36,821,397	$0	$0	$0	$0	$0	$0	$0	$3,074,148	$0	$0
Exterior HID replacement above	$0	$0	$29,236,146	$0	$0	$0	$36,812,753	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
HPT8 4ft 4 lamp, T12 to HPT8 F	$0	$0	$14,133,007	$0	$0	$0	$14,811,262	$0	$0	$0	$0	$0	$0	$0	$3,891,067	$0	$0
HPT8 4ft 4 lamp, T12 to HPT8 H	$0	$0	$32,288,210	$0	$0	$0	$39,657,191	$0	$0	$0	$0	$0	$0	$0	$9,790,730	$0	$0
HPT8 4ft 4 lamp, T12 to HPT8 H	$0	$0	$36,608,379	$0	$0	$0	$57,661,368	$0	$0	$0	$0	$0	$0	$0	$6,752,820	$0	$0
HPT8 4ft 4 lamp, T12 to HPT8 O	$0	$0	$101,934,263	$0	$0	$0	$129,926,070	$0	$0	$0	$0	$0	$0	$0	$31,254,201	$0	$0
HPT8 4ft 4 lamp, T12 to HPT8 S	$0	$0	$17,691,754	$0	$0	$0	$24,202,420	$0	$0	$0	$0	$0	$0	$0	$4,902,722	$0	$0
HPT8 4ft 4 lamp, T12 to HPT8 E	$0	$0	$24,248,325	$0	$0	$0	$36,453,917	$0	$0	$0	$0	$0	$0	$0	$6,807,611	$0	$0
HPT8 4ft 4 lamp, T12 to HPT8 O	$0	$0	$21,819,938	$0	$0	$0	$28,254,498	$0	$0	$0	$0	$0	$0	$0	$5,812,989	$0	$0
LED Exit Signs Electronic Fixture	$0	$0	$13,763,198	$0	$0	$0	$13,087,795	$0	$0	$0	-$16,442,899	$0	$0	$0	$2,528,818	$0	$0
Occupancy Sensors under 500 V	$0	$0	$7,782,118	$0	$0	$0	$37,659,115	$0	$0	$0	$0	$0	$0	$0	$1,941,043	$0	$0
Daylight Dimming Sensors	$0	$0	$2,568,099	$0	$0	$0	$12,427,508	$0	$0	$0	$0	$0	$0	$0	$640,544	$0	$0
Switching Controls Mutli Level Li	$0	$0	$2,568,099	$0	$0	$0	$12,427,508	$0	$0	$0	$0	$0	$0	$0	$640,544	$0	$0
Central Lighting Control - Timelo	$0	$0	$4,051,415	$0	$0	$0	$12,427,508	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Measure Name	Program Year 2026	Program Year 2012	Program Year 2026	Program Year 2012	Program Year 2026	Program Year 2012	Program Year 2026	UC Test 2016	UC Test Total	TRC Test 2016	TRC Test Total	Participant Test 2016	Participant Test Total	Participants 2012	Participants 2016	Participants 2021	Participants 2026
	Avoided Capacity	Lost Revene	Lost Revene	Participant Costs	Participant Costs	Societal Benefits	Societal Benefits	No Data by Measure. Summary by program only						Number of	Number of	Number of	Number of
Test	$0	$4,500,000	$0	$100,000	$0	$0	$0							10,000	0	0	0
DLC-CAC	$0	$6,906,183	$0	$0	$0	$0	$0							63,946	0	0	0
DLC-Pool Pumps	$0	$1,732,231	$0	$0	$0	$0	$0							6,714	0	0	0
DLC-Water Heat	$0	$1,449,753	$0	$0	$0	$0	$0							9,476	0	0	0
Residential Online Audit	$0	$15,648,668	$0	$0	$0	$0	$0							167,904	0	0	0
Energy Efficiency Kit	$0	$242,354,985	$0	$0	$0	$0	$0							561,683	0	0	0
Schools Childern Education	$0	$1,769,720	$0	$0	$0	$0	$0							22,500	0	0	0
Refrigerator/Freezer recycling	$0	$1,101	$0	-$50	$0	$0	$0							1	0	0	0
Room Air Conditioners recycling	$0	$31	$0	-$31	$0	$0	$0							1	0	0	0
Room Air Conditioners recycling	$0	$17	$0	-$31	$0	$0	$0							1	0	0	0
Refrigerator/Freezer recycling	$0	$110,457,403	$0	-$5,017,142	$0	$0	$0							100,343	0	0	0
Room Air Conditioners recycling	$0	$4,684,027	$0	-$2,825,789	$0	$0	$0							90,425	0	0	0
Room Air Conditioners CEE TIEI	$0	$3,642,191	$0	$853,206	$0	$0	$0							56,880	0	0	0
ASHP - SEER 15	$0	$122,343,490	$0	$23,168,620	$0	$0	$0							54,902	0	0	0
CAC - SEER 15	$0	$174,533,277	$0	$131,623,889	$0	$0	$0							438,746	0	0	0
CAC - Maintenance	$0	$17,569,697	$0	$7,320,707	$0	$0	$0							254,633	0	0	0
EE Ground Source Heat Pump	$0	$24,335,920	$0	$12,317,744	$0	$0	$0							4,927	0	0	0
Solar Water Heating	$0	$4,154,627	$0	$2,231,770	$0	$0	$0							858	0	0	0
HP Water Heater	$0	$20,596,233	$0	$3,678,844	$0	$0	$0							10,587	0	0	0
EE Water Heater	$0	$33,966,013	$0	$22,802,681	$0	$0	$0							76,777	0	0	0
Programable Thermostat_Heat	$0	$25,410,613	$0	$0	$0	$0	$0							12,041	0	0	0
Programable Thermostat_Heat	$0	$2,110	$0	$0	$0	$0	$0							1	0	0	0
Programable Thermostat_CAC	$0	$33,889,612	$0	$3,427,088	$0	$0	$0							85,677	0	0	0
Clothes Washer Energy Star, Ele	$0	$30,444,844	$0	$32,057,227	$0	$0	$0							126,959	0	0	0
Clothes Washer CEE TIER 3, El	$0	$8,134,918	$0	$9,823,477	$0	$0	$0							31,740	0	0	0
Dehumidifiers 25-35 pints/day	$0	$16,524,891	$0	$914,723	$0	$0	$0							66,525	0	0	0
Pump and Motor Single Speed	$0	$16,512,926	$0	$2,927,108	$0	$0	$0							40,374	0	0	0
Pump and Motor 2 Speed	$0	$4,737,204	$0	$1,614,956	$0	$0	$0							10,766	0	0	0
Pump and Motor Variable Speed	$0	$3,149,164	$0	$1,816,826	$0	$0	$0							2,692	0	0	0
Refrigerators-Freezers CEE TIEI	$0	$41,525,163	$0	$9,797,970	$0	$0	$0							182,288	0	0	0
Refrigerators-Freezers CEE TIEI	$0	$41,525,163	$0	$9,797,970	$0	$0	$0							182,288	0	0	0
Refrigerators-Freezers CEE TIEI	$0	$41,525,163	$0	$9,797,970	$0	$0	$0							182,288	0	0	0
Smart Strip plug outlet 5 plug	$0	$16,985,862	$0	$5,565,756	$0	$0	$0							412,278	0	0	0
Torchiere Floor Lamps	$0	$34,099,874	$0	$9,920,444	$0	$0	$0							330,681	0	0	0
Residential New Construction - 1	$0	$44,979,337	$0	$17,424,428	$0	$0	$0							40,522	0	0	0
Residential New Construction - 3	$0	$17,991,735	$0	$5,916,201	$0	$0	$0							8,104	0	0	0
Ceiling Fans	$0	$660,700	$0	$741,911	$0	$0	$0							5,506	0	0	0
Ceiling Fans 2014 onwards	$0	$22,337,235	$0	$31,030,334	$0	$0	$0							230,281	0	0	0
Duct sealing 20 leakage base	$0	$228,703,074	$0	$53,459,007	$0	$0	$0							509,133	0	0	0
Low Flow Showerheads	$0	$28,174,342	$0	$0	$0	$0	$0							240,806	0	0	0
Kitchen Aerator	$0	$7,163,989	$0	$0	$0	$0	$0							240,806	0	0	0
Bathroom Aerator	$0	$3,581,994	$0	$0	$0	$0	$0							240,806	0	0	0
Pipe Wrap	$0	$160,325,648	$0	$41,418,690	$0	$0	$0							240,806	0	0	0
Whole Building	$0	$15,600,355	$0	$2,083,381	$0	$0	$0							20,834	0	0	0
Low Income Whole House (PA V	$0	$498	$0	$400	$0	$0	$0							1	0	0	0
Current Community Connections	$0	$498	$0	$400	$0	$0	$0							1	0	0	0
Commercial, Industrial Audit - Sr	$0	$23	$0	$250	$0	$0	$0							1	0	0	0
Commercial, Industrial Audit - La	$0	$0	$0	$18,750	$0	$0	$0							1	0	0	0
Commercial New Construction	$0	$71,020,747	$0	$17,292,966	$0	$0	$0							3,147	0	0	0
Exterior HID replacement above	$0	$144,553,956	$0	$24,200,363	$0	$0	$0							432,149	0	0	0
HPT8 4ft 4 lamp, T12 to HPT8 F	$0	$50,639,812	$0	$11,137,161	$0	$0	$0							218,376	0	0	0
HPT8 4ft 4 lamp, T12 to HPT8 H	$0	$111,235,586	$0	$29,819,775	$0	$0	$0							584,701	0	0	0
HPT8 4ft 4 lamp, T12 to HPT8 H	$0	$147,616,554	$0	$43,357,812	$0	$0	$0							850,153	0	0	0
HPT8 4ft 4 lamp, T12 to HPT8 O	$0	$349,467,488	$0	$97,696,435	$0	$0	$0							1,915,616	0	0	0
HPT8 4ft 4 lamp, T12 to HPT8 S	$0	$63,233,546	$0	$18,198,735	$0	$0	$0							356,838	0	0	0
HPT8 4ft 4 lamp, T12 to HPT8 E	$0	$86,233,126	$0	$27,411,109	$0	$0	$0							537,473	0	0	0
HPT8 4ft 4 lamp, T12 to HPT8 O	$0	$79,144,081	$0	$21,245,649	$0	$0	$0							416,581	0	0	0
LED Exit Signs Electronic Fixture	$0	$56,981,617	$0	$22,526,618	$0	$0	$0							429,078	0	0	0
Occupancy Sensors under 500 V	$0	$24,047,236	$0	$28,411,071	$0	$0	$0							263,676	0	0	0
Daylight Dimming Sensors	$0	$7,935,588	$0	$9,375,653	$0	$0	$0							87,013	0	0	0
Switching Controls Mutli Level Li	$0	$7,935,588	$0	$9,375,653	$0	$0	$0							87,013	0	0	0
Central Lighting Control - Timelo	$0	$16,679,350	$0	$9,375,653	$0	$0	$0							87,013	0	0	0

OE Economic Potential Results

Measure Name	Program	Rate Class	Total Measure TRC Test	Total Discounted Lifetime Costs ($000)	Total Discounted Utility Lifetime Costs	Total Discounted Lifetime Benefits ($000)	Program Year 2012		Program Year 2016		Program Year 2021		Program Year 2026	
							MWh Saved	kW Saved	MWh Saved	kW Saved	MWh Saved	kW Saved	MWh Saved	kW Saved
Exterior HID replacement above	C/I Equipment (Comm Lighting)	IND	0.79	$593,615	$207,645	$466,286	1,640		0		0		0	
High Bay T-* 48" Four Lamps Inc	C/I Equipment (Comm Lighting)	IND	1.63	$495,431,908	$80,284,226	$807,527,495	2,136,050	376,124	0		0		0	
High Bay T-* 48" Four Lamps Fo	C/I Equipment (Comm Lighting)	COM	1.93	$33,643,718	$5,451,930	$64,797,103	170,017	30,919	0		0		0	
High Bay T-* 48" Four Lamps Pu	C/I Equipment (Comm Lighting)	COM	1.04	$10,302,958	$1,669,584	$10,683,304	25,629	6,381	0		0		0	
High Bay T-* 48" Four Lamps Re	C/I Equipment (Comm Lighting)	COM	1.54	$137,231,961	$22,238,297	$211,592,691	528,629	115,151	0		0		0	
High Bay T-* 48" Four Lamps Wa	C/I Equipment (Comm Lighting)	COM	1.32	$103,423,687	$16,759,701	$136,290,871	326,561	81,617	0		0		0	
LED Exit Signs Electronic Fixture	C/I Equipment (Comm Lighting)	IND	2.04	$1,646,544	-$1,577,202	$3,355,318	11,801		0		0		0	
Occupancy Sensors under 500 V	C/I Equipment (Comm Lighting)	IND	0.20	$3,574,911	$902,922	$731,888	3,016	529	0		0		0	
Daylight Dimming Sensors	C/I Equipment (Comm Lighting)	IND	0.20	$1,179,721	$297,964	$241,523	995	175	0		0		0	
Switching Controls Mutli Level Li	C/I Equipment (Comm Lighting)	IND	0.20	$1,179,721	$297,964	$241,523	995	175	0		0		0	
Central Lighting Control - Timelo	C/I Equipment (Comm Lighting)	IND	0.32	$1,179,721	$297,964	$381,025	2,092		0		0		0	
LED Auto Traffic Signals 8"	Government Lighting	GOV	0.98	$5,103,236	-$440,764	$5,019,130	14,725	1,564	0		0		0	
LED Pedestrian Signals	Government Lighting	GOV	1.93	$1,072,591	$1,072,591	$2,075,261	6,056	664	0		0		0	
Street Lighting - 175 Mercury to	Government Lighting	GOV	0.30	$3,259,637	$3,259,637	$981,831	3,067	206	0		0		0	
AC 65,000 - 135,000 (10 Ton)	C&I Audits & C/I Equipment (expanded)	COM	0.75	$136,612,350	$36,237,413	$103,006,430	116,580	100,641	0		0		0	
AC 240,000 - 760,000 (25 Ton)	C&I Audits & C/I Equipment (expanded)	IND	0.72	$149,113,495	$23,644,824	$107,298,364	121,438	104,834	0		0		0	
Clothes Washer CEE Tier1, Elec	C&I Audits & C/I Equipment (expanded)	COM	0.26	$9,516,992	$1,466,086	$2,439,028	11,287		0		0		0	
Efficient Refrigeration Condense	C&I Audits & C/I Equipment (expanded)	COM	0.91	$497,383	$179,391	$453,186	1,086	271	0		0		0	
ENERGY STAR Commercial Sol	C&I Audits & C/I Equipment (expanded)	COM	2.11	$1,551,036	$482,582	$3,275,018	8,802	1,013	0		0		0	
ENERGY STAR Commercial Sol	C&I Audits & C/I Equipment (expanded)	COM	2.29	$574,314	$226,643	$1,316,986	4,401	507	0		0		0	
ENERGY STAR Commercial Gla	C&I Audits & C/I Equipment (expanded)	COM	2.74	$1,446,337	$466,921	$3,966,461	13,175	1,568	0		0		0	
ENERGY STAR Commercial Gla	C&I Audits & C/I Equipment (expanded)	COM	3.63	$532,593	$213,894	$1,932,191	6,418	764	0		0		0	
ENERGY STAR Commercial Sol	C&I Audits & C/I Equipment (expanded)	COM	0.87	$1,905,265	$742,827	$1,649,102	5,519	630	0		0		0	
ENERGY STAR Commercial Sol	C&I Audits & C/I Equipment (expanded)	COM	0.90	$698,911	$340,286	$627,838	2,085	248	0		0		0	
ENERGY STAR Commercial Gla	C&I Audits & C/I Equipment (expanded)	COM	0.70	$2,559,365	$965,164	$1,783,799	5,970	681	0		0		0	
ENERGY STAR Commercial Gla	C&I Audits & C/I Equipment (expanded)	COM	0.84	$945,114	$453,286	$793,027	2,634	314	0		0		0	
ENERGY STAR Ice Machines Ie	C&I Audits & C/I Equipment (expanded)	COM	0.66	$2,088,567	$521,519	$1,373,873	4,858	1,070	0		0		0	
ENERGY STAR Ice Machines 50	C&I Audits & C/I Equipment (expanded)	COM	0.68	$483,171	$114,454	$328,299	1,410	124	0		0		0	
ENERGY STAR Ice Machines m	C&I Audits & C/I Equipment (expanded)	COM	0.37	$479,043	$110,326	$177,251	761	67	0		0		0	
ENERGY STAR Steam Cookers	C&I Audits & C/I Equipment (expanded)	COM	1.33	$3,903,356	$745,516	$5,203,554	15,546	2,981	0		0		0	
Hot Food Holding Cabinets	C&I Audits & C/I Equipment (expanded)	COM	1.00	$2,173,864	$16,817	$2,183,501	6,887	1,057	0		0		0	
EE Water Heater	C&I Audits & C/I Equipment (expanded)	COM	0.27	$4,123,961	$1,129,556	$1,130,757	3,398	402	0		0		0	
HP Water Heater (Base Usage 2	C&I Audits & C/I Equipment (expanded)	COM	1.57	$2,197,754	$517,215	$3,448,048	9,273	1,524	0		0		0	
Plug Load Occupancy Sensors D	C&I Audits & C/I Equipment (expanded)	COM	0.37	$2,797,639	$1,821,028	$1,026,576	7,280	593	0		0		0	
Commercial Smart Strip plug out	C&I Audits & C/I Equipment (expanded)	COM	0.37	$99,971,434	$65,073,013	$36,683,900	260,134	21,188	0		0		0	
Pre Rinse Sprayers	C&I Audits & C/I Equipment (expanded)	COM	8.55	$903,031	$632,769	$7,723,912	63,228		0		0		0	
Strip curtains for walk-ins - freez	C&I Audits & C/I Equipment (expanded)	COM	0.65	$4,111,059	$464,748	$2,685,324	15,364	1,764	0		0		0	
Vending Machine Occupancy Se	C&I Audits & C/I Equipment (expanded)	COM	0.82	$9,913,248	$2,622,124	$8,156,406	66,769		0		0		0	
Window Film	C&I Audits & C/I Equipment (expanded)	COM	0.96	$9,902,660	$3,952,384	$9,459,119	25,115	9,885	0		0		0	
Plug Load Occupancy Sensors D	C&I Audits & C/I Equipment (expanded)	IND	0.34	$77,484	$52,226	$26,551	188	15	0		0		0	
Water-Cooled cent Chiller 150 - 3	C&I Audits & C/I Equipment (expanded)	IND	0.50	$24,360,538	$4,893,898	$12,260,002	18,803	9,625	0		0		0	
Water-Cooled Centrifugal Chiller	C&I Audits & C/I Equipment (expanded)	IND	0.96	$4,342,114	$1,631,299	$4,160,380	3,128	5,017	0		0		0	
Window Film	C&I Audits & C/I Equipment (expanded)	IND	1.02	$58,552,408	$22,435,129	$59,449,152	96,771	59,998	0		0		0	
Commercial Smart Strip plug out	C&I Audits & C/I Equipment (expanded)	IND	0.36	$1,304,808	$859,534	$468,056	3,319	270	0		0		0	
Motors 1 HP 1200	C/I Equipment (Industrial Motors)	IND	0.17	$751,569	$314,769	$125,404	205	117	0		0		0	
Motors 5 HP 1200	C/I Equipment (Industrial Motors)	IND	0.47	$181,081	$90,991	$84,550	138	79	0		0		0	
Motors 10 HP 1200	C/I Equipment (Industrial Motors)	IND	0.37	$65,596	$35,020	$24,015	39	22	0		0		0	
Motors 20 HP 1200	C/I Equipment (Industrial Motors)	IND	0.68	$13,010	$7,004	$8,820	14	8	0		0		0	
Motors 1 HP 3600	C/I Equipment (Industrial Motors)	IND	0.11	$751,569	$314,769	$85,422	140	80	0		0		0	
Motors 5 HP 3600	C/I Equipment (Industrial Motors)	IND	0.25	$181,081	$90,991	$44,764	73	42	0		0		0	
Motors 10 HP 3600	C/I Equipment (Industrial Motors)	IND	0.25	$65,744	$40,628	$16,719	27	16	0		0		0	
Motors 20 HP 3600	C/I Equipment (Industrial Motors)	IND	0.40	$13,040	$8,126	$5,163	8	5	0		0		0	
Water Pumps with VFD's 1	C/I Equipment (Industrial Motors)	IND	1.86	$1,684,846	$1,438,437	$3,128,362	6,474	2,419	0		0		0	
HVAC Fans with VFD's 1	C/I Equipment (Industrial Motors)	IND	3.80	$842,423	$671,798	$3,201,796	8,625	1,408	0		0		0	
Air Compressors with VFD's 1	C/I Equipment (Industrial Motors)	IND	0.42	$1,126,472	$884,313	$476,977	1,212	249	0		0		0	
Water Pumps with VFD's 5	C/I Equipment (Industrial Motors)	IND	2.56	$1,274,736	$1,017,856	$3,261,289	6,749	2,522	0		0		0	
HVAC Fans with VFD's 5	C/I Equipment (Industrial Motors)	IND	5.24	$2,549,472	$1,624,522	$13,351,373	35,968	5,871	0		0		0	
Air Compressors with VFD's 5	C/I Equipment (Industrial Motors)	IND	0.94	$1,274,736	$669,339	$1,192,443	3,030	622	0		0		0	
Water Pumps with VFD's 10	C/I Equipment (Industrial Motors)	IND	0.70	$18,560,626	$3,303,107	$13,045,155	26,995	10,089	0		0		0	
HVAC Fans with VFD's 10	C/I Equipment (Industrial Motors)	IND	1.44	$9,280,313	$3,757,453	$13,351,373	35,968	5,871	0		0		0	
Air Compressors with VFD's 10	C/I Equipment (Industrial Motors)	IND	0.26	$18,560,626	$1,909,041	$4,769,771	12,120	2,487	0		0		0	
Commercial Skylight 14"	C/I Equipment (Industrial Motors)	IND	0.18	$105,840	$9,840	$18,590	51	18	0		0		0	

OE Economic Potential Results

Measure Name	Program Year 2012 Cumulative		Program Year 2016 Cumulative		Program Year 2021 Cumulative		Program Year 2026 Cumulative		Life Time Savings		Program Year 2012	Program Year 2016	Program Year 2021	Program Year 2026	Program Year 2012	Program Year 2016
	MWh Saved	kW Saved	MWh Saved	kW Saved	MWh Saved	kW Saved	MWh Saved	kW Saved	MWh Saved	kW Saved	Portfolio Budget	Portfolio Budget	Portfolio Budget	Portfolio Budget	Total Incentives	Total Incentives
Exterior HID replacement above	1,640	0	1,640	$0	1,640	$0	1,640	$0	23,055	$0	$207,645	$0	$0	$0	$172,308	$0
High Bay T-* 48" Four Lamps Inc	2,136,050	376,124	2,136,050	$376,124	2,136,050	$376,124	2,136,050	$376,124	30,028,587	$376,124	$80,284,226	$0	$0	$0	$62,033,562	$0
High Bay T-* 48" Four Lamps Fo	170,017	30,919	170,017	$30,919	170,017	$30,919	170,017	$30,919	2,390,105	$30,919	$5,451,930	$0	$0	$0	$4,212,566	$0
High Bay T-* 48" Four Lamps Pu	25,629	6,381	25,629	$6,381	25,629	$6,381	25,629	$6,381	360,293	$6,381	$1,669,584	$0	$0	$0	$1,290,045	$0
High Bay T-* 48" Four Lamps Re	528,629	115,151	528,629	$115,151	528,629	$115,151	528,629	$115,151	7,431,467	$115,151	$22,238,297	$0	$0	$0	$17,182,961	$0
High Bay T-* 48" Four Lamps Wa	326,561	81,617	326,561	$81,617	326,561	$81,617	326,561	$81,617	4,590,793	$81,617	$16,759,701	$0	$0	$0	$12,949,791	$0
LED Exit Signs Electronic Fixture	11,801	0	11,801	$0	11,801	$0	11,801	$0	165,899	$0	-$1,577,202	$0	$0	$0	$0	$0
Occupancy Sensors under 500 V	3,016	529	3,016	$529	3,016	$529	3,016	$529	22,616	$529	$902,922	$0	$0	$0	$774,939	$0
Daylight Dimming Sensors	995	175	995	$175	995	$175	995	$175	7,463	$175	$297,964	$0	$0	$0	$255,730	$0
Switching Controls Mutli Level Li	995	175	995	$175	995	$175	995	$175	7,463	$175	$297,964	$0	$0	$0	$255,730	$0
Central Lighting Control - Timelo	2,092	0	2,092	$0	2,092	$0	2,092	$0	15,687	$0	$297,964	$0	$0	$0	$255,730	$0
LED Auto Traffic Signals 8"	14,725	1,564	14,725	$1,564	14,725	$1,564	14,725	$1,564	207,000	$1,564	-$440,764	$0	$0	$0	$4,056,000	$0
LED Pedestrian Signals	6,056	664	6,056	$664	6,056	$664	6,056	$664	85,140	$664	$1,072,591	$0	$0	$0	$1,014,000	$0
Street Lighting - 175 Mercury to	3,067	206	3,067	$206	3,067	$206	3,067	$206	43,121	$206	$3,259,637	$0	$0	$0	$630,000	$0
AC 65,000 - 135,000 (10 Ton)	116,580	100,641	116,580	$100,641	116,580	$100,641	116,580	$100,641	1,638,884	$100,641	$36,237,413	$0	$0	$0	$33,458,312	$0
AC 240,000 - 760,000 (25 Ton)	121,438	104,834	121,438	$104,834	121,438	$104,834	121,438	$104,834	1,707,171	$104,834	$23,644,824	$0	$0	$0	$13,940,963	$0
Clothes Washer CEE Tier1, Elec	11,287	0	11,287	$0	11,287	$0	11,287	$0	105,784	$0	$1,466,086	$0	$0	$0	$1,219,834	$0
Efficient Refrigeration Condense	1,086	271	1,086	$271	1,086	$271	1,086	$271	15,264	$271	$179,391	$0	$0	$0	$105,997	$0
ENERGY STAR Commercial Sol	8,802	1,013	8,802	$1,013	8,802	$1,013	8,802	$1,013	140,235	$1,013	$482,582	$0	$0	$0	$423,990	$0
ENERGY STAR Commercial Sol	4,401	507	4,401	$507	4,401	$507	4,401	$507	49,495	$507	$226,643	$0	$0	$0	$211,995	$0
ENERGY STAR Commercial Gla	13,175	1,568	13,175	$1,568	13,175	$1,568	13,175	$1,568	148,170	$1,568	$466,921	$0	$0	$0	$388,657	$0
ENERGY STAR Commercial Gla	6,418	764	6,418	$764	6,418	$764	6,418	$764	72,178	$764	$213,894	$0	$0	$0	$194,329	$0
ENERGY STAR Commercial Sol	5,519	630	5,519	$630	5,519	$630	5,519	$630	62,070	$630	$742,827	$0	$0	$0	$618,318	$0
ENERGY STAR Commercial Sol	2,085	248	2,085	$248	2,085	$248	2,085	$248	23,453	$248	$340,286	$0	$0	$0	$309,159	$0
ENERGY STAR Commercial Gla	5,970	681	5,970	$681	5,970	$681	5,970	$681	67,140	$681	$965,164	$0	$0	$0	$847,979	$0
ENERGY STAR Commercial Gla	2,634	314	2,634	$314	2,634	$314	2,634	$314	29,624	$314	$453,286	$0	$0	$0	$423,990	$0
ENERGY STAR Ice Machines Ie	4,858	1,070	4,858	$1,070	4,858	$1,070	4,858	$1,070	40,974	$1,070	$521,519	$0	$0	$0	$451,339	$0
ENERGY STAR Ice Machines 50	1,410	124	1,410	$124	1,410	$124	1,410	$124	11,889	$124	$114,454	$0	$0	$0	$106,197	$0
ENERGY STAR Ice Machines m	761	67	761	$67	761	$67	761	$67	6,419	$67	$110,326	$0	$0	$0	$106,197	$0
ENERGY STAR Steam Cookers	15,546	2,981	15,546	$2,981	15,546	$2,981	15,546	$2,981	174,834	$2,981	$745,516	$0	$0	$0	$728,732	$0
Hot Food Holding Cabinets	6,887	1,057	6,887	$1,057	6,887	$1,057	6,887	$1,057	77,459	$1,057	$16,817	$0	$0	$0	$0	$0
EE Water Heater	3,398	402	3,398	$402	3,398	$402	3,398	$402	44,579	$402	$1,129,556	$0	$0	$0	$1,008,217	$0
HP Water Heater (Base Usage 2	9,273	1,524	9,273	$1,524	9,273	$1,524	9,273	$1,524	130,366	$1,524	$517,215	$0	$0	$0	$477,577	$0
Plug Load Occupancy Sensors D	7,280	593	7,280	$593	7,280	$593	7,280	$593	34,113	$593	$1,821,028	$0	$0	$0	$1,430,529	$0
Commercial Smart Strip plug out	260,134	21,188	260,134	$21,188	260,134	$21,188	260,134	$21,188	1,218,987	$21,188	$65,073,013	$0	$0	$0	$51,118,815	$0
Pre Rinse Sprayers	63,228	0	63,228	$0	63,228	$0	63,228	$0	296,288	$0	$632,769	$0	$0	$0	$556,422	$0
Strip curtains for walk-ins - freez	15,364	1,764	15,364	$1,764	15,364	$1,764	15,364	$1,764	86,392	$1,764	$464,748	$0	$0	$0	$423,990	$0
Vending Machine Occupancy Se	66,769	0	66,769	$0	66,769	$0	66,769	$0	312,879	$0	$2,622,124	$0	$0	$0	$1,742,620	$0
Window Film	25,115	9,885	25,115	$9,885	25,115	$9,885	25,115	$9,885	235,374	$9,885	$3,952,384	$0	$0	$0	$3,563,040	$0
Plug Load Occupancy Sensors D	188	15	188	$15	188	$15	188	$15	882	$15	$52,226	$0	$0	$0	$36,998	$0
Water-Cooled cent Chiller 150 - :	18,803	9,625	18,803	$9,625	18,803	$9,625	18,803	$9,625	352,439	$9,625	$4,893,898	$0	$0	$0	$3,201,750	$0
Water-Cooled Centrifugal Chiller	3,128	5,017	3,128	$5,017	3,128	$5,017	3,128	$5,017	58,634	$5,017	$1,631,299	$0	$0	$0	$1,067,250	$0
Window Film	96,771	59,998	96,771	$59,998	96,771	$59,998	96,771	$59,998	1,360,400	$59,998	$22,435,129	$0	$0	$0	$21,627,113	$0
Commercial Smart Strip plug out	3,319	270	3,319	$270	3,319	$270	3,319	$270	15,553	$270	$859,534	$0	$0	$0	$652,233	$0
Motors 1 HP 1200	205	117	205	$117	205	$117	205	$117	3,074	$117	$314,769	$0	$0	$0	$273,000	$0
Motors 5 HP 1200	138	79	138	$79	138	$79	138	$79	2,073	$79	$90,991	$0	$0	$0	$81,900	$0
Motors 10 HP 1200	39	22	39	$22	39	$22	39	$22	589	$22	$35,020	$0	$0	$0	$32,760	$0
Motors 20 HP 1200	14	8	14	$8	14	$8	14	$8	216	$8	$7,004	$0	$0	$0	$6,552	$0
Motors 1 HP 3600	140	80	140	$80	140	$80	140	$80	2,094	$80	$314,769	$0	$0	$0	$273,000	$0
Motors 5 HP 3600	73	42	73	$42	73	$42	73	$42	1,097	$42	$90,991	$0	$0	$0	$81,900	$0
Motors 10 HP 3600	27	16	27	$16	27	$16	27	$16	410	$16	$40,628	$0	$0	$0	$38,220	$0
Motors 20 HP 3600	8	5	8	$5	8	$5	8	$5	127	$5	$8,126	$0	$0	$0	$7,644	$0
Water Pumps with VFD's 1	6,474	2,419	6,474	$2,419	6,474	$2,419	6,474	$2,419	91,007	$2,419	$1,438,437	$0	$0	$0	$606,715	$0
HVAC Fans with VFD's 1	8,625	1,408	8,625	$1,408	8,625	$1,408	8,625	$1,408	121,256	$1,408	$671,798	$0	$0	$0	$255,938	$0
Air Compressors with VFD's 1	1,212	249	1,212	$249	1,212	$249	1,212	$249	17,039	$249	$884,313	$0	$0	$0	$113,591	$0
Water Pumps with VFD's 5	6,749	2,522	6,749	$2,522	6,749	$2,522	6,749	$2,522	94,874	$2,522	$1,017,856	$0	$0	$0	$632,495	$0
HVAC Fans with VFD's 5	35,968	5,871	35,968	$5,871	35,968	$5,871	35,968	$5,871	505,633	$5,871	$1,624,522	$0	$0	$0	$853,800	$0
Air Compressors with VFD's 5	3,030	622	3,030	$622	3,030	$622	3,030	$622	42,597	$622	$669,339	$0	$0	$0	$283,979	$0
Water Pumps with VFD's 10	26,995	10,089	26,995	$10,089	26,995	$10,089	26,995	$10,089	379,497	$10,089	$3,303,107	$0	$0	$0	$2,529,980	$0
HVAC Fans with VFD's 10	35,968	5,871	35,968	$5,871	35,968	$5,871	35,968	$5,871	505,633	$5,871	$3,757,453	$0	$0	$0	$3,370,889	$0
Air Compressors with VFD's 10	12,120	2,487	12,120	$2,487	12,120	$2,487	12,120	$2,487	170,387	$2,487	$1,909,041	$0	$0	$0	$1,135,914	$0
Commercial Skylight 14"	51	18	51	$18	51	$18	51	$18	482	$18	$9,840	$0	$0	$0	$4,000	$0

OE Economic Potential Results

Measure Name	Program Year 2021	Program Year 2026	Program Year 2012	Program Year 2016	Program Year 2021	Program Year 2026	Program Year 2012	Program Year 2016	Program Year 2021	Program Year 2026	Program Year 2012	Program Year 2016	Program Year 2021	Program Year 2026	Program Year 2012	Program Year 2016	Program Year 2021
	Total Incentives	Total Incentives	Benefits	Benefits	Benefits	Benefits	Costs	Costs	Costs	Costs	O&M	O&M	O&M	O&M	Avoided Capacity	Avoided Capacity	Avoided Capacity
Exterior HID replacement above	$0	$0	$466,286	$0	$0	$0	$593,615	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
High Bay T-* 48" Four Lamps Inc	$0	$0	$807,527,495	$0	$0	$0	$495,431,908	$0	$0	$0	$0	$0	$0	$0	$200,197,060	$0	$0
High Bay T-* 48" Four Lamps Fo	$0	$0	$64,797,103	$0	$0	$0	$33,643,718	$0	$0	$0	$0	$0	$0	$0	$16,457,048	$0	$0
High Bay T-* 48" Four Lamps Pu	$0	$0	$10,683,304	$0	$0	$0	$10,302,958	$0	$0	$0	$0	$0	$0	$0	$3,396,360	$0	$0
High Bay T-* 48" Four Lamps Re	$0	$0	$211,592,691	$0	$0	$0	$137,231,961	$0	$0	$0	$0	$0	$0	$0	$61,290,714	$0	$0
High Bay T-* 48" Four Lamps Wa	$0	$0	$136,290,871	$0	$0	$0	$103,423,687	$0	$0	$0	$0	$0	$0	$0	$43,441,743	$0	$0
LED Exit Signs Electronic Fixture	$0	$0	$3,355,318	$0	$0	$0	$1,646,544	$0	$0	$0	-$1,833,168	$0	$0	$0	$0	$0	$0
Occupancy Sensors under 500 V	$0	$0	$731,888	$0	$0	$0	$3,574,911	$0	$0	$0	$0	$0	$0	$0	$182,550	$0	$0
Daylight Dimming Sensors	$0	$0	$241,523	$0	$0	$0	$1,179,721	$0	$0	$0	$0	$0	$0	$0	$60,242	$0	$0
Switching Controls Mutli Level Li	$0	$0	$241,523	$0	$0	$0	$1,179,721	$0	$0	$0	$0	$0	$0	$0	$60,242	$0	$0
Central Lighting Control - Timelo	$0	$0	$381,025	$0	$0	$0	$1,179,721	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
LED Auto Traffic Signals 8"	$0	$0	$5,019,130	$0	$0	$0	$5,103,236	$0	$0	$0	-$7,096,693	$0	$0	$0	$832,539	$0	$0
LED Pedestrian Signals	$0	$0	$2,075,261	$0	$0	$0	$1,072,591	$0	$0	$0	-$591,391	$0	$0	$0	$353,298	$0	$0
Street Lighting - 175 Mercury to	$0	$0	$981,831	$0	$0	$0	$3,259,637	$0	$0	$0	$1,617,085	$0	$0	$0	$109,700	$0	$0
AC 65,000 - 135,000 (10 Ton)	$0	$0	$103,006,430	$0	$0	$0	$136,612,350	$0	$0	$0	$0	$0	$0	$0	$53,567,443	$0	$0
AC 240,000 - 760,000 (25 Ton)	$0	$0	$107,298,364	$0	$0	$0	$149,113,495	$0	$0	$0	$0	$0	$0	$0	$55,799,420	$0	$0
Clothes Washer CEE Tier1, Elec	$0	$0	$2,439,028	$0	$0	$0	$9,516,992	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Efficient Refrigeration Condense	$0	$0	$453,186	$0	$0	$0	$497,383	$0	$0	$0	$0	$0	$0	$0	$144,478	$0	$0
ENERGY STAR Commercial Sol	$0	$0	$3,275,018	$0	$0	$0	$1,551,036	$0	$0	$0	$0	$0	$0	$0	$578,834	$0	$0
ENERGY STAR Commercial Sol	$0	$0	$1,316,986	$0	$0	$0	$574,314	$0	$0	$0	$0	$0	$0	$0	$234,496	$0	$0
ENERGY STAR Commercial Gla	$0	$0	$3,966,461	$0	$0	$0	$1,446,337	$0	$0	$0	$0	$0	$0	$0	$725,874	$0	$0
ENERGY STAR Commercial Gla	$0	$0	$1,932,191	$0	$0	$0	$532,593	$0	$0	$0	$0	$0	$0	$0	$353,597	$0	$0
ENERGY STAR Commercial Sol	$0	$0	$1,649,102	$0	$0	$0	$1,905,265	$0	$0	$0	$0	$0	$0	$0	$291,581	$0	$0
ENERGY STAR Commercial Sol	$0	$0	$627,838	$0	$0	$0	$698,911	$0	$0	$0	$0	$0	$0	$0	$114,896	$0	$0
ENERGY STAR Commercial Gla	$0	$0	$1,783,799	$0	$0	$0	$2,559,365	$0	$0	$0	$0	$0	$0	$0	$315,397	$0	$0
ENERGY STAR Commercial Gla	$0	$0	$793,027	$0	$0	$0	$945,114	$0	$0	$0	$0	$0	$0	$0	$145,126	$0	$0
ENERGY STAR Ice Machines Ie	$0	$0	$1,373,873	$0	$0	$0	$2,088,567	$0	$0	$0	$0	$0	$0	$0	$404,045	$0	$0
ENERGY STAR Ice Machines 50	$0	$0	$328,299	$0	$0	$0	$483,171	$0	$0	$0	$0	$0	$0	$0	$46,895	$0	$0
ENERGY STAR Ice Machines m	$0	$0	$177,251	$0	$0	$0	$479,043	$0	$0	$0	$0	$0	$0	$0	$25,319	$0	$0
ENERGY STAR Steam Cookers	$0	$0	$5,203,554	$0	$0	$0	$3,903,356	$0	$0	$0	$0	$0	$0	$0	$1,379,791	$0	$0
Hot Food Holding Cabinets	$0	$0	$2,183,501	$0	$0	$0	$2,173,864	$0	$0	$0	$0	$0	$0	$0	$489,406	$0	$0
EE Water Heater	$0	$0	$1,130,757	$0	$0	$0	$4,123,961	$0	$0	$0	$0	$0	$0	$0	$205,492	$0	$0
HP Water Heater (Base Usage 2	$0	$0	$3,448,048	$0	$0	$0	$2,197,754	$0	$0	$0	$0	$0	$0	$0	$811,384	$0	$0
Plug Load Occupancy Sensors D	$0	$0	$1,026,576	$0	$0	$0	$2,797,639	$0	$0	$0	$0	$0	$0	$0	$137,298	$0	$0
Commercial Smart Strip plug out	$0	$0	$36,683,900	$0	$0	$0	$99,971,434	$0	$0	$0	$0	$0	$0	$0	$4,906,239	$0	$0
Pre Rinse Sprayers	$0	$0	$7,723,912	$0	$0	$0	$903,031	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Strip curtains for walk-ins - freez	$0	$0	$2,685,324	$0	$0	$0	$4,111,059	$0	$0	$0	$0	$0	$0	$0	$479,985	$0	$0
Vending Machine Occupancy Se	$0	$0	$8,156,406	$0	$0	$0	$9,913,248	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Window Film	$0	$0	$9,459,119	$0	$0	$0	$9,902,660	$0	$0	$0	$0	$0	$0	$0	$4,032,169	$0	$0
Plug Load Occupancy Sensors D	$0	$0	$26,551	$0	$0	$0	$77,484	$0	$0	$0	$0	$0	$0	$0	$3,551	$0	$0
Water-Cooled cent Chiller 150 - :	$0	$0	$12,260,002	$0	$0	$0	$24,360,538	$0	$0	$0	$0	$0	$0	$0	$5,975,065	$0	$0
Water-Cooled Centrifugal Chiller	$0	$0	$4,160,380	$0	$0	$0	$4,342,114	$0	$0	$0	$0	$0	$0	$0	$3,114,784	$0	$0
Window Film	$0	$0	$59,449,152	$0	$0	$0	$58,552,408	$0	$0	$0	$0	$0	$0	$0	$31,934,960	$0	$0
Commercial Smart Strip plug out	$0	$0	$468,056	$0	$0	$0	$1,304,808	$0	$0	$0	$0	$0	$0	$0	$62,599	$0	$0
Motors 1 HP 1200	$0	$0	$125,404	$0	$0	$0	$751,569	$0	$0	$0	$0	$0	$0	$0	$64,788	$0	$0
Motors 5 HP 1200	$0	$0	$84,550	$0	$0	$0	$181,081	$0	$0	$0	$0	$0	$0	$0	$43,681	$0	$0
Motors 10 HP 1200	$0	$0	$24,015	$0	$0	$0	$65,596	$0	$0	$0	$0	$0	$0	$0	$12,407	$0	$0
Motors 20 HP 1200	$0	$0	$8,820	$0	$0	$0	$13,010	$0	$0	$0	$0	$0	$0	$0	$4,557	$0	$0
Motors 1 HP 3600	$0	$0	$85,422	$0	$0	$0	$751,569	$0	$0	$0	$0	$0	$0	$0	$44,132	$0	$0
Motors 5 HP 3600	$0	$0	$44,764	$0	$0	$0	$181,081	$0	$0	$0	$0	$0	$0	$0	$23,127	$0	$0
Motors 10 HP 3600	$0	$0	$16,719	$0	$0	$0	$65,744	$0	$0	$0	$0	$0	$0	$0	$8,638	$0	$0
Motors 20 HP 3600	$0	$0	$5,163	$0	$0	$0	$13,040	$0	$0	$0	$0	$0	$0	$0	$2,667	$0	$0
Water Pumps with VFD's 1	$0	$0	$3,128,362	$0	$0	$0	$1,684,846	$0	$0	$0	$0	$0	$0	$0	$1,287,733	$0	$0
HVAC Fans with VFD's 1	$0	$0	$3,201,796	$0	$0	$0	$842,423	$0	$0	$0	$0	$0	$0	$0	$749,383	$0	$0
Air Compressors with VFD's 1	$0	$0	$476,977	$0	$0	$0	$1,126,472	$0	$0	$0	$0	$0	$0	$0	$132,368	$0	$0
Water Pumps with VFD's 5	$0	$0	$3,261,289	$0	$0	$0	$1,274,736	$0	$0	$0	$0	$0	$0	$0	$1,342,450	$0	$0
HVAC Fans with VFD's 5	$0	$0	$13,351,373	$0	$0	$0	$2,549,472	$0	$0	$0	$0	$0	$0	$0	$3,124,900	$0	$0
Air Compressors with VFD's 5	$0	$0	$1,192,443	$0	$0	$0	$1,274,736	$0	$0	$0	$0	$0	$0	$0	$330,920	$0	$0
Water Pumps with VFD's 10	$0	$0	$13,045,155	$0	$0	$0	$18,560,626	$0	$0	$0	$0	$0	$0	$0	$5,369,799	$0	$0
HVAC Fans with VFD's 10	$0	$0	$13,351,373	$0	$0	$0	$9,280,313	$0	$0	$0	$0	$0	$0	$0	$3,124,900	$0	$0
Air Compressors with VFD's 10	$0	$0	$4,769,771	$0	$0	$0	$18,560,626	$0	$0	$0	$0	$0	$0	$0	$1,323,679	$0	$0
Commercial Skylight 14"	$0	$0	$18,590	$0	$0	$0	$105,840	$0	$0	$0	$0	$0	$0	$0	$7,486	$0	$0

Measure Name	Program Year 2026	Program Year 2012	Program Year 2026	Program Year 2012	Program Year 2026	Program Year 2012	Program Year 2026	UC Test 2016	UC Test Total	TRC Test 2016	TRC Test Total	Participant Test 2016	Participant Test Total	Participants 2012	Participants 2016	Participants 2021	Participants 2026
	Avoided Capacity	Lost Revene	Lost Revene	Participant Costs	Participant Costs	Societal Benefits	Societal Benefits	No Data by Measure. Summary by program only						Number of	Number of	Number of	Number of
Exterior HID replacement above	$0	$2,305,484	$0	$385,970	$0	$0	$0							6,892	0	0	0
High Bay T-* 48" Four Lamps Inc	$0	$3,002,858,743	$0	$415,147,682	$0	$0	$0							4,771,812	0	0	0
High Bay T-* 48" Four Lamps Fo	$0	$239,010,507	$0	$28,191,788	$0	$0	$0							324,044	0	0	0
High Bay T-* 48" Four Lamps Pu	$0	$36,029,254	$0	$8,633,375	$0	$0	$0							99,234	0	0	0
High Bay T-* 48" Four Lamps Re	$0	$743,146,693	$0	$114,993,664	$0	$0	$0							1,321,766	0	0	0
High Bay T-* 48" Four Lamps Wa	$0	$459,079,276	$0	$86,663,986	$0	$0	$0							996,138	0	0	0
LED Exit Signs Electronic Fixture	$0	$16,589,891	$0	$3,223,746	$0	$0	$0							49,596	0	0	0
Occupancy Sensors under 500 V	$0	$2,261,582	$0	$2,671,989	$0	$0	$0							24,798	0	0	0
Daylight Dimming Sensors	$0	$746,322	$0	$881,756	$0	$0	$0							8,183	0	0	0
Switching Controls Mutli Level Li	$0	$746,322	$0	$881,756	$0	$0	$0							8,183	0	0	0
Central Lighting Control - Timelo	$0	$1,568,651	$0	$881,756	$0	$0	$0							8,183	0	0	0
LED Auto Traffic Signals 8"	$0	$20,700,000	$0	$5,544,000	$0	$0	$0							24,000	0	0	0
LED Pedestrian Signals	$0	$8,514,000	$0	$0	$0	$0	$0							6,000	0	0	0
Street Lighting - 175 Mercury to	$0	$4,312,125	$0	$0	$0	$0	$0							10,000	0	0	0
AC 65,000 - 135,000 (10 Ton)	$0	$163,888,373	$0	$100,374,937	$0	$0	$0							66,917	0	0	0
AC 240,000 - 760,000 (25 Ton)	$0	$170,717,055	$0	$125,468,671	$0	$0	$0							27,882	0	0	0
Clothes Washer CEE Tier1, Elec	$0	$10,578,403	$0	$8,050,906	$0	$0	$0							19,517	0	0	0
Efficient Refrigeration Condense	$0	$1,526,363	$0	$317,992	$0	$0	$0							8,480	0	0	0
ENERGY STAR Commercial Sol	$0	$14,023,542	$0	$1,068,454	$0	$0	$0							6,784	0	0	0
ENERGY STAR Commercial Sol	$0	$4,949,485	$0	$347,671	$0	$0	$0							1,696	0	0	0
ENERGY STAR Commercial Gla	$0	$14,816,979	$0	$979,416	$0	$0	$0							6,219	0	0	0
ENERGY STAR Commercial Gla	$0	$7,217,830	$0	$318,699	$0	$0	$0							1,555	0	0	0
ENERGY STAR Commercial Sol	$0	$6,207,012	$0	$1,162,438	$0	$0	$0							9,893	0	0	0
ENERGY STAR Commercial Sol	$0	$2,345,330	$0	$358,625	$0	$0	$0							2,473	0	0	0
ENERGY STAR Commercial Gla	$0	$6,713,993	$0	$1,594,201	$0	$0	$0							13,568	0	0	0
ENERGY STAR Commercial Gla	$0	$2,962,405	$0	$491,828	$0	$0	$0							3,392	0	0	0
ENERGY STAR Ice Machines Ie	$0	$4,097,445	$0	$1,567,048	$0	$0	$0							14,443	0	0	0
ENERGY STAR Ice Machines 50	$0	$1,188,909	$0	$368,717	$0	$0	$0							1,699	0	0	0
ENERGY STAR Ice Machines m	$0	$641,899	$0	$368,717	$0	$0	$0							850	0	0	0
ENERGY STAR Steam Cookers	$0	$17,483,449	$0	$3,157,839	$0	$0	$0							1,943	0	0	0
Hot Food Holding Cabinets	$0	$7,745,937	$0	$2,157,047	$0	$0	$0							1,943	0	0	0
EE Water Heater	$0	$4,457,883	$0	$2,994,405	$0	$0	$0							10,082	0	0	0
HP Water Heater (Base Usage 2	$0	$13,036,611	$0	$1,680,539	$0	$0	$0							531	0	0	0
Plug Load Occupancy Sensors D	$0	$3,411,261	$0	$976,611	$0	$0	$0							55,020	0	0	0
Commercial Smart Strip plug out	$0	$121,898,712	$0	$34,898,422	$0	$0	$0							1,966,108	0	0	0
Pre Rinse Sprayers	$0	$29,628,831	$0	$270,262	$0	$0	$0							15,898	0	0	0
Strip curtains for walk-ins - freez	$0	$8,639,213	$0	$3,646,311	$0	$0	$0							8,480	0	0	0
Vending Machine Occupancy Se	$0	$31,287,872	$0	$7,291,124	$0	$0	$0							55,764	0	0	0
Window Film	$0	$23,537,439	$0	$5,950,276	$0	$0	$0							71,261	0	0	0
Plug Load Occupancy Sensors D	$0	$88,226	$0	$25,258	$0	$0	$0							1,423	0	0	0
Water-Cooled cent Chiller 150 - 3	$0	$35,243,895	$0	$19,466,640	$0	$0	$0							427	0	0	0
Water-Cooled Centrifugal Chiller	$0	$5,863,369	$0	$2,710,815	$0	$0	$0							427	0	0	0
Window Film	$0	$136,039,998	$0	$36,117,279	$0	$0	$0							8,651	0	0	0
Commercial Smart Strip plug out	$0	$1,555,325	$0	$445,275	$0	$0	$0							25,086	0	0	0
Motors 1 HP 1200	$0	$307,450	$0	$436,800	$0	$0	$0							13,650	0	0	0
Motors 5 HP 1200	$0	$207,289	$0	$90,090	$0	$0	$0							2,730	0	0	0
Motors 10 HP 1200	$0	$58,878	$0	$30,576	$0	$0	$0							546	0	0	0
Motors 20 HP 1200	$0	$21,623	$0	$6,006	$0	$0	$0							109	0	0	0
Motors 1 HP 3600	$0	$209,426	$0	$436,800	$0	$0	$0							13,650	0	0	0
Motors 5 HP 3600	$0	$109,748	$0	$90,090	$0	$0	$0							2,730	0	0	0
Motors 10 HP 3600	$0	$40,989	$0	$25,116	$0	$0	$0							546	0	0	0
Motors 20 HP 3600	$0	$12,657	$0	$4,914	$0	$0	$0							109	0	0	0
Water Pumps with VFD's 1	$0	$9,100,728	$0	$246,410	$0	$0	$0							6,825	0	0	0
HVAC Fans with VFD's 1	$0	$12,125,608	$0	$170,625	$0	$0	$0							3,413	0	0	0
Air Compressors with VFD's 1	$0	$1,703,871	$0	$242,159	$0	$0	$0							2,846	0	0	0
Water Pumps with VFD's 5	$0	$9,487,426	$0	$256,880	$0	$0	$0							1,423	0	0	0
HVAC Fans with VFD's 5	$0	$50,563,340	$0	$924,950	$0	$0	$0							2,846	0	0	0
Air Compressors with VFD's 5	$0	$4,259,678	$0	$605,396	$0	$0	$0							1,423	0	0	0
Water Pumps with VFD's 10	$0	$37,949,702	$0	$15,257,520	$0	$0	$0							2,846	0	0	0
HVAC Fans with VFD's 10	$0	$50,563,340	$0	$5,522,861	$0	$0	$0							1,423	0	0	0
Air Compressors with VFD's 10	$0	$17,038,714	$0	$16,651,586	$0	$0	$0							2,846	0	0	0
Commercial Skylight 14"	$0	$48,160	$0	$96,000	$0	$0	$0							200	0	0	0

Appendix C-2 The Illuminating Company Detailed Measure Results

Measure Name	Program	Rate Class	Total Measure TRC Test	Total Discounted Lifetime Costs ($000)	Total Discounted Utility Lifetime Costs	Total Discounted Lifetime Benefits ($000)	Program Year 2012		Program Year 2016		Program Year 2021		Program Year 2026	
							MWh Saved	kW Saved	MWh Saved	kW Saved	MWh Saved	kW Saved	MWh Saved	kW Saved
DLC-CAC	Direct Load Control	Res	0.54	$41,556,214	$41,556,214	$22,613,421	3,758	37,584	0		0		0	
DLC-Pool Pumps	Direct Load Control	Res	1.02	$2,690,859	$2,690,859	$2,740,441	455	4,555	0		0		0	
DLC-Water Heat	Direct Load Control	Res	0.60	$4,675,367	$4,675,367	$2,823,690	469	4,693	0		0		0	
Residential Online Audit	On-Line Audit	Res	0.82	$3,659,292	$3,659,292	$2,987,445	27,861	1,196	0		0		0	
Energy Efficiency Kit	Comprehensive Residential	Res	1.30	$41,155,996	$41,155,996	$53,438,651	228,876	9,760	0		0		0	
Schools Childern Education	Comprehensive Residential	Res	0.76	$775,268	$775,268	$590,806	3,147	511	0		0		0	
Refrigerator/Freezer recycling	Appliance Turn-In Program	LI RES	2.88	$121	$171	$348	1	0	0		0		0	
Room Air Conditioners recycling	Appliance Turn-In Program	LI RES	0.50	$52	$83	$26	0	0	0		0		0	
Room Air Conditioners recycling	Appliance Turn-In Program	LI RES	0.30	$52	$83	$16	0	0	0		0		0	
Refrigerator/Freezer recycling	Appliance Turn-In Program	Res	6.40	$3,581,246	$6,871,012	$22,920,502	96,601	15,445	0		0		0	
Room Air Conditioners recycling	Appliance Turn-In Program	Res	1.11	$1,730,762	$4,033,920	$1,923,139	8,147	1,895	0		0		0	
Room Air Conditioners CEE TIEI	Energy Efficient Products Program	Res	0.63	$2,553,920	$1,886,566	$1,613,041	2,328	1,640	0		0		0	
ASHP - SEER 15	Energy Efficient Products Program	Res	0.67	$21,946,791	$11,578,091	$14,740,914	32,456	7,603	0		0		0	
CAC - SEER 15	Energy Efficient Products Program	Res	0.70	$153,303,847	$46,855,088	$106,656,742	83,672	109,796	0		0		0	
CAC - Maintenance	Energy Efficient Products Program	Res	0.47	$15,750,082	$9,900,065	$7,470,057	29,962	8,685	0		0		0	
EE Ground Source Heat Pump	Energy Efficient Products Program	Res	0.33	$9,141,231	$1,934,835	$3,031,180	8,440	615	0		0		0	
Solar Water Heating	Energy Efficient Products Program	Res	0.32	$660,219	$111,181	$208,993	545	43	0		0		0	
HP Water Heater	Energy Efficient Products Program	Res	0.74	$1,755,383	$850,350	$1,291,023	3,604	500	0		0		0	
EE Water Heater	Energy Efficient Products Program	Res	0.27	$14,246,989	$4,040,097	$3,904,603	11,588	1,467	0		0		0	
Programable Thermostat_Heat	Energy Efficient Products Program	Res	5.23	$565,028	$565,028	$2,952,934	10,386		0		0		0	
Programable Thermostat_Heat	Energy Efficient Products Program	Res	4.99	$86	$86	$427	2		0		0		0	
Programable Thermostat_CAC	Energy Efficient Products Program	Res	3.89	$6,041,610	$2,855,527	$23,505,392	22,412	26,305	0		0		0	
Clothes Washer Energy Star, Ele	Energy Efficient Products Program	Res	0.21	$21,087,957	$4,884,353	$4,351,995	14,927	2,054	0		0		0	
Clothes Washer CEE TIER 3, El	Energy Efficient Products Program	Res	0.15	$6,186,450	$1,221,088	$923,381	3,989		0		0		0	
Dehumidifiers 25-35 pints/day	Energy Efficient Products Program	Res	1.80	$2,873,783	$2,199,620	$5,183,501	10,829	2,616	0		0		0	
Pump and Motor Single Speed	Energy Efficient Products Program	Res	3.89	$1,662,220	$470,906	$6,459,425	7,171	10,169	0		0		0	
Pump and Motor 2 Speed	Energy Efficient Products Program	Res	3.41	$826,670	$169,393	$2,818,201	2,057	5,283	0		0		0	
Pump and Motor Variable Speed	Energy Efficient Products Program	Res	1.51	$836,558	$97,121	$1,265,644	1,368	2,022	0		0		0	
Refrigerators-Freezers CEE TIEI	Energy Efficient Products Program	Res	0.57	$13,542,616	$6,161,051	$7,688,703	19,636	2,931	0		0		0	
Refrigerators-Freezers CEE TIEI	Energy Efficient Products Program	Res	0.57	$13,542,616	$6,161,051	$7,688,703	19,636	2,931	0		0		0	
Refrigerators-Freezers CEE TIEI	Energy Efficient Products Program	Res	0.57	$13,542,616	$6,161,051	$7,688,703	19,636	2,931	0		0		0	
Smart Strip plug outlet 5 plug	Energy Efficient Products Program	Res	0.35	$10,976,120	$6,925,361	$3,871,196	32,977	3,202	0		0		0	
Torchiere Floor Lamps	Energy Efficient Products Program	Res	0.78	$10,181,868	$2,815,834	$7,957,607	33,770	5,240	0		0		0	
Residential New Construction - 1	Residential New Construction	Res	0.96	$1,074	$644	$1,028	1	2	0		0		0	
Residential New Construction - 3	Residential New Construction	Res	1.16	$1,779	$1,049	$2,055	2	3	0		0		0	
Ceiling Fans	Comprehensive Residential-Home Performance	Res	0.19	$564,337	$110,165	$107,925	432	36	0		0		0	
Ceiling Fans 2014 onwards	Comprehensive Residential-Home Performance	Res	0.17	$27,548,718	$5,186,129	$4,578,405	17,176	2,125	0		0		0	
Duct sealing 20 leakage base	Comprehensive Residential-Home Performance	Res	1.44	$65,585,665	$30,202,262	$94,616,225	74,231	87,125	0		0		0	
Low Flow Showerheads	Comprehensive Residential-Home Performance	Res	1.30	$2,890,782	$2,890,782	$3,760,652	26,047	2,499	0		0		0	
Kitchen Aerator	Comprehensive Residential-Home Performance	Res	1.25	$802,554	$802,554	$1,000,776	6,623	828	0		0		0	
Bathroom Aerator	Comprehensive Residential-Home Performance	Res	0.62	$802,554	$802,554	$500,388	3,312	414	0		0		0	
Pipe Wrap	Comprehensive Residential-Home Performance	Res	0.81	$21,147,773	$3,204,271	$17,049,676	49,407	5,640	0		0		0	
Whole Building	Comprehensive Residential-Home Performance	Res	1.05	$7,715,176	$5,881,286	$8,125,829	16,280	12,915	0		0		0	
Low Income Whole House (PA V	Comm Connect	LI RES	0.08	$2,533	$2,133	$199	1	0	0		0		0	
Current Community Connections	Comm Connect	LI RES	0.08	$2,533	$2,133	$199	1	0	0		0		0	
Commercial, Industrial Audit - Sr	C&I Audits & C/I Equipment (expanded)	COM	0.00	$10,506	$10,256	$6	0	0	0		0		0	
Commercial, Industrial Audit - La	C&I Audits & C/I Equipment (expanded)	IND	0.00	$25,597	$6,847	$0	0		0		0		0	
Commercial New Construction	Commercial New Construction	COM	0.54	$10,306	$4,811	$5,541	16	2	0		0		0	
Exterior HID replacement above	C/I Equipment (Comm Lighting)	COM	0.79	$16,067,973	$5,538,653	$12,720,335	44,739		0		0		0	
HPT8 4ft 4 lamp, T12 to HPT8 F	C/I Equipment (Comm Lighting)	COM	0.95	$12,968,953	$3,259,135	$12,321,715	31,405	6,374	0		0		0	
HPT8 4ft 4 lamp, T12 to HPT8 H	C/I Equipment (Comm Lighting)	COM	0.81	$34,724,403	$8,726,343	$28,150,140	68,985	16,037	0		0		0	
HPT8 4ft 4 lamp, T12 to HPT8 H	C/I Equipment (Comm Lighting)	COM	0.63	$50,489,118	$12,688,061	$31,916,634	91,548	11,061	0		0		0	
HPT8 4ft 4 lamp, T12 to HPT8 O	C/I Equipment (Comm Lighting)	COM	0.78	$113,765,125	$28,589,505	$88,870,327	216,730	51,194	0		0		0	
HPT8 4ft 4 lamp, T12 to HPT8 S	C/I Equipment (Comm Lighting)	COM	0.73	$21,191,985	$5,325,607	$15,424,372	39,216	8,031	0		0		0	
HPT8 4ft 4 lamp, T12 to HPT8 E	C/I Equipment (Comm Lighting)	COM	0.66	$31,919,571	$8,021,480	$21,140,650	53,479	11,151	0		0		0	
HPT8 4ft 4 lamp, T12 to HPT8 O	C/I Equipment (Comm Lighting)	COM	0.77	$56,752,906	$14,262,169	$43,639,299	112,595	21,842	0		0		0	
LED Exit Signs Electronic Fixture	C/I Equipment (Comm Lighting)	COM	1.04	$7,030,728	-$4,954,672	$7,322,779	20,218	2,436	0		0		0	
Occupancy Sensors under 500 V	C/I Equipment (Comm Lighting)	COM	0.21	$12,742,368	$3,148,977	$2,627,740	10,830	1,900	0		0		0	
Daylight Dimming Sensors	C/I Equipment (Comm Lighting)	COM	0.21	$4,204,981	$1,039,162	$867,154	3,574	627	0		0		0	
Switching Controls Mutli Level Li	C/I Equipment (Comm Lighting)	COM	0.21	$4,204,981	$1,039,162	$867,154	3,574	627	0		0		0	
Central Lighting Control - Timelo	C/I Equipment (Comm Lighting)	COM	0.33	$4,204,981	$1,039,162	$1,368,016	7,512		0		0		0	
Exterior HID replacement above	C/I Equipment (Comm Lighting)	IND	0.79	$168,292	$58,850	$132,216	465		0		0		0	

CE Economic Potential Results

Measure Name	Program Year 2012 Cumulative		Program Year 2016 Cumulative		Program Year 2021 Cumulative		Program Year 2026 Cumulative		Life Time Savings		Program Year 2012	Program Year 2016	Program Year 2021	Program Year 2026	Program Year 2012	Program Year 2016
	MWh Saved	kW Saved	MWh Saved	kW Saved	MWh Saved	kW Saved	MWh Saved	kW Saved	MWh Saved	kW Saved	Portfolio Budget	Portfolio Budget	Portfolio Budget	Portfolio Budget	Total Incentives	Total Incentives
DLC-CAC	3,758	37,584	3,758	$37,584	3,758	$37,584	3,758	$37,584	52,836	$37,584	$41,556,214	$0	$0	$0	$9,099,471	$0
DLC-Pool Pumps	455	4,555	455	$4,555	455	$4,555	455	$4,555	6,403	$4,555	$2,690,859	$0	$0	$0	$585,698	$0
DLC-Water Heat	469	4,693	469	$4,693	469	$4,693	469	$4,693	6,597	$4,693	$4,675,367	$0	$0	$0	$1,017,650	$0
Residential Online Audit	27,861	1,196	27,861	$1,196	27,861	$1,196	27,861	$1,196	104,444	$1,196	$3,659,292	$0	$0	$0	$0	$0
Energy Efficiency Kit	228,876	9,760	228,876	$9,760	228,876	$9,760	228,876	$9,760	2,145,030	$9,760	$41,155,996	$0	$0	$0	$38,304,107	$0
Schools Childern Education	3,147	511	3,147	$511	3,147	$511	3,147	$511	17,697	$511	$775,268	$0	$0	$0	$472,500	$0
Refrigerator/Freezer recycling	1	0	1	$0	1	$0	1	$0	11	$0	$171	$0	$0	$0	$50	$0
Room Air Conditioners recycling	0	0	0	$0	0	$0	0	$0	0	$0	$83	$0	$0	$0	$31	$0
Room Air Conditioners recycling	0	0	0	$0	0	$0	0	$0	0	$0	$83	$0	$0	$0	$31	$0
Refrigerator/Freezer recycling	96,601	15,445	96,601	$15,445	96,601	$15,445	96,601	$15,445	724,275	$15,445	$6,871,012	$0	$0	$0	$3,289,767	$0
Room Air Conditioners recycling	8,147	1,895	8,147	$1,895	8,147	$1,895	8,147	$1,895	38,177	$1,895	$4,033,920	$0	$0	$0	$2,303,158	$0
Room Air Conditioners CEE TIE	2,328	1,640	2,328	$1,640	2,328	$1,640	2,328	$1,640	26,186	$1,640	$1,886,566	$0	$0	$0	$1,112,257	$0
ASHP - SEER 15	32,456	7,603	32,456	$7,603	32,456	$7,603	32,456	$7,603	547,526	$7,603	$11,578,091	$0	$0	$0	$9,828,151	$0
CAC - SEER 15	83,672	109,796	83,672	$109,796	83,672	$109,796	83,672	$109,796	1,411,511	$109,796	$46,855,088	$0	$0	$0	$35,482,920	$0
CAC - Maintenance	29,962	8,685	29,962	$8,685	29,962	$8,685	29,962	$8,685	140,400	$8,685	$9,900,065	$0	$0	$0	$6,358,714	$0
EE Ground Source Heat Pump	8,440	615	8,440	$615	8,440	$615	8,440	$615	142,375	$615	$1,934,835	$0	$0	$0	$1,729,535	$0
Solar Water Heating	545	43	545	$43	545	$43	545	$43	10,221	$43	$111,181	$0	$0	$0	$105,584	$0
HP Water Heater	3,604	500	3,604	$500	3,604	$500	3,604	$500	50,669	$500	$850,350	$0	$0	$0	$781,323	$0
EE Water Heater	11,588	1,467	11,588	$1,467	11,588	$1,467	11,588	$1,467	152,038	$1,467	$4,040,097	$0	$0	$0	$3,436,664	$0
Programable Thermostat_Heat	10,386	0	10,386	$0	10,386	$0	10,386	$0	146,004	$0	$565,028	$0	$0	$0	$484,299	$0
Programable Thermostat_Heat	2	0	2	$0	2	$0	2	$0	21	$0	$86	$0	$0	$0	$70	$0
Programable Thermostat_CAC	22,412	26,305	22,412	$26,305	22,412	$26,305	22,412	$26,305	315,064	$26,305	$2,855,527	$0	$0	$0	$2,389,562	$0
Clothes Washer Energy Star, Ele	14,927	2,054	14,927	$2,054	14,927	$2,054	14,927	$2,054	153,886	$2,054	$4,884,353	$0	$0	$0	$4,010,793	$0
Clothes Washer CEE TIER 3, El	3,989	0	3,989	$0	3,989	$0	3,989	$0	41,119	$0	$1,221,088	$0	$0	$0	$1,002,698	$0
Dehumidifiers 25-35 pints/day	10,829	2,616	10,829	$2,616	10,829	$2,616	10,829	$2,616	121,791	$2,616	$2,199,620	$0	$0	$0	$1,532,190	$0
Pump and Motor Single Speed	7,171	10,169	7,171	$10,169	7,171	$10,169	7,171	$10,169	67,207	$10,169	$470,906	$0	$0	$0	$246,479	$0
Pump and Motor 2 Speed	2,057	5,283	2,057	$5,283	2,057	$5,283	2,057	$5,283	19,280	$5,283	$169,393	$0	$0	$0	$109,546	$0
Pump and Motor Variable Speed	1,368	2,022	1,368	$2,022	1,368	$2,022	1,368	$2,022	12,817	$2,022	$97,121	$0	$0	$0	$82,160	$0
Refrigerators-Freezers CEE TIE	19,636	2,931	19,636	$2,931	19,636	$2,931	19,636	$2,931	312,841	$2,931	$6,161,051	$0	$0	$0	$4,291,607	$0
Refrigerators-Freezers CEE TIE	19,636	2,931	19,636	$2,931	19,636	$2,931	19,636	$2,931	312,841	$2,931	$6,161,051	$0	$0	$0	$4,291,607	$0
Refrigerators-Freezers CEE TIE	19,636	2,931	19,636	$2,931	19,636	$2,931	19,636	$2,931	312,841	$2,931	$6,161,051	$0	$0	$0	$4,291,607	$0
Smart Strip plug outlet 5 plug	32,977	3,202	32,977	$3,202	32,977	$3,202	32,977	$3,202	123,623	$3,202	$6,925,361	$0	$0	$0	$3,750,704	$0
Torchiere Floor Lamps	33,770	5,240	33,770	$5,240	33,770	$5,240	33,770	$5,240	253,195	$5,240	$2,815,834	$0	$0	$0	$2,455,345	$0
Residential New Construction - 1	1	2	1	$2	1	$2	1	$2	11	$2	$644	$0	$0	$0	$375	$0
Residential New Construction - 3	2	3	2	$3	2	$3	2	$3	22	$3	$1,049	$0	$0	$0	$750	$0
Ceiling Fans	432	36	432	$36	432	$36	432	$36	4,045	$36	$110,165	$0	$0	$0	$105,327	$0
Ceiling Fans 2014 onwards	17,176	2,125	17,176	$2,125	17,176	$2,125	17,176	$2,125	160,977	$2,125	$5,186,129	$0	$0	$0	$5,186,129	$0
Duct sealing 20 leakage base	74,231	87,125	74,231	$87,125	74,231	$87,125	74,231	$87,125	1,391,384	$87,125	$30,202,262	$0	$0	$0	$25,273,859	$0
Low Flow Showerheads	26,047	2,499	26,047	$2,499	26,047	$2,499	26,047	$2,499	122,058	$2,499	$2,890,782	$0	$0	$0	$2,712,390	$0
Kitchen Aerator	6,623	828	6,623	$828	6,623	$828	6,623	$828	31,036	$828	$802,554	$0	$0	$0	$730,259	$0
Bathroom Aerator	3,312	414	3,312	$414	3,312	$414	3,312	$414	15,518	$414	$802,554	$0	$0	$0	$730,259	$0
Pipe Wrap	49,407	5,640	49,407	$5,640	49,407	$5,640	49,407	$5,640	694,567	$5,640	$3,204,271	$0	$0	$0	$2,608,067	$0
Whole Building	16,280	12,915	16,280	$12,915	16,280	$12,915	16,280	$12,915	137,322	$12,915	$5,881,286	$0	$0	$0	$5,501,670	$0
Low Income Whole House (PA V	1	0	1	$0	1	$0	1	$0	7	$0	$2,133	$0	$0	$0	$1,901	$0
Current Community Connections	1	0	1	$0	1	$0	1	$0	7	$0	$2,133	$0	$0	$0	$1,901	$0
Commercial, Industrial Audit - S	0	0	0	$0	0	$0	0	$0	0	$0	$10,256	$0	$0	$0	$3,750	$0
Commercial, Industrial Audit - La	0	0	0	$0	0	$0	0	$0	0	$0	$6,847	$0	$0	$0	$0	$0
Commercial New Construction	16	2	16	$2	16	$2	16	$2	226	$2	$4,811	$0	$0	$0	$1,505	$0
Exterior HID replacement above	44,739	0	44,739	$0	44,739	$0	44,739	$0	628,939	$0	$5,538,653	$0	$0	$0	$4,700,589	$0
HPT8 4ft 4 lamp, T12 to HPT8 F	31,405	6,374	31,405	$6,374	31,405	$6,374	31,405	$6,374	441,498	$6,374	$3,259,135	$0	$0	$0	$2,475,052	$0
HPT8 4ft 4 lamp, T12 to HPT8 H	68,985	16,037	68,985	$16,037	68,985	$16,037	68,985	$16,037	969,796	$16,037	$8,726,343	$0	$0	$0	$6,626,957	$0
HPT8 4ft 4 lamp, T12 to HPT8 H	91,548	11,061	91,548	$11,061	91,548	$11,061	91,548	$11,061	1,286,980	$11,061	$12,688,061	$0	$0	$0	$9,635,564	$0
HPT8 4ft 4 lamp, T12 to HPT8 C	216,730	51,194	216,730	$51,194	216,730	$51,194	216,730	$51,194	3,046,796	$51,194	$28,589,505	$0	$0	$0	$21,711,433	$0
HPT8 4ft 4 lamp, T12 to HPT8 S	39,216	8,031	39,216	$8,031	39,216	$8,031	39,216	$8,031	551,295	$8,031	$5,325,607	$0	$0	$0	$4,044,371	$0
HPT8 4ft 4 lamp, T12 to HPT8 E	53,479	11,151	53,479	$11,151	53,479	$11,151	53,479	$11,151	751,815	$11,151	$8,021,480	$0	$0	$0	$6,091,670	$0
HPT8 4ft 4 lamp, T12 to HPT8 C	112,595	21,842	112,595	$21,842	112,595	$21,842	112,595	$21,842	1,582,861	$21,842	$14,262,169	$0	$0	$0	$10,830,972	$0
LED Exit Signs Electronic Fixture	20,218	2,436	20,218	$2,436	20,218	$2,436	20,218	$2,436	303,174	$2,436	-$4,954,672	$0	$0	$0	$2,853,667	$0
Occupancy Sensors under 500 V	10,830	1,900	10,830	$1,900	10,830	$1,900	10,830	$1,900	81,199	$1,900	$3,148,977	$0	$0	$0	$2,782,306	$0
Daylight Dimming Sensors	3,574	627	3,574	$627	3,574	$627	3,574	$627	26,796	$627	$1,039,162	$0	$0	$0	$918,161	$0
Switching Controls Mutli Level Li	3,574	627	3,574	$627	3,574	$627	3,574	$627	26,796	$627	$1,039,162	$0	$0	$0	$918,161	$0
Central Lighting Control - Timelo	7,512	0	7,512	$0	7,512	$0	7,512	$0	56,320	$0	$1,039,162	$0	$0	$0	$918,161	$0
Exterior HID replacement above	465	0	465	$0	465	$0	465	$0	6,537	$0	$58,850	$0	$0	$0	$48,858	$0

CE Economic Potential Results

Measure Name	Program Year 2021	Program Year 2026	Program Year 2012	Program Year 2016	Program Year 2021	Program Year 2026	Program Year 2012	Program Year 2016	Program Year 2021	Program Year 2026	Program Year 2012	Program Year 2016	Program Year 2021	Program Year 2026	Program Year 2012	Program Year 2016	Program Year 2021
	Total Incentives	Total Incentives	Benefits	Benefits	Benefits	Benefits	Costs	Costs	Costs	Costs	O&M	O&M	O&M	O&M	Avoided Capacity	Avoided Capacity	Avoided Capacity
DLC-CAC	$0	$0	$22,613,421	$0	$0	$0	$41,556,214	$0	$0	$0	$28,931,968	$0	$0	$0	$20,004,614	$0	$0
DLC-Pool Pumps	$0	$0	$2,740,441	$0	$0	$0	$2,690,859	$0	$0	$0	$1,926,352	$0	$0	$0	$2,424,289	$0	$0
DLC-Water Heat	$0	$0	$2,823,690	$0	$0	$0	$4,675,367	$0	$0	$0	$3,347,036	$0	$0	$0	$2,497,934	$0	$0
Residential Online Audit	$0	$0	$2,987,445	$0	$0	$0	$3,659,292	$0	$0	$0	$0	$0	$0	$0	$224,356	$0	$0
Energy Efficiency Kit	$0	$0	$53,438,651	$0	$0	$0	$41,155,996	$0	$0	$0	$0	$0	$0	$0	$3,981,395	$0	$0
Schools Childern Education	$0	$0	$590,806	$0	$0	$0	$775,268	$0	$0	$0	$0	$0	$0	$0	$139,048	$0	$0
Refrigerator/Freezer recycling	$0	$0	$348	$0	$0	$0	$121	$0	$0	$0	$0	$0	$0	$0	$81	$0	$0
Room Air Conditioners recycling	$0	$0	$26	$0	$0	$0	$52	$0	$0	$0	$0	$0	$0	$0	$14	$0	$0
Room Air Conditioners recycling	$0	$0	$16	$0	$0	$0	$52	$0	$0	$0	$0	$0	$0	$0	$10	$0	$0
Refrigerator/Freezer recycling	$0	$0	$22,920,502	$0	$0	$0	$3,581,246	$0	$0	$0	$0	$0	$0	$0	$5,327,857	$0	$0
Room Air Conditioners recycling	$0	$0	$1,923,139	$0	$0	$0	$1,730,762	$0	$0	$0	$0	$0	$0	$0	$438,716	$0	$0
Room Air Conditioners CEE TIEI	$0	$0	$1,613,041	$0	$0	$0	$2,553,920	$0	$0	$0	$0	$0	$0	$0	$758,847	$0	$0
ASHP - SEER 15	$0	$0	$14,740,914	$0	$0	$0	$21,946,791	$0	$0	$0	$0	$0	$0	$0	$4,477,083	$0	$0
CAC - SEER 15	$0	$0	$106,656,742	$0	$0	$0	$153,303,847	$0	$0	$0	$0	$0	$0	$0	$64,655,087	$0	$0
CAC - Maintenance	$0	$0	$7,470,057	$0	$0	$0	$15,750,082	$0	$0	$0	$0	$0	$0	$0	$2,010,940	$0	$0
EE Ground Source Heat Pump	$0	$0	$3,031,180	$0	$0	$0	$9,141,231	$0	$0	$0	$0	$0	$0	$0	$362,238	$0	$0
Solar Water Heating	$0	$0	$208,993	$0	$0	$0	$660,219	$0	$0	$0	$0	$0	$0	$0	$26,728	$0	$0
HP Water Heater	$0	$0	$1,291,023	$0	$0	$0	$1,755,383	$0	$0	$0	$0	$0	$0	$0	$266,242	$0	$0
EE Water Heater	$0	$0	$3,904,603	$0	$0	$0	$14,246,989	$0	$0	$0	$0	$0	$0	$0	$748,944	$0	$0
Programable Thermostat_Heat	$0	$0	$2,952,934	$0	$0	$0	$565,028	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Programable Thermostat_Heat	$0	$0	$427	$0	$0	$0	$86	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Programable Thermostat_CAC	$0	$0	$23,505,392	$0	$0	$0	$6,041,610	$0	$0	$0	$0	$0	$0	$0	$14,001,098	$0	$0
Clothes Washer Energy Star, Ele	$0	$0	$4,351,995	$0	$0	$0	$21,087,957	$0	$0	$0	$0	$0	$0	$0	$896,253	$0	$0
Clothes Washer CEE TIER 3, El	$0	$0	$923,381	$0	$0	$0	$6,186,450	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Dehumidifiers 25-35 pints/day	$0	$0	$5,183,501	$0	$0	$0	$2,873,783	$0	$0	$0	$0	$0	$0	$0	$1,210,584	$0	$0
Pump and Motor Single Speed	$0	$0	$6,459,425	$0	$0	$0	$1,662,220	$0	$0	$0	$0	$0	$0	$0	$4,148,213	$0	$0
Pump and Motor 2 Speed	$0	$0	$2,818,201	$0	$0	$0	$826,670	$0	$0	$0	$0	$0	$0	$0	$2,155,164	$0	$0
Pump and Motor Variable Speed	$0	$0	$1,265,644	$0	$0	$0	$836,558	$0	$0	$0	$0	$0	$0	$0	$824,875	$0	$0
Refrigerators-Freezers CEE TIEI	$0	$0	$7,688,703	$0	$0	$0	$13,542,616	$0	$0	$0	$0	$0	$0	$0	$1,673,980	$0	$0
Refrigerators-Freezers CEE TIEI	$0	$0	$7,688,703	$0	$0	$0	$13,542,616	$0	$0	$0	$0	$0	$0	$0	$1,673,980	$0	$0
Refrigerators-Freezers CEE TIEI	$0	$0	$7,688,703	$0	$0	$0	$13,542,616	$0	$0	$0	$0	$0	$0	$0	$1,673,980	$0	$0
Smart Strip plug outlet 5 plug	$0	$0	$3,871,196	$0	$0	$0	$10,976,120	$0	$0	$0	$0	$0	$0	$0	$600,719	$0	$0
Torchiere Floor Lamps	$0	$0	$7,957,607	$0	$0	$0	$10,181,868	$0	$0	$0	$0	$0	$0	$0	$1,807,496	$0	$0
Residential New Construction - 1	$0	$0	$1,028	$0	$0	$0	$1,074	$0	$0	$0	$0	$0	$0	$0	$803	$0	$0
Residential New Construction - 3	$0	$0	$2,055	$0	$0	$0	$1,779	$0	$0	$0	$0	$0	$0	$0	$1,606	$0	$0
Ceiling Fans	$0	$0	$107,925	$0	$0	$0	$564,337	$0	$0	$0	$0	$0	$0	$0	$14,670	$0	$0
Ceiling Fans 2014 onwards	$0	$0	$4,578,405	$0	$0	$0	$27,548,718	$0	$0	$0	$0	$0	$0	$0	$866,801	$0	$0
Duct sealing 20 leakage base	$0	$0	$94,616,225	$0	$0	$0	$65,585,665	$0	$0	$0	$0	$0	$0	$0	$54,087,842	$0	$0
Low Flow Showerheads	$0	$0	$3,760,652	$0	$0	$0	$2,890,782	$0	$0	$0	$0	$0	$0	$0	$578,746	$0	$0
Kitchen Aerator	$0	$0	$1,000,776	$0	$0	$0	$802,554	$0	$0	$0	$0	$0	$0	$0	$191,702	$0	$0
Bathroom Aerator	$0	$0	$500,388	$0	$0	$0	$802,554	$0	$0	$0	$0	$0	$0	$0	$95,851	$0	$0
Pipe Wrap	$0	$0	$17,049,676	$0	$0	$0	$21,147,773	$0	$0	$0	$0	$0	$0	$0	$3,002,016	$0	$0
Whole Building	$0	$0	$8,125,829	$0	$0	$0	$7,715,176	$0	$0	$0	$0	$0	$0	$0	$4,875,550	$0	$0
Low Income Whole House (PA V	$0	$0	$199	$0	$0	$0	$2,533	$0	$0	$0	$0	$0	$0	$0	$40	$0	$0
Current Community Connections	$0	$0	$199	$0	$0	$0	$2,533	$0	$0	$0	$0	$0	$0	$0	$40	$0	$0
Commercial, Industrial Audit - Sr	$0	$0	$6	$0	$0	$0	$10,506	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Commercial, Industrial Audit - La	$0	$0	$0	$0	$0	$0	$25,597	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Commercial New Construction	$0	$0	$5,541	$0	$0	$0	$10,306	$0	$0	$0	$0	$0	$0	$0	$977	$0	$0
Exterior HID replacement above	$0	$0	$12,720,335	$0	$0	$0	$16,067,973	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
HPT8 4ft 4 lamp, T12 to HPT8 F	$0	$0	$12,321,715	$0	$0	$0	$12,968,953	$0	$0	$0	$0	$0	$0	$0	$3,392,386	$0	$0
HPT8 4ft 4 lamp, T12 to HPT8 H	$0	$0	$28,150,140	$0	$0	$0	$34,724,403	$0	$0	$0	$0	$0	$0	$0	$8,535,946	$0	$0
HPT8 4ft 4 lamp, T12 to HPT8 H	$0	$0	$31,916,634	$0	$0	$0	$50,489,118	$0	$0	$0	$0	$0	$0	$0	$5,887,376	$0	$0
HPT8 4ft 4 lamp, T12 to HPT8 O	$0	$0	$88,870,327	$0	$0	$0	$113,765,125	$0	$0	$0	$0	$0	$0	$0	$27,248,650	$0	$0
HPT8 4ft 4 lamp, T12 to HPT8 S	$0	$0	$15,424,372	$0	$0	$0	$21,191,985	$0	$0	$0	$0	$0	$0	$0	$4,274,387	$0	$0
HPT8 4ft 4 lamp, T12 to HPT8 E	$0	$0	$21,140,650	$0	$0	$0	$31,919,571	$0	$0	$0	$0	$0	$0	$0	$5,935,145	$0	$0
HPT8 4ft 4 lamp, T12 to HPT8 O	$0	$0	$43,639,299	$0	$0	$0	$56,752,906	$0	$0	$0	$0	$0	$0	$0	$11,625,823	$0	$0
LED Exit Signs Electronic Fixture	$0	$0	$7,322,779	$0	$0	$0	$7,030,728	$0	$0	$0	-$8,748,527	$0	$0	$0	$1,345,471	$0	$0
Occupancy Sensors under 500 V	$0	$0	$2,627,740	$0	$0	$0	$12,742,368	$0	$0	$0	$0	$0	$0	$0	$655,420	$0	$0
Daylight Dimming Sensors	$0	$0	$867,154	$0	$0	$0	$4,204,981	$0	$0	$0	$0	$0	$0	$0	$216,289	$0	$0
Switching Controls Mutli Level Li	$0	$0	$867,154	$0	$0	$0	$4,204,981	$0	$0	$0	$0	$0	$0	$0	$216,289	$0	$0
Central Lighting Control - Timelo	$0	$0	$1,368,016	$0	$0	$0	$4,204,981	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Exterior HID replacement above	$0	$0	$132,216	$0	$0	$0	$168,292	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Measure Name	Program Year 2026	Program Year 2012	Program Year 2026	Program Year 2012	Program Year 2026	Program Year 2012	Program Year 2026	UC Test 2016	UC Test Total	TRC Test 2016	TRC Test Total	Participant Test 2016	Participant Test Total	Participants 2012	Participants 2016	Participants 2021	Participants 2026
	Avoided Capacity	Lost Revene	Lost Revene	Participant Costs	Participant Costs	Societal Benefits	Societal Benefits	No Data by Measure. Summary by program only						Number of	Number of	Number of	Number of
DLC-CAC	$0	$5,283,564	$0	$0	$0	$0	$0							48,922	0	0	0
DLC-Pool Pumps	$0	$640,297	$0	$0	$0	$0	$0							2,482	0	0	0
DLC-Water Heat	$0	$659,747	$0	$0	$0	$0	$0							4,312	0	0	0
Residential Online Audit	$0	$10,444,408	$0	$0	$0	$0	$0							112,064	0	0	0
Energy Efficiency Kit	$0	$197,342,758	$0	$0	$0	$0	$0							457,362	0	0	0
Schools Childern Education	$0	$1,769,720	$0	$0	$0	$0	$0							22,500	0	0	0
Refrigerator/Freezer recycling	$0	$1,101	$0	-$50	$0	$0	$0							1	0	0	0
Room Air Conditioners recycling	$0	$31	$0	-$31	$0	$0	$0							1	0	0	0
Room Air Conditioners recycling	$0	$17	$0	-$31	$0	$0	$0							1	0	0	0
Refrigerator/Freezer recycling	$0	$72,427,502	$0	-$3,289,767	$0	$0	$0							65,795	0	0	0
Room Air Conditioners recycling	$0	$3,817,714	$0	-$2,303,158	$0	$0	$0							73,701	0	0	0
Room Air Conditioners CEE TIEI	$0	$2,618,554	$0	$667,354	$0	$0	$0							44,490	0	0	0
ASHP - SEER 15	$0	$54,752,630	$0	$10,368,699	$0	$0	$0							24,570	0	0	0
CAC - SEER 15	$0	$141,151,055	$0	$106,448,759	$0	$0	$0							354,829	0	0	0
CAC - Maintenance	$0	$14,040,040	$0	$5,850,017	$0	$0	$0							203,479	0	0	0
EE Ground Source Heat Pump	$0	$14,237,532	$0	$7,206,396	$0	$0	$0							2,883	0	0	0
Solar Water Heating	$0	$1,022,081	$0	$549,038	$0	$0	$0							211	0	0	0
HP Water Heater	$0	$5,066,883	$0	$905,033	$0	$0	$0							2,604	0	0	0
EE Water Heater	$0	$15,203,801	$0	$10,206,892	$0	$0	$0							34,367	0	0	0
Programable Thermostat_Heat	$0	$14,600,363	$0	$0	$0	$0	$0							6,919	0	0	0
Programable Thermostat_Heat	$0	$2,110	$0	$0	$0	$0	$0							1	0	0	0
Programable Thermostat_CAC	$0	$31,506,377	$0	$3,186,083	$0	$0	$0							79,652	0	0	0
Clothes Washer Energy Star, Ele	$0	$15,388,610	$0	$16,203,603	$0	$0	$0							64,173	0	0	0
Clothes Washer CEE TIER 3, El	$0	$4,111,865	$0	$4,965,362	$0	$0	$0							16,043	0	0	0
Dehumidifiers 25-35 pints/day	$0	$12,179,074	$0	$674,164	$0	$0	$0							49,030	0	0	0
Pump and Motor Single Speed	$0	$6,720,657	$0	$1,191,314	$0	$0	$0							16,432	0	0	0
Pump and Motor 2 Speed	$0	$1,928,012	$0	$657,277	$0	$0	$0							4,382	0	0	0
Pump and Motor Variable Speed	$0	$1,281,690	$0	$739,437	$0	$0	$0							1,095	0	0	0
Refrigerators-Freezers CEE TIEI	$0	$31,284,099	$0	$7,381,564	$0	$0	$0							137,331	0	0	0
Refrigerators-Freezers CEE TIEI	$0	$31,284,099	$0	$7,381,564	$0	$0	$0							137,331	0	0	0
Refrigerators-Freezers CEE TIEI	$0	$31,284,099	$0	$7,381,564	$0	$0	$0							137,331	0	0	0
Smart Strip plug outlet 5 plug	$0	$12,362,319	$0	$4,050,760	$0	$0	$0							300,056	0	0	0
Torchiere Floor Lamps	$0	$25,319,514	$0	$7,366,034	$0	$0	$0							245,534	0	0	0
Residential New Construction - 1	$0	$1,110	$0	$430	$0	$0	$0							1	0	0	0
Residential New Construction - 3	$0	$2,220	$0	$730	$0	$0	$0							1	0	0	0
Ceiling Fans	$0	$404,457	$0	$454,171	$0	$0	$0							3,370	0	0	0
Ceiling Fans 2014 onwards	$0	$16,097,745	$0	$22,362,589	$0	$0	$0							165,956	0	0	0
Duct sealing 20 leakage base	$0	$139,138,427	$0	$35,383,403	$0	$0	$0							336,985	0	0	0
Low Flow Showerheads	$0	$12,205,754	$0	$0	$0	$0	$0							104,323	0	0	0
Kitchen Aerator	$0	$3,103,600	$0	$0	$0	$0	$0							104,323	0	0	0
Bathroom Aerator	$0	$1,551,800	$0	$0	$0	$0	$0							104,323	0	0	0
Pipe Wrap	$0	$69,456,652	$0	$17,943,502	$0	$0	$0							104,323	0	0	0
Whole Building	$0	$13,732,169	$0	$1,833,890	$0	$0	$0							18,339	0	0	0
Low Income Whole House (PA V	$0	$653	$0	$400	$0	$0	$0							1	0	0	0
Current Community Connections	$0	$653	$0	$400	$0	$0	$0							1	0	0	0
Commercial, Industrial Audit - Sr	$0	$23	$0	$250	$0	$0	$0							1	0	0	0
Commercial, Industrial Audit - La	$0	$0	$0	$18,750	$0	$0	$0							1	0	0	0
Commercial New Construction	$0	$22,568	$0	$5,495	$0	$0	$0							1	0	0	0
Exterior HID replacement above	$0	$62,893,882	$0	$10,529,320	$0	$0	$0							188,024	0	0	0
HPT8 4ft 4 lamp, T12 to HPT8 F	$0	$44,149,794	$0	$9,709,818	$0	$0	$0							190,389	0	0	0
HPT8 4ft 4 lamp, T12 to HPT8 H	$0	$96,979,588	$0	$25,998,061	$0	$0	$0							509,766	0	0	0
HPT8 4ft 4 lamp, T12 to HPT8 H	$0	$128,697,957	$0	$37,801,057	$0	$0	$0							741,197	0	0	0
HPT8 4ft 4 lamp, T12 to HPT8 O	$0	$304,679,595	$0	$85,175,620	$0	$0	$0							1,670,110	0	0	0
HPT8 4ft 4 lamp, T12 to HPT8 S	$0	$55,129,509	$0	$15,866,378	$0	$0	$0							311,105	0	0	0
HPT8 4ft 4 lamp, T12 to HPT8 E	$0	$75,181,454	$0	$23,898,090	$0	$0	$0							468,590	0	0	0
HPT8 4ft 4 lamp, T12 to HPT8 O	$0	$158,286,068	$0	$42,490,737	$0	$0	$0							833,152	0	0	0
LED Exit Signs Electronic Fixture	$0	$30,317,355	$0	$11,985,400	$0	$0	$0							228,293	0	0	0
Occupancy Sensors under 500 V	$0	$8,119,882	$0	$9,593,391	$0	$0	$0							89,034	0	0	0
Daylight Dimming Sensors	$0	$2,679,561	$0	$3,165,819	$0	$0	$0							29,381	0	0	0
Switching Controls Mutli Level Li	$0	$2,679,561	$0	$3,165,819	$0	$0	$0							29,381	0	0	0
Central Lighting Control - Timelo	$0	$5,632,013	$0	$3,165,819	$0	$0	$0							29,381	0	0	0
Exterior HID replacement above	$0	$653,725	$0	$109,443	$0	$0	$0							1,954	0	0	0

Measure Name	Program	Rate Class	Total Measure TRC Test	Total Discounted Lifetime Costs ($000)	Total Discounted Utility Lifetime Costs	Total Discounted Lifetime Benefits ($000)	Program Year 2012		Program Year 2016		Program Year 2021		Program Year 2026	
							MWh Saved	kW Saved	MWh Saved	kW Saved	MWh Saved	kW Saved	MWh Saved	kW Saved
High Bay T-* 48" Four Lamps Inc	C/I Equipment (Comm Lighting)	IND	1.63	$321,870,016	$52,919,388	$523,151,245	1,383,825	243,669	0		0		0	
High Bay T-* 48" Four Lamps Fo	C/I Equipment (Comm Lighting)	COM	1.92	$29,414,887	$4,836,169	$56,492,680	148,228	26,956	0		0		0	
High Bay T-* 48" Four Lamps Pu	C/I Equipment (Comm Lighting)	COM	1.03	$9,007,933	$1,481,015	$9,314,128	22,344	5,563	0		0		0	
High Bay T-* 48" Four Lamps Re	C/I Equipment (Comm Lighting)	COM	1.54	$119,982,653	$19,726,623	$184,474,887	460,880	100,393	0		0		0	
High Bay T-* 48" Four Lamps Wa	C/I Equipment (Comm Lighting)	COM	1.31	$90,423,895	$14,866,800	$118,823,778	284,709	71,157	0		0		0	
LED Exit Signs Electronic Fixture	C/I Equipment (Comm Lighting)	IND	2.04	$1,229,237	-$1,183,319	$2,511,021	8,832		0		0		0	
Occupancy Sensors under 500 V	C/I Equipment (Comm Lighting)	IND	0.20	$2,675,341	$675,703	$547,724	2,257	396	0		0		0	
Daylight Dimming Sensors	C/I Equipment (Comm Lighting)	IND	0.20	$882,863	$222,982	$180,749	745	131	0		0		0	
Switching Controls Mutli Level Li	C/I Equipment (Comm Lighting)	IND	0.20	$882,863	$222,982	$180,749	745	131	0		0		0	
Central Lighting Control - Timelo	C/I Equipment (Comm Lighting)	IND	0.32	$882,863	$222,982	$285,148	1,566		0		0		0	
LED Auto Traffic Signals 8"	Government Lighting	GOV	1.45	$3,453,138	-$2,090,862	$5,019,130	14,725	1,564	0		0		0	
LED Pedestrian Signals	Government Lighting	GOV	3.14	$660,067	$660,067	$2,075,261	6,056	664	0		0		0	
Street Lighting - 175 Mercury to	Government Lighting	GOV	0.38	$2,610,705	$2,610,705	$981,831	3,067	206	0		0		0	
AC 65,000 - 135,000 (10 Ton)	C&I Audits & C/I Equipment (expanded)	COM	0.75	$95,743,238	$25,390,740	$72,196,903	81,711	70,539	0		0		0	
AC 240,000 - 760,000 (25 Ton)	C&I Audits & C/I Equipment (expanded)	IND	0.72	$104,902,021	$16,961,399	$75,205,108	85,115	73,478	0		0		0	
Clothes Washer CEE Tier1, Elec	C&I Audits & C/I Equipment (expanded)	COM	0.26	$7,504,693	$1,156,480	$1,923,196	8,900		0		0		0	
Efficient Refrigeration Condense	C&I Audits & C/I Equipment (expanded)	COM	0.92	$346,947	$124,068	$317,637	761	190	0		0		0	
ENERGY STAR Commercial Sol	C&I Audits & C/I Equipment (expanded)	COM	2.11	$1,085,869	$336,993	$2,295,451	6,169	710	0		0		0	
ENERGY STAR Commercial Sol	C&I Audits & C/I Equipment (expanded)	COM	2.29	$402,223	$158,541	$923,072	3,085	355	0		0		0	
ENERGY STAR Commercial Gla	C&I Audits & C/I Equipment (expanded)	COM	2.74	$1,014,000	$327,530	$2,780,081	9,234	1,099	0		0		0	
ENERGY STAR Commercial Gla	C&I Audits & C/I Equipment (expanded)	COM	3.63	$373,360	$149,985	$1,354,267	4,498	536	0		0		0	
ENERGY STAR Commercial Sol	C&I Audits & C/I Equipment (expanded)	COM	0.87	$1,335,820	$521,071	$1,155,851	3,868	442	0		0		0	
ENERGY STAR Commercial Sol	C&I Audits & C/I Equipment (expanded)	COM	0.90	$489,971	$238,612	$440,050	1,462	174	0		0		0	
ENERGY STAR Commercial Gla	C&I Audits & C/I Equipment (expanded)	COM	0.70	$1,791,356	$673,985	$1,250,259	4,184	478	0		0		0	
ENERGY STAR Commercial Gla	C&I Audits & C/I Equipment (expanded)	COM	0.84	$661,804	$317,083	$555,830	1,846	220	0		0		0	
ENERGY STAR Ice Machines Ie	C&I Audits & C/I Equipment (expanded)	COM	0.66	$730,789	$181,916	$481,212	1,701	375	0		0		0	
ENERGY STAR Ice Machines 50	C&I Audits & C/I Equipment (expanded)	COM	0.68	$169,147	$40,000	$114,990	494	44	0		0		0	
ENERGY STAR Ice Machines m	C&I Audits & C/I Equipment (expanded)	COM	0.37	$167,745	$38,598	$62,084	267	23	0		0		0	
ENERGY STAR Steam Cookers	C&I Audits & C/I Equipment (expanded)	COM	1.33	$2,735,493	$522,173	$3,647,156	10,896	2,090	0		0		0	
Hot Food Holding Cabinets	C&I Audits & C/I Equipment (expanded)	COM	1.00	$1,523,275	$11,407	$1,530,410	4,827	741	0		0		0	
EE Water Heater	C&I Audits & C/I Equipment (expanded)	COM	0.28	$3,252,071	$879,759	$895,840	2,692	319	0		0		0	
HP Water Heater (Base Usage 2	C&I Audits & C/I Equipment (expanded)	COM	1.57	$1,741,167	$409,763	$2,731,710	7,347	1,208	0		0		0	
Plug Load Occupancy Sensors D	C&I Audits & C/I Equipment (expanded)	COM	0.37	$1,961,492	$1,276,988	$719,524	5,102	416	0		0		0	
Commercial Smart Strip plug out	C&I Audits & C/I Equipment (expanded)	COM	0.37	$52,485,716	$34,169,721	$19,253,081	136,528	11,120	0		0		0	
Pre Rinse Sprayers	C&I Audits & C/I Equipment (expanded)	COM	8.57	$799,762	$560,020	$6,851,673	56,088		0		0		0	
Strip curtains for walk-ins - freez	C&I Audits & C/I Equipment (expanded)	COM	0.65	$733,407	$82,653	$479,247	2,742	315	0		0		0	
Vending Machine Occupancy Se	C&I Audits & C/I Equipment (expanded)	COM	0.82	$6,949,595	$1,839,268	$5,716,801	46,798		0		0		0	
Window Film	C&I Audits & C/I Equipment (expanded)	COM	0.95	$9,151,328	$3,672,313	$8,709,958	23,126	9,102	0		0		0	
Plug Load Occupancy Sensors D	C&I Audits & C/I Equipment (expanded)	IND	0.34	$36,119	$24,581	$12,128	86	7	0		0		0	
Water-Cooled cent Chiller 150 - :	C&I Audits & C/I Equipment (expanded)	IND	0.56	$10,894,408	$2,002,408	$6,103,354	10,094	4,396	0		0		0	
Water-Cooled Centrifugal Chiller	C&I Audits & C/I Equipment (expanded)	IND	1.04	$1,905,719	$667,469	$1,984,102	1,679	2,292	0		0		0	
Window Film	C&I Audits & C/I Equipment (expanded)	IND	1.05	$40,097,694	$15,385,363	$42,043,601	71,021	41,052	0		0		0	
Commercial Smart Strip plug out	C&I Audits & C/I Equipment (expanded)	IND	0.36	$445,009	$292,706	$160,095	1,135	92	0		0		0	
Motors 1 HP 1200	C/I Equipment (Industrial Motors)	IND	0.17	$1,348,970	$564,970	$225,084	368	211	0		0		0	
Motors 5 HP 1200	C/I Equipment (Industrial Motors)	IND	0.47	$325,017	$163,317	$151,757	248	142	0		0		0	
Motors 10 HP 1200	C/I Equipment (Industrial Motors)	IND	0.37	$117,737	$62,857	$43,105	70	40	0		0		0	
Motors 20 HP 1200	C/I Equipment (Industrial Motors)	IND	0.68	$23,351	$12,571	$15,830	26	15	0		0		0	
Motors 1 HP 3600	C/I Equipment (Industrial Motors)	IND	0.11	$1,348,970	$564,970	$153,321	251	143	0		0		0	
Motors 5 HP 3600	C/I Equipment (Industrial Motors)	IND	0.25	$325,017	$163,317	$80,346	131	75	0		0		0	
Motors 10 HP 3600	C/I Equipment (Industrial Motors)	IND	0.25	$118,002	$72,922	$30,008	49	28	0		0		0	
Motors 20 HP 3600	C/I Equipment (Industrial Motors)	IND	0.40	$23,404	$14,584	$9,266	15	9	0		0		0	
Water Pumps with VFD's 1	C/I Equipment (Industrial Motors)	IND	1.74	$3,230,660	$2,788,386	$5,615,009	11,619	4,342	0		0		0	
HVAC Fans with VFD's 1	C/I Equipment (Industrial Motors)	IND	3.56	$1,615,330	$1,309,080	$5,746,814	15,482	2,527	0		0		0	
Air Compressors with VFD's 1	C/I Equipment (Industrial Motors)	IND	0.39	$563,268	$452,654	$217,874	554	114	0		0		0	
Water Pumps with VFD's 5	C/I Equipment (Industrial Motors)	IND	2.46	$606,634	$489,296	$1,489,696	3,083	1,152	0		0		0	
HVAC Fans with VFD's 5	C/I Equipment (Industrial Motors)	IND	5.03	$1,213,268	$790,768	$6,098,660	16,429	2,682	0		0		0	
Air Compressors with VFD's 5	C/I Equipment (Industrial Motors)	IND	0.90	$606,634	$330,100	$544,686	1,384	284	0		0		0	
Water Pumps with VFD's 10	C/I Equipment (Industrial Motors)	IND	0.70	$8,525,768	$1,556,416	$5,958,785	12,331	4,608	0		0		0	
HVAC Fans with VFD's 10	C/I Equipment (Industrial Motors)	IND	1.43	$4,262,884	$1,740,144	$6,098,660	16,429	2,682	0		0		0	
Air Compressors with VFD's 10	C/I Equipment (Industrial Motors)	IND	0.26	$8,525,768	$919,632	$2,178,743	5,536	1,136	0		0		0	
Commercial Skylight 14"	C/I Equipment (Industrial Motors)	IND	0.18	$105,840	$9,840	$18,590	51	18	0		0		0	

CE Economic Potential Results

Measure Name	Program Year 2012 Cumulative		Program Year 2016 Cumulative		Program Year 2021 Cumulative		Program Year 2026 Cumulative		Life Time Savings		Program Year 2012	Program Year 2016	Program Year 2021	Program Year 2026	Program Year 2012	Program Year 2016
	MWh Saved	kW Saved	MWh Saved	kW Saved	MWh Saved	kW Saved	MWh Saved	kW Saved	MWh Saved	kW Saved	Portfolio Budget	Portfolio Budget	Portfolio Budget	Portfolio Budget	Total Incentives	Total Incentives
High Bay T-* 48" Four Lamps Inc	1,383,825	243,669	1,383,825	$243,669	1,383,825	$243,669	1,383,825	$243,669	19,453,818	$243,669	$52,919,388	$0	$0	$0	$40,188,025	$0
High Bay T-* 48" Four Lamps Fo	148,228	26,956	148,228	$26,956	148,228	$26,956	148,228	$26,956	2,083,788	$26,956	$4,836,169	$0	$0	$0	$3,672,682	$0
High Bay T-* 48" Four Lamps Pu	22,344	5,563	22,344	$5,563	22,344	$5,563	22,344	$5,563	314,117	$5,563	$1,481,015	$0	$0	$0	$1,124,712	$0
High Bay T-* 48" Four Lamps Re	460,880	100,393	460,880	$100,393	460,880	$100,393	460,880	$100,393	6,479,047	$100,393	$19,726,623	$0	$0	$0	$14,980,786	$0
High Bay T-* 48" Four Lamps Wa	284,709	71,157	284,709	$71,157	284,709	$71,157	284,709	$71,157	4,002,435	$71,157	$14,866,800	$0	$0	$0	$11,290,141	$0
LED Exit Signs Electronic Fixture	8,832	0	8,832	$0	8,832	$0	8,832	$0	124,154	$0	-$1,183,319	$0	$0	$0	$0	$0
Occupancy Sensors under 500 V	2,257	396	2,257	$396	2,257	$396	2,257	$396	16,925	$396	$675,703	$0	$0	$0	$579,941	$0
Daylight Dimming Sensors	745	131	745	$131	745	$131	745	$131	5,585	$131	$222,982	$0	$0	$0	$191,381	$0
Switching Controls Mutli Level Li	745	131	745	$131	745	$131	745	$131	5,585	$131	$222,982	$0	$0	$0	$191,381	$0
Central Lighting Control - Timelo	1,566	0	1,566	$0	1,566	$0	1,566	$0	11,739	$0	$222,982	$0	$0	$0	$191,381	$0
LED Auto Traffic Signals 8"	14,725	1,564	14,725	$1,564	14,725	$1,564	14,725	$1,564	207,000	$1,564	-$2,090,862	$0	$0	$0	$4,056,000	$0
LED Pedestrian Signals	6,056	664	6,056	$664	6,056	$664	6,056	$664	85,140	$664	$660,067	$0	$0	$0	$1,014,000	$0
Street Lighting - 175 Mercury to	3,067	206	3,067	$206	3,067	$206	3,067	$206	43,121	$206	$2,610,705	$0	$0	$0	$630,000	$0
AC 65,000 - 135,000 (10 Ton)	81,711	70,539	81,711	$70,539	81,711	$70,539	81,711	$70,539	1,148,689	$70,539	$25,390,740	$0	$0	$0	$23,450,833	$0
AC 240,000 - 760,000 (25 Ton)	85,115	73,478	85,115	$73,478	85,115	$73,478	85,115	$73,478	1,196,551	$73,478	$16,961,399	$0	$0	$0	$9,771,180	$0
Clothes Washer CEE Tier1, Elec	8,900	0	8,900	$0	8,900	$0	8,900	$0	83,412	$0	$1,156,480	$0	$0	$0	$961,851	$0
Efficient Refrigeration Condense	761	190	761	$190	761	$190	761	$190	10,698	$190	$124,068	$0	$0	$0	$74,293	$0
ENERGY STAR Commercial Sol	6,169	710	6,169	$710	6,169	$710	6,169	$710	98,291	$710	$336,993	$0	$0	$0	$297,173	$0
ENERGY STAR Commercial Sol	3,085	355	3,085	$355	3,085	$355	3,085	$355	34,691	$355	$158,541	$0	$0	$0	$148,587	$0
ENERGY STAR Commercial Gla	9,234	1,099	9,234	$1,099	9,234	$1,099	9,234	$1,099	103,852	$1,099	$327,530	$0	$0	$0	$272,409	$0
ENERGY STAR Commercial Gla	4,498	536	4,498	$536	4,498	$536	4,498	$536	50,590	$536	$149,985	$0	$0	$0	$136,204	$0
ENERGY STAR Commercial Sol	3,868	442	3,868	$442	3,868	$442	3,868	$442	43,505	$442	$521,071	$0	$0	$0	$433,377	$0
ENERGY STAR Commercial Sol	1,462	174	1,462	$174	1,462	$174	1,462	$174	16,438	$174	$238,612	$0	$0	$0	$216,689	$0
ENERGY STAR Commercial Gla	4,184	478	4,184	$478	4,184	$478	4,184	$478	47,058	$478	$673,985	$0	$0	$0	$594,346	$0
ENERGY STAR Commercial Gla	1,846	220	1,846	$220	1,846	$220	1,846	$220	20,763	$220	$317,083	$0	$0	$0	$297,173	$0
ENERGY STAR Ice Machines Ie	1,701	375	1,701	$375	1,701	$375	1,701	$375	14,352	$375	$181,916	$0	$0	$0	$158,085	$0
ENERGY STAR Ice Machines 50	494	44	494	$44	494	$44	494	$44	4,164	$44	$40,000	$0	$0	$0	$37,197	$0
ENERGY STAR Ice Machines m	267	23	267	$23	267	$23	267	$23	2,248	$23	$38,598	$0	$0	$0	$37,197	$0
ENERGY STAR Steam Cookers	10,896	2,090	10,896	$2,090	10,896	$2,090	10,896	$2,090	122,541	$2,090	$522,173	$0	$0	$0	$510,766	$0
Hot Food Holding Cabinets	4,827	741	4,827	$741	4,827	$741	4,827	$741	54,291	$741	$11,407	$0	$0	$0	$0	$0
EE Water Heater	2,692	319	2,692	$319	2,692	$319	2,692	$319	35,317	$319	$879,759	$0	$0	$0	$798,758	$0
HP Water Heater (Base Usage 2	7,347	1,208	7,347	$1,208	7,347	$1,208	7,347	$1,208	103,282	$1,208	$409,763	$0	$0	$0	$378,359	$0
Plug Load Occupancy Sensors D	5,102	416	5,102	$416	5,102	$416	5,102	$416	23,909	$416	$1,276,988	$0	$0	$0	$1,002,653	$0
Commercial Smart Strip plug out	136,528	11,120	136,528	$11,120	136,528	$11,120	136,528	$11,120	639,770	$11,120	$34,169,721	$0	$0	$0	$26,829,064	$0
Pre Rinse Sprayers	56,088	0	56,088	$0	56,088	$0	56,088	$0	262,829	$0	$560,020	$0	$0	$0	$493,587	$0
Strip curtains for walk-ins - freez	2,742	315	2,742	$315	2,742	$315	2,742	$315	15,418	$315	$82,653	$0	$0	$0	$75,669	$0
Vending Machine Occupancy Se	46,798	0	46,798	$0	46,798	$0	46,798	$0	219,296	$0	$1,839,268	$0	$0	$0	$1,221,398	$0
Window Film	23,126	9,102	23,126	$9,102	23,126	$9,102	23,126	$9,102	216,733	$9,102	$3,672,313	$0	$0	$0	$3,280,847	$0
Plug Load Occupancy Sensors D	86	7	86	$7	86	$7	86	$7	403	$7	$24,581	$0	$0	$0	$16,900	$0
Water-Cooled cent Chiller 150 - :	10,094	4,396	10,094	$4,396	10,094	$4,396	10,094	$4,396	189,206	$4,396	$2,002,408	$0	$0	$0	$1,462,500	$0
Water-Cooled Centrifugal Chiller	1,679	2,292	1,679	$2,292	1,679	$2,292	1,679	$2,292	31,477	$2,292	$667,469	$0	$0	$0	$487,500	$0
Window Film	71,021	41,052	71,021	$41,052	71,021	$41,052	71,021	$41,052	998,410	$41,052	$15,385,363	$0	$0	$0	$14,797,803	$0
Commercial Smart Strip plug out	1,135	92	1,135	$92	1,135	$92	1,135	$92	5,320	$92	$292,706	$0	$0	$0	$223,091	$0
Motors 1 HP 1200	368	211	368	$211	368	$211	368	$211	5,518	$211	$564,970	$0	$0	$0	$490,000	$0
Motors 5 HP 1200	248	142	248	$142	248	$142	248	$142	3,721	$142	$163,317	$0	$0	$0	$147,000	$0
Motors 10 HP 1200	70	40	70	$40	70	$40	70	$40	1,057	$40	$62,857	$0	$0	$0	$58,800	$0
Motors 20 HP 1200	26	15	26	$15	26	$15	26	$15	388	$15	$12,571	$0	$0	$0	$11,760	$0
Motors 1 HP 3600	251	143	251	$143	251	$143	251	$143	3,759	$143	$564,970	$0	$0	$0	$490,000	$0
Motors 5 HP 3600	131	75	131	$75	131	$75	131	$75	1,970	$75	$163,317	$0	$0	$0	$147,000	$0
Motors 10 HP 3600	49	28	49	$28	49	$28	49	$28	736	$28	$72,922	$0	$0	$0	$68,600	$0
Motors 20 HP 3600	15	9	15	$9	15	$9	15	$9	227	$9	$14,584	$0	$0	$0	$13,720	$0
Water Pumps with VFD's 1	11,619	4,342	11,619	$4,342	11,619	$4,342	11,619	$4,342	163,346	$4,342	$2,788,386	$0	$0	$0	$1,088,976	$0
HVAC Fans with VFD's 1	15,482	2,527	15,482	$2,527	15,482	$2,527	15,482	$2,527	217,639	$2,527	$1,309,080	$0	$0	$0	$459,375	$0
Air Compressors with VFD's 1	554	114	554	$114	554	$114	554	$114	7,783	$114	$452,654	$0	$0	$0	$51,886	$0
Water Pumps with VFD's 5	3,083	1,152	3,083	$1,152	3,083	$1,152	3,083	$1,152	43,337	$1,152	$489,296	$0	$0	$0	$288,912	$0
HVAC Fans with VFD's 5	16,429	2,682	16,429	$2,682	16,429	$2,682	16,429	$2,682	230,964	$2,682	$790,768	$0	$0	$0	$390,000	$0
Air Compressors with VFD's 5	1,384	284	1,384	$284	1,384	$284	1,384	$284	19,457	$284	$330,100	$0	$0	$0	$129,716	$0
Water Pumps with VFD's 10	12,331	4,608	12,331	$4,608	12,331	$4,608	12,331	$4,608	173,347	$4,608	$1,556,416	$0	$0	$0	$1,155,648	$0
HVAC Fans with VFD's 10	16,429	2,682	16,429	$2,682	16,429	$2,682	16,429	$2,682	230,964	$2,682	$1,740,144	$0	$0	$0	$1,539,760	$0
Air Compressors with VFD's 10	5,536	1,136	5,536	$1,136	5,536	$1,136	5,536	$1,136	77,830	$1,136	$919,632	$0	$0	$0	$518,865	$0
Commercial Skylight 14"	51	18	51	$18	51	$18	51	$18	482	$18	$9,840	$0	$0	$0	$4,000	$0

CE Economic Potential Results

Measure Name	Program Year 2021	Program Year 2026	Program Year 2012	Program Year 2016	Program Year 2021	Program Year 2026	Program Year 2012	Program Year 2016	Program Year 2021	Program Year 2026	Program Year 2012	Program Year 2016	Program Year 2021	Program Year 2026	Program Year 2012	Program Year 2016	Program Year 2021
	Total Incentives	Total Incentives	Benefits	Benefits	Benefits	Benefits	Costs	Costs	Costs	Costs	O&M	O&M	O&M	O&M	Avoided Capacity	Avoided Capacity	Avoided Capacity
High Bay T-* 48" Four Lamps Inc	$0	$0	$523,151,245	$0	$0	$0	$321,870,016	$0	$0	$0	$0	$0	$0	$0	$129,696,316	$0	$0
High Bay T-* 48" Four Lamps Fo	$0	$0	$56,492,680	$0	$0	$0	$29,414,887	$0	$0	$0	$0	$0	$0	$0	$14,347,906	$0	$0
High Bay T-* 48" Four Lamps Pu	$0	$0	$9,314,128	$0	$0	$0	$9,007,933	$0	$0	$0	$0	$0	$0	$0	$2,961,081	$0	$0
High Bay T-* 48" Four Lamps Re	$0	$0	$184,474,887	$0	$0	$0	$119,982,653	$0	$0	$0	$0	$0	$0	$0	$53,435,672	$0	$0
High Bay T-* 48" Four Lamps Wa	$0	$0	$118,823,778	$0	$0	$0	$90,423,895	$0	$0	$0	$0	$0	$0	$0	$37,874,231	$0	$0
LED Exit Signs Electronic Fixture	$0	$0	$2,511,021	$0	$0	$0	$1,229,237	$0	$0	$0	-$1,371,889	$0	$0	$0	$0	$0	$0
Occupancy Sensors under 500 W	$0	$0	$547,724	$0	$0	$0	$2,675,341	$0	$0	$0	$0	$0	$0	$0	$136,615	$0	$0
Daylight Dimming Sensors	$0	$0	$180,749	$0	$0	$0	$882,863	$0	$0	$0	$0	$0	$0	$0	$45,083	$0	$0
Switching Controls Mutli Level Li	$0	$0	$180,749	$0	$0	$0	$882,863	$0	$0	$0	$0	$0	$0	$0	$45,083	$0	$0
Central Lighting Control - Timelo	$0	$0	$285,148	$0	$0	$0	$882,863	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
LED Auto Traffic Signals 8"	$0	$0	$5,019,130	$0	$0	$0	$3,453,138	$0	$0	$0	-$7,096,693	$0	$0	$0	$832,539	$0	$0
LED Pedestrian Signals	$0	$0	$2,075,261	$0	$0	$0	$660,067	$0	$0	$0	-$591,391	$0	$0	$0	$353,298	$0	$0
Street Lighting - 175 Mercury to	$0	$0	$981,831	$0	$0	$0	$2,610,705	$0	$0	$0	$1,617,085	$0	$0	$0	$109,700	$0	$0
AC 65,000 - 135,000 (10 Ton)	$0	$0	$72,196,903	$0	$0	$0	$95,743,238	$0	$0	$0	$0	$0	$0	$0	$37,545,263	$0	$0
AC 240,000 - 760,000 (25 Ton)	$0	$0	$75,205,108	$0	$0	$0	$104,902,021	$0	$0	$0	$0	$0	$0	$0	$39,109,649	$0	$0
Clothes Washer CEE Tier1, Elec	$0	$0	$1,923,196	$0	$0	$0	$7,504,693	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Efficient Refrigeration Condense	$0	$0	$317,637	$0	$0	$0	$346,947	$0	$0	$0	$0	$0	$0	$0	$101,264	$0	$0
ENERGY STAR Commercial Sol	$0	$0	$2,295,451	$0	$0	$0	$1,085,869	$0	$0	$0	$0	$0	$0	$0	$405,703	$0	$0
ENERGY STAR Commercial Sol	$0	$0	$923,072	$0	$0	$0	$402,223	$0	$0	$0	$0	$0	$0	$0	$164,358	$0	$0
ENERGY STAR Commercial Gla	$0	$0	$2,780,081	$0	$0	$0	$1,014,000	$0	$0	$0	$0	$0	$0	$0	$508,763	$0	$0
ENERGY STAR Commercial Gla	$0	$0	$1,354,267	$0	$0	$0	$373,360	$0	$0	$0	$0	$0	$0	$0	$247,835	$0	$0
ENERGY STAR Commercial Sol	$0	$0	$1,155,851	$0	$0	$0	$1,335,820	$0	$0	$0	$0	$0	$0	$0	$204,368	$0	$0
ENERGY STAR Commercial Sol	$0	$0	$440,050	$0	$0	$0	$489,971	$0	$0	$0	$0	$0	$0	$0	$80,530	$0	$0
ENERGY STAR Commercial Gla	$0	$0	$1,250,259	$0	$0	$0	$1,791,356	$0	$0	$0	$0	$0	$0	$0	$221,061	$0	$0
ENERGY STAR Commercial Gla	$0	$0	$555,830	$0	$0	$0	$661,804	$0	$0	$0	$0	$0	$0	$0	$101,719	$0	$0
ENERGY STAR Ice Machines Ie	$0	$0	$481,212	$0	$0	$0	$730,789	$0	$0	$0	$0	$0	$0	$0	$141,521	$0	$0
ENERGY STAR Ice Machines 50	$0	$0	$114,990	$0	$0	$0	$169,147	$0	$0	$0	$0	$0	$0	$0	$16,425	$0	$0
ENERGY STAR Ice Machines m	$0	$0	$62,084	$0	$0	$0	$167,745	$0	$0	$0	$0	$0	$0	$0	$8,868	$0	$0
ENERGY STAR Steam Cookers	$0	$0	$3,647,156	$0	$0	$0	$2,735,493	$0	$0	$0	$0	$0	$0	$0	$967,091	$0	$0
Hot Food Holding Cabinets	$0	$0	$1,530,410	$0	$0	$0	$1,523,275	$0	$0	$0	$0	$0	$0	$0	$343,023	$0	$0
EE Water Heater	$0	$0	$895,840	$0	$0	$0	$3,252,071	$0	$0	$0	$0	$0	$0	$0	$162,800	$0	$0
HP Water Heater (Base Usage 2	$0	$0	$2,731,710	$0	$0	$0	$1,741,167	$0	$0	$0	$0	$0	$0	$0	$642,817	$0	$0
Plug Load Occupancy Sensors D	$0	$0	$719,524	$0	$0	$0	$1,961,492	$0	$0	$0	$0	$0	$0	$0	$96,232	$0	$0
Commercial Smart Strip plug out	$0	$0	$19,253,081	$0	$0	$0	$52,485,716	$0	$0	$0	$0	$0	$0	$0	$2,574,978	$0	$0
Pre Rinse Sprayers	$0	$0	$6,851,673	$0	$0	$0	$799,762	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Strip curtains for walk-ins - freez	$0	$0	$479,247	$0	$0	$0	$733,407	$0	$0	$0	$0	$0	$0	$0	$85,663	$0	$0
Vending Machine Occupancy Se	$0	$0	$5,716,801	$0	$0	$0	$6,949,595	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Window Film	$0	$0	$8,709,958	$0	$0	$0	$9,151,328	$0	$0	$0	$0	$0	$0	$0	$3,712,821	$0	$0
Plug Load Occupancy Sensors D	$0	$0	$12,128	$0	$0	$0	$36,119	$0	$0	$0	$0	$0	$0	$0	$1,622	$0	$0
Water-Cooled cent Chiller 150 - :	$0	$0	$6,103,354	$0	$0	$0	$10,894,408	$0	$0	$0	$0	$0	$0	$0	$2,729,299	$0	$0
Water-Cooled Centrifugal Chiller	$0	$0	$1,984,102	$0	$0	$0	$1,905,719	$0	$0	$0	$0	$0	$0	$0	$1,422,775	$0	$0
Window Film	$0	$0	$42,043,601	$0	$0	$0	$40,097,694	$0	$0	$0	$0	$0	$0	$0	$21,850,685	$0	$0
Commercial Smart Strip plug out	$0	$0	$160,095	$0	$0	$0	$445,009	$0	$0	$0	$0	$0	$0	$0	$21,412	$0	$0
Motors 1 HP 1200	$0	$0	$225,084	$0	$0	$0	$1,348,970	$0	$0	$0	$0	$0	$0	$0	$116,286	$0	$0
Motors 5 HP 1200	$0	$0	$151,757	$0	$0	$0	$325,017	$0	$0	$0	$0	$0	$0	$0	$78,402	$0	$0
Motors 10 HP 1200	$0	$0	$43,105	$0	$0	$0	$117,737	$0	$0	$0	$0	$0	$0	$0	$22,269	$0	$0
Motors 20 HP 1200	$0	$0	$15,830	$0	$0	$0	$23,351	$0	$0	$0	$0	$0	$0	$0	$8,178	$0	$0
Motors 1 HP 3600	$0	$0	$153,321	$0	$0	$0	$1,348,970	$0	$0	$0	$0	$0	$0	$0	$79,211	$0	$0
Motors 5 HP 3600	$0	$0	$80,346	$0	$0	$0	$325,017	$0	$0	$0	$0	$0	$0	$0	$41,510	$0	$0
Motors 10 HP 3600	$0	$0	$30,008	$0	$0	$0	$118,002	$0	$0	$0	$0	$0	$0	$0	$15,503	$0	$0
Motors 20 HP 3600	$0	$0	$9,266	$0	$0	$0	$23,404	$0	$0	$0	$0	$0	$0	$0	$4,787	$0	$0
Water Pumps with VFD's 1	$0	$0	$5,615,009	$0	$0	$0	$3,230,660	$0	$0	$0	$0	$0	$0	$0	$2,311,316	$0	$0
HVAC Fans with VFD's 1	$0	$0	$5,746,814	$0	$0	$0	$1,615,330	$0	$0	$0	$0	$0	$0	$0	$1,345,047	$0	$0
Air Compressors with VFD's 1	$0	$0	$217,874	$0	$0	$0	$563,268	$0	$0	$0	$0	$0	$0	$0	$60,463	$0	$0
Water Pumps with VFD's 5	$0	$0	$1,489,696	$0	$0	$0	$606,634	$0	$0	$0	$0	$0	$0	$0	$613,206	$0	$0
HVAC Fans with VFD's 5	$0	$0	$6,098,660	$0	$0	$0	$1,213,268	$0	$0	$0	$0	$0	$0	$0	$1,427,396	$0	$0
Air Compressors with VFD's 5	$0	$0	$544,686	$0	$0	$0	$606,634	$0	$0	$0	$0	$0	$0	$0	$151,158	$0	$0
Water Pumps with VFD's 10	$0	$0	$5,958,785	$0	$0	$0	$8,525,768	$0	$0	$0	$0	$0	$0	$0	$2,452,825	$0	$0
HVAC Fans with VFD's 10	$0	$0	$6,098,660	$0	$0	$0	$4,262,884	$0	$0	$0	$0	$0	$0	$0	$1,427,396	$0	$0
Air Compressors with VFD's 10	$0	$0	$2,178,743	$0	$0	$0	$8,525,768	$0	$0	$0	$0	$0	$0	$0	$604,632	$0	$0
Commercial Skylight 14"	$0	$0	$18,590	$0	$0	$0	$105,840	$0	$0	$0	$0	$0	$0	$0	$7,486	$0	$0

Measure Name	Program Year 2026	Program Year 2012	Program Year 2026	Program Year 2012	Program Year 2026	Program Year 2012	Program Year 2026	UC Test 2016	UC Test Total	TRC Test 2016	TRC Test Total	Participant Test 2016	Participant Test Total	Participants 2012	Participants 2016	Participants 2021	Participants 2026
	Avoided Capacity	Lost Revene	Lost Revene	Participant Costs	Participant Costs	Societal Benefits	Societal Benefits	No Data by Measure. Summary by program only						Number of	Number of	Number of	Number of
High Bay T-* 48" Four Lamps Inc	$0	$1,945,381,798	$0	$268,950,628	$0	$0	$0							3,091,387	0	0	0
High Bay T-* 48" Four Lamps Fo	$0	$208,378,825	$0	$24,578,718	$0	$0	$0							282,514	0	0	0
High Bay T-* 48" Four Lamps Pu	$0	$31,411,731	$0	$7,526,918	$0	$0	$0							86,516	0	0	0
High Bay T-* 48" Four Lamps Re	$0	$647,904,714	$0	$100,256,030	$0	$0	$0							1,152,368	0	0	0
High Bay T-* 48" Four Lamps Wa	$0	$400,243,492	$0	$75,557,095	$0	$0	$0							868,472	0	0	0
LED Exit Signs Electronic Fixture	$0	$12,415,388	$0	$2,412,557	$0	$0	$0							37,116	0	0	0
Occupancy Sensors under 500 W	$0	$1,692,501	$0	$1,999,638	$0	$0	$0							18,558	0	0	0
Daylight Dimming Sensors	$0	$558,525	$0	$659,881	$0	$0	$0							6,124	0	0	0
Switching Controls Mutli Level Li	$0	$558,525	$0	$659,881	$0	$0	$0							6,124	0	0	0
Central Lighting Control - Timelo	$0	$1,173,932	$0	$659,881	$0	$0	$0							6,124	0	0	0
LED Auto Traffic Signals 8"	$0	$20,700,000	$0	$5,544,000	$0	$0	$0							24,000	0	0	0
LED Pedestrian Signals	$0	$8,514,000	$0	$0	$0	$0	$0							6,000	0	0	0
Street Lighting - 175 Mercury to	$0	$4,312,125	$0	$0	$0	$0	$0							10,000	0	0	0
AC 65,000 - 135,000 (10 Ton)	$0	$114,868,878	$0	$70,352,498	$0	$0	$0							46,902	0	0	0
AC 240,000 - 760,000 (25 Ton)	$0	$119,655,081	$0	$87,940,622	$0	$0	$0							19,542	0	0	0
Clothes Washer CEE Tier1, Elec	$0	$8,341,168	$0	$6,348,214	$0	$0	$0							15,390	0	0	0
Efficient Refrigeration Condense	$0	$1,069,823	$0	$222,880	$0	$0	$0							5,943	0	0	0
ENERGY STAR Commercial Sol	$0	$9,829,059	$0	$748,876	$0	$0	$0							4,755	0	0	0
ENERGY STAR Commercial Sol	$0	$3,469,080	$0	$243,682	$0	$0	$0							1,189	0	0	0
ENERGY STAR Commercial Gla	$0	$10,385,177	$0	$686,470	$0	$0	$0							4,359	0	0	0
ENERGY STAR Commercial Gla	$0	$5,058,956	$0	$223,375	$0	$0	$0							1,090	0	0	0
ENERGY STAR Commercial Sol	$0	$4,350,476	$0	$814,750	$0	$0	$0							6,934	0	0	0
ENERGY STAR Commercial Sol	$0	$1,643,835	$0	$251,359	$0	$0	$0							1,734	0	0	0
ENERGY STAR Commercial Gla	$0	$4,705,818	$0	$1,117,371	$0	$0	$0							9,510	0	0	0
ENERGY STAR Commercial Gla	$0	$2,076,341	$0	$344,721	$0	$0	$0							2,377	0	0	0
ENERGY STAR Ice Machines Ie	$0	$1,435,167	$0	$548,873	$0	$0	$0							5,059	0	0	0
ENERGY STAR Ice Machines 50	$0	$416,426	$0	$129,147	$0	$0	$0							595	0	0	0
ENERGY STAR Ice Machines m	$0	$224,831	$0	$129,147	$0	$0	$0							298	0	0	0
ENERGY STAR Steam Cookers	$0	$12,254,098	$0	$2,213,320	$0	$0	$0							1,362	0	0	0
Hot Food Holding Cabinets	$0	$5,429,105	$0	$1,511,868	$0	$0	$0							1,362	0	0	0
EE Water Heater	$0	$3,531,749	$0	$2,372,312	$0	$0	$0							7,988	0	0	0
HP Water Heater (Base Usage 2	$0	$10,328,230	$0	$1,331,404	$0	$0	$0							420	0	0	0
Plug Load Occupancy Sensors D	$0	$2,390,943	$0	$684,504	$0	$0	$0							38,564	0	0	0
Commercial Smart Strip plug out	$0	$63,976,998	$0	$18,315,995	$0	$0	$0							1,031,887	0	0	0
Pre Rinse Sprayers	$0	$26,282,931	$0	$239,742	$0	$0	$0							14,102	0	0	0
Strip curtains for walk-ins - freez	$0	$1,541,833	$0	$650,754	$0	$0	$0							1,513	0	0	0
Vending Machine Occupancy Se	$0	$21,929,577	$0	$5,110,327	$0	$0	$0							39,085	0	0	0
Window Film	$0	$21,673,275	$0	$5,479,015	$0	$0	$0							65,617	0	0	0
Plug Load Occupancy Sensors D	$0	$40,300	$0	$11,538	$0	$0	$0							650	0	0	0
Water-Cooled cent Chiller 150 - 3	$0	$18,920,608	$0	$8,892,000	$0	$0	$0							195	0	0	0
Water-Cooled Centrifugal Chiller	$0	$3,147,737	$0	$1,238,250	$0	$0	$0							195	0	0	0
Window Film	$0	$99,840,992	$0	$24,712,331	$0	$0	$0							5,919	0	0	0
Commercial Smart Strip plug out	$0	$531,986	$0	$152,302	$0	$0	$0							8,580	0	0	0
Motors 1 HP 1200	$0	$551,832	$0	$784,000	$0	$0	$0							24,500	0	0	0
Motors 5 HP 1200	$0	$372,058	$0	$161,700	$0	$0	$0							4,900	0	0	0
Motors 10 HP 1200	$0	$105,678	$0	$54,880	$0	$0	$0							980	0	0	0
Motors 20 HP 1200	$0	$38,810	$0	$10,780	$0	$0	$0							196	0	0	0
Motors 1 HP 3600	$0	$375,893	$0	$784,000	$0	$0	$0							24,500	0	0	0
Motors 5 HP 3600	$0	$196,983	$0	$161,700	$0	$0	$0							4,900	0	0	0
Motors 10 HP 3600	$0	$73,571	$0	$45,080	$0	$0	$0							980	0	0	0
Motors 20 HP 3600	$0	$22,718	$0	$8,820	$0	$0	$0							196	0	0	0
Water Pumps with VFD's 1	$0	$16,334,640	$0	$442,274	$0	$0	$0							12,250	0	0	0
HVAC Fans with VFD's 1	$0	$21,763,911	$0	$306,250	$0	$0	$0							6,125	0	0	0
Air Compressors with VFD's 1	$0	$778,297	$0	$110,614	$0	$0	$0							1,300	0	0	0
Water Pumps with VFD's 5	$0	$4,333,680	$0	$117,338	$0	$0	$0							650	0	0	0
HVAC Fans with VFD's 5	$0	$23,096,396	$0	$422,500	$0	$0	$0							1,300	0	0	0
Air Compressors with VFD's 5	$0	$1,945,742	$0	$276,534	$0	$0	$0							650	0	0	0
Water Pumps with VFD's 10	$0	$17,334,720	$0	$6,969,352	$0	$0	$0							1,300	0	0	0
HVAC Fans with VFD's 10	$0	$23,096,396	$0	$2,522,740	$0	$0	$0							650	0	0	0
Air Compressors with VFD's 10	$0	$7,782,968	$0	$7,606,135	$0	$0	$0							1,300	0	0	0
Commercial Skylight 14"	$0	$48,160	$0	$96,000	$0	$0	$0							200	0	0	0

Appendix C-3 Toledo Edison Detailed Measure Results

TE Economic Plan Results

Measure Name	Program	Rate Class	Total Measure TRC Test	Total Discounted Lifetime Costs ($000)	Total Discounted Utility Lifetime Costs	Total Discounted Lifetime Benefits ($000)	Program Year 2012		Program Year 2016		Program Year 2021		Program Year 2026	
							MWh Saved	kW Saved	MWh Saved	kW Saved	MWh Saved	kW Saved	MWh Saved	kW Saved
DLC-CAC	Direct Load Control	Res	0.50	$16,294,472	$16,294,472	$8,077,159	1,342	13,424	0		0		0	
DLC-Pool Pumps	Direct Load Control	Res	0.95	$1,984,998	$1,984,998	$1,877,744	312	3,121	0		0		0	
DLC-Water Heat	Direct Load Control	Res	0.56	$2,395,687	$2,395,687	$1,343,935	223	2,234	0		0		0	
Residential Online Audit	On-Line Audit	Res	0.86	$1,460,928	$1,460,928	$1,263,132	11,780	506	0		0		0	
Energy Efficiency Kit	Comprehensive Residential	Res	1.30	$13,575,288	$13,575,288	$17,634,338	75,527	3,221	0		0		0	
Schools Childern Education	Comprehensive Residential	Res	0.71	$832,291	$832,291	$590,806	3,147	511	0		0		0	
Refrigerator/Freezer recycling	Appliance Turn-In Program	LI RES	2.85	$122	$172	$348	1	0	0		0		0	
Room Air Conditioners recycling	Appliance Turn-In Program	LI RES	0.49	$54	$85	$26	0	0	0		0		0	
Room Air Conditioners recycling	Appliance Turn-In Program	LI RES	0.29	$54	$85	$16	0	0	0		0		0	
Refrigerator/Freezer recycling	Appliance Turn-In Program	Res	6.33	$1,771,058	$3,379,983	$11,209,723	47,245	7,554	0		0		0	
Room Air Conditioners recycling	Appliance Turn-In Program	Res	1.08	$702,147	$1,612,910	$760,488	3,222	749	0		0		0	
Room Air Conditioners CEE TIEI	Energy Efficient Products Program	Res	0.61	$937,435	$703,114	$571,299	831	576	0		0		0	
ASHP - SEER 15	Energy Efficient Products Program	Res	0.67	$10,519,434	$5,576,886	$7,026,693	15,471	3,624	0		0		0	
CAC - SEER 15	Energy Efficient Products Program	Res	0.69	$63,457,429	$19,620,343	$43,922,735	34,457	45,215	0		0		0	
CAC - Maintenance	Energy Efficient Products Program	Res	0.46	$7,138,580	$4,573,464	$3,275,471	13,138	3,808	0		0		0	
EE Ground Source Heat Pump	Energy Efficient Products Program	Res	0.33	$5,314,260	$1,131,332	$1,759,438	4,899	357	0		0		0	
Solar Water Heating	Energy Efficient Products Program	Res	0.32	$216,352	$36,646	$68,405	178	14	0		0		0	
HP Water Heater	Energy Efficient Products Program	Res	0.73	$577,708	$281,482	$422,564	1,180	164	0		0		0	
EE Water Heater	Energy Efficient Products Program	Res	0.27	$6,571,555	$1,891,195	$1,790,452	5,313	673	0		0		0	
Programable Thermostat_Heat	Energy Efficient Products Program	Res	5.23	$238,542	$238,542	$1,246,663	4,385		0		0		0	
Programable Thermostat_Heat	Energy Efficient Products Program	Res	4.99	$86	$86	$427	2		0		0		0	
Programable Thermostat_CAC	Energy Efficient Products Program	Res	3.85	$2,291,431	$1,083,030	$8,829,159	8,500	9,815	0		0		0	
Clothes Washer Energy Star, Ele	Energy Efficient Products Program	Res	0.20	$10,484,983	$2,536,144	$2,134,914	7,323	1,008	0		0		0	
Clothes Washer CEE TIER 3, El	Energy Efficient Products Program	Res	0.15	$3,069,844	$634,036	$452,974	1,957		0		0		0	
Dehumidifiers 25-35 pints/day	Energy Efficient Products Program	Res	1.68	$1,024,134	$800,823	$1,716,985	3,587	866	0		0		0	
Pump and Motor Single Speed	Energy Efficient Products Program	Res	3.73	$1,410,224	$441,377	$5,253,187	5,832	8,270	0		0		0	
Pump and Motor 2 Speed	Energy Efficient Products Program	Res	3.33	$687,873	$153,336	$2,291,928	1,673	4,297	0		0		0	
Pump and Motor Variable Speed	Energy Efficient Products Program	Res	1.50	$684,232	$82,879	$1,029,296	1,112	1,645	0		0		0	
Refrigerators-Freezers CEE TIEI	Energy Efficient Products Program	Res	0.54	$5,694,957	$2,724,870	$3,093,670	7,901	1,179	0		0		0	
Refrigerators-Freezers CEE TIEI	Energy Efficient Products Program	Res	0.54	$5,694,957	$2,724,870	$3,093,670	7,901	1,179	0		0		0	
Refrigerators-Freezers CEE TIEI	Energy Efficient Products Program	Res	0.54	$5,694,957	$2,724,870	$3,093,670	7,901	1,179	0		0		0	
Smart Strip plug outlet 5 plug	Energy Efficient Products Program	Res	0.36	$3,956,041	$2,469,987	$1,420,179	12,098	1,175	0		0		0	
Torchiere Floor Lamps	Energy Efficient Products Program	Res	0.77	$3,799,605	$1,079,408	$2,938,659	12,471	1,935	0		0		0	
Residential New Construction - 1	Residential New Construction	Res	0.94	$11,900,650	$7,210,447	$11,207,785	8,612	16,456	0		0		0	
Residential New Construction - 3	Residential New Construction	Res	1.14	$3,921,972	$2,329,485	$4,483,114	3,445	6,583	0		0		0	
Ceiling Fans	Comprehensive Residential-Home Performance	Res	0.19	$227,599	$44,906	$43,413	174	14	0		0		0	
Ceiling Fans 2014 onwards	Comprehensive Residential-Home Performance	Res	0.17	$11,261,432	$2,119,999	$1,871,572	7,021	869	0		0		0	
Duct sealing 20 leakage base	Comprehensive Residential-Home Performance	Res	1.45	$29,597,144	$13,629,513	$42,998,428	34,049	39,318	0		0		0	
Low Flow Showerheads	Comprehensive Residential-Home Performance	Res	1.30	$1,629,698	$1,629,698	$2,120,094	14,684	1,409	0		0		0	
Kitchen Aerator	Comprehensive Residential-Home Performance	Res	1.25	$452,446	$452,446	$564,194	3,734	467	0		0		0	
Bathroom Aerator	Comprehensive Residential-Home Performance	Res	0.62	$452,446	$452,446	$282,097	1,867	233	0		0		0	
Pipe Wrap	Comprehensive Residential-Home Performance	Res	0.81	$11,922,203	$1,806,430	$9,611,873	27,854	3,180	0		0		0	
Whole Building	Comprehensive Residential-Home Performance	Res	1.05	$2,952,308	$2,250,547	$3,109,449	6,230	4,942	0		0		0	
Low Income Whole House (PA V	Comm Connect	LI RES	0.05	$2,469	$2,069	$133	1	0	0		0		0	
Current Community Connections	Comm Connect	LI RES	0.05	$2,469	$2,069	$133	1	0	0		0		0	
Commercial, Industrial Audit - Sr	C&I Audits & C/I Equipment (expanded)	COM	0.00	$10,986	$10,736	$6	0	0	0		0		0	
Commercial, Industrial Audit - La	C&I Audits & C/I Equipment (expanded)	IND	0.00	$25,896	$7,146	$0	0		0		0		0	
Commercial New Construction	Commercial New Construction	COM	0.49	$2,350,705	$1,217,655	$1,142,563	3,310	378	0		0		0	
Exterior HID replacement above	C/I Equipment (Comm Lighting)	COM	0.79	$3,559,316	$1,224,009	$2,821,254	9,923		0		0		0	
HPT8 4ft 4 lamp, T12 to HPT8 F	C/I Equipment (Comm Lighting)	COM	0.95	$4,231,970	$1,056,895	$4,029,156	10,269	2,084	0		0		0	
HPT8 4ft 4 lamp, T12 to HPT8 H	C/I Equipment (Comm Lighting)	COM	0.81	$11,331,110	$2,829,839	$9,204,993	22,558	5,244	0		0		0	
HPT8 4ft 4 lamp, T12 to HPT8 H	C/I Equipment (Comm Lighting)	COM	0.63	$16,475,380	$4,114,573	$10,436,623	29,936	3,617	0		0		0	
HPT8 4ft 4 lamp, T12 to HPT8 O	C/I Equipment (Comm Lighting)	COM	0.78	$37,123,320	$9,271,203	$29,060,272	70,870	16,740	0		0		0	
HPT8 4ft 4 lamp, T12 to HPT8 S	C/I Equipment (Comm Lighting)	COM	0.73	$6,915,273	$1,727,025	$5,043,713	12,823	2,626	0		0		0	
HPT8 4ft 4 lamp, T12 to HPT8 E	C/I Equipment (Comm Lighting)	COM	0.66	$10,415,850	$2,601,261	$6,912,915	17,488	3,646	0		0		0	
HPT8 4ft 4 lamp, T12 to HPT8 O	C/I Equipment (Comm Lighting)	COM	0.77	$61,081,827	$15,254,617	$47,065,960	121,436	23,557	0		0		0	
LED Exit Signs Electronic Fixture	C/I Equipment (Comm Lighting)	COM	1.05	$1,539,227	-$1,096,860	$1,610,583	4,447	536	0		0		0	
Occupancy Sensors under 500 V	C/I Equipment (Comm Lighting)	COM	0.21	$5,438,041	$1,339,822	$1,122,549	4,626	812	0		0		0	
Daylight Dimming Sensors	C/I Equipment (Comm Lighting)	COM	0.21	$1,794,553	$442,141	$370,441	1,527	268	0		0		0	
Switching Controls Mutli Level Li	C/I Equipment (Comm Lighting)	COM	0.21	$1,794,553	$442,141	$370,441	1,527	268	0		0		0	
Central Lighting Control - Timelo	C/I Equipment (Comm Lighting)	COM	0.33	$1,794,553	$442,141	$584,405	3,209		0		0		0	

TE Economic Plan Results

Measure Name	Program Year 2012 Cumulative		Program Year 2016 Cumulative		Program Year 2021 Cumulative		Program Year 2026 Cumulative		Life Time Savings		Program Year 2012	Program Year 2016	Program Year 2021	Program Year 2026	Program Year 2012	Program Year 2016
	MWh Saved	kW Saved	MWh Saved	kW Saved	MWh Saved	kW Saved	MWh Saved	kW Saved	MWh Saved	kW Saved	Portfolio Budget	Portfolio Budget	Portfolio Budget	Portfolio Budget	Total Incentives	Total Incentives
DLC-CAC	1,342	13,424	1,342	$13,424	1,342	$13,424	1,342	$13,424	18,872	$13,424	$16,294,472	$0	$0	$0	$3,250,188	$0
DLC-Pool Pumps	312	3,121	312	$3,121	312	$3,121	312	$3,121	4,387	$3,121	$1,984,998	$0	$0	$0	$401,319	$0
DLC-Water Heat	223	2,234	223	$2,234	223	$2,234	223	$2,234	3,140	$2,234	$2,395,687	$0	$0	$0	$484,350	$0
Residential Online Audit	11,780	506	11,780	$506	11,780	$506	11,780	$506	44,160	$506	$1,460,928	$0	$0	$0	$0	$0
Energy Efficiency Kit	75,527	3,221	75,527	$3,221	75,527	$3,221	75,527	$3,221	707,843	$3,221	$13,575,288	$0	$0	$0	$12,640,056	$0
Schools Childern Education	3,147	511	3,147	$511	3,147	$511	3,147	$511	17,697	$511	$832,291	$0	$0	$0	$472,500	$0
Refrigerator/Freezer recycling	1	0	1	$0	1	$0	1	$0	11	$0	$172	$0	$0	$0	$50	$0
Room Air Conditioners recycling	0	0	0	$0	0	$0	0	$0	0	$0	$85	$0	$0	$0	$31	$0
Room Air Conditioners recycling	0	0	0	$0	0	$0	0	$0	0	$0	$85	$0	$0	$0	$31	$0
Refrigerator/Freezer recycling	47,245	7,554	47,245	$7,554	47,245	$7,554	47,245	$7,554	354,221	$7,554	$3,379,983	$0	$0	$0	$1,608,925	$0
Room Air Conditioners recycling	3,222	749	3,222	$749	3,222	$749	3,222	$749	15,097	$749	$1,612,910	$0	$0	$0	$910,763	$0
Room Air Conditioners CEE TIEI	831	576	831	$576	831	$576	831	$576	9,345	$576	$703,114	$0	$0	$0	$390,535	$0
ASHP - SEER 15	15,471	3,624	15,471	$3,624	15,471	$3,624	15,471	$3,624	260,995	$3,624	$5,576,886	$0	$0	$0	$4,684,879	$0
CAC - SEER 15	34,457	45,215	34,457	$45,215	34,457	$45,215	34,457	$45,215	581,280	$45,215	$19,620,343	$0	$0	$0	$14,612,362	$0
CAC - Maintenance	13,138	3,808	13,138	$3,808	13,138	$3,808	13,138	$3,808	61,563	$3,808	$4,573,464	$0	$0	$0	$2,788,169	$0
EE Ground Source Heat Pump	4,899	357	4,899	$357	4,899	$357	4,899	$357	82,641	$357	$1,131,332	$0	$0	$0	$1,003,903	$0
Solar Water Heating	178	14	178	$14	178	$14	178	$14	3,345	$14	$36,646	$0	$0	$0	$34,559	$0
HP Water Heater	1,180	164	1,180	$164	1,180	$164	1,180	$164	16,584	$164	$281,482	$0	$0	$0	$255,735	$0
EE Water Heater	5,313	673	5,313	$673	5,313	$673	5,313	$673	69,717	$673	$1,891,195	$0	$0	$0	$1,575,879	$0
Programable Thermostat_Heat	4,385	0	4,385	$0	4,385	$0	4,385	$0	61,639	$0	$238,542	$0	$0	$0	$204,460	$0
Programable Thermostat_Heat	2	0	2	$0	2	$0	2	$0	21	$0	$86	$0	$0	$0	$70	$0
Programable Thermostat_CAC	8,500	9,815	8,500	$9,815	8,500	$9,815	8,500	$9,815	119,496	$9,815	$1,083,030	$0	$0	$0	$906,301	$0
Clothes Washer Energy Star, Ele	7,323	1,008	7,323	$1,008	7,323	$1,008	7,323	$1,008	75,490	$1,008	$2,536,144	$0	$0	$0	$1,967,534	$0
Clothes Washer CEE TIER 3, El	1,957	0	1,957	$0	1,957	$0	1,957	$0	20,171	$0	$634,036	$0	$0	$0	$491,884	$0
Dehumidifiers 25-35 pints/day	3,587	866	3,587	$866	3,587	$866	3,587	$866	40,342	$866	$800,823	$0	$0	$0	$507,523	$0
Pump and Motor Single Speed	5,832	8,270	5,832	$8,270	5,832	$8,270	5,832	$8,270	54,656	$8,270	$441,377	$0	$0	$0	$200,451	$0
Pump and Motor 2 Speed	1,673	4,297	1,673	$4,297	1,673	$4,297	1,673	$4,297	15,680	$4,297	$153,336	$0	$0	$0	$89,089	$0
Pump and Motor Variable Speed	1,112	1,645	1,112	$1,645	1,112	$1,645	1,112	$1,645	10,423	$1,645	$82,879	$0	$0	$0	$66,817	$0
Refrigerators-Freezers CEE TIEI	7,901	1,179	7,901	$1,179	7,901	$1,179	7,901	$1,179	125,876	$1,179	$2,724,870	$0	$0	$0	$1,726,795	$0
Refrigerators-Freezers CEE TIEI	7,901	1,179	7,901	$1,179	7,901	$1,179	7,901	$1,179	125,876	$1,179	$2,724,870	$0	$0	$0	$1,726,795	$0
Refrigerators-Freezers CEE TIEI	7,901	1,179	7,901	$1,179	7,901	$1,179	7,901	$1,179	125,876	$1,179	$2,724,870	$0	$0	$0	$1,726,795	$0
Smart Strip plug outlet 5 plug	12,098	1,175	12,098	$1,175	12,098	$1,175	12,098	$1,175	45,352	$1,175	$2,469,987	$0	$0	$0	$1,375,975	$0
Torchiere Floor Lamps	12,471	1,935	12,471	$1,935	12,471	$1,935	12,471	$1,935	93,502	$1,935	$1,079,408	$0	$0	$0	$906,732	$0
Residential New Construction - 1	8,612	16,456	8,612	$16,456	8,612	$16,456	8,612	$16,456	121,073	$16,456	$7,210,447	$0	$0	$0	$4,090,293	$0
Residential New Construction - 3	3,445	6,583	3,445	$6,583	3,445	$6,583	3,445	$6,583	48,429	$6,583	$2,329,485	$0	$0	$0	$1,636,117	$0
Ceiling Fans	174	14	174	$14	174	$14	174	$14	1,627	$14	$44,906	$0	$0	$0	$42,369	$0
Ceiling Fans 2014 onwards	7,021	869	7,021	$869	7,021	$869	7,021	$869	65,805	$869	$2,119,999	$0	$0	$0	$2,119,999	$0
Duct sealing 20 leakage base	34,049	39,318	34,049	$39,318	34,049	$39,318	34,049	$39,318	638,214	$39,318	$13,629,513	$0	$0	$0	$11,405,450	$0
Low Flow Showerheads	14,684	1,409	14,684	$1,409	14,684	$1,409	14,684	$1,409	68,811	$1,409	$1,629,698	$0	$0	$0	$1,529,129	$0
Kitchen Aerator	3,734	467	3,734	$467	3,734	$467	3,734	$467	17,497	$467	$452,446	$0	$0	$0	$411,688	$0
Bathroom Aerator	1,867	233	1,867	$233	1,867	$233	1,867	$233	8,748	$233	$452,446	$0	$0	$0	$411,688	$0
Pipe Wrap	27,854	3,180	27,854	$3,180	27,854	$3,180	27,854	$3,180	391,567	$3,180	$1,806,430	$0	$0	$0	$1,470,316	$0
Whole Building	6,230	4,942	6,230	$4,942	6,230	$4,942	6,230	$4,942	52,548	$4,942	$2,250,547	$0	$0	$0	$2,105,282	$0
Low Income Whole House (PA V	1	0	1	$0	1	$0	1	$0	4	$0	$2,069	$0	$0	$0	$1,901	$0
Current Community Connections	1	0	1	$0	1	$0	1	$0	4	$0	$2,069	$0	$0	$0	$1,901	$0
Commercial, Industrial Audit - Sr	0	0	0	$0	0	$0	0	$0	0	$0	$10,736	$0	$0	$0	$3,750	$0
Commercial, Industrial Audit - La	0	0	0	$0	0	$0	0	$0	0	$0	$7,146	$0	$0	$0	$0	$0
Commercial New Construction	3,310	378	3,310	$378	3,310	$378	3,310	$378	46,533	$378	$1,217,655	$0	$0	$0	$310,326	$0
Exterior HID replacement above	9,923	0	9,923	$0	9,923	$0	9,923	$0	139,493	$0	$1,224,009	$0	$0	$0	$1,042,548	$0
HPT8 4ft 4 lamp, T12 to HPT8 F	10,269	2,084	10,269	$2,084	10,269	$2,084	10,269	$2,084	144,368	$2,084	$1,056,895	$0	$0	$0	$809,333	$0
HPT8 4ft 4 lamp, T12 to HPT8 H	22,558	5,244	22,558	$5,244	22,558	$5,244	22,558	$5,244	317,120	$5,244	$2,829,839	$0	$0	$0	$2,166,991	$0
HPT8 4ft 4 lamp, T12 to HPT8 H	29,936	3,617	29,936	$3,617	29,936	$3,617	29,936	$3,617	420,838	$3,617	$4,114,573	$0	$0	$0	$3,150,794	$0
HPT8 4ft 4 lamp, T12 to HPT8 C	70,870	16,740	70,870	$16,740	70,870	$16,740	70,870	$16,740	996,291	$16,740	$9,271,203	$0	$0	$0	$7,099,559	$0
HPT8 4ft 4 lamp, T12 to HPT8 S	12,823	2,626	12,823	$2,626	12,823	$2,626	12,823	$2,626	180,271	$2,626	$1,727,025	$0	$0	$0	$1,322,494	$0
HPT8 4ft 4 lamp, T12 to HPT8 E	17,488	3,646	17,488	$3,646	17,488	$3,646	17,488	$3,646	245,841	$3,646	$2,601,261	$0	$0	$0	$1,991,954	$0
HPT8 4ft 4 lamp, T12 to HPT8 C	121,436	23,557	121,436	$23,557	121,436	$23,557	121,436	$23,557	1,707,151	$23,557	$15,254,617	$0	$0	$0	$11,681,446	$0
LED Exit Signs Electronic Fixture	4,447	536	4,447	$536	4,447	$536	4,447	$536	66,680	$536	-$1,096,860	$0	$0	$0	$627,640	$0
Occupancy Sensors under 500 V	4,626	812	4,626	$812	4,626	$812	4,626	$812	34,687	$812	$1,339,822	$0	$0	$0	$1,188,578	$0
Daylight Dimming Sensors	1,527	268	1,527	$268	1,527	$268	1,527	$268	11,447	$268	$442,141	$0	$0	$0	$392,231	$0
Switching Controls Mutli Level Li	1,527	268	1,527	$268	1,527	$268	1,527	$268	11,447	$268	$442,141	$0	$0	$0	$392,231	$0
Central Lighting Control - Timelo	3,209	0	3,209	$0	3,209	$0	3,209	$0	24,059	$0	$442,141	$0	$0	$0	$392,231	$0

TE Economic Plan Results

Measure Name	Program Year 2021	Program Year 2026	Program Year 2012	Program Year 2016	Program Year 2021	Program Year 2026	Program Year 2012	Program Year 2016	Program Year 2021	Program Year 2026	Program Year 2012	Program Year 2016	Program Year 2021	Program Year 2026	Program Year 2012	Program Year 2016	Program Year 2021
	Total Incentives	Total Incentives	Benefits	Benefits	Benefits	Benefits	Costs	Costs	Costs	Costs	O&M	O&M	O&M	O&M	Avoided Capacity	Avoided Capacity	Avoided Capacity
DLC-CAC	$0	$0	$8,077,159	$0	$0	$0	$16,294,472	$0	$0	$0	$10,334,045	$0	$0	$0	$7,145,335	$0	$0
DLC-Pool Pumps	$0	$0	$1,877,744	$0	$0	$0	$1,984,998	$0	$0	$0	$1,319,932	$0	$0	$0	$1,661,117	$0	$0
DLC-Water Heat	$0	$0	$1,343,935	$0	$0	$0	$2,395,687	$0	$0	$0	$1,593,021	$0	$0	$0	$1,188,891	$0	$0
Residential Online Audit	$0	$0	$1,263,132	$0	$0	$0	$1,460,928	$0	$0	$0	$0	$0	$0	$0	$94,861	$0	$0
Energy Efficiency Kit	$0	$0	$17,634,338	$0	$0	$0	$13,575,288	$0	$0	$0	$0	$0	$0	$0	$1,313,829	$0	$0
Schools Childern Education	$0	$0	$590,806	$0	$0	$0	$832,291	$0	$0	$0	$0	$0	$0	$0	$139,048	$0	$0
Refrigerator/Freezer recycling	$0	$0	$348	$0	$0	$0	$122	$0	$0	$0	$0	$0	$0	$0	$81	$0	$0
Room Air Conditioners recycling	$0	$0	$26	$0	$0	$0	$54	$0	$0	$0	$0	$0	$0	$0	$14	$0	$0
Room Air Conditioners recycling	$0	$0	$16	$0	$0	$0	$54	$0	$0	$0	$0	$0	$0	$0	$10	$0	$0
Refrigerator/Freezer recycling	$0	$0	$11,209,723	$0	$0	$0	$1,771,058	$0	$0	$0	$0	$0	$0	$0	$2,605,693	$0	$0
Room Air Conditioners recycling	$0	$0	$760,488	$0	$0	$0	$702,147	$0	$0	$0	$0	$0	$0	$0	$173,486	$0	$0
Room Air Conditioners CEE TIEI	$0	$0	$571,299	$0	$0	$0	$937,435	$0	$0	$0	$0	$0	$0	$0	$266,446	$0	$0
ASHP - SEER 15	$0	$0	$7,026,693	$0	$0	$0	$10,519,434	$0	$0	$0	$0	$0	$0	$0	$2,134,134	$0	$0
CAC - SEER 15	$0	$0	$43,922,735	$0	$0	$0	$63,457,429	$0	$0	$0	$0	$0	$0	$0	$26,625,868	$0	$0
CAC - Maintenance	$0	$0	$3,275,471	$0	$0	$0	$7,138,580	$0	$0	$0	$0	$0	$0	$0	$881,757	$0	$0
EE Ground Source Heat Pump	$0	$0	$1,759,438	$0	$0	$0	$5,314,260	$0	$0	$0	$0	$0	$0	$0	$210,260	$0	$0
Solar Water Heating	$0	$0	$68,405	$0	$0	$0	$216,352	$0	$0	$0	$0	$0	$0	$0	$8,748	$0	$0
HP Water Heater	$0	$0	$422,564	$0	$0	$0	$577,708	$0	$0	$0	$0	$0	$0	$0	$87,144	$0	$0
EE Water Heater	$0	$0	$1,790,452	$0	$0	$0	$6,571,555	$0	$0	$0	$0	$0	$0	$0	$343,428	$0	$0
Programable Thermostat_Heat	$0	$0	$1,246,663	$0	$0	$0	$238,542	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Programable Thermostat_Heat	$0	$0	$427	$0	$0	$0	$86	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Programable Thermostat_CAC	$0	$0	$8,829,159	$0	$0	$0	$2,291,431	$0	$0	$0	$0	$0	$0	$0	$5,224,418	$0	$0
Clothes Washer Energy Star, Ele	$0	$0	$2,134,914	$0	$0	$0	$10,484,983	$0	$0	$0	$0	$0	$0	$0	$439,666	$0	$0
Clothes Washer CEE TIER 3, El	$0	$0	$452,974	$0	$0	$0	$3,069,844	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Dehumidifiers 25-35 pints/day	$0	$0	$1,716,985	$0	$0	$0	$1,024,134	$0	$0	$0	$0	$0	$0	$0	$400,994	$0	$0
Pump and Motor Single Speed	$0	$0	$5,253,187	$0	$0	$0	$1,410,224	$0	$0	$0	$0	$0	$0	$0	$3,373,573	$0	$0
Pump and Motor 2 Speed	$0	$0	$2,291,928	$0	$0	$0	$687,873	$0	$0	$0	$0	$0	$0	$0	$1,752,707	$0	$0
Pump and Motor Variable Speed	$0	$0	$1,029,296	$0	$0	$0	$684,232	$0	$0	$0	$0	$0	$0	$0	$670,837	$0	$0
Refrigerators-Freezers CEE TIEI	$0	$0	$3,093,670	$0	$0	$0	$5,694,957	$0	$0	$0	$0	$0	$0	$0	$673,552	$0	$0
Refrigerators-Freezers CEE TIEI	$0	$0	$3,093,670	$0	$0	$0	$5,694,957	$0	$0	$0	$0	$0	$0	$0	$673,552	$0	$0
Refrigerators-Freezers CEE TIEI	$0	$0	$3,093,670	$0	$0	$0	$5,694,957	$0	$0	$0	$0	$0	$0	$0	$673,552	$0	$0
Smart Strip plug outlet 5 plug	$0	$0	$1,420,179	$0	$0	$0	$3,956,041	$0	$0	$0	$0	$0	$0	$0	$220,379	$0	$0
Torchiere Floor Lamps	$0	$0	$2,938,659	$0	$0	$0	$3,799,605	$0	$0	$0	$0	$0	$0	$0	$667,489	$0	$0
Residential New Construction - 1	$0	$0	$11,207,785	$0	$0	$0	$11,900,650	$0	$0	$0	$0	$0	$0	$0	$8,759,081	$0	$0
Residential New Construction - 3	$0	$0	$4,483,114	$0	$0	$0	$3,921,972	$0	$0	$0	$0	$0	$0	$0	$3,503,632	$0	$0
Ceiling Fans	$0	$0	$43,413	$0	$0	$0	$227,599	$0	$0	$0	$0	$0	$0	$0	$5,901	$0	$0
Ceiling Fans 2014 onwards	$0	$0	$1,871,572	$0	$0	$0	$11,261,432	$0	$0	$0	$0	$0	$0	$0	$354,333	$0	$0
Duct sealing 20 leakage base	$0	$0	$42,998,428	$0	$0	$0	$29,597,144	$0	$0	$0	$0	$0	$0	$0	$24,408,469	$0	$0
Low Flow Showerheads	$0	$0	$2,120,094	$0	$0	$0	$1,629,698	$0	$0	$0	$0	$0	$0	$0	$326,272	$0	$0
Kitchen Aerator	$0	$0	$564,194	$0	$0	$0	$452,446	$0	$0	$0	$0	$0	$0	$0	$108,073	$0	$0
Bathroom Aerator	$0	$0	$282,097	$0	$0	$0	$452,446	$0	$0	$0	$0	$0	$0	$0	$54,037	$0	$0
Pipe Wrap	$0	$0	$9,611,873	$0	$0	$0	$11,922,203	$0	$0	$0	$0	$0	$0	$0	$1,692,407	$0	$0
Whole Building	$0	$0	$3,109,449	$0	$0	$0	$2,952,308	$0	$0	$0	$0	$0	$0	$0	$1,865,689	$0	$0
Low Income Whole House (PA V	$0	$0	$133	$0	$0	$0	$2,469	$0	$0	$0	$0	$0	$0	$0	$27	$0	$0
Current Community Connections	$0	$0	$133	$0	$0	$0	$2,469	$0	$0	$0	$0	$0	$0	$0	$27	$0	$0
Commercial, Industrial Audit - Sr	$0	$0	$6	$0	$0	$0	$10,986	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Commercial, Industrial Audit - La	$0	$0	$0	$0	$0	$0	$25,896	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Commercial New Construction	$0	$0	$1,142,563	$0	$0	$0	$2,350,705	$0	$0	$0	$0	$0	$0	$0	$201,421	$0	$0
Exterior HID replacement above	$0	$0	$2,821,254	$0	$0	$0	$3,559,316	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
HPT8 4ft 4 lamp, T12 to HPT8 F	$0	$0	$4,029,156	$0	$0	$0	$4,231,970	$0	$0	$0	$0	$0	$0	$0	$1,109,298	$0	$0
HPT8 4ft 4 lamp, T12 to HPT8 H	$0	$0	$9,204,993	$0	$0	$0	$11,331,110	$0	$0	$0	$0	$0	$0	$0	$2,791,223	$0	$0
HPT8 4ft 4 lamp, T12 to HPT8 H	$0	$0	$10,436,623	$0	$0	$0	$16,475,380	$0	$0	$0	$0	$0	$0	$0	$1,925,150	$0	$0
HPT8 4ft 4 lamp, T12 to HPT8 O	$0	$0	$29,060,272	$0	$0	$0	$37,123,320	$0	$0	$0	$0	$0	$0	$0	$8,910,209	$0	$0
HPT8 4ft 4 lamp, T12 to HPT8 S	$0	$0	$5,043,713	$0	$0	$0	$6,915,273	$0	$0	$0	$0	$0	$0	$0	$1,397,709	$0	$0
HPT8 4ft 4 lamp, T12 to HPT8 E	$0	$0	$6,912,915	$0	$0	$0	$10,415,850	$0	$0	$0	$0	$0	$0	$0	$1,940,771	$0	$0
HPT8 4ft 4 lamp, T12 to HPT8 O	$0	$0	$47,065,960	$0	$0	$0	$61,081,827	$0	$0	$0	$0	$0	$0	$0	$12,538,710	$0	$0
LED Exit Signs Electronic Fixture	$0	$0	$1,610,583	$0	$0	$0	$1,539,227	$0	$0	$0	-$1,924,164	$0	$0	$0	$295,925	$0	$0
Occupancy Sensors under 500 V	$0	$0	$1,122,549	$0	$0	$0	$5,438,041	$0	$0	$0	$0	$0	$0	$0	$279,990	$0	$0
Daylight Dimming Sensors	$0	$0	$370,441	$0	$0	$0	$1,794,553	$0	$0	$0	$0	$0	$0	$0	$92,397	$0	$0
Switching Controls Mutli Level Li	$0	$0	$370,441	$0	$0	$0	$1,794,553	$0	$0	$0	$0	$0	$0	$0	$92,397	$0	$0
Central Lighting Control - Timelo	$0	$0	$584,405	$0	$0	$0	$1,794,553	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

TE Economic Plan Results

Measure Name	Program Year 2026	Program Year 2012	Program Year 2026	Program Year 2012	Program Year 2026	Program Year 2012	Program Year 2026	UC Test 2016	UC Test Total	TRC Test 2016	TRC Test Total	Participant Test 2016	Participant Test Total	Participants 2012	Participants 2016	Participants 2021	Participants 2026
	Avoided Capacity	Lost Revene	Lost Revene	Participant Costs	Participant Costs	Societal Benefits	Societal Benefits	No Data by Measure. Summary by program only						Number of	Number of	Number of	Number of
DLC-CAC	$0	$1,887,206	$0	$0	$0	$0	$0							17,474	0	0	0
DLC-Pool Pumps	$0	$438,730	$0	$0	$0	$0	$0							1,701	0	0	0
DLC-Water Heat	$0	$314,007	$0	$0	$0	$0	$0							2,052	0	0	0
Residential Online Audit	$0	$4,416,038	$0	$0	$0	$0	$0							47,382	0	0	0
Energy Efficiency Kit	$0	$65,121,570	$0	$0	$0	$0	$0							150,926	0	0	0
Schools Childern Education	$0	$1,769,720	$0	$0	$0	$0	$0							22,500	0	0	0
Refrigerator/Freezer recycling	$0	$1,101	$0	-$50	$0	$0	$0							1	0	0	0
Room Air Conditioners recycling	$0	$31	$0	-$31	$0	$0	$0							1	0	0	0
Room Air Conditioners recycling	$0	$17	$0	-$31	$0	$0	$0							1	0	0	0
Refrigerator/Freezer recycling	$0	$35,422,095	$0	-$1,608,925	$0	$0	$0							32,179	0	0	0
Room Air Conditioners recycling	$0	$1,509,680	$0	-$910,763	$0	$0	$0							29,144	0	0	0
Room Air Conditioners CEE TIEI	$0	$934,533	$0	$234,321	$0	$0	$0							15,621	0	0	0
ASHP - SEER 15	$0	$26,099,463	$0	$4,942,548	$0	$0	$0							11,712	0	0	0
CAC - SEER 15	$0	$58,127,975	$0	$43,837,085	$0	$0	$0							146,124	0	0	0
CAC - Maintenance	$0	$6,156,278	$0	$2,565,116	$0	$0	$0							89,221	0	0	0
EE Ground Source Heat Pump	$0	$8,264,127	$0	$4,182,928	$0	$0	$0							1,673	0	0	0
Solar Water Heating	$0	$334,537	$0	$179,705	$0	$0	$0							69	0	0	0
HP Water Heater	$0	$1,658,440	$0	$296,226	$0	$0	$0							852	0	0	0
EE Water Heater	$0	$6,971,689	$0	$4,680,361	$0	$0	$0							15,759	0	0	0
Programable Thermostat_Heat	$0	$6,163,949	$0	$0	$0	$0	$0							2,921	0	0	0
Programable Thermostat_Heat	$0	$2,110	$0	$0	$0	$0	$0							1	0	0	0
Programable Thermostat_CAC	$0	$11,949,580	$0	$1,208,401	$0	$0	$0							30,210	0	0	0
Clothes Washer Energy Star, Ele	$0	$7,549,036	$0	$7,948,839	$0	$0	$0							31,481	0	0	0
Clothes Washer CEE TIER 3, El	$0	$2,017,116	$0	$2,435,807	$0	$0	$0							7,870	0	0	0
Dehumidifiers 25-35 pints/day	$0	$4,034,202	$0	$223,310	$0	$0	$0							16,241	0	0	0
Pump and Motor Single Speed	$0	$5,465,637	$0	$968,848	$0	$0	$0							13,363	0	0	0
Pump and Motor 2 Speed	$0	$1,567,974	$0	$534,537	$0	$0	$0							3,564	0	0	0
Pump and Motor Variable Speed	$0	$1,042,346	$0	$601,354	$0	$0	$0							891	0	0	0
Refrigerators-Freezers CEE TIEI	$0	$12,587,646	$0	$2,970,088	$0	$0	$0							55,257	0	0	0
Refrigerators-Freezers CEE TIEI	$0	$12,587,646	$0	$2,970,088	$0	$0	$0							55,257	0	0	0
Refrigerators-Freezers CEE TIEI	$0	$12,587,646	$0	$2,970,088	$0	$0	$0							55,257	0	0	0
Smart Strip plug outlet 5 plug	$0	$4,535,215	$0	$1,486,053	$0	$0	$0							110,078	0	0	0
Torchiere Floor Lamps	$0	$9,350,225	$0	$2,720,197	$0	$0	$0							90,673	0	0	0
Residential New Construction - 1	$0	$12,107,268	$0	$4,690,203	$0	$0	$0							10,907	0	0	0
Residential New Construction - 3	$0	$4,842,907	$0	$1,592,487	$0	$0	$0							2,181	0	0	0
Ceiling Fans	$0	$162,695	$0	$182,693	$0	$0	$0							1,356	0	0	0
Ceiling Fans 2014 onwards	$0	$6,580,476	$0	$9,141,434	$0	$0	$0							67,840	0	0	0
Duct sealing 20 leakage base	$0	$63,821,391	$0	$15,967,630	$0	$0	$0							152,073	0	0	0
Low Flow Showerheads	$0	$6,881,078	$0	$0	$0	$0	$0							58,813	0	0	0
Kitchen Aerator	$0	$1,749,676	$0	$0	$0	$0	$0							58,813	0	0	0
Bathroom Aerator	$0	$874,838	$0	$0	$0	$0	$0							58,813	0	0	0
Pipe Wrap	$0	$39,156,668	$0	$10,115,773	$0	$0	$0							58,813	0	0	0
Whole Building	$0	$5,254,785	$0	$701,761	$0	$0	$0							7,018	0	0	0
Low Income Whole House (PA V	$0	$438	$0	$400	$0	$0	$0							1	0	0	0
Current Community Connections	$0	$438	$0	$400	$0	$0	$0							1	0	0	0
Commercial, Industrial Audit - Sr	$0	$23	$0	$250	$0	$0	$0							1	0	0	0
Commercial, Industrial Audit - La	$0	$0	$0	$18,750	$0	$0	$0							1	0	0	0
Commercial New Construction	$0	$4,653,342	$0	$1,133,050	$0	$0	$0							206	0	0	0
Exterior HID replacement above	$0	$13,949,289	$0	$2,335,307	$0	$0	$0							41,702	0	0	0
HPT8 4ft 4 lamp, T12 to HPT8 F	$0	$14,436,821	$0	$3,175,075	$0	$0	$0							62,256	0	0	0
HPT8 4ft 4 lamp, T12 to HPT8 H	$0	$31,711,971	$0	$8,501,271	$0	$0	$0							166,692	0	0	0
HPT8 4ft 4 lamp, T12 to HPT8 H	$0	$42,083,762	$0	$12,360,808	$0	$0	$0							242,369	0	0	0
HPT8 4ft 4 lamp, T12 to HPT8 O	$0	$99,629,115	$0	$27,852,117	$0	$0	$0							546,120	0	0	0
HPT8 4ft 4 lamp, T12 to HPT8 S	$0	$18,027,148	$0	$5,188,248	$0	$0	$0							101,730	0	0	0
HPT8 4ft 4 lamp, T12 to HPT8 E	$0	$24,584,061	$0	$7,814,588	$0	$0	$0							153,227	0	0	0
HPT8 4ft 4 lamp, T12 to HPT8 O	$0	$170,715,065	$0	$45,827,210	$0	$0	$0							898,573	0	0	0
LED Exit Signs Electronic Fixture	$0	$6,668,045	$0	$2,636,087	$0	$0	$0							50,211	0	0	0
Occupancy Sensors under 500 V	$0	$3,468,747	$0	$4,098,218	$0	$0	$0							38,035	0	0	0
Daylight Dimming Sensors	$0	$1,144,687	$0	$1,352,412	$0	$0	$0							12,551	0	0	0
Switching Controls Mutli Level Li	$0	$1,144,687	$0	$1,352,412	$0	$0	$0							12,551	0	0	0
Central Lighting Control - Timelo	$0	$2,405,950	$0	$1,352,412	$0	$0	$0							12,551	0	0	0

Measure Name	Program	Rate Class	Total Measure TRC Test	Total Discounted Lifetime Costs ($000)	Total Discounted Utility Lifetime Costs	Total Discounted Lifetime Benefits ($000)	Program Year 2012		Program Year 2016		Program Year 2021		Program Year 2026	
							MWh Saved	kW Saved	MWh Saved	kW Saved	MWh Saved	kW Saved	MWh Saved	kW Saved
Exterior HID replacement above	C/I Equipment (Comm Lighting)	IND	0.79	$57,376	$19,798	$45,398	160		0		0		0	
High Bay T-* 48" Four Lamps Inc	C/I Equipment (Comm Lighting)	IND	1.63	$344,274,149	$56,210,481	$560,329,110	1,482,167	260,986	0		0		0	
High Bay T-* 48" Four Lamps Fo	C/I Equipment (Comm Lighting)	COM	1.92	$9,605,457	$1,568,306	$18,472,900	48,470	8,815	0		0		0	
High Bay T-* 48" Four Lamps Pu	C/I Equipment (Comm Lighting)	COM	1.04	$2,941,549	$480,274	$3,045,686	7,307	1,819	0		0		0	
High Bay T-* 48" Four Lamps Re	C/I Equipment (Comm Lighting)	COM	1.54	$39,180,442	$6,397,087	$60,322,614	150,706	32,828	0		0		0	
High Bay T-* 48" Four Lamps Wa	C/I Equipment (Comm Lighting)	COM	1.32	$29,528,003	$4,821,109	$38,854,942	93,099	23,268	0		0		0	
LED Exit Signs Electronic Fixture	C/I Equipment (Comm Lighting)	IND	2.08	$1,192,564	-$1,186,362	$2,476,018	8,708		0		0		0	
Occupancy Sensors under 500 V	C/I Equipment (Comm Lighting)	IND	0.21	$2,626,822	$655,059	$540,089	2,226	391	0		0		0	
Daylight Dimming Sensors	C/I Equipment (Comm Lighting)	IND	0.21	$866,851	$216,169	$178,229	735	129	0		0		0	
Switching Controls Mutli Level Li	C/I Equipment (Comm Lighting)	IND	0.21	$866,851	$216,169	$178,229	735	129	0		0		0	
Central Lighting Control - Timelo	C/I Equipment (Comm Lighting)	IND	0.32	$866,851	$216,169	$281,173	1,544		0		0		0	
LED Auto Traffic Signals 8"	Government Lighting	GOV	0.54	$9,296,891	$3,752,891	$5,019,130	14,725	1,564	0		0		0	
LED Pedestrian Signals	Government Lighting	GOV	0.98	$2,121,005	$2,121,005	$2,075,261	6,056	664	0		0		0	
Street Lighting - 175 Mercury to	Government Lighting	GOV	0.44	$2,247,085	$2,247,085	$981,831	3,067	206	0		0		0	
AC 65,000 - 135,000 (10 Ton)	C&I Audits & C/I Equipment (expanded)	COM	0.75	$44,232,216	$11,735,873	$33,348,287	37,743	32,582	0		0		0	
AC 240,000 - 760,000 (25 Ton)	C&I Audits & C/I Equipment (expanded)	IND	0.72	$48,480,361	$7,859,933	$34,737,799	39,315	33,940	0		0		0	
Clothes Washer CEE Tier1, Elec	C&I Audits & C/I Equipment (expanded)	COM	0.26	$2,866,772	$446,471	$733,232	3,393		0		0		0	
Efficient Refrigeration Condense	C&I Audits & C/I Equipment (expanded)	COM	0.90	$162,192	$59,242	$146,719	352	88	0		0		0	
ENERGY STAR Commercial Sol	C&I Audits & C/I Equipment (expanded)	COM	2.11	$503,118	$157,207	$1,060,286	2,850	328	0		0		0	
ENERGY STAR Commercial Sol	C&I Audits & C/I Equipment (expanded)	COM	2.29	$186,177	$73,618	$426,374	1,425	164	0		0		0	
ENERGY STAR Commercial Gla	C&I Audits & C/I Equipment (expanded)	COM	2.73	$470,280	$153,195	$1,284,140	4,265	508	0		0		0	
ENERGY STAR Commercial Gla	C&I Audits & C/I Equipment (expanded)	COM	3.62	$172,934	$69,756	$625,546	2,078	247	0		0		0	
ENERGY STAR Commercial Sol	C&I Audits & C/I Equipment (expanded)	COM	0.86	$620,058	$243,719	$533,896	1,787	204	0		0		0	
ENERGY STAR Commercial Sol	C&I Audits & C/I Equipment (expanded)	COM	0.90	$227,079	$110,975	$203,262	675	80	0		0		0	
ENERGY STAR Commercial Gla	C&I Audits & C/I Equipment (expanded)	COM	0.70	$830,536	$314,414	$577,504	1,933	221	0		0		0	
ENERGY STAR Commercial Gla	C&I Audits & C/I Equipment (expanded)	COM	0.84	$306,466	$147,237	$256,742	853	102	0		0		0	
ENERGY STAR Ice Machines Ie	C&I Audits & C/I Equipment (expanded)	COM	0.66	$153,956	$38,641	$101,100	357	79	0		0		0	
ENERGY STAR Ice Machines 50	C&I Audits & C/I Equipment (expanded)	COM	0.68	$35,586	$8,453	$24,159	104	9	0		0		0	
ENERGY STAR Ice Machines m	C&I Audits & C/I Equipment (expanded)	COM	0.37	$35,267	$8,134	$13,043	56	5	0		0		0	
ENERGY STAR Steam Cookers	C&I Audits & C/I Equipment (expanded)	COM	1.33	$1,263,988	$241,639	$1,684,649	5,033	965	0		0		0	
Hot Food Holding Cabinets	C&I Audits & C/I Equipment (expanded)	COM	1.00	$704,055	$5,712	$706,908	2,230	342	0		0		0	
EE Water Heater	C&I Audits & C/I Equipment (expanded)	COM	0.27	$1,139,661	$311,919	$312,575	939	111	0		0		0	
HP Water Heater (Base Usage 2	C&I Audits & C/I Equipment (expanded)	COM	1.57	$607,525	$142,974	$953,143	2,563	421	0		0		0	
Plug Load Occupancy Sensors D	C&I Audits & C/I Equipment (expanded)	COM	0.36	$915,514	$599,337	$332,354	2,357	192	0		0		0	
Commercial Smart Strip plug out	C&I Audits & C/I Equipment (expanded)	COM	0.36	$22,213,524	$14,541,973	$8,064,044	57,184	4,658	0		0		0	
Pre Rinse Sprayers	C&I Audits & C/I Equipment (expanded)	COM	8.51	$253,435	$177,991	$2,156,141	17,650		0		0		0	
Strip curtains for walk-ins - freez	C&I Audits & C/I Equipment (expanded)	COM	0.65	$1,220,797	$138,680	$796,925	4,559	524	0		0		0	
Vending Machine Occupancy Se	C&I Audits & C/I Equipment (expanded)	COM	0.82	$3,231,436	$870,938	$2,640,633	21,616		0		0		0	
Window Film	C&I Audits & C/I Equipment (expanded)	COM	0.95	$2,324,853	$933,150	$2,212,382	5,874	2,312	0		0		0	
Plug Load Occupancy Sensors D	C&I Audits & C/I Equipment (expanded)	IND	0.34	$25,528	$17,380	$8,564	61	5	0		0		0	
Water-Cooled cent Chiller 150 - :	C&I Audits & C/I Equipment (expanded)	IND	0.53	$7,790,184	$1,511,064	$4,123,287	6,570	3,105	0		0		0	
Water-Cooled Centrifugal Chiller	C&I Audits & C/I Equipment (expanded)	IND	0.99	$1,378,083	$503,688	$1,370,034	1,093	1,618	0		0		0	
Window Film	C&I Audits & C/I Equipment (expanded)	IND	1.02	$33,376,764	$12,816,397	$33,929,594	55,395	34,155	0		0		0	
Commercial Smart Strip plug out	C&I Audits & C/I Equipment (expanded)	IND	0.36	$287,354	$189,831	$102,512	727	59	0		0		0	
Motors 1 HP 1200	C/I Equipment (Industrial Motors)	IND	0.17	$346,878	$145,278	$57,879	95	54	0		0		0	
Motors 5 HP 1200	C/I Equipment (Industrial Motors)	IND	0.47	$83,576	$41,996	$39,023	64	36	0		0		0	
Motors 10 HP 1200	C/I Equipment (Industrial Motors)	IND	0.37	$30,275	$16,163	$11,084	18	10	0		0		0	
Motors 20 HP 1200	C/I Equipment (Industrial Motors)	IND	0.68	$6,005	$3,233	$4,071	7	4	0		0		0	
Motors 1 HP 3600	C/I Equipment (Industrial Motors)	IND	0.11	$346,878	$145,278	$39,425	64	37	0		0		0	
Motors 5 HP 3600	C/I Equipment (Industrial Motors)	IND	0.25	$83,576	$41,996	$20,660	34	19	0		0		0	
Motors 10 HP 3600	C/I Equipment (Industrial Motors)	IND	0.25	$30,343	$18,751	$7,716	13	7	0		0		0	
Motors 20 HP 3600	C/I Equipment (Industrial Motors)	IND	0.40	$6,018	$3,750	$2,383	4	2	0		0		0	
Water Pumps with VFD's 1	C/I Equipment (Industrial Motors)	IND	2.15	$673,068	$559,340	$1,443,859	2,988	1,117	0		0		0	
HVAC Fans with VFD's 1	C/I Equipment (Industrial Motors)	IND	4.39	$336,534	$257,784	$1,477,752	3,981	650	0		0		0	
Air Compressors with VFD's 1	C/I Equipment (Industrial Motors)	IND	0.52	$295,641	$217,531	$153,853	391	80	0		0		0	
Water Pumps with VFD's 5	C/I Equipment (Industrial Motors)	IND	2.79	$377,321	$294,462	$1,051,955	2,177	814	0		0		0	
HVAC Fans with VFD's 5	C/I Equipment (Industrial Motors)	IND	5.71	$754,641	$456,291	$4,306,592	11,602	1,894	0		0		0	
Air Compressors with VFD's 5	C/I Equipment (Industrial Motors)	IND	1.02	$377,321	$182,045	$384,632	977	201	0		0		0	
Water Pumps with VFD's 10	C/I Equipment (Industrial Motors)	IND	0.71	$5,918,391	$996,957	$4,207,819	8,707	3,254	0		0		0	
HVAC Fans with VFD's 10	C/I Equipment (Industrial Motors)	IND	1.46	$2,959,196	$1,177,753	$4,306,592	11,602	1,894	0		0		0	
Air Compressors with VFD's 10	C/I Equipment (Industrial Motors)	IND	0.26	$5,918,391	$547,290	$1,538,528	3,909	802	0		0		0	
Commercial Skylight 14"	C/I Equipment (Industrial Motors)	IND	0.18	$105,840	$9,840	$18,590	51	18	0		0		0	

TE Economic Plan Results

Measure Name	Program Year 2012 Cumulative		Program Year 2016 Cumulative		Program Year 2021 Cumulative		Program Year 2026 Cumulative		Life Time Savings		Program Year 2012	Program Year 2016	Program Year 2021	Program Year 2026	Program Year 2012	Program Year 2016
	MWh Saved	kW Saved	MWh Saved	kW Saved	MWh Saved	kW Saved	MWh Saved	kW Saved	MWh Saved	kW Saved	Portfolio Budget	Portfolio Budget	Portfolio Budget	Portfolio Budget	Total Incentives	Total Incentives
Exterior HID replacement above	160	0	160	$0	160	$0	160	$0	2,245	$0	$19,798	$0	$0	$0	$16,776	$0
High Bay T-* 48" Four Lamps Inc	1,482,167	260,986	1,482,167	$260,986	1,482,167	$260,986	1,482,167	$260,986	20,836,308	$260,986	$56,210,481	$0	$0	$0	$43,043,996	$0
High Bay T-* 48" Four Lamps Fo	48,470	8,815	48,470	$8,815	48,470	$8,815	48,470	$8,815	681,391	$8,815	$1,568,306	$0	$0	$0	$1,200,954	$0
High Bay T-* 48" Four Lamps Pu	7,307	1,819	7,307	$1,819	7,307	$1,819	7,307	$1,819	102,715	$1,819	$480,274	$0	$0	$0	$367,777	$0
High Bay T-* 48" Four Lamps Re	150,706	32,828	150,706	$32,828	150,706	$32,828	150,706	$32,828	2,118,625	$32,828	$6,397,087	$0	$0	$0	$4,898,662	$0
High Bay T-* 48" Four Lamps Wa	93,099	23,268	93,099	$23,268	93,099	$23,268	93,099	$23,268	1,308,782	$23,268	$4,821,109	$0	$0	$0	$3,691,835	$0
LED Exit Signs Electronic Fixture	8,708	0	8,708	$0	8,708	$0	8,708	$0	122,423	$0	-$1,186,362	$0	$0	$0	$0	$0
Occupancy Sensors under 500 V	2,226	391	2,226	$391	2,226	$391	2,226	$391	16,689	$391	$655,059	$0	$0	$0	$571,857	$0
Daylight Dimming Sensors	735	129	735	$129	735	$129	735	$129	5,507	$129	$216,169	$0	$0	$0	$188,713	$0
Switching Controls Mutli Level Li	735	129	735	$129	735	$129	735	$129	5,507	$129	$216,169	$0	$0	$0	$188,713	$0
Central Lighting Control - Timelo	1,544	0	1,544	$0	1,544	$0	1,544	$0	11,576	$0	$216,169	$0	$0	$0	$188,713	$0
LED Auto Traffic Signals 8"	14,725	1,564	14,725	$1,564	14,725	$1,564	14,725	$1,564	207,000	$1,564	$3,752,891	$0	$0	$0	$4,056,000	$0
LED Pedestrian Signals	6,056	664	6,056	$664	6,056	$664	6,056	$664	85,140	$664	$2,121,005	$0	$0	$0	$1,014,000	$0
Street Lighting - 175 Mercury to	3,067	206	3,067	$206	3,067	$206	3,067	$206	43,121	$206	$2,247,085	$0	$0	$0	$630,000	$0
AC 65,000 - 135,000 (10 Ton)	37,743	32,582	37,743	$32,582	37,743	$32,582	37,743	$32,582	530,588	$32,582	$11,735,873	$0	$0	$0	$10,832,114	$0
AC 240,000 - 760,000 (25 Ton)	39,315	33,940	39,315	$33,940	39,315	$33,940	39,315	$33,940	552,696	$33,940	$7,859,933	$0	$0	$0	$4,513,381	$0
Clothes Washer CEE Tier1, Elec	3,393	0	3,393	$0	3,393	$0	3,393	$0	31,801	$0	$446,471	$0	$0	$0	$366,712	$0
Efficient Refrigeration Condense	352	88	352	$88	352	$88	352	$88	4,942	$88	$59,242	$0	$0	$0	$34,317	$0
ENERGY STAR Commercial Sol	2,850	328	2,850	$328	2,850	$328	2,850	$328	45,401	$328	$157,207	$0	$0	$0	$137,266	$0
ENERGY STAR Commercial Sol	1,425	164	1,425	$164	1,425	$164	1,425	$164	16,024	$164	$73,618	$0	$0	$0	$68,633	$0
ENERGY STAR Commercial Gla	4,265	508	4,265	$508	4,265	$508	4,265	$508	47,970	$508	$153,195	$0	$0	$0	$125,828	$0
ENERGY STAR Commercial Gla	2,078	247	2,078	$247	2,078	$247	2,078	$247	23,368	$247	$69,756	$0	$0	$0	$62,914	$0
ENERGY STAR Commercial Sol	1,787	204	1,787	$204	1,787	$204	1,787	$204	20,095	$204	$243,719	$0	$0	$0	$200,180	$0
ENERGY STAR Commercial Sol	675	80	675	$80	675	$80	675	$80	7,593	$80	$110,975	$0	$0	$0	$100,090	$0
ENERGY STAR Commercial Gla	1,933	221	1,933	$221	1,933	$221	1,933	$221	21,737	$221	$314,414	$0	$0	$0	$274,533	$0
ENERGY STAR Commercial Gla	853	102	853	$102	853	$102	853	$102	9,591	$102	$147,237	$0	$0	$0	$137,266	$0
ENERGY STAR Ice Machines Ie	357	79	357	$79	357	$79	357	$79	3,015	$79	$38,641	$0	$0	$0	$33,213	$0
ENERGY STAR Ice Machines 5(	104	9	104	$9	104	$9	104	$9	875	$9	$8,453	$0	$0	$0	$7,815	$0
ENERGY STAR Ice Machines m	56	5	56	$5	56	$5	56	$5	472	$5	$8,134	$0	$0	$0	$7,815	$0
ENERGY STAR Steam Cookers	5,033	965	5,033	$965	5,033	$965	5,033	$965	56,603	$965	$241,639	$0	$0	$0	$235,927	$0
Hot Food Holding Cabinets	2,230	342	2,230	$342	2,230	$342	2,230	$342	25,077	$342	$5,712	$0	$0	$0	$0	$0
EE Water Heater	939	111	939	$111	939	$111	939	$111	12,323	$111	$311,919	$0	$0	$0	$278,701	$0
HP Water Heater (Base Usage 2	2,563	421	2,563	$421	2,563	$421	2,563	$421	36,037	$421	$142,974	$0	$0	$0	$132,016	$0
Plug Load Occupancy Sensors D	2,357	192	2,357	$192	2,357	$192	2,357	$192	11,044	$192	$599,337	$0	$0	$0	$463,133	$0
Commercial Smart Strip plug out	57,184	4,658	57,184	$4,658	57,184	$4,658	57,184	$4,658	267,964	$4,658	$14,541,973	$0	$0	$0	$11,237,201	$0
Pre Rinse Sprayers	17,650	0	17,650	$0	17,650	$0	17,650	$0	82,709	$0	$177,991	$0	$0	$0	$155,326	$0
Strip curtains for walk-ins - freez	4,559	524	4,559	$524	4,559	$524	4,559	$524	25,639	$524	$138,680	$0	$0	$0	$125,828	$0
Vending Machine Occupancy Se	21,616	0	21,616	$0	21,616	$0	21,616	$0	101,294	$0	$870,938	$0	$0	$0	$564,173	$0
Window Film	5,874	2,312	5,874	$2,312	5,874	$2,312	5,874	$2,312	55,051	$2,312	$933,150	$0	$0	$0	$833,355	$0
Plug Load Occupancy Sensors D	61	5	61	$5	61	$5	61	$5	285	$5	$17,380	$0	$0	$0	$11,934	$0
Water-Cooled cent Chiller 150 - :	6,570	3,105	6,570	$3,105	6,570	$3,105	6,570	$3,105	123,144	$3,105	$1,511,064	$0	$0	$0	$1,032,750	$0
Water-Cooled Centrifugal Chiller	1,093	1,618	1,093	$1,618	1,093	$1,618	1,093	$1,618	20,487	$1,618	$503,688	$0	$0	$0	$344,250	$0
Window Film	55,395	34,155	55,395	$34,155	55,395	$34,155	55,395	$34,155	778,740	$34,155	$12,816,397	$0	$0	$0	$12,311,597	$0
Commercial Smart Strip plug out	727	59	727	$59	727	$59	727	$59	3,406	$59	$189,831	$0	$0	$0	$142,850	$0
Motors 1 HP 1200	95	54	95	$54	95	$54	95	$54	1,419	$54	$145,278	$0	$0	$0	$126,000	$0
Motors 5 HP 1200	64	36	64	$36	64	$36	64	$36	957	$36	$41,996	$0	$0	$0	$37,800	$0
Motors 10 HP 1200	18	10	18	$10	18	$10	18	$10	272	$10	$16,163	$0	$0	$0	$15,120	$0
Motors 20 HP 1200	7	4	7	$4	7	$4	7	$4	100	$4	$3,233	$0	$0	$0	$3,024	$0
Motors 1 HP 3600	64	37	64	$37	64	$37	64	$37	967	$37	$145,278	$0	$0	$0	$126,000	$0
Motors 5 HP 3600	34	19	34	$19	34	$19	34	$19	507	$19	$41,996	$0	$0	$0	$37,800	$0
Motors 10 HP 3600	13	7	13	$7	13	$7	13	$7	189	$7	$18,751	$0	$0	$0	$17,640	$0
Motors 20 HP 3600	4	2	4	$2	4	$2	4	$2	58	$2	$3,750	$0	$0	$0	$3,528	$0
Water Pumps with VFD's 1	2,988	1,117	2,988	$1,117	2,988	$1,117	2,988	$1,117	42,003	$1,117	$559,340	$0	$0	$0	$280,022	$0
HVAC Fans with VFD's 1	3,981	650	3,981	$650	3,981	$650	3,981	$650	55,964	$650	$257,784	$0	$0	$0	$118,125	$0
Air Compressors with VFD's 1	391	80	391	$80	391	$80	391	$80	5,496	$80	$217,531	$0	$0	$0	$36,640	$0
Water Pumps with VFD's 5	2,177	814	2,177	$814	2,177	$814	2,177	$814	30,602	$814	$294,462	$0	$0	$0	$204,016	$0
HVAC Fans with VFD's 5	11,602	1,894	11,602	$1,894	11,602	$1,894	11,602	$1,894	163,096	$1,894	$456,291	$0	$0	$0	$275,400	$0
Air Compressors with VFD's 5	977	201	977	$201	977	$201	977	$201	13,740	$201	$182,045	$0	$0	$0	$91,600	$0
Water Pumps with VFD's 10	8,707	3,254	8,707	$3,254	8,707	$3,254	8,707	$3,254	122,410	$3,254	$996,957	$0	$0	$0	$816,065	$0
HVAC Fans with VFD's 10	11,602	1,894	11,602	$1,894	11,602	$1,894	11,602	$1,894	163,096	$1,894	$1,177,753	$0	$0	$0	$1,087,307	$0
Air Compressors with VFD's 10	3,909	802	3,909	$802	3,909	$802	3,909	$802	54,960	$802	$547,290	$0	$0	$0	$366,398	$0
Commercial Skylight 14"	51	18	51	$18	51	$18	51	$18	482	$18	$9,840	$0	$0	$0	$4,000	$0

Measure Name	Program Year 2021	Program Year 2026	Program Year 2012	Program Year 2016	Program Year 2021	Program Year 2026	Program Year 2012	Program Year 2016	Program Year 2021	Program Year 2026	Program Year 2012	Program Year 2016	Program Year 2021	Program Year 2026	Program Year 2012	Program Year 2016	Program Year 2021
	Total Incentives	Total Incentives	Benefits	Benefits	Benefits	Benefits	Costs	Costs	Costs	Costs	O&M	O&M	O&M	O&M	Avoided Capacity	Avoided Capacity	Avoided Capacity
Exterior HID replacement above	$0	$0	$45,398	$0	$0	$0	$57,376	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
High Bay T-* 48" Four Lamps Inc	$0	$0	$560,329,110	$0	$0	$0	$344,274,149	$0	$0	$0	$0	$0	$0	$0	$138,913,215	$0	$0
High Bay T-* 48" Four Lamps Fo	$0	$0	$18,472,900	$0	$0	$0	$9,605,457	$0	$0	$0	$0	$0	$0	$0	$4,691,713	$0	$0
High Bay T-* 48" Four Lamps Pu	$0	$0	$3,045,686	$0	$0	$0	$2,941,549	$0	$0	$0	$0	$0	$0	$0	$968,263	$0	$0
High Bay T-* 48" Four Lamps Re	$0	$0	$60,322,614	$0	$0	$0	$39,180,442	$0	$0	$0	$0	$0	$0	$0	$17,473,270	$0	$0
High Bay T-* 48" Four Lamps Wa	$0	$0	$38,854,942	$0	$0	$0	$29,528,003	$0	$0	$0	$0	$0	$0	$0	$12,384,735	$0	$0
LED Exit Signs Electronic Fixture	$0	$0	$2,476,018	$0	$0	$0	$1,192,564	$0	$0	$0	-$1,352,765	$0	$0	$0	$0	$0	$0
Occupancy Sensors under 500 W	$0	$0	$540,089	$0	$0	$0	$2,626,822	$0	$0	$0	$0	$0	$0	$0	$134,711	$0	$0
Daylight Dimming Sensors	$0	$0	$178,229	$0	$0	$0	$866,851	$0	$0	$0	$0	$0	$0	$0	$44,455	$0	$0
Switching Controls Mutli Level Li	$0	$0	$178,229	$0	$0	$0	$866,851	$0	$0	$0	$0	$0	$0	$0	$44,455	$0	$0
Central Lighting Control - Timelo	$0	$0	$281,173	$0	$0	$0	$866,851	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
LED Auto Traffic Signals 8"	$0	$0	$5,019,130	$0	$0	$0	$9,296,891	$0	$0	$0	-$7,096,693	$0	$0	$0	$832,539	$0	$0
LED Pedestrian Signals	$0	$0	$2,075,261	$0	$0	$0	$2,121,005	$0	$0	$0	-$591,391	$0	$0	$0	$353,298	$0	$0
Street Lighting - 175 Mercury to	$0	$0	$981,831	$0	$0	$0	$2,247,085	$0	$0	$0	$1,617,085	$0	$0	$0	$109,700	$0	$0
AC 65,000 - 135,000 (10 Ton)	$0	$0	$33,348,287	$0	$0	$0	$44,232,216	$0	$0	$0	$0	$0	$0	$0	$17,342,436	$0	$0
AC 240,000 - 760,000 (25 Ton)	$0	$0	$34,737,799	$0	$0	$0	$48,480,361	$0	$0	$0	$0	$0	$0	$0	$18,065,038	$0	$0
Clothes Washer CEE Tier1, Elec	$0	$0	$733,232	$0	$0	$0	$2,866,772	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Efficient Refrigeration Condense	$0	$0	$146,719	$0	$0	$0	$162,192	$0	$0	$0	$0	$0	$0	$0	$46,775	$0	$0
ENERGY STAR Commercial Sol	$0	$0	$1,060,286	$0	$0	$0	$503,118	$0	$0	$0	$0	$0	$0	$0	$187,397	$0	$0
ENERGY STAR Commercial Sol	$0	$0	$426,374	$0	$0	$0	$186,177	$0	$0	$0	$0	$0	$0	$0	$75,918	$0	$0
ENERGY STAR Commercial Gla	$0	$0	$1,284,140	$0	$0	$0	$470,280	$0	$0	$0	$0	$0	$0	$0	$235,001	$0	$0
ENERGY STAR Commercial Gla	$0	$0	$625,546	$0	$0	$0	$172,934	$0	$0	$0	$0	$0	$0	$0	$114,477	$0	$0
ENERGY STAR Commercial Sol	$0	$0	$533,896	$0	$0	$0	$620,058	$0	$0	$0	$0	$0	$0	$0	$94,399	$0	$0
ENERGY STAR Commercial Sol	$0	$0	$203,262	$0	$0	$0	$227,079	$0	$0	$0	$0	$0	$0	$0	$37,198	$0	$0
ENERGY STAR Commercial Gla	$0	$0	$577,504	$0	$0	$0	$830,536	$0	$0	$0	$0	$0	$0	$0	$102,110	$0	$0
ENERGY STAR Commercial Gla	$0	$0	$256,742	$0	$0	$0	$306,466	$0	$0	$0	$0	$0	$0	$0	$46,985	$0	$0
ENERGY STAR Ice Machines Ie	$0	$0	$101,100	$0	$0	$0	$153,956	$0	$0	$0	$0	$0	$0	$0	$29,733	$0	$0
ENERGY STAR Ice Machines 50	$0	$0	$24,159	$0	$0	$0	$35,586	$0	$0	$0	$0	$0	$0	$0	$3,451	$0	$0
ENERGY STAR Ice Machines m	$0	$0	$13,043	$0	$0	$0	$35,267	$0	$0	$0	$0	$0	$0	$0	$1,863	$0	$0
ENERGY STAR Steam Cookers	$0	$0	$1,684,649	$0	$0	$0	$1,263,988	$0	$0	$0	$0	$0	$0	$0	$446,707	$0	$0
Hot Food Holding Cabinets	$0	$0	$706,908	$0	$0	$0	$704,055	$0	$0	$0	$0	$0	$0	$0	$158,445	$0	$0
EE Water Heater	$0	$0	$312,575	$0	$0	$0	$1,139,661	$0	$0	$0	$0	$0	$0	$0	$56,804	$0	$0
HP Water Heater (Base Usage 2	$0	$0	$953,143	$0	$0	$0	$607,525	$0	$0	$0	$0	$0	$0	$0	$224,291	$0	$0
Plug Load Occupancy Sensors D	$0	$0	$332,354	$0	$0	$0	$915,514	$0	$0	$0	$0	$0	$0	$0	$44,450	$0	$0
Commercial Smart Strip plug out	$0	$0	$8,064,044	$0	$0	$0	$22,213,524	$0	$0	$0	$0	$0	$0	$0	$1,078,515	$0	$0
Pre Rinse Sprayers	$0	$0	$2,156,141	$0	$0	$0	$253,435	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Strip curtains for walk-ins - freez	$0	$0	$796,925	$0	$0	$0	$1,220,797	$0	$0	$0	$0	$0	$0	$0	$142,445	$0	$0
Vending Machine Occupancy Se	$0	$0	$2,640,633	$0	$0	$0	$3,231,436	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Window Film	$0	$0	$2,212,382	$0	$0	$0	$2,324,853	$0	$0	$0	$0	$0	$0	$0	$943,079	$0	$0
Plug Load Occupancy Sensors D	$0	$0	$8,564	$0	$0	$0	$25,528	$0	$0	$0	$0	$0	$0	$0	$1,145	$0	$0
Water-Cooled cent Chiller 150 - :	$0	$0	$4,123,287	$0	$0	$0	$7,790,184	$0	$0	$0	$0	$0	$0	$0	$1,927,305	$0	$0
Water-Cooled Centrifugal Chiller	$0	$0	$1,370,034	$0	$0	$0	$1,378,083	$0	$0	$0	$0	$0	$0	$0	$1,004,698	$0	$0
Window Film	$0	$0	$33,929,594	$0	$0	$0	$33,376,764	$0	$0	$0	$0	$0	$0	$0	$18,179,512	$0	$0
Commercial Smart Strip plug out	$0	$0	$102,512	$0	$0	$0	$287,354	$0	$0	$0	$0	$0	$0	$0	$13,710	$0	$0
Motors 1 HP 1200	$0	$0	$57,879	$0	$0	$0	$346,878	$0	$0	$0	$0	$0	$0	$0	$29,902	$0	$0
Motors 5 HP 1200	$0	$0	$39,023	$0	$0	$0	$83,576	$0	$0	$0	$0	$0	$0	$0	$20,161	$0	$0
Motors 10 HP 1200	$0	$0	$11,084	$0	$0	$0	$30,275	$0	$0	$0	$0	$0	$0	$0	$5,726	$0	$0
Motors 20 HP 1200	$0	$0	$4,071	$0	$0	$0	$6,005	$0	$0	$0	$0	$0	$0	$0	$2,103	$0	$0
Motors 1 HP 3600	$0	$0	$39,425	$0	$0	$0	$346,878	$0	$0	$0	$0	$0	$0	$0	$20,368	$0	$0
Motors 5 HP 3600	$0	$0	$20,660	$0	$0	$0	$83,576	$0	$0	$0	$0	$0	$0	$0	$10,674	$0	$0
Motors 10 HP 3600	$0	$0	$7,716	$0	$0	$0	$30,343	$0	$0	$0	$0	$0	$0	$0	$3,987	$0	$0
Motors 20 HP 3600	$0	$0	$2,383	$0	$0	$0	$6,018	$0	$0	$0	$0	$0	$0	$0	$1,231	$0	$0
Water Pumps with VFD's 1	$0	$0	$1,443,859	$0	$0	$0	$673,068	$0	$0	$0	$0	$0	$0	$0	$594,338	$0	$0
HVAC Fans with VFD's 1	$0	$0	$1,477,752	$0	$0	$0	$336,534	$0	$0	$0	$0	$0	$0	$0	$345,869	$0	$0
Air Compressors with VFD's 1	$0	$0	$153,853	$0	$0	$0	$295,641	$0	$0	$0	$0	$0	$0	$0	$42,696	$0	$0
Water Pumps with VFD's 5	$0	$0	$1,051,955	$0	$0	$0	$377,321	$0	$0	$0	$0	$0	$0	$0	$433,018	$0	$0
HVAC Fans with VFD's 5	$0	$0	$4,306,592	$0	$0	$0	$754,641	$0	$0	$0	$0	$0	$0	$0	$1,007,961	$0	$0
Air Compressors with VFD's 5	$0	$0	$384,632	$0	$0	$0	$377,321	$0	$0	$0	$0	$0	$0	$0	$106,741	$0	$0
Water Pumps with VFD's 10	$0	$0	$4,207,819	$0	$0	$0	$5,918,391	$0	$0	$0	$0	$0	$0	$0	$1,732,072	$0	$0
HVAC Fans with VFD's 10	$0	$0	$4,306,592	$0	$0	$0	$2,959,196	$0	$0	$0	$0	$0	$0	$0	$1,007,961	$0	$0
Air Compressors with VFD's 10	$0	$0	$1,538,528	$0	$0	$0	$5,918,391	$0	$0	$0	$0	$0	$0	$0	$426,963	$0	$0
Commercial Skylight 14"	$0	$0	$18,590	$0	$0	$0	$105,840	$0	$0	$0	$0	$0	$0	$0	$7,486	$0	$0

Measure Name	Program Year 2026	Program Year 2012	Program Year 2026	Program Year 2012	Program Year 2026	Program Year 2012	Program Year 2026	UC Test 2016	UC Test Total	TRC Test 2016	TRC Test Total	Participant Test 2016	Participant Test Total	Participants 2012	Participants 2016	Participants 2021	Participants 2026
	Avoided Capacity	Lost Revene	Lost Revene	Participant Costs	Participant Costs	Societal Benefits	Societal Benefits	No Data by Measure. Summary by program only						Number of	Number of	Number of	Number of
Exterior HID replacement above	$0	$224,463	$0	$37,578	$0	$0	$0							671	0	0	0
High Bay T-* 48" Four Lamps Inc	$0	$2,083,630,810	$0	$288,063,667	$0	$0	$0							3,311,077	0	0	0
High Bay T-* 48" Four Lamps Fo	$0	$68,139,115	$0	$8,037,151	$0	$0	$0							92,381	0	0	0
High Bay T-* 48" Four Lamps Pu	$0	$10,271,521	$0	$2,461,275	$0	$0	$0							28,291	0	0	0
High Bay T-* 48" Four Lamps Re	$0	$211,862,476	$0	$32,783,356	$0	$0	$0							376,820	0	0	0
High Bay T-* 48" Four Lamps Wa	$0	$130,878,160	$0	$24,706,894	$0	$0	$0							283,987	0	0	0
LED Exit Signs Electronic Fixture	$0	$12,242,318	$0	$2,378,926	$0	$0	$0							36,599	0	0	0
Occupancy Sensors under 500 W	$0	$1,668,908	$0	$1,971,763	$0	$0	$0							18,299	0	0	0
Daylight Dimming Sensors	$0	$550,740	$0	$650,682	$0	$0	$0							6,039	0	0	0
Switching Controls Mutli Level Li	$0	$550,740	$0	$650,682	$0	$0	$0							6,039	0	0	0
Central Lighting Control - Timelo	$0	$1,157,567	$0	$650,682	$0	$0	$0							6,039	0	0	0
LED Auto Traffic Signals 8"	$0	$20,700,000	$0	$5,544,000	$0	$0	$0							24,000	0	0	0
LED Pedestrian Signals	$0	$8,514,000	$0	$0	$0	$0	$0							6,000	0	0	0
Street Lighting - 175 Mercury to	$0	$4,312,125	$0	$0	$0	$0	$0							10,000	0	0	0
AC 65,000 - 135,000 (10 Ton)	$0	$53,058,790	$0	$32,496,342	$0	$0	$0							21,664	0	0	0
AC 240,000 - 760,000 (25 Ton)	$0	$55,269,572	$0	$40,620,428	$0	$0	$0							9,027	0	0	0
Clothes Washer CEE Tier1, Elec	$0	$3,180,128	$0	$2,420,300	$0	$0	$0							5,867	0	0	0
Efficient Refrigeration Condense	$0	$494,159	$0	$102,950	$0	$0	$0							2,745	0	0	0
ENERGY STAR Commercial Sol	$0	$4,540,116	$0	$345,911	$0	$0	$0							2,196	0	0	0
ENERGY STAR Commercial Sol	$0	$1,602,394	$0	$112,558	$0	$0	$0							549	0	0	0
ENERGY STAR Commercial Gla	$0	$4,796,991	$0	$317,086	$0	$0	$0							2,013	0	0	0
ENERGY STAR Commercial Gla	$0	$2,336,769	$0	$103,179	$0	$0	$0							503	0	0	0
ENERGY STAR Commercial Sol	$0	$2,009,517	$0	$376,339	$0	$0	$0							3,203	0	0	0
ENERGY STAR Commercial Sol	$0	$759,300	$0	$116,105	$0	$0	$0							801	0	0	0
ENERGY STAR Commercial Gla	$0	$2,173,652	$0	$516,122	$0	$0	$0							4,393	0	0	0
ENERGY STAR Commercial Gla	$0	$959,077	$0	$159,229	$0	$0	$0							1,098	0	0	0
ENERGY STAR Ice Machines Ie	$0	$301,520	$0	$115,315	$0	$0	$0							1,063	0	0	0
ENERGY STAR Ice Machines 50	$0	$87,489	$0	$27,133	$0	$0	$0							125	0	0	0
ENERGY STAR Ice Machines m	$0	$47,236	$0	$27,133	$0	$0	$0							63	0	0	0
ENERGY STAR Steam Cookers	$0	$5,660,259	$0	$1,022,349	$0	$0	$0							629	0	0	0
Hot Food Holding Cabinets	$0	$2,507,744	$0	$698,343	$0	$0	$0							629	0	0	0
EE Water Heater	$0	$1,232,292	$0	$827,743	$0	$0	$0							2,787	0	0	0
HP Water Heater (Base Usage 2	$0	$3,603,707	$0	$464,551	$0	$0	$0							147	0	0	0
Plug Load Occupancy Sensors D	$0	$1,104,394	$0	$316,177	$0	$0	$0							17,813	0	0	0
Commercial Smart Strip plug out	$0	$26,796,404	$0	$7,671,551	$0	$0	$0							432,200	0	0	0
Pre Rinse Sprayers	$0	$8,270,930	$0	$75,444	$0	$0	$0							4,438	0	0	0
Strip curtains for walk-ins - freez	$0	$2,563,863	$0	$1,082,117	$0	$0	$0							2,517	0	0	0
Vending Machine Occupancy Se	$0	$10,129,435	$0	$2,360,498	$0	$0	$0							18,054	0	0	0
Window Film	$0	$5,505,144	$0	$1,391,703	$0	$0	$0							16,667	0	0	0
Plug Load Occupancy Sensors D	$0	$28,458	$0	$8,147	$0	$0	$0							459	0	0	0
Water-Cooled cent Chiller 150 - :	$0	$12,314,355	$0	$6,279,120	$0	$0	$0							138	0	0	0
Water-Cooled Centrifugal Chiller	$0	$2,048,684	$0	$874,395	$0	$0	$0							138	0	0	0
Window Film	$0	$77,874,034	$0	$20,560,367	$0	$0	$0							4,925	0	0	0
Commercial Smart Strip plug out	$0	$340,641	$0	$97,522	$0	$0	$0							5,494	0	0	0
Motors 1 HP 1200	$0	$141,900	$0	$201,600	$0	$0	$0							6,300	0	0	0
Motors 5 HP 1200	$0	$95,672	$0	$41,580	$0	$0	$0							1,260	0	0	0
Motors 10 HP 1200	$0	$27,174	$0	$14,112	$0	$0	$0							252	0	0	0
Motors 20 HP 1200	$0	$9,980	$0	$2,772	$0	$0	$0							50	0	0	0
Motors 1 HP 3600	$0	$96,658	$0	$201,600	$0	$0	$0							6,300	0	0	0
Motors 5 HP 3600	$0	$50,653	$0	$41,580	$0	$0	$0							1,260	0	0	0
Motors 10 HP 3600	$0	$18,918	$0	$11,592	$0	$0	$0							252	0	0	0
Motors 20 HP 3600	$0	$5,842	$0	$2,268	$0	$0	$0							50	0	0	0
Water Pumps with VFD's 1	$0	$4,200,336	$0	$113,728	$0	$0	$0							3,150	0	0	0
HVAC Fans with VFD's 1	$0	$5,596,434	$0	$78,750	$0	$0	$0							1,575	0	0	0
Air Compressors with VFD's 1	$0	$549,597	$0	$78,110	$0	$0	$0							918	0	0	0
Water Pumps with VFD's 5	$0	$3,060,245	$0	$82,859	$0	$0	$0							459	0	0	0
HVAC Fans with VFD's 5	$0	$16,309,609	$0	$298,350	$0	$0	$0							918	0	0	0
Air Compressors with VFD's 5	$0	$1,373,993	$0	$195,275	$0	$0	$0							459	0	0	0
Water Pumps with VFD's 10	$0	$12,240,979	$0	$4,921,435	$0	$0	$0							918	0	0	0
HVAC Fans with VFD's 10	$0	$16,309,609	$0	$1,781,443	$0	$0	$0							459	0	0	0
Air Compressors with VFD's 10	$0	$5,495,973	$0	$5,371,102	$0	$0	$0							918	0	0	0
Commercial Skylight 14"	$0	$48,160	$0	$96,000	$0	$0	$0							200	0	0	0

APPENDIX D: 2009 SURVEY RESULTS

Appendix D1 – 2012 Residential Survey Results

APPENDIX D1 - 2012 Residential Survey Results

Q1a: On a scale of 1 to 5, where 1 = “Not At All Concerned” and 5 = “Very Concerned,” please rate ... The cost of electricity

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
5 - Very Concerned	58.7%	61.3% C	56.3%	58.3%
4	20.3%	19.7%	18.9%	22.2%
3	14.3%	13.7%	16.9% D	12.5%
2	2.2%	1.5%	2.3%	2.8%
1 - Not At All Concerned	1.0%	1.1%	1.3%	0.8%
No Answer	3.4%	2.7%	4.3%	3.4%
MEAN	4.4	4.4	4.3	4.4

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q1b: On a scale of 1 to 5, where 1 = “Not At All Concerned” and 5 = “Very Concerned,” please rate ... The environment

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
5 - Very Concerned	42.3%	40.5%	44.2%	42.4%
4	24.1%	23.4%	22.3%	26.4%
3	19.1%	22.3% CD	17.4%	17.5%
2	5.1%	4.9%	5.5%	4.8%
1 - Not At All Concerned	2.2%	2.0%	2.8%	1.9%
No Answer	7.2%	6.9%	7.7%	7.0%
MEAN	4.1	4.0	4.1	4.1

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q2: Are you aware that FirstEnergy currently offers Residential Energy Efficiency Programs?

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Yes	51.6%	51.9%	49.1%	53.5%
No	47.5%	46.8%	50.0%	45.9%
No Answer	0.9%	1.3%	0.9%	0.6%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q3: Have you participated in any FirstEnergy Energy Efficiency Programs?

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Yes	11.9%	13.0%	10.8%	11.7%
No	85.5%	84.4%	86.0%	86.1%
No Answer	2.7%	2.6%	3.2%	2.2%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q3a: (If participated in efficiency program) Have you participated in FirstEnergy's CFL Energy Efficiency Program?

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	295	111	84	100

Yes	39.7%	39.6%	34.5%	44.0%
No	52.9%	51.4%	59.5%	49.0%
No Answer	7.5%	9.0%	6.0%	7.0%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q3b: (If participated in efficiency program) Have you participated in any other FirstEnergy's Energy Efficiency Program(s)?

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	295	111	84	100
Yes	41.7%	45.9%	41.7%	37.0%
No	51.2%	45.9%	51.2%	57.0%
No Answer	7.1%	8.1%	7.1%	6.0%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q4: Has the cost of electricity caused you to use electricity any differently over the past year?

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Yes	69.6%	70.4%	66.2%	71.7% C
No - cost doesn’t impact my usage decisions	7.6%	7.0%	9.4% D	6.7%
No - I haven’t thought about it	10.1%	10.0%	10.4%	9.8%
Not yet but I’m considering it	11.6%	11.6%	12.6%	10.7%
No Answer	1.1%	0.9%	1.3%	1.1%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q5: Is natural gas available at this residence? (choose one only)

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Yes, natural gas is available here	76.2%	75.4%	80.2% BD	73.4%
No	17.5%	18.8% C	11.5%	21.6% C
Don't Know	6.2%	5.8%	8.1% D	4.8%
No Answer	0.2%	0.1%	0.3%	0.2%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q6: Which of the following best describes your household electricity use during the past 12 months? (mark one only)

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Have used electricity without trying to reduce	9.7%	7.9%	11.9% B	9.5%
Have taken some steps to reduce usage	68.6%	67.8%	69.7%	68.2%
Have taken a lot of steps to reduce househol	21.4%	24.1% C	17.8%	22.0% C
No Answer	0.4%	0.2%	0.6%	0.4%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q7: Do you think that over the next 12 months your household will: (please mark one)

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)

TOTAL	2484	852	776	856
Do a lot more to reduce electric use	23.9%	24.3%	23.5%	23.8%
Do a little more to reduce electric use	61.9%	62.0%	61.0%	62.6%
Do a little less to reduce electric use	4.6%	5.3%	4.5%	4.0%
Do a lot less to reduce electric use	1.2%	1.2%	0.9%	1.4%
Not do anything to reduce electric use	7.0%	5.9%	8.6% B	6.7%
Increase electric usage	0.7%	0.6%	0.8%	0.7%
No Answer	0.8%	0.8%	0.8%	0.8%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q8: How many light bulbs in your home are on more than 4 hours per day? (If a fixture has two bulbs count as 2 bulbs)

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
None	7.2%	6.9%	6.7%	8.1%
One	9.8%	9.5%	9.3%	10.5%
Two	20.8%	20.5%	19.7%	22.1%
Three	12.6%	12.0%	14.0%	11.9%
Four	14.3%	15.0%	13.7%	14.0%
Five	6.2%	6.0%	4.9%	7.5% C
Six	8.2%	8.8%	7.5%	8.2%
Seven	2.7%	3.8% D	2.4%	1.9%
Eight	5.2%	4.3%	5.9%	5.3%
Nine	1.2%	1.2%	1.5%	1.1%
Ten	4.0%	4.7% D	4.9% D	2.6%
Eleven	0.6%	0.2%	0.8%	0.8%
Twelve	2.2%	2.1%	2.6%	1.9%
Thirteen	0.4%	0.5%	0.3%	0.4%
Fourteen	0.4%	0.5%	0.4%	0.5%
Fifteen	0.6%	0.6%	0.8%	0.5%
Sixteen	0.3%	0.2%	0.4%	0.4%
Seventeen	0.1%	0.2%		
Eightteen	0.3%	0.4%	0.5%	0.1%
Nineteen	0.1%		0.1%	0.2%
Twenty	0.6%	0.2%	0.8%	0.8%
Twenty-two	0.1%	0.1%	0.1%	
Twenty-three	0.1%		0.1%	0.1%
Twenty-four	0.1%	0.2%	0.1%	
Twenty-five	0.2%	0.1%	0.1%	0.4%
Over 25	0.6%	0.6%	0.8%	0.4%
Other	0.0%		0.1%	
Don't Know	0.2%		0.4%	0.2%

No Answer	0.9%	1.3%	1.0%	0.5%
MEAN	4.5	4.5	4.8	4.3

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q9: Do you have any compact fluorescent light (CFL) bulbs installed in your home?

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Yes	73.3%	75.2% C	68.4%	75.7% C
No	26.0%	24.2%	30.3% BD	23.8%
No Answer	0.8%	0.6%	1.3%	0.5%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q10: (If have CFL bulbs) How many compact fluorescent light bulbs do you have in your home?

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	1820	641	531	648
None	0.4%	0.5%	0.6%	0.3%
One	5.8%	3.9%	7.9% B	5.9%
Two	11.5%	10.6%	11.7%	12.3%
Three	6.5%	7.2%	5.8%	6.3%
Four	10.2%	11.4% C	7.5%	11.1% C
Five	6.7%	6.9%	7.2%	6.2%
Six	10.0%	9.4%	8.7%	11.7%
Seven	2.8%	2.3%	2.4%	3.5%
Eight	7.0%	6.4%	8.1%	6.8%
Nine	2.0%	2.2%	2.3%	1.5%
Ten	7.7%	7.6%	8.9%	6.8%
Eleven	1.0%	1.1%	0.9%	0.9%
Twelve	5.4%	5.5%	5.6%	5.2%
Thirteen	0.6%	0.6%	0.8%	0.5%

Fourteen	2.1%	2.0%	2.1%	2.3%
Fifteen	3.1%	3.4%	3.0%	2.8%
Sixteen	1.3%	0.9%	1.5%	1.4%
Seventeen	1.0%	1.1%	0.9%	0.9%
Eightteen	1.0%	1.7% D	1.1%	0.3%
Nineteen	0.5%	0.3%	0.4%	0.9%
Twenty	4.1%	4.7%	4.1%	3.5%
Twenty-one	0.4%	0.3%	0.4%	0.5%
Twenty-two	0.4%	0.3%	0.2%	0.6%
Twenty-three	0.3%	0.3%	0.4%	0.3%
Twenty-four	0.3%	0.5%		0.3%
Twenty-five	1.5%	1.7%	0.9%	1.7%
Over 25	3.8%	4.2%	4.0%	3.4%
Other	0.3%	0.2%	0.6%	0.3%
Don't Know	0.2%		0.6%	0.2%
No Answer	1.9%	2.8%	1.5%	1.4%
MEAN	8.9	9.3	8.9	8.6

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q11a: Please indicate if you have made the change in the last 5 years, plan to make the change in the next 2 years, would consider the change in the next 2 years, or would not make the change ... Purchase a programmable thermostat

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Made Change	42.9%	41.0%	45.0%	42.9%
Plan Change	5.4%	5.6%	5.0%	5.6%
Consider Change	19.2%	21.4% C	15.9%	20.0% C
Won't Change / Don't have	27.3%	26.4%	28.4%	27.1%
No Answer	5.3%	5.6%	5.8%	4.4%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q11b: Please indicate if you have made the change in the last 5 years, plan to make the change in the next 2 years, would consider the change in the next 2 years, or would not make the change ... Purchase energy efficient Dishwasher

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Made Change	28.3%	28.9%	27.8%	28.2%
Plan Change	5.4%	4.8%	6.6%	4.9%
Consider Change	16.3%	16.2%	18.2%	14.6%
Won't Change / Don't have	44.3%	44.2%	40.9%	47.5% C
No Answer	5.7%	5.9%	6.6%	4.8%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q11c: Please indicate if you have made the change in the last 5 years, plan to make the change in the next 2 years, would consider the change in the next 2 years, or would not make the change ... Purchase energy efficient Electric Dryer

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Made Change	30.5%	33.1% C	28.1%	30.0%
Plan Change	5.6%	4.7%	6.7%	5.5%
Consider Change	22.7%	23.4%	21.1%	23.4%
Won't Change / Don't have	35.2%	33.9%	37.0%	34.8%
No Answer	6.1%	4.9%	7.1%	6.3%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q11d: Please indicate if you have made the change in the last 5 years, plan to make the change in the next 2 years, would consider the change in the next 2 years, or would not make the change ... Purchase energy efficient Clothes Washer

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)

TOTAL	2484	852	776	856
Made Change	38.5%	41.9% C	34.0%	39.3% C
Plan Change	6.9%	6.1%	8.1%	6.5%
Consider Change	23.9%	23.5%	23.7%	24.5%
Won't Change / Don't have	25.4%	23.7%	28.1% B	24.5%
No Answer	5.3%	4.8%	6.1%	5.1%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q11e: Please indicate if you have made the change in the last 5 years, plan to make the change in the next 2 years, would consider the change in the next 2 years, or would not make the change ... Purchase energy efficient Refrigerator

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Made Change	38.4%	39.8%	37.2%	38.1%
Plan Change	9.5%	8.7%	10.1%	9.9%
Consider Change	25.1%	25.9%	23.8%	25.4%
Won't Change / Don't have	22.0%	20.8%	23.1%	22.2%
No Answer	5.0%	4.8%	5.8%	4.4%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q11f: Please indicate if you have made the change in the last 5 years, plan to make the change in the next 2 years, would consider the change in the next 2 years, or would not make the change ... Purchase energy efficient Stand-alone Freezer

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Made Change	14.0%	14.1%	13.9%	14.1%
Plan Change	4.6%	5.0%	4.5%	4.2%
Consider Change	13.6%	15.7% C	12.1%	12.9%

Won't Change / Don't have	60.3%	58.0%	61.3%	61.8%
No Answer	7.4%	7.2%	8.1%	7.0%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q11g: Please indicate if you have made the change in the last 5 years, plan to make the change in the next 2 years, would consider the change in the next 2 years, or would not make the change ... Purchase compact fluorescent light bulbs

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Made Change	47.1%	47.9%	44.6%	48.7%
Plan Change	12.9%	12.2%	12.9%	13.6%
Consider Change	19.6%	21.0%	19.5%	18.2%
Won't Change / Don't have	14.7%	13.6%	15.9%	14.8%
No Answer	5.7%	5.3%	7.2% D	4.7%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q11h: Please indicate if you have made the change in the last 5 years, plan to make the change in the next 2 years, would consider the change in the next 2 years, or would not make the change ... Replace electric water heater

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Made Change	17.6%	19.1% C	15.5%	18.0%
Plan Change	5.6%	5.3%	5.7%	6.0%
Consider Change	14.7%	14.9%	13.4%	15.5%
Won't Change / Don't have	55.7%	54.1%	58.2%	54.9%
No Answer	6.4%	6.6%	7.2%	5.6%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q11i: Please indicate if you have made the change in the last 5 years, plan to make the change in the next 2 years, would consider the change in the next 2 years, or would not make the change ... Replace my Central AC system

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Made Change	17.3%	18.3% C	14.7%	18.7% C
Plan Change	4.4%	4.1%	4.9%	4.2%
Consider Change	16.1%	17.4%	14.8%	16.1%
Won't Change / Don't have	55.8%	54.9%	57.5%	55.0%
No Answer	6.4%	5.3%	8.1% B	6.0%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q11j: Please indicate if you have made the change in the last 5 years, plan to make the change in the next 2 years, would consider the change in the next 2 years, or would not make the change ... Replace my Window AC(s)

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Made Change	14.6%	16.0%	13.9%	13.8%
Plan Change	4.0%	4.7%	4.0%	3.4%
Consider Change	10.3%	10.3%	11.2%	9.6%
Won't Change / Don't have	63.9%	62.0%	62.8%	66.8% B
No Answer	7.2%	7.0%	8.1%	6.4%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q11k: Please indicate if you have made the change in the last 5 years, plan to make the change in the next 2

years, would consider the change in the next 2 years, or would not make the change ... Replace my electric heating system

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Made Change	8.3%	9.3% C	6.2%	9.3% C
Plan Change	1.6%	1.5%	1.8%	1.4%
Consider Change	6.6%	6.3%	6.4%	6.9%
Won't Change / Don't have	76.1%	75.6%	77.6%	75.2%
No Answer	7.4%	7.3%	8.0%	7.1%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q11l: Please indicate if you have made the change in the last 5 years, plan to make the change in the next 2 years, would consider the change in the next 2 years, or would not make the change ... Unplug/remove old refrigerator or freezer

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Made Change	12.3%	14.6% CD	11.1%	11.2%
Plan Change	3.6%	3.3%	4.5%	3.2%
Consider Change	11.7%	13.3% C	9.8%	11.9%
Won't Change / Don't have	65.2%	62.3%	65.9%	67.5% B
No Answer	7.1%	6.6%	8.8% D	6.2%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q11m: Please indicate if you have made the change in the last 5 years, plan to make the change in the next 2 years, would consider the change in the next 2 years, or would not make the change ... Participate in a FirstEnergy Online energy efficiency audit

THE

	TOTAL	OHIO EDISON	ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Made Change	2.0%	2.2%	1.8%	1.9%
Plan Change	6.5%	6.6%	6.4%	6.5%
Consider Change	42.2%	42.3%	41.8%	42.6%
Won't Change / Don't have	40.1%	40.7%	39.0%	40.4%
No Answer	9.2%	8.2%	11.0%	8.5%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q11n: Please indicate if you have made the change in the last 5 years, plan to make the change in the next 2 years, would consider the change in the next 2 years, or would not make the change ... Participate in a home energy efficiency audit

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Made Change	3.0%	3.5%	3.0%	2.6%
Plan Change	7.0%	6.5%	6.6%	7.8%
Consider Change	43.6%	44.6%	42.4%	43.7%
Won't Change / Don't have	37.9%	37.8%	37.5%	38.3%
No Answer	8.5%	7.6%	10.6% BD	7.6%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q11o: Please indicate if you have made the change in the last 5 years, plan to make the change in the next 2 years, would consider the change in the next 2 years, or would not make the change ... Adjust time of day I use appliances

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)

TOTAL	2484	852	776	856
Made Change	12.3%	14.4% D	11.2%	11.1%
Plan Change	5.4%	5.8%	5.3%	5.3%
Consider Change	34.8%	35.4%	34.5%	34.5%
Won't Change / Don't have	41.9%	39.7%	41.9%	44.3%
No Answer	5.5%	4.7%	7.1% B	4.9%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q12: Do you have any outdoor / security lights?

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Yes	60.8%	64.8% C	57.0%	60.3%
No	37.8%	34.9%	39.9% B	38.8%
No Answer	1.4%	0.4%	3.1% BD	0.9%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q13a: (If have outdoor / security lights) How many of your outdoor security lights are ... Owned by you

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	1510	552	442	516
None	1.6%	1.3%	1.6%	1.9%
One	34.7%	38.0% C	29.0%	36.0% C
Two	28.5%	29.3%	29.0%	27.3%
Three	10.8%	10.0%	10.2%	12.2%
Four	7.6%	6.7%	9.0%	7.4%
Five	3.8%	3.8%	4.8%	2.9%
Six	3.0%	2.2%	3.8%	3.1%
Seven	1.3%	1.4%	2.0%	0.6%
Eight	0.5%	0.4%	1.1%	0.2%
Nine	0.3%	0.4%	0.5%	

Ten	1.0%	0.9%	0.9%	1.2%
Eleven	0.1%	0.2%		
Twelve	0.2%	0.4%		0.2%
Fifteen	0.2%	0.2%		0.4%
Eighteen	0.1%		0.2%	
Twenty	0.1%		0.2%	
Twenty-three	0.1%		0.2%	
Over 25	0.1%		0.5%	
Other	1.4%	0.5%	1.8%	1.9% B
Don't Know	0.1%			0.2%
No Answer	4.6%	4.3%	5.2%	4.5%
MEAN	2.5	2.3	3.0	2.4

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q13b: (If have outdoor / security lights) How many of your outdoor security lights are ... Owned by your electric company

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	1510	552	442	516
None	36.4%	35.3%	38.5%	35.7%
One	5.0%	4.9%	5.2%	5.0%
Two	1.1%	0.5%	2.0% B	1.0%
Three	0.1%	0.2%		
Four	0.1%		0.2%	0.2%
Seventeen	0.1%			0.2%
Twenty-one	0.1%		0.2%	
Over 25	0.1%		0.2%	
Don't Know	0.4%	0.4%	0.2%	0.6%
No Answer	56.7%	58.7%	53.4%	57.4%
MEAN	1.9	1.2	2.7	1.7

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q14: (If have outdoor / security lights) How are the outdoor security lights operated? (mark all that apply)

THE ILLUMINATING

	TOTAL	OHIO EDISON	COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	1509	551	442	516
Motion Sensitive	42.7%	39.6%	43.7%	45.2%
Switch	36.4%	32.1%	45.2% BD	33.5%
Photocell	27.4%	34.5% CD	19.9%	26.2% C
Timer	13.4%	12.7%	13.1%	14.3%
On 24 hours	2.1%	2.4%	1.1%	2.5%
Don't Know	2.6%	2.2%	2.5%	3.1%
Other	2.4%	3.1%	1.8%	2.1%
No Answer	0.7%	1.3% C	0.2%	0.4%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q15: How old is your primary refrigerator?

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Under 1 year	7.7%	8.3%	6.8%	7.8%
1 to 4 years	29.0%	28.1%	30.5%	28.6%
5 to 10 years	33.8%	35.7%	32.2%	33.3%
11 to 20 years	18.2%	18.3%	17.4%	18.8%
More than 20 years	3.5%	3.2%	4.0%	3.5%
Don't Know	6.7%	5.9%	7.5%	6.9%
Do not have a refrigerator	0.1%	0.1%	0.1%	
No Answer	1.0%	0.5%	1.4%	1.1%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q16: Do you have an additional refrigerator?

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)

TOTAL	2484	852	776	856
Yes	33.1%	33.0%	32.0%	34.1%
No	65.3%	65.8%	65.9%	64.4%
No Answer	1.6%	1.2%	2.2%	1.5%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q17: (If have additional refrigerator) How often do you operate your second refrigerator?

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	822	281	249	292
All year	81.6%	79.7%	85.1%	80.5%
Part-time	13.5%	15.7% C	9.6%	14.7%
None, it is unplugged and not in use	4.5%	3.9%	4.8%	4.8%
No Answer	0.4%	0.7%	0.4%	

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q18: Do you have a stand-alone food freezer in use in this residence? (Only include freezers that are not part of the refrigerator.)

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Yes	41.8%	45.8% C	35.8%	43.2% C
No	56.4%	53.3%	61.3% BD	55.0%
No Answer	1.8%	0.9%	2.8% B	1.8%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q19: (If have freezer) How often do you operate your second freezer?

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	1038	390	278	370
All year	90.3%	90.3%	90.3%	90.3%
Part-time	3.4%	3.1%	4.0%	3.2%
None, it is unplugged and not in use	4.7%	4.4%	4.7%	5.1%
No Answer	1.6%	2.3%	1.1%	1.4%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q20a: What types of fuel are used to operate the water heater(s) in this residence? - MAIN WATER HEATER

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Natural gas	66.0%	64.3%	71.9% BD	62.4%
Electricity	26.9%	31.3% C	21.5%	27.2% C
Other	3.8%	2.7% C	1.2%	7.4% BC
None	0.6%	0.4%	1.2%	0.4%
No Answer	2.7%	1.3%	4.3% B	2.7% B

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q20b: What types of fuel are used to operate the water heater(s) in this residence? - SECONDARY WATER HEATER - MULTIPLE RESPONSE

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON

	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Natural gas	2.1%	1.3%	1.9%	2.9% B
Electricity	1.1%	1.6%	0.8%	0.9%
Other	0.3%	0.4%	0.3%	0.4%
None	8.0%	7.4%	7.2%	9.2%
No Answer	88.5%	89.3%	89.8% D	86.6%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q21: How old is your MAIN water heater?

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Under 1 year	7.0%	9.0% CD	5.9%	5.8%
1 to 4 years	25.4%	26.5% D	27.8% D	22.2%
5 to 10 years	32.9%	31.6%	34.5%	32.6%
11 to 20 years	17.8%	17.8%	14.6%	20.7% C
More than 20 years	3.6%	4.1% C	1.5%	5.0% C
Don't Know	12.1%	10.2%	13.3%	13.0%
No Answer	1.2%	0.7%	2.3% BD	0.7%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q22a: What types of fuel or energy are used to heat this residence? - MAIN HEATING SOURCE

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Natural gas	73.5%	72.9%	79.1% BD	69.0%
Electricity	14.7%	14.8%	12.9%	16.2%
Oil	2.3%	3.5% CD	1.5%	1.9%
Other	7.5%	7.3% C	3.6%	11.3% BC

None	0.5%	0.6%	0.8%	0.1%
No Answer	1.4%	0.9%	2.1%	1.4%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q22b: What types of fuel or energy are used to heat this residence? - SECONDARY HEATING SOURCE - MULTIPLE RESPONSE

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Electricity	9.5%	9.6%	10.6%	8.5%
Natural gas	4.1%	3.6%	4.0%	4.8%
Oil	0.6%	1.3% CD	0.3%	0.1%
Other	3.1%	4.9% CD	2.2%	2.1%
None	6.9%	6.1%	6.2%	8.3%
No Answer	76.2%	75.1%	77.2%	76.4%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q23a: What type of heating systems are used for your primary and secondary heating sources? - MAIN HEATING SYSTEM

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Oil / Gas Furnance (Boiler or hot water syster	12.5%	12.8%	13.5%	11.3%
Gas furnace (Hot Air)	63.8%	62.7%	64.9%	63.9%
Central Electric Furnace	5.0%	4.6%	4.8%	5.5%
Air Heat Pump	1.9%	3.1% CD	1.5%	0.9%
Geothermal Heat Pump	1.1%	1.5% C	0.3%	1.4% C
Stand-Alone Electric Baseboard	3.3%	4.5% C	1.4%	4.0% C
Other (Fireplace-Stove-Space Heaters, etc.)	4.9%	4.8%	4.1%	5.7%
Don't know	3.7%	2.2%	5.5% B	3.6%
No Answer	3.8%	3.9%	3.9%	3.6%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q23b: What type of heating systems are used for your primary and secondary heating sources? - SECONDARY HEATING SYSTEM - MULTIPLE RESPONSE

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Oil / Gas Furnance (Boiler or hot water syster	1.2%	1.9% D	1.2%	0.6%
Gas furnace (Hot Air)	3.5%	4.2% C	2.1%	4.0% C
Central Electric Furnace	0.8%	1.3% C	0.4%	0.6%
Air Heat Pump	1.2%	1.9% D	0.9%	0.7%
Geothermal Heat Pump	0.1%	0.1%	0.1%	0.1%
Stand-Alone Electric Baseboard	2.5%	3.1%	2.7%	1.6%
Other (Fireplace-Stove-Space Heaters, etc.)	15.6%	18.1% C	12.4%	16.0% C
Don't know	2.9%	2.6%	3.5%	2.7%
No Answer	74.0%	68.8%	78.1% B	75.5% B

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q24: How old is your MAIN heating system?

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Under 1 year	3.9%	4.3%	3.6%	3.9%
1 to 4 years	16.7%	18.1% C	14.4%	17.4%
5 to 10 years	26.5%	27.3%	26.3%	25.9%
11 to 20 years	24.6%	24.1%	24.6%	25.2%
More than 20 years	14.0%	14.0%	14.4%	13.8%
Don't Know	13.0%	11.4%	14.9% B	12.7%
No Answer	1.2%	0.8%	1.7%	1.1%

Comparison Groups: BCD
Independent Z-Test for Percentages

Upper case letters indicate significance at the 95% level.

Q25: The next time you need to select a heating system, what would you choose? (choose one only)

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Gas Furnace (Hot Air)	62.7%	61.7%	62.4%	64.0%
Oil / Gas Furnace (Boiler or hot water system	10.1%	9.9%	9.8%	10.7%
Central Electric Furnace	7.4%	6.3%	8.4%	7.6%
Geothermal Heat Pump	5.1%	5.0%	4.3%	5.8%
Stand Alone Electric Baseboard	2.4%	2.7%	1.8%	2.6%
Air Heat Pump	2.3%	3.9% CD	2.2% D	0.8%
Other	4.1%	4.2%	4.6%	3.5%
Don't Know	3.0%	3.4%	3.1%	2.5%
No Answer	2.9%	2.8%	3.5%	2.5%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q26: Do you have central air conditioning?

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Yes	70.2%	69.6%	69.6%	71.3%
No	29.1%	30.0%	28.9%	28.4%
No Answer	0.7%	0.4%	1.5% BD	0.4%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q27a: (If have central air conditioning) What types of WHOLE HOUSE (central) air conditioning or cooling

systems are used to cool this residence? - MAIN COOLING SYSTEM

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	1743	593	540	610
Electric whole house central air conditioning	87.7%	84.0%	88.5% B	90.5% B
Heat pump	4.8%	7.4% CD	4.1%	2.8%
Whole house fan	2.5%	2.7%	3.1%	1.8%
Geothermal system	2.0%	2.7% C	0.9%	2.3%
No Answer	3.0%	3.2%	3.3%	2.6%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q27b: (If have central air conditioning) What types of WHOLE HOUSE (central) air conditioning or cooling systems are used to cool this residence? - SECONDARY COOLING SYSTEM - MULTIPLE RESPONSE

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	1743	593	540	610
Whole house fan	4.6%	5.2%	4.1%	4.4%
Electric whole house central air conditioning	1.6%	2.0%	1.5%	1.3%
Heat pump	0.8%	0.5%	0.7%	1.1%
Geothermal system	0.1%	0.2%	0.2%	
No Answer	93.1%	92.4%	93.7%	93.3%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q28: (If have central air conditioning) How old is your MAIN central air conditioning unit?

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)

TOTAL	1743	593	540	610
Under 1 year	4.9%	5.1%	5.0%	4.6%
1 to 4 years	16.9%	17.2%	14.8%	18.5%
5 to 10 years	29.5%	31.0%	29.8%	27.9%
11 to 20 years	29.7%	29.3%	29.6%	30.2%
More than 20 years	7.6%	6.6%	9.1%	7.2%
Don't Know	9.8%	9.4%	9.6%	10.3%
No Answer	1.5%	1.3%	2.0%	1.3%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q29: (If have central air conditioning) How often is your central air conditioner serviced?

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON	
	(A)	(B)	(C)	(D)	
TOTAL	1743	593	540	610	
Every year	34.1%	34.7%	36.7%	31.3%	
Every 2 years	24.3%	21.2%	22.8%	28.5%	BC
Every 5 years	11.0%	11.3%	11.3%	10.3%	
Over 5 years	9.4%	10.1%	9.8%	8.2%	
Don't Know	19.2%	20.4%	17.6%	19.3%	
No Answer	2.1%	2.2%	1.9%	2.3%	

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q30: Choose the statement that BEST DESCRIBES your air conditioning USAGE pattern at this residence during summer months. (choose one only)

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Have Central Air but do not use	1.8%	2.1%	2.2%	1.2%
Only have Window Air conditioners	18.6%	17.8%	19.5%	18.6%
Use only on hot or humid days on a consister	28.3%	25.7%	29.5%	29.9%

Turn on for the summer and leave on day, ev	12.6%	15.1% C	9.4%	12.9% C
Turn on for the summer and manually change	12.2%	11.7%	11.0%	13.8%
In summer use a programmable thermostat th	14.0%	13.1%	15.1%	14.0%
Have a programmable thermostat but manual	5.4%	5.0%	6.1%	5.0%
No Air Conditioning	0.8%	0.9%	0.6%	0.8%
No Answer	6.3%	8.3% D	6.7% D	3.9%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q31: How many window or wall air conditioners do you use in this residence?

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
None	58.3%	59.5%	57.7%	57.5%
One	15.6%	14.0%	16.6%	16.4%
Two	7.9%	7.7%	7.2%	8.5%
Three	2.4%	3.1% C	1.5%	2.5%
Four	0.8%	0.7%	1.3%	0.6%
Five	0.3%	0.1%	0.4%	0.4%
Over 5	0.2%	0.1%	0.5%	0.1%
No Answer	14.5%	14.8%	14.7%	14.1%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q32: What is the main type of fuel used for oven cooking? (choose one only)

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Electricity	51.9%	50.5%	49.2%	55.7% BC
Natural gas	34.4%	34.5% D	40.6% BD	28.7%
Propane	2.5%	2.3% C	0.5%	4.4% BC
Don't Know	0.2%	0.4%	0.1%	0.2%
None	0.2%	0.1%	0.1%	0.5%

No Answer	10.7%	12.2%	9.4%	10.4%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q33a: Which of the following are used in your residence? - Dishwasher

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
None	31.2%	33.3% C	27.3%	32.6% C
One	63.0%	60.6%	67.0% BD	61.9%
Two	0.5%	0.4%	0.8%	0.5%
Three or more	0.2%	0.2%	0.3%	0.1%
No Answer	5.0%	5.5%	4.6%	4.9%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q33b: Which of the following are used in your residence? - Dehumidifier

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
None	49.9%	48.0%	50.0%	51.8%
One	37.6%	39.7%	36.5%	36.7%
Two	2.9%	2.3%	2.7%	3.5%
Three or more	0.2%	0.2%	0.3%	0.2%
No Answer	9.3%	9.7%	10.6%	7.8%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q33c: Which of the following are used in your residence? - Well pump

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
None	67.1%	60.9%	76.7% BD	64.5%
One	20.6%	26.6% C	10.1%	24.1% C
Two	0.7%	0.8%	0.4%	0.9%
Three or more	0.2%	0.2%		0.4%
No Answer	11.4%	11.4%	12.9%	10.2%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q33d: Which of the following are used in your residence? - Stand-alone electric hot tub/whirlpool tub

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
None	79.7%	78.1%	80.7%	80.4%
One	7.5%	9.4% C	5.8%	7.2%
Two	0.2%	0.2%	0.1%	0.2%
No Answer	12.6%	12.3%	13.4%	12.1%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q33e: Which of the following are used in your residence? - Swimming pool pump (for above ground)

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)

TOTAL	2484	852	776	856
None	82.0%	81.5%	82.9%	81.9%
One	4.9%	5.3%	3.4%	6.0% C
Three or more	0.0%		0.1%	
No Answer	13.0%	13.3%	13.7%	12.1%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q33f: Which of the following are used in your residence? - Swimming pool pump (for in-ground)

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
None	83.9%	83.9%	84.0%	83.8%
One	2.1%	2.0%	1.2%	3.0% C
Two	0.2%		0.3%	0.2%
Three or more	0.2%	0.1%	0.3%	0.1%
No Answer	13.7%	14.0%	14.3%	12.9%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q33g: Which of the following are used in your residence? - Whole house fan

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
None	67.4%	67.1%	66.0%	68.9%
One	15.7%	16.9%	15.1%	15.1%
Two	2.1%	1.8%	3.1% D	1.4%
Three or more	2.8%	2.0%	3.1%	3.4%
No Answer	12.0%	12.2%	12.8%	11.2%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q33h: Which of the following are used in your residence? - Home theater

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
None	73.3%	73.9%	70.2%	75.5% C
One	11.5%	11.5%	12.5%	10.6%
Two	1.7%	1.2%	2.2%	1.9%
Three or more	0.3%	0.5%	0.4%	0.1%
No Answer	13.1%	12.9%	14.7%	11.9%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q33i: Which of the following are used in your residence? - TiVo / DVR / Hard drive video recorder

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
None	41.9%	39.7%	39.8%	46.0% BC
One	36.0%	39.2% D	36.0%	32.8%
Two	7.6%	6.7%	8.0%	8.1%
Three or more	3.9%	4.5% D	4.9% D	2.5%
No Answer	10.6%	10.0%	11.3%	10.6%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q33j: Which of the following are used in your residence? - Satellite dish / Cable TV service

THE

	TOTAL	OHIO EDISON	ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
None	19.6%	16.3%	20.9% B	21.8% B
One	60.1%	63.6% CD	58.4%	58.3%
Two	7.0%	6.6%	6.3%	7.9%
Three or more	6.3%	7.2%	5.7%	6.0%
No Answer	7.0%	6.3%	8.8% D	6.0%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q33k: Which of the following are used in your residence? - Large screen (40” or larger) TV - Plasma

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
None	63.4%	61.6%	62.6%	65.8%
One	18.6%	20.2%	17.7%	17.8%
Two	2.1%	2.0%	2.2%	2.0%
Three or more	0.6%	0.7%	0.5%	0.5%
No Answer	15.5%	15.5%	17.0%	14.0%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q33l: Which of the following are used in your residence? - Large screen (40” or larger) TV - Rear Projector

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
None	72.1%	71.4%	71.3%	73.6%
One	7.6%	7.4%	7.5%	8.1%
Two	0.6%	0.5%	0.8%	0.6%

Three or more	0.2%	0.1%	0.4%	0.1%
No Answer	19.4%	20.7%	20.1%	17.6%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q33m: Which of the following are used in your residence? - Large screen (40” or larger) TV - LCD or LED

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
None	54.4%	54.7%	53.9%	54.7%
One	23.8%	23.4%	23.7%	24.2%
Two	5.8%	5.6%	5.3%	6.3%
Three or more	1.1%	0.6%	1.4%	1.3%
No Answer	15.0%	15.7%	15.7%	13.6%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q33n: Which of the following are used in your residence? - Other televisions

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
None	10.7%	11.0%	10.8%	10.3%
One	28.7%	27.7%	30.7%	28.0%
Two	27.7%	28.5%	26.4%	27.9%
Three or more	28.3%	28.9%	26.9%	29.1%
No Answer	4.5%	3.9%	5.2%	4.7%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q33o: Which of the following are used in your residence? - Desktop personal computer

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
None	22.1%	20.2%	22.3%	23.9%
One	57.5%	60.8% C	54.9%	56.7%
Two	10.5%	9.5%	12.2%	9.8%
Three or more	3.8%	3.6%	4.0%	3.9%
No Answer	6.0%	5.9%	6.6%	5.7%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q33p: Which of the following are used in your residence? - Smart-Surge Protector (Energy Saving)

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
None	37.7%	39.7%	38.4%	35.2%
One	24.4%	24.6%	24.2%	24.2%
Two	15.3%	13.8%	13.9%	18.0% BC
Three or more	14.0%	13.8%	14.3%	13.9%
No Answer	8.6%	8.0%	9.1%	8.8%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q34a: Please rate your likelihood to participate in programs that promote the following energy saving measures: Compact fluorescent bulbs

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON

	(A)	(B)	(C)	(D)	
TOTAL	2484	852	776	856	
5 - Very Likely	36.7%	37.0%	33.9%	39.0%	C
4	12.1%	12.1%	11.3%	12.7%	
3	15.3%	15.8%	16.5%	13.7%	
2	7.6%	8.1%	7.3%	7.4%	
1 - Not At All Likely	16.8%	15.8%	19.1%	15.8%	
Already participated in FE Program	5.6%	5.6%	5.8%	5.5%	
No Answer	5.8%	5.5%	6.1%	6.0%	
MEAN	3.5	3.5	3.4	3.6	

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q34b: Please rate your likelihood to participate in programs that promote the following energy saving measures: LED light bulbs

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
5 - Very Likely	28.7%	29.8%	28.2%	27.9%
4	14.3%	14.0%	15.5%	13.6%
3	19.0%	18.0%	19.2%	20.0%
2	7.9%	8.1%	7.6%	7.8%
1 - Not At All Likely	19.6%	19.4%	19.5%	19.9%
Already participated in FE Program	1.8%	2.3%	1.3%	1.6%
No Answer	8.8%	8.5%	8.8%	9.2%
MEAN	3.3	3.3	3.3	3.2

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q34c: Please rate your likelihood to participate in programs that promote the following energy saving measures: Outdoor security lighting

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)

TOTAL	2484	852	776	856
5 - Very Likely	23.7%	25.0%	21.0%	24.8%
4	10.2%	9.7%	11.1%	9.9%
3	13.8%	14.1%	13.9%	13.3%
2	8.4%	8.0%	10.1% D	7.2%
1 - Not At All Likely	33.9%	33.5%	34.0%	34.3%
Already participated in FE Program	2.7%	2.9%	1.8%	3.2%
No Answer	7.4%	6.8%	8.1%	7.2%
MEAN	2.8	2.8	2.7	2.8

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q34d: Please rate your likelihood to participate in programs that promote the following energy saving measures: 2nd refrigerator removal

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
5 - Very Likely	7.1%	6.8%	7.1%	7.4%
4	2.3%	1.6%	3.0%	2.3%
3	5.3%	6.5%	4.4%	4.9%
2	5.6%	4.6%	5.3%	6.8% B
1 - Not At All Likely	64.9%	65.4%	65.5%	64.0%
Already participated in FE Program	1.8%	1.9%	1.8%	1.8%
No Answer	13.0%	13.3%	13.0%	12.9%
MEAN	1.6	1.6	1.6	1.6

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q34e: Please rate your likelihood to participate in programs that promote the following energy saving measures: Energy efficient electric water heaters

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)

TOTAL	2484	852	776	856
5 - Very Likely	18.1%	20.3% D	18.0%	16.0%
4	8.3%	9.0%	9.1%	6.7%
3	12.3%	10.6%	13.3%	13.1%
2	6.9%	6.1%	5.9%	8.5% C
1 - Not At All Likely	43.9%	43.7%	43.8%	44.2%
Already participated in FE Program	2.7%	3.5% C	1.4%	2.9% C
No Answer	7.9%	6.8%	8.4%	8.6%
MEAN	2.4	2.5	2.5	2.3

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q34f: Please rate your likelihood to participate in programs that promote the following energy saving measures: Programmable thermostat

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
5 - Very Likely	27.3%	27.8%	27.4%	26.6%
4	9.1%	8.1%	9.1%	10.0%
3	11.8%	12.8%	10.1%	12.3%
2	5.0%	4.3%	5.0%	5.5%
1 - Not At All Likely	30.0%	32.3%	29.3%	28.3%
Already participated in FE Program	8.3%	6.7%	9.1%	9.0%
No Answer	8.7%	8.0%	9.9%	8.3%
MEAN	3.0	2.9	3.0	3.0

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q34g: Please rate your likelihood to participate in programs that promote the following energy saving measures: Central air conditioner maintenance service

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856

5 - Very Likely	22.8%	22.5%	23.7%	22.3%
4	8.9%	8.0%	8.8%	10.0%
3	13.7%	13.7%	11.6%	15.7% C
2	5.3%	5.2%	4.8%	6.0%
1 - Not At All Likely	36.9%	38.1%	38.8% D	33.9%
Already participated in FE Program	3.6%	2.8%	4.3%	3.9%
No Answer	8.7%	9.6%	8.1%	8.3%
MEAN	2.7	2.7	2.7	2.8

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q34h: Please rate your likelihood to participate in programs that promote the following energy saving measures: Home energy audits

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
5 - Very Likely	18.2%	20.0%	17.1%	17.4%
4	12.0%	11.4%	12.8%	11.9%
3	19.5%	19.7%	18.4%	20.2%
2	8.6%	7.2%	8.4%	10.2% B
1 - Not At All Likely	32.6%	32.6%	33.8%	31.7%
Already participated in FE Program	0.7%	0.8%	0.8%	0.6%
No Answer	8.4%	8.3%	8.8%	8.1%
MEAN	2.7	2.8	2.7	2.7

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q34i: Please rate your likelihood to participate in programs that promote the following energy saving measures: Air sealing measures

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
5 - Very Likely	26.7%	28.4%	26.7%	25.1%

4	14.4%	13.3%	14.2%	15.7%
3	17.6%	16.4%	16.6%	19.5%
2	7.0%	6.3%	6.7%	7.8%
1 - Not At All Likely	25.4%	27.0%	26.0%	23.4%
Already participated in FE Program	1.7%	2.3%	1.3%	1.4%
No Answer	7.2%	6.2%	8.5%	7.1%
MEAN	3.1	3.1	3.1	3.1

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q34j: Please rate your likelihood to participate in programs that promote the following energy saving measures: Smart-Surge Protector for appliances, lights, computers

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
5 - Very Likely	32.4%	33.2%	34.0%	30.0%
4	14.9%	13.8%	15.6%	15.2%
3	15.9%	14.8%	14.2%	18.6% BC
2	7.1%	5.5%	8.0% B	7.9% B
1 - Not At All Likely	19.3%	21.4%	18.0%	18.5%
Already participated in FE Program	3.8%	4.7% C	2.8%	3.7%
No Answer	6.6%	6.6%	7.3%	6.1%
MEAN	3.4	3.4	3.4	3.3

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q34k: Please rate your likelihood to participate in programs that promote the following energy saving measures: Special credits or rates for allowing the utility to cycle AC for short periods during times of peak usages

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
5 - Very Likely	24.4%	26.2%	24.5%	22.4%

4	12.2%	11.6%	12.2%	12.6%
3	16.1%	14.4%	15.5%	18.3% B
2	7.6%	7.7%	6.4%	8.6%
1 - Not At All Likely	30.4%	31.1%	30.5%	29.7%
Already participated in FE Program	0.8%	0.9%	1.3% D	0.4%
No Answer	8.5%	8.0%	9.5%	7.9%
MEAN	2.9	2.9	2.9	2.9

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q35a: Please rate each of the following program types in terms of your interest levels: General information about ways to save energy

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
5 - Very Interested	45.7%	46.9%	46.0%	44.0%
4	16.1%	16.3%	15.3%	16.6%
3	19.0%	18.2%	18.9%	19.7%
2	6.0%	4.8%	6.2%	7.0%
1 - Not At All Interested	8.7%	9.5%	8.4%	8.3%
Already participated in FE Program	0.9%	0.9%	0.9%	0.9%
No Answer	3.6%	3.3%	4.3%	3.4%
MEAN	3.9	3.9	3.9	3.8

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q35b: Please rate each of the following program types in terms of your interest levels: First Energy's online audit to get customized information about energy saving opportunities specific to my home

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
5 - Very Interested	24.4%	25.2%	24.6%	23.4%
4	16.4%	17.5%	15.1%	16.6%

3	17.4%	16.4%	17.0%	18.6%
2	8.5%	7.2%	8.6%	9.8% B
1 - Not At All Interested	27.2%	28.9%	27.6%	25.1%
Already participated in FE Program	0.5%	0.1%	0.9% B	0.6%
No Answer	5.6%	4.7%	6.2%	6.0%
MEAN	3.0	3.0	3.0	3.0

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q35c: Please rate each of the following program types in terms of your interest levels: Cash rebates or coupons for energy efficient products

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
5 - Very Interested	50.1%	52.8% C	47.0%	50.2%
4	17.8%	16.5%	18.9%	17.9%
3	13.6%	12.7%	15.3%	13.0%
2	4.8%	4.1%	4.5%	5.6%
1 - Not At All Interested	9.4%	10.1%	9.5%	8.6%
Already participated in FE Program	0.4%	0.2%	0.4%	0.5%
No Answer	4.0%	3.5%	4.3%	4.2%
MEAN	4.0	4.0	3.9	4.0

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q35d: Please rate each of the following program types in terms of your interest levels: First Energy's online catalog of energy efficient products at reduced rates

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
5 - Very Interested	35.9%	37.1%	32.7%	37.5% C
4	17.6%	16.4%	19.8%	16.6%
3	15.9%	15.4%	14.8%	17.5%

2	6.8%	6.3%	7.0%	7.2%
1 - Not At All Interested	18.7%	20.5% D	19.1%	16.6%
Already participated in FE Program	0.2%		0.4%	0.1%
No Answer	4.9%	4.2%	6.2%	4.4%
MEAN	3.5	3.5	3.4	3.5

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q35e: Please rate each of the following program types in terms of your interest levels: Ways to track my electric usage on line

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
5 - Very Interested	28.5%	29.6%	28.5%	27.3%
4	14.4%	13.3%	13.9%	16.0%
3	15.9%	14.3%	16.9%	16.6%
2	7.3%	7.2%	7.3%	7.5%
1 - Not At All Interested	28.4%	30.8%	26.9%	27.3%
Already participated in FE Program	0.3%	0.4%	0.3%	0.2%
No Answer	5.2%	4.6%	6.2%	5.0%
MEAN	3.1	3.0	3.1	3.1

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q35f: Please rate each of the following program types in terms of your interest levels: Incentives for modifying the time you use electricity

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
5 - Very Interested	34.7%	36.2%	35.6%	32.4%
4	18.0%	17.7%	18.3%	17.9%
3	17.0%	16.1%	16.5%	18.5%
2	7.7%	7.0%	7.6%	8.5%

1 - Not At All Interested	17.8%	19.0%	16.6%	17.5%
Already participated in FE Program	0.2%		0.1%	0.4%
No Answer	4.7%	4.0%	5.3%	4.9%
MEAN	3.5	3.5	3.5	3.4

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q36a: Please rate your level of agreement with the following statements: I am willing to pay more for an efficient product in order to save energy and reduce energy costs in the future

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
5 - Completely Agree	21.0%	20.5%	23.2%	19.4%
4	20.7%	22.4% C	16.8%	22.4% C
3	31.5%	32.0%	31.6%	31.0%
2	9.9%	10.2%	10.6%	9.1%
1 - Completely Disagree	12.4%	10.8%	13.4%	13.1%
No Answer	4.5%	4.0%	4.5%	5.0%
MEAN	3.3	3.3	3.3	3.3

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q36b: Please rate your level of agreement with the following statements: I would install a programmable thermostat myself if it was provided by my utility company

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
5 - Completely Agree	37.0%	37.2%	35.8%	38.0%
4	12.3%	12.2%	12.4%	12.4%
3	14.7%	14.9%	14.4%	14.6%
2	6.4%	7.6%	6.1%	5.6%
1 - Completely Disagree	22.4%	22.4%	22.9%	21.8%
No Answer	7.2%	5.6%	8.4% B	7.6%

MEAN	3.4	3.4	3.4	3.4

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q36c: Please rate your level of agreement with the following statements: I would buy a higher efficiency water heater or appliance if a rebate was offered

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
5 - Completely Agree	25.9%	26.1%	25.9%	25.8%
4	17.7%	17.1%	18.7%	17.4%
3	20.9%	21.4%	20.1%	21.1%
2	8.8%	8.2%	8.5%	9.6%
1 - Completely Disagree	20.5%	22.2%	20.0%	19.4%
No Answer	6.2%	5.0%	6.8%	6.7%
MEAN	3.2	3.2	3.2	3.2

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q36d: Please rate your level of agreement with the following statements: I would allow my utility to have limited control of my central AC in times of peak electricity demand in return for a credit on my bill

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
5 - Completely Agree	13.1%	12.9%	13.8%	12.6%
4	11.3%	13.1% D	11.0%	9.7%
3	17.1%	16.2%	17.5%	17.8%
2	10.6%	11.2%	8.9%	11.6%
1 - Completely Disagree	40.3%	39.9%	40.7%	40.4%
No Answer	7.6%	6.7%	8.1%	7.9%
MEAN	2.4	2.4	2.4	2.4

Comparison Groups: BCD
Independent Z-Test for Percentages

Upper case letters indicate significance at the 95% level.

Q36e: Please rate your level of agreement with the following statements: I would be willing to turn in my second refrigerator if my utility offered to pick it up and offered me a cash payment

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
5 - Completely Agree	17.4%	18.9%	16.9%	16.2%
4	6.6%	5.0%	7.9% B	6.9%
3	10.9%	11.5%	10.4%	10.6%
2	7.6%	7.4%	6.8%	8.4%
1 - Completely Disagree	43.8%	43.4%	44.1%	43.9%
No Answer	13.8%	13.7%	13.9%	13.9%
MEAN	2.4	2.4	2.4	2.3

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q36f: Please rate your level of agreement with the following statements: I am interested in FirstEnergy's Free Online Audit to find out more about energy efficiency opportunities for my home

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
5 - Completely Agree	19.0%	20.8%	18.3%	17.9%
4	14.9%	14.8%	14.2%	15.7%
3	19.4%	18.5%	19.6%	20.2%
2	11.3%	9.7%	12.2%	12.0%
1 - Completely Disagree	29.7%	31.1%	28.9%	29.0%
No Answer	5.7%	5.0%	6.8%	5.3%
MEAN	2.8	2.8	2.8	2.8

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q37: What type of residence do you live in?

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Single family home	78.7%	81.7% C	73.7%	80.4% C
Duplex or two family home	3.6%	3.4%	5.2% D	2.3%
Condominium	4.6%	4.2%	6.4% BD	3.4%
Mobile home	3.3%	4.0% C	1.8%	4.0% C
Apartment in building with less than 5 units	1.8%	2.3%	1.7%	1.3%
Apartment in building with 5 or more units	7.2%	3.4%	10.3% B	8.1% B
No Answer	0.8%	0.9%	0.9%	0.6%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q38: Do you own or rent this residence?

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Own	81.1%	83.8% C	78.4%	81.0%
Rent	17.9%	14.9%	20.7% B	18.2%
No Answer	1.0%	1.3%	0.9%	0.8%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q39: Which best describes the use of this residence? (Please select one)

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON

	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Year round residence	96.5%	95.5%	97.8% B	96.4%
Seasonal - used in summer	1.9%	2.7% C	1.2%	1.8%
Seasonal - used in winter	0.3%	0.2%	0.1%	0.6%
Second home used throughout the year	0.6%	0.9% C	0.1%	0.8% C
No Answer	0.6%	0.6%	0.8%	0.5%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q40: What is the highest level of education you have completed? (Please select one)

	TOTAL (A)	OHIO EDISON (B)	THE ILLUMINATING COMPANY (C)	TOLEDO EDISON (D)
TOTAL	2484	852	776	856
Elementary school or less	0.4%	0.5%	0.4%	0.2%
Some high school	3.5%	3.1%	3.5%	3.9%
Graduated high school	24.8%	28.1% C	21.1%	25.0%
Some college	28.7%	27.8%	27.7%	30.4%
Graduated college	28.2%	26.4%	30.8%	27.6%
Post-graduate degree	13.3%	12.8%	15.2%	12.0%
No Answer	1.2%	1.4%	1.3%	0.9%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q41: Please indicate the number of people in your household in each of the following age ranges.

	TOTAL (A)	OHIO EDISON (B)	THE ILLUMINATING COMPANY (C)	TOLEDO EDISON (D)
TOTAL	2484	852	776	856
No Answer	2.3%	2.1%	3.0%	2.0%
Under 5 years old	7.9%	8.2%	8.0%	7.4%
One	5.4%	5.3%	5.4%	5.4%

Two	1.9%	2.3%	2.1%	1.4%
Three or more	0.6%	0.6%	0.5%	0.6%
5-18 years old	19.4%	21.4%	18.2%	18.6%
One	9.7%	11.6% D	9.1%	8.2%
Two	6.9%	8.0%	6.1%	6.7%
Three or more	2.8%	1.8%	3.0%	3.7% B
19-24 years old	12.4%	12.6%	10.7%	13.8%
One	8.1%	8.3%	6.7%	9.0%
Two	3.5%	3.5%	3.4%	3.6%
Three or more	0.8%	0.7%	0.6%	1.2%
25-34 years old	15.0%	12.9%	15.6%	16.6% B
One	9.2%	7.6%	9.7%	10.4% B
Two	5.6%	5.2%	5.4%	6.1%
Three or more	0.2%	0.1%	0.5%	0.1%
35-44 years old	14.6%	14.6%	14.8%	14.5%
One	9.3%	10.1%	9.0%	8.9%
Two	5.2%	4.5%	5.7%	5.5%
Three or more	0.1%		0.1%	0.1%
45-54 years old	25.0%	26.1%	24.2%	24.8%
One	15.0%	14.2%	15.5%	15.4%
Two	9.8%	11.5% C	8.5%	9.3%
Three or more	0.2%	0.4%	0.3%	
55-64 years old	30.9%	30.5%	30.8%	31.3%
One	17.5%	18.0%	17.0%	17.5%
Two	13.1%	12.2%	13.3%	13.8%
Three or more	0.3%	0.4%	0.5%	
65 years or older	36.2%	37.0%	37.0%	34.8%
One	19.9%	19.4%	21.8%	18.8%
Two	15.9%	17.1%	14.7%	15.7%
Three or more	0.4%	0.5%	0.5%	0.4%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q42: What is the age of the household member (or one of the household members) in whose name this residence is owned or rented?

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)

TOTAL	2484	852	776	856
18-24	1.3%	1.4%	0.9%	1.5%
25-34	8.4%	6.8%	8.4%	9.9% B
35-44	9.5%	9.7%	9.8%	9.1%
45-54	18.6%	19.6%	17.4%	18.8%
55-64	25.0%	24.9%	24.4%	25.7%
65 or older	31.0%	32.0%	32.5%	28.5%
No Answer	6.2%	5.5%	6.7%	6.4%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Q43: Please choose the category that best describes your total 2011 household income, before taxes, for people living in your residence.

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	2484	852	776	856
Under $15,000	9.0%	9.7% C	6.8%	10.3% C
$15,000 to just under $25,000	10.7%	11.3%	9.9%	11.0%
$25,000 to just under $35,000	11.2%	10.2%	13.5% BD	10.0%
$35,000 to just under $50,000	13.4%	15.7% C	10.8%	13.4%
$50,000 to just under $75,000	16.4%	16.1%	16.0%	17.2%
$75,000 to just under $100,000	10.5%	10.4%	9.9%	11.2%
$100,000 to just under $150,000	6.8%	6.3%	6.8%	7.2%
$150,000 to just under $200,000	2.1%	1.9%	2.8%	1.6%
$200,000 and over	1.7%	1.1%	2.4% B	1.5%
Prefer not to answer	14.8%	14.1%	17.3% D	13.2%
No Answer	3.3%	3.2%	3.6%	3.3%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

Appendix D-2 – 2012 Commercial Survey Results

APPENDIX D2 - 2012 Commercial Survey Results

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q1a: Please rate your company's concern about ... The price of electricity

		OPERATING COMPANY				
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY		TOLEDO EDISON	
	(A)	(B)	(C)		(D)	
TOTAL	300	100	100		100	
5 - Very Concerned	51.3%	50.0%	59.0%	D	45.0%	
4	16.3%	12.0%	17.0%		20.0%	
3	19.7%	23.0%	14.0%		22.0%	
2	4.0%	3.0%	7.0%		2.0%	
1 - Not At All Concerned	7.3%	9.0%	3.0%		10.0%	C
Don't Know	1.3%	3.0%			1.0%	
MEAN	4.0	3.9	4.2		3.9	

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q1b: Please rate your company's concern about ... The environmental impact of electricity consumption

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	300	100	100	100
5 - Very Concerned	27.0%	25.0%	28.0%	28.0%
4	16.3%	19.0%	18.0%	12.0%
3	30.3%	29.0%	31.0%	31.0%
2	9.7%	11.0%	10.0%	8.0%
1 - Not At All Concerned	13.0%	11.0%	11.0%	17.0%
Don't Know	3.7%	5.0%	2.0%	4.0%
MEAN	3.4	3.4	3.4	3.3

Comparison Groups: BCD

Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q1c: Please rate your company's concern about ... Your company's monthly electric bill amount

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	300	100	100	100
5 - Very Concerned	50.7%	54.0%	51.0%	47.0%
4	17.0%	14.0%	17.0%	20.0%
3	15.0%	12.0%	16.0%	17.0%
2	7.0%	8.0%	8.0%	5.0%
1 - Not At All Concerned	7.0%	7.0%	6.0%	8.0%
Don't Know	3.3%	5.0%	2.0%	3.0%
MEAN	4.0	4.1	4.0	4.0

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q2: What percentage of your company’s operating costs goes toward electricity?

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	300	100	100	100
10% or less	40.3%	39.0%	41.0%	41.0%
11% - 20%	10.3%	10.0%	11.0%	10.0%
21% - 30%	5.7%	3.0%	6.0%	8.0%
31% - 40%	3.3%	2.0%	5.0%	3.0%
41% - 50%	1.7%	1.0%	2.0%	2.0%
Over 50%	6.3%	5.0%	9.0%	5.0%
Don't Know	32.3%	40.0% C	26.0%	31.0%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q3: Has the cost of electricity caused your company to change the way it uses use electricity over the past year?

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	300	100	100	100
Yes	28.0%	25.0%	31.0%	28.0%
No, electricity prices don’t im	27.3%	26.0%	25.0%	31.0%
Not yet, but it is a concern	42.7%	45.0%	43.0%	40.0%
Don't Know	2.0%	4.0%	1.0%	1.0%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q4: Which of the following statements best describes the way your business has used electricity during the past 12 months?

		OPERATING COMPANY				
	TOTAL	OHIO EDISON		THE ILLUMINATING COMPANY		TOLEDO EDISON
	(A)	(B)		(C)		(D)
TOTAL	300	100		100		100
We have not tried to reduce t	19.3%	18.0%		21.0%		19.0%
We have taken some steps t	61.0%	68.0%	C	51.0%		64.0%
We have taken a lot of steps	18.3%	11.0%		28.0%	BD	16.0%
Don't Know	1.3%	3.0%				1.0%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q5: Which of the following statements best describes the way your company will use electricity over the next 12 months?

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	300	100	100	100
We will do a lot more to redu	13.7%	13.0%	15.0%	13.0%
We will do a little more to red	33.3%	32.0%	32.0%	36.0%
We will do a little less to redu	6.7%	7.0%	5.0%	8.0%
We will do a lot less to reduc	3.7%	2.0%	3.0%	6.0%
We will not do anything to re	31.3%	33.0%	33.0%	28.0%
We will increase electric use	7.7%	8.0%	10.0%	5.0%
Don't Know	3.7%	5.0%	2.0%	4.0%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q6: Which of the following information source(s) might your company use to find information about energy efficient measures and equipment.
[MULTIPLE RESPONSE]

		OPERATING COMPANY			
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON	
	(A)	(B)	(C)	(D)	
TOTAL	300	100	100	100	
Internet search engines such	46.3%	45.0%	44.0%	50.0%	
Your electric company's acc	29.0%	24.0%	32.0%	31.0%	
Your electric company's web	26.3%	28.0%	29.0%	22.0%	
Trade magazines	14.7%	15.0%	14.0%	15.0%	
Appliance or equipment man	13.7%	14.0%	8.0%	19.0%	C
Trade shows or seminars	7.7%	10.0%	5.0%	8.0%	

Newspaper articles	1.0%		3.0%	
Electric bill	1.0%	2.0%	1.0%	
Television	0.7%		2.0%	
Consulting engineers	0.7%	1.0%		1.0%
Energy audit	0.7%		2.0%	
Other churches	0.3%	1.0%		
Vendor data	0.3%			1.0%
Contractors	0.3%		1.0%	
Energy management system	0.3%		1.0%	
Don't Know / Refused	2.3%	2.0%	3.0%	2.0%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q7: Do you have any exit signs at your company?

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	300	100	100	100
Yes	80.3%	81.0%	83.0%	77.0%
No	19.7%	19.0%	17.0%	23.0%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q8: (If have exit signs) How many?

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	241	81	83	77
One	5.0%	2.5%	7.2%	5.2%

Two	11.6%	8.6%	15.7%	10.4%
Three	15.8%	22.2%	13.3%	11.7%
Four	9.1%	6.2%	7.2%	14.3%
Five	8.3%	7.4%	8.4%	9.1%
Six	7.1%	6.2%	9.6%	5.2%
Seven	2.1%	1.2%	2.4%	2.6%
Eight	4.1%	2.5%	6.0%	3.9%
Nine	2.1%	3.7%	2.4%	
Ten	3.3%	3.7%	2.4%	3.9%
Eleven	0.8%			2.6%
Twelve	5.0%	6.2%	2.4%	6.5%
Fourteen	0.4%			1.3%
Fifteen	2.1%	3.7%	1.2%	1.3%
Sixteen	2.1%	1.2%	2.4%	2.6%
Seventeen	0.4%			1.3%
Twenty	3.7%	7.4%	2.4%	1.3%
Over 20	7.9%	8.6%	7.2%	7.8%
Not Sure	9.1%	8.6%	9.6%	9.1%
MEAN	12.9	16.4	13.5	8.6

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q9: (If have exit signs) How many are energy efficient LED exit signs?

		OPERATING COMPANY					
	TOTAL	OHIO EDISON		THE ILLUMINATING COMPANY		TOLEDO EDISON	
	(A)	(B)		(C)		(D)	
TOTAL	241	81		83		77	
None	29.0%	24.7%		31.3%		31.2%	
One	4.1%	3.7%		4.8%		3.9%	
Two	5.0%	6.2%		3.6%		5.2%	
Three	9.1%	14.8%	C	4.8%		7.8%	
Four	3.7%	2.5%		1.2%		7.8%	C
Five	2.1%	1.2%		1.2%		3.9%	
Six	2.9%			7.2%		1.3%	
Seven	0.8%			1.2%		1.3%	
Eight	4.1%	2.5%		6.0%		3.9%	
Nine	0.8%	1.2%		1.2%			
Ten	2.9%	4.9%		2.4%		1.3%	
Eleven	0.4%					1.3%	
Twelve	2.5%	3.7%		2.4%		1.3%	
Fifteen	0.8%	2.5%					
Sixteen	0.4%	1.2%					

Seventeen	0.4%			1.3%
Twenty	1.2%	2.5%	1.2%	
Over 20	4.6%	4.9%	4.8%	3.9%
Not Sure	24.9%	23.5%	26.5%	24.7%
MEAN	7.7	10.1	8.6	4.1

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q10a: How many natural gas water heaters are at your company?

		OPERATING COMPANY				
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY		TOLEDO EDISON	
	(A)	(B)	(C)		(D)	
TOTAL	300	100	100		100	
One	33.3%	28.0%	42.0%	B	30.0%	
Two	10.0%	10.0%	9.0%		11.0%	
Three or more	11.7%	14.0%	6.0%		15.0%	C
None	28.3%	27.0%	30.0%		28.0%	
Not Sure	16.7%	21.0%	13.0%		16.0%	

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q10b: How many electric water heaters are at your company?

		OPERATING COMPANY			
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY		TOLEDO EDISON
	(A)	(B)	(C)		(D)
TOTAL	300	100	100		100
One	21.7%	23.0%	24.0%		18.0%
Two	7.7%	3.0%	12.0%	B	8.0%
Three or more	6.7%	9.0%	5.0%		6.0%

None	46.3%	39.0%	48.0%	52.0%
Not Sure	17.7%	26.0% C	11.0%	16.0%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q10b1: (If have electric water heater) About how old is the first electric water heater?

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	108	35	41	32
Under 5 years	40.7%	45.7%	43.9%	31.3%
5 to 10 years	27.8%	14.3%	31.7%	37.5% B
11 to 20 years	17.6%	28.6%	12.2%	12.5%
21 to 40 years	1.9%			6.3%
Don't Know	12.0%	11.4%	12.2%	12.5%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q10b2: (If have second electric water heater) About how old is the second electric water heater?

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	43	12	17	14
Under 5 years	27.9%	25.0%	35.3%	21.4%
5 to 10 years	25.6%	8.3%	35.3%	28.6%
11 to 20 years	34.9%	58.3% C	23.5%	28.6%
Don't Know	11.6%	8.3%	5.9%	21.4%

Comparison Groups: BCD
Independent Z-Test for Percentages

Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q10b3: (If have third water heater) bout how old is the third electric water heater?

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	20	9	5	6
Under 5 years	25.0%	33.3%	20.0%	16.7%
5 to 10 years	25.0%	22.2%	40.0%	16.7%
11 to 20 years	30.0%	33.3%	40.0%	16.7%
Don't Know	20.0%	11.1%		50.0%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q11: Are there any other water heaters at your company fueled by something other than natural gas or electricity?

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	300	100	100	100
Yes	1.7%	1.0%	3.0%	1.0%
No	91.7%	89.0%	95.0%	91.0%
Not Sure	6.7%	10.0% C	2.0%	8.0% C

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q11a: (If have water heaters fueled by something other than electric/natural gas) How many others?

		OPERATING COMPANY				
	TOTAL	OHIO EDISON		THE ILLUMINATING COMPANY	TOLEDO EDISON	
	(A)	(B)		(C)	(D)	
TOTAL	5	1		3	1	
One	40.0%			66.7%		
Three or more	60.0%	100.0%	C	33.3%	100.0%	C

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q11b1: (If have water heaters fueled by something other than electric/natural gas) How are they fueled?

		OPERATING COMPANY				
	TOTAL	OHIO EDISON		THE ILLUMINATING COMPANY	TOLEDO EDISON	
	(A)	(B)		(C)	(D)	
TOTAL	5	1		3	1	
Propane	60.0%	100.0%	C	33.3%	100.0%	C
Solar Thermal	20.0%			33.3%		
Oil	20.0%			33.3%		

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q12: Approximately what percentage of your office equipment such as computers, printers, copiers, etc. is EnergyStar rated?

OPERATING COMPANY

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	300	100	100	100
10% or less	19.3%	20.0%	22.0%	16.0%
11% - 20%	4.0%	2.0%	3.0%	7.0%
21% - 30%	6.3%	5.0%	6.0%	8.0%
31% - 40%	1.0%		1.0%	2.0%
41% - 50%	7.3%	8.0%	6.0%	8.0%
Over 50%	39.0%	42.0%	42.0%	33.0%
Don't Know	23.0%	23.0%	20.0%	26.0%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q13: Approximately what percentage of your total electric usage is for items and equipment plugged into electrical wall outlets?

	OPERATING COMPANY			
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	300	100	100	100
10% or less	12.7%	10.0%	13.0%	15.0%
11% - 20%	9.3%	9.0%	10.0%	9.0%
21% - 30%	6.0%	7.0%	6.0%	5.0%
31% - 40%	5.0%	4.0%	7.0%	4.0%
41% - 50%	9.0%	12.0%	5.0%	10.0%
Over 50%	46.0%	48.0%	47.0%	43.0%
Don't Know	12.0%	10.0%	12.0%	14.0%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q14: How many ICE Machines are at your location?

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
		OPERATING COMPANY		
	(A)	(B)	(C)	(D)
TOTAL	300	100	100	100
None	76.3%	75.0%	75.0%	79.0%
One	16.0%	17.0%	15.0%	16.0%
Two	2.3%	3.0%	2.0%	2.0%
Three	0.3%			1.0%
Four	0.7%	2.0%		
Five	0.3%		1.0%	
Six	0.7%	1.0%		1.0%
Seven	0.3%		1.0%	
Twelve	0.3%		1.0%	
Not Sure	2.7%	2.0%	5.0%	1.0%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q15: Are you a Grocery, Restaurant, or Food Service business?

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
		OPERATING COMPANY		
	(A)	(B)	(C)	(D)
TOTAL	300	100	100	100
Yes	7.7%	11.0% D	9.0%	3.0%
No	92.3%	89.0%	91.0%	97.0% B

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q16: (If grocery, restaurant or food service business) How many refrigerated display units are at your location?

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	23	11	9	3
None	4.3%		11.1%	
One	13.0%	18.2%	11.1%	
Two	17.4%	18.2%	11.1%	33.3%
Three	17.4%	18.2%	22.2%	
Four	21.7%	18.2%	33.3%	
Five	4.3%	9.1%		
Six	4.3%		11.1%	
Eight	4.3%	9.1%		
Nine	4.3%			33.3%
Fifteen	4.3%	9.1%		
Not Sure	4.3%			33.3%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q17: (If grocery, restaurant or food service business and have refrigerated display units) What percentage of the refrigerated display units at your location have enclosures such as curtains or doors?

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	22	11	8	3
33%	4.5%	9.1%		
50%	13.6%	18.2%	12.5%	
75%	4.5%	9.1%		
100%	72.7%	63.6%	87.5%	66.7%
Not Sure	4.5%			33.3%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q18: (If grocery, restaurant or food service business) How many freezer display units are at your location?

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	23	11	9	3
None	21.7%	9.1%	44.4%	
One	17.4%	18.2%	22.2%	
Two	26.1%	45.5%	11.1%	
Three	17.4%	18.2%	22.2%	
Four	4.3%	9.1%		
Six	4.3%			33.3%
Nine	4.3%			33.3%
Not Sure	4.3%			33.3%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q19: (If grocery, restaurant or food service business and have freezer display) What percentage of your freezer display units have gaskets that are due for replacement?

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	18	10	5	3
None	44.4%	40.0%	80.0%	
25%	5.6%	10.0%		
33%	5.6%			33.3%
50%	5.6%	10.0%		
100%	22.2%	20.0%	20.0%	33.3%
Not Sure/Refused	16.7%	20.0%		33.3%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q20: (If grocery, restaurant or food service business) How many refrigerated storage units are at your location?

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	23	11	9	3
None	4.3%		11.1%	
One	30.4%	36.4%	22.2%	33.3%
Two	30.4%	18.2%	55.6%	
Three	4.3%	9.1%		
Four	13.0%	18.2%	11.1%	
Six	4.3%	9.1%		
Nine	4.3%			33.3%
Ten	4.3%	9.1%		
Not Sure	4.3%			33.3%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q21: (If grocery, restaurant or food service business and have refrigerated storage units) What percentage of your refrigerated storage units have walk-in refrigerator strip curtains?

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	22	11	8	3
None	50.0%	45.5%	75.0%	
100%	36.4%	36.4%	25.0%	66.7%
Not Sure	13.6%	18.2%		33.3%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q22: (If grocery, restaurant or food service business) How many freezer storage units are at your location?

		OPERATING COMPANY			
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON	
	(A)	(B)	(C)	(D)	
TOTAL	23	11	9	3	
None	21.7%	9.1%	44.4%		
One	34.8%	27.3%	55.6%		
Two	30.4%	36.4%		100.0%	B
Three	4.3%	9.1%			
Four	4.3%	9.1%			
Six	4.3%	9.1%			

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q23: (If grocery, restaurant or food service business and have freezer storage units) What percentage of your freezer storage units have walk-in freezer strip curtains?

		OPERATING COMPANY			
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON	
	(A)	(B)	(C)	(D)	
TOTAL	18	10	5	3	
None	55.6%	60.0%	80.0%		
25%	5.6%	10.0%			
50%	5.6%	10.0%			
100%	22.2%	10.0%	20.0%	66.7%	B
Not Sure	11.1%	10.0%		33.3%	

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q24a: (If grocery, restaurant or food service business) Install or replace strip curtains on display units ... please indicate if you have made the change or would consider making the change at your company in the next 2 years

		OPERATING COMPANY			
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON	
	(A)	(B)	(C)	(D)	
TOTAL	23	11	9	3	
Made the change	17.4%	9.1%	11.1%	66.7%	B
Would consider changing in r	13.0%	9.1%	22.2%		
Neither	52.2%	54.5%	66.7%		
Don't Know	17.4%	27.3%		33.3%	

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q24b: (If grocery, restaurant or food service business) Replace gaskets on display units ... please indicate if you have made the change or would consider making the change at your company in the next 2 years

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	23	11	9	3
Made the change	26.1%	9.1%	44.4%	33.3%
Would consider changing in r	13.0%	9.1%	11.1%	33.3%
Neither	30.4%	36.4%	33.3%	
Don't Know	30.4%	45.5%	11.1%	33.3%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q24c: (If grocery, restaurant or food service business) Install new energy efficient refrigeration units ... please indicate if you have made the change or would consider making the change at your company in the next 2 years

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	23	11	9	3
Made the change	13.0%	9.1%	11.1%	33.3%
Would consider changing in r	26.1%	18.2%	44.4%	
Neither	39.1%	36.4%	44.4%	33.3%
Don't Know	21.7%	36.4%		33.3%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q25a: (If grocery, restaurant or food service business) Please rate your level of agreement with ... I would be willing to pay half the cost for the purchase and installation of any of the items just mentioned (strip curtains, gasket replacement, or energy efficient Refrigeration units)

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL ANSWERING	23	11	9	3
5 - Completely Agree	8.7%		22.2%	
4	100.0%		50.0%	
3	17.4%	27.3%	11.1%	
2	4.3%		11.1%	
1 - Completely Disagree	39.1%	36.4%	33.3%	66.7%
Don't Know	21.7%	27.3%	11.1%	33.3%
MEAN	2.3	2.1	2.8	1.0

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q25b: (If grocery, restaurant or food service business) Please rate your level of agreement with ... If any of the items were provided free of charge, I would install them (strip curtains, gasket replacement, or energy efficient refrigeration units)

		OPERATING COMPANY			
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON	
	(A)	(B)	(C)	(D)	
TOTAL ANSWERING	23	11	9	3	
5 - Completely Agree	78.3%	63.6%	88.9%	100.0%	B
3	5.6%	14.3%			
1 - Completely Disagree	13.0%	18.2%	11.1%		
Don't Know	4.3%	9.1%			
MEAN	4.4	4.0	4.6	5.0	

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q26: Do you have any occupancy sensors in your company?

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	300	100	100	100
Yes	24.7%	23.0%	27.0%	24.0%
No	71.7%	72.0%	72.0%	71.0%
Don't Know	3.7%	5.0%	1.0%	5.0%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q27: (If have occupancy sensors) How many occupancy sensors do you have?

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
		OPERATING COMPANY		
	(A)	(B)	(C)	(D)
TOTAL	74	23	27	24
One	12.2%	4.3%	22.2% B	8.3%
Two	13.5%	8.7%	14.8%	16.7%
Three	9.5%	17.4%	3.7%	8.3%
Four	4.1%		11.1%	
Five	5.4%			16.7%
Six	8.1%		11.1%	12.5%
Eight	1.4%	4.3%		
Nine	6.8%	4.3%	7.4%	8.3%
Ten	6.8%	21.7%		
Twelve	6.8%	4.3%	7.4%	8.3%
Fifteen	1.4%	4.3%		
Twenty	1.4%	4.3%		
More than 20	17.6%	21.7%	18.5%	12.5%
Not Sure	5.4%	4.3%	3.7%	8.3%
MEAN	14.4	15.6	17.6	9.3

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q28: Which of the following locations in your company have occupancy sensors.
[MULTIPLE RESPONSE]

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
		OPERATING COMPANY		
	(A)	(B)	(C)	(D)
TOTAL	74	23	27	24
Offices	35.1%	47.8% D	37.0%	20.8%
Hallways	33.8%	30.4%	51.9% D	16.7%
Restrooms	33.8%	21.7%	51.9% BD	25.0%
Conference rooms	27.0%	26.1%	33.3%	20.8%
Shop/Plant	9.5%	17.4%		12.5%
Stockroom	6.8%		7.4%	12.5%

Warehouse	5.4%	13.0%		4.2%
Break room	4.1%			12.5%
Entranceway	4.1%		7.4%	4.2%
Locker rooms	2.7%	4.3%	3.7%	
Kitchen	1.4%		3.7%	
Judge's chambers	1.4%			4.2%
Show room	1.4%	4.3%		
Volleyball / Basketball courts	1.4%	4.3%		
Cylinder dock	1.4%			4.2%
Laundry area	1.4%		3.7%	
Parking lot	1.4%	4.3%		
Gym	1.4%	4.3%		
Road	1.4%	4.3%		
Park entrance	1.4%	4.3%		
Marina entrance	1.4%	4.3%		
Don't Know / Refused	8.1%	8.7%	3.7%	12.5%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q29: Do you have any outdoor security lights at your company?

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	300	100	100	100
Yes	79.7%	80.0%	80.0%	79.0%
No	19.3%	20.0%	18.0%	20.0%
Don't Know	1.0%		2.0%	1.0%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q30: (If have outdoor security lights) How many outdoor security lights do you have?

	OPERATING COMPANY			
			THE	

	TOTAL	OHIO EDISON	ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	239	80	80	79
One	11.7%	15.0%	12.5%	7.6%
Two	15.1%	15.0%	16.3%	13.9%
Three	12.6%	15.0%	11.3%	11.4%
Four	8.8%	8.8%	12.5%	5.1%
Five	3.8%	3.8%	6.3%	1.3%
Six	6.3%	6.3%	5.0%	7.6%
Seven	2.1%		1.3%	5.1%
Eight	3.3%	2.5%	1.3%	6.3%
Nine	2.1%	1.3%	2.5%	2.5%
Ten	5.0%	5.0%	2.5%	7.6%
Twelve	3.3%	3.8%	2.5%	3.8%
Fourteen	0.4%	1.3%		
Fifteen	0.8%	1.3%	1.3%	
Sixteen	0.8%		1.3%	1.3%
Eighteen	2.1%	2.5%	2.5%	1.3%
Twenty	4.6%	6.3%	2.5%	5.1%
Over 20	7.1%	6.3%	8.8%	6.3%
Not Sure	10.0%	6.3%	10.0%	13.9%
MEAN	12.9	18.3	11.4	8.4

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q31: (If have outdoor security lights) How many hours per night are they on?

			OPERATING COMPANY	
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	239	80	80	79
1 hour	0.4%	1.3%		
2 hours	0.4%		1.3%	
3 hours	0.4%		1.3%	
4 hours	2.5%	3.8%	2.5%	1.3%
5 hours	2.1%		5.0%	1.3%
6 hours	2.1%	2.5%	2.5%	1.3%
7 hours	0.8%	2.5%		
8 hours	23.0%	18.8%	26.3%	24.1%
9 hours	2.9%	3.8%	2.5%	2.5%

10 hours	27.6%	26.3%		27.5%	29.1%
11 hours	1.7%	1.3%		3.8%	
12 hours	26.4%	35.0%	C	17.5%	26.6%
13 hours	0.8%				2.5%
14 hours	0.4%			1.3%	
Not Sure	8.4%	5.0%		8.8%	11.4%
MEAN	9.6	9.8		9.1	9.9

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q32: (If have outdoor security lights) How are the outdoor security lights operated?

		OPERATING COMPANY				
	TOTAL	OHIO EDISON		THE ILLUMINATING COMPANY		TOLEDO EDISON
	(A)	(B)		(C)		(D)
TOTAL	239	80		80		79
Photocell	53.6%	50.0%		46.3%		64.6% C
Timer	37.2%	40.0%		45.0%	D	26.6%
Motion sensors	13.4%	16.3%		13.8%		10.1%
Switch	5.4%	3.8%		6.3%		6.3%
Don't Know	3.3%	3.8%		5.0%		1.3%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q33_1: Please tell me if you already have it, are planning to install in the next 2 years, would consider installing in the next 2 years, or would not consider installing ... occupancy sensors

		OPERATING COMPANY				
	TOTAL	OHIO EDISON		THE ILLUMINATING COMPANY		TOLEDO EDISON
	(A)	(B)		(C)		(D)
TOTAL	300	100		100		100

Already have it	15.7%	17.0%		19.0%		11.0%	
Planning to install in next 2 y	6.7%	8.0%		5.0%		7.0%	
Consider to install in next 2 y	8.7%	13.0%	C	4.0%		9.0%	
Would NOT consider	59.0%	51.0%		69.0%	B	57.0%	
Don't Know	10.0%	11.0%	C	3.0%		16.0%	C

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q33_2: Please tell me if you already have it, are planning to install in the next 2 years, would consider installing in the next 2 years, or would not consider installing ...energy efficient outdoor security lighting

		OPERATING COMPANY				
	TOTAL	OHIO EDISON		THE ILLUMINATING COMPANY		TOLEDO EDISON
	(A)	(B)		(C)		(D)
TOTAL	300	100		100		100
Already have it	24.0%	20.0%		21.0%		31.0%
Planning to install in next 2 y	8.7%	13.0%	D	9.0%		4.0%
Consider to install in next 2 y	20.7%	20.0%		24.0%		18.0%
Would NOT consider	37.7%	39.0%		36.0%		38.0%
Don't Know	9.0%	8.0%		10.0%		9.0%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q33_3: Please tell me if you already have it, are planning to install in the next 2 years, would consider installing in the next 2 years, or would not consider installing ... energy efficient indoor lighting

		OPERATING COMPANY				
	TOTAL	OHIO EDISON		THE ILLUMINATING COMPANY		TOLEDO EDISON
	(A)	(B)		(C)		(D)
TOTAL	300	100		100		100
Already have it	37.3%	33.0%		42.0%		37.0%

Planning to install in next 2 y	12.0%	14.0%		11.0%		11.0%	
Consider to install in next 2 y	19.3%	21.0%		21.0%		16.0%	
Would NOT consider	24.0%	22.0%		24.0%		26.0%	
Don't Know	7.3%	10.0%	C	2.0%		10.0%	C

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q33_4: Please tell me if you already have it, are planning to install in the next 2 years, would consider installing in the next 2 years, or would not consider installing ... energy efficient ICE Machines

		OPERATING COMPANY					
	TOTAL	OHIO EDISON		THE ILLUMINATING COMPANY		TOLEDO EDISON	
	(A)	(B)		(C)		(D)	
TOTAL	300	100		100		100	
Already have it	3.3%	5.0%		2.0%		3.0%	
Planning to install in next 2 y	2.0%	3.0%		3.0%			
Consider to install in next 2 y	4.0%	4.0%		4.0%		4.0%	
Would NOT consider	84.3%	80.0%		90.0%	B	83.0%	
Don't Know	6.3%	8.0%	C	1.0%		10.0%	C

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q33_5: Please tell me if you already have it, are planning to install in the next 2 years, would consider installing in the next 2 years, or would not consider installing ... energy efficient LED exit signs

		OPERATING COMPANY					
	TOTAL	OHIO EDISON		THE ILLUMINATING COMPANY		TOLEDO EDISON	
	(A)	(B)		(C)		(D)	
TOTAL	300	100		100		100	
Already have it	24.3%	22.0%		27.0%		24.0%	
Planning to install in next 2 y	8.7%	12.0%		8.0%		6.0%	

Consider to install in next 2 y	16.7%	17.0%	18.0%	15.0%
Would NOT consider	42.3%	37.0%	44.0%	46.0%
Don't Know	8.0%	12.0% C	3.0%	9.0%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q33a: (If have electric water heaters) Are you planning to replace your electric water heaters with heat pump water heaters within the next 2 years, would you consider heat pump water heaters in the next 2 years, or would you not consider installing heat pump water heaters?

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	108	35	41	32
Planning in next 2 years	3.7%		4.9%	6.3%
Consider in next two years	11.1%	11.4%	12.2%	9.4%
Would not install	71.3%	74.3%	70.7%	68.8%
Already installed	5.6%	5.7%	2.4%	9.4%
Not Sure	8.3%	8.6%	9.8%	6.3%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q33b: Are you planning to have an onsite energy audit within the next 2 years, would you consider an onsite energy audit in the next 2 years, or would you not consider an energy audit in the next 2 years?

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	300	100	100	100
Planning in next 2 years	5.3%	3.0%	7.0%	6.0%
Consider in next two years	21.0%	21.0%	12.0%	30.0% C

Would not consider	53.7%	51.0%	65.0%	BD	45.0%
Already had it	6.3%	7.0%	7.0%		5.0%
Not Sure	13.7%	18.0%	9.0%		14.0%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q34a: Rate the likelihood that your company would participate in the following programs if offered by your electric company ... Occupancy sensors

		OPERATING COMPANY			
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON	
	(A)	(B)	(C)	(D)	
TOTAL	300	100	100	100	
5 - Very Likely	12.7%	12.0%	13.0%	13.0%	
4	3.3%	6.0%	1.0%	3.0%	
3	9.0%	8.0%	10.0%	9.0%	
2	6.0%	7.0%	2.0%	9.0%	C
1 - Not At All Likely	57.0%	54.0%	60.0%	57.0%	
Already Participated	4.0%	3.0%	7.0%	2.0%	
Don't Know	8.0%	10.0%	7.0%	7.0%	
MEAN	2.0	2.0	1.9	2.0	

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q34b: Rate the likelihood that your company would participate in the following programs if offered by your electric company ... Outdoor security lighting

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	300	100	100	100

5 - Very Likely	26.3%	28.0%	31.0%	20.0%
4	6.3%	7.0%	7.0%	5.0%
3	12.3%	15.0%	8.0%	14.0%
2	5.3%	3.0%	4.0%	9.0%
1 - Not At All Likely	39.0%	34.0%	38.0%	45.0%
Already Participated	6.3%	8.0%	7.0%	4.0%
Don't Know	4.3%	5.0%	5.0%	3.0%
MEAN	2.7	2.9	2.9	2.4

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q34c: Rate the likelihood that your company would participate in the following programs if offered by your electric company ... Indoor Lighting

		OPERATING COMPANY				
	TOTAL	OHIO EDISON		THE ILLUMINATING COMPANY		TOLEDO EDISON
	(A)	(B)		(C)		(D)
TOTAL	300	100		100		100
5 - Very Likely	26.3%	29.0%		26.0%		24.0%
4	7.0%	12.0%	C	4.0%		5.0%
3	15.7%	9.0%		20.0%	B	18.0%
2	5.0%	2.0%		6.0%		7.0%
1 - Not At All Likely	35.0%	38.0%		29.0%		38.0%
Already Participated	5.0%	3.0%		9.0%		3.0%
Don't Know	6.0%	7.0%		6.0%		5.0%
MEAN	2.8	2.9		2.9		2.7

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q34d: Rate the likelihood that your company would participate in the following programs if offered by your electric company ... Energy efficient LED exit signs

	OPERATING COMPANY		
		THE ILLUMINATING	

	TOTAL	OHIO EDISON		COMPANY		TOLEDO EDISON	
	(A)	(B)		(C)		(D)	
TOTAL	300	100		100		100	
5 - Very Likely	22.0%	24.0%		18.0%		24.0%	
4	5.0%	6.0%		7.0%		2.0%	
3	9.3%	13.0%	D	10.0%		5.0%	
2	5.0%	4.0%		3.0%		8.0%	
1 - Not At All Likely	44.0%	38.0%		42.0%		52.0%	B
Already Participated	8.7%	7.0%		15.0%	D	4.0%	
Don't Know	6.0%	8.0%		5.0%		5.0%	
MEAN	2.5	2.7		2.5		2.3	

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q34e: Rate the likelihood that your company would participate in the following programs if offered by your electric company ... Rebates for energy efficient electric water heaters

				OPERATING COMPANY			
	TOTAL	OHIO EDISON		THE ILLUMINATING COMPANY		TOLEDO EDISON	
	(A)	(B)		(C)		(D)	
TOTAL	300	100		100		100	
5 - Very Likely	20.7%	21.0%		19.0%		22.0%	
4	6.0%	11.0%	C	2.0%		5.0%	
3	15.7%	15.0%		18.0%		14.0%	
2	6.7%	9.0%		4.0%		7.0%	
1 - Not At All Likely	43.0%	37.0%		46.0%		46.0%	
Already Participated	1.7%	1.0%		4.0%			
Don't Know	6.3%	6.0%		7.0%		6.0%	
MEAN	2.5	2.7		2.4		2.5	

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q34f: Rate the likelihood that your company would participate in the following programs if offered by your electric company ... Rebates for more energy efficient ice Machines

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	300	100	100	100
5 - Very Likely	9.0%	14.0% D	8.0%	5.0%
4	2.7%		4.0%	4.0%
3	2.3%	4.0%	2.0%	1.0%
2	2.0%	3.0%	2.0%	1.0%
1 - Not At All Likely	77.0%	75.0%	75.0%	81.0%
Already Participated	1.0%		3.0%	
Don't Know	6.0%	4.0%	6.0%	8.0%
MEAN	1.5	1.7	1.5	1.4

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q34g: (If grocery, restaurant or food service business) Rate the likelihood that your company would participate in the following programs if offered by your electric company ... Strip curtains for refrigerated display units

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	23	11	9	3
5 - Very Likely	21.7%	18.2%	22.2%	33.3%
4	4.3%	9.1%		
3	4.3%	9.1%		
1 - Not At All Likely	43.5%	27.3%	66.7%	33.3%
Don't Know	26.1%	36.4%	11.1%	33.3%
MEAN	2.5	2.9	2.0	3.0

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q34h: (If grocery, restaurant or food service business) Rate the likelihood that your company would participate in the following programs if offered by your electric company ... Gasket replacement for refrigerated display units

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	23	11	9	3
5 - Very Likely	43.5%	36.4%	44.4%	66.7%
4	8.7%	18.2%		
3	13.0%	18.2%	11.1%	
1 - Not At All Likely	13.0%		33.3%	
Already Participated	4.3%		11.1%	
Don't Know	17.4%	27.3%		33.3%
MEAN	3.9	4.3	3.3	5.0

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q34i: (If grocery, restaurant or food service business) Rate the likelihood that your company would participate in the following programs if offered by your electric company ... Rebates for more energy efficient refrigeration units

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	23	11	9	3
5 - Very Likely	47.8%	36.4%	66.7%	33.3%
4	4.3%	9.1%		
3	21.7%	27.3%	11.1%	33.3%
1 - Not At All Likely	8.7%		22.2%	
Don't Know	17.4%	27.3%		33.3%
MEAN	4.0	4.1	3.9	4.0

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q34j: (If grocery, restaurant or food service business) Rate the likelihood that your company would participate in the following programs if offered by your electric company ... Rebates for more energy efficient freezer units

	OPERATING COMPANY			
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	23	11	9	3
5 - Very Likely	52.2%	36.4%	66.7%	66.7%
4	4.3%	9.1%		
3	17.4%	27.3%	11.1%	
1 - Not At All Likely	8.7%		22.2%	
Don't Know	17.4%	27.3%		33.3%
MEAN	4.1	4.1	3.9	5.0

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q35a: Rate your level of agreement with ... My company is willing to pay more to save energy and reduce energy costs in the future

	OPERATING COMPANY					
	TOTAL	OHIO EDISON		THE ILLUMINATING COMPANY		TOLEDO EDISON
	(A)	(B)		(C)		(D)
TOTAL	300	100		100		100
5 - Completely Agree	100.0%	100.0%		100.0%		100.0%
4	11.3%	10.0%		12.0%		12.0%
3	31.3%	35.0%	D	37.0%	D	22.0%
2	8.7%	6.0%		10.0%		10.0%
1 - Completely Disagree	25.0%	23.0%		24.0%		28.0%
Don't Know	5.7%	6.0%		4.0%		7.0%
MEAN	2.9	3.0		2.8		2.9

Comparison Groups: BCD

Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q35b: Rate your level of agreement with ... My company is willing to pay more to be environmentally friendly

		OPERATING COMPANY			
	TOTAL	OHIO EDISON		THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)		(C)	(D)
TOTAL	300	100		100	100
5 - Completely Agree	100.0%	100.0%		100.0%	100.0%
4	7.0%	12.0%	D	6.0%	3.0%
3	29.0%	27.0%		32.0%	28.0%
2	11.0%	8.0%		9.0%	16.0%
1 - Completely Disagree	31.7%	31.0%		34.0%	30.0%
Don't Know	6.7%	5.0%		9.0%	6.0%
MEAN	2.6	2.7		2.4	2.6

Comparison Groups: BCD

Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q35c: Rate your level of agreement with ... My company would buy a higher efficiency water heater if a rebate was offered

		OPERATING COMPANY			
	TOTAL	OHIO EDISON		THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)		(C)	(D)
TOTAL	300	100		100	100
5 - Completely Agree	100.0%	100.0%		100.0%	100.0%
4	6.7%	4.0%		5.0%	11.0%
3	19.3%	26.0%	D	22.0%	D 10.0%
2	10.0%	10.0%		12.0%	8.0%
1 - Completely Disagree	42.3%	36.0%		44.0%	47.0%
Don't Know	4.7%	3.0%		4.0%	7.0%

MEAN	2.4	2.6	2.3	2.4

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q35d: Rate your level of agreement with ... My company would be willing to install occupancy sensors if they were provided for free

		OPERATING COMPANY			
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY		TOLEDO EDISON
	(A)	(B)	(C)		(D)
TOTAL	300	100	100		100
5 - Completely Agree	100.0%	100.0%	100.0%		100.0%
4	6.7%	6.0%	4.0%		10.0%
3	13.3%	13.0%	16.0%		11.0%
2	4.3%	1.0%	7.0%	B	5.0%
1 - Completely Disagree	32.3%	31.0%	33.0%		33.0%
Don't Know	5.7%	7.0%	6.0%		4.0%
MEAN	3.1	3.3	3.0		3.1

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q35e: Rate your level of agreement with ... My company would be interested in finding out more about efficient outdoor security lighting systems

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	300	100	100	100
5 - Completely Agree	100.0%	100.0%	100.0%	100.0%
4	9.3%	11.0%	8.0%	9.0%
3	14.7%	18.0%	13.0%	13.0%

2	8.0%	6.0%	10.0%	8.0%	
1 - Completely Disagree	39.3%	33.0%	38.0%	47.0%	B
Don't Know	5.3%	5.0%	7.0%	4.0%	
MEAN	2.7	2.9	2.7	2.4	

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q35f: Rate your level of agreement with ... My company would be interested in finding out more about efficient indoor lighting systems

	OPERATING COMPANY			
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	300	100	100	100
5 - Completely Agree	100.0%	100.0%	100.0%	100.0%
4	11.0%	12.0%	11.0%	10.0%
3	17.0%	13.0%	18.0%	20.0%
2	8.3%	6.0%	12.0%	7.0%
1 - Completely Disagree	32.3%	33.0%	31.0%	33.0%
Don't Know	5.0%	6.0%	4.0%	5.0%
MEAN	2.9	3.0	2.8	2.9

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q35g: Rate your level of agreement with ... We are interested in finding out more about efficient LED exit signs

	OPERATING COMPANY			
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	300	100	100	100

5 - Completely Agree	100.0%	100.0%	100.0%	100.0%
4	6.0%	3.0%	6.0%	9.0%
3	12.3%	13.0%	15.0%	9.0%
2	8.0%	5.0%	9.0%	10.0%
1 - Completely Disagree	52.3%	49.0%	50.0%	58.0%
Don't Know	4.7%	5.0%	7.0%	2.0%
MEAN	2.2	2.5	2.2	2.1

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q35h: Rate your level of agreement with ... We are interested in finding out more about the energy efficient water heater

		OPERATING COMPANY			
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY		TOLEDO EDISON
	(A)	(B)	(C)		(D)
TOTAL	300	100	100		100
5 - Completely Agree	100.0%	100.0%	100.0%		100.0%
4	8.3%	6.0%	9.0%		10.0%
3	13.3%	16.0%	12.0%		12.0%
2	10.7%	11.0%	10.0%		11.0%
1 - Completely Disagree	48.7%	39.0%	55.0%	B	52.0%
Don't Know	5.7%	9.0%	5.0%		3.0%
MEAN	2.2	2.5	2.0		2.2

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q36a: Please rate each of the following programs types in terms of your company's interest levels ... Cash rebates

	OPERATING COMPANY			
TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON	

	(A)	(B)	(C)	(D)	
TOTAL	300	100	100	100	
5 - Very Interested	44.3%	51.0%	44.0%	38.0%	
4	11.7%	8.0%	11.0%	16.0%	
3	15.3%	15.0%	16.0%	15.0%	
2	6.3%	3.0%	6.0%	10.0%	B
1 - No Interest	18.7%	17.0%	21.0%	18.0%	
Don't Know	3.7%	6.0%	2.0%	3.0%	
MEAN	3.6	3.8	3.5	3.5	

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q36b: Please rate each of the following programs types in terms of your company's interest levels ... Energy efficiency incentives

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	300	100	100	100
5 - Very Interested	27.3%	27.0%	30.0%	25.0%
4	15.3%	15.0%	11.0%	20.0%
3	20.0%	19.0%	23.0%	18.0%
2	9.0%	10.0%	5.0%	12.0%
1 - No Interest	23.0%	23.0%	25.0%	21.0%
Don't Know	5.3%	6.0%	6.0%	4.0%
MEAN	3.2	3.1	3.2	3.2

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q36c: Please rate each of the following programs types in terms of your company's interest levels ... Design assistance services

	OPERATING COMPANY			
			THE	

	TOTAL	OHIO EDISON	ILLUMINATING COMPANY	TOLEDO EDISON	
	(A)	(B)	(C)	(D)	
TOTAL	300	100	100	100	
5 - Very Interested	10.0%	13.0%	7.0%	10.0%	
4	5.7%	2.0%	6.0%	9.0%	B
3	17.3%	21.0%	17.0%	14.0%	
2	14.0%	15.0%	11.0%	16.0%	
1 - No Interest	47.0%	43.0%	53.0%	45.0%	
Don't Know	6.0%	6.0%	6.0%	6.0%	
MEAN	2.1	2.2	2.0	2.2	

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q36d: Please rate each of the following programs types in terms of your company's interest levels ... On-site energy assessments

	OPERATING COMPANY				
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON	
	(A)	(B)	(C)	(D)	
TOTAL	300	100	100	100	
5 - Very Interested	16.3%	18.0%	13.0%	18.0%	
4	7.3%	5.0%	7.0%	10.0%	
3	22.7%	27.0%	26.0%	15.0%	D
2	12.7%	11.0%	11.0%	16.0%	
1 - No Interest	36.0%	31.0%	40.0%	37.0%	
Don't Know	5.0%	8.0%	3.0%	4.0%	
MEAN	2.5	2.7	2.4	2.5	

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q36e: Please rate each of the following programs types in terms of your company's interest levels ... Account executives and trained technicians

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	300	100	100	100
5 - Very Interested	10.0%	10.0%	9.0%	11.0%
4	6.0%	4.0%	7.0%	7.0%
3	14.7%	18.0%	12.0%	14.0%
2	10.0%	8.0%	11.0%	11.0%
1 - No Interest	51.3%	52.0%	50.0%	52.0%
Don't Know	8.0%	8.0%	11.0%	5.0%
MEAN	2.1	2.0	2.0	2.1

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q36f: Please rate each of the following programs types in terms of your company's interest levels ...
Training, education and equipment seminars

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	300	100	100	100
5 - Very Interested	11.7%	15.0%	11.0%	9.0%
4	5.3%	4.0%	7.0%	5.0%
3	14.0%	14.0%	11.0%	17.0%
2	14.3%	14.0%	13.0%	16.0%
1 - No Interest	50.3%	47.0%	55.0%	49.0%
Don't Know	4.3%	6.0%	3.0%	4.0%
MEAN	2.1	2.2	2.0	2.1

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q36g: Please rate each of the following programs types in terms of your company's interest levels ...
Recommended upgrades and improvements

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	300	100	100	100
5 - Very Interested	20.7%	22.0%	19.0%	21.0%
4	11.0%	11.0%	7.0%	15.0%
3	22.0%	23.0%	26.0%	17.0%
2	11.0%	9.0%	8.0%	16.0%
1 - No Interest	30.3%	28.0%	34.0%	29.0%
Don't Know	5.0%	7.0%	6.0%	2.0%
MEAN	2.8	2.9	2.7	2.8

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q36h: Please rate each of the following programs types in terms of your company's interest levels ...
Decision making assistance

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	300	100	100	100
5 - Very Interested	10.3%	14.0%	11.0%	6.0%
4	8.0%	7.0%	8.0%	9.0%
3	16.3%	15.0%	12.0%	22.0%
2	11.7%	12.0%	9.0%	14.0%
1 - No Interest	47.7%	45.0%	53.0%	45.0%
Don't Know	6.0%	7.0%	7.0%	4.0%
MEAN	2.2	2.3	2.1	2.1

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q37: Including yourself, how many employees work at your location?

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	300	100	100	100
One	8.0%	6.0%	10.0%	8.0%
2-4	21.0%	19.0%	25.0%	19.0%
5-9	22.0%	23.0%	18.0%	25.0%
10-19	20.0%	21.0%	19.0%	20.0%
20-99	19.0%	22.0%	18.0%	17.0%
100-499	6.7%	6.0%	7.0%	7.0%
500 or more	2.0%	3.0%	1.0%	2.0%
Don't Know	1.3%		2.0%	2.0%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q38: How many employees work at this company across all locations?

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	300	100	100	100
One	8.0%	6.0%	10.0%	8.0%
2-4	17.7%	15.0%	21.0%	17.0%
5-9	16.0%	19.0%	13.0%	16.0%
10-19	15.3%	13.0%	16.0%	17.0%
20-99	17.0%	18.0%	17.0%	16.0%
100-499	8.3%	9.0%	5.0%	11.0%
500 or more	11.3%	15.0%	11.0%	8.0%
Don't Know	6.3%	5.0%	7.0%	7.0%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q39: How many locations does your company have?

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	300	100	100	100
One	73.3%	67.0%	77.0%	76.0%
2-4	5.7%	6.0%	6.0%	5.0%
5-9	2.3%	2.0%	1.0%	4.0%
10-19	7.3%	12.0% D	6.0%	4.0%
20-99	3.3%	3.0%	3.0%	4.0%
100-499	5.3%	7.0%	7.0%	2.0%
Don't Know	2.7%	3.0%		5.0%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q40: In what country is your organization headquartered?

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	300	100	100	100
U.S.	100.0%	100.0%	100.0%	100.0%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q41: In what state is your organization headquartered?

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
		OPERATING COMPANY		
	(A)	(B)	(C)	(D)
TOTAL	300	100	100	100
California	0.3%		1.0%	
Colorado	0.3%			1.0%
Connecticut	0.3%		1.0%	
Florida	0.3%	1.0%		
Illinois	1.0%	3.0%		
Indiana	0.3%			1.0%
Iowa	0.3%			1.0%
Maryland	0.3%			1.0%
Massachusetts	0.3%	1.0%		
Michigan	0.3%			1.0%
Minnesota	0.3%	1.0%		
Mississippi	0.3%			1.0%
Missouri	0.3%	1.0%		
New Jersey	0.3%		1.0%	
New York	0.3%			1.0%
Ohio	91.3%	88.0%	94.0%	92.0%
Pennsylvania	0.7%	1.0%	1.0%	
Rhode Island	0.3%		1.0%	
South Carolina	0.3%	1.0%		
Tennessee	0.3%	1.0%		
Texas	0.7%	1.0%	1.0%	
Washington	0.3%			1.0%
Wisconsin	0.3%	1.0%		

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q42: How many square feet does your business occupy?

	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
		OPERATING COMPANY		
	(A)	(B)	(C)	(D)

TOTAL	300	100	100	100
1,000	1.7%	4.0%		1.0%
1,200	1.3%	2.0%	1.0%	1.0%
1,300	0.7%		1.0%	1.0%
1,400	0.3%		1.0%	
1,500	1.3%	1.0%		3.0%
1,600	0.7%			2.0%
1,800	1.0%	1.0%	1.0%	1.0%
2,000	2.0%		3.0%	3.0%
2,100	0.3%			1.0%
2,200	0.3%	1.0%		
2,400	0.3%		1.0%	
2,500	2.0%	3.0%	1.0%	2.0%
2,600	0.7%		1.0%	1.0%
2,800	1.0%		3.0%	
3,000	1.0%		1.0%	2.0%
3,500	1.3%	2.0%	1.0%	1.0%
3,700	0.7%	1.0%	1.0%	
3,800	0.7%	1.0%	1.0%	
3,900	0.3%	1.0%		
4,000	2.7%	2.0%	5.0%	1.0%
4,200	0.3%			1.0%
4,800	0.3%		1.0%	
5,000	2.0%	1.0%	2.0%	3.0%
5,300	0.7%	1.0%		1.0%
5,500	0.7%	1.0%		1.0%
5,525	0.3%		1.0%	
6,000	2.0%	4.0%	2.0%	
6,400	0.3%			1.0%
7,000	1.3%		1.0%	3.0%
7,200	0.3%		1.0%	
7,500	0.7%			2.0%
8,000	1.0%		3.0%	
10,000	4.3%	4.0%	5.0%	4.0%
11,000	0.3%		1.0%	
12,000	1.0%	1.0%	2.0%	
13,000	0.3%			1.0%
13,800	0.3%		1.0%	
14,000	1.0%	1.0%	1.0%	1.0%
15,000	1.0%	2.0%		1.0%
15,500	0.3%			1.0%
16,000	0.3%			1.0%
20,000	1.3%		2.0%	2.0%
25,000	0.7%	1.0%		1.0%
30,000	2.3%	4.0%	3.0%	
32,000	0.3%			1.0%
38,000	0.7%		1.0%	1.0%
40,000	0.3%	1.0%		
45,000	0.7%		1.0%	1.0%
50,000	1.0%	2.0%		1.0%
60,000	1.0%		1.0%	2.0%
62,000	0.3%		1.0%	
70,000	0.3%	1.0%		
75,000	0.7%	1.0%		1.0%
80,000	0.3%	1.0%		

90,000	1.0%	1.0%	1.0%	1.0%
95,000	0.3%	1.0%		
100,000	0.3%	1.0%		
110,000	0.3%			1.0%
124,000	0.3%	1.0%		
132,000	0.3%		1.0%	
135,000	0.3%	1.0%		
150,000	1.0%	1.0%		2.0%
161,000	0.3%			1.0%
180,000	0.3%	1.0%		
214,000	0.3%			1.0%
225,000	0.3%	1.0%		
300,000	0.3%			1.0%
450,000	0.7%	1.0%		1.0%
500,000	0.7%	2.0%		
Don't Know/Refused	43.7%	44.0%	46.0%	41.0%
MEAN	37400.1	57867.9	14850.5	38611.9

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q43: Where are major decisions made on energy efficiency investments?

		OPERATING COMPANY		
	TOTAL	OHIO EDISON	THE ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)	(C)	(D)
TOTAL	300	100	100	100
Headquarters	95.7%	92.0%	96.0%	99.0% B
Local office	4.3%	8.0% D	4.0%	1.0%

Comparison Groups: BCD
Independent Z-Test for Percentages
Upper case letters indicate significance at the 95% level.

2012-2854 OHIO EE COMMERCIAL TELEPHONE SURVEY

Q44: What is the principal industry of your company?

	OPERATING COMPANY			
			THE	

	TOTAL	OHIO EDISON		ILLUMINATING COMPANY	TOLEDO EDISON
	(A)	(B)		(C)	(D)
TOTAL	300	100		100	100
Agriculture, Forestry, Fishing	1.3%	2.0%		1.0%	1.0%
Mining, Quarrying, and Oil ar	0.3%				1.0%
Utilities	2.3%	1.0%		4.0%	2.0%
Construction	5.0%	4.0%		7.0%	4.0%
Manufacturing	11.3%	8.0%		14.0%	12.0%
Wholesale Trade	4.7%	7.0%		2.0%	5.0%
Retail Trade	13.0%	14.0%		12.0%	13.0%
Transportation and Warehou	1.3%			1.0%	3.0%
Information	1.3%	2.0%		1.0%	1.0%
Finance and Insurance	3.0%	2.0%		4.0%	3.0%
Real Estate and Rental and L	12.7%	13.0%		10.0%	15.0%
Professional, Scientific, and T	5.0%	6.0%		5.0%	4.0%
Management of Companies a	0.7%	1.0%		1.0%	
Administrative and Support a	1.7%	1.0%		3.0%	1.0%
Educational Services	2.0%	1.0%		3.0%	2.0%
Health Care and Social Assis	8.0%	7.0%		6.0%	11.0%
Arts, Entertainment, and Rec	2.0%	4.0%		1.0%	1.0%
Accommodation and Food Se	6.3%	10.0%	D	7.0%	2.0%
Other Services (except Publi	12.0%	10.0%		14.0%	12.0%
Public Administration	6.0%	7.0%		4.0%	7.0%

Comparison Groups: BCD

Independent Z-Test for Percentages

Upper case letters indicate significance at the 95% level.

APPENDIX E: RETAIL STORES SURVEYED

	STORE NAME	LOCATION	PHONE NUMBER
1	Home Depot	Cuyahoga Falls	330-922-3448
2	Home Depot	Akron	330-245-0280
3	Home Depot	Wadsworth	330-336-7257
4	Home Depot	Canton	330-497-1810
5	Home Depot	Cleveland	216-741-6123
6	Home Depot	Cleveland	216-676-9969
7	Home Depot	Lorain	440-282-4066
8	Home Depot	Ashtabula	440-992-7797
9	Home Depot	Toledo	419-866-3024
10	Home Depot	Toledo	419-537-1920
11	Costco	Cleveland	440-544-1350
12	Costco	Strongsville	440-783-3415
13	Costco	Avon	440-930-0103
14	Costco	Toledo	419-381-5000
15	Lowe's	Stow	330-920-9280
16	Lowe's	Fairlawn	330-665-9356
17	Lowe's	Green	330-245-4300
18	Lowe's	Rocky River	440-331-1027
19	Lowe's	Brooklyn	216-351-4723
20	Lowe's	Toledo	419-470-2491
21	Lowe's	Toledo	419-389-9464
22	Lowe's	Sylvania Township	419-843-9758
23	Best Buy	Cuyahoga Falls	330-928-5410
24	Best Buy	North Canton	330-244-0639
25	Best Buy	Cleveland	216-635-1450
26	Best Buy	Cleveland	216-351-9911
27	Best Buy	Toledo	419-471-1411
28	Sears	Fairlawn	330-668-1122
29	Sears	Macedonia	330-468-6772
30	Sears	Parma	216-520-7881
31	Sears	Toledo	419-535-3311
32	Walmart	Stow	330-923-8232
33	Walmart	Akron	330-645-9556

34	Walmart	Aurora	330-562-0000
35	Walmart	Toledo	419-380-0994
36	Sam's Club	Toledo	419-866-8366
37	Sam's Club	Mentor	440-352-7430
38	Sam's Club	Cuyahoga Falls	330-929-3789
39	Sam's Club	Warren	330-856-7411
40	hhgregg	North Olmsted	440-716-0591
41	hhgregg	Montrose	330-670-8422
42	hhgregg	Cuyahoga Falls	330-634-2350

Appendix E:
Example Incentive Mechanism Calculations

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Appendix E: Example Incentive Mechanism Calculations

Example of Incentive Mechanism Trigger Calculation (For Illustrative Purposes Only)

A	B	C	D = ΣB	E = ΣC	F	G = ΣF	H = F-C	I= ΣH	J
Year	**Annual Benchmark**	**Annual Target MWh***	**Cumulative Benchmark**	**Cumulative Target MWh***	**Achieved Annual Energy Savings MWh**	**Achieved Cumulative Energy Savings MWh**	**Annual (Deficit)/ Bank**	**Cumulative (Deficit)/ Bank**	**Prior Year Cumulative (Deficit) / Bank**
2009	0.30%	300,000	0.30%	300,000	300,000	300,000	0	0	-
2010	0.50%	500,000	0.80%	800,000	500,000	800,000	0	0	0
2011	0.70%	700,000	1.50%	1,500,000	700,000	1,500,000	0	0	0
2012	0.80%	800,000	2.30%	2,300,000	800,000	2,300,000	0	0	0
2013	0.90%	900,000	3.20%	3,200,000	850,000	3,150,000	(50,000)	(50,000)	0
2014	1.00%	1,000,000	4.20%	4,200,000	1,020,000	4,170,000	20,000	(30,000)	(50,000)
2015	1.00%	1,000,000	5.20%	5,200,000	1,100,000	5,270,000	100,000	70,000	(30,000)

A	K=F/C	L=G/E	M
Year	**Annual Compliance**	**Cumulative Compliance**	**Eligible for Incentive?**
2013	94%	98%	N
2014	102%	99%	N
2015	110%	101%	Y

**Assumes constant Utility baseline of 100,000,000 MWh, for simplicity. The actual annual baselines will be calculated as the average of the prior three year sales, consistent with ORC 4928.66 (A)(1)(a).*

Note: For illustrative purposes only. This exhibit includes a scenario in which the Company did not achieve its annual or cumulative compliance target in 2013. As such, the Company does not trigger the Incentive Mechanism in that year. In 2014, the Company exceeded its annual target, yet still does not trigger the Incentive Mechanism as it did not meet its cumulative target due to the cumulative deficit shown in Column I. In 2015, the Company exceeded both its annual and cumulative targets. The Company triggers the Incentive Mechanism only for the reporting period covering 2015.

Appendix E: Example Incentive Mechanism Calculations

Example of Incentive Percentage Calculation (For Illustrative Purposes Only)

A	B	C	D	E = C+D	F = E/B
Year	**Annual Target MWh**	**Achieved Annual Energy Savings MWh**	**Prior Year Cumulative Deficit**	**Adjusted Annual Energy Savings MWh**	**Incentive Mechanism Compliance Percentage**
2015	1,000,000	1,100,000	(30,000)	1,070,000	107.0%

Incentive Tier	Compliance Percentage	Incentive Percentage
1	< 100%	0.00%
2	100-105%	5.00%
3	>105-110%	7.50%
4	>110-115%	10.00%
5	>115%	13.00%

Appendix E: Example Incentive Mechanism Calculations

Example of Adjusted Net Benefits (For Illustrative Purposes Only)

A	B	C	D = C - B
Program	**Discounted Lifetime Costs**	**Discounted Lifetime Benefits**	**Total Discounted Net Lifetime Benefits**
Direct Load Control	$4,300,000	$6,000,000	$1,700,000
Appliance Turn-In	$3,300,000	$4,700,000	$1,400,000
Energy Efficient Products	$7,900,000	$11,000,000	$3,100,000
Home Performance	$8,200,000	$11,500,000	$3,300,000
Low-Income	$1,000,000	$1,400,000	$400,000
C&I Energy Efficiency Equipment-Small	$2,300,000	$3,200,000	$900,000
Energy Efficient Buildings-Small	$9,500,000	$13,400,000	$3,900,000
Mercantile Customer	$8,900,000	$12,500,000	$3,600,000
Demand Reduction	$9,400,000	$13,100,000	$3,700,000
C/I Energy Efficient Equipment-Large	$4,000,000	$5,500,000	$1,500,000
Energy Efficient Buildings-Large	$6,200,000	$8,700,000	$2,500,000
Government Tariff Lighting	$900,000	$1,200,000	$300,000
Transmission & Distribution Projects	$300,000	$400,000	$100,000
Total	*$66,200,000*	*$92,600,000*	*$26,400,000*

Adjustments			
Mercantile Projects Pre-3/23/2011	$8,500,000	$12,000,000	$3,500,000
T&D Projects not modified for additional EE benefits	$100,000	$200,000	$100,000
Behavioral Modification Projects that do not demonstrate persistence	$400,000	$600,000	$200,000
Total	*$9,000,000*	*$12,800,000*	*$3,800,000*

Adjusted Discounted Net Lifetime Benefits ***$22,600,000***

Note: All values in the above scenario are illustrative and for the purpose of discussion only. Actual values will be calculated consistent with information as presented in the Company's Annual Portfolio Status Report, with discounted lifetime costs and benefits determined under the Utility Cost Test (UCT), and calculated in line with industry standards.

Appendix E: Example Incentive Mechanism Calculations

Example of Company Incentive Calculation (For Illustrative Purposes Only)

A	B	C	D	E	F = B*E
Year	**Adjusted Net Benefits**	**Compliance Percentage**	**Incentive Tier**	**Incentive Percentage**	**Company Incentive**
2015	$22,600,000	107%	3	7.50%	$1,695,000

Summary: Text Attachment B (CEI EE&PDR Plan) to the Application electronically filed by Ms. Carrie M Dunn on behalf of The Cleveland Electric Illuminating Company and Ohio Edison Company and The Toledo Edison Company