Attachment B

Pennsylvania Electric Company

Phase III Energy Efficiency & Conservation Plan

(For the Period June 1, 2016 through May 31, 2021)

November 23, 2015

Docket No. _____

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1. OVERVIEW OF PLAN

Introduction

FirstEnergy Corp. ("FirstEnergy"), through its Efficiency Plan development team ("EE&C Team"), has coordinated energy efficiency and conservation ("EE&C") development efforts across its four Pennsylvania operating companies: Metropolitan Edison Company ("Met-Ed"), Pennsylvania Electric Company ("Penelec") Pennsylvania Power Company ("Penn Power") and West Penn Power Company ("West Penn" or "Company") (collectively "Companies"), to meet statutory goals, achieve cost efficiencies and offer a consistent and effective set of EE&C programs to the customers served by these four companies. In accordance with Act 129 and the Commission's 2015 Implementation Order, issued on June 11, 2015 at Docket No. M-2014-2424864 ("2015 Implementation Order"), Penelec developed this Energy Efficiency and Conservation Plan ("Phase III Plan") for the period June 1, 2016 through May 31, 2021 ("Phase III Period"). As detailed below, Penelec's Phase III Plan is based on both the 2016 Pennsylvania Total Resource Cost ("TRC") test and the 2016 Technical Reference Manual and is designed to meet all requirements as set forth in the Commission's 2015 Implementation Order.

Historic Background

On October 15, 2008, then Governor Rendell signed Act 129 of 2008, ("Act 129")[1] into law. Act 129 imposed new requirements on Pennsylvania's Electric Distribution Companies ("EDCs") in the areas of energy efficiency and conservation, smart meters, procurement and alternative energy sources. Among other things, Act 129 required EDCs with at least 100,000 customers to adopt and implement a plan, approved by the Commission, to reduce energy demand and consumption within its service territory during the period June 1, 2010 through May 31, 2013[2] ("Phase I").

Act 129 also authorized the Commission to evaluate whether it was cost beneficial to continue the EE&C program beyond Phase I.[3] The Commission concluded in its August 3, 2012 Order at Docket Nos. M-2012-2289411 and M-2008-2069887 ("2012 Implementation Order"), that further energy efficiency programs would be cost effective and established Phase II of the EE&C program, requiring EDCs to adopt and implement cost effective plans to reduce energy consumption throughout the Commonwealth, consistent with said Order for the period June 1, 2013 through May 31, 2016 ("Phase II Period"). The Companies submitted such plans, which were approved and are currently being implemented ("Phase II Plans").[4]

The Commission further concluded in the 2015 Implementation Order that additional energy efficiency and demand reduction programs would be cost effective and established Phase III of the EE&C program, requiring EDCs to adopt and implement cost effective plans to reduce

[1] 66 Pa. C.S. §2806.1 *et seq*.
[2] 66 Pa. C.S. § 2806.1.
[3] 66 Pa.C.S. § 2806.1(c) (3).
[4] *See* Docket No. M-2012-2334387 (Met-Ed); Docket No. M-2012-2334392 (Penelec); Docket No. M-2012-2334395 (Penn Power): and Docket No. M-2012-2334398 (West Penn).

energy demand and consumption throughout the Commonwealth, consistent with the parameters set forth in said Implementation Order. Pursuant to the 2015 Implementation Order, Penelec submits this Phase III EE&C Plan.

1.1. Summary description of plan, plan objectives, and overall strategy to achieve energy efficiency and conservation goals.

Objectives:

When developing the Phase III Plan, the EE&C Team set forth to develop a plan that meets all requirements as established in Act 129 and the Commission's 2015 Implementation Order, including the achievement of:

- the Company's target of 566,168 incremental annual MWhs of energy savings during the Phase III Period;
- the 5.5% consumption reduction target from the low-income sector; and
- the 3.5% consumption reduction target from the governmental/educational/non-profit sector ("G/E/NP" sector which include federal, state, and local government or municipalities/school districts/institutions of higher learning and non-profit entities) all within the 2% statutory spending cap.

Description of the Plan and Strategy for Success:

Keeping in mind these objectives, the Phase III Plan is generally an extension of the successful programs and measures included in the Company's Phase II Plan with the addition of new programs and measures, including demand response, and a revision of some existing programs and measures. To meet the requirement that savings counted towards the 5.5% low-income savings target come from specific low-income programs, the plan includes a significantly expanded low-income program that specifically targets certain measures and services to this sector. To achieve the G/E/NP sector requirement, program services are targeted through the Government & Institutional Tariff Program and through the Commercial/Industrial Small and Large sector programs. Additionally, the Plan includes at least one program for each customer segment and includes at least one comprehensive program for the residential and non-residential sectors.

As demonstrated throughout, this Phase III Plan is comprehensive and includes over 150 EE&C measures which are more fully discussed in Tables 8, 10, 12, and 14 in Section 3.

The Phase III Plan was developed based on experience gained through the completion of the Phase I plan and the current implementation of the Phase II Plan, factoring in (i) performance to date of not only the Company's programs, but also the performance of similar programs of both affiliated and non-affiliated electric distribution utilities; (ii) feedback and suggestions received from the Company's energy efficiency consultants, vendors and contractors; and (iii) input from interested stakeholders.

The program designs presented in this Phase III Plan cover each of the four market segments: (1) residential (which includes low-income); (2) small commercial and industrial (3) large commercial and industrial; and (4) Governmental/Educational/Non-Profit. The Phase III Plan leverages the existing programs and includes a mix of expanded and new program

services that take maximum advantage of opportunities, volume cost efficiencies and a variety of delivery channels with a goal to achieve significant levels of customer participation in a cost effective manner.

The table below identifies the programs that are proposed in this Phase III Plan for each of the customer sectors, and compares how these programs align with the programs in the Phase II Plan:

Table 1: Existing & New Programs

Energy Efficiency & Conservation Plan	
Phase II Program	**Proposed Phase III Program**
Residential Programs	
Appliance Turn-In Program	Appliance Turn In Program
Home Performance Program	Energy Efficient Homes Program
Energy Efficient Products Program	Energy Efficient Products Program
Residential Low-Income Programs	
Low-Income Program	Low-Income Energy Efficiency Program
Small Commercial & Industrial Programs	
C&I Energy Efficient Equipment Program - Small	C&I Energy Solutions for Business Program - Small
C&I Energy Efficient Buildings Program - Small	
Large Commercial & Industrial Programs	
C&I Energy Efficient Equipment Program - Large	C&I Energy Solutions for Business Program - Large
C&I Energy Efficient Buildings Program - Large	
Governmental/Educational/Non-Profit Programs	
Governmental & Institutional Program	Governmental & Institutional Tariff Program

Residential Sector Programs – Residential programs were designed with a progression from general to specific. Home energy kits, energy usage reports and home energy audits are expected to serve as a "portal" (but not a requirement) for the other programs, because they serve a dual purpose of providing customers with energy efficiency education and information regarding other services upon which they can act, as well as provide basic energy savings measures or recommendations. The energy efficiency programs then address the higher first cost of energy efficient appliances and products by providing rebates to overcome cost barriers and tap a variety of delivery channels and vendors. The Company has also included a demand response program for residential customers with smart meters. Through this program, the Company will provide notification messages to motivate customers to reduce usage during Act 129 DR events. The program will also provide post-event feedback to the customer about their usage performance during the event and recommendations to reinforce their usage reduction behaviors in future Act 129 DR events. The programs incorporate monitoring protocols into the implementation process so that the

evaluation, measurement and verification ("EM&V") activities for each program are manageable.

Low-Income Customer Sector Programs – Within the residential sector is a special category of Low-Income Customer Sector Programs. The low-income customer programs outlined in this Phase III Plan will serve a dual purpose of contributing to Act 129 goal attainment and minimizing the percentage of household income that is devoted to energy costs. Basic, enhanced and comprehensive services and education will be offered in the low-income portfolio to give households more control over their energy spending.

To the greatest extent practical, effort will be made to capture electric energy savings as part of the delivery of the Company's existing Low-Income Usage Reduction Program ("LIURP"), by tapping the considerable expertise and existing infrastructure of LIURP contractors comprised of both Community Based Organizations ("CBOs") and private contractors. The LIURP program has offered comprehensive energy efficiency services to eligible Pennsylvania households for years. This aspect of the Phase III Plan enhances and accelerates the deployment of services to LIURP-eligible households by providing additional measures and services to achieve more savings in each visit or through additional home treatments. If deemed to be necessary to achieve its targets, the Company will supplement the delivery system by adding new contractors.

Like its Residential Sector program counterpart, the low-income customer sector programs are also designed with a progression from general to specific in an effort to make EE&C programs and services available to low-income customers of all types. The Company will provide home energy kits, school education and customized energy usage reports providing low-income customers with basic energy savings measures or energy efficiency education, recommendations and information regarding other services upon which they can act. Additional low-income customer sector programs (e.g. appliance rebate, appliance turn in, appliance replacement and audits) will be targeted to promote energy efficiency in multifamily homes, low-use low-income homes or to help identify new low-income customers.

Small and Large Commercial and Industrial Sector Programs – Small and large commercial businesses and industrial customers are also addressed by offering targeted information on ways to save energy followed by a choice of prescriptive rebates on selected measures, or a performance (calculated based on energy savings) rebate. Custom equipment can be addressed through calculated rebates based upon the estimated amount of energy savings associated with the project.

Governmental/Educational/Non-Profit Sector Programs –The Phase III Plan also provides program services for governmental, educational and non-profit customers. While all non-residential customers, including the G/E/NP sector, are eligible for the prescriptive and custom energy efficiency programs offered under the Commercial and Industrial sectors, special efforts will be made to target the G/E/NP sector in recognition of its unique decision-making and financing processes for making capital improvements to facilities. These efforts will include the leveraging of existing Company Area Manager relationships and employing experienced vendors who specialize in working with G/E/NP accounts.

Table 2 below describes each of the programs that are included in the Phase III Plan. More detailed descriptions of the programs are provided in Section 3.

Table 2: Program Summary Descriptions

Energy Efficiency & Conservation Plan	
Proposed Phase III Program	**Program Description**
Residential Programs	
Appliance Turn In Program	This program provides rebates to consumers for turning in working appliances.
Energy Efficient Homes Program	This program provides customers with energy efficiency education and awareness along with measures and incentives to improve energy efficiency of homes. Additionally the program provides an opportunity for residential customers with smart meters to reduce usage during Act 129 demand response events.
Energy Efficient Products Program	This program promotes the purchase of energy efficient products, such as HVAC equipment, appliances, lighting, home electronics and other home products, through consumer rebates or incentives and support to retailers and manufacturers.
Residential Low-Income Programs	
Low-Income Energy Efficiency Program	This program provides energy efficiency education and awareness along with basic to comprehensive whole house energy efficiency measures to qualified low-income customers, including appliance replacement and rebates for turning in working appliances or the purchase of energy efficient products.
Small Commercial & Industrial Programs	
C&I Energy Solutions for Business Program - Small	This program provides measures and financial incentives (prescriptive & performance) to small commercial and industrial customers, including small government and institutional customers, to purchase qualifying high efficiency measures, recycle inefficient appliances, retrofit specialized processes and applications to higher efficiency processes and applications, complete qualifying high efficiency building shell or system improvements or to complete an audit with qualifying audit installations or recommendations.
Large Commercial & Industrial Programs	
C&I Energy Solutions for Business Program - Large	This program provides financial incentives (prescriptive & performance) to large commercial and industrial customers, including large government and institutional customers, to implement qualifying high efficiency measures or retrofit specialized processes and applications to higher efficiency processes and applications, complete qualifying high efficiency building shell or system improvements or to complete an audit with qualifying audit recommendations.
Governmental/Educational/Non-Profit Programs	
Governmental & Institutional Tariff Program	This program provides financial incentives (prescriptive or performance) to the Government, Education and Non-profit tariff customers to purchase or install qualifying high efficiency measures and recycle inefficient appliances.

Table 3 below provides the Program Delivery Channels that are currently anticipated for the programs included in the Phase III Plan. As programs are implemented during the Phase III Period, the Company will consider and pursue additional delivery channels if deemed necessary for the Company to meet its targets and/or to enhance the success of a given program.

Table 3: Program Delivery Channels

Program	Sub Program	Customer Rebate [1]	Mid/Up-Stream [1]	Direct Install/Mail [1]
Energy Efficiency & Conservation Plan				
Residential Programs				
Appliance Turn In Program	Appliance Turn In	X		
Energy Efficient Homes Program	School Education			X
	EE Kits			X
	Audits	X		X
	Behavioral			X
	New Homes	P	X	
Energy Efficient Products Program	Appliances and Electronics	X	X	
	Lighting	X		
	HVAC	X	P	
Low-Income Energy Efficiency Program	LI - EE Kits			X
	Weatherization			X
	Multifamily / LILU Single Family			X
	LI - Behavioral			X
	LI - New Homes		X	
	LI - Appliance Rebate	X		
	LI - Appliance Turn In	X		
	LI - School Education			X
Small Commercial & Industrial Programs				
C&I Energy Solutions for Business Program - Small	HVAC - SCI	X	P	
	Lighting - SCI	X	P	
	Food Service	X	P	
	Appliances and Electronics - SCI	X	P	
	Agricultural	X	P	
	Custom - SCI	X	P	
	Custom Buildings - SCI	X		
	EE Kits - SCI			X
	Multifamily	X		X
	Audits - SCI	X		X
Large Commercial & Industrial Programs				
C&I Energy Solutions for Business Program - Large	HVAC - LCI	X	P	
	Lighting - LCI	X	P	
	Custom - LCI	X	P	
	Custom Buildings - LCI	X		
	Audits - LCI	X		
Governmental/Educational/Non-Profit Programs				
Governmental & Institutional Tariff Program	HVAC - Gov't	X	P	
	Lighting - Gov't	X	P	
	Appliances - Gov't	X	P	
	Street Lighting - Gov't	X		
	Audits - Gov't	X		X

1. "X" is Planned and "P" is Potential

Like the Phase II Plan, the Phase III Plan continues the use of incentive level ranges. Under this approach, the Company has the ability to adjust rebate levels within the range as market conditions warrant, provided that these adjustments do not increase program costs beyond approved budgets and the Company discusses potential changes with interested stakeholders. Based on these ranges, the Company can adjust incentives for the measures or programs to

either avoid overpaying for measures, or if it is determined that an incentive is not sufficient, the Company can increase incentives to enhance market response without missing potential opportunities while waiting for resolution through the regulatory process. This allows the Company to quickly react to changing market conditions, thus, optimizing its efforts to achieve its energy savings goals.

Appendix D-4 lists the planned incentive level ranges associated with each of the measures and programs included in the Phase III Plan. For some measures, Company pre-approval may be required and there may be limits on the number of units that will be rebated to any one customer or through any one program to support process and budget management and verification of existing equipment. More detail is provided in the individual program descriptions in Section 3.

The total proposed cost of the Phase III Plan is $115 million as reported in Table 6C in Appendix E. These costs will be recovered through the Company's EEC-C Rider, which is summarized in Section 1.8 and is subject to approval by the Commission as part of this Phase III Plan. The successful implementation of this Phase III Plan is projected to generate Total Discounted Lifetime Benefits of approximately $199 million and a Total Resource Cost ("TRC") Benefit-Cost ratio of 1.2 [5] as shown in Table 1A located in Appendix E for the Energy Efficiency Measures, and Total Discounted Lifetime Benefits of approximately $930,000 and a Total Resource Cost ("TRC") Benefit-Cost ratio of 1.1 as shown in Table 1B located in Appendix E for the Demand Response Measures.

The EE&C Team has developed a successful strategy for achieving Phase III targets throughout the FirstEnergy Pennsylvania footprint. This strategy includes the use of outsourced vendors with expertise in program management, program marketing and program tracking and reporting. This network of contractors reports to a core team within the FirstEnergy Energy Efficiency group, which oversees the implementation, tracking and evaluation of programs and measures. Programs are monitored for performance against projections and, if needed, adjustments are made to improve performance, including a shift of emphasis from lesser to higher performing programs. Rebate levels are routinely reviewed and assessed against market conditions, with modifications to rebate levels made if deemed appropriate after discussing the matter with FirstEnergy's energy efficiency consultants, contractors, vendors and stakeholders. This strategy was put in place during Phase I and Phase II of Act 129 and has proven to be successful. The Company intends to continue this practice throughout Phase III.

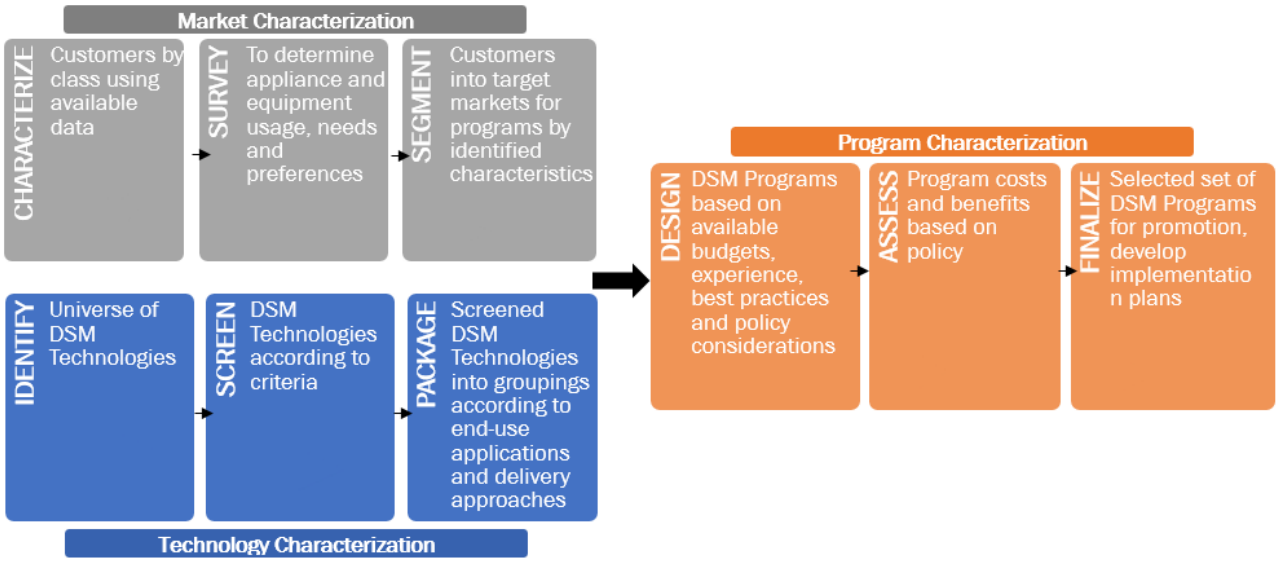
[5] *See* Section 8.0 for details on the TRC test.

1.2. Summary description of process used to develop the EE&C plan and key assumptions used in preparing the plan.

Process

Figure 1, below illustrates the process undertaken by the EE&C Team to develop the Phase III Plan:

Figure 1: FirstEnergy EE&C Plan Development Process



When developing the Phase III Plan, the EE&C Team, which is familiar with the EE&C plans and related measures being offered by other FirstEnergy utilities, compared each of the programs and measures included in the Company's Phase II Plan to those that may potentially be offered through the Phase III Plan. To the extent Phase II Plan measures showed potential, these measures were mapped to the Company's Phase III Plan program offerings. Other potential measures were identified through peer review and benchmarking of other utilities and affiliates, industry review, input from stakeholders, consultants and vendors, and a review of both the Pennsylvania Technical Reference Manual ("TRM") and the Market Potential Studies.[6] The EE&C Team also issued a request for proposal ("RFP") for demand response programs. All measures, both current and potential, were assessed based on (i) experience gained since the Phase II Plan was approved and implemented; (ii) participation results and costs from programs and measures offered in the Company's Phase II Plan; (iii) information related to the participation results and costs of potential measures being offered by the other Companies, other FirstEnergy affiliates and other utilities both within and outside of Pennsylvania; (iv) input from stakeholders as well as the Company's energy efficiency consultants and Phase II Plan program evaluator, ADM Associates, Inc.; and (v) responses to the demand response RFP (collectively, "Assessment Input"). Based on

[6] Act 129 Statewide Evaluator Demand Response Potential for Pennsylvania – Final Report – dated February 25, 2015 and released via Secretarial Letter at Docket No. M-2014-2424864 on February 27, 2015 and Act 129 Statewide Evaluator Energy Efficiency Potential for Pennsylvania – Final Report – Dated February 2015, released via Secretarial Letter at Docket No. M-2014-2424864 on February 27, 2015.

this Assessment Input, the EE&C Team developed participation level estimates and corresponding program and measure savings estimates. Program costs were then assigned to each selected measure, which were balanced against the Company's 2% spending cap.

The EE&C Team used an iterative process to refine and complete the modeling, which included the review of the projected results for each sector, program, subprogram and measure with the Company's 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 projected savings. Estimated program participation values were informed by program implementation experience through the Phase II Plan, the implementation of affiliate programs in other jurisdictions, the experiences of the Company's energy efficiency consultants with other utility programs throughout the country, and the market potential study. Potential program savings were predominantly based upon the values included in the 2016 Pennsylvania 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.

The Company's approach balances key sources of information regarding program and industry experience as follows:

- Program experience and anticipated energy savings, captured through implementation of the current portfolio of programs, similar programs in other jurisdictions and the market potential study; and
- Industry experience provided by the Company's energy efficiency consultants, stakeholders and Conservation Service Providers.

Assumptions and Potential Risks

The Phase III Plan adopts the 2015 Implementation Order assumptions on acquisition cost for the mandated reductions. The acquisition costs supported in the SWE Market Potential Study as adopted by the Commission in setting targets dictate the budget available for incentives and administrative costs associated with program implementation, management, reporting and evaluation. The Phase III Plan incorporates these assumptions into its estimates of program participants, program budgets and other factors necessary for plan design.

There are both portfolio based and program/measure specific assumptions that must be made when modeling the programs included in this Phase III Plan. To support the modeling effort, the Company relied on the incentives and costs of various program elements based on both the Company's experience with like programs and input from the Company's EE&C consultant based on its industry experience throughout the country. Customer participation levels and other program/measure specific assumptions are set forth in Appendices D-1 & D-2.

For purposes of cost effectiveness testing, the EE&C Team assumed a discount rate based on the Company's overall post-tax weighted average cost of capital ("WACC"). Avoided cost

data is based on the methodology prescribed by the Commission in the 2016 Total Resource Cost ("TRC") Order.[7] Cost effectiveness testing is more fully described in Section 8.

Savings values were based upon the protocols included in the Pennsylvania 2016 TRM.

The Phase III Plan is also based on an assumption that the Commission will approve the plan in March 2016 to support CSP development and implementation activities to ready programs for implementation as close to June 1, 2016 as possible. It further assumes that the Commission has in place a process, to which it adheres, that affords the Company the ability to make mid-stream adjustments in a timely manner.

The above assumptions, which are based on currently known conditions, yield results that provide the Company with the opportunity to meet the Phase III energy reduction and peak demand reduction goals established in the 2015 Implementation Order. However, there are certain conditions that may change during the Phase III Period, which could have a material impact on actual results:

- Changing economic conditions over the Phase III period may not support the pace of investment estimated in the Phase III 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;
- New proposed programs may not provide adequate incentives to achieve targeted participants' penetration rates and energy/demand savings;
- The Company's rates may not induce customer interest in pursuing energy efficiency projects and the Company may not be able to provide a greater incentive, given the spending caps to which it must adhere;
- Updates to the TRM or evaluation results may reduce the savings projections for the programs and measures;
- Goals for Act 129 low-income savings and LIURP participation may prove to be more aggressive than programs and/or delivery infrastructure are capable of delivering in the Company's service territory;
- Acquisition costs associated with the Phase III Plan may exceed the estimates assumed for the Company and restrict the Company's ability to implement certain programs and measures or adjust incentives for certain programs and measures; and
- Adherence to the Commission's procedural timeline will be critical. Deviations not only could impact the Company's ability to comply with the Commission's 2015 Implementation Order, but could also cause the loss of momentum gained during the implementation of the Phase II Plan.

Based upon conditions as they exist today, the Company's Phase III Plan is designed in a manner that will provide the Company with the opportunity to achieve the goals established under Act 129 and the Commission's 2015 Implementation Order for reductions in energy consumption by 2021, and within the spending caps as required under Act 129 and as

[7] 2016 PA Total Resource Cost (TRC) Test, Docket No. M-2015-2468992 (Order entered June 22, 2015).

prescribed by the Commission. The above assumptions and risks have been factored into the Phase III Plan to the degree known. The Company will do its utmost to support the success of the Phase III Plan as it moves through the program years, including ongoing evaluations of whether Phase III Plan modifications are necessary.

1.3. Summary tables of portfolio savings goals, budget and cost-effectiveness.

The Company's five year goal is shown in Table 4 below[8]:

Table 4: Energy Savings Targets per Act 129

EDC	Act 129 Mandated Reductions	
	MWh [1] (Five-Year)	MW [2] (Per Year)
Penelec	566,168	N/A

1. 2015 Implementation Order at pg. 57.

2. 2015 Implementation Order at pg. 35. To be achieved during the months of June-September, 2017 through 2020.

This target is to be achieved for the expenditure level noted below in Table 5, which represents the annual spending cap established by Act 129.

Table 5: Spending Caps per Act 129

EDC	Total Act 129 Allowable Plan Costs (Five-Year)[1]
Penelec	$114,873,710

1. 2015 Implementation Order at pg. 11, amount multiplied by 5 to reflect the total allowable spending for the five-year Phase III period

Tables 1-3 located in Appendix E detail the portfolio savings goals, budget and cost-effectiveness.

1.4. Summary of program implementation schedule over five- year plan period.

The proposed time line for Phase III Plan implementation is set forth below. The Company anticipates that the Company will leverage the existing program implementation processes that have been developed for the Companies to the extent practical to support timely program transition and implementation. The Company will use one or more CSPs to transition and implement the various programs identified in its Phase III Plan. These CSPs will be responsible for the transition and start-up of new programs and measures, which will include, at a minimum, the identification of appropriate staffing skills and levels and the hiring of the same, and the development of website(s), promotional strategies, and processes ensuring

[8] In addition to the tables required by the Commission (which are designated as "PUC Tables"), the Company developed additional tables that have been included as additional support.

quality and other controls supporting successful program transition and implementation. The CSPs' transition and start-up phase will include communication and coordination with Company personnel so as to: (i) present a seamless transition for customers and allies who either wish to participate or continue participation in new and existing programs that will be offered during Phase III; (ii) maximize process efficiency and controls; and (iii) leverage Company relationships and communications with customers.

The Company will contractually obligate the CSPs to design a transition and start-up phase that will be performed in an organized and efficient manner and that strives to maintain and strengthen constructive relationships with Company program management, customers, program allies, contractors and other energy program partners. The start-up period will include milestone objectives and targets along the timeline to completion of program startup.

The transition and start-up period will include a Program Set-Up Period, which will commence immediately following approval of this Phase III Plan. This set up/start up plan will outline a process to develop the systems and procedures needed to operate the energy efficiency programs for the Company. The transition and Start-up Plan will include, at a minimum:

- An organization chart and description of management roles and responsibilities;
- A description of programs and dates of milestone objectives and program launch;
- A description of an implementation and operational plan for use by any subcontractor;
- A plan to facilitate or support program tracking and reporting;
- A determination of the required information transfers between the CSPs, the Company and the Company's other energy efficiency or tracking system contractors;
- A plan for creating, installing and testing necessary data collection systems for program operation and evaluation;
- The establishment of a toll-free number and the processes needed for the Company to transfer calls it receives related to the programs;
- The development of the detailed processes for managing rebate/incentive applications, rebate/incentive payment processes, reporting procedures, data collection and data recording processes, internal billing and related documentation to be sent to the Company for processing;
- The identification of potential CSPs and the development of processes for transactions between the two, including electronic payments between the Company and the CSPs;
- A marketing, promotion and communication plan, which includes a website strategy;
- The creation of a check processing system (if deemed appropriate); and
- A summary of any other program specific preparations needed before the programs are launched.

During program transition and set-up, the CSPs will meet with the Company, its consultant, and tracking system contractors as necessary and appropriate in order to properly integrate the applicable program into the Company's overall comprehensive Phase III Plan.

To the extent possible, the Company anticipates a seamless transition of programs and measures from the Phase II Plan to the Phase III Plan, noting that a) Phase II transactions will be managed to conclusion concurrent with the introduction of Phase III programs and b) any installations completed prior to May 31, 2016 may be included in Company documentation supporting compliance with Phase II targets. The Company's implementation strategy for this Phase III Plan will rely on the use of CSP(s), partners, program allies, community-based organizations, and other entities engaged in energy-efficiency to promote, communicate, deliver, and support the effective transition and deployment of the new programs and measures and suspension of programs and measures not being carried over to Phase III.

Consistent with the 2015 Implementation Order, the Company will not begin offering incentives and rebates to customers upon Commission approval of the Phase III Plan and will initiate controls to ensure that the rebates apply to only those measures installed and commercially operable after May 31, 2016 and before June 1, 2021. Program measures installed and commercially operable on or before May 31, 2016, as well as CSP or administrative fees related to Phase II, are considered Phase II expenses and will be tracked and reported accordingly. Program measures installed and commercially operable after May 31, 2016, as well as CSP or administrative fees related to Phase III, are considered Phase III expenses and will also be tracked and reported accordingly. Recovery of Phase III costs that are incurred during Phase II will be deferred and included in the Phase III cost recovery rates. Phase III costs will be accounted for separately from Phase II costs. Details surrounding cost recovery are set forth in Section 1.8.

The timeline listed below anticipates Commission approval of the Company's Plan during March 2016:

The Company's goal is to maintain the momentum created through programs included in the Phase II Plan and to leverage in the Phase III Plan the synergies created through implementation of those programs. The Phase III Plan assumes approval in a time frame that allows the Company to seamlessly transition from the Phase II Plan to the Phase III Plan. 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. The Company's Supply Chain group will be involved in the third party contracting process by utilizing bids for the servicing of Phase III programs, with such programs being implemented upon Commission approval of the proposed CSP contract(s). [9]

[9] Secretarial Letter issued August 14, 2015 approving FirstEnergy Corp.'s "Procedure for Awarding Contracts to PA Act 129 Conservation Service Providers" filed by the Companies on July 28, 2015 pursuant to the Act 129 Phase III Energy Efficiency and Conservation Program Final Implementation Order at Docket No. M-2014-2424864.

Figure 2: Gantt Chart of Program Schedule Summary

Existing Program Name	Proposed Pase III Program	September	October	November	December	January	February	March	April	May	Plan Year 2016				Plan Year 2017	Plan Year 2018	Plan Year 2019	Plan Year 2020
											1	2	3	4				
Residential Programs																		
Appliance Turn-In Program	Appliance Turn In Program																	
Home Performance Program	Energy Efficient Homes Program																	
Energy Efficient Products Program	Energy Efficient Products Program																	
Residential Low-Income Programs																		
Low-Income Program	Low-Income Energy Efficiency Program																	
Small Commercial & Industrial Programs																		
C&I Energy Efficient Equipment Program - Small	C&I Energy Solutions for Business Program - Small																	
C&I Energy Efficient Buildings Program - Small																		
Large Commercial & Industrial Programs																		
C&I Energy Efficient Equipment Program - Large	C&I Energy Solutions for Business Program - Large																	
C&I Energy Efficient Buildings Program - Large																		
Governmental/Educational/Non-Profit Programs																		
Governmental & Institutional Program	Governmental & Institutional Tariff Program																	

Key
Develop and Issue RFP
Select CSP / File Proposed CSP Contract for PUC approval
Award CSP Contract after PUC approval
Program Set-Up Activities
Program Launch and Implementation per PUC Approval

1.5. Summary description of the EDC implementation strategy to acquire at least 15% of its consumption reduction target in each program year.

This Phase III Plan is designed to achieve savings throughout the Phase III Period. As indicated in Table 2 located in Appendix E, it is expected that the Phase III Plan will achieve at least 15% of the consumption reduction targets in each of the plan years. In addition, the design of the Phase III Plan and programs, along with the inclusion of incentive ranges rather than fixed incentive levels, provides the Company with the flexibility to react quickly to changing conditions to support meeting this requirement should conditions warrant.

1.6. Summary description of the EDC implementation strategy to manage EE&C portfolios and engage customers and program allies.

As already discussed, the Company intends to utilize outsourced vendors who will in turn develop a network of program allies as deemed appropriate for the applicable program. The Company intends to secure CSPs and implementation vendors during the first quarter of 2016 for the Phase III programs so as to enable a timely program transition and implementation of the Phase III programs and measures once the Phase III Plan is approved. All CSP contracts will be contingent upon Commission approval of both the contract and the related program.

The Company will oversee a range of contractors and vendors in the delivery of the programs. Low-income residential programs will be served by a mix of Community Based Organizations and private vendors under contract with the Company. The Company will continue to meet with CBOs regarding its Low-Income Program on a quarterly basis and will provide written materials distributed for such meetings if requested. The Company will cross-market all low-income programs offered by the Company to confirmed low-income customers, and refer these customers to other federal and state agency sponsored low-income programs for which the customer qualifies.

The Company will seek a vendor or group of vendors to deliver services to existing residential homes and small commercial customers. Non-residential audits will be performed by a mix of auditing firms and specialized engineering firms that have the expertise to identify opportunities for specific industries. The Company will also leverage its relationships with various parties through the stakeholder process, seeking input from participating stakeholders on how better to reach customers and program allies alike. The Company will hold a minimum of two stakeholder meetings per year, with additional ad hoc meetings scheduled as needed or upon stakeholder request.

1.7. Summary description of EDC's data management, quality assurance and evaluation processes; include how EE&C plan, portfolios, and programs will be updated and refined based on evaluation results.

The Company already has in place many quality control processes and procedures that it currently utilizes to manage the quality of its programs being offered through the Phase II Plan. It is committed to designing and implementing robust processes, organizations and systems that achieve the energy savings goals established in Act 129 and, where appropriate, will continue to utilize those processes already in place. The Company's Phase III Plan

intends to continue the existing two-fold approach to ensure the quality of its EE&C programs during implementation which:

- Develops processes to clearly detail the steps to meet EE&C goals while complying with applicable requirements; and,
- Devises and implements control points at various stages of these processes to establish and maintain quality.

Section 6 of this report presents plans regarding the data management quality assurance and evaluation processes for the Phase III Plan. Each program description included in Section 3 provides a brief description of the planned evaluation monitoring and verification steps intended for each program. Further, the Company is committed to working with the Statewide Evaluation Contractor ("SWE") to support its efforts at evaluating the programs. The Company will conduct process evaluations as a way to gauge progress toward the achievement of goals and identify issues requiring mid-course correction. All programs will benefit from periodic feedback from stakeholders and vendor-conducted customer satisfaction surveys. In addition to making interim adjustments to programs as identified through these feedback activities, the Company will propose any major changes it feels are necessary in its annual reporting to the Commission or, alternatively, it will propose a plan change using either the Commission's standard procedures for rescission and amendment of Commission orders, or the expedited review process outlined in the Commission's Order on Act 129 Energy Efficiency and Conservation Program Phase II (entered June 10, 2011 in Docket No. M-2008-2069887) (Minor Plan Change Order) and as affirmed in the Commission's 2015 Implementation Order.

1.8. Summary description of cost recovery mechanism.

The Company's proposed EE&C Charge Phase III Rider ("Phase III EE&C-C Rider") is included in Appendix F. The Phase III EE&C-C Rider rates are expressed as a price per kilowatt-hour ("kWh") for the residential, non-profit, commercial and street lighting classes and will be billed accordingly. The industrial class will be billed based upon the individual customer's Peak Load Contribution ("PLC") kW. The Phase III EE&C-C Rider rates will be calculated separately for each rate schedule/tariff that has been allocated EE&C program costs, with the revenues collected through these rates being reconciled to actual EE&C program costs. The Company is proposing that the Phase III EE&C-C Rider rates reflecting the programs and budgets of this Phase III Plan become effective for service rendered on or after June 1, 2016 and continue through May 31, 2021. The amount of revenues that the Phase III EE&C-C Rider rates can recover are capped by Act 129's 2% spending limit. The Company will submit to the Commission by May 1 of each year a reconciliation of the Phase III EE&C-C Rider. The Phase III EE&C-C Rider tariff meets the requirements of 66 Pa.C.S. § 1307 as required by the Commission's 2015 Implementation Order and Act 129.

2. Energy Efficiency Portfolio/Program Summary Tables and Charts

2.1. Residential, Commercial/Industrial Small, Commercial/Industrial Large and Governmental/Educational/Non-profit Portfolio Summaries.

The Residential, Commercial/Industrial Small, Commercial/Industrial Large and Governmental/Educational/Non-profit Portfolio Summaries are shown in Table 4 located in Appendix E.

2.2. Plan data: Costs, Cost-effectiveness and Savings by program, sector and portfolio.

The Costs, Cost-effectiveness and Savings by program, sector and portfolio are shown in Appendix C and Appendix E.

2.3. Budget and Parity Analysis.

The Budget and Parity Analysis are shown in Table 5 located in Appendix E.

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3. Program Descriptions

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

The Company has coordinated EE&C development efforts with the Companies to achieve cost efficiencies and offer a consistent set of EE&C programs to customers served by these four companies where available. Section 1.2 outlines the process followed by the Company when selecting 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 EE&C Team reviewed potential programs and measures based on identification by, or feedback from: (i) stakeholders and vendors; (ii) FirstEnergy's energy efficiency implementation team; (iii) evaluation contractor and energy efficiency consultant; and the demand response RFP issued by the Company. The team also reviewed other industry sources, the Pennsylvania ("PA") Technical Reference Manual and the PA Market Potential Study, along with the programs and measures currently being offered through the Existing Plan, by the other Companies, other FirstEnergy affiliate utilities and non-FirstEnergy affiliates both within and outside of Pennsylvania.
2. Technologies were grouped by (i) sectors, such as residential and C&I; (ii) end uses, such as lighting and HVAC; and (iii) program types, such as home performance, and efficient products.
3. The potential programs and measures underwent a screening process carried out by the EE&C Team, which included among other things assessment of the technology readiness, anticipated participation, implementation requirements and cost and savings impacts. Potential programs and measures were reviewed with the Company stakeholders, the Company's implementation team and its energy efficiency consultants.
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 PA TRM and PA SWE Database for those measures covered, historic actuals, and from other industry sources, including the Database for Energy Efficiency Resources (DEER) and TRMs from other states. The Company's results were reviewed by its energy efficiency consultant.
5. The economic modeling was completed on an iterative basis and savings, cost and TRC values were determined for each program. The TRC results for each of the programs included in this plan can be found in Tables 7A through 7E in Appendix E.
6. The results from the PA Market Potential Study, prepared by the SWE on behalf of the Commission, were used to finalize and to confirm that the final program designs and assumptions are supported by the market potential.
7. 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. The preliminary plan and results were reviewed with the Company's

stakeholders, implementation team and energy efficiency consultants, incorporating, when appropriate, suggestions for refinement from these groups.

Program designs were then finalized and evaluated based on whether each:

- Promotes cost effective results;
- Involves proven delivery strategies;
- Includes programs that address prescriptive and custom measures; and
- Leverages existing delivery channels that have proven to be successful.

When designing the Phase III Plan, the Company utilized the following principles:

- Leverage the portfolio and program design of the Companies that have proven to be successful;
- Focus on those programs and measures with greater contributions to the energy savings targets vis-à-vis budget impacts;
- Incorporate additional program services or measures identified as successful from other EDCs or based on the Company's consultants;
- Incorporate new and innovative program services or measures that have the opportunity to contribute to the plan savings during the Phase III Plan period.

The Company believes that it has designed a suite of programs, including both proven and new technologies, that initially provides customers with generic information about saving energy, and then customized information and services with the intent to move them to make energy efficiency changes in their own homes and facilities.

3.1.1. Describe portfolio objectives and metrics that define program success (e.g., energy and demand savings, customers served, number of units installed).

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 Appendices D & E.

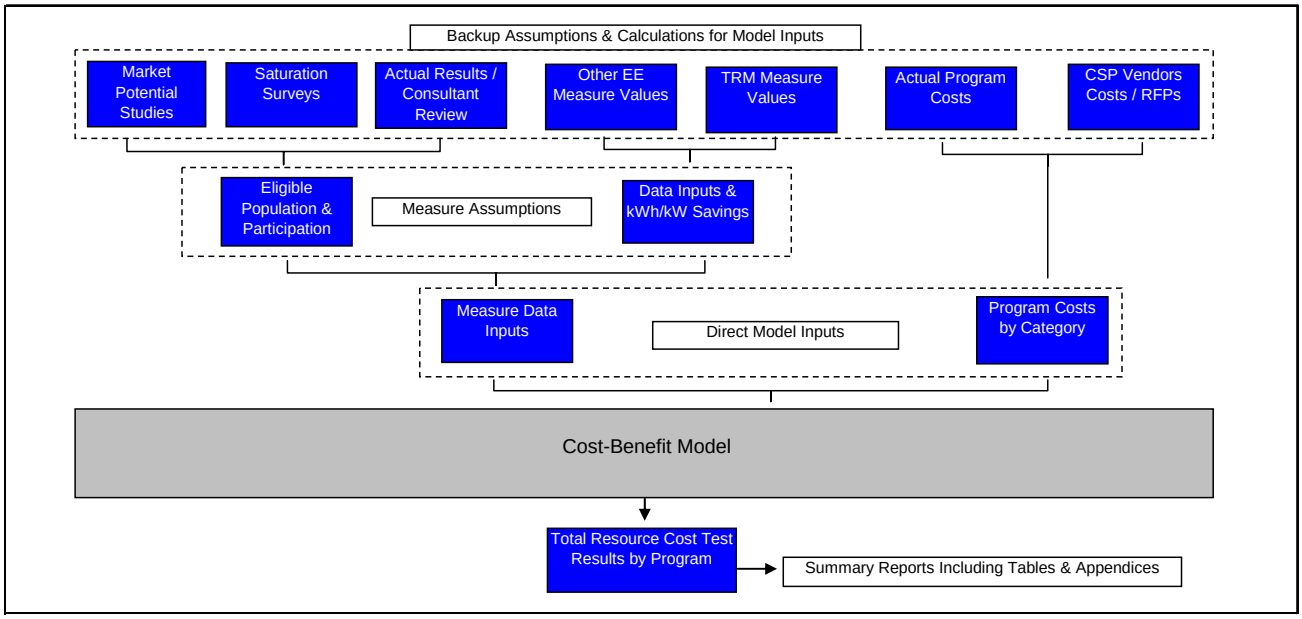
Fundamental metrics for program performance are the number of participants, kWh savings, kW peak load reductions, and dollars spent. Individual program metrics follow the three main metric designations: Immediate (Near Term) Metrics which are generally numeric counts, Intermediate Metrics, which generally 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.

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).

Figure 3 presents a schematic diagram of the analyses the Company used to develop programs, based on available information, experience of the Company and the other Companies and input from the Company's consultants and stakeholders. Generally, the approach is a "bottom-up" approach that relies upon detailed customer data to characterize the landscape for change and then applies assumptions and participation figures to the eligible population in order to arrive at the potential that exists for energy efficiency and the likely rate of uptake. Starting with individual assumptions about energy efficiency technologies, these are grouped into logical program groupings, incentives are applied along with other program costs, participation levels are assumed and the figures multiplied.

Figure 3: Model Process Diagram



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 Phase II Plan being considered first. The majority of the programs and measures included in the Phase II Plan are included as the cornerstone for this Phase III 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 and large C&I) 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.

Checks are then made between the results from the "bottom-up" analysis and selected data points (such as number of customers by customer segments and number of kWh sales by class) to see how proportional the savings are to these baseline figures. Logical and intuitive feasibility about the program assumptions is examined next, and adjustments are made as necessary, rebalancing the portfolio as appropriate.

3.1.3. Describe how energy efficiency, conservation, solar, solar photovoltaic systems, geothermal heating, and other measures are included in the portfolio of programs as applicable.

Section 3.2 presents individual program descriptions. See Appendix D-4 for the Rebate Schedule for incentive and rebate amounts.

For solar and geothermal heating related equipment please refer to the Residential Energy Efficient Products Program and Commercial/Industrial Efficient Equipment Program-Small for rebates on solar water heating and geothermal heating system measures.

3.1.4. Describe the comprehensive measures to be offered to the residential and small commercial rate classes.

In the Commission's 2015 Implementation Order, the Commission requires EDCs to develop EE&C plans that contain at least one comprehensive measure for residential and non-residential customers.[10] To comply with this Commission directive, the Company is offering both residential and small commercial customers comprehensive programs/measures.

The Company offers comprehensive measures to residential customers including whole house treatments through the Residential Energy Efficiency Homes program and the Low-Income program. The Energy Efficient Homes program includes home audits with additional incentives for comprehensive home retrofits as well as incentives for efficient new home construction. These residential home retrofit and new construction measures engage builders, developers, contractors, and program allies in providing comprehensive measures across the residential sector.

Similarly, the Company offers comprehensive measures to the commercial, industrial and G/E/NP sectors through energy audits, custom building, and custom measures. The services include audits with incentives for retrofit of major building end-uses such as lighting and HVAC, incentives for building shell improvements, and incentives for comprehensive process improvements.

Accordingly, the Company's Phase III Plan provides comprehensive services to both the residential and non-residential customers, with measures targeting both existing dwellings and buildings as well as new construction and process improvements, and with a range of

[10] 2015 Implementation Order, p. 61.

services that target overall energy usage and major end uses. The table below details the major end uses that the programs target in the Phase III Plan:

Table 6: Program Major End Uses

Program	End Use Category					
	HVAC	Water Heating	Lighting	Appliances	Consumer Electronics	Building Envelope
Energy Efficiency & Conservation Plan						
Residential Programs						
Appliance Turn In Program				X		
Energy Efficient Homes Program	X	X	X	X		X
Energy Efficient Products Program	X	X	X	X	X	
Low-Income Energy Efficiency Program	X	X	X	X	X	X
Small Commercial & Industrial Programs						
C&I Energy Solutions for Business Program - Small	X	X	X	X	X	X
Large Commercial & Industrial Programs						
C&I Energy Solutions for Business Program - Large	X	X	X			X
Governmental/Educational/Non-Profit Programs						
Governmental & Institutional Tariff Program	X	X	X	X		X

3.2. Residential Sector Programs:

The table below details the comparison of the sector's programs included in the Phase II Plan with those programs included in the Phase III Plan, along with a description of each program:

Table 7: Residential Existing & New Program Names & Descriptions

Phase II Program	Proposed Phase III Program	Program Description
Residential Programs		
Appliance Turn-In Program	Appliance Turn In Program	This program provides rebates to consumers for turning in working appliances.
Home Performance Program	Energy Efficient Homes Program	This program provides customers with energy efficiency education and awareness along with measures and incentives to improve energy efficiency of homes. Additionally the program provides an opportunity for residential customers with smart meters to reduce usage during Act 129 demand response events.
Energy Efficient Products Program	Energy Efficient Products Program	This program promotes the purchase of energy efficient products, such as HVAC equipment, appliances, lighting, home electronics and other home products, through consumer rebates or incentives and support to retailers and manufacturers.
Residential Low-Income Programs		
Low-Income Program	Low-Income Energy Efficiency Program	This program provides energy efficiency education and awareness along with basic to comprehensive whole house energy efficiency measures to qualified low-income customers, including appliance replacement and rebates for turning in working appliances or the purchase of energy efficient products.

The Table below illustrates the residential proposed programs, subprograms, and measures that are included in this plan:

Table 8: Proposed Residential Portfolio

Proposed Residential Portfolio			
Program	**Sub-Program**	**Measure**	**Measure Status**
Appliance Turn In Program	Appliance Turn In	Refrigerator Recycling	Existing
		Freezer Recycling	Existing
		Room Air Conditioner Recycling	Existing
		Dehumidifier Recycling	New
Energy Efficient Homes Program	School Education	School Education	Existing
	EE Kits	Energy Efficiency Measures	Existing
	Audits	Audit	Existing
		On-Line Audit	Existing
	Behavioral	Behavioral	Existing
	Behavioral - DR	Behavioral - DR	New
	New Homes	New Construction -Townhouse and Duplexs	Existing
		New Construction - Two-on-Two Condos	Existing
		New Construction - Single Family Detached	Existing
		New Construction - Multi Family Low Rise	Existing
		New Manufactured Housing	New
Energy Efficient Products Program	Appliances and Electronics	Pool Pump Motors	Removed
		Clothes Washer - Level 1	Existing
		Clothes Washer - Level 2	Existing
		Clothes Washer - Level 3	Existing
		Clothes Dryer - (Elec w Moisture Sensor)	New
		Clothes Dryer - (Elec Heat Pump)	New
		Freezers	Existing
		Refrigerators - Level 1	Existing
		Refrigerators - Level 2	Existing
		Refrigerators - Level 3	Existing
		Dehumidifiers	Existing
		Water Heater - Heat Pump	Existing
		Water Heater - Solar	Existing
		Home Controls	New
		Monitors	Existing
		Computers	Existing
		Imaging	Existing
		Smart Strip Plug Outlets	Removed
		TVs	Existing
	Lighting	CFL Lamps - Speciality	Existing
		CFL Lamps	Existing
		CFL Fixtures	Existing
		LED Lamps - Speciality	Existing
		LED Fixtures	Existing
		LED Lamps	Existing
		Residential Occupancy Sensors	New
	HVAC	Heat Pump - Level 2	Existing
		Heat Pump - Level 3	Existing
		Central Air Conditioner - Level 2	Existing
		Central Air Conditioner - Level 3	Existing
		Room Air Conditioner - Level 2	Existing
		Ductless Mini-Split A/C	Removed
		Ductless Mini-Split Heat Pump - Level 3	Existing
		PTAC - Level 2 - Multi Family	New
		PTHP - Level 2 - Multi Family	New
		Heat Pump - Water & GeoT - ES Tier 3	Existing
		HVAC - Maintenance	Existing
		Furnace Fans	Existing
		Whole House Fan	Removed
		Programmable Thermostat	New

Proposed Residential Portfolio (Cont'd)			
Program	**Sub-Program**	**Measure**	**Measure Status**
Low - Income Energy Efficiency Program	LI - EE Kits	LI Energy Efficiency Measures	Existing
	Weatherization	LI Weatherization (WARM Plus)	Existing
		LI WARM Extra Measures	Existing
	Multifamily / LILU Single Family	LI ApRplc Refrigerators/Freezers	Existing
		LI ApRplc HVAC	New
		LI ApRplc Water Heater	New
		LI Audit - MF & SF	New
	LI - Behavioral	LI Behavioral	Existing
	LI - New Homes	LI New Construction	New
	LI - Appliance Rebate	LI Clothes Washers	New
		LI Clothes Dryer	New
		LI Freezers	New
		LI Refrigerators	New
		LI Dehumidifiers	New
	LI - Appliance Turn In	LI Refrigerator Recycling	New
		LI Freezer Recycling	New
		LI Room Air Conditioner Recycling	New
		LI Dehumidifier Recycling	New
	LI - School Education	LI School Education	New

Below are the program descriptions for the Residential sector included in the Phase III Plan:

Program Title and Program years during which program will be implemented	**Appliance Turn-In Program** **June 2016 - May 2021**
Objective(s)	The objective of the Program is to remove older, inefficient, operating appliances from residences by offering customers an incentive, pick-up, and recycle services at no additional cost.
Target market	The target market for this program is existing multi- and single family households, renters and home owners.
Program description	This program will provide incentives to residential customers who recycle inefficient appliances such as refrigerators and freezers. The program provides customers an incentive, pick-up, and recycle services for turning in qualifying, inefficient, operating appliances. Qualifying appliances will be picked up at the customer's residence. In order to qualify for pick-up, equipment must be working at the time of pick up. In addition, periodic events may be offered at centralized drop-off locations where customers can drop off smaller inefficient operating appliances.
Implementation strategy (including expected changes that may occur in different program years)	The Company will outsource implementation of this program to a CSP who will be responsible for marketing, scheduling appointments, picking up / recycling of qualified working appliances, processing rebates and handling all customer inquiries. The Company plans to issue the RFP for this program by the end of 2015 and plans to select the CSP in a timeframe that supports a seamless transition and implementation from the current program beginning June 1, 2016, upon Commission approval of the CSP contract and program.
Program issues and risks and risk management strategy	The risks associated with this program are primarily obtaining sufficient customers to participate in the program. Well established and innovative marketing techniques and incentives will be used to promote the participation in this program.
Anticipated costs to participating customers	There are no additional costs to participating customers for this program.
Ramp up strategy	The Company anticipates a seamless transition and implementation upon Commission approval of the CSP contracts. For the existing and continuing program services, there will be some ramp-up period with the transition in implementation vendors. For new and expanded program services, it is anticipated that it will take at least three- to six-months to start up a program to launch after program approval. See discussion in Section 1.4 for more details on ramp up.

Marketing strategy	Marketing activities will target eligible customers to inform them of the program. Marketing channels may include but are not limited to: bill inserts, newspaper, television and radio spots, search engine optimization, and e-mail. This program is also cross-marketed through retailers and other residential programs such as energy usage reports or audits.
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 customer receives an incentive following pick up or turn in of qualifying appliances. Eligible program measures and incentive strategy are included in Appendix D-4.
Maximum deadline for rebates	Rebates are issued following pick-up of a qualifying appliance.
Program start date with key schedule milestones	See Figure 2
Assumed Evaluation, Measurement, and Verification (EM&V) requirements required to document savings by the Commission's statewide EE&C Plan Evaluator	The Company will verify that the planned number targeted appliances is collected and properly recycled. The Company plans to verify that the calculations of kWh and kW savings from appliance retirement are accurate and compliant with applicable requirements including those contained in the TRM. As part of the monitoring process, the Company plans to use selected indicators to verify periodically that energy savings and demand reduction are being realized as projected. A tracking and reporting system is to be used for such monitoring. In the event that EE&C program indicators show that projected EE&C targets are not likely to be achieved on schedule and within budget, the Company will take appropriate corrective actions, which may include adjustments to the incentive amount.
Administrative requirements – include internal and external staffing levels	The Company will use a combination of internal and external resources to manage and implement the EE&C programs and will monitor and adjust the allocation of resources to balance the needs of each program. See sections 4.2.1 and 4.2.2 of the EE&C plan for more details.
Estimated participation – includes tables indicating metric(s) with target value(s) per year	See Appendix D-3
Estimated program budget (total) by year – include table with budget per year	See Appendix C-1
Estimated percentage of sector budget attributed to program	See Appendix C-1 and Appendix E, Table 6

For demand response programs, costs to acquire MWs from customers who participate in PJM's Emergency Load Response Program (ELRP) and those that do not participate in PJM's ELRP.	Not applicable.
Savings targets – include tables with total MWh and MW goals per year and cumulative tables that document key assumptions of savings per measure or project	See Appendix C-2 and Appendix D-2
Cost-effectiveness – include TRC and net-to-gross (NTG) ratio for each program	See Appendix E, Table 7, for TRC ratios for this program on both a gross and net basis. See Appendix D-2 for the net-to-gross ratios assumed for each program measure. See Section 8.0 for information regarding the avoided cost calculations and inputs.
Other information deemed appropriate	None

Program Title and Program years during which program will be implemented	**Residential Energy Efficient Products Program** **June 2016 - May 2021**
Objective(s)	The objective of this program is to promote the installation of energy efficient residential appliances, lighting, consumer electronics and HVAC equipment which will increase market demand for those measures, thereby increasing customer awareness, energy efficiency product availability and lowering product prices.
Target market	Residential customers of the Company that purchase high-efficiency appliances, lighting, consumer electronics, HVAC equipment or other qualifying products from retailers.
Program description	This program will provide incentives for residential customers to purchase or install qualifying high efficiency appliances, lighting, consumer electronics and HVAC equipment. Incentives are targeted to reduce the customer's investment for qualifying energy efficient products thereby encouraging the adoption of high efficient equipment in lieu of standard equipment at the end of its useful life, or as early replacement. The program provides rebates to consumers and/or "mid-stream" or "upstream" incentives and support for manufacturers, distributors, and retailers that sell qualifying energy efficient products. The program also includes promotional support, point-of-sale materials, training, promotional events and rebates for select products. In addition to offering mail-in rebates, the Company will also work with manufacturers, distributors and retailers for point of purchase rebates, mid-stream incentives, and up-stream buy-downs for select measures and may consider other methods and processes for providing rebates. This program may also use strategies including, but not limited to, dealer incentives and/or special promotional events to encourage sales of high efficiency products.
Implementation strategy (including expected changes that may occur in different program years)	The Company will outsource implementation of this program to a CSP who will be responsible for marketing, to take applications, process documentation regarding purchased products and mail the rebate checks. A separate activity will involve implementation of the retailer program. The Company will offer mail in rebates, 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. The Company plans to issue the RFP for this program by the end of 2015 and plans to select the CSP in a

	timeframe that supports a seamless transition and implementation from the current program beginning June 1, 2016, upon Commission approval of the CSP contract and program. For contractor-installed products such as HVAC, the Company/CSP will work with contractors supporting their marketing and installation of qualified energy efficient products, and participation in the program.
Program issues and risks and risk management strategy	The risks associated with this program are primarily obtaining sufficient customers to participate in the program based on the customers' ability to purchase qualified energy efficient equipment and technology. A key barrier to implementation of energy efficiency measures remains their higher purchase price as compared to less efficient models. This program involves consumer education and dealer marketing and incentives for selling energy efficient appliances and other qualifying products. Educational materials will highlight the lower operating costs of the eligible high efficiency equipment and the savings customers will enjoy from making the higher efficiency choice. Evaluations will monitor the extent of uptake on each product and determine whether the marketing materials and/or rebate levels need to be adjusted to mitigate this risk.
Anticipated costs to participating customers	Customers will have to pay the balance of appliance equipment and installation costs not covered by the rebate.
Ramp up strategy	The Company anticipates a seamless transition and implementation upon Commission approval of the CSP contracts. For the existing and continuing program services, there will be some ramp-up period with the transition in implementation vendors. For new and expanded program services, it is anticipated that it will take at least three- to six-months to start up a program to launch after program approval. See discussion in Section 1.4 for more details on ramp up.
Marketing strategy	The program may use strategies including, but not limited to, dealer incentives, giveaways, and/or special promotional events to encourage sales of high efficiency products. The program will be marketed, where practical, in conjunction with the online audit, residential audit and energy usage reports as a recommendation for achievement of the identified energy savings. Mass marketing will target this program as a cornerstone for the other programs and services available to residential customers under the overall portfolio.

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 measures, the minimum qualifying efficiency ratings are based on meeting either ENERGYSTAR® requirements or other requirements that exceed the current Federal Standard. The Company has adopted new Federal Standards and revised eligibility requirements for certain applicable measures. New measures or eligibility requirements have been added to support emerging technologies including Home Controls (e.g. Home Energy Management Systems and other in home devices) and connected appliances. This program has been designed based on applying established efficient conditions per the 2016 PA TRM or other sources, which rely on ENERGYSTAR®, CEE or other standards and specifications for certain applicable measures. Given the potential of changing standards and specifications for the eligible products under the program during the term of this Phase III Plan, to maintain program continuity and implement timely on-going energy efficiency improvements, the Company may implement tier level or incentive changes for certain applicable measures in conjunction with future specification changes. Eligible program measures and incentive strategy are included in Appendix D-4.
Maximum deadline for rebates	Rebate applications must be submitted within 180 days of purchase and be postmarked by June 7, 2021.
Program start date with key schedule milestones	See Figure 2
Assumed Evaluation, Measurement, and Verification (EM&V) requirements required to document savings by the Commission's statewide EE&C Plan Evaluator	Verify that qualified products have been sold by dealers seeking payment of incentives by auditing a sample of their claims. Verify that new, more efficient products have been installed through review of documentation provided by retailers, as well as individual participant rebate applications. Document, store and send measure data to state using specified data transmission protocols, processes and technology. As part of the monitoring process, the Company plans to use selected indicators to verify periodically that energy savings and demand reduction are being realized as projected. A tracking and reporting system is to be used for such monitoring. In the event that EE&C program indicators show that projected EE&C targets are not likely to be achieved on schedule or within budget, the Company will take appropriate corrective actions such as changing marketing and/or incentive levels.

Administrative requirements – include internal and external staffing levels	The Company will use a combination of internal and external resources to manage and implement the EE&C programs. The Company will monitor and adjust the allocation of resources to balance the needs of each program. See sections 4.2.1 and 4.2.2 of the EE&C plan for more details.
Estimated participation – includes tables indicating metric(s) with target value(s) per year	See Appendix D-3
Estimated program budget (total) by year – include table with budget per year	See Appendix C-1
Estimated percentage of sector budget attributed to program	See Appendix C-1 and Appendix E, Table 6
For demand response programs, costs to acquire MWs from customers who participate in PJM's Emergency Load Response Program (ELRP) and those that do not participate in PJM's ELRP.	Not applicable
Savings targets – include tables with total MWh and MW goals per year and cumulative tables that document key assumptions of savings per measure or project	See Appendix C-2 and Appendix D-2
Cost-effectiveness – include TRC and net-to-gross (NTG) ratio for each program	The Company adopted adjusted effective useful lives for general service CFLs and LEDs projected under this program to comply with the 2016 TRM requirement to calculate the TRC with dual baselines pursuant to EISA 2020. The adjusted effective useful life reflects a weighted average measure life based on the projected number of units installed by year. See Appendix E, Table 7, for TRC ratios for this program on both a gross and net basis. See Appendix D-2 for the measure life and net-to-gross ratios assumed for each program measure. See Section 8.0 for information regarding the avoided cost calculations and inputs.
Other information deemed appropriate	The Company's plan projects a transition to LED products over the plan period. Building shell and weatherization measures are covered under the Energy Efficient Homes Program. At this time, the Company does not intend to bid energy efficiency or demand response resources into the PJM market.

Program Title and Program years during which program will be implemented	**Residential Energy Efficient Homes Program** **June 2016 - May 2021**
Objective(s)	The primary objective of this program is to educate customers on energy efficiency and energy usage, and to encourage customers to retrofit existing or implement new end use technologies and to adopt energy efficiency behaviors to conserve energy in their homes.
Target market	The target market for this program is residential customers and builders of new residential home construction.
Program description	This program provides customers with energy efficiency and energy usage education and awareness along with measures and incentives for customers to improve energy efficiency and conservation of their homes. This program includes the following subprograms: ➢ Audits <u>In-Home Audit</u> This measure offers residential customers a comprehensive in-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, with the direct installation of low cost energy savings measures at the time of the audit. It also examines appliance efficiency, lighting and HVAC systems. The audit targets comprehensive measures to provide whole home energy savings opportunities for customers. The cost of the 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 recommended energy savings projects and measures applicable to their home along with their associated energy savings impacts. Customers who implement these recommended and eligible energy savings measures are then entitled to additional rebates from the Company, including tiered incentives based on the amount of their savings. <u>On-Line Audit</u> The Online Home Energy Audit Tool is a software program that provides customers with information and education to lower their energy usage and costs through energy efficiency program participation and other actions. Customers without access to the internet can

verbally record via telephone their responses to the computerized questionnaire through one of the Company's customer service representatives. 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, a usage comparison graph, tips on how to save energy and other energy efficiency program opportunities available to them. Customers are sent an energy efficiency kit after the successful completion of an audit.

- EE Kits

  This subprogram 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 energy efficiency education. Provided items may include, but not be limited to: Educational Materials, CFLs/LEDs, Faucet Aerators, Low Flow Shower Heads, Furnace Whistles, etc. EE Kit contents may also be customized to target specific customer end-uses (e.g. electric water heating).

- New Homes

  This program provides incentives to local builders for achieving energy efficiency targets through a combination of building shell and installed measures, including appliance upgrades. To qualify for this program, the contractor must construct the home to the applicable ENERGYSTAR® Standard or build at a higher efficiency level than the then current adopted building code.

- Behavioral

  This subprogram provides 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 and other energy efficiency program opportunities that are available to them.

- Behavioral – Demand Response

	The Behavioral Demand Response subprogram (BDR) provides notification messages to motivate customers with smart meters installed to reduce usage during the Act 129 demand reduction events. This subprogram will also provide post-event feedback to the customer about their usage performance during the event, with normative comparisons to other customers, and recommendations to reinforce their usage reduction behaviors in future events. ➢ School Education This subprogram is a customized education program that is delivered by contracted performers and/or educators to elementary school children and teachers. The educational materials include: handout materials, homework assignments, and presentations that educate students on energy efficiency and conservation measures. A "take home" or "opt-in" kit will be utilized to introduce simple retrofit measures that the student can work with at home with their parents' involvement.
Implementation strategy (including expected changes that may occur in different program years)	The Company will outsource implementation of the individual subprograms to CSPs who will be responsible for marketing, outreach, enrollment, fulfillment of the program services and rebate processing where applicable. The Company has issued an RFP for Demand Response programs, plans to issue the RFP(s) for the other programs by the end of 2015 and plans to select the CSP(s) in a timeframe that supports a seamless transition and implementation from the current program beginning June 1, 2016, upon Commission approval of the CSP contract(s) and program.
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 and innovative marketing techniques will be used to promote the participation in this program. The Company will monitor the program performance and adjust marketing, outreach and/or incentives where applicable to mitigate this risk. The risk associated with Behavioral Demand Response subprogram is that it relies on residential customers to conserve energy usage during the targeted load reduction events. The CSP for this program will be required to manage their portfolio of participating customers to cover any contingency associated with customer non-response during load curtailment events. The CSP for this program will also be required to provide reporting to the Company detailing its performance during all load

	curtailment events, and to promptly react to any performance deficiencies.
Anticipated costs to participating customers	The on-line audit, EE Kits, Behavioral Modification, Behavioral Demand Response and School Education programs are offered at no additional cost to the customer. The In-Home Audit is offered to customers for a discounted fee. New Construction has a participant cost to build homes to efficiency levels in excess of the current adopted building code.
Ramp up strategy	The Company anticipates a seamless transition and implementation upon Commission approval of the CSP contracts. For the existing and continuing program services, there will be some ramp-up period with the transition in implementation vendors. For new and expanded program services, it is anticipated that it will take at least three- to six-months to start up a program to launch after program approval. See discussion in Section 1.4 for more details on ramp up.
Marketing strategy	Marketing and outreach activities will target eligible customers to inform them of the program. Mass marketing will target this program as a cornerstone for the other programs and services available to residential customers under the overall portfolio. Marketing channels may include but are not limited to: bill inserts, newspaper, television and radio spots, search engine optimization, and e-mail. The online audit, EE Kits and energy usage reports will also serve as a portal to other program opportunities available to the customer.
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)	Please see Appendix D-4 for a list of measures available within each product category listed above along with their rebate/incentive amounts.
Maximum deadlines for rebates	For the In-Home Audit measure, installation of major measures must be completed within 180 days from the date of the energy audit, rebate applications must be received within 180 days of measure installation and the rebate applications must be postmarked by June 7, 2021. All services must be purchased and installed between June 1, 2016, and May 31, 2021. For the New Home subprogram the deadline for submittal of applications is 180 days after home construction is completed and no later than June 7, 2021. Home construction and rating must be completed between June 1, 2016, and May 31, 2021.

Program start date with key schedule milestones	See Figure 2
Assumed Evaluation, Measurement, and Verification (EM&V) requirements required to document savings by the Commission's statewide EE&C Plan Evaluator	The Company is to verify that the planned number of each type of audit is performed on time and within budget. A sample of in-home audits will be reviewed to check that their actual costs do not exceed the contract cost, and that customers are satisfied with the service. The Company will also verify that existing EE&C opportunities are properly quantified to enable accurate tracking and documentation of energy efficiency and demand reduction. For the in-home audits, the Company is to verify that the installed measures and comprehensive diagnostics are performed as supported on program applications. The Company will also verify that existing EE&C opportunities are properly quantified to enable accurate tracking and documentation of energy efficiency and demand reduction. The Behavioral Demand Response subprogram will utilize advanced metering infrastructure (AMI) data analytics to evaluate the usage reduction during the Act 129 DR events. As part of the monitoring process, the Company plans to use selected indicators to verify periodically that energy savings and demand reduction are being realized as projected. A tracking and reporting system is to be used for such monitoring. In the event that EE&C program indicators show that projected EE&C targets are not likely to be achieved on schedule and within budget, the Company will take appropriate corrective actions.
Administrative requirements – include internal and external staffing levels	The Company will use a combination of internal and external resources to manage and implement the EE&C programs. The Company will monitor and adjust the allocation of resources to balance the needs of each program. See sections 4.2.1 and 4.2.2 of the EE&C plan for more details.
Estimated participation – includes tables indicating metric(s) with target value(s) per year	See Appendix D-3
Estimated program budget (total) by year – include table with budget per year	See Appendix C-1
Estimated percentage of sector budget attributed to program	See Appendix C-1 and Appendix E, Table 6
For demand response programs, costs to acquire MWs from customers who participate in PJM's	Not applicable

Emergency Load Response Program (ELRP) and those that do not participate in PJM's ELRP.	
Savings targets – include tables with total MWh and MW goals per year and cumulative tables that document key assumptions of savings per measure or project	See Appendix C-2 and Appendix D-2
Cost-effectiveness – include TRC and net-to-gross (NTG) ratio for each program	The Company adopted adjusted effective useful lives for general service CFLs and LEDs projected under this program to comply with the 2016 TRM requirement to calculate the TRC with dual baselines pursuant to EISA 2020. The adjusted effective useful life reflects a weighted average measure life based on the projected number of units installed by year. See Appendix E, Table 7, for TRC ratios for this program on both a gross and net basis. See Appendix D-2 for the measure life and net-to-gross ratios assumed for each program measure. See Section 8.0 for information regarding the avoided cost calculations and inputs.
Other information deemed appropriate	At this time, the Company does not intend to bid energy efficiency or demand response resources into the PJM market.

3.2.1. Low-Income Sector Programs.

Program Title and Program years during which program will be implemented	**Low-Income Energy Efficiency Program** **June 2016 - May 2021**
Objective(s)	The primary objectives of this program are to provide basic to comprehensive energy efficiency and whole building measures, through direct installation or direct mail to low-income households; provide enhanced rebates to qualified customers to replace inefficient appliances with ENERGYSTAR® or other energy efficient qualified appliances; remove older inefficient appliances from the system by offering qualified customers an incentive and pick-up and recycle service at no additional cost; educate low-income customers about energy efficiency and conservation, about their home's energy use and ways to save energy and to target the construction of new energy efficient low-income housing.
Target market	The target market for this program are customers who are income-qualified up to 150% of the Federal Poverty Income Guideline (FPIG).
Program description	This program provides various levels of energy efficiency and whole building measures, rebates, inefficient appliance removal, energy efficiency and conservation education and targets the construction of new energy efficient low-income housing. This program includes the following subprograms: ➢ Comprehensive Weatherization/Energy Conservation This subprogram contains the following components: <u>WARM Plus (Comprehensive)</u> This component is an expansion of the existing comprehensive Low-Income Usage Reduction Program, known as the WARM program. This program provides additional energy education and comprehensive weatherization services in single and multi-family homes. The Company has pursued opportunities to coordinate providing these services to qualified customers with Natural Gas Distribution Companies (NGDC) and the Department of Community and Economic Development (DCED) Weatherization Assistance Program, during Phases I and II, including providing program referrals and/or leveraging common

contractors, and plans to continue to pursue additional opportunities during Phase III, where available.

WARM Extra Measures (Extra Measures)

This component is an expansion of the existing WARM program and provides additional electric energy savings measures above and beyond those provided to customers in individually metered residential properties that are participating in the WARM Program. As discussed under WARM Plus above, the Company has pursued opportunities to coordinate providing program services to qualified customers with state and gas programs during Phases I and II, including providing program referrals and/or leveraging common contractors, and plans to continue to pursue additional opportunities during Phase III, where available.

- Multi-Family and Low-Income Low Usage (LILU) Single Family

This subprogram contains the following components:

Audit – Multi Family and Single Family

This measure targets low-income multi-family or single-family customers who do not qualify for the comprehensive WARM program that consists of customers receiving a no-cost in-home audit/assessment with the direct installation of low cost measures at the time of the audit and the installation of qualified major measures (e.g. appliance replacement) after the audit. The audit/assessment will examine major end uses including appliances, lighting and HVAC systems coordinated with the small commercial and industrial sector program and will provide customers with a list of energy savings opportunities and measures applicable to their home and the associated energy savings impacts. Audit recommended qualified measures will be incented up to 100% of the cost of retrofit. Workshops providing energy education may be conducted as appropriate. The CSP for this subprogram will coordinate with the implementation vendor for the WARM Plus subprogram to avoid duplicating efforts for projects coordinated with state and gas weatherization programs, and for the multifamily subprogram under the C&I Energy Solutions for Business Program – Small to target building shell and/or common building systems.

Appliance Replacement

This measure targets the replacement of older inefficient appliances replaced with ENERGYSTAR® or other energy efficient appliances, HVAC and water heaters.

- Energy Efficiency Kits

  This component consists of customers receiving a kit with energy savings measures and energy education information through direct mail or other direct "to customer" means. Typically these are customers who do not accept in-home services or their landlord does not accept services or they otherwise are not eligible for other low-income program services.

- Low-Income New Housing

  This is a new subprogram that provides incentives for the construction of energy efficient housing through a combination of building shell and installed measures, including appliance upgrades to low-income multi-family or single-family homes. To qualify for this program, the contractor must construct the home to meet the applicable ENERGYSTAR® Standard or build at a higher efficiency level than the current adopted building code. To identify potential projects, the Company will work with the Pennsylvania Housing Financing Agency (PHFA) or other entities.

- Behavioral Modification Program

  This subprogram provides customized energy usage reports to low-income customers with specific information about each customer's energy usage as well as analysis regarding their usage over time, with specific tips and recommendations for conserving energy and provides other relevant program information to them.

- Appliance Rebates

  This subprogram provides enhanced incentives to income-qualified customers for the purchase of energy efficient appliances meeting ENERGYSTAR® or other energy efficiency requirements.

- Appliance Turn-In

  This subprogram provides enhanced incentives to income-qualified 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. ➢ School Education This subprogram provides energy efficiency education and awareness to low-income students and parents to save energy in their homes. This subprogram is a customized education program that is delivered by contracted performers and/or educators to elementary school children and teachers. Educational materials may include: handout materials, homework assignments, and presentations that educate students on energy efficiency and conservation measures. A "take home" or "opt in" kit includes low cost measures, such as but not limited to CFLs, LEDs, faucet aerators and energy-saving shower heads.
Implementation strategy (including expected changes that may occur in different program years)	Program services would be administered by Company staff, and delivered by a Conservation Service Provider(s), WARM program Community Based Organizations ("CBOs"), and/or private contractors, coordinated or augmented by additional private vendors as needed to enhance the capacity of existing agencies and contractors. The Company will give specific consideration for program referrals and coordination with the DCED Weatherization Assistance Program and the NGDC Programs.
Program issues and risks and risk management strategy	Challenges with identifying income-qualified customers and customer participation in certain areas. Challenges with adding and training contractors if needed and landlord reluctance to permit services. The Company will monitor the program performance and adjust marketing, outreach and/or incentives where applicable to mitigate this risk.
Anticipated costs to participating customers	Based on income qualification, there are no out-of-pocket costs to qualified low-income customers to participate in the Weatherization/Energy Conservation, Multi/Single-Family, Behavioral Modification and School Education programs. The Company will offer incentives to qualified low-income customers for the Low-Income Appliance Rebates and Appliance Turn-in subprograms, and to customers and/or landlords for the Multi/Single-Family subprogram.
Ramp up strategy	The Company anticipates a seamless transition and implementation upon Commission approval of the CSP contracts. For the low-income program services continuing from Phase II (Warm Plus, Warm Extra, EE Kits and Behavioral Modification), there will be some ramp-up period with any

	transition in implementation vendors and/or new vendors. For new and expanded program services, it is anticipated that it will take three- to six-months to launch after program approval. See discussion in Section 1.4 for more details on ramp up.
Marketing strategy	Marketing and outreach activities will target income-eligible customers to inform them of the program. The marketing strategy for this program will include but is not limited to Company bill inserts, Company website, direct mail campaigns, radio, newspaper and internet advertising, bus signs, posters, postcards, energy-usage reports, giveaways, and/or special promotional events, senior citizen and low-income information fairs and community presentations as needed. Marketing activities will be coordinated with other Act 129 programs, the Company's and other state low-income programs such as the Customer Assistance Program, Dept. of Public Welfare, PHFA, DCED Weatherization Assistance Program, the NGDC Programs and CBO initiatives. The EE Kits and energy usage reports will also serve as a portal to educate the customer on other program opportunities available to them.
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 measures, the minimum qualifying efficiency ratings are based on meeting either ENERGYSTAR® requirements or other requirements that exceed the current Federal Standard. The Company has adopted new Federal Standards and revised eligibility requirements for certain applicable measures. This program has been designed based on applying established efficient conditions per the 2016 PA TRM or other sources, which relies on ENERGYSTAR®, CEE or other standards and specifications for certain applicable measures. Given the potential of changing standards and specifications for the eligible products under the program during the term of this Phase III Plan, to maintain program continuity and implement timely on-going energy efficiency improvements, the Company may implement tier level or incentive changes for certain applicable measures in conjunction with future specification changes. Eligible program measures and incentive strategy are included in Appendix D-4.
Maximum deadlines for rebates	For the Multifamily/LILU Single Family subprogram, installation of major measures (e.g. appliance replacement) must be completed within 180 days from the date of the energy audit, rebate applications must be received within 180 days of measure installation and postmarked by June 7, 2021. All services must

	be purchased and installed between June 1, 2016, and May 31, 2021. For the Appliance Rebate subprogram, the application must be submitted within 180 days of purchase and be postmarked by June 7, 2021. All services must be purchased and installed between June 1, 2016, and May 31, 2021. For the New Home subprogram the deadline for submittal of applications is 180 days after home construction is completed and no later than June 7, 2021. Home construction and rating must be completed between June 1, 2016, and May 31, 2021.
Program start date with key schedule milestones	See Figure 2
Assumed Evaluation, Measurement, and Verification (EM&V) requirements required to document savings by the Commission's statewide EE&C Plan Evaluator	For the Human Services programs, third-party Quality Assurance vendors will inspect a percentage of completed homes. EM&V contractors will conduct surveys and check sample calculations of projected savings for accuracy and for compliance with TRM guidelines. They will verify that new, more efficient products have been installed through review of documentation provided by individual participant rebate applications. They will document, store and send measure data to the Statewide Evaluator using specified data transmission protocols, processes and technology. For the post-installation phase, measures will be verified that they have been installed and that expected energy savings goals are being achieved. As part of the monitoring process, the Company plans to use selected indicators to periodically verify that energy savings and demand reduction are being realized as projected. A tracking and reporting system is to be used for such monitoring. In the event that EE&C program indicators show that projected EE&C targets are not likely to be achieved on schedule or within budget, the Company will take appropriate corrective actions such as changing marketing, outreach and/or incentive levels.
Administrative requirements – include internal and external staffing levels	The Company will use a combination of internal and external resources to manage and implement the EE&C programs. The Company will monitor and adjust the allocation of resources to balance the needs of each program. See sections 4.2.1 and 4.2.2 of the EE&C plan for more details.
Estimated participation – includes tables indicating metric(s) with target value(s) per year	See Appendix D-3

Estimated program budget (total) by year – include table with budget per year	See Appendix C-1
Estimated percentage of sector budget attributed to program	See Appendix C-1 and Appendix E, Table 6
For demand response programs, costs to acquire MWs from customers who participate in PJM's Emergency Load Response Program (ELRP) and those that do not participate in PJM's ELRP.	Not applicable
Savings targets – include tables with total MWh and MW goals per year and cumulative tables that document key assumptions of savings per measure or project	See Appendix C-2 and Appendix D-2
Cost-effectiveness – include TRC and net-to-gross (NTG) ratio for each program	The Company adopted adjusted effective useful lives for general service CFLs and LEDs projected under this program to comply with the 2016 TRM requirement to calculate the TRC with dual baselines pursuant to EISA 2020. The adjusted effective useful life reflects a weighted average measure life based on the projected number of units installed by year. See Appendix E, Table 7, for TRC ratios for this program on both a gross and net basis. See Appendix D-2 for the measure life and net-to-gross ratios assumed for each program measure. See Section 8.0 for information regarding the avoided cost calculations and inputs.
Other information deemed appropriate	At this time, the Company does not intend to bid energy efficiency or demand response resources into the PJM market.

3.3. Commercial/Industrial Small Sector Programs.

The table below details the comparison of this sector's programs included in the Phase II Plan with those included in this Phase III Plan, along with a program description:

Table 9: Existing & New Small C/I Programs

Phase II Program	Proposed Phase III Program	Program Description
Small Commercial & Industrial Programs		
C&I Energy Efficient Equipment Program - Small	C&I Energy Solutions for Business Program - Small	This program provides measures and financial incentives (prescriptive & performance) to small commercial and industrial customers, including small government and institutional customers, to purchase qualifying high efficiency measures, recycle inefficient appliances, retrofit specialized processes and applications to higher efficiency processes and applications, complete qualifying high efficiency building shell or system improvements or to complete an audit with qualifying audit installations or recommendations.
C&I Energy Efficient Buildings Program - Small		

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

Table 10: Proposed Small C/I Portfolio

Proposed Small C&I Portfolio			
Program	**Sub-Program**	**Measure**	**Measure Status**
C&I Energy Solutions for Business Program - Small	HVAC - SCI	Room Air Conditioner - Level 2 - SCI	Existing
		Air Conditioning - Level 1 <=5.4 Tn - SCI	Existing
		Air Conditioning - Level 2 <=5.4 Tn - SCI	Existing
		Air Conditioning - Level 1 >5.4 < 20 Tn - SCI	Existing
		Air Conditioning - Level 1 >=20 Tn - SCI	Existing
		Chiller - Water Cld w Full Load - Level 1 - SCI	Existing
		Heat Pump - Level 1 <=5.4 Tn - SCI	Existing
		Heat Pump - Level 2 <=5.4 Tn - SCI	Existing
		Heat Pumps - Level 1 >5.4 Tn - SCI	Existing
		Heat Pumps - Water & GeoT - ES Tier 3 - SCI	Existing
		HVAC - Maintenance - SCI	Removed
		Ductless Mini-Split HP - Level 3 – SCI	Existing
		PTAC - SCI	Existing
		PTHP - SCI	Existing
	Lighting - SCI	CFL Fixtures - SCI	Existing
		CFL Lamps Speciality - SCI	Existing
		CFL Lamps - SCI	Existing
		Lighting Controls (Daylight & Occupancy) - SCI	Existing
		Linear Fluorscent T5 - SCI	Existing
		Linear Fluorscent T8 - SCI	Existing
		LED Linear - SCI	Existing
		LED Channel Signage - SCI	Existing
		Exit Signs - SCI	Existing
		LED Fixtures External - SCI	Existing
		LED Fixtures Internal - SCI	Existing
		LED - Traffic Signals - Gov	Existing
		LED Lamps - SCI	Existing
		LED Reach in Refrigerator / Freezer Lights - SCI	Existing
		Street & Area Lighting (Customer Owned) - SCI	Existing
	Food Service	Refrigerators - Reach In - SCI	Existing
		Freezers - Reach In - SCI	Existing
		Ice Machines - SCI	Existing
		Refrigerated Case Cover - SCI	Existing
		Strip Curtains - SCI	Existing
		Anti Sweat Heater Controls - SCI	Existing
		Beverage Vending Machine - Controls - SCI	Existing
		Beverage Vending Machine - Energy Star - SCI	New
		Combination Oven - SCI	Existing
		Convection Oven - SCI	Existing
		Steam Cookers - SCI	Existing
		Fryers - SCI	Existing
		Griddles - SCI	Existing
		Hot Food Holding Cabinet - SCI	Existing
	Appliances and Electronics - SCI	Refrigerator Recycling - SCI	Existing
		Freezer Recycling - SCI	Existing
		Room Air Conditioner Recycling - SCI	Existing
		Clothes Washer - Level 1 - SCI	Existing
		Clothes Washer - Level 2 - SCI	Existing
		Clothes Washer - Level 3 - SCI	Existing
		Clothes Dryer (Elec w Moisture Sensor) - SCI	New
		Clothes Dryer (Elec Heat Pump) - SCI	New
		Refrigerators - Level 1 - SCI	Existing
		Refrigerators - Level 2 - SCI	Existing
		Refrigerators - Level 3 - SCI	Existing
		Water Heater - Heat Pump - SCI	Existing
		Water Heater - Solar - SCI	Existing
		Freezers - SCI	Existing
		Pre-Rinse Sprayers - SCI	Existing
		Uninterruptible Power Supply - SCI	New
		Monitors - SCI	Existing
		Computers - SCI	Existing
		Imaging - SCI	Existing
		Smart Strip Plug Outlets - SCI	Removed

Proposed Small C&I Portfolio (Cont'd)			
Program	**Sub-Program**	**Measure**	**Measure Status**
C&I Energy Solutions for Business Program - Small	Agricultural	Automatic Milker Takeoffs - SCI	New
		Dairy Scroll Compresors - SCI	New
		High Efficiency Ventilation Fans - SCI	New
		High Volume LowSpeed Fans - SCI	New
		Livestock Waterer - SCI	New
		VFD on Dairy Vacuum Pumps - SCI	New
		Heat Reclaimers - SCI	New
		Low Pressure Irrigation System - SCI	New
	Custom - SCI	Custom Retrocommissioning - SCI	Existing
		Custom - Process Improvement - SCI	Existing
		Custom - HVAC & Chillers - SCI	Existing
		Custom - Data Centers - SCI	Existing
		Custom - Compressed Air - SCI	Existing
		Custom - VFDs < 10HP - SCI	Existing
		Custom - VFDs > 10 HP - SCI	Existing
		Custom-Motors - Three Phase - SCI	Existing
		Custom - Refrigeration - SCI	Existing
	Custom Buildings - SCI	Custom - Building Improvements - SCI	Existing
	EE Kits - SCI	Energy Efficiency Measures - SCI	Existing
	Multifamily	ApRplc Refrigerators/Freezers - SCI	New
		ApRplc HVAC - SCI	New
		ApRplc Water Heater - SCI	New
		Audit - MF - SCI	Existing
	Audits - SCI	Audit - SCI	Existing
		Audits w Direct Install - SCI	Existing
		Behavioral - SCI	New

Below are the program descriptions for the Commercial/Industrial Small sector included in the Phase III Plan:

Program Title and Program years during which program will be implemented	**C/I Energy Solutions for Business Program - Small** **June 2016 - May 2021**
Objective(s)	The primary objective of the program is to accelerate the adoption and increase the market share of high efficiency equipment, and to increase the energy efficiency of buildings among commercial and industrial customers including small G/E/NP customers, by reducing the first cost of high efficiency equipment or building improvements. This program will provide financial support through incentives to customers who implement qualifying high efficiency measures. The ultimate goal is to influence future customer behavior toward energy efficiency measures and practices.
Target market	Commercial, industrial, municipal, and agricultural customers of the Company with buildings or equipment in the Company's Pennsylvania service territory.
Program description	This program will provide incentives to the small commercial and industrial customer who implements qualifying high efficiency measures, recycles inefficient appliances or retrofits specialized processes and applications to higher efficiency processes and applications, implements qualifying high efficiency building shell or system improvements, or completes an energy efficiency audit. Prescriptive or performance incentives are targeted to reduce the customer's investment for qualifying high efficiency measures thereby encouraging the adoption of high efficiency equipment and buildings. This program includes the following subprograms: ➢ HVAC HVAC measures within the program are intended to encourage customers to install more efficient HVAC equipment in an effort to reduce both energy consumption and demand in the HVAC end use category. Prescriptive-based incentives will be provided to encourage customers to upgrade less efficient HVAC equipment to higher efficiency units. These program measures are selected and designed to encourage the customer to install newer energy efficient systems. ➢ Appliances and Electronics Appliance recycle and rebate measures within the program are intended to encourage customers to recycle inefficient appliances and to install ENERGYSTAR® qualified or other energy efficient appliances in an effort to reduce both energy consumption and demand in the small commercial/industrial

customer sector. Prescriptive-based incentives will be provided to customers and incentives and support to retailers that sell energy efficient products, such as ENERGYSTAR® qualified appliances and consumer electronics.

Appliance recycle measures provide a service and incentive to customers for turning in inefficient operating appliances such as refrigerators, freezers and room-air conditioners 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.

In addition, water heating measures within the program 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. Prescriptive based incentives will be provided to customers for upgrading less efficient Domestic Hot Water (DHW) equipment to higher efficiency units.

- Food Service

The food service subprogram and general end-use measures within the program 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. Prescriptive incentives will be offered 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 program 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. Prescriptive or 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 retrofit projects employing standard efficient lighting technologies where the anticipated energy savings are relatively consistent. Performance based incentives will be offered for larger projects and retrofits, based on annual kWh savings, where the anticipated energy savings can vary significantly from application to application. These program measures

are designed to encourage customer renovation of existing lighting systems and to install newer energy efficient systems.

- Custom

  Custom measures within the program are intended to encourage customers to retrofit or install more efficient specialized processes and applications in an effort to reduce both energy consumption and demand. Prescriptive 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, equipment replacement, combined heat and power, process change, etc.) to high efficiency specialized processes and applications. Prescriptive incentives will be offered for individual applications and retrofit projects employing standard efficient technologies where the anticipated energy savings are relatively consistent. Performance based incentives will be offered for larger projects and retrofits, based upon an analysis of potential annual energy savings on a case-by-case basis where the anticipated energy savings can vary significantly from application to application.

- Agriculture

  The agriculture subprogram and general end-use measures within the program are intended to encourage customers to install energy efficient equipment in an effort to reduce both energy consumption and demand in the agricultural customer sector. Prescriptive-based incentives will be provided to consumers and incentives and support to retailers that sell energy efficient equipment related to the milking, cooling, ventilation and watering systems on farms.

- Custom Buildings

  The measures within the Custom Buildings subprogram are intended to encourage customers to install specialized building shell or systems improvements to reduce energy consumption and demand by improved building energy performance.

  This program provides financial support through incentives for the implementation of 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 measures and operations.

Performance incentives will be provided to customers for installing highly specialized custom building shell or systems improvements.

- Audits & Education

The audit measure is intended to encourage customers to complete a detailed third party energy efficiency audit for commercial and industrial operational or manufacturing processes, building shell/envelope or building systems. This program will provide financial support through incentives toward the customer's cost of the audit pending approval and implementation of qualifying audit recommended energy efficiency improvements.

The Audit with Direct Install Measures is intended to provide an energy audit/assessment with technical assistance conducted to document the building's existing equipment and efficiency opportunities prior to installation of efficiency measures. The direct installation of qualified energy efficiency measures will be provided with additional incentive for comprehensive retrofits.

The Behavioral measure is designed to engage and provide customers with specific information about their energy usage as well as analysis regarding their usage over time, including development of specific recommendations for conserving energy, energy efficiency and other energy efficiency program opportunities that are available to them. This measure may be provided through various means such as written reports or in person consultation.

Virtual/remote audits, energy analysis software or other energy usage and efficiency tools may also be provided under this subprogram to support customer engagement, education and participation in the Company's programs.

- EE Kits

The Energy Efficiency Kits subprogram is intended to educate customers on the benefits of simple energy efficiency measures and other opportunities to accelerate the adoption and increase the market share of high efficiency equipment in the small business sector, including non-residential metered multifamily buildings, to improve building energy performance in an effort to reduce both energy consumption and demand. Provided items may include, but not be limited to: Educational Materials, CFLs/LEDs, and Faucet Aerators. EE Kit contents may also

	be customized to target specific customer end-uses (e.g. electric water heating, refrigeration). The energy efficiency measures should promote customer participation from engaged customers in other programs and the adoption of more comprehensive measures. ➢ Multi-Family This subprogram targets energy efficiency measures for non-residential metered multi-family residences, including: <u>Appliance Replacement</u> This measure replaces older inefficient appliances with ENERGYSTAR® or other energy efficient appliances, HVAC and water heaters. <u>Audit</u> This measure offers building owners and tenants an energy audit/assessment with the direct installation of low cost measures at the time of the audit and the installation of major measures (e.g. appliance replacement) after the audit. The audit/assessment will examine major end uses including appliances, lighting and HVAC systems and provide customers and building owners with a list of energy savings opportunities and measures applicable to them and the associated energy savings impacts. Audit recommended qualified measures will be incented up to 100% of the cost of retrofit. The CSP for this subprogram will coordinate with the implementation vendor for the Low-Income multifamily subprogram to target building shell and/or common building systems. Potential enhancements to this program include working with customers, manufacturers, program allies, wholesalers and retailers including point-of-sale or 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.
Implementation strategy (including expected changes that may occur in different program years)	The Company will outsource implementation of this program and subprograms to one or more CSPs who will be responsible for marketing, outreach, to take applications, process documentation regarding purchased products and rebate fulfillment. The Company will require the CSP to consider innovative outreach activities to engage customers such as, but not limited to, providing Energy Manager services and/or

	developing/supporting customers' continuous improvement activities. The Company plans to issue the RFP for this program by the end of 2015 and to select the CSP(s) in a timeframe that supports a seamless transition and implementation from the current program beginning June 1, 2016, upon Commission approval of the CSP contract and program. The Company will encourage CSPs who target specific customer segments or end uses (e.g. agriculture, food service) to respond to the RFP. The Company intends to contract on a performance basis to insure creativity and motivation toward obtaining participation and meeting the goal.
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 and innovative marketing and outreach techniques will be used to promote the participation in this program. The Company will monitor the program performance and adjust marketing, outreach and/or incentives levels or approaches where applicable to mitigate this risk. Business climate may require customer fees or contributions to be reduced in order to encourage participation. With respect to risk management, refer to Section 4 of the EE&C plan.
Anticipated costs to participating customers	Balance of costs of equipment, plus installation costs as relevant.
Ramp up strategy	The Company anticipates a seamless transition and implementation upon Commission approval of the CSPs contracts. For the existing and continuing program services, there will be some ramp-up period with the transition in implementation vendors. For new and expanded program services, it is anticipated that it will take at least three- to six-months to start up a program to launch after contract and program approval. The program is 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 program measures will occur in the 2016 plan year. See discussion in Section 1.4 for more details on ramp up.
Marketing strategy	The objective of the program is to promote the installation of energy efficient equipment and to improve energy efficiency of buildings which will increase market demand for those measures, thereby increasing customer awareness, measure availability and lowering prices for energy efficiency measures. Marketing activities will target eligible customers to inform them of the program, the measures, 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 measures. As discussed above, the Company will require the CSP to consider innovative outreach activities to engage customers such as, but not limited to, providing Energy Manager services and/or developing/supporting customers' continuous improvement activities. Additionally, Company resources will be utilized to conduct outreach to their constituents regarding program availability. FirstEnergy personnel (e.g. Area Managers and Customer Support Representatives) will be charged with providing first line contacts to eligible customers within the target market segments. The Implementation Providers and/or Program Managers will be responsible for ultimate program marketing. The Company will contract with experienced Implementation Providers and/or Program Managers on a performance basis to insure creativity and motivation in marketing strategies toward obtaining the program's participation and energy savings goals.
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)	This program has been designed based on applying established efficient conditions per the 2016 PA TRM or other sources, which relies on ENERGYSTAR®, CEE or other standards and specifications for certain applicable measures. Given the potential of changing standards and specifications for the eligible products under the program during the term of this Phase III Plan, to maintain program continuity and implement timely on-going energy efficiency improvements, the Company may implement tier level or incentive changes for certain applicable measures in conjunction with future specification changes. Proposed measures with their eligibility and rebate strategy can be found in Appendix D-4**.** In addition to providing incentives after customers have installed qualified energy efficient measures, the Company may provide mid-stream or up-stream incentive strategies to enhance program delivery for select measures, with such rebates and program costs within the approved incentive ranges and program budgets. The Company has adopted new Federal Standards and revised eligibility requirements for certain applicable measures.
Maximum deadlines for rebates	Applications must be submitted no later than 180 days from the date of project completion, which is defined as all measures being installed and operable**.** All applications must be submitted via the on-line application portal by May 31, 2021.

Program start date with key schedule milestones	See Figure 2
Assumed Evaluation, Measurement, and Verification (EM&V) requirements required to document savings by the Commission's statewide EE&C Plan Evaluator	For the pre-installation phase, for a sample of participants, the Company will verify that inefficient equipment (Ex. HVAC, lighting, food services equipment plug loads and controls) are installed and working on customers' premises. It will also determine current total energy consumption and demand using billing/meter information and will check sample calculations of projected savings and assumptions (e.g. EFLH) for accuracy and for compliance with TRM guidelines. Pre-approval providing the opportunity for pre-installation inspections will be required for certain measures and projects. For the post-installation phase, the Company will verify through verification inspections that new, more efficient, equipment has been installed and will document, store and send measure data to the SWE using specified data transmission protocols, processes and technology. As part of the monitoring process, the Company will use selected indicators to verify periodically that energy savings and demand reduction are being realized as projected. A tracking and reporting system is to be used for such monitoring. In the event that EE&C program indicators show that projected EE&C targets are not likely to be achieved on schedule and within budget, the Company will take appropriate corrective actions, which may include adjusting incentives.
Administrative requirements – include internal and external staffing levels	The Company will use a combination of internal and external resources to manage and implement the EE&C programs. The Company will monitor and adjust the allocation of resources to balance the needs of each program. See Section 4 of the EE&C plan for more details.
Estimated participation – includes tables indicating metric(s) with target value(s) per year	See Appendix D-3
Estimated program budget (total) by year – include table with budget per year	See Appendix C-1
Estimated percentage of sector budget attributed to program	See Appendix C-1 and Appendix E, Table 6
For demand response programs, costs to acquire MWs from customers who participate in PJM's Emergency Load Response Program	Not applicable.

(ELRP) and those that do not participate in PJM's ELRP.	
Savings targets – include tables with total MWh and MW goals per year and cumulative tables that document key assumptions of savings per measure or project	See Appendix C-2 and Appendix D-2
Cost-effectiveness – include TRC and net-to-gross (NTG) ratio for each program	The Company adopted adjusted effective useful lives for general service CFLs and LEDs projected under this program to comply with the 2016 TRM requirement to calculate the TRC with dual baselines pursuant to EISA 2020. The adjusted effective useful life reflects a weighted average measure life based on the projected number of units installed by year. See Appendix E, Table 7, for TRC ratios for this program on both a gross and net basis. See Appendix D-2 for the measure life and net-to-gross ratios assumed for each program measure. See Section 8.0 for information regarding the avoided cost calculations and inputs.
Other information deemed appropriate	The plan anticipates a transition to LED products during the Phase III Period. At this time, the Company does not intend to bid energy efficiency or demand response resources into the PJM market.

3.4. Commercial/Industrial Large Sector Programs.

The table below details the comparison of this sector's programs included in the Existing Plan with those included in the Phase III Plan, along with a program description:

Table 11: Existing & New Large C/I Programs

Phase II Program	Proposed Phase III Program	Program Description
Large Commercial & Industrial Programs		
C&I Energy Efficient Equipment Program - Large	C&I Energy Solutions for Business Program - Large	This program provides financial incentives (prescriptive & performance) to large commercial and industrial customers, including large government and institutional customers, to implement qualifying high efficiency measures or retrofit specialized processes and applications to higher efficiency processes and applications, complete qualifying high efficiency building shell or system improvements or to complete an audit with qualifying audit recommendations.
C&I Energy Efficient Buildings Program - Large		

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

Table 12: Large C/I Portfolio

Proposed Large C&I Portfolio			
Program	**Sub-Program**	**Measure**	**Measure Status**
C&I Energy Solutions for Business Program - Large	HVAC - LCI	Air Conditioning - Level 1 <=5.4 Tn - LCI	Existing
		Air Conditioning - Level 2 <=5.4 Tn - LCI	Existing
		Chiller - Water Cld w Full Load - Level 1 - LCI	Existing
		Air Conditioning - Level 1 >5.4 < 20 Tn - LCI	Existing
		Air Conditioning - Level 1 >=20 Tn - LCI	Existing
		Heat Pump - Level 1 <=5.4 Tn - LCI	Existing
		Heat Pump - Level 2 <=5.4 Tn - LCI	Existing
		Heat Pumps - Level 1 >5.4 Tn - LCI	Existing
		Heat Pumps - Water & GeoT - ES Tier 3 - LCI	Existing
		HVAC Maintenance - LCI	Removed
		Ductless Mini-Split HP - Level 3- LCI	Existing
		PTAC - LCI	Existing
		PTHP - LCI	Existing
	Lighting - LCI	CFL Fixtures - LCI	Existing
		CFL Lamps Speciality - LCI	Existing
		CFL Lamps - LCI	Existing
		Lighting Controls (Daylight & Occupancy) - LCI	Existing
		Linear Fluorscent T5 - LCI	Existing
		Linear Fluorscent T8 - LCI	Existing
		LED Linear - LCI	Existing
		LED Channel Signage - LCI	Existing
		Exit Signs - LCI	Existing
		LED Fixtures External - LCI	Existing
		LED Fixtures Internal - LCI	Existing
		LED Lamps - LCI	Existing
		Street & Area Lighting (Customer Owned) - LCI	Existing
	Custom - LCI	Custom - Process Improvement - LCI	Existing
		Custom - HVAC & Chillers - LCI	Existing
		Custom - Data Centers - LCI	Existing
		Custom - Compressed Air - LCI	Existing
		Custom - VFDs < 10HP - LCI	Existing
		Custom - VFDs > 10 HP - LCI	Existing
		Custom-Motors - Three Phase - LCI	Existing
		Custom - Refrigeration - LCI	Existing
	Custom Buildings - LCI	Custom Retrocommissioning - LCI	Existing
		Custom - Building Improvements - LCI	Existing
	Audits - LCI	Audit - LCI	Existing

Below are the program descriptions for the Commercial/Industrial Large sector included in the Phase III Plan:

Program Title and Program years during which program will be implemented	**C/I Energy Solutions for Business Program - Large** **June 2016 - May 2021**
Objective(s)	The primary objective of the program is to accelerate the adoption and increase the market share of high efficiency equipment and increase the energy efficiency of buildings among large commercial and industrial customers, including large G/E/NP customers, by reducing the first cost of high efficiency equipment, processes and systems, thereby encouraging the adoption of high efficient equipment, processes and systems in lieu of standard efficiencies at the end of their useful life, or as early replacement. The ultimate goal is to influence future customer behavior toward energy efficiency measures and practices.
Target market	Large commercial and industrial customers, including large G/E/NP customers of the Company with buildings or equipment in the Company's Pennsylvania service territory.
Program description	This program will provide financial support through prescriptive or performance based incentives to the commercial and industrial customer, including G/E/NP customers, who implements qualifying high efficiency equipment, retrofits specialized processes and applications to higher efficiency processes and applications, or implements qualifying high efficiency building shell or system improvements. Prescriptive and performance incentives are intended to reduce the customer's capital investment for qualifying high efficiency equipment, processes and systems. This program includes the following subprograms: ➢ HVAC HVAC measures within the program are intended to encourage customers to install more efficient HVAC equipment in an effort to reduce both energy consumption and demand in the HVAC end use category. Prescriptive-based incentives will be provided to encourage customers to upgrade from less efficient HVAC equipment to higher efficiency units. These program measures are selected and designed to encourage the customer to install newer energy efficient systems. ➢ Lighting Lighting measures within the program 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. Prescriptive or 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 retrofit projects employing standard efficient lighting technologies where the anticipated energy savings are relatively consistent. Performance based incentives will be offered for larger projects and retrofits, based on annual kWh savings, where the anticipated energy savings can vary significantly from application to application. These program measures are designed to encourage customer renovation of existing lighting systems and installation of newer energy efficient systems.

- Custom

  Custom measures within the program are intended to encourage customers to retrofit or install more efficient specialized processes and applications in an effort to reduce both energy consumption and demand. Prescriptive 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, equipment replacement, combined heat and power, process change, etc.) to high efficiency specialized processes and applications. Prescriptive incentives will be offered for individual applications and retrofit projects employing standard efficient technologies where the anticipated energy savings are relatively consistent. Performance based incentives will be offered for larger projects and retrofits, based upon an analysis of potential annual energy savings on a case-by-case basis where the anticipated energy savings can vary significantly from application to application.

- Custom Buildings

  The Custom Buildings subprogram is intended to encourage customers to install specialized building shell or system 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 a 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 and systems improvements.

- Audits & Education

	The audit measure is intended to encourage customers to complete a detailed energy efficiency audit for commercial and industrial operational or manufacturing processes, building shell/envelope or building systems. This program will provide financial support through incentives toward the customer's cost of the audit pending approval and implementation of qualifying audit recommended energy efficiency improvements. The incentive will subsidize the customer's cost of the audit and will be paid upon approval and implementation of qualified audit recommended energy efficiency improvements. The Company may also provide the direct installation of measures to customers by the Company's contractor network. Virtual/remote audits, energy analysis software or other energy usage and efficiency tools may also be provided under this subprogram to support customer engagement, education and participation in the Company's programs. 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.
Implementation strategy (including expected changes that may occur in different program years)	The Company will outsource implementation of this program and subprograms to one or more CSPs who will be responsible for marketing, outreach, application processing, documenting details regarding purchased products and fulfilling rebate requests. The Company will require the CSPs to consider innovative outreach activities to engage customers such as, but not limited to, developing/supporting customers' continuous improvement activities. The Company plans to issue the RFP for this program by the end of 2015 and plans to select the CSP(s) in a timeframe that supports a seamless transition and implementation from the current program beginning June 1, 2016, upon Commission approval of the CSP contract and program. The Company will encourage CSPs who target specific customer segments or end uses (e.g. data centers) to respond to the RFP. The Company intends to contract on a performance basis to insure creativity and motivation toward obtaining participation and meeting the goals.
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 and innovative marketing and outreach techniques will be used to promote the participation in this program. The Company will

	monitor the program performance and adjust marketing, outreach and/or incentive levels or approaches where applicable to mitigate this risk. Business climate may require customer fees or contributions to be reduced or waived in order to encourage participation. With respect to risk management, refer to Section 4 of the plan where the Company provides further details on "early warning systems" as well as a description of contingency plans.
Anticipated costs to participating customers	Balance of costs of equipment, plus installation costs as relevant.
Ramp up strategy	The Company anticipates a seamless transition and implementation upon Commission approval of the CSPs contracts. For the existing and continuing program services, there will be some ramp-up period with the transition in implementation vendors. For new and expanded program services, it is anticipated that it will take at least three- to six-months to start up a program to launch after contract and program approval. The program is 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 program measures will occur in the 2016 plan year. See discussion in Section 1.4 for more details on ramp up.
Marketing strategy	The objective of the program is to promote the installation of energy efficient equipment by increasing customer awareness which, in turn, should increase market demand for these measures, increase EE product availability and lower EE product prices. Marketing activities will target eligible customers to inform them of the program, the measures, the 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. As discussed above, the Company will require the CSP to consider innovative outreach activities to engage customers such as, but not limited to, developing/supporting customers' continuous improvement activities. Additionally, Company resources will be utilized to conduct outreach to their constituents regarding program availability. FirstEnergy personnel (e.g. Area Managers and Customer Support Representatives) will be charged with providing first line contacts to eligible customers within the target market segments. The Implementation Providers and/or Program Managers will be responsible for ultimate program marketing. The Company will contract with experienced Implementation Providers and/or

	Program Managers on a performance basis to insure creativity and motivation in marketing strategies toward obtaining the program's participation and energy savings goals.
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)	This program has been designed based on applying established efficient conditions per the 2016 PA TRM or other sources, which relies on ENERGYSTAR®, CEE or other standards and specifications for certain applicable measures. Given the potential for changing standards and specifications for the eligible products under the program during Phase III Period, to maintain program continuity and implement timely on-going energy efficiency improvements, the Company may implement tier level or incentive changes for certain applicable measures in conjunction with future specification changes. The Company has adopted new Federal Standards and revised eligibility requirements for certain applicable measures. Proposed measures with their eligibility and rebate strategy can be found in Appendix D-4. In addition to providing incentives after customers have installed qualified energy efficient equipment, the Company may provide the direct installation of select qualified energy efficiency measures to customers through participating contractors, mid-stream or up-stream incentive strategies, and conduct reverse auctions to enhance program delivery for select qualified projects or measures, with such rebates and program costs within the approved incentive ranges and program budgets.
Maximum deadlines for rebates	Applications must be submitted no later than 180 days from the date of project completion, which is defined as all equipment being installed and operable**.** All application must be submitted via the on-line application portal by May 31, 2021.
Program start date with key schedule milestones	See Figure 2
Assumed Evaluation, Measurement, and Verification (EM&V) requirements required to document savings by the Commission's statewide EE&C Plan Evaluator	For the pre-installation phase, for a sample of participants, the Company will verify that inefficient HVAC, lighting, food services equipment and plug loads and controls are installed and working on customers' premises. It will also determine current total energy consumption and demand using billing/meter information and will check sample calculations of projected savings and assumptions (e.g. EFLH) for accuracy and for compliance with TRM guidelines. For the post-installation phase, the Company will verify through verification inspections that new, more efficient, equipment has been installed. It will document, store and provide measure data to

	the SWE using specified data transmission protocols, processes and technology. As part of the monitoring process, the Company will use selected indicators to verify periodically that energy savings and demand reduction are being realized as projected. A tracking and reporting system is to be used for such monitoring. In the event that EE&C program indicators show that projected EE&C targets are not likely to be achieved on schedule and within budget, the Company will take appropriate corrective actions, which may include adjustments to incentives.
Administrative requirements – include internal and external staffing levels	The Company will use a combination of internal and external resources to manage and implement the EE&C programs. The Company will monitor and adjust the allocation of resources to balance the needs of each program. See Section 4 of the EE&C plan for more details.
Estimated participation – includes tables indicating metric(s) with target value(s) per year	See Appendix D-3
Estimated program budget (total) by year – include table with budget per year	See Appendix C-1
Estimated percentage of sector budget attributed to program	See Appendix C-1 and Appendix E, Table 6
For demand response programs, costs to acquire MWs from customers who participate in PJM's Emergency Load Response Program (ELRP) and those that do not participate in PJM's ELRP.	Not applicable.
Savings targets – include tables with total MWh and MW goals per year and cumulative tables that document key assumptions of savings per measure or project	See Appendix C-2 and Appendix D-2
Cost-effectiveness – include TRC and net-to-gross (NTG) ratio for each program	The Company adopted adjusted effective useful lives for general service CFLs and LEDs projected under this program to comply with the 2016 TRM requirement to calculate the TRC with dual baselines pursuant to EISA 2020. The adjusted effective useful life reflects a weighted average measure life based on the projected number of units installed by year. See Appendix E, Table 7, for TRC ratios for this program on both a gross and net basis. See Appendix D-2 for the measure life and

	net-to-gross ratios assumed for each program measure. See Section 8.0 for information regarding the avoided cost calculations and inputs.
Other information deemed appropriate	The plan anticipates a transition to LED products during the Phase III Period. At this time, the Company does not intend to bid energy efficiency or demand response resources into the PJM market.

3.5. Governmental/Educational/Non-Profit Sector Programs.

The table below compares the program included in the Phase II Plan with that included in the Phase III Plan, along with a program description:

Table 13: Existing & New Governmental/Educational/Non-Profit Programs

Phase II Program	Proposed Phase III Program	Program Description
Governmental/Educational/Non-Profit Programs		
Governmental & Institutional Program	Governmental & Institutional Tariff Program	This program provides financial incentives (prescriptive or performance) to the Government, Education and Non-profit tariff customers to purchase or install qualifying high efficiency measures and recycle inefficient appliances.

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

Table 14: Governmental/Educational/Non-Profit Portfolio

Proposed Governmental/Educational/Non-Profit Portfolio			
Program	**Sub-Program**	**Measure**	**Measure Status**
Governmental & Institutional Tariff Program	HVAC - Gov't	Room Air Conditioner - Level 2 - Govt	Existing
		Air Conditioning - Level 1 <=5.4 Tn - Govt	Existing
		Air Conditioning - Level 2 <=5.4 Tn - Govt	Existing
		Air Conditioning - Level 1 >5.4 < 20 Tn - Govt	Existing
		Air Conditioning - Level 1 >=20 Tn - Govt	Existing
		Chiller - Water Cld w Full Load - Level 1 - Govt	Existing
		Heat Pump - Level 1 <=5.4 Tn - Govt	Existing
		Heat Pump - Level 2 <=5.4 Tn - Govt	Existing
		Heat Pumps - Level 1 >5.4 Tn - Govt	Existing
		Heat Pumps - Water & GeoT - ES Tier 3 - Govt	Existing
		Ductless Mini-Split HP – Level 3 - Govt	New
		PTAC - Govt	Existing
		PTHP - Govt	Existing
	Lighting - Gov't	CFL Fixtures - Govt	Existing
		CFL Lamps Speciality - Govt	Existing
		CFL Lamps - Govt	Existing
		Lighting Controls (Daylight & Occupancy) - Govt	Existing
		Linear Fluorscent T5 - Govt	Existing
		Linear Fluorscent T8 - Govt	Existing
		LED Linear - Govt	Existing
		LED Channel Signage - Govt	Existing
		Exit Signs - Govt	Existing
		LED Fixtures External - Govt	Existing
		LED Fixtures Internal - Govt	Existing
		LED Lamps - Govt	Existing
		LED Reach in Refrigerator / Freezer Lights - Govt	Existing
		Street & Area Lighting (Customer Owned) - Govt	Existing
	Appliances - Gov't	Refrigerator Recycling - Govt	Existing
		Freezer Recycling - Govt	Existing
		Room Air Conditioner Recycling - Govt	Existing
		Dehumidifiers Recycling - Govt	New
		Clothes Washer - Level 1 - Govt	New
		Clothes Washer - Level 2 - Govt	New
		Clothes Washer - Level 3 - Govt	New
		Clothes Dryer (Elec w Moisture Sensor) - Govt	New
		Clothes Dryer (Elec Heat Pump) - Govt	New
		Refrigerators - Level 1 - Govt	Existing
		Refrigerators - Level 2 - Govt	Existing
		Refrigerators - Level 3 - Govt	Existing
		Water Heater - Heat Pump - Govt	Existing
		Water Heater - Solar - Govt	Existing
		Freezers - Govt	Existing
		Pre-Rinse Sprayers - Govt	New
	Street Lighting - Gov't	Street & Area Lighting (Tariff / Utility Owned) - Gov	Existing
		Street & Area Lighting (Tariff / Customer Owned) - Gov	Existing
	Audits - Gov't	Audit - Gov	Existing
		Audits w Direct Install - Gov	Existing

Below are the program descriptions for the G/E/NP sector included in the Phase III Plan:

Program Title and Program years during which program will be implemented	**Government & Institutional Tariff Program** **June 2016 - May 2021**
Objective(s)	The primary objective of the program is to accelerate the adoption and increase the market share of high efficiency equipment among government and institutional customers by reducing the first cost of high efficiency equipment thereby encouraging the adoption of high efficient equipment in lieu of standard equipment at the end of its useful life, or as early replacement. The ultimate goal is to influence future customer behavior toward energy efficiency measures and practices.
Target market	The Outdoor Lighting subprogram targets government customers on the Company's public street-lighting rate schedules. The HVAC & Water Heating, Appliances, Lighting and Audits subprograms targets customers on the Company's government, educational and non-profit rate schedule(s).
Program description	This program will provide financial support through incentives to the G/E/NP customer who purchases or installs qualifying high efficiency measures, recycles inefficient appliances or retrofits specialized processes and applications to higher efficiency processes and applications. Prescriptive and performance incentives are intended to reduce the customer's capital investment for qualifying high efficiency equipment. This program includes the following subprograms: ➢ HVAC HVAC measures within the Government & Institutional Tariff Program are intended to encourage customers to install more efficient HVAC equipment in an effort to reduce both energy consumption and demand in this end use category. The plan proposes efficiency measures within this grouping as listed in the table above. Prescriptive-based incentives will be provided to encourage customers 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. ➢ Appliances Appliance recycle and rebate measures within the Government & Institutional Tariff Program are intended to encourage customers to recycle inefficient refrigeration and room air conditioning appliances and to install ENERGYSTAR® qualified or other energy efficient

appliances in an effort to reduce both energy consumption and demand.

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

This program provides a service and incentive to customers for turning in inefficient operating appliances. Large and other qualifying appliances, such as refrigerators and freezers, 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 room air conditioners and dehumidifiers.

Water Heating measures within the Government & Institutional Tariff Program 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. Prescriptive based incentives will be provided to customers for upgrading less efficient water heating equipment to higher efficiency units.

- Lighting & Outdoor Lighting

Lighting measures within the Government & Institutional Tariff Program 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 annual kWh savings. These program measures are designed to encourage customer renovation of existing lighting systems and the installation of newer energy efficiency measures.

- Audits

The audit measure within the Government & Institutional Tariff Program is intended to encourage customers to complete a detailed third party energy efficiency audit for

	operational processes, building shell/envelope or building systems. This program will provide customer education and consultation to support the implementation of audit recommendations, and financial support through incentives toward the customers cost of the audit pending approval and implementation of qualifying audit recommended energy efficiency improvements. Customers will also be eligible for additional incentives through the other program measures. The Audit with Direct Install Measures within the Government & Institutional Tariff Program is intended to provide an energy audit/assessment with technical assistance conducted to document the building's existing equipment and efficiency opportunities prior to installation of energy efficiency measures. The direct installation of qualified energy efficiency measures will be provided with additional incentive for comprehensive retrofits. Potential enhancements to this program include working with customers and manufacturers, partnering with local government or public agencies, allies, wholesalers and retailers, including mid/up-stream incentives on select measures and implementing other methods for providing incentives and other rebate application processes based on market considerations and as opportunities that are identified during program implementation present themselves.
Implementation strategy (including expected changes that may occur in different program years)	The Company will outsource implementation of this program and its subprograms to one or more CSPs who will be responsible for marketing, outreach, application processing, documenting details regarding purchased products and fulfilling rebate requests. The Company plans to issue the RFP for this program by the end of 2015 and plans to select the CSP(s) in a timeframe that supports a seamless transition and implementation from the current program beginning June 1, 2016, upon Commission approval of the CSPs contract(s) and program. The Company intends to contract on a performance basis to insure creativity and motivation toward obtaining participation and meeting program goals.
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 and innovative marketing and outreach techniques will be used to promote the participation in this program. The Company will monitor the program performance and adjust marketing, outreach and/or incentives where applicable to mitigate this risk. Business climate may require customer fees or contributions to be reduced or waived in order to encourage

	participation. With respect to risk management, refer to Section 4 of the EE&C plan where the Company provides further details on "early warning systems" as well as a description of contingency plans.
Anticipated costs to participating customers	Balance of costs of equipment, plus installation costs as relevant.
Ramp up strategy	The Company anticipates a seamless transition and implementation upon Commission approval of the CSPs contracts. For the existing and continuing program services, there will be some ramp-up period with the transition in implementation vendors. For new and expanded program services, it is anticipated that it will take at least three- to six-months to start up a program to launch after contract and program approval. The program is 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 program measures will occur in the 2016 plan year. See discussion in Section 1.4 for more details on ramp up.
Marketing strategy	The objective of the program is to promote the installation of energy efficient equipment by increasing customer awareness which, in turn, should increase market demand for these measures, increase EE product availability and lower EE product prices. Marketing activities will target eligible customers to inform them of the program, the measures, the 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. Additionally, Company resources will be utilized to conduct outreach to their constituents regarding program availability. FirstEnergy personnel (e.g. Area Managers and Customer Support Representatives) will be charged with providing first line contacts to eligible customers within the target market segments. The Implementation Providers and/or Program Managers will be responsible for ultimate program marketing. The Company will contract with experienced Implementation Providers and/or Program Managers on a performance basis to insure creativity and motivation in marketing strategies toward obtaining the program's participation and energy savings goals.
Eligible measures and incentive strategy, include tables for each year of program, as appropriate showing financial incentives & rebate levels	This program has been designed based on applying established efficient conditions per the 2016 PA TRM or other sources, which relies on ENERGYSTAR®, CEE or other standards and specifications for certain applicable measures. Given the

(e.g., $ per measure, $ per kWh or MW saved)	potential for changing standards and specifications for the eligible products under the program during Phase III, to maintain program continuity and implement timely on-going energy efficiency improvements, the Company may implement tier level or incentive changes for certain applicable measures in conjunction with future specification changes. The Company has adopted new Federal Standards and revised eligibility requirements for certain applicable measures. The Street Lighting subprogram leverages the Company's approved street light tariffs (including LED streetlights). The incentive provided under this program will be applied to the project with such payment going to fund removal costs or being treated as a contribution in aid of construction ("CIAC") and therefore reducing the capital cost associated with the installation. Proposed measures with their eligibility and rebate strategy can be found Appendix D-4**.**
Maximum deadlines for rebates	Applications must be submitted no later than 180 days from the date of project completion, which is defined as all equipment being installed and operable**.** All application must be submitted via the on-line application portal by May 31, 2021.
Program start date with key schedule milestones	See Figure 2.
Assumed Evaluation, Measurement, and Verification (EM&V) requirements required to document savings by the Commission's statewide EE&C Plan Evaluator	For the pre-installation phase, for a sample of participants, the Company will verify that inefficient equipment (Ex. HVAC, lighting, food services equipment plug loads and controls) are installed and working on customers' premises. It will also determine current total energy consumption and demand using billing/meter information and will check sample calculations of projected savings and assumptions (e.g. EFLH) for accuracy and for compliance with TRM guidelines. For the post-installation phase, the Company will verify through verification inspections that new, more efficient, equipment has been installed. It will document, store and send measure data to the SWE using specified data transmission protocols, processes and technology. As part of the monitoring process, the company will use selected indicators to verify periodically that energy savings and demand reduction are being realized as projected. A tracking and reporting system is to be used for such monitoring. In the event that EE&C program indicators show that projected EE&C targets are not likely to be achieved on schedule and within

	budget, the Company will take appropriate corrective actions which may include adjustments to incentives.
Administrative requirements – include internal and external staffing levels	The Company will use a combination of internal and external resources to manage and implement the EE&C programs. The Company will monitor and adjust the allocation of resources to balance the needs of each program. See Section 4 of the EE&C plan for more details.
Estimated participation – includes tables indicating metric(s) with target value(s) per year	See Appendix D-3
Estimated program budget (total) by year – include table with budget per year	See Appendix C-1
Estimated percentage of sector budget attributed to program	See Appendix C-1 and Appendix E, Table 6
For demand response programs, costs to acquire MWs from customers who participate in PJM's Emergency Load Response Program (ELRP) and those that do not participate in PJM's ELRP.	Not applicable.
Savings targets – include tables with total MWh and MW goals per year and cumulative tables that document key assumptions of savings per measure or project	See Appendix C-2 and Appendix D-2
Cost-effectiveness – include TRC and net-to-gross (NTG) ratio for each program	The Company adopted adjusted effective useful lives for general service CFLs and LEDs projected under this program to comply with the 2016 TRM requirement to calculate the TRC with dual baselines pursuant to EISA 2020. The adjusted effective useful life reflects a weighted average measure life based on the projected number of units installed by year. See Appendix E, Table 7, for TRC ratios for this program on both a gross and net basis. See Appendix D-2 for the measure life and net-to-gross ratios assumed for each program measure. See Section 8.0 for information regarding the avoided cost calculations and inputs.
Other information deemed appropriate	The Company anticipates a transition to LED products during the Phase III Period. At this time, the Company does not intend to bid energy efficiency or demand response resources into the PJM market.

4. Program Management and Implementation Strategies

4.1. Overview of EDC Management and Implementation Strategies:

4.1.1. Describe the types of services to be provided by EDC as well as consultants, program allies, and CSPs. Indicate which organizations will provide which services and the basis for such allocation. Reference reporting and EM&V information from Sections 5 and 6 below.

Generally the Company will provide administration and oversight of this Phase III Plan, and utilize third-party vendors to perform various program implementation and support duties as described in Section 3. Specific activities that the Company will oversee include (i) plan development; (ii) the execution of marketing campaigns; (iii) Quality Assurance/Quality Control activities; and (iv) tracking and reporting activities. The Company will utilize contractors to provide many program implementation services, including EM&V and the installation of the tracking and reporting tool. The following are examples of additional contractors that the Company anticipates using for program implementation services, either directly or indirectly:

- Online audit vendor
- Energy efficiency kit vendor
- Environmentally responsible appliance recycler
- Qualified contractors with appropriate training and certification who agree to participation terms
- BPI certified auditors, contractors and quality-assurance inspectors
- Program allies who have attended training
- Qualified vendor(s) that are registered in Pennsylvania as a Conservation Service Provider
- Equipment distributors, retailers and/or manufacturers who would promote the eligible products

4.1.2. Describe how the risk categories of performance, technology, market and evaluation can affect the programs and any risk management strategies that will be employed to mitigate those risks.

There are various risks associated with the implementation of this Phase III 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 Phase III Period may change. Below is a list of some of the more material risks the Company will face:

- Changing economic conditions over the life of the plan causes concern that customers 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;
- There is uncertainty around the savings estimates associated with the 2016 TRM over the life of the plan, including inputs to the savings protocols, schedules of rising baselines, treatment of behavior programs and demand response protocols -- any of which may pose a risk to the Company's compliance both as to targets and cost effectiveness.
- Targeted participation 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 Phase III Period. Those steps are as follows:

- The Company will continue open discussion with stakeholders, seeking input from them as circumstances dictate.
- The Company will continue to consult with its Conservation Service Providers to modify program implementation strategies and suggest program designs changes as indicated by participation and savings results.
- The Company will continue to perform EM&V of its programs in order to ensure that all programs are reasonable in terms of dollars spent, participation rates achieved and kWh savings realized.
- The Company will continue its participation in any proceedings, rulemakings or working groups involving issues that may affect compliance, including as examples those related to the TRM and adjustments thereto, demand response issues as events transpire, and unforeseen changes in the economy and/or Federal and state laws that may occur during the five year Phase III Period.
- 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 timely 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, 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.

- The Company will utilize the expedited review process implemented by the Commission for minor plan changes.

Given the significant investment required to meet the energy and demand savings goals, 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 under conditions as known today. 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 Phase II Plan. Therefore this risk is minimized because of the known historic results for the majority of the technologies and the market potential for future savings through these programs. However, this risk is heightened for those new or existing measures that have been modified since being implemented under the Phase II 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. As with the Performance Risk, the Company will continue to participate in any proceedings, rulemakings and working groups that address issues that may have an impact on compliance with the Phase III EE&C targets.

3. Market Risk is the risk that customers, or other key market players, such as contractors, are not aware of available programs, choose not to participate in a program or cannot afford investments in energy efficiency measures that support achievement of targets.

   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. The Company's use of flexible incentive ranges, rather than fixed incentives, is a valuable tool that allows for such corrections in a timely manner. The Company will continue to 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 wide-reaching educational campaigns, and community level outreach. In addition, the Company intends to utilize the relationships it has with interested parties through the stakeholder process, as well as contacts within various target markets, providing the latter with educational tools as well. Further, each program implementation vendor will also support and supplement such efforts with program specific marketing activities.

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, insights gained through Company experiences in other jurisdictions, and by utilizing the TRM and other industry guidelines to estimate program savings. The Company and its EM&V consultant will also work with the Commission's SWE, in an effort to perform EM&V activities consistent with Commission direction in a sufficiently robust manner so as to reliably capture all applicable program-related savings.

5. Regulatory Risk is the risk that the rules governing compliance, recognition of savings estimates, reporting or management of program budgets may change in a manner that will impair the Company's ability to meet the requirements set forth in the 2015 Implementation Order. The Company minimizes this risk through active participation in regulatory proceedings, rulemakings and working groups, through its ongoing work with Commission Staff, the SWE and its EM&V consultant, and by following regulatory guidance.

4.1.3. Describe how EDC plans to address human resource and contractor resource constraints to ensure that adequate personnel and contractors are available to implement the EE&C plan successfully.

The Company did not experience a shortage of resources during either Phase I or Phase II and does not anticipate a significant problem in obtaining the necessary resources during Phase III. Nevertheless, the Company intends to use both in-house personnel and contractors to successfully implement this plan. The Company will also leverage on an as needed basis the FirstEnergy Pennsylvania Companies' centralized organization which is staffed with and/or has access to qualified and experienced personnel in various departments including legal, finance, engineering, customer service and regulatory affairs.

This plan also incorporates virtually all of the programs included in the Phase II Plan. The Company's experience with these programs supports the availability of contractors to successfully implement this Phase III Plan. For those new or existing measures that have been modified since being implemented under the Phase II Plan, the Company has carefully developed implementation projections based on input from its expert consultants, its experience with similar measures used by its sister utilities in other jurisdictions and industry research to ensure that there will be a sufficient number of adequately qualified contractors to implement the measures being selected or developed to reach the kWh and kW savings goals.

4.1.4. Describe "early warning systems" that will be utilized to indicate progress towards the goals and whether they are likely to be met. Describe EDC's approach and process for shifting goals and funds, as needed, between programs and adding new measures/programs.

On a monthly basis, the Company leverages tracking and reporting processes to monitor the progress of each program toward its goals individually and for the portfolio collectively, 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 expert EM&V consultant hired by the Companies.

Below is a description of the Company's contingency plans should any of the following issues arise:

What if the savings do not 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 or programs that have a higher adoption rate. The Company's Phase III Plan utilizes over 150 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. Shift the focus, or expand program measures, to include promising emerging technology that may not have been well known, tested, accepted by the market, or produced in sufficient quantities at the time this plan was designed and submitted for approval. The Company has included some emerging technology in the plan and will continue to monitor technologies reviewed but not incorporated into this plan.

3. Alter the program delivery processes utilized in order to enhance market penetration. Options here may include (i) having vendors add field staff to handle more inquiries or shorten response times; (ii) eliminating or adjusting project requirements if bottlenecks appear to be stalling progress; or (iii) implementing 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 programs and, if deemed appropriate, modify delivery based upon the results.
5. Shift program delivery to more aggressively promoted and perhaps rebated versions of measures.
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. This plan assumes customer participation based on current experience of the Companies and their consultants which, in turn, is based on, among other things, customer participation in existing programs. 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 that the overall objectives of the plan are met.

8. Add delivery channels.
9. Shift resources among sectors as needed to address demand across the programs.
10. Alter rebate levels on a temporary or long term basis to affect market response.

What mid-course corrections could be implemented? In addition to the steps discussed above, the Company believes that certain programs can be ramped up through enhanced marketing efforts to outperform projected kWh impacts to offset underperforming programs. This may require a re-balancing of program goals and budgets. Notwithstanding, the 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.

How will the appropriate mid-course corrections be identified? The Company anticipates using process evaluations to determine progress and to 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 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.

4.1.5. Provide implementation schedules with milestones.

Section 1.4 describes the Company's current roll out plan for the various programs proposed in this plan.

The Gantt chart below details this plan's anticipated implementation schedule, based on Commission approval by March 2016. The Company notes that it will continue to receive and process rebate applications for participation in the Company's existing programs based on participation prior to June 1, 2016. The Company will track and report this participation with its existing programs in accordance with the Commission's 2015 Implementation Order.

Figure 4: Subprogram Implementation Schedule

Program Name	Sub-Program Name	October	September	November	December	January	February	March	April	May	Plan Year 2016 1	Plan Year 2016 2	Plan Year 2016 3	Plan Year 2016 4	Plan Year 2017	Plan Year 2018	Plan Year 2019	Plan Year 2020
Residential Programs																		
Appliance Turn In Program	Appliance Turn In																	
Energy Efficient Homes Program	School Education																	
	EE Kits																	
	Audits																	
	Behavioral																	
	New Homes																	
Energy Efficient Products Program	Appliances and Electronics																	
	Lighting																	
	HVAC																	
Residential Low-Income Programs																		
Low-Income Energy Efficiency Program	LI - EE Kits																	
	Weatherization																	
	Multifamily / LILU Single Family																	
	LI - Behavioral																	
	LI - New Homes																	
	LI - Appliance Rebate																	
	LI - Appliance Turn In																	
	LI - School Education																	
Small Commercial & Industrial Programs																		
C&I Energy Solutions for Business Program - Small	HVAC - SCI																	
	Lighting - SCI																	
	Food Service																	
	Appliances and Electronics - SCI																	
	Agricultural																	
	Custom - SCI																	
	Custom Buildings - SCI																	
	EE Kits - SCI																	
	Multifamily																	
	Audits - SCI																	
Large Commercial & Industrial Programs																		
C&I Energy Solutions for Business Program - Large	HVAC - LCI																	
	Lighting - LCI																	
	Custom - LCI																	
	Custom Buildings - LCI																	
	Audits - LCI																	
Governmental/Educational/Non-Profit Programs																		
Governmental & Institutional Tariff Program	HVAC - Gov't																	
	Lighting - Gov't																	
	Appliances - Gov't																	
	Street Lighting - Gov't																	
	Audits - Gov't																	

Key
Develop and Issue RFP
Select CSP / File Proposed CSP Contract for PUC approval
Award CSP Contract after PUC approval
Program Set-Up Activities
Program Launch and Implementation per PUC Approval

4.1.6. Provide a brief overview of how stakeholders will be engaged throughout Phase III

During the development of this plan, the Company sought and obtained feedback on the proposed EE&C programs from stakeholders through a variety of methods. Stakeholder meetings on different aspects of the plan design were held in May, August and October 2015. The Company also participated in over 20 meetings with interested parties, including numerous potential CSPs and vendors, during the months of July, August, September and October and discussed a number of issues with stakeholders at various conferences, including the AESP conference in Philadelphia, the KEEA conference in Harrisburg and the Pennsylvania Energy Management conference in Harrisburg. The Company further involves stakeholders through outreach programs with both program allies and customers – a practice the Company intends to continue during the Phase III Period. To the extent possible, the Company incorporates responses from these stakeholders into program designs and implementation processes.

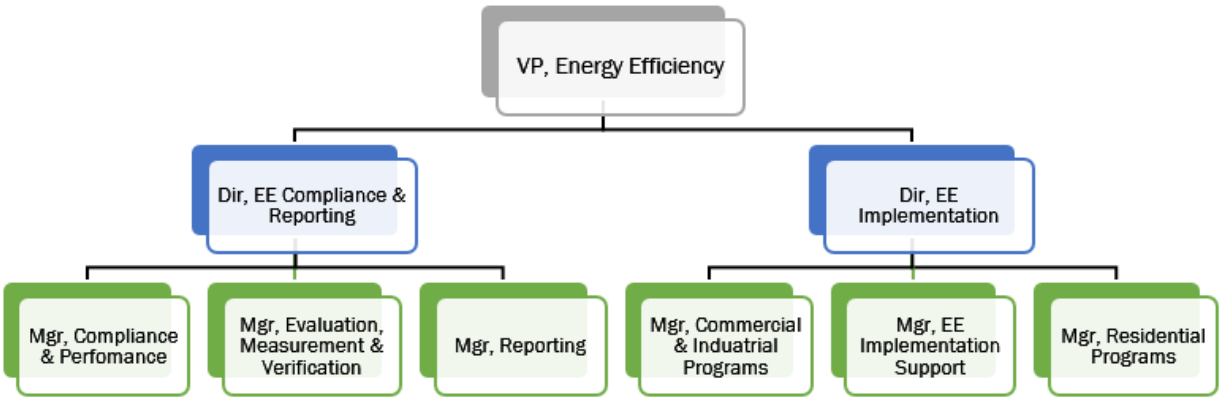
During the Phase III Period, the Company plans to conduct a minimum of two stakeholder meetings per year, where the Company will review the performance, progress and operation of the programs with its stakeholders for collaborative discussion and feedback. The Company will also meet with stakeholders on an as needed basis to discuss any plan or program aspects that warrant discussion.

4.2. Executive Management Structure:

4.2.1. Describe EDC structure for addressing portfolio strategy, planning, review of program metrics, internal and external communications, budgeting and financial management, program implementation, procurement, program tracking and reporting, and Quality Assurance/Quality Control (QA/QC). Include EDC organization chart for management team responsible for implementing EE&C plan.

The Energy Efficiency Group is entrusted with ensuring that the Company complies with all statutory energy efficiency and demand reduction requirements and that the approved programs are successfully implemented. The group reports to the Vice President, Energy Efficiency. This group also has responsibility for similar activities for FirstEnergy's other Pennsylvania utilities, as well as its Maryland, New Jersey, Ohio, and West Virginia utility affiliates. The organization chart set forth below depicts the management team and their current primary areas of responsibility.

Figure 5: Organization Chart



FirstEnergy believes that it is important for senior management to be visible in its oversight role and corporate-wide support for the EE&C plan initiatives. As a result, FirstEnergy has created a steering committee that is comprised of senior management members from across the organization, including FE Utilities, Customer Service, Legal, Rates and Regulatory Affairs, Information Technology ("IT"), Marketing and Branding, External Affairs, Strategy, Corporate Risk and Supply Chain. The steering committee's primary purpose is to:

- Define strategies and provide governance over initiatives relating to EE&C and
- Assure initiatives support corporate objectives integrating customer solutions with operational efficiencies.

The Energy Efficiency 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 Compliance and Reporting 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. The Implementation and Compliance and Reporting Groups also receive support from areas such as Rates and Regulatory Affairs, Legal, Customer Service, Customer Support, Information Technology ("IT") and Communications.

4.2.2. *Describe approach to overseeing the performance of sub-contractors and implementers of programs and how they can be managed to achieve results, within budget, and ensure customer satisfaction.*

The Company will provide administrative, contract management, program design/implementation and marketing oversight of the selected CSPs primarily through the Energy Efficient Department staff who are dedicated for this purpose. Not only will such monitoring be accomplished through the use of the tracking and reporting system described in Section 5, but this dedicated staff will also provide:

- Guidance and direction to the implementation contractors, including review and revision of proposed implementation plans and proposed milestones, and, additionally, engage with the contractor team on a daily basis when working through strategy and policy issues.

- Review and approval of implementation contractor invoices to ensure program activities are according to contact, within investment and on schedule.

- Review of implementation contractor operational databases for accuracy, ensuring incorporation of data into the Companies' comprehensive tracking database to be used for overall tracking and regulatory reporting.

- Review of measure saving estimates maintained by the implementation contractor.

- Oversight and coordination of evaluation, measurement, and verification contractors.

- Participation in outreach to community groups, program allies and trade associations.

- Provision of guidance and direction on new initiatives or strategies proposed by the implementation contractors.

- Communication with implementation contractors advising of other initiatives that may provide opportunities for cross-program promotion.

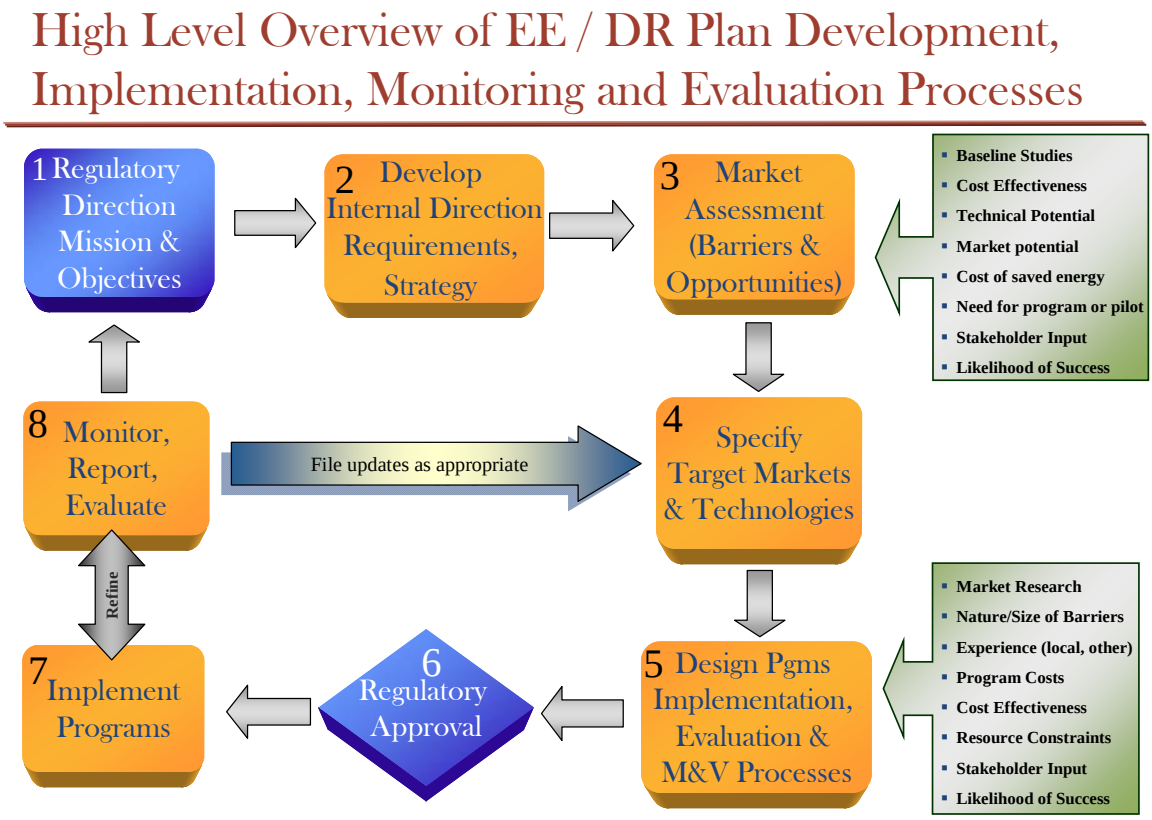
- Review and approval of printed materials and advertising plans.

- Evaluation of portfolio and program effectiveness and recommendations regarding modifications to programs and approach as needed.

- Performance of periodic review of program metrics, and evolving program design.

In addition to the comprehensive oversight activities described above, the Company will follow the overall planning, implementation, monitoring and evaluation framework identified below to help guide its programs and contractors:

Figure 6: High Level Overview of EM&V



The Company believes that this framework, in conjunction with agility, flexibility, and a well-trained staff, will assist in its efforts to achieve the targets established by Act 129 and the Commission's 2015 Implementation Order in an efficient and cost-effective manner.

4.2.3. Describe basis for administrative budget.

The model used for developing the EE&C programs involves a build-up of direct costs based on program or subprogram fixed costs and variable costs based on participation at the measure level, both of which are then aggregated to the program level. Common costs are estimated at the State or Company level and allocated to each program based on the ratio of Program implementation and marketing costs.

Program cost elements are categorized into Program Administration, Incentives, Portfolio Administration and Other. Program Administration and Incentives are direct costs while Portfolio Administration and Other are common costs. The following terms are used in the budget tables located throughout the plan.

- Portfolio Administration – Includes costs incurred by the utility for employee labor for plan development, to oversee and manage the portfolio, and to perform duties associated with activities such as regulatory reporting or meetings to support the plan (Ex. Stakeholder meetings).

- Program Administration – Includes utility and CSP administration costs associated with the implementation, marketing for program messaging and education, ongoing management of programs, and evaluation, measurement and verification of the program including staffing, contractors, websites(s), call centers, quality assurances and control processes, and other program specific activities supporting successful program implementation.

- Incentives - include costs for rebates paid to customers as well as costs associated with providing services or measures directly to customers or midstream or upstream payments to program allies where applicable

- Other – includes other common costs associated with the development and implementation of the plan including consulting and legal fees, software fees, and employee expenses. Also includes 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.

4.3. Conservation Service Providers (CSPs):

4.3.1. List any selected CSPs, describe their qualifications and basis for selection (include contracts in Appendix).

The Companies have selected an EM&V CSP, whose contract is currently pending approval before the Commission. A summary of that contract, including justification for selection of the CSP, is included in Appendix B of the plan. No other CSPs have been selected. However, the Companies expect to complete the selection process during the first quarter of 2016 so as to enable a timely transition and implementation of the programs and measures once the Commission approves this plan. The timeline for selection of the other CSPs is included in Figure 2 (on page 20) of this plan.

The Company has, and will continue to, adhere to the requirements as set forth in the Commission's 2015 Implementation Order and will select all of its CSPs that provide consultation, design, administration and management or advisory services to the Company through a competitive bidding process. The RFP will be distributed to all qualified CSPs registered on the Commission's website and the Company will make an effort to acquire bids from minority or other special category businesses consistent with the Commission's Policy Statements at 52 Pa. Code §§ 69.804, 69.807 and 69.808.

4.3.2. Describe the work and measures being performed by CSPs

The Company will contract with CSPs to implement the portfolio of programs. The CSPs will be responsible for the start-up and ongoing management of new programs including staffing, development of website(s), promotional strategies, and processes ensuring quality and other controls supporting successful program implementation. The CSPs will support consumer education initiatives and be the interface with the customer on many of the programs being offered. The CSPs will also be responsible for program set-up. During

program set-up and for the duration of the program, the CSPs will meet with the Company, its consultant(s), tracking system contractors and the SWE as necessary and appropriate.

The start-up phase will be performed in an organized and efficient manner as more fully described in Section 1.4. The CSP will be contractually obligated to strive to maintain and strengthen constructive relationships with the Company's program management staff, customers, program allies, contractors and other energy program partners. In addition to the development of the startup plan and the implementation of the same, CSPs will also be responsible for the following activities:

- Managing advertising and marketing activities that promote its programs including:
  - Telemarketing, sales training, participation in and sponsorship of program/industry seminars and trade shows;
  - Sponsoring special promotional "events" to encourage sales of high efficiency products, and/or retirement of less efficient equipment through "buy down" first cost and/or promotion of eligible equipment to customers;
  - Developing bill inserts, local newspaper ads, radio spots, direct mail, and point-of-sale displays at retailers, the Company's website and the Company's on-line store. Retailers and manufacturers will also be involved in cross-promoting product offers in conjunction with national campaigns like Earth Day and ENERGYSTAR® Change a Light, Change the World programs;
  - Developing and launching promotional strategies, including use of the energysavepa.com to facilitate such strategies;
- Developing rebate application forms, and detailed processes for managing rebate/incentive applications, rebate/incentive payment processes, reporting procedures, data collection and data recording processes, internal billing and related documentation to be sent to the Company for processing;
- Performing energy savings calculations, collecting data and maintaining auditable records required to support program reporting, measurement and verification consistent with the TRM;
- Performing quality assurance and verification inspections;
- Conducting outreach, training, certification management, and coordination with program allies;
- Performing outreach, communications, training and development of participation agreements with retailers and manufacturers for the Energy Efficient Products program, as appropriate;
- If applicable, performing energy audits; and,
- Managing fulfillment of all requests for services or energy efficient products offered through the programs.

The Company will host or contract for website services, linked through the Company's public internet domain, www.firstenergycorp.com. Although FirstEnergy personnel will manage the overall content on the website, the CSPs will be responsible for generally managing their respective section of the site and updating it as necessary. Customers will be able to obtain information, contact the CSP, download program literature and application forms, or complete on-line forms and applications through the website.

4.3.3. Describe any pending RFPs to be issued for additional CSPs.

As of the date this plan was filed, the Company has issued RFPs for the following CSP services:

- Demand Response Programs;
- EM&V activities; and
- Tracking/Reporting system

The Company anticipates issuing the remaining RFPs for the following programs/subprograms before year end:

- Residential sector programs/subprograms implementation vendors
- Commercial and Industrial sector program implementation vendors, including the Governmental/Educational/Non-Profit sector

The Company plans to award contracts with all program implementation CSPs during the first quarter of 2016, pending Commission approval of both the programs and the proposed CSP contracts.

5. Reporting and Tracking Systems

5.1. Indicate that the EDC will provide semiannual and annual reports as prescribed in the June 11, 2015 Implementation Order:

As more fully discussed in Section 5.2, the Companies have issued a RFP to provide a Tracking and Reporting System ("T&R System" or "System") to provide the necessary reports, including the semiannual and annual reports, for all of the Companies. The System will have the ability to monitor the progress of the various programs being offered and generate the reports as required by the Commission.

Standard reports will be provided as necessary and required. The format and content will be consistent with that defined by the Commission and the Statewide Evaluator.

The System will also be able to produce customized reports using a report writing tool. Summaries, dashboards, or other reporting formats will be used by the Company to monitor program performance on an on-going basis.

5.2. Project Management Tracking Systems:

5.2.1. Provide brief overview of the data tracking system for managing and reporting measure, project, program and portfolio activities, status and performance as well as EDC and CSP performance and expenditures.

The comprehensive T&R System will report and track activities and results associated with EE&C programs throughout the FirstEnergy Pennsylvania footprint. The system will have the ability to track a customer through program-specific statuses. The System will provide standard status reports both for individual participants and at the program level and will be configured to provide required reports for varying service territories. Additional enhancements will be made to the System as deemed necessary as requirements change. In addition, the Company uses SAP enterprise software for financial management.

5.2.2. Describe the software format, data exchange format, and database structure you will use for tracking participant and savings data. Provide examples of data fields captured.

The T&R System will be web-based, allowing for access from any internet connection. The System will exchange data with implementation contractor databases wherever necessary to gather data to upload key metrics on a routine basis, (e.g., daily, weekly or monthly) and will ensure data integrity through a routine reconciliation processes. The Company will work with the CSPs and the Company's EM&V consultant on a regular basis to verify the accuracy of data transferred from implementation contractor databases to the T&R System. Not only will this reduce paperwork and minimize data entry, but it will support quality control and allow for easy access to track goal attainment and budget variances. The tracking and reporting system will store various data fields, including but not limited to:

- Customer name
- Customer contact info
- Customer type
- Customer ID number
- Account number
- Premise number
- Project/Program name
- Contractor/Retailer
- Measure
- Service address
- Job status
- Completion date
- Install Date
- Heating system type
- Square footage
- kWh savings
- KW savings
- MWh savings
- MW savings
- Rate Code
- Incentive
- Transaction results
- Measures implemented

5.2.3. Describe access and mechanism for access for Commission and statewide EE&C Plan Evaluator.

The T&R System will be web based, thus requiring an internet connection for access. The System will be designed to allow for varying levels of security-controlled access by Company staff. Access for others, such as Commission staff and the SWE, will be provided as required.

6. Quality Assurance and Evaluation, Measurement and Verification

6.1. Quality Assurance/Quality Control:

An overview of quality assurance was discussed in Section 1.7 of this plan.

6.1.1 Describe overall approach to quality assurance and quality control.

The following are examples of specific steps that the Company took toward quality assurance and quality control during the design phase of this plan:

- Use of qualified and experienced personnel, including the Company's expert consultant, to assist with the design of EE&C programs;
- Selected EE&C measures compliant with the requirements of the 2016 TRM;
- Use of proven approaches that are designed to reach the energy savings targets set for the Company;
- Communicated frequently and effectively with interested parties and other stakeholders on EE&C program design and objectives; and
- Verified that established EE&C program design procedures and approaches are being followed.
- Validated EE&C program assumptions with the Company's expert consultant.

During the implementation phase of this plan, the Company intends to acquire selected program managers (or CSPs) to present processes that accurately document and verify data used to support energy savings and peak load reductions – all of which will be subject to audit and review by both the Company's EM&V contractor and the Commission's SWE. The Company will perform, directly or through contract evaluators, its own quality assurance processes, including evaluation of CSP systems, in order to ensure the accuracy and reliability of the reported data and savings. Such evaluations will have the following key characteristics:

- Both deemed and custom measures will be included in the evaluation universe;
- The statistically valid sample size may cover a subset or the entire population for a particular measure;
- The frequency and sample size of these evaluations will vary based on the significance of any findings; and
- The control points will target specific risks associated with the design or implementation of EE&C measures.

6.1.2 Describe procedures for measure and project installation verification, quality assurance and control, and savings documentation.

EM&V efforts evolve over time and change as programs move from initial roll-out to full-scale implementation. The Company will continue to engage an 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 Company intends to utilize synergies among programs and between the Companies to reduce redundant work. EM&V plans may be refined over time to include best practices and lessons learned – issues periodically reviewed by the Company and its contractor. The EM&V Consultant will utilize the format required by the SWE 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

The Companies will perform processes to meet standards specified in the Pennsylvania TRM. Programs include documentation requirements supporting expected ("ex-ante") impact estimates following protocols defined in the 2016 Technical Reference Manual. Samples of participant applications are selected for EM&V. After the statistically valid samples of projects are selected, and the CSP 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. The Companies will support metering studies independently or in coordination with other EDCs as appropriate.

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 Consultant's calculated measure savings to the ex-ante reported savings.

Sampling Plan

- Residential Programs

  Statistically valid 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 in stages consistent 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.

6.1.3 Describe process for collecting and addressing participating customer, contractor and trade ally feedback (e.g., suggestions and complaints).

Process evaluations will be performed periodically to support program performance. Where applicable the EM&V Consultant may incorporate program manager interviews, participant (and in some cases non-participant) customer surveys, and trade ally 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 improve implementation of the programs or 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, and market or process barriers that could be addressed in the program design or implementation plan.

Throughout the implementation phase of this plan, the Company hopes to also gain additional direct input from various sources, including CSPs that bid to perform program management and implementation services, stakeholders and other EDCs for relevant developments, the PUC and the PUC's SWE for insights into the evolution of the process.

6.2. Describe any planned market and 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. 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.

The Company's EM&V Consultant will conduct process evaluations in order to identify issues that may require mid-course correction, gauge progress toward goals and measure customer, trade ally and vendor satisfaction with various program features.

6.3. Describe strategy for coordinating with the statewide EE&C Plan Evaluator (nature and type of data will be provided in a separate Commission Order).

A representative from the Company's evaluation team, as well as the EM&V Consultant will attend formal evaluation and/or Program Evaluation Group meetings with the SWE to support development, and ensure compliance with statewide EM&V directives, share ideas and suggestions regarding the approach being taken by the Company and otherwise assist the Company in shaping and performing a prudent and effective evaluation strategy in coordination with the SWE and other EDCs. Informal meetings and/or discussions with Company representatives will be arranged upon request of the SWE.

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

The EM&V planning process will also include the SWE to incorporate where appropriate its advice and consent to enhance EM&V efforts. The EM&V Consultant will facilitate ongoing Company communications with the SWE to ensure the highest practicable level of

coordination, particularly for any EM&V field activities and other time-sensitive EM&V tasks and processes.

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7. Cost-Recovery Mechanism

7.1. Provide the amount of total annual revenues as of December 31, 2006, and provide a calculation of the total allowable EE&C costs based on 2% of that annual revenue amount.

See Table 5 in Section 1.3 for the Company's Total Allowable Plan Costs pursuant to Act 129. This amount reflects the annual amount determined by the Commission in the 2015 Implementation Order (at page 11) multiplied by 5 (to reflect the total allowable spending for the five-year Phase III period).

7.2. Description of plan in accordance with 66 Pa. C.S. §§ 1307 and 2806.1 to fund the energy efficiency and conservation measures, to include administrative costs.

See Section 4.2.3 for the budgeting process used to identify the funding for the energy efficiency and conservation measures. See Section 7.4 for a complete description of the cost recovery mechanism being proposed by the Company. The cost recovery mechanism will include all costs as described in Appendix D-1, including administrative costs currently incurred by the Company in connection with the development of this plan. The costs to design, create, and obtain Commission approval of the Company's Phase III EE&C Plan include consultant costs, outside legal fees, and other direct and indirect costs associated with the development and implementation of the Company's plan consistent with Commission directives.

7.3. Provide data tables (see Tables 6A, 6B, and 6C).

Tables 6A, 6B, and 6C are provided in Appendix E.

7.4. Provide and describe tariffs and a Section 1307 cost recovery mechanism, pursuant to the requirements of the June 11, 2015 Implementation Order at 149, that will be specific to Phase III Program costs. Provide all calculations and supporting cost documentation.

The Company's proposed tariff for its proposed cost recovery mechanism ("Phase III EE&C-C Rider") is included in Appendix F of the plan. Consistent with Act 129, the Company's tariff will contain a Section 1307 cost recovery mechanism for the recovery of all Phase III energy efficiency and conservation program costs. There is also a provision in the rider to allow for a reconciliation adjustment to collect any remaining Phase II Period costs not recovered prior to the end of the Phase II Period. This component will be shown as a separate E factor (E_2) and will be in place through May 31, 2018.

Under the Company's proposal, the Phase III EE&C-C Rider for which the Company is seeking approval as part of this plan would remain in effect during the Phase III Period (June

1, 2016 through May 31, 2021).[11] On an annual basis, to be effective June 1 of each year starting June 1, 2016, the Company will file by May 1st of the same year the following information:

1. A reconciliation between actual Phase III EE&C-C revenues and actual Phase III EE&C-C costs for the Phase III EE&C-C Reconciliation Period, as adjusted for removal of gross receipts tax. Because this is a new Rider, this information is not being provided in support of the Phase III EE&C-C Rider rates being proposed through this plan for the period June 1, 2016 through May 31, 2017. Such reconciliations will be provided starting in Program Year 2 for rates to be effective June 1, 2017.
2. Any adjustment to the forecasted Phase III EE&C-C revenues anticipated to be billed during April and May of the applicable program year, as adjusted for the removal of GRT. Because this is a new Rider, this information is not being provided in support of the Phase III EE&C-C Rider rates being proposed through this plan for the period June 1, 2016 through May 31, 2017. Such adjustments will be provided starting in Program Year 2.
3. The Phase III EE&C budget estimate for the forthcoming Phase III EE&C-C Computational Period by rate class.
4. A reconciliation adjustment for any remaining Phase II EE&C costs that were not collected by the end of the Phase II Period. This adjustment will only be included in the initial EE&C-C rate that will become effective on June 1, 2016 and will be approved as part of this plan, and the subsequent EE&C-C rate that will be in effect for the period June 1, 2017 through May 31, 2018. The reconciliation process is described in Section 7.6 below.

Included in Appendix F is a copy of the Company's proposed Phase III EE&C-C Rider which includes the corresponding rates to be charged during Program Year 1 of the plan. The Company is requesting approval of both the rider and related rates as part of this plan. Worksheets demonstrating how these rates were determined are set forth in Exhibit KMS-6, which is attached to the direct testimony of Kevin M. Siedt (Met-Ed/Penelec/Penn Power/West Penn Statement No. 3).

As can be seen in Appendix F, the Phase III EE&C-C rates are expressed as a price per kWh for the residential, non-profit, commercial and street lighting classes. The industrial class will be billed based upon the individual customer's Peak Load Contribution ("PLC") kW. The Phase III EE&C-C rates will be calculated and stated separately for the residential, non-profit, commercial, street lighting and industrial customer classes. The rate schedules that comprise the residential, non-profit, commercial, street-lighting and industrial customer classes are identified on pages 1 and 2 of the Company's Phase III EE&C-C Rider.

[11] If the Commission concludes that additional cost effective energy efficiency and/or demand reduction can be attained post Phase III, the Companies anticipate recovering any Phase III costs not recovered by the end of Phase III through a Phase IV cost recovery mechanism. Should there be no Phase IV of the Commission's EE&C Program, the Companies reserve the right herein to request through a separate filing approval from the Commission to extend the Phase III EE&C-C Rider beyond the end of Phase III in order to collect any remaining Phase III costs.

The Phase III EE&C-C rates to be billed to the residential, non-profit, commercial, street lighting and industrial classes consist of three principal components. The first, is the EEC_C, or "current cost" component; the second, the reconciliation component, or "E" factor for Phase III costs; and the third, a second "E" Factor (E_2) for collection of Phase II related costs remaining to be collected after May 31, 2016.

The EEC_C component represents the recovery of estimated costs to be incurred during the Annual Computation Period or "Computational Period" in which the Phase III EE&C-C rates will be in effect for each customer class. As shown on the second and third pages of the Company's Phase III EE&C-C Rider, the EEC_C component is customer class specific. The costs included in each customer class' EEC_C rate are identified as EEC_{Exp1}, EEC_{Exp2}, EEC_{Exp3}.

- EEC_{Exp1} represents customer class specific costs that will be associated with the customer class specific EE&C programs as approved by the Commission. These costs will also include an allocated portion of any indirect costs, such as marketing costs, that will be incurred by the Companies.
- EEC_{Exp2} represents an allocated portion of administrative start-up costs incurred by the Companies in connection with the development of each Company's Phase III EE&C Plans and related programs in response to the Commission's orders and guidance in its 2015 Implementation Order. These costs are incurred to design, create, and obtain Commission approval of the Companies' respective Phase III EE&C Plans, and include, but are not limited to, consultant costs, outside legal fees, and other direct and indirect costs associated with the development and implementation of the Company's Phase III EE&C Programs in compliance with Commission directives.
- EEC_{Exp3} represents the costs allocated to the Companies for the funding of the Commission's statewide evaluator contract. These costs are not subject to the 2% spending cap imposed by Act 129.[12]

The E-factor component of each Company's residential, non-profit, commercial, street lighting and industrial class specific Phase III EE&C-C rates represents a reconciliation of actual Phase III EE&C program costs incurred by customer class to actual Phase III EE&C revenues billed by customer class on a monthly basis. For each of the Companies, this monthly reconciliation by specific customer class will result in either an over-collection of costs by customer class (revenues billed, excluding Pennsylvania Gross Receipts Tax ("GRT"), greater than actual costs) or an under-collection by customer class (revenues billed, excluding GRT, less than actual costs). The E-factor component will be applied on a customer class specific basis.

The second E-factor component (E_2), is a reconciliation adjustment that will be in effect through the determination of rates to be effective June 1, 2017 in order to collect any remaining Phase II Period costs not recovered prior to the end of the Phase II Period.

The Phase III EE&C-C Rider will include a reconciliation process that will calculate annual over- or under-collection by rate class. Pursuant to the Commission's 2015 Implementation

[12] 2015 Implementation Order, p. 95.

Order (on page 149), any over or under-collection will be reflected in annual adjustments to Phase III rates.

All plan costs (net-of-tax) and revenues included in the Company's EE&C revenues will be excluded from distribution base rate treatment and subject to Commission review and audit. Further, to the extent that the Company is reimbursed through the Phase III EE&C-C Rider for Company-owned property, such reimbursement will be treated as a contribution-in-aid-of-construction resulting in a net-of-tax reduction in amounts capitalized for those assets. As a result, these costs will be excluded from rate base in determining future distribution base rate case revenue requirements.

7.5. ***Describe how the cost recovery mechanism will ensure that measures approved are financed by the same customer class that will receive the direct energy and conservation benefits.***

Consistent with the 2015 Implementation Order and Act 129, the Company's proposed Phase III EE&C-C Rider will permit the Company to bill annual, levelized Phase III EE&C-C rates on a per kWh or kW basis, as applicable to all residential, commercial, non-profit, street lighting, and industrial customers. Throughout the Phase I and II Periods, the Companies have had in place a tracking and reporting system and related processes and procedures, all of which have proven to be effective in tracking program specific costs during these earlier phases of the Commission's EE&C Program. The Company will continue to utilize this system and related processes and procedures to track customer participation in each program and subprogram such that cost allocations are done in a manner that ensures that there are no cross subsidies. The rates will be calculated specifically for each customer class to recover the costs of this plan as approved by the Commission and in compliance with 66 Pa.C.S. § 1307. Coupled with the reconciliation provisions by customer class included in the Company's proposed Phase III EE&C-C Rider, the Phase III EE&C-C rates will provide full, equitable and timely cost recovery of actual EE&C program costs incurred by each Company for each customer class' available EE&C Programs as approved by the Commission in this proceeding.

7.6. ***Describe how Phase III costs will be accounted for separately from costs incurred in prior phases.***

Because the Rider filings are generally filed with the Commission on May 1st of each year to be in effect on June 1st of that same year, the Phase II costs will be reconciled in two distinct steps. The first step, will reconcile the total actual recoverable Phase II Plan expenditures incurred through March 31, 2016 to the actual Phase II Plan revenues collected through March 31, 2016. Since the Phase II Riders will end on May 31, 2016, the result of the Phase II reconciliation through March 31, 2016 will appear as a separate line item in the Phase III EE&C-C Rider, which will go into effect on June 1, 2016. The second step will account for all actual Phase II revenues and expenses that are realized during the period April 1, 2016 through March 31, 2017 in a final reconciliation. The final over/under collection that results from this reconciliation will also be included as a separate line item in the Phase III EE&C-C rate calculation that will be effective on June 1, 2017.

8. Cost Effectiveness

8.1. Explain and demonstrate how the proposed plan will be cost effective as defined by the Total Resource Cost Test (TRC) specified by the Commission.

The projected savings generated and evaluated through this plan are based upon the requirements and guidance of the Pennsylvania 2016 Technical Reference Manual ("TRM"), the 2016 PA Total Resource Cost ("TRC") Test and other sources, which have been used in developing the key inputs to the analysis of the EE&C technologies or measures proposed in this plan, including but not limited to the following:

- The California PUC's Database for Energy Efficient Resources (DEER)
- SWE Incremental Costs Database
- Northeast Energy Efficiency Partnerships, Mid-Atlantic Technical Reference Manual
- ENERGYSTAR®
- ACEEE

The TRC takes into account the combined effects of this plan 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, the avoided energy supply costs and fossil fuel and water savings as prescribed in the PA TRC Test.

Avoided energy costs are calculated as follows:

- For years 2016 through 2019 the NYMEX futures electricity price at the PJM West Hub is adjusted to the Company zone using the locational basis derived from the PJM State of the Market Report (Real-Time Load-Weighted LMP, 2013-2014 average);
- For years 2020 through 2027 the NYMEX natural gas futures price at the Henry Hub is converted to an electricity price at PJM West Hub through the use of a standard spark spread calculation. Specifically, heat rates for the Spark Spread calculation are based on the heat rate of a conventional combustion turbine for on-peak periods and a conventional gas/oil combined cycle turbine for off-peak periods as depicted on Table 8.2 from EIA Annual Outlook. The results are then adjusted to the Company zone using the PJM State of the Market Report, similar to what was done for years 2016-2019;
- For years 2028 through 2035 the electricity price in the Company zone is escalated from 2027 annually according to the escalation of the 2015 EIA AEO natural gas forecast in the mid-Atlantic region;

No avoided ancillary service costs were included as a benefit.

For the avoided generation supply capacity cost, the Company used the "Preliminary Zonal Capacity Price" column of the Base Residual Auction (BRA) results spreadsheet published by PJM for the 2015 auction results for the zone applicable for the Company. The Company used the BLS factor to escalate the PJM RPM capacity prices in years four through twenty;

For avoided T&D costs ($/kW-year), the values calculated by the SWE listed in Table 1-3 of the Demand Response Potential Study[13] were used for 2016 and then escalated for years 2 through 20 using the BLS escalation rate as described in the TRC Test;

Avoided AEPS compliance costs were included and were calculated by multiplying the projected reduction in required alternative energy credits (AECs) by the estimated unit costs of such credits for all types required. For the costs of AECs for years in which AECs were not available, we applied a 5 year rolling annual compound rate of growth in the BLS index as the annual AEC price escalation rate, as described in the TRC Order.

Avoided operation and maintenance costs were included as a benefit where quantified. Additionally, any measures that produced a reasonably quantifiable savings in fossil fuel and water were included as a benefit, as prescribed in the TRC Test. For avoided natural gas, the average PA city gate price was used from the EIA and was adjusted in future years to follow the Henry Hub spot price forecast.

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

On the costs side the TRC test includes the costs of the various programs incurred by the Company and the participating customers, including, equipment, installation, operation, and maintenance costs, cost of removal (less salvage value) for turn-in programs, and administrative costs. The costs are "as spent" due to the fact that each year's program is evaluated separately by measure and the projected number of measure units. Program costs are budgeted by year, but operation and maintenance costs are based on measure life and are discounted using NPV back to the program year installed.

The Company also included estimated net-to-gross (NTG) ratios based on previous program evaluations or other industry experience in is planning and in performing cost-effectiveness calculations on a net basis as prescribed in the 2016 TRC Order. NTG ratios depend on assumptions for effects from free ridership, spillover and rebound effects. Estimates for these factors are difficult to quantify and can change over time. The SWE acknowledges this in its 2011 report: "NTGRs [Net to Gross ratios] based on spillover, free ridership factors, etc. can represent oversimplifications that are highly dependent upon scale, program implementation dynamics, and technology." [14]

[13] Act 129 Statewide Evaluator Demand Response Potential for Pennsylvania – Final Report – dated February 25, 2015 and released via Secretarial Letter at Docket No. M-2014-2424864 on February 27, 2015.
[14] *Net Savings: An Overview, GDS Associates, Inc., Nexant, & Mondre Energy, October 19, 2011*

Methods for measuring NTG ratios range from inexpensive surveys to more complex econometric modeling. Inherent issues with surveying such as biased and subjective responses, identifying correct respondents, etc., create uncertainty in the resulting values. While the econometric modeling may result in more accurate results, it is expensive, complex and thus not typically performed on an annual basis. This leads to results that do not reflect any changes over time, such as technological changes, participant cost, etc. The SWE further states that "The challenge of interpreting the NTG studies and converting study results and observations into NTGR is a complex process riddled with uncertainty and subjective judgment."[15] Therefore in the evaluation of any TRC results which incorporate NTG ratios the speculative nature of the ratios should be recognized.

The results of the TRC test as described above are presented in Tables 1 & 7 located in Appendix E of this plan, and are expressed as both a net present value and a benefit-cost ratio, and on both a net and gross basis.

8.2. Provide data tables (see Tables 7A thru 7E).

Tables 7A thru 7E are provided in Appendix E.

[15] *Net Savings: An Overview, GDS Associates, Inc., Nexant, & Mondre Energy, October 19, 2011*

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9. Plan Compliance Information and Other Key Issues

9.1. Plan Compliance Issues.[16]

9.1.1. Describe how the plan provides a variety of energy efficiency and conservation measures and will provide the measures equitably to all classes of customers in accordance with the June 11, 2015 Implementation Order.

As demonstrated throughout this plan, a variety of programs are being offered, with at least one program for each customer class and the low-income and Governmental/Education/Non-Profit subclasses. The plan addresses all customer sectors with a variety of programs that offer a broad range of services from education (on-line audits, energy usage reports) through direct installation of measures (Home Performance Audits, Low-Income Comprehensive weatherization services, audits with direct installation) to equipment replacement. Many of the programs provide financial assistance or other incentives to customers and program allies in an effort to overcome first cost barriers to installation of energy efficient equipment. Table 2 in Section 1 presents a summary description of the programs by sector and detailed descriptions are provided in Section 3. Appendix D-2 provides a listing of measures that are available to all classes of customers.

9.1.2. Provide a statement delineating the manner in which the EE&C plan will achieve the requirements of the program under 66 Pa. C.S. §§ 2806.1(c).

The Phase III Plan has been developed to incorporate a comprehensive set of programs that, based on known conditions, are designed to allow the Company to achieve the goals for energy reductions as set forth in the Commission's 2015 Implementation Order, all within the statutory spending caps. See Table 2 in Appendix E for the projected energy and demand reductions by each year and in total for the Phase III Plan.

9.1.3. Provide a statement delineating the manner in which the EE&C plan will achieve the Low-Income requirements prescribed in the June 11, 2015 Implementation Order.

There are two low-income targets more fully described in Act 129 or the 2015 Implementation Order. The first, requires the Company to obtain a minimum of five-and-a-half percent (5.5%) of its consumption reduction requirements from programs specifically targeted to the low-income sector. The Phase III Plan includes a comprehensive suite of subprograms within the Low-Income Program for the low-income sector that are collectively designed to achieve this requirement. The Low-Income Program includes the following services that are targeted directly to low-income customers:

- WARM Plus Component (Comprehensive weatherization services)
- WARM Extra Measures (Extra measures provided directly to customers participating in the Company's LIURP program.)

[16] These 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.

- Energy Efficiency Measures provided to customers through direct mail kits or other channels
- Audit – Multi Family and low use single family, including installation of basic energy efficiency measures and select appliance/HVAC/water heater replacement
- Energy Usage Reports with specific education, energy savings recommendations and marketing for this sector.
- School Education program targeting schools with low-income students
- New Construction in the low-income housing sector such as HUD or Habitat for Humanity
- Appliance Rebate & Recycling

Table 2 in Appendix E shows that the projected savings from the Low-Income Program exceeds the requirement to achieve 5.5% of the consumption reduction requirements from the low-income sector.

The second low income target, requires that each EE&C plan include specific energy efficiency measures for households at or below 150% of the federal poverty income guidelines ("FPIG"), in proportion to that sector's share of the total energy usage in the EDC's service territory.[17] This requirement is achieved by including measures that number at least proportional to low-income sector energy usage in the program targeted directly to low-income customers.[18]

Table 15 below lists 59 measures that are provided directly at no cost to Low-Income customers through the Phase III Plan. The measures listed in Tables 8, 10, 12 and 14 include a total of 99 additional non-low-income measures (without double counting measures offered in multiple sectors, measure tiers or demand response measures) resulting in a total of 158 measures, of which low-income represents 37%, significantly greater than the target percentages (all under 11%).

[17] 66 Pa. C.S. § 2806.1(b)(1)(i)(G)

[18] Targets provided in an October 10, 2012 memo from the SWE follow:

Phase 2 Low-Income Target Proportions by EDC

EDC	Percent 2011 kWh Usage Low-Income Households vs. Total Consumption
Duquesne	8.402%
PECO	8.799%
PPL	9.950%
Met-Ed	8.787%
Penelec	10.231%
Penn Power	10.639%
West Penn Power	8.794%

Table 15: Residential Low-Income Sub-Measures

Dedicated to Low-Income Customers
AC/Heating System Filter Replacement and Tune-Up
Air Sealing
Appliance Timers
Caulk
Central Air Conditioner
CFL Torchiere Floor Lamp
CFLs
Clothes Line Installation
Clothes Washer
Dehumidifier
Door Repair or Replacement
Duct Insulation
Duct Sealing
Electric Baseboard Heater Replacement
Electric Clothes Dryer
Electric Dryer Venting Repair or Replacement
Electric Furnace
Electric Heat Pumps
Electric Ductless Mini-Split Heat Pumps
Electrical Repairs
Energy Education
Exhaust Fan Repair and Replacement
Faucet Aerator – Energy Saving
Freezer Replacement
Furnace Filter
Furnace Filter Whistle
Gravity Film Exchange (Drain Water Heat Recovery System)
Health and Safety Measures
Heat Pump Water Heater
Heated Waterbed Mattress Replacement
Insulation (attic, wall, floor, band joist, basement, crawl space)
LEDs
LED Nightlight
Packaged Terminal AC/HP for Multi Family
Pipe Insulation
Plumbing Repairs
Refrigerator Replacement
Refrigerator/Freezer Thermometers
Residential Occupancy Sensors
Roof Coating
Room Air Conditioner Cover
Room Air Conditioner Replacement
Room Thermometer
Sash locks
Shower Head – Energy Saving
Smart Power Strip
Storm Windows & Doors
Tank Temperature Set-Back
Thermostat Replacement and Repair
Thermostatic Shower Valves
Vapor Barrier
Vents (Roof, Gable, Soffit and Ridge)
Water Heater Replacement
Weather Stripping
Well Pump
Window plastic cover kits
Window Quilt
Window Tint
Windows

9.1.4. Provide a statement delineating the manner in which the EE&C plan will achieve the Government/Educational/Non-Profit requirements prescribed in the June 11, 2015 Implementation Order.

While all non-residential buildings (including those in the Governmental/Educational/Non-Profit sector) are eligible for the prescriptive and custom energy efficiency programs through the Commercial/Industrial Small and Large sector programs, special efforts will be made to target these subdivisions of the G/E/NP sector in recognition of their unique decision-making and financing processes for making capital improvements to facilities. This plan will achieve the Government/Educational/Non-Profit requirements through the combination of program services targeted through the Governmental & Institutional Tariff Program and the services provided to Government/Educational/Non-Profit customers under the Commercial/Industrial Small and Large sector programs. The Company's programs will leverage existing Company Area Manager relationships and vendors who are familiar with the G/E/NP sector and will provide tailored support to G/E/NP accounts in an effort to complete projects. The Commercial/Industrial Small and Large sector programs and G/E/NP sector programs are described in Section 3.3, 3.4 and 3.5.

9.1.5. Describe how an EDC will ensure that no more than two percent of funds available to implement the plan shall be allocated for experimental equipment or devices.

Recognizing the five-year duration of Phase III, the EE&C Team plans to collaborate with the Electric Power Research Institute (EPRI) and participate in research projects, demonstrations and/or pilots on technological advancements in efficient measures, but at less than two percent of funds available. To ensure that the Company does not exceed this limitation, the EE&C Team continuously evaluates costs incurred for the implementation of various aspects of the Companies' EE&C plans. This evaluation includes the tracking of funds expended for any experimental equipment or devices to ensure that no more than two percent of the funds available to implement the plan is spent on such equipment or devices. Should the costs incurred for the evaluation of such equipment and devices begin to approach the 2% threshold, the Company will adjust its spending accordingly. Further, the Phase III Plan primarily focuses on encouraging the accelerated adoption of commercially available technologies for achieving the energy efficiency and demand response requirements in a cost effective manner. See Appendix D-2 for the measures included in the Phase III Plan.

9.1.6. Describe how the plan will be competitively neutral to all distribution customers even if they are receiving supply from an EGS.

All programs are available to retail customers who receive distribution electric service from the Company regardless of that customer's source of generation service and, thus, will be offered on a non-discriminatory basis. Likewise, the Phase III EE&C-C tariff will collect the costs from like customers, thereby assuring the Phase III Plan is competitively neutral.

9.2. Other Key Issues:

9.2.1. Describe how this EE&C plan will lead to long-term, sustainable energy efficiency savings in the EDC's service territory and in Pennsylvania.

The purpose of this Phase III Plan is to demonstrate the connections between end-use energy technologies and energy consumption, and to better guide customers' energy decisions. The amount of energy used in the future is a central determinant of environmental impacts both within the Company's service territory and beyond. Energy use will depend on the demand for energy services and the technologies used to supply those services.

The Company's Phase III Plan is intended to (i) elevate customer awareness of energy efficiency opportunities so that they become more conscious of their choices involving energy usage; and (ii) establish ongoing energy saving habits through market transformation by first providing introductory products and educational materials and then moving customers to more sophisticated energy efficiency options. In addition, many measures installed and appliances retired and/or replaced as a result of the execution of the Company's Phase III Plan have lengthy expected product lifetimes. They will save energy for years to come, bridging customers to even better technologies as they become available. So, the benefits of this plan should extend far beyond the length of the specific programs.

9.2.2. Describe how this EE&C plan will leverage and utilize other financial resources, including funds from other public and private sector energy efficiency and solar energy programs.

The Company's approach will be to encourage customers to use financial resources to gain the greatest possible financial support available to install energy-efficiency technologies. The Company expects its CSPs to educate customers on the funding mechanisms and resources that are available not only through the Phase III plan, but also through other sources such as private financing programs, state and federal tax incentives, and potential funds that may be offered through other government agencies. Information will be available to customers on the program website as well as in general educational and program specific promotional materials where applicable. Customers will be encouraged to use all available financial resources to help offset some of their capital outlay to undertake energy efficiency improvements. The low income programs encourage coordination of funds from multiple sources, including Gas Energy Conservation programs, State Weatherization Assistance Programs, Local Community Block Grants and housing rehabilitation services. The programs also encourage customers who are not currently enrolled, to seek LIHEAP grants, Dollar Energy Fund Grants and Customer Assistance Program aid, as well as Keystone Renovate and Repair Loan Program, where applicable.

9.2.3. Describe how the EDC will address consumer education for its programs.

A concurrent marketing and educational campaign is essential to the success of these programs. The Company will continue to market its existing programs and measures to build awareness and interest in both the existing programs and the core programs proposed under the Phase III Plan. Since the Phase III Plan leverages many of the programs currently being offered through the Phase II Plan, and the response to many of the Phase II programs has

been positive, the Company does not anticipate significant changes in its marketing and education strategy for Phase III. Once Commission approval is obtained on the Phase III Plan, the Company will pursue marketing efforts to build awareness and interest in the new or revised programs and measures. Included in each program's budget is a marketing budget for promoting the program for each year of the plan, including sustaining marketing resources for subsequent years of the plan to ensure adequate outreach for achieving program goals. The Company's CSPs will be required to develop and execute a marketing plan that will include a requirement that at least one member of the CSP team have educational expertise in social marketing and consumer behavior change. In addition, the Company assigns program managers and other staff to help manage its customer communication and educations efforts. This staff will be tasked with continually evaluating and, when appropriate, modifying the Company's energy efficiency education messages and delivery strategies.

The Company will develop educational materials to be distributed during customer interactions in specific programs. These materials may include equipment fact sheets, customer and/or sector specific energy use information, installation and maintenance guides and other materials. The Company will also seek input on marketing and other communication materials from interested parties through its stakeholder process.

The Company's consumer website, *energysavepa.com*, contains information and tools to support customer energy-efficiency strategies, including information regarding its existing programs. The Company will increase the information available on its website for the Phase III Plan by posting customer educational materials developed for its new programs and measures and creating new materials and tools to increase customers' ability to manage their energy use.

9.2.4. Indicate that the EDC will provide a list of all eligible federal and state funding programs available to ratepayers for energy efficiency and conservation.

The Company will provide a list of all known eligible federal and state funding programs that are available to its customers for energy efficiency and conservation as part of its energy efficiency marketing and implementation efforts.

9.2.5. Describe how the EDC will provide the public with information about the results from the programs.

The Company provides summary reports to the Commission as part of its regular reporting responsibilities, which are then posted on the Public Utility Commission's website. These reports will also be posted on the Company's website for review by the public.

10. Appendices

Appendix A: Commission approved electricity consumption forecast for the period of June 1, 2009 through May 31, 2010.

Appendix B: CSP contract(s)

Appendix C-1: Program costs by program year and total

Appendix C-2: Program savings by program year and total

Appendix D-1: Calculation Methods and Assumptions - Costs Assumptions

Appendix D-2: Calculation Methods and Assumptions - Measure Assumptions

Appendix D-3: Calculation Methods and Assumptions - Number of Units

Appendix D-4: Calculation Methods and Assumptions - Rebate Strategy

Appendix E: PUC Tables 1-7

Table 1A: Portfolio Summary of Lifetime Costs and Benefits of Energy Efficiency Measures

Table 1B: Portfolio Summary of Lifetime Costs and Benefits of Demand Response Measures

Table 2: Summary of Portfolio Energy and Demand Savings

Table 3: Summary of Portfolio Costs

Table 4: Program Summaries

Table 5: Budget and Parity Analysis Summary

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

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

Table 6C: Summary of Portfolio EE&C Costs

Table 7A: Gross TRC Benefits Table

Table 7B: Gross TRC Benefits Table

Table 7C: Gross TRC Benefits Table

Table 7D: Gross TRC Benefits Table

Table 7E: Gross TRC Benefits Table

Table 7A: Net TRC Benefits Table

Appendix A:
Commission Approved Consumption Forecast

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Appendix A: Commission approved electricity consumption forecast for the period of June 1, 2009 through May 31, 2010

Retail Energy Forecast (MWh)	
Penelec *	
June 2009	1,158,582
July 2009	1,246,775
August 2009	1,266,171
September 2009	1,123,299
October 2009	1,133,396
November 2009	1,153,195
December 2009	1,299,238
January 2010	1,309,249
February 2010	1,202,447
March 2010	1,239,565
April 2010	1,121,267
May 2010	1,146,105
Total	**14,399,289**

* Excludes Waverly, NY service territory

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Appendix B:
CSP Contract(s)

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CSP Contract Summary

Status

Pending approval by PUC Staff

Full company name of contractor and SEP registration Docket Number

ADM Associates, Inc. – Docket A-2010-2175190

Brief description of statement of work

The EM&V services being sought are to 1) perform impact and process evaluations, 2) perform verification of data used to generate regulatory reports, 3) support regulatory reporting, including generation and/or verification of tables included in reports, 4) provide consultative and technical support for plan development and/or updates and 5) provide evaluation feedback and guidance supporting effective implementation and accurate reporting for Program Managers including coordinating and communicating results of any impact, process or other analyses that are required in performing the Companies' EE&C Plans. The qualified firm must work with the selected Statewide Evaluator and meet future requirements developed by the Statewide Evaluator and the PUC.

Name of EE&C Plan Program associated with proposed contract and explanation if SOW addresses the Program in its entirety or in part

The proposed contract spans the portfolio of programs included in the approved EDC Plans.

Estimated total contract cost and statement regarding incentives and rebates, their amount and explanation if total cost includes incentives and rebates

Redacted – Contains pricing information. Included in CSP contract filed with PUC staff.

Estimated targeted energy savings associated with contract

This contract will not produce energy savings, but rather verify the energy savings produced by implementation of programs in the Plans.

Timeframe and duration of contract from start date to completion

The term of the contract is for the duration of Act 129 Phase III and is expected to run from contract award until May 31, 2022 to support final evaluation through the end of the Phase, including applicable reports for that program year (program years are June 1 – May 31). Phase III activities prior to June 1, 2016 are billed separately and limited to Phase III start-up planning and support activities.

Statement relating to the number of bids that were received, justification for selection of CSP contractor/subcontractor if based on receipt of less than three bids for any particular program, and identification and explanation for non-selection of low-bid CSP, if applicable.

There were 2 strong proposals received for providing FirstEnergy's EM&V services for the duration of PA Act 129 Phase III. ADM was the low-bid for the contract and ADM's pricing is competitive. Contract pricing is time and materials based and ADM has performed well and billed significantly below the "not to exceed" contract amounts for both Phase I and Phase II contracts. In addition, ADM has established familiarity with Company programs, Pennsylvania EM&V procedures, and credibility with the previous Statewide Independent Evaluator and PUC staff. A new contractor would involve significant start-up costs. For all of those reasons, FirstEnergy requests that the Commission approve the Companies' recommended award of the EM&V contract to ADM.

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Appendix C:
Program Costs and Savings by Program Year

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Appendix C-1: Program Cost by Program Year

Program Year is June 1 to May 31

Penelec - Program Year 2016			Direct			Administrative			
Sector	Program	Sub-Program	Program Administration	Incentives	Direct Total	Portfolio Administration	Other	Administrative Total	Total
Res	Appliance Turn In Program	Appliance Turn In	$733,717	$331,498	$1,065,214	$103,117	$47,989	$151,105	$1,216,320
		Sub-Total	$733,717	$331,498	$1,065,214	$103,117	$47,989	$151,105	$1,216,320
	Energy Efficient Homes Program	School Education	$138,071	$88,000	$226,071	$19,253	$8,960	$28,212	$254,283
		EE Kits	$505,364	$2,652,000	$3,157,364	$56,653	$26,365	$83,019	$3,240,383
		Audits	$248,018	$285,000	$533,018	$33,831	$15,744	$49,575	$582,593
		Behavioral	$1,461,213	$0	$1,461,213	$214,394	$99,775	$314,169	$1,775,383
		Behavioral - DR	$91,868	$0	$91,868	$13,157	$6,123	$19,280	$111,149
		New Homes	$116,615	$51,950	$168,565	$16,394	$7,629	$24,023	$192,588
		Sub-Total	$2,561,150	$3,076,950	$5,638,100	$353,682	$164,597	$518,279	$6,156,379
	Energy Efficient Products Program	Appliances and Electronics	$197,592	$569,075	$766,667	$24,925	$11,599	$36,524	$803,191
		Lighting	$588,713	$1,821,075	$2,409,788	$80,847	$37,625	$118,472	$2,528,260
		HVAC	$243,658	$191,961	$435,619	$33,758	$15,710	$49,469	$485,088
		Sub-Total	$1,029,962	$2,582,111	$3,612,073	$139,530	$64,935	$204,465	$3,816,538
Res LI	Low Income Energy Efficiency Program	LI - EE Kits	$634,654	$0	$634,654	$90,895	$42,301	$133,195	$767,849
		Weatherization	$1,603,082	$0	$1,603,082	$188,700	$3,088	$191,788	$1,794,870
		Multifamily / LILU Single Family	$219,046	$0	$219,046	$31,371	$14,600	$45,971	$265,017
		LI - Behavioral	$625,486	$0	$625,486	$89,581	$41,690	$131,271	$756,757
		LI - New Homes	$57,995	$6,272	$64,267	$8,269	$3,848	$12,117	$76,384
		LI - Appliance Rebate	$90,011	$18,368	$108,379	$12,782	$5,949	$18,731	$127,110
		LI - Appliance Turn In	$215,049	$35,812	$250,861	$30,587	$14,235	$44,821	$295,683
		LI - School Education	$111,763	$0	$111,763	$16,007	$7,449	$23,456	$135,218
		Sub-Total	$3,557,086	$60,451	$3,617,537	$468,192	$133,158	$601,350	$4,218,888
		Residential Total	$7,881,915	$6,051,010	$13,932,925	$1,064,521	$410,679	$1,475,199	$15,408,124
SCI	C&I Energy Solutions for Business Program - Small	HVAC - SCI	$35,932	$19,169	$55,101	$5,032	$2,342	$7,375	$62,476
		Lighting - SCI	$175,166	$403,245	$578,412	$22,696	$10,562	$33,259	$611,670
		Food Service	$56,479	$41,000	$97,479	$7,846	$3,651	$11,497	$108,976
		Appliances and Electronics - SCI	$72,324	$18,391	$90,715	$10,249	$4,770	$15,019	$105,734
		Agricultural	$39,580	$11,181	$50,761	$5,602	$2,607	$8,210	$58,971
		Custom - SCI	$373,887	$941,612	$1,315,499	$47,965	$22,322	$70,287	$1,385,786
		Custom Buildings - SCI	$71,369	$109,678	$181,047	$9,571	$4,454	$14,025	$195,072
		EE Kits - SCI	$67,774	$0	$67,774	$9,706	$4,517	$14,224	$81,997
		Multifamily	$385,744	$0	$385,744	$55,246	$25,710	$80,956	$466,700
		Audits - SCI	$318,453	$662,647	$981,100	$41,679	$19,397	$61,076	$1,042,176
		Small C&I Total	$1,596,708	$2,206,924	$3,803,632	$215,593	$100,333	$315,927	$4,119,558
LCI	C&I Energy Solutions for Business Program - Large	HVAC - LCI	$23,714	$22,525	$46,239	$3,263	$1,518	$4,781	$51,020
		Lighting - LCI	$93,497	$197,042	$290,539	$12,222	$5,688	$17,910	$308,449
		Custom - LCI	$511,549	$1,132,746	$1,644,296	$66,547	$30,970	$97,517	$1,741,813
		Custom Buildings - LCI	$133,830	$192,237	$326,067	$18,027	$8,390	$26,417	$352,484
		Audits - LCI	$38,347	$72,000	$110,347	$5,065	$2,357	$7,422	$117,769
		Large C&I Total	$800,938	$1,616,550	$2,417,488	$105,124	$48,923	$154,048	$2,571,535
G/E/NP	Governmental & Institutional Tariff Program	HVAC - Gov't	$7,305	$9,429	$16,734	$990	$461	$1,451	$18,185
		Lighting - Gov't	$48,173	$27,704	$75,876	$6,735	$3,134	$9,869	$85,746
		Appliances - Gov't	$16,498	$7,768	$24,266	$2,317	$1,078	$3,395	$27,661
		Street Lighting - Gov't	$6,849	$28,750	$35,599	$810	$377	$1,188	$36,786
		Audits - Gov't	$46,933	$241,312	$288,245	$5,291	$2,462	$7,753	$295,998
		Governmental/Educational/Non-Profit Total	$125,758	$314,962	$440,720	$16,143	$7,513	$23,656	$464,377
		Non - Residential Total	$2,523,403	$4,138,436	$6,661,839	$336,861	$156,769	$493,631	$7,155,470
		Total	**$10,405,318**	**$10,189,446**	**$20,594,764**	**$1,401,382**	**$567,448**	**$1,968,830**	**$22,563,594**

Appendix C-1: Program Cost by Program Year

Program Year is June 1 to May 31

Penelec - Program Year 2017			Direct			Administrative			
Sector	Program	Sub-Program	Program Administration	Incentives	Direct Total	Portfolio Administration	Other	Administrative Total	Total
Res	Appliance Turn In Program	Appliance Turn In	$732,677	$331,498	$1,064,175	$96,829	$26,014	$122,843	$1,187,018
		Sub-Total	$732,677	$331,498	$1,064,175	$96,829	$26,014	$122,843	$1,187,018
	Energy Efficient Homes Program	School Education	$112,703	$88,000	$200,703	$14,688	$3,946	$18,634	$219,337
		EE Kits	$436,498	$2,652,000	$3,088,498	$44,001	$11,821	$55,822	$3,144,321
		Audits	$253,524	$295,000	$548,524	$32,500	$8,731	$41,231	$589,755
		Behavioral	$1,380,365	$0	$1,380,365	$190,323	$51,132	$241,455	$1,621,820
		Behavioral - DR	$182,365	$0	$182,365	$24,561	$6,599	$31,160	$213,525
		New Homes	$119,786	$51,950	$171,736	$15,843	$4,256	$20,100	$191,835
		Sub-Total	$2,485,241	$3,086,950	$5,572,191	$321,916	$86,486	$408,402	$5,980,593
	Energy Efficient Products Program	Appliances and Electronics	$203,855	$593,675	$797,530	$24,145	$6,487	$30,632	$828,162
		Lighting	$603,344	$2,108,369	$2,711,712	$77,171	$20,733	$97,903	$2,809,616
		HVAC	$256,389	$242,286	$498,676	$33,180	$8,914	$42,094	$540,769
		Sub-Total	$1,063,588	$2,944,330	$4,007,918	$134,496	$36,133	$170,629	$4,178,547
Res LI	Low Income Energy Efficiency Program	LI - EE Kits	$599,590	$0	$599,590	$80,753	$21,695	$102,448	$702,039
		Weatherization	$1,603,330	$0	$1,603,330	$194,587	$3,184	$197,771	$1,801,100
		Multifamily / LILU Single Family	$260,481	$0	$260,481	$35,082	$9,425	$44,507	$304,988
		LI - Behavioral	$526,626	$0	$526,626	$70,926	$19,055	$89,981	$616,607
		LI - New Homes	$59,579	$6,272	$65,851	$7,989	$2,146	$10,136	$75,987
		LI - Appliance Rebate	$93,347	$19,523	$112,870	$12,463	$3,348	$15,812	$128,681
		LI - Appliance Turn In	$214,947	$35,843	$250,790	$28,749	$7,724	$36,473	$287,263
		LI - School Education	$99,014	$0	$99,014	$13,335	$3,583	$16,918	$115,932
		Sub-Total	$3,456,915	$61,637	$3,518,552	$443,885	$70,160	$514,045	$4,032,597
		Residential Total	$7,738,420	$6,424,415	$14,162,835	$997,126	$218,793	$1,215,919	$15,378,754
SCI	C&I Energy Solutions for Business Program - Small	HVAC - SCI	$24,858	$27,487	$52,345	$3,195	$858	$4,053	$56,398
		Lighting - SCI	$163,920	$427,482	$591,402	$19,693	$5,291	$24,984	$616,386
		Food Service	$44,129	$41,000	$85,129	$5,715	$1,535	$7,250	$92,379
		Appliances and Electronics - SCI	$47,357	$18,596	$65,953	$6,274	$1,686	$7,960	$73,913
		Agricultural	$30,029	$16,346	$46,375	$3,953	$1,062	$5,015	$51,390
		Custom - SCI	$345,286	$1,089,730	$1,435,016	$40,427	$10,861	$51,288	$1,486,305
		Custom Buildings - SCI	$68,227	$146,237	$214,465	$8,374	$2,250	$10,623	$225,088
		EE Kits - SCI	$57,432	$0	$57,432	$7,735	$2,078	$9,813	$67,245
		Multifamily	$375,043	$0	$375,043	$50,511	$13,570	$64,081	$439,125
		Audits - SCI	$223,071	$760,047	$983,118	$25,805	$6,933	$32,738	$1,015,856
		Small C&I Total	$1,379,351	$2,526,924	$3,906,276	$171,682	$46,124	$217,806	$4,124,082
LCI	C&I Energy Solutions for Business Program - Large	HVAC - LCI	$17,851	$33,788	$51,639	$2,216	$595	$2,811	$54,450
		Lighting - LCI	$86,358	$205,616	$291,974	$10,484	$2,817	$13,301	$305,275
		Custom - LCI	$581,548	$1,521,350	$2,102,898	$69,841	$18,763	$88,604	$2,191,502
		Custom Buildings - LCI	$142,626	$252,925	$395,551	$17,799	$4,782	$22,580	$418,132
		Audits - LCI	$26,974	$108,000	$134,974	$3,031	$814	$3,845	$138,819
		Large C&I Total	$855,357	$2,121,679	$2,977,036	$103,370	$27,771	$131,141	$3,108,177
G/E/NP	Governmental & Institutional Tariff Program	HVAC - Gov't	$5,939	$9,429	$15,368	$747	$201	$948	$16,316
		Lighting - Gov't	$47,105	$28,211	$75,316	$6,187	$1,662	$7,849	$83,165
		Appliances - Gov't	$15,146	$7,768	$22,913	$1,997	$536	$2,533	$25,446
		Street Lighting - Gov't	$6,944	$33,750	$40,694	$747	$201	$948	$41,641
		Audits - Gov't	$38,917	$271,749	$310,666	$3,726	$1,001	$4,727	$315,393
		Governmental/Educational/Non-Profit Total	$114,050	$350,907	$464,956	$13,404	$3,601	$17,005	$481,961
		Non - Residential Total	$2,348,758	$4,999,510	$7,348,268	$288,456	$77,496	$365,952	$7,714,220
		Total	**$10,087,178**	**$11,423,925**	**$21,511,103**	**$1,285,582**	**$296,290**	**$1,581,872**	**$23,092,974**

Appendix C-1: Program Cost by Program Year

Program Year is June 1 to May 31

Penelec - Program Year 2018			Direct			Administrative			
Sector	Program	Sub-Program	Program Administration	Incentives	Direct Total	Portfolio Administration	Other	Administrative Total	Total
Res	Appliance Turn In Program	Appliance Turn In	$732,620	$331,498	$1,064,117	$95,569	$26,648	$122,217	$1,186,334
		Sub-Total	$732,620	$331,498	$1,064,117	$95,569	$26,648	$122,217	$1,186,334
	Energy Efficient Homes Program	School Education	$112,694	$88,000	$200,694	$14,497	$4,042	$18,539	$219,233
		EE Kits	$439,254	$2,652,000	$3,091,254	$43,798	$12,212	$56,011	$3,147,265
		Audits	$266,371	$315,000	$581,371	$33,677	$9,390	$43,068	$624,439
		Behavioral	$1,380,308	$0	$1,380,308	$187,846	$52,378	$240,224	$1,620,532
		Behavioral - DR	$187,238	$0	$187,238	$24,891	$6,941	$31,832	$219,069
		New Homes	$123,071	$51,950	$175,021	$16,075	$4,482	$20,557	$195,579
		Sub-Total	$2,508,937	$3,106,950	$5,615,887	$320,785	$89,446	$410,231	$6,026,117
	Energy Efficient Products Program	Appliances and Electronics	$209,728	$614,400	$824,128	$24,499	$6,831	$31,331	$855,459
		Lighting	$614,569	$2,347,144	$2,961,712	$77,025	$21,477	$98,502	$3,060,214
		HVAC	$269,948	$293,061	$563,009	$34,274	$9,557	$43,830	$606,840
		Sub-Total	$1,094,245	$3,254,605	$4,348,850	$135,798	$37,865	$173,663	$4,522,512
Res LI	Low Income Energy Efficiency Program	LI - EE Kits	$600,933	$0	$600,933	$79,887	$22,275	$102,163	$703,096
		Weatherization	$1,603,570	$0	$1,603,570	$200,288	$3,277	$203,566	$1,807,135
		Multifamily / LILU Single Family	$340,814	$0	$340,814	$45,307	$12,633	$57,941	$398,755
		LI - Behavioral	$526,584	$0	$526,584	$70,003	$19,519	$89,523	$616,106
		LI - New Homes	$61,222	$6,272	$67,494	$8,104	$2,260	$10,364	$77,858
		LI - Appliance Rebate	$96,931	$20,788	$117,719	$12,771	$3,561	$16,333	$134,051
		LI - Appliance Turn In	$215,341	$35,905	$251,246	$28,430	$7,927	$36,357	$287,603
		LI - School Education	$99,006	$0	$99,006	$13,162	$3,670	$16,832	$115,838
		Sub-Total	$3,544,401	$62,964	$3,607,366	$457,953	$75,123	$533,076	$4,140,442
		Residential Total	$7,880,202	$6,756,017	$14,636,219	$1,010,104	$229,083	$1,239,187	$15,875,406
SCI	C&I Energy Solutions for Business Program - Small	HVAC - SCI	$26,995	$37,622	$64,616	$3,382	$943	$4,324	$68,941
		Lighting - SCI	$162,898	$430,944	$593,842	$19,284	$5,377	$24,661	$618,502
		Food Service	$44,673	$41,000	$85,673	$5,713	$1,593	$7,306	$92,980
		Appliances and Electronics - SCI	$48,133	$18,711	$66,844	$6,296	$1,755	$8,051	$74,895
		Agricultural	$34,088	$22,361	$56,449	$4,408	$1,229	$5,638	$62,087
		Custom - SCI	$414,910	$1,385,913	$1,800,824	$47,530	$13,253	$60,783	$1,861,607
		Custom Buildings - SCI	$89,920	$219,356	$309,276	$10,747	$2,997	$13,743	$323,019
		EE Kits - SCI	$57,844	$0	$57,844	$7,690	$2,144	$9,834	$67,678
		Multifamily	$377,673	$0	$377,673	$50,207	$14,000	$64,207	$441,880
		Audits - SCI	$234,681	$833,096	$1,067,777	$26,613	$7,421	$34,034	$1,101,811
		Small C&I Total	$1,491,815	$2,989,004	$4,480,819	$181,869	$50,712	$232,581	$4,713,399
LCI	C&I Energy Solutions for Business Program - Large	HVAC - LCI	$18,176	$33,788	$51,963	$2,230	$622	$2,852	$54,815
		Lighting - LCI	$85,216	$209,916	$295,132	$10,173	$2,837	$13,010	$308,142
		Custom - LCI	$652,519	$1,773,069	$2,425,588	$76,986	$21,467	$98,453	$2,524,041
		Custom Buildings - LCI	$188,591	$379,388	$567,979	$22,983	$6,408	$29,391	$597,370
		Audits - LCI	$28,041	$120,000	$148,041	$3,067	$855	$3,923	$151,964
		Large C&I Total	$972,542	$2,516,161	$3,488,703	$115,440	$32,189	$147,629	$3,636,332
G/E/NP	Governmental & Institutional Tariff Program	HVAC - Gov't	$5,936	$9,429	$15,365	$737	$206	$943	$16,308
		Lighting - Gov't	$46,796	$28,582	$75,379	$6,064	$1,691	$7,755	$83,133
		Appliances - Gov't	$15,142	$7,768	$22,910	$1,970	$549	$2,520	$25,429
		Street Lighting - Gov't	$8,534	$41,250	$49,784	$907	$253	$1,160	$50,944
		Audits - Gov't	$46,882	$332,624	$379,505	$4,402	$1,227	$5,629	$385,135
		Governmental/Educational/Non-Profit Total	$123,290	$419,653	$542,943	$14,080	$3,926	$18,007	$560,950
		Non - Residential Total	$2,587,648	$5,924,817	$8,512,464	$311,390	$86,827	$398,216	$8,910,681
		Total	**$10,467,850**	**$12,680,834**	**$23,148,683**	**$1,321,494**	**$315,909**	**$1,637,403**	**$24,786,087**

Appendix C-1: Program Cost by Program Year

Program Year is June 1 to May 31

Penelec - Program Year 2019			Direct			Administrative			
Sector	Program	Sub-Program	Program Administration	Incentives	Direct Total	Portfolio Administration	Other	Administrative Total	Total
Res	Appliance Turn In Program	Appliance Turn In	$732,758	$331,498	$1,064,255	$97,799	$27,029	$124,828	$1,189,083
		Sub-Total	$732,758	$331,498	$1,064,255	$97,799	$27,029	$124,828	$1,189,083
	Energy Efficient Homes Program	School Education	$112,715	$88,000	$200,715	$14,835	$4,100	$18,935	$219,650
		EE Kits	$441,954	$2,652,051	$3,094,005	$45,178	$12,486	$57,664	$3,151,669
		Audits	$268,589	$213,051	$481,640	$35,332	$9,765	$45,097	$526,737
		Behavioral	$1,413,302	$0	$1,413,302	$192,229	$53,127	$245,356	$1,658,658
		Behavioral - DR	$191,893	$0	$191,893	$26,100	$7,213	$33,313	$225,206
		New Homes	$126,209	$51,950	$178,159	$16,874	$4,663	$21,537	$199,696
		Sub-Total	$2,554,661	$3,005,052	$5,559,713	$330,549	$91,354	$421,903	$5,981,617
	Energy Efficient Products Program	Appliances and Electronics	$214,900	$624,475	$839,375	$25,713	$7,106	$32,819	$872,195
		Lighting	$665,133	$2,564,025	$3,229,158	$76,030	$21,012	$97,042	$3,326,200
		HVAC	$276,252	$293,061	$569,313	$35,924	$9,928	$45,852	$615,165
		Sub-Total	$1,156,285	$3,481,561	$4,637,846	$137,667	$38,047	$175,714	$4,813,560
Res LI	Low Income Energy Efficiency Program	LI - EE Kits	$602,425	$0	$602,425	$81,938	$22,645	$104,584	$707,009
		Weatherization	$1,603,796	$0	$1,603,796	$205,676	$3,365	$209,042	$1,812,838
		Multifamily / LILU Single Family	$343,815	$0	$343,815	$46,764	$12,924	$59,688	$403,502
		LI - Behavioral	$526,685	$0	$526,685	$71,637	$19,798	$91,435	$618,120
		LI - New Homes	$62,791	$6,272	$69,063	$8,505	$2,351	$10,856	$79,918
		LI - Appliance Rebate	$99,303	$21,283	$120,586	$13,387	$3,700	$17,087	$137,672
		LI - Appliance Turn In	$215,794	$35,967	$251,761	$29,149	$8,056	$37,204	$288,965
		LI - School Education	$99,025	$0	$99,025	$13,469	$3,722	$17,191	$116,217
		Sub-Total	$3,553,634	$63,521	$3,617,155	$470,525	$76,562	$547,086	$4,164,242
		Residential Total	$7,997,338	$6,881,632	$14,878,971	$1,036,539	$232,992	$1,269,531	$16,148,502
SCI	C&I Energy Solutions for Business Program - Small	HVAC - SCI	$27,518	$37,622	$65,139	$3,531	$976	$4,507	$69,646
		Lighting - SCI	$161,885	$431,057	$592,942	$19,591	$5,415	$25,006	$617,948
		Food Service	$45,200	$41,000	$86,200	$5,917	$1,635	$7,552	$93,752
		Appliances and Electronics - SCI	$48,937	$19,286	$68,224	$6,548	$1,810	$8,357	$76,581
		Agricultural	$38,126	$28,376	$66,502	$5,026	$1,389	$6,415	$72,917
		Custom - SCI	$417,149	$1,385,913	$1,803,062	$48,934	$13,524	$62,458	$1,865,520
		Custom Buildings - SCI	$90,509	$219,356	$309,865	$11,075	$3,061	$14,136	$324,002
		EE Kits - SCI	$41,181	$0	$41,181	$5,601	$1,548	$7,149	$48,330
		Multifamily	$380,260	$0	$380,260	$51,721	$14,294	$66,015	$446,274
		Audits - SCI	$235,867	$833,096	$1,068,964	$27,390	$7,570	$34,960	$1,103,924
		Small C&I Total	$1,486,632	$2,995,706	$4,482,338	$185,334	$51,221	$236,556	$4,718,894
LCI	C&I Energy Solutions for Business Program - Large	HVAC - LCI	$18,487	$33,788	$52,274	$2,324	$642	$2,967	$55,241
		Lighting - LCI	$84,807	$212,066	$296,873	$10,341	$2,858	$13,199	$310,072
		Custom - LCI	$655,530	$1,778,015	$2,433,545	$79,150	$21,875	$101,024	$2,534,570
		Custom Buildings - LCI	$190,992	$384,474	$575,466	$23,813	$6,581	$30,394	$605,860
		Audits - LCI	$28,587	$120,000	$148,587	$3,212	$888	$4,100	$152,687
		Large C&I Total	$978,403	$2,528,343	$3,506,746	$118,840	$32,844	$151,684	$3,658,429
G/E/NP	Governmental & Institutional Tariff Program	HVAC - Gov't	$5,935	$9,429	$15,364	$754	$208	$963	$16,326
		Lighting - Gov't	$46,483	$28,950	$75,433	$6,159	$1,702	$7,862	$83,295
		Appliances - Gov't	$15,142	$7,768	$22,910	$2,016	$557	$2,573	$25,483
		Street Lighting - Gov't	$11,157	$53,750	$64,907	$1,215	$336	$1,551	$66,457
		Audits - Gov't	$47,381	$332,624	$380,005	$4,572	$1,263	$5,835	$385,840
		Governmental/Educational/Non-Profit Total	$126,098	$432,521	$558,619	$14,716	$4,067	$18,783	$577,401
		Non - Residential Total	$2,591,133	$5,956,570	$8,547,703	$318,890	$88,132	$407,022	$8,954,724
		Total	**$10,588,471**	**$12,838,202**	**$23,426,673**	**$1,355,429**	**$321,124**	**$1,676,553**	**$25,103,226**

Appendix C-1: Program Cost by Program Year

Program Year is June 1 to May 31

Penelec - Program Year 2020			Direct			Administrative			
Sector	Program	Sub-Program	Program Administration	Incentives	Direct Total	Portfolio Administration	Other	Administrative Total	Total
Res	Appliance Turn In Program	Appliance Turn In	$733,844	$331,498	$1,065,342	$118,259	$33,407	$151,665	$1,217,007
		Sub-Total	$733,844	$331,498	$1,065,342	$118,259	$33,407	$151,665	$1,217,007
	Energy Efficient Homes Program	School Education	$0	$0	$0	$0	$0	$0	$0
		EE Kits	$103,196	$51	$103,247	$16,946	$4,787	$21,734	$124,980
		Audits	$269,112	$60,051	$329,163	$43,785	$12,369	$56,154	$385,318
		Behavioral	$1,415,437	$0	$1,415,437	$232,444	$65,663	$298,107	$1,713,544
		Behavioral - DR	$196,855	$0	$196,855	$32,328	$9,132	$41,460	$238,315
		New Homes	$129,547	$51,950	$181,497	$20,921	$5,910	$26,831	$208,328
		Sub-Total	$2,114,147	$112,052	$2,226,199	$346,425	$97,861	$444,286	$2,670,485
	Energy Efficient Products Program	Appliances and Electronics	$220,314	$633,850	$854,164	$31,871	$9,003	$40,874	$895,038
		Lighting	$309,783	$1,029,837	$1,339,620	$43,871	$12,393	$56,264	$1,395,884
		HVAC	$282,978	$293,061	$576,039	$44,478	$12,565	$57,043	$633,082
		Sub-Total	$813,075	$1,956,748	$2,769,823	$120,220	$33,961	$154,181	$2,924,004
Res LI	Low Income Energy Efficiency Program	LI - EE Kits	$51,656	$0	$51,656	$8,483	$2,396	$10,879	$62,535
		Weatherization	$1,604,025	$0	$1,604,025	$211,119	$3,454	$214,573	$1,818,599
		Multifamily / LILU Single Family	$347,303	$0	$347,303	$57,034	$16,112	$73,146	$420,449
		LI - Behavioral	$527,480	$0	$527,480	$86,623	$24,470	$111,093	$638,574
		LI - New Homes	$64,461	$6,272	$70,733	$10,543	$2,978	$13,521	$84,254
		LI - Appliance Rebate	$101,742	$21,723	$123,464	$16,560	$4,678	$21,239	$144,703
		LI - Appliance Turn In	$216,324	$35,998	$252,322	$35,280	$9,966	$45,246	$297,568
		LI - School Education	$0	$0	$0	$0	$0	$0	$0
		Sub-Total	$2,912,991	$63,992	$2,976,983	$425,643	$64,055	$489,698	$3,466,681
		Residential Total	$6,574,057	$2,464,290	$9,038,347	$1,010,546	$229,283	$1,239,830	$10,278,177
SCI	C&I Energy Solutions for Business Program - Small	HVAC - SCI	$28,534	$40,872	$69,406	$4,408	$1,245	$5,653	$75,059
		Lighting - SCI	$149,768	$447,131	$596,899	$21,555	$6,089	$27,644	$624,543
		Food Service	$45,790	$41,000	$86,790	$7,241	$2,045	$9,286	$96,076
		Appliances and Electronics - SCI	$49,754	$19,386	$69,140	$8,039	$2,271	$10,310	$79,450
		Agricultural	$41,486	$33,542	$75,027	$6,585	$1,860	$8,445	$83,472
		Custom - SCI	$419,893	$1,385,940	$1,805,833	$59,532	$16,817	$76,350	$1,882,182
		Custom Buildings - SCI	$91,213	$219,356	$310,569	$13,488	$3,810	$17,298	$327,867
		EE Kits - SCI	$18,907	$0	$18,907	$3,105	$877	$3,982	$22,889
		Multifamily	$383,377	$0	$383,377	$62,958	$17,785	$80,743	$464,121
		Audits - SCI	$237,664	$841,096	$1,078,760	$33,311	$9,410	$42,721	$1,121,481
		Small C&I Total	$1,466,385	$3,028,323	$4,494,708	$220,222	$62,210	$282,432	$4,777,139
LCI	C&I Energy Solutions for Business Program - Large	HVAC - LCI	$20,286	$45,050	$65,336	$3,025	$855	$3,880	$69,215
		Lighting - LCI	$73,522	$210,816	$284,338	$10,641	$3,006	$13,646	$297,985
		Custom - LCI	$657,966	$1,778,015	$2,435,981	$95,963	$27,109	$123,072	$2,559,053
		Custom Buildings - LCI	$191,804	$384,474	$576,278	$28,884	$8,159	$37,044	$613,321
		Audits - LCI	$29,169	$120,000	$149,169	$3,974	$1,123	$5,097	$154,267
		Large C&I Total	$972,748	$2,538,355	$3,511,103	$142,488	$40,251	$182,739	$3,693,842
G/E/NP	Governmental & Institutional Tariff Program	HVAC - Gov't	$5,943	$9,429	$15,372	$912	$258	$1,169	$16,541
		Lighting - Gov't	$36,501	$26,274	$62,775	$5,816	$1,643	$7,458	$70,233
		Appliances - Gov't	$15,164	$7,768	$22,932	$2,437	$689	$3,126	$26,058
		Street Lighting - Gov't	$12,761	$61,250	$74,011	$1,679	$474	$2,154	$76,165
		Audits - Gov't	$47,931	$332,624	$380,555	$5,610	$1,585	$7,195	$387,750
		Governmental/Educational/Non-Profit Total	$118,300	$437,345	$555,644	$16,454	$4,648	$21,102	$576,746
		Non - Residential Total	$2,557,432	$6,004,022	$8,561,455	$379,163	$107,109	$486,272	$9,047,727
		Total	**$9,131,489**	**$8,468,313**	**$17,599,802**	**$1,389,710**	**$336,393**	**$1,726,102**	**$19,325,904**

Appendix C-1: Program Cost by Program Year

Program Year is June 1 to May 31

Penelec - Program Years 2016 - 2020			Direct			Administrative			
Sector	Program	Sub-Program	Program Administration	Incentives	Direct Total	Portfolio Administration	Other	Administrative Total	Total
Res	Appliance Turn In Program	Appliance Turn In	$3,665,616	$1,657,488	$5,323,103	$511,572	$161,086	$672,658	$5,995,761
		Sub-Total	$3,665,616	$1,657,488	$5,323,103	$511,572	$161,086	$672,658	$5,995,761
	Energy Efficient Homes Program	School Education	$476,182	$352,000	$828,182	$63,273	$21,048	$84,321	$912,503
		EE Kits	$1,926,266	$10,608,102	$12,534,368	$206,577	$67,672	$274,249	$12,808,618
		Audits	$1,305,614	$1,168,102	$2,473,716	$179,126	$56,000	$235,126	$2,708,842
		Behavioral	$7,050,626	$0	$7,050,626	$1,017,236	$322,075	$1,339,311	$8,389,937
		Behavioral - DR	$850,220	$0	$850,220	$121,037	$36,008	$157,045	$1,007,265
		New Homes	$615,228	$259,750	$874,978	$86,106	$26,941	$113,048	$988,026
		Sub-Total	$12,224,136	$12,387,954	$24,612,090	$1,673,356	$529,744	$2,203,101	$26,815,190
	Energy Efficient Products Program	Appliances and Electronics	$1,046,388	$3,035,475	$4,081,863	$131,153	$41,027	$172,180	$4,254,043
		Lighting	$2,781,541	$9,870,450	$12,651,991	$354,943	$113,240	$468,183	$13,120,174
		HVAC	$1,329,225	$1,313,431	$2,642,657	$181,614	$56,674	$238,288	$2,880,945
		Sub-Total	$5,157,154	$14,219,356	$19,376,510	$667,710	$210,941	$878,651	$20,255,162
Res LI	Low Income Energy Efficiency Program	LI - EE Kits	$2,489,259	$0	$2,489,259	$341,956	$111,313	$453,269	$2,942,528
		Weatherization	$8,017,803	$0	$8,017,803	$1,000,371	$16,368	$1,016,739	$9,034,542
		Multifamily / LILU Single Family	$1,511,459	$0	$1,511,459	$215,559	$65,694	$281,252	$1,792,711
		LI - Behavioral	$2,732,861	$0	$2,732,861	$388,771	$124,532	$513,303	$3,246,164
		LI - New Homes	$306,048	$31,359	$337,407	$43,410	$13,583	$56,994	$394,401
		LI - Appliance Rebate	$481,335	$101,683	$583,017	$67,964	$21,236	$89,200	$672,218
		LI - Appliance Turn In	$1,077,455	$179,525	$1,256,980	$152,194	$47,907	$200,102	$1,457,081
		LI - School Education	$408,808	$0	$408,808	$55,972	$18,424	$74,397	$483,205
		Sub-Total	$17,025,027	$312,567	$17,337,594	$2,266,198	$419,058	$2,685,256	$20,022,850
		Residential Total	$38,071,933	$28,577,364	$66,649,297	$5,118,837	$1,320,830	$6,439,666	$73,088,963
SCI	C&I Energy Solutions for Business Program - Small	HVAC - SCI	$143,837	$162,770	$306,607	$19,548	$6,364	$25,912	$332,519
		Lighting - SCI	$813,637	$2,139,860	$2,953,496	$102,820	$32,734	$135,553	$3,089,050
		Food Service	$236,270	$205,000	$441,270	$32,431	$10,460	$42,892	$484,162
		Appliances and Electronics - SCI	$266,505	$94,370	$360,875	$37,406	$12,291	$49,697	$410,572
		Agricultural	$183,308	$111,806	$295,114	$25,575	$8,148	$33,722	$328,836
		Custom - SCI	$1,971,125	$6,189,109	$8,160,234	$244,388	$76,777	$321,166	$8,481,400
		Custom Buildings - SCI	$411,239	$913,983	$1,325,222	$53,254	$16,571	$69,826	$1,395,048
		EE Kits - SCI	$243,137	$0	$243,137	$33,837	$11,165	$45,002	$288,139
		Multifamily	$1,902,097	$0	$1,902,097	$270,643	$85,359	$356,003	$2,258,100
		Audits - SCI	$1,249,735	$3,929,984	$5,179,719	$154,799	$50,730	$205,529	$5,385,248
		Small C&I Total	$7,420,891	$13,746,880	$21,167,772	$974,701	$310,600	$1,285,301	$22,453,073
LCI	C&I Energy Solutions for Business Program - Large	HVAC - LCI	$98,514	$168,938	$267,451	$13,058	$4,233	$17,291	$284,742
		Lighting - LCI	$423,400	$1,035,457	$1,458,857	$53,861	$17,205	$71,066	$1,529,923
		Custom - LCI	$3,059,113	$7,983,195	$11,042,308	$388,487	$120,183	$508,670	$11,550,978
		Custom Buildings - LCI	$847,843	$1,593,498	$2,441,341	$111,506	$34,320	$145,826	$2,587,167
		Audits - LCI	$151,118	$540,000	$691,118	$18,350	$6,037	$24,387	$715,505
		Large C&I Total	$4,579,987	$11,321,088	$15,901,075	$585,262	$181,978	$767,240	$16,668,315
G/E/NP	Governmental & Institutional Tariff Program	HVAC - Gov't	$31,058	$47,145	$78,203	$4,141	$1,333	$5,474	$83,677
		Lighting - Gov't	$225,058	$139,721	$364,779	$30,960	$9,832	$40,793	$405,572
		Appliances - Gov't	$77,093	$38,838	$115,930	$10,737	$3,410	$14,147	$130,077
		Street Lighting - Gov't	$46,244	$218,750	$264,994	$5,359	$1,641	$7,000	$271,994
		Audits - Gov't	$228,044	$1,510,933	$1,738,977	$23,600	$7,539	$31,139	$1,770,116
		Governmental/Educational/Non-Profit Total	$607,496	$1,955,387	$2,562,883	$74,797	$23,755	$98,552	$2,661,435
		Non - Residential Total	$12,608,374	$27,023,355	$39,631,729	$1,634,760	$516,333	$2,151,093	$41,782,822
		Total	**$50,680,307**	**$55,600,719**	**$106,281,026**	**$6,753,597**	**$1,837,163**	**$8,590,760**	**$114,871,786**

Appendix C-2: Program Savings by Program Year

Program Year is June 1 to May 31

Penelec			2016		2017		2018		2019		2020		Total	
Sector	Program	Sub-Program	kWh	kW	kWh	kW	kWh	kW	kWh	kW	kWh	kW	kWh	kW
Res	Appliance Turn In Program	Appliance Turn In	6,925,480	860	6,925,480	860	6,925,480	860	6,925,480	860	6,925,480	860	34,627,400	4,302
		Sub-Total	6,925,480	860	6,925,480	860	6,925,480	860	6,925,480	860	6,925,480	860	34,627,400	4,302
	Energy Efficient Homes Program	School Education	523,954	54	523,954	54	523,954	54	523,954	54	0	0	2,095,816	215
		EE Kits	17,128,435	1,993	17,128,435	1,993	17,128,435	1,993	17,128,543	1,993	108	0	68,513,957	7,971
		Audits	736,817	131	755,508	139	792,891	156	520,705	114	112,259	50	2,918,180	590
		Behavioral	11,246,154	1,284	11,246,154	1,284	11,246,154	1,284	11,246,154	1,284	11,246,154	1,284	56,230,769	6,419
		Behavioral - DR	0	0	0	2,500	0	2,500	0	2,500	0	2,500	0	2,500
		New Homes	128,047	21	128,047	21	128,047	21	128,047	21	128,047	21	640,234	106
		Sub-Total	29,763,406	3,483	29,782,098	5,991	29,819,480	6,008	29,547,403	5,965	11,486,568	3,855	130,398,955	17,802
	Energy Efficient Products Program	Appliances and Electronics	1,615,611	216	1,677,653	222	1,712,863	225	1,744,039	228	1,773,353	231	8,523,519	1,122
		Lighting	21,512,909	2,268	21,677,943	2,283	21,667,767	2,282	19,995,319	2,107	1,352,613	143	86,206,552	9,083
		HVAC	1,012,250	314	1,281,284	398	1,584,773	488	1,584,773	488	1,584,773	488	7,047,853	2,178
		Sub-Total	24,140,770	2,798	24,636,880	2,904	24,965,403	2,996	23,324,131	2,824	4,710,739	862	101,777,923	12,383
Res LI	Low Income Energy Efficiency Program	LI - EE Kits	2,964,712	345	2,964,712	345	2,964,712	345	2,964,821	345	108	0	11,859,066	1,378
		Weatherization	1,203,808	92	1,203,808	92	1,203,808	92	1,203,808	92	1,203,808	92	6,019,040	460
		Multifamily / LILU Single Family	243,447	82	324,596	110	486,894	164	486,894	164	486,894	164	2,028,727	685
		LI - Behavioral	1,757,927	201	1,757,927	201	1,757,927	201	1,757,927	201	1,757,927	201	8,789,633	1,003
		LI - New Homes	16,391	0	16,391	0	16,391	0	16,391	0	16,391	0	81,953	0
		LI - Appliance Rebate	38,807	7	39,803	8	40,550	8	40,949	8	41,264	8	201,372	38
		LI - Appliance Turn In	756,215	91	756,896	91	758,258	91	759,620	91	760,301	91	3,791,289	455
		LI - School Education	261,977	27	261,977	27	261,977	27	261,977	27	0	0	1,047,908	107
		Sub-Total	7,243,283	845	7,326,109	872	7,490,516	927	7,492,386	927	4,266,693	556	33,818,987	4,127
		Residential Total	68,072,939	7,986	68,670,567	10,627	69,200,880	10,791	67,289,400	10,577	27,389,480	6,134	300,623,265	38,614
SCI	C&I Energy Solutions for Business Program - Small	HVAC - SCI	104,168	16	142,700	26	192,634	29	192,634	29	206,200	37	838,337	138
		Lighting - SCI	5,638,373	423	5,650,410	473	5,568,568	480	5,493,445	480	4,844,429	411	27,195,224	2,268
		Food Service	744,869	111	744,869	111	744,869	111	744,869	111	744,869	111	3,724,346	554
		Appliances and Electronics - SCI	210,480	29	210,680	29	210,843	29	212,392	29	212,479	29	1,056,873	144
		Agricultural	209,501	69	301,621	97	419,002	138	536,382	178	628,502	206	2,095,008	688
		Custom - SCI	10,130,979	1,363	11,740,921	1,553	14,960,245	1,933	14,960,245	1,933	14,960,525	1,933	66,752,917	8,714
		Custom Buildings - SCI	1,157,712	132	1,543,615	176	2,315,423	264	2,315,423	264	2,315,423	264	9,647,596	1,101
		EE Kits - SCI	168,268	23	168,268	23	168,268	23	96,153	13	142	0	601,097	83
		Multifamily	538,923	186	538,923	186	538,923	186	538,923	186	538,923	186	2,694,613	929
		Audits - SCI	3,850,542	398	4,271,384	437	4,587,015	467	4,587,015	467	4,587,015	467	21,882,972	2,235
		Small C&I Total	22,753,813	2,749	25,313,391	3,111	29,705,790	3,659	29,677,481	3,689	29,038,507	3,644	136,488,982	16,853
LCI	C&I Energy Solutions for Business Program - Large	HVAC - LCI	84,779	22	127,168	34	127,168	34	127,168	34	169,558	45	635,842	168
		Lighting - LCI	2,574,047	299	2,570,124	314	2,491,308	319	2,451,899	321	1,892,415	236	11,979,793	1,489
		Custom - LCI	15,515,287	1,664	20,834,339	2,208	24,279,943	2,570	24,347,519	2,578	24,347,519	2,578	109,324,607	11,597
		Custom Buildings - LCI	2,608,933	298	3,432,554	392	5,148,832	588	5,217,866	596	5,217,866	596	21,626,051	2,469
		Audits - LCI	0	0	0	0	0	0	0	0	0	0	0	0
		Large C&I Total	20,783,045	2,283	26,964,186	2,947	32,047,251	3,510	32,144,452	3,528	31,627,358	3,454	143,566,293	15,722
G/E/NP	Governmental & Institutional Tariff Program	HVAC - Gov't	40,333	11	40,333	11	40,333	11	40,333	11	40,333	11	201,666	54
		Lighting - Gov't	486,064	25	489,800	25	486,261	26	482,537	27	372,102	8	2,316,764	112
		Appliances - Gov't	105,113	22	105,113	22	105,113	22	105,113	22	105,113	22	525,567	110
		Street Lighting - Gov't	158,764	0	198,455	0	257,992	0	357,219	0	416,756	0	1,389,185	0
		Audits - Gov't	315,631	29	420,842	39	631,263	59	631,263	59	631,263	59	2,630,262	245
		G/E/NP Total	1,105,906	87	1,254,543	97	1,520,962	118	1,616,466	118	1,565,567	100	7,063,444	521
		Non - Residential Total	44,642,765	5,120	53,532,121	6,156	63,274,002	7,287	63,438,399	7,336	62,231,433	7,198	287,118,719	33,096
		Total	112,715,704	13,105	122,202,688	16,783	132,474,882	18,078	130,727,799	17,912	89,620,913	13,332	587,741,984	71,711

1. kWh savings represents incremental annual savings achieved per year and in total for 2016-2020
2. kW savings represents incremental annual coincident peak demand savings from EEC measures and average annual demand savings from DR measures, per year and in total for 2016 - 2020

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Appendix D:
Calculation Methods and Assumptions

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Appendix D-1: Costs Assumptions

Cost Assumptions	
Program cost elements are categorized into direct costs and common costs. Direct costs include 1) program administration costs associated with program management, implementation, marketing, and evaluation, measurement and verification (M&V); and 2) incentives. Common costs include portfolio administrative costs associated with plan development, portfolio management and other costs. The following details the assumptions for each cost element used in the budget tables located throughout the plan:	
Cost Elements	**Description**
Program Administration	Program administration costs were informed by experience for similar programs operated by FirstEnergy in Pennsylvania or in other jurisdictions, or by vendor proposals. Program management, implementation and marketing costs were identified by two components, (1) fixed sub-program costs, and (2) variable measure unit cost. These costs were estimated for each subprogram based on measure participation where applicable, and summed to the program level. M&V costs were estimated for each subprogram based on program costs, and summed to the program level.
Incentives	Incentives include rebates paid to customers as well as costs associated with providing services or measures directly to customers, or mid-stream or upstream payments to program allies where applicable. Incentives were calculated based on measure assumptions and participation, and summed to the subprogram and program level.
Portfolio Administration	Portfolio Administration costs were based on Company estimated EE&C portfolio administration costs, allocated to each subprogram based on program implementation and marketing costs, and summed to the program level.
Other	Other costs includes other common costs associated with the development and implementation of the plan, including consulting and legal fees, software fees, employee expenses and the cost to develop and maintain a data collection, tracking and reporting system. Other costs were informed by existing contracts or Company estimates, allocated to each subprogram based on program implementation and marketing costs, and summed to the program level.

Appendix D-2: Measure Assumptions

Penelec															
Sector	**Program**	**Sub-Program**	**Measure**	**Msre Life**	**Verified kWh**	**Verified kW**	**NTG**	**RR**	**Incremental Cost**	**Modeled Rebate**	**O&M Benefit ($/Yr)**	**Gas Savings (MMBTu/Yr)**	**Water Savings (Gal/Yr)**	**Savings Source**	**Incremental Cost Source**
Res	Appliance Turn In Program	Appliance Turn In	Refrigerator Recycling	8	1,119	0.125	0.63	0.98	0.00	50.20	0.00	0.00	0	PA TRM, 2016	DEER
			Freezer Recycling	8	914	0.102	0.63	0.98	0.00	50.30	0.00	0.00	0	PA TRM, 2016	DEER
			Room Air Conditioner Recycling	4	103	0.255	0.63	0.98	0.00	30.00	0.00	0.00	0	PA TRM, 2016	DEER
			Dehumidifier Recycling	3	681	0.078	0.63	0.98	0.00	30.00	0.00	0.00	0	MA TRM, V5.0	Co Assumption
	Energy Efficient Homes Program	School Education	School Education	3	327	0.034	0.87	1	30.85	55.00	1.68	0.00	0	PA TRM, 2016	Historic Actuals
			School Education (Post 2020)	5	8	0.000	0.87	1	12.42	55.00	0.00	0.00	0	PA TRM, 2016	Historic Actuals
		EE Kits	Energy Efficiency Measures	5	329	0.038	0.87	1	46.93	51.00	2.79	0.00	143	PA TRM, 2016	Historic Actuals
			Energy Efficiency Measures (Post 2020)	5	108	0.007	0.87	1	25.61	51.00	0.00	0.00	143	PA TRM, 2016	Historic Actuals
		Audits	Audit	8	935	0.420	0.87	1	967.79	500.00	3.94	0.13	364	Actuals	Historic Actuals
			On-Line Audit	8	136	0.021	0.87	1	34.72	51.00	2.79	0.00	244	PA TRM, 2016	Historic Actuals
			On-Line Audit (Post 2020)	5	111	0.010	0.87	1	28.39	51.00	0.00	0.00	244	PA TRM, 2016	Historic Actuals
		Behavioral	Behavioral	2	148	0.017	1	1	0.00	0.00	0.00	0.00	0	Actuals	Co Assumption
		Behavioral - DR	Behavioral - DR	1	0	0.050	1	1	0.00	0.00	0.00	0.00	0	Co Assumption	Co Assumption
		New Homes	New Construction -Townhouse and Duplexs	15	1,093	0.081	0.8	0.98	940.08	425.00	2.79	1.34	3,636	Actuals	Evaluation
			New Construction - Two-on-Two Condos	15	2,409	0.226	0.8	0.98	2,072.40	950.00	2.79	1.34	3,636	Actuals	Evaluation
			New Construction - Single Family Detached	15	2,297	0.493	0.8	0.98	1,976.29	950.00	5.58	1.68	4,545	Actuals	Evaluation
			New Construction - Multi Family Low Rise	15	886	0.101	0.8	0.98	762.06	350.00	2.79	1.34	3,636	Actuals	Evaluation
			New Manufactured Housing	15	820	0.000	0.8	0.98	705.06	350.00	2.79	1.34	3,636	Co Assumption	Evaluation
	Energy Efficient Products Program	Appliances and Electronics	Clothes Washer - Level 1	11	85	0.010	0.58	0.98	50.00	50.00	0.00	0.12	1,720	PA TRM, 2016	PA SWE DB
			Clothes Washer - Level 2	11	95	0.011	0.58	0.98	50.00	60.00	0.00	0.22	2,394	PA TRM, 2016	PA SWE DB
			Clothes Washer - Level 3	11	186	0.021	0.58	0.98	50.00	70.00	0.00	0.22	2,394	PA TRM, 2016	PA SWE DB
			Clothes Dryer - (Elec w Moisture Sensor)	13	25	0.005	0.58	0.98	111.73	50.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Clothes Dryer - (Elec Heat Pump)	13	349	0.056	0.58	0.98	910.98	100.00	0.00	0.00	0	PA TRM, 2016	Co Assumption
			Freezers	12	25	0.003	0.58	0.98	6.61	55.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Refrigerators - Level 1	12	39	0.004	0.58	0.98	25.25	50.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Refrigerators - Level 2	12	64	0.007	0.58	0.98	25.25	60.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Refrigerators - Level 3	12	86	0.010	0.58	0.98	25.25	70.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Dehumidifiers	12	166	0.041	0.58	0.98	20.00	25.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Water Heater - Heat Pump	10	1,173	0.108	0.58	0.98	605.00	375.00	0.00	0.00	0	PA TRM, 2016	DEER
			Water Heater - Solar	15	1,664	0.271	0.58	0.98	7,414.00	625.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Home Controls	0	0	0.000	0.58	0.98	0.00	0.00	0.00	0.00	0	Co Assumption	Co Assumption
			Monitors	4	15	0.002	0.32	1	0.00	1.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Computers	4	133	0.018	0.32	1	0.00	3.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Imaging	4	83	0.011	0.32	1	0.00	2.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			TVs	6	44	0.004	0.32	1	0.00	4.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB

Appendix D-2: Measure Assumptions

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Sector	**Program**	**Sub-Program**	**Measure**	**Msre Life**	**Verified kWh**	**Verified kW**	**NTG**	**RR**	**Incremental Cost**	**Modeled Rebate**	**O&M Benefit ($/Yr)**	**Gas Savings (MMBTu/Yr)**	**Water Savings (Gal/Yr)**	**Savings Source**	**Incremental Cost Source**
Res	Energy Efficient Products Program	Lighting	CFL Lamps - Speciality	3	26	0.003	0.5	1.03	5.62	0.94	5.85	0.00	0	PA TRM, 2016	DEER
			CFL Lamps	3	31	0.003	0.5	1.03	1.68	0.94	0.56	0.00	0	PA TRM, 2016	PA SWE DB
			CFL Lamps - (Post 2020)	6	0	0.000	0.5	1.03	0.00	0.94	0.00	0.00	0	PA TRM, 2016	Co Assumption
			CFL Fixtures	3	51	0.005	0.5	1.03	32.00	5.00	0.56	0.00	0	PA TRM, 2016	PA SWE DB
			LED Lamps - Speciality	3	28	0.003	0.5	1.03	7.23	5.00	5.85	0.00	0	PA TRM, 2016	Co Assumption
			LED Lamps - Speciality (Post 2020)	14	2	0.000	0.5	1.03	5.00	5.00	0.00	0.00	0	PA TRM, 2016	Co Assumption
			LED Fixtures	3	54	0.006	0.5	1.03	35.72	6.25	1.80	0.00	0	PA TRM, 2016	DEER
			LED Fixtures - (Post 2020)	15	3	0.000	0.5	1.03	35.72	6.25	0.00	0.00	0	PA TRM, 2016	DEER
			LED Lamps	4	33	0.004	0.5	1.03	7.23	5.00	0.56	0.00	0	PA TRM, 2016	PA SWE PtStdy
			LED Lamps - (Post 2020)	15	6	0.001	0.5	1.03	5.00	5.00	0.00	0.00	0	PA TRM, 2016	PA SWE PtStdy
			Residential Occupancy Sensors	10	32	0.000	0.5	1.03	40.00	3.75	0.00	0.00	0	PA TRM, 2016	PA SWE DB
		HVAC	Heat Pump - Level 2	12	1,937	0.261	0.6	0.97	471.15	312.50	0.00	0.00	0	PA TRM, 2016	DEER
			Heat Pump - Level 3	12	2,540	0.261	0.6	0.97	942.30	375.00	0.00	0.00	0	PA TRM, 2016	DEER
			Central Air Conditioner - Level 2	14	402	0.261	0.6	0.97	880.20	125.00	0.00	0.00	0	PA TRM, 2016	DEER
			Central Air Conditioner - Level 3	14	501	0.261	0.6	0.97	1,760.40	187.50	0.00	0.00	0	PA TRM, 2016	DEER
			Room Air Conditioner - Level 2	9	8	0.022	0.6	0.97	220.00	36.25	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Ductless Mini-Split Heat Pump - Level 3	15	488	0.189	0.6	0.97	2,824.93	125.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			PTAC - Level 2 - Multi Family	15	412	0.657	0.6	0.97	84.00	100.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			PTHP - Level 2 - Multi Family	15	1,537	0.657	0.6	0.97	255.00	250.00	0.00	0.00	0	PA TRM, 2016	Co Assumption
			Heat Pump - Water & GeoT - ES Tier 3	15	3,056	0.402	0.6	0.97	10,897.00	312.50	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			HVAC - Maintenance	7	226	0.130	0.6	0.97	100.00	60.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Furnace Fans	10	282	0.102	0.6	0.97	360.00	125.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Programmable Thermostat	11	283	0.000	0.6	0.97	30.12	18.75	0.00	0.00	0	PA TRM, 2016	DEER

Appendix D-2: Measure Assumptions

Penelec															
Sector	**Program**	**Sub-Program**	**Measure**	**Msre Life**	**Verified kWh**	**Verified kW**	**NTG**	**RR**	**Incremental Cost**	**Modeled Rebate**	**O&M Benefit ($/Yr)**	**Gas Savings (MMBTu/Yr)**	**Water Savings (Gal/Yr)**	**Savings Source**	**Incremental Cost Source**
Res LI	Low Income Energy Efficiency Program	LI - EE Kits	LI Energy Efficiency Measures	4	329	0.038	1	1	0.00	0.00	2.79	0.00	143	PA TRM, 2016	No upfront cost for Customers
			LI Energy Efficiency Measures (Post 2020)	5	108	0.007	1	1	0.00	0.00	0.00	0.00	143	PA TRM, 2016	No upfront cost for Customers
		Weatherization	LI Weatherization (WARM Plus)	5	816	0.077	1	1	0.00	0.00	0.00	7.97	209	Actuals	No upfront cost for Customers
			LI WARM Extra Measures	7	464	0.030	1	1	0.00	0.00	0.00	0.11	320	Actuals	No upfront cost for Customers
		Multifamily / LILU Single Family	LI ApRplc Refrigerators/Freezers	12	350	0.057	1	1	0.00	0.00	0.00	0.00	0	PA TRM, 2016	No upfront cost for Customers
			LI ApRplc HVAC	15	1,584	0.678	1	1	0.00	0.00	0.00	0.00	0	PA TRM, 2016	No upfront cost for Customers
			LI ApRplc Water Heater	14	107	0.009	1	1	0.00	0.00	0.00	0.00	0	PA TRM, 2015	No upfront cost for Customers
			LI Audit - MF & SF	10	672	0.209	1	1	0.00	0.00	2.79	0.13	364	Actuals	No upfront cost for Customers
		LI - Behavioral	LI Behavioral	2	110	0.013	1	1	0.00	0.00	0.00	0.00	0	Actuals	Co Assumption
		LI - New Homes	LI New Construction	15	820	0.000	0.8	0.98	705.00	313.59	2.79	1.34	3,636	Actuals	Evaluation
		LI - Appliance Rebate	LI Clothes Washers	11	85	0.010	0.58	0.98	50.00	55.00	0.00	0.12	1,720	PA TRM, 2016	PA SWE DB
			LI Clothes Dryer	13	25	0.005	0.58	0.98	111.73	68.75	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			LI Freezers	12	25	0.003	0.58	0.98	6.61	55.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			LI Refrigerators	12	39	0.004	0.58	0.98	25.25	55.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			LI Dehumidifiers	12	166	0.041	0.58	0.98	20.00	25.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
		LI - Appliance Turn In	LI Refrigerator Recycling	8	1,119	0.125	0.63	0.98	0.00	50.00	0.00	0.00	0	PA TRM, 2016	DEER
			LI Freezer Recycling	8	914	0.102	0.63	0.98	0.00	50.00	0.00	0.00	0	PA TRM, 2016	DEER
			LI Room Air Conditioner Recycling	4	103	0.255	0.63	0.98	0.00	30.00	0.00	0.00	0	PA TRM, 2016	DEER
			LI Dehumidifier Recycling	3	681	0.078	0.63	0.98	0.00	31.00	0.00	0.00	0	MA TRM, V5.0	Co Assumption
		LI - School Education	LI School Education	3	327	0.034	0.87	1	0.00	0.00	0.00	0.00	0	PA TRM, 2016	No upfront cost for Customers
			LI School Education (Post 2020)	5	8	0.000	0.87	1	0.00	0.00	0.00	0.00	0	PA TRM, 2016	No upfront cost for Customers

Appendix D-2: Measure Assumptions

Penelec															
Sector	**Program**	**Sub-Program**	**Measure**	**Msre Life**	**Verified kWh**	**Verified kW**	**NTG**	**RR**	**Incremental Cost**	**Modeled Rebate**	**O&M Benefit ($/Yr)**	**Gas Savings (MMBTu/Yr)**	**Water Savings (Gal/Yr)**	**Savings Source**	**Incremental Cost Source**
SCI	C&I Energy Solutions for Business Program Small	HVAC - SCI	Room Air Conditioner - Level 2 - SCI	9	9	0.022	0.76	1	40.00	29.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Air Conditioning - Level 1 <=5.4 Tn - SCI	15	615	0.075	0.76	1	1,960.20	187.50	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Air Conditioning - Level 2 <=5.4 Tn - SCI	15	911	0.110	0.76	1	2,635.20	187.50	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Air Conditioning - Level 1 >5.4 < 20 Tn - SCI	15	1,447	0.033	0.76	1	1,679.63	312.50	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Air Conditioning - Level 1 >=20 Tn - SCI	15	2,136	0.040	0.76	1	2,500.00	375.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Chiller - Water Cld w Full Load - Level 1 - SCI	15	7,803	7.175	0.76	1	6,500.00	2500.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Heat Pump - Level 1 <=5.4 Tn - SCI	15	1,726	0.075	0.76	1	1,285.20	187.50	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Heat Pump - Level 2 <=5.4 Tn - SCI	15	2,716	0.596	0.76	1	2,635.20	187.50	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Heat Pumps - Level 1 >5.4 Tn - SCI	15	1,461	0.058	0.76	1	1,935.00	312.50	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Heat Pumps - Water & GeoT - ES Tier 3 - SCI	15	4,675	0.969	0.76	1	5,869.80	312.50	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Ductless Mini-Split HP - Level 3 – SCI	15	544	0.057	0.76	1	2,859.00	468.75	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			PTAC - SCI	15	114	0.063	0.76	1	84.00	52.50	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			PTHP - SCI	15	727	0.070	0.76	1	84.00	52.50	0.00	0.00	0	PA TRM, 2016	PA SWE DB
		Lighting - SCI	CFL Fixtures - SCI	2	153	0.019	0.94	0.96	30.00	15.95	11.48	0.00	0	PA TRM, 2016	PA SWE DB
			CFL Lamps Speciality - SCI	3	184	0.023	0.94	0.96	5.62	3.50	5.85	0.00	0	PA TRM, 2016	DEER
			CFL Lamps - SCI	3	153	0.016	0.94	0.96	1.75	1.00	9.31	0.00	0	PA TRM, 2016	PA SWE DB
			CFL Lamps (Post 2020)- SCI	4	0	0.000	0.94	0.96	0.00	1.00	0.00	0.00	0	PA TRM, 2016	Co Assumption
			Lighting Controls (Daylight & Occupancy) - SCI	8	418	0.104	0.94	0.96	116.66	43.75	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Linear Fluorscent T5 - SCI	13	601	0.000	0.94	0.96	171.14	1.05	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Linear Fluorscent T8 - SCI	15	116	0.000	0.94	0.96	7.50	4.69	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			LED Linear - SCI	12	131	0.018	0.94	0.96	81.14	13.61	0.00	0.00	0	PA TRM, 2016	Co Assumption
			LED Channel Signage - SCI	15	362	0.026	0.94	0.96	21.66	18.84	0.00	0.00	0	PA TRM, 2016	Historic Actuals
			Exit Signs - SCI	16	160	0.018	0.94	0.96	30.00	12.50	10.53	0.00	0	PA TRM, 2016	PA SWE DB
			LED Fixtures External - SCI	13	736	0.000	0.94	0.96	1,042.70	95.83	12.84	0.00	0	PA TRM, 2016	DEER
			LED Fixtures Internal - SCI	13	130	0.021	0.94	0.96	128.99	13.55	11.48	0.00	0	PA TRM, 2016	Evaluation
			LED - Traffic Signals - Gov	10	523	0.060	0.94	0.96	170.00	87.50	189.00	0.00	0	PA TRM, 2016	PA SWE DB
			LED Lamps - SCI	4	120	0.023	0.94	0.96	7.23	5.00	11.48	0.00	0	PA TRM, 2016	PA SWE PtStdy
			LED Lamps (Post 2020) - SCI	14	22	0.004	0.94	0.96	5.00	5.00	0.00	0.00	0	PA TRM, 2016	PA SWE PtStdy
			LED Reach in Refrigerator / Freezer Lights - SCI	8	454	0.067	0.94	0.96	266.00	62.50	4.07	0.00	0	PA TRM, 2016	PA SWE DB
			Street & Area Lighting (Customer Owned) - SCI	12	572	0.000	0.94	0.96	337.00	74.49	12.84	0.00	0	PA TRM, 2016	PA SWE DB
		Food Service	Refrigerators - Reach In - SCI	12	729	0.064	0.92	1	430.00	62.50	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Freezers - Reach In - SCI	12	2,758	0.243	0.92	1	430.00	62.50	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Ice Machines - SCI	10	643	0.141	0.92	1	981.00	62.50	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Refrigerated Case Cover - SCI	5	44	0.000	0.92	1	37.54	11.25	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Strip Curtains - SCI	4	129	0.015	0.92	1	3.80	1.25	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Anti Sweat Heater Controls - SCI	12	1,298	0.028	0.92	1	70.00	25.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Beverage Vending Machine - Controls - SCI	5	1,665	0.000	0.92	1	180.00	31.25	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Beverage Vending Machine - Energy Star - SCI	5	1,633	0.000	0.92	1	180.00	93.75	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Combination Oven - SCI	12	18,432	3.530	0.92	1	1,584.00	500.00	0.00	0.00	0	OH TRM	DEER
			Convection Oven - SCI	12	3,235	0.620	0.92	1	1,007.00	500.00	0.00	0.00	0	OH TRM	DEER
			Steam Cookers - SCI	12	4,540	0.870	0.92	1	800.00	312.50	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Fryers - SCI	12	983	0.220	0.92	1	4,876.00	125.00	0.00	0.00	0	OH TRM	DEER
			Griddles - SCI	12	5,767	1.106	0.92	1	774.00	125.00	0.00	0.00	0	OH TRM	DEER
			Hot Food Holding Cabinet - SCI	12	3,322	0.510	0.92	1	2,336.00	312.50	0.00	0.00	0	OH TRM	DEER

Appendix D-2: Measure Assumptions

Penelec															
Sector	**Program**	**Sub-Program**	**Measure**	**Msre Life**	**Verified kWh**	**Verified kW**	**NTG**	**RR**	**Incremental Cost**	**Modeled Rebate**	**O&M Benefit ($/Yr)**	**Gas Savings (MMBTu/Yr)**	**Water Savings (Gal/Yr)**	**Savings Source**	**Incremental Cost Source**
SCI	C&I Energy Solutions for Business Program - Small	Appliances and Electronics - SCI	Refrigerator Recycling - SCI	8	1,104	0.124	0.63	1	0.00	50.00	0.00	0.00	0	PA TRM, 2016	DEER
			Freezer Recycling - SCI	4	939	0.105	0.63	1	0.00	50.00	0.00	0.00	0	PA TRM, 2016	DEER
			Room Air Conditioner Recycling - SCI	3	121	0.260	0.63	1	0.00	30.00	0.00	0.00	0	PA TRM, 2016	DEER
			Clothes Washer - Level 1 - SCI	11	87	0.010	0.58	1	150.00	31.25	0.00	0.12	1,720	PA TRM, 2016	PA SWE DB
			Clothes Washer - Level 2 - SCI	11	97	0.011	0.58	1	150.00	62.50	0.00	0.22	2,394	PA TRM, 2016	PA SWE DB
			Clothes Washer - Level 3 - SCI	11	109	0.013	0.58	1	150.00	62.50	0.00	0.22	2,394	PA TRM, 2016	PA SWE DB
			Clothes Dryer (Elec w Moisture Sensor) - SCI	13	25	0.005	0.58	1	111.73	68.75	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Clothes Dryer (Elec Heat Pump) - SCI	13	356	0.063	0.58	1	910.98	125.00	0.00	0.00	0	DOE Study	Co Assumption
			Refrigerators - Level 1 - SCI	12	40	0.004	0.58	1	25.25	25.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Refrigerators - Level 2 - SCI	12	66	0.007	0.58	1	25.25	100.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Refrigerators - Level 3 - SCI	12	87	0.010	0.58	1	25.25	100.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Water Heater - Heat Pump - SCI	10	1,374	0.111	0.58	1	945.00	375.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Water Heater - Solar - SCI	15	1,462	0.118	0.58	1	7,414.00	625.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Freezers - SCI	12	25	0.003	0.58	1	6.34	5.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Pre-Rinse Sprayers - SCI	5	687	0.130	0.58	1	22.80	35.00	0.00	0.00	7,766	PA TRM, 2016	DEER
			Uninterruptible Power Supply - SCI	15	2,238	0.255	0.32	1	3,925.67	279.74	0.00	0.00	0	Co Assumption	Co Assumption
			Monitors - SCI	4	15	0.002	0.32	1	10.00	6.25	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Computers - SCI	4	133	0.018	0.32	1	12.00	6.25	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Imaging - SCI	6	203	0.027	0.32	1	20.00	12.50	0.00	0.00	0	PA TRM, 2016	PA SWE DB
		Agricultural	Automatic Milker Takeoffs - SCI	10	534	0.075	0.92	0.95	73.00	90.00	0.00	0.00	0	PA TRM, 2016	PA SWE PtStdy
			Dairy Scroll Compresors - SCI	15	20,801	2.912	0.92	0.95	1,000.00	625.00	0.00	0.00	0	PA TRM, 2016	Co Assumption
			High Efficiency Ventilation Fans - SCI	10	1,851	0.365	0.92	0.95	988.00	268.75	0.00	0.00	0	PA TRM, 2016	Co Assumption
			High Volume LowSpeed Fans - SCI	15	10,779	5.389	0.92	0.95	2,426.00	156.25	0.00	0.00	0	PA TRM, 2016	PA SWE PtStdy
			Livestock Waterer - SCI	10	990	0.000	0.92	0.95	539.00	100.00	0.00	0.00	0	PA TRM, 2016	Co Assumption
			VFD on Dairy Vacuum Pumps - SCI	15	14,022	1.963	0.92	0.95	4,607.59	1875.00	0.00	0.00	0	PA TRM, 2016	Co Assumption
			Heat Reclaimers - SCI	15	5,442	0.762	0.92	0.95	1,500.00	468.75	0.00	0.00	0	PA TRM, 2016	Co Assumption
			Low Pressure Irrigation System - SCI	5	3,280	8.527	0.92	0.95	1,151.00	431.53	0.00	0.00	0	PA TRM, 2016	Co Assumption
		Custom - SCI	Custom Retrocommissioning - SCI	7	69,761	7.964	0.77	0.96	15,000.00	6540.08	0.00	0.00	0	Co Assumption	Co Assumption
			Custom - Process Improvement - SCI	15	49,081	7.654	0.77	0.96	28,193.40	4601.32	0.00	0.00	0	Actuals	Evaluation
			Custom - HVAC & Chillers - SCI	20	26,867	2.838	0.77	0.96	13,000.00	2518.82	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Custom - Data Centers - SCI	20	170,255	23.323	0.77	0.96	13,000.00	15322.93	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Custom - Compressed Air - SCI	10	16,623	3.996	0.77	0.96	6,651.34	1558.44	0.00	0.00	0	Efficiency VT TRM	Evaluation
			Custom - VFDs < 10HP - SCI	15	12,043	0.499	0.94	0.95	2,149.65	1140.88	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Custom - VFDs > 10 HP - SCI	13	60,213	2.497	0.94	0.95	10,748.25	5704.38	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Custom-Motors - Three Phase - SCI	15	10,916	0.624	0.94	0.95	2,669.00	1034.14	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Custom - Refrigeration - SCI	15	280	0.034	0.77	0.96	250.00	26.28	0.00	0.00	0	PA TRM, 2016	PA SWE DB
		Custom Buildings - SCI	Custom - Building Improvements - SCI	15	96,476	11.013	0.92	0.95	30,000.00	9139.83	0.00	0.00	0	Actuals	Evaluation
		EE Kits - SCI	Energy Efficiency Measures - SCI	6	240	0.033	0.92	0.75	0.00	0.00	5.58	0.00	143	PA TRM, 2016	No upfront cost for Customers
			Energy Efficiency Measures - (Post 2020) - SCI	7	142	0.020	0.92	0.75	0.00	0.00	5.58	0.00	143	PA TRM, 2016	No upfront cost for Customers
		Multifamily	ApRplc Refrigerators/Freezers - SCI	12	350	0.057	1	1	0.00	0.00	0.00	0.00	0	PA TRM, 2016	No upfront cost for Customers
			ApRplc HVAC - SCI	15	1,550	0.678	1	1	0.00	0.00	0.00	0.00	0	PA TRM, 2016	No upfront cost for Customers
			ApRplc Water Heater - SCI	14	107	0.009	1	1	0.00	0.00	0.00	0.00	0	PA TRM, 2015	No upfront cost for Customers
			Audit - MF - SCI	11	504	0.157	0.92	0.75	0.00	0.00	2.79	0.13	364	Actuals	Co Assumption
		Audits - SCI	Audit - SCI	1	0	0.000	0.92	0.75	0.00	8000.00	0.00	0.00	0	N/A	N/A
			Audits w Direct Install - SCI	15	21,042	1.963	0.92	0.75	8,183.58	4869.97	0.00	0.00	0	Actuals	Co Assumption
			Behavioral - SCI	1	444	0.051	0.92	0.75	0.00	0.00	0.00	0.00	0	Co Assumption	Co Assumption

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Penelec															
Sector	**Program**	**Sub-Program**	**Measure**	**Msre Life**	**Verified kWh**	**Verified kW**	**NTG**	**RR**	**Incremental Cost**	**Modeled Rebate**	**O&M Benefit ($/Yr)**	**Gas Savings (MMBTu/Yr)**	**Water Savings (Gal/Yr)**	**Savings Source**	**Incremental Cost Source**
LCI	C&I Energy Solutions for Business Program - Large	HVAC - LCI	Air Conditioning - Level 1 <=5.4 Tn - LCI	15	615	0.075	0.76	1	1,960.20	187.50	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Air Conditioning - Level 2 <=5.4 Tn - LCI	15	911	0.110	0.76	1	2,635.20	187.50	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Chiller - Water Cld w Full Load - Level 1 - LCI	15	18,320	8.610	0.76	1	19,500.00	7500.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Air Conditioning - Level 1 >5.4 < 20 Tn - LCI	15	1,447	0.033	0.76	1	1,679.63	312.50	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Air Conditioning - Level 1 >=20 Tn - LCI	15	2,136	0.040	0.76	1	2,500.00	375.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Heat Pump - Level 1 <=5.4 Tn - LCI	15	1,726	0.075	0.76	1	1,285.20	187.50	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Heat Pump - Level 2 <=5.4 Tn - LCI	15	2,716	0.596	0.76	1	2,635.20	187.50	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Heat Pumps - Level 1 >5.4 Tn - LCI	15	1,447	0.033	0.76	1	1,679.63	312.50	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Heat Pumps - Water & GeoT - ES Tier 3 - LCI	15	4,675	0.969	0.76	1	5,869.80	312.50	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Ductless Mini-Split HP - Level 3- LCI	15	544	0.057	0.76	1	447.75	375.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			PTAC - LCI	15	114	0.063	0.76	1	84.00	52.50	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			PTHP - LCI	15	727	0.070	0.76	1	84.00	52.50	0.00	0.00	0	PA TRM, 2016	PA SWE DB
		Lighting - LCI	CFL Fixtures - LCI	2	153	0.019	0.94	0.96	30.00	15.95	11.48	0.00	0	PA TRM, 2016	PA SWE DB
			CFL Lamps Speciality - LCI	3	184	0.023	0.94	0.96	5.62	3.50	5.85	0.00	0	PA TRM, 2016	DEER
			CFL Lamps - LCI	3	153	0.016	0.94	0.96	1.75	1.00	9.31	0.00	0	PA TRM, 2016	PA SWE DB
			CFL Lamps (Post 2020)- LCI	4	0	0.000	0.94	0.96	0.00	0.00	0.00	0.00	0	PA TRM, 2016	Co Assumption
			Lighting Controls (Daylight & Occupancy) - LCI	8	418	0.104	0.94	0.96	76.50	43.75	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Linear Fluorscent T5 - LCI	13	601	0.000	0.94	0.96	171.14	78.30	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Linear Fluorscent T8 - LCI	15	116	0.000	0.94	0.96	7.50	4.69	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			LED Linear - LCI	12	131	0.018	0.94	0.96	81.14	13.61	0.00	0.00	0	PA TRM, 2016	Co Assumption
			LED Channel Signage - LCI	15	362	0.026	0.94	0.96	35.00	18.84	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Exit Signs - LCI	16	160	0.018	0.94	0.96	30.00	12.50	10.53	0.00	0	PA TRM, 2016	PA SWE DB
			LED Fixtures External - LCI	13	736	0.000	0.94	0.96	1,042.70	95.83	12.84	0.00	0	PA TRM, 2016	DEER
			LED Fixtures Internal - LCI	13	130	0.021	0.94	0.96	128.99	13.55	11.48	0.00	0	PA TRM, 2016	Evaluation
			LED Lamps - LCI	4	120	0.023	0.94	0.96	7.23	5.00	11.48	0.00	0	PA TRM, 2016	PA SWE PtStdy
			LED Lamps 2020 - LCI	14	22	0.004	0.94	0.96	5.00	5.00	0.00	0.00	0	PA TRM, 2016	PA SWE PtStdy
			Street & Area Lighting (Customer Owned) - LCI	12	572	0.000	0.94	0.96	337.00	74.49	12.84	0.00	0	PA TRM, 2016	PA SWE DB
		Custom - LCI	Custom - Process Improvement - LCI	15	572,378	65.340	0.77	0.96	250,000.00	41735.87	0.00	0.00	0	Actuals	Evaluation
			Custom - HVAC & Chillers - LCI	20	26,867	2.838	0.77	0.96	13,000.00	1959.08	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Custom - Data Centers - LCI	20	163,445	22.390	0.77	0.96	13,000.00	11917.83	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Custom - Compressed Air - LCI	10	16,623	3.996	0.77	0.96	6,651.34	1212.12	0.00	0.00	0	Efficiency VT TRM	Evaluation
			Custom - VFDs < 10HP - LCI	15	12,043	0.499	0.94	0.95	2,149.65	887.35	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Custom - VFDs > 10 HP - LCI	13	72,256	2.996	0.94	0.95	10,748.25	5324.09	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Custom-Motors - Three Phase - LCI	15	10,916	0.624	0.94	0.95	2,669.00	804.33	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Custom - Refrigeration - LCI	15	280	0.034	0.77	0.96	250.00	20.44	0.00	0.00	0	PA TRM, 2016	PA SWE DB
		Custom Buildings - LCI	Custom Retrocommissioning - LCI	7	69,034	7.881	0.92	0.95	15,000.00	5086.73	0.00	0.00	0	Co Assumption	Co Assumption
			Custom - Building Improvements - LCI	15	823,622	94.021	0.92	0.95	260,000.00	60687.90	0.00	0.00	0	Co Assumption	Evaluation
		Audits - LCI	Audit - LCI	1	0	0.000	0.92	0.65	0.00	12000.00	0.00	0.00	0	N/A	N/A

Appendix D-2: Measure Assumptions

Penelec															
Sector	**Program**	**Sub-Program**	**Measure**	**Msre Life**	**Verified kWh**	**Verified kW**	**NTG**	**RR**	**Incremental Cost**	**Modeled Rebate**	**O&M Benefit ($/Yr)**	**Gas Savings (MMBTu/Yr)**	**Water Savings (Gal/Yr)**	**Savings Source**	**Incremental Cost Source**
G/E/NP	Governmental & Institutional Tariff Program	HVAC - Gov't	Room Air Conditioner - Level 2 - Govt	9	9	0.022	0.76	1	40.00	29.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Air Conditioning - Level 1 <=5.4 Tn - Govt	15	615	0.075	0.76	1	1,960.20	187.50	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Air Conditioning - Level 2 <=5.4 Tn - Govt	15	911	0.110	0.76	1	2,635.20	187.50	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Air Conditioning - Level 1 >5.4 < 20 Tn - Govt	15	1,447	0.033	0.76	1	1,679.63	312.50	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Air Conditioning - Level 1 >=20 Tn - Govt	15	2,136	0.040	0.76	1	2,500.00	375.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Chiller - Water Cld w Full Load - Level 1 - Govt	15	7,803	7.175	0.76	1	6,500.00	2500.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Heat Pump - Level 1 <=5.4 Tn - Govt	15	1,726	0.075	0.76	1	1,285.20	187.50	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Heat Pump - Level 2 <=5.4 Tn - Govt	15	2,716	0.596	0.76	1	2,635.20	187.50	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Heat Pumps - Level 1 >5.4 Tn - Govt	15	1,461	0.058	0.76	1	1,935.00	312.50	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Heat Pumps - Water & GeoT - ES Tier 3 - Govt	15	4,675	0.969	0.76	1	5,869.80	312.50	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Ductless Mini-Split HP – Level 3 - Govt	15	544	0.057	0.76	1	882.00	468.75	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			PTAC - Govt	15	114	0.063	0.76	1	84.00	52.50	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			PTHP - Govt	15	727	0.070	0.76	1	84.00	52.50	0.00	0.00	0	PA TRM, 2016	PA SWE DB
		Lighting - Gov't	CFL Fixtures - Govt	2	153	0.019	0.94	0.96	30.00	15.95	11.48	0.00	0	PA TRM, 2016	PA SWE DB
			CFL Lamps Speciality - Govt	3	184	0.023	0.94	0.96	5.62	3.50	5.85	0.00	0	PA TRM, 2016	DEER
			CFL Lamps - Govt	3	153	0.016	0.94	0.96	3.00	1.25	9.31	0.00	0	PA TRM, 2016	PA SWE DB
			CFL Lamps (Post 2020)- Govt	4	0	0.000	0.94	0.96	0.00	1.00	0.00	0.00	0	PA TRM, 2016	Co Assumption
			Lighting Controls (Daylight & Occupancy) - Govt	8	418	0.104	0.94	0.96	76.50	43.75	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Linear Fluorscent T5 - Govt	13	601	0.000	0.94	0.96	171.14	0.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Linear Fluorscent T8 - Govt	15	116	0.000	0.94	0.96	7.50	4.69	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			LED Linear - Govt	12	131	0.018	0.94	0.96	81.14	17.02	0.00	0.00	0	PA TRM, 2016	Co Assumption
			LED Channel Signage - Govt	15	362	0.026	0.94	0.96	35.00	18.84	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Exit Signs - Govt	16	160	0.018	0.94	0.96	30.00	12.50	10.53	0.00	0	PA TRM, 2016	PA SWE DB
			LED Fixtures External - Govt	13	736	0.000	0.94	0.96	1,042.70	95.83	12.84	0.00	0	PA TRM, 2016	DEER
			LED Fixtures Internal - Govt	13	130	0.021	0.94	0.96	128.99	16.94	11.48	0.00	0	PA TRM, 2016	Evaluation
			LED Lamps - Govt	4	120	0.023	0.94	0.96	7.23	5.00	11.48	0.00	0	PA TRM, 2016	PA SWE PtStdy
			LED Lamps 2020 - Govt	14	22	0.004	0.94	0.96	5.00	5.00	0.00	0.00	0	PA TRM, 2016	PA SWE PtStdy
			LED Reach in Refrigerator / Freezer Lights - Govt	8	454	0.067	0.94	0.96	266.00	62.50	4.07	0.00	0	PA TRM, 2016	PA SWE DB
			Street & Area Lighting (Customer Owned) - Govt	12	572	0.000	0.94	0.96	337.00	74.49	12.84	0.00	0	PA TRM, 2016	PA SWE DB
		Appliances - Gov't	Refrigerator Recycling - Govt	8	1,104	0.124	0.63	1	0.00	50.00	0.00	0.00	0	PA TRM, 2016	DEER
			Freezer Recycling - Govt	4	939	0.105	0.63	1	0.00	50.00	0.00	0.00	0	PA TRM, 2016	DEER
			Room Air Conditioner Recycling - Govt	3	121	0.260	0.63	1	0.00	30.00	0.00	0.00	0	PA TRM, 2016	DEER
			Dehumidifiers Recycling - Govt	3	170	0.042	0.63	1	0.00	30.00	0.00	0.00	0	PA TRM, 2016	Co Assumption
			Clothes Washer - Level 1 - Govt	11	87	0.010	0.58	1	150.00	31.25	0.00	0.12	1,720	PA TRM, 2016	PA SWE DB
			Clothes Washer - Level 2 - Govt	11	97	0.011	0.58	1	150.00	62.50	0.00	0.22	2,394	PA TRM, 2016	PA SWE DB
			Clothes Washer - Level 3 - Govt	11	109	0.013	0.58	1	150.00	62.50	0.00	0.22	2,394	PA TRM, 2016	PA SWE DB
			Clothes Dryer (Elec w Moisture Sensor) - Govt	13	25	0.005	0.58	1	111.73	68.75	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Clothes Dryer (Elec Heat Pump) - Govt	13	356	0.063	0.58	1	910.98	125.00	0.00	0.00	0	DOE Study	Co Assumption
			Refrigerators - Level 1 - Govt	12	40	0.004	0.58	1	25.25	25.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Refrigerators - Level 2 - Govt	12	66	0.007	0.58	1	25.25	100.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Refrigerators - Level 3 - Govt	12	87	0.010	0.58	1	25.25	100.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Water Heater - Heat Pump - Govt	10	1,374	0.111	0.58	1	945.00	375.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Water Heater - Solar - Govt	15	1,462	0.118	0.58	1	7,414.00	625.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Freezers - Govt	12	25	0.003	0.58	1	6.34	5.00	0.00	0.00	0	PA TRM, 2016	PA SWE DB
			Pre-Rinse Sprayers - Govt	5	687	0.130	0.58	1	81.22	43.75	0.00	0.00	777	PA TRM, 2016	Co Assumption
		Street Lighting - Gov't	Street & Area Lighting (Tariff / Utility Owned) - Gov	15	397	0.000	0.94	0.95	0.00	50.00	15.40	0.00	0	PA TRM, 2016	Co Assumption
			Street & Area Lighting (Tariff / Customer Owned) - Gov	15	397	0.000	0.94	0.95	337.00	137.50	15.40	0.00	0	PA TRM, 2016	PA SWE DB
		Audits - Gov't	Audit - Gov	1	0	0.000	0.92	0.75	0.00	5000.00	0.00	0.00	0	N/A	N/A
			Audits w Direct Install - Gov	15	21,042	1.963	0.92	0.75	11,690.83	6087.47	2.79	0.00	0	Actuals	Co Assumption

Appendix D-3: Number of Units

Program Year is June 1 to May 31

Penelec								
Sector	**Program**	**Sub-Program**	**Measure**	**2016 Units**	**2017 Units**	**2018 Units**	**2019 Units**	**2020 Units**
Res	Appliance Turn In Program	Appliance Turn In	Refrigerator Recycling	5,075	5,075	5,075	5,075	5,075
			Freezer Recycling	1,275	1,275	1,275	1,275	1,275
			Room Air Conditioner Recycling	350	350	350	350	350
			Dehumidifier Recycling	70	70	70	70	70
	Energy Efficient Homes Program	School Education	School Education	1,600	1,600	1,600	1,600	0
			School Education (Post 2020)	0	0	0	0	0
		EE Kits	Energy Efficiency Measures	52,000	52,000	52,000	52,000	0
			Energy Efficiency Measures (Post 2020)	0	0	0	1	1
		Audits	Audit	60	80	120	120	120
			On-Line Audit	5,000	5,000	5,000	3,000	0
			On-Line Audit (Post 2020)	0	0	0	1	1
		Behavioral	Behavioral	75,814	75,814	75,814	75,814	75,814
		Behavioral - DR	Behavioral - DR	0	50,000	50,000	50,000	50,000
		New Homes	New Construction -Townhouse and Duplexs	20	20	20	20	20
			New Construction - Two-on-Two Condos	10	10	10	10	10
			New Construction - Single Family Detached	35	35	35	35	35
			New Construction - Multi Family Low Rise	1	1	1	1	1
			New Manufactured Housing	1	1	1	1	1
	Energy Efficient Products Program	Appliances and Electronics	Clothes Washer - Level 1	2,365	2,365	2,365	2,365	2,365
			Clothes Washer - Level 2	1,150	1,150	1,150	1,150	1,150
			Clothes Washer - Level 3	5	10	15	25	25
			Clothes Dryer - (Elec w Moisture Sensor)	375	375	375	375	375
			Clothes Dryer - (Elec Heat Pump)	1	1	1	1	1
			Freezers	100	200	400	400	400
			Refrigerators - Level 1	3,850	3,850	3,850	3,850	3,850
			Refrigerators - Level 2	400	400	400	400	400
			Refrigerators - Level 3	100	100	100	100	100
			Dehumidifiers	1,900	1,900	1,900	1,900	1,900
			Water Heater - Heat Pump	80	130	155	180	205
			Water Heater - Solar	1	1	1	1	1
			Home Controls	0	0	0	0	1
			Monitors	1,000	1,000	1,000	1,000	1,000
			Computers	500	500	500	500	500
			Imaging	500	500	500	500	500
			TVs	13,000	13,000	13,000	13,000	13,000

Appendix D-3: Number of Units

Program Year is June 1 to May 31

Penelec								
Sector	**Program Name**	**Sub-Program**	**Measure Name**	**2016 Units**	**2017 Units**	**2018 Units**	**2019 Units**	**2020 Units**
Res	Energy Efficient Products Program	Lighting	CFL Lamps - Speciality	20,000	10,000	5,000	5,000	5,000
			CFL Lamps	360,000	300,000	240,000	180,000	0
			CFL Lamps - (Post 2020)	0	0	0	0	1
			CFL Fixtures	100	50	25	25	25
			LED Lamps - Speciality	2,500	12,500	12,500	7,500	0
			LED Lamps - Speciality (Post 2020)	0	0	0	0	1
			LED Fixtures	65	300	300	175	0
			LED Fixtures - (Post 2020)	0	0	0	0	1
			LED Lamps	290,000	350,000	410,000	410,000	0
			LED Lamps - (Post 2020)	0	0	0	60,000	205,000
			Residential Occupancy Sensors	125	625	625	375	0
		HVAC	Heat Pump - Level 2	190	230	260	260	260
			Heat Pump - Level 3	24	33	41	41	41
			Central Air Conditioner - Level 2	115	160	200	200	200
			Central Air Conditioner - Level 3	9	12	18	18	18
			Room Air Conditioner - Level 2	1	1	1	1	1
			Ductless Mini-Split Heat Pump - Level 3	100	140	170	170	170
			PTAC - Level 2 - Multi Family	30	40	60	60	60
			PTHP - Level 2 - Multi Family	60	80	120	120	120
			Heat Pump - Water & GeoT - ES Tier 3	15	20	30	30	30
			HVAC - Maintenance	1,080	1,300	1,440	1,440	1,440
			Furnace Fans	15	20	30	30	30
			Programmable Thermostat	300	400	600	600	600
Res LI	Low Income Energy Efficiency Program	LI - EE Kits	LI Energy Efficiency Measures	9,000	9,000	9,000	9,000	0
			LI Energy Efficiency Measures (Post 2020)	0	0	0	1	1
		Weatherization	LI Weatherization (WARM Plus)	599	599	599	599	599
			LI WARM Extra Measures	1,541	1,541	1,541	1,541	1,541
		Multifamily / LILU Single Family	LI ApRplc Refrigerators/Freezers	60	80	120	120	120
			LI ApRplc HVAC	60	80	120	120	120
			LI ApRplc Water Heater	60	80	120	120	120
			LI Audit - MF & SF	180	240	360	360	360
		LI - Behavioral	LI Behavioral	15,921	15,921	15,921	15,921	15,921
		LI - New Homes	LI New Construction	20	20	20	20	20
		LI - Appliance Rebate	LI Clothes Washers	150	156	157	158	158
			LI Clothes Dryer	30	30	30	30	30
			LI Freezers	7	14	28	28	28
			LI Refrigerators	79	87	95	103	111
			LI Dehumidifiers	133	133	133	133	133
		LI - Appliance Turn In	LI Refrigerator Recycling	550	550	550	550	550
			LI Freezer Recycling	150	150	150	150	150
			LI Room Air Conditioner Recycling	25	25	25	25	25
			LI Dehumidifier Recycling	2	3	5	7	8
		LI - School Education	LI School Education	800	800	800	800	0
			LI School Education (Post 2020)	0	0	0	0	0

Appendix D-3: Number of Units

Program Year is June 1 to May 31

Penelec								
Sector	**Program Name**	**Sub-Program**	**Measure Name**	**2016 Units**	**2017 Units**	**2018 Units**	**2019 Units**	**2020 Units**
SCI	C&I Energy Solutions for Business Program Small	HVAC - SCI	Room Air Conditioner - Level 2 - SCI	1	1	1	1	1
			Air Conditioning - Level 1 <=5.4 Tn - SCI	6	8	12	12	12
			Air Conditioning - Level 2 <=5.4 Tn - SCI	3	4	4	4	5
			Air Conditioning - Level 1 >5.4 < 20 Tn - SCI	6	8	12	12	12
			Air Conditioning - Level 1 >=20 Tn - SCI	2	3	3	3	4
			Chiller - Water Cld w Full Load - Level 1 - SCI	1	2	2	2	3
			Heat Pump - Level 1 <=5.4 Tn - SCI	15	20	30	30	30
			Heat Pump - Level 2 <=5.4 Tn - SCI	4	5	5	5	6
			Heat Pumps - Level 1 >5.4 Tn - SCI	15	20	30	30	30
			Heat Pumps - Water & GeoT - ES Tier 3 - SCI	1	1	1	1	1
			Ductless Mini-Split HP - Level 3 – SCI	4	6	10	10	10
			PTAC - SCI	24	32	48	48	48
			PTHP - SCI	12	16	24	24	24
		Lighting - SCI	CFL Fixtures - SCI	4	4	4	4	4
			CFL Lamps Speciality - SCI	600	500	400	200	100
			CFL Lamps - SCI	3,000	3,000	1,500	750	0
			CFL Lamps (Post 2020)- SCI	0	0	0	0	1
			Lighting Controls (Daylight & Occupancy) - SCI	1,500	1,500	1,500	1,500	1,500
			Linear Fluorscent T5 - SCI	900	900	900	900	900
			Linear Fluorscent T8 - SCI	12,000	9,000	9,000	9,000	6,000
			LED Linear - SCI	6,000	9,000	9,000	9,000	12,000
			LED Channel Signage - SCI	12	12	12	12	12
			Exit Signs - SCI	150	150	150	150	150
			LED Fixtures External - SCI	20	20	20	20	20
			LED Fixtures Internal - SCI	20	20	20	20	20
			LED - Traffic Signals - Gov	100	75	50	25	1
			LED Lamps - SCI	3,000	3,000	4,500	5,250	0
			LED Lamps (Post 2020) - SCI	0	0	0	0	3,750
			LED Reach in Refrigerator / Freezer Lights - SCI	265	265	265	265	265
			Street & Area Lighting (Customer Owned) - SCI	2,000	2,000	2,000	2,000	2,000
		Food Service	Refrigerators - Reach In - SCI	8	8	8	8	8
			Freezers - Reach In - SCI	8	8	8	8	8
			Ice Machines - SCI	40	40	40	40	40
			Refrigerated Case Cover - SCI	160	160	160	160	160
			Strip Curtains - SCI	160	160	160	160	160
			Anti Sweat Heater Controls - SCI	60	60	60	60	60
			Beverage Vending Machine - Controls - SCI	16	16	16	16	16
			Beverage Vending Machine - Energy Star - SCI	16	16	16	16	16
			Combination Oven - SCI	8	8	8	8	8
			Convection Oven - SCI	8	8	8	8	8
			Steam Cookers - SCI	32	32	32	32	32
			Fryers - SCI	16	16	16	16	16
			Griddles - SCI	16	16	16	16	16
			Hot Food Holding Cabinet - SCI	32	32	32	32	32

Appendix D-3: Number of Units

Program Year is June 1 to May 31

Penelec								
Sector	**Program Name**	**Sub-Program**	**Measure Name**	**2016 Units**	**2017 Units**	**2018 Units**	**2019 Units**	**2020 Units**
SCI	C&I Energy Solutions for Business Program - Small	Appliances and Electronics - SCI	Refrigerator Recycling - SCI	100	100	100	100	100
			Freezer Recycling - SCI	25	25	25	25	25
			Room Air Conditioner Recycling - SCI	15	15	15	15	15
			Clothes Washer - Level 1 - SCI	24	24	24	24	24
			Clothes Washer - Level 2 - SCI	10	10	10	10	10
			Clothes Washer - Level 3 - SCI	1	1	1	1	1
			Clothes Dryer (Elec w Moisture Sensor) - SCI	5	5	5	5	5
			Clothes Dryer (Elec Heat Pump) - SCI	1	1	1	1	1
			Refrigerators - Level 1 - SCI	1	1	1	1	1
			Refrigerators - Level 2 - SCI	2	2	2	2	2
			Refrigerators - Level 3 - SCI	15	17	18	20	21
			Water Heater - Heat Pump - SCI	2	2	2	3	3
			Water Heater - Solar - SCI	1	1	1	1	1
			Freezers - SCI	2	3	6	6	6
			Pre-Rinse Sprayers - SCI	28	28	28	28	28
			Uninterruptible Power Supply - SCI	20	20	20	20	20
			Monitors - SCI	4	4	4	4	4
			Computers - SCI	4	4	4	4	4
			Imaging - SCI	4	4	4	4	4
		Agricultural	Automatic Milker Takeoffs - SCI	2	3	4	5	6
			Dairy Scroll Compresors - SCI	4	6	8	10	12
			High Efficiency Ventilation Fans - SCI	6	8	12	16	18
			High Volume LowSpeed Fans - SCI	6	8	12	16	18
			Livestock Waterer - SCI	4	6	8	10	12
			VFD on Dairy Vacuum Pumps - SCI	2	3	4	5	6
			Heat Reclaimers - SCI	2	3	4	5	6
			Low Pressure Irrigation System - SCI	2	3	4	5	6
		Custom - SCI	Custom Retrocommissioning - SCI	3	4	6	6	6
			Custom - Process Improvement - SCI	115	120	130	130	130
			Custom - HVAC & Chillers - SCI	6	7	9	9	9
			Custom - Data Centers - SCI	15	20	30	30	30
			Custom - Compressed Air - SCI	8	10	14	14	14
			Custom - VFDs < 10HP - SCI	40	45	55	55	55
			Custom - VFDs > 10 HP - SCI	15	20	30	30	30
			Custom-Motors - Three Phase - SCI	4	6	10	10	10
			Custom - Refrigeration - SCI	3	4	4	4	5
		Custom Buildings - SCI	Custom - Building Improvements - SCI	12	16	24	24	24
		EE Kits - SCI	Energy Efficiency Measures - SCI	700	700	700	400	0
			Energy Efficiency Measures - (Post 2020) - SCI	0	0	0	0	1
		Multifamily	ApRplc Refrigerators/Freezers - SCI	153	153	153	153	153
			ApRplc HVAC - SCI	153	153	153	153	153
			ApRplc Water Heater - SCI	153	153	153	153	153
			Audit - MF - SCI	460	460	460	460	460
		Audits - SCI	Audit - SCI	25	25	25	25	26
			Audits w Direct Install - SCI	95	115	130	130	130
			Behavioral - SCI	4,170	4,170	4,170	4,170	4,170

Appendix D-3: Number of Units

Program Year is June 1 to May 31

Penelec								
Sector	**Program Name**	**Sub-Program**	**Measure Name**	**2016 Units**	**2017 Units**	**2018 Units**	**2019 Units**	**2020 Units**
LCI	C&I Energy Solutions for Business Program - Large	HVAC - LCI	Air Conditioning - Level 1 <=5.4 Tn - LCI	2	3	3	3	4
			Air Conditioning - Level 2 <=5.4 Tn - LCI	2	3	3	3	4
			Chiller - Water Cld w Full Load - Level 1 - LCI	2	3	3	3	4
			Air Conditioning - Level 1 >5.4 < 20 Tn - LCI	2	3	3	3	4
			Air Conditioning - Level 1 >=20 Tn - LCI	2	3	3	3	4
			Heat Pump - Level 1 <=5.4 Tn - LCI	6	9	9	9	12
			Heat Pump - Level 2 <=5.4 Tn - LCI	2	3	3	3	4
			Heat Pumps - Level 1 >5.4 Tn - LCI	4	6	6	6	8
			Heat Pumps - Water & GeoT - ES Tier 3 - LCI	2	3	3	3	4
			Ductless Mini-Split HP - Level 3- LCI	4	6	6	6	8
			PTAC - LCI	4	6	6	6	8
			PTHP - LCI	6	9	9	9	12
		Lighting - LCI	CFL Fixtures - LCI	3	3	3	3	3
			CFL Lamps Speciality - LCI	500	400	200	100	50
			CFL Lamps - LCI	2,500	2,500	1,250	625	0
			CFL Lamps (Post 2020)- LCI	0	0	0	0	1
			Lighting Controls (Daylight & Occupancy) - LCI	1,500	1,500	1,500	1,500	1,500
			Linear Fluorscent T5 - LCI	500	500	500	500	500
			Linear Fluorscent T8 - LCI	3,000	2,000	2,000	2,000	1,000
			LED Linear - LCI	1,500	2,500	2,500	2,500	3,500
			LED Channel Signage - LCI	9	9	9	9	9
			Exit Signs - LCI	100	100	100	100	100
			LED Fixtures External - LCI	3	3	3	3	3
			LED Fixtures Internal - LCI	150	150	150	150	150
			LED Lamps - LCI	2,500	2,500	3,750	4,375	0
			LED Lamps 2020 - LCI	0	0	0	0	2,500
			Street & Area Lighting (Customer Owned) - LCI	500	500	500	500	500
		Custom - LCI	Custom - Process Improvement - LCI	22	29	33	33	33
			Custom - HVAC & Chillers - LCI	2	2	3	4	4
			Custom - Data Centers - LCI	6	8	11	11	11
			Custom - Compressed Air - LCI	2	2	3	4	4
			Custom - VFDs < 10HP - LCI	12	14	20	22	22
			Custom - VFDs > 10 HP - LCI	22	35	42	42	42
			Custom-Motors - Three Phase - LCI	11	13	17	17	17
			Custom - Refrigeration - LCI	4	5	7	7	7
		Custom Buildings - LCI	Custom Retrocommissioning - LCI	2	2	3	4	4
			Custom - Building Improvements - LCI	3	4	6	6	6
		Audits - LCI	Audit - LCI	6	9	10	10	10

Appendix D-3: Number of Units

Program Year is June 1 to May 31

Penelec								
Sector	**Program Name**	**Sub-Program**	**Measure Name**	**2016 Units**	**2017 Units**	**2018 Units**	**2019 Units**	**2020 Units**
G/E/NP	Governmental & Institutional Tariff Program	HVAC - Gov't	Room Air Conditioner - Level 2 - Govt	1	1	1	1	1
			Air Conditioning - Level 1 <=5.4 Tn - Govt	5	5	5	5	5
			Air Conditioning - Level 2 <=5.4 Tn - Govt	1	1	1	1	1
			Air Conditioning - Level 1 >5.4 < 20 Tn - Govt	1	1	1	1	1
			Air Conditioning - Level 1 >=20 Tn - Govt	1	1	1	1	1
			Chiller - Water Cld w Full Load - Level 1 - Govt	1	1	1	1	1
			Heat Pump - Level 1 <=5.4 Tn - Govt	5	5	5	5	5
			Heat Pump - Level 2 <=5.4 Tn - Govt	1	1	1	1	1
			Heat Pumps - Level 1 >5.4 Tn - Govt	1	1	1	1	1
			Heat Pumps - Water & GeoT - ES Tier 3 - Govt	1	1	1	1	1
			Ductless Mini-Split HP – Level 3 - Govt	6	6	6	6	6
			PTAC - Govt	5	5	5	5	5
			PTHP - Govt	5	5	5	5	5
		Lighting - Gov't	CFL Fixtures - Govt	5	5	5	5	5
			CFL Lamps Speciality - Govt	6	5	4	2	2
			CFL Lamps - Govt	450	450	350	250	0
			CFL Lamps (Post 2020)- Govt	0	0	0	0	1
			Lighting Controls (Daylight & Occupancy) - Govt	50	50	50	50	50
			Linear Fluorscent T5 - Govt	9	9	9	9	9
			Linear Fluorscent T8 - Govt	2,000	2,000	2,000	2,000	2,000
			LED Linear - Govt	60	90	90	90	120
			LED Channel Signage - Govt	5	5	5	5	5
			Exit Signs - Govt	5	5	5	5	5
			LED Fixtures External - Govt	5	5	5	5	5
			LED Fixtures Internal - Govt	5	5	5	5	5
			LED Lamps - Govt	450	450	550	650	0
			LED Lamps 2020 - Govt	0	0	0	0	75
			LED Reach in Refrigerator / Freezer Lights - Govt	5	5	5	5	5
			Street & Area Lighting (Customer Owned) - Govt	150	150	150	150	150
		Appliances - Gov't	Refrigerator Recycling - Govt	70	70	70	70	70
			Freezer Recycling - Govt	15	15	15	15	15
			Room Air Conditioner Recycling - Govt	40	40	40	40	40
			Dehumidifiers Recycling - Govt	6	6	6	6	6
			Clothes Washer - Level 1 - Govt	4	4	4	4	4
			Clothes Washer - Level 2 - Govt	1	1	1	1	1
			Clothes Washer - Level 3 - Govt	1	1	1	1	1
			Clothes Dryer (Elec w Moisture Sensor) - Govt	1	1	1	1	1
			Clothes Dryer (Elec Heat Pump) - Govt	1	1	1	1	1
			Refrigerators - Level 1 - Govt	10	10	10	10	10
			Refrigerators - Level 2 - Govt	1	1	1	1	1
			Refrigerators - Level 3 - Govt	1	1	1	1	1
			Water Heater - Heat Pump - Govt	1	1	1	1	1
			Water Heater - Solar - Govt	1	1	1	1	1
			Freezers - Govt	5	5	5	5	5
			Pre-Rinse Sprayers - Govt	5	5	5	5	5
		Street Lighting - Gov't	Street & Area Lighting (Tariff / Utility Owned) - Gov	300	400	550	800	950
			Street & Area Lighting (Tariff / Customer Owned) - Gov	100	100	100	100	100
		Audits - Gov't	Audit - Gov	30	30	30	30	30
			Audits w Direct Install - Gov	15	20	30	30	30

Appendix D-4: Calculation Methods and Assumptions - Rebate Strategy

Penelec

Sector	Program	Sub-Program	Measure	Eligibility / Description	Rebate Strategy (All values are "up to" values)[1,2,3]	Qualifiers
Res	Appliance Turn In Program	Appliance Turn In	Refrigerator Recycling	Removal of an existing inefficient unit generally older than 10 years from service prior to end of useful life via recycling	$75	per unit
			Freezer Recycling	Removal of an existing inefficient unit generally older than 10 years from service prior to end of useful life via recycling	$75	per unit
			Room Air Conditioner Recycling	Removal of an existing inefficient room air conditioner from service, prior to its natural end of life (early retirement).	$38	per unit
			Dehumidifier Recycling	Removal of an existing inefficient dehumidifier from service, prior to its natural end of life (early retirement).	$38	per unit
	Energy Efficient Homes Program	School Education	School Education	Adoption of an energy efficiency school curriculum provided by teachers or school districts which encourages efficient practices & installation of efficiency measures at home.	NA	
			School Education (Post 2020)	Adoption of an energy efficiency school curriculum provided by teachers or school districts which encourages efficient practices & installation of efficiency measures at home.	NA	
		EE Kits	Energy Efficiency Measures	Opt In Kit with energy efficiency measures that include but are not limited to: CFLs, LEDs, Night Lights etc. The kit is mailed at the customers request.	NA	
			Energy Efficiency Measures (Post 2020)	Opt In Kit with energy efficiency measures including but not limited to: CFLs, LEDs, Night Lights etc. The kit is mailed at the customers request.	NA	
		Audits	Audit	Provides a Customized Home Energy Report, including diagnostics and testing to any residential customer. Comprehensive measures that are eligible for incentives include, but are not limited to: Windows, Duct Sealing, and Wall & Attic Insulation, etc.	Audit - Up to $500 for the cost of the audit direct install measures, plus up to $500 for audit recommended measures and additional incentives	
			On-Line Audit	Energy education and awareness supporting installation of measures and behaviors that reduce consumption of energy and demand thru deployment of energy efficiency kits.	NA	
			On-Line Audit (Post 2020)	Energy education and awareness supporting installation of measures and behaviors that reduce consumption of energy and demand thru deployment of energy efficiency kits.	NA	
		Behavioral	Behavioral	Reports containing energy usage comparisons, recommendations and education emphasizing key points, general conservation tips and information on tools and resources supporting implementation of measures and efficiencies behaviors that reduces consumption of energy and demand.	NA	
		Behavioral - DR	Behavioral - DR	Residential customers with Smart Meter	NA	
		New Homes	New Construction -Townhouse and Duplexs	New residential homes to be constructed in accordance with the applicable Energy Star standard, or build at a higher efficiency level than the current adopted building code	$1,125	per unit
			New Construction - Two-on-Two Condos	New residential homes to be constructed in accordance with the applicable Energy Star standard, or build at a higher efficiency level than the current adopted building code	$825	per unit
			New Construction - Single Family Detached	New residential homes to be constructed in accordance with the applicable Energy Star standard, or build at a higher efficiency level than the current adopted building code	$1,875	per unit
			New Construction - Multi Family Low Rise	New residential homes to be constructed in accordance with the applicable Energy Star standard, or build at a higher efficiency level than the current adopted building code	$600	per unit
			New Manufactured Housing	Residential manufactured or modular homes to be constructed to meet the applicable Energy Star standard, or built at a higher efficiency level than the current adopted building code.	$1,875	per unit

Appendix D-4: Calculation Methods and Assumptions - Rebate Strategy

Penelec						
Sector	**Program**	**Sub-Program**	**Measure**	**Eligibility / Description**	**Rebate Strategy (All values are "up to" values)[1,2,3]**	**Qualifiers**
Res	Energy Efficient Homes Program	Appliances and Electronics	Clothes Washer - Level 1	Purchase and installation of an Energy Star or CEE Tier 1 clothes washer per Federal Standard effective March 2015, including SMART appliances that can be interconnected to home energy management systems	$50	per unit
			Clothes Washer - Level 2	Purchase and installation of an CEE Tier 2 clothes washer per Federal Standard effective March 2015 including SMART appliances that can be interconnected to home energy management systems	$75	per unit
			Clothes Washer - Level 3	Purchase and installation of an CEE Tier 3 clothes washer per Federal Standard effective March 2015 including SMART appliances that can be interconnected to home energy management systems	$100	per unit
			Clothes Dryer - (Elec w Moisture Sensor)	Purchase and installation of an Energy Star rated Clothes Dryer with moisture sensor	$75	per unit
			Clothes Dryer - (Elec Heat Pump)	Purchase and installation of an Energy Star rated heat pump clothes dryer	$600	per unit
			Freezers	Purchase and installation of a new unit meeting either Energy Star or greater efficiency level	$40	per unit
			Refrigerators - Level 1	Purchase and installation of a new unit meeting CEE Tier 1 as proposed Sept. 15, 2014.	$75	per unit
			Refrigerators - Level 2	Purchase and installation of a new unit meeting CEE Tier 2 as proposed Sept. 15, 2014.	$100	per unit
			Refrigerators - Level 3	Purchase and installation of a new unit meeting CEE Tier 3 as proposed Sept. 15, 2014.	$150	per unit
			Dehumidifiers	Purchase and installation of a new Energy Star rated unit	$25	per unit
			Water Heater - Heat Pump	Replacement of existing electric storage tank type units with heat pump type unit, EF>2.0	$700	per unit
			Water Heater - Solar	Replacement of existing electric storage tank type units w/ an Energy Star rated Solar w/ EF >= 1.8 for electric backup	$700	per unit
			Home Controls	Purchase and installation of emerging technologies related to the control of in-home appliances, lighting, HVAC equipment, etc.	TBD	
			Monitors	Purchase of Energy Star rated monitor	$8	per unit
			Computers	Purchase and installation of an Energy Star rated unit	$8	per unit
			Imaging	Purchase and installation of an Energy Star rated unit	$8	per unit
			TVs	Purchase and installation of an Energy Star V7.0 rated Television	$8	

Appendix D-4: Calculation Methods and Assumptions - Rebate Strategy

Penelec

Sector	Program	Sub-Program	Measure	Eligibility / Description	Rebate Strategy (All values are "up to" values)[1,2,3]	Qualifiers
Res	Energy Efficient Products Program	Lighting	CFL Lamps - Speciality	Purchase and installation of energy efficiency, specialty, compact fluorescent bulb (CFL)in place of an incandescent specialty bulb.	$5	NTE Cost of Lamp
			CFL Lamps	Purchase and installation of a energy efficient, general service, compact fluorescent light bulb (CFL) in place of an incandescent bulb.	$3	NTE Cost of Lamp
			CFL Lamps - (Post 2020)	Purchase and installation of an energy efficient general service, compact fluorescent light bulb (CFL) in place of an incandescent bulb.	$3	NTE Cost of Lamp
			CFL Fixtures	Purchase and installation of an energy efficient lighting fixture wired for exclusive use with pin-based (including the GU-24 base) compact fluorescent lamp(s) that is installed in an interior or exterior residential setting.	$20	per fixture
			LED Lamps - Speciality	Purchase and installation of an energy efficient, specialty, LED lamp in place of an specialty incandescent lamp.	$8	NTE Cost of Lamp
			LED Lamps - Speciality (Post 2020)	Purchase and installation of an energy efficient, specialty, LED lamp in place of an specialty incandescent lamp.	$8	NTE Cost of Lamp
			LED Fixtures	Purchase and installation of an energy efficiency recessed downlight luminaire with integral LED lamp in place of an incandescent downlight lamp.	$50	per fixture
			LED Fixtures - (Post 2020)	Purchase and installation of an energy efficient recessed downlight luminaire with integral LED lamp in place of an incandescent downlight lamp.	$50	per fixture
			LED Lamps	Purchase and installation of an energy efficient, general service, LED lamp in place of an incandescent lamp.	$5	NTE Cost of Lamp
			LED Lamps - (Post 2020)	Purchase and installation of an energy efficient, general service, LED lamp in place of an incandescent lamp.	$5	NTE Cost of Lamp
			Residential Occupancy Sensors	The purchase and installation of a occupancy sensor inside the home	$25	
		HVAC	Heat Pump - Level 2	Replacement of ducted split central units prior to end of life or a new system w/ Energy Star qualifying units w/ SEER ratings > or = 16 or 13 EER or 9 HSPF. Includes variable refrigerant flow (VRF) systems.	$800	per unit
			Heat Pump - Level 3	Replacement of ducted split central units prior to end of life or a new system w/ Energy Star qualifying units w/ SEER ratings > or = 18 or 13 EER or 10 HSPF. Includes variable refrigerant flow (VRF) systems.	$1,000	per unit
			Central Air Conditioner - Level 2	Replacement of ducted split central units prior to end of life w/ Energy Star qualifying units w/ SEER ratings > or = 16 or 13 EER. Includes variable flow (VRF) systems.	$500	per unit
			Central Air Conditioner - Level 3	Replacement of ducted split central units prior to end of life w/ Energy Star qualifying units w/ SEER ratings > or = 18 or 13 EER. Includes variable flow (VRF) systems.	$800	per unit
			Room Air Conditioner - Level 2	Purchase and installation of an Energy Star V4.0 room air conditioner, Tier 2, CEER>=10.2	$100	per unit
			Ductless Mini-Split Heat Pump - Level 3	Purchase and installation of a new or replacement Energy Star qualifying unit w/ SEER >= 18, EER >=13 or HSPF >= 10.	$400	per unit
			PTAC - Level 2 - Multi Family	Purchase and installation of a new or replacement unit meeting CEE Tier 2, SEER >16	$200	per unit
			PTHP - Level 2 - Multi Family	Purchase and installation of a new or replacement unit meeting CEE Tier 2, HSPF>8.2	$200	per unit
			Heat Pump - Water & GeoT - ES Tier 3	Replacement or new installation of Ground & Water Source Heat Pumps < 135kBtuH, meeting CEE Tier 3 of >=17.1 EER Cool and >=3.6 COP Heating. The following retrofit scenarios are eligible: • Ground source heat pumps for existing or new HVAC applications • Groundwater source heat pumps for existing or new HVAC applications • Water source heat pumps for existing or new HVAC applications	$1,500	per unit
			HVAC - Maintenance	Eligibility items covered during maintenance on existing central air conditioner or air source heat pumps: • Check refrigerant charge level and correct as necessary,• Clean filters as needed • Inspect and lubricate bearings • Inspect and clean condenser and, if accessible, evaporator coil 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	per unit
			Furnace Fans	Replacement of an existing fan with a brushless permanent magnet (BPM) or electrically commutated motor (ECM) at the time of an HVAC tune-up or installation of a new CAC or HP. Purchase of a new gas furnace with a BPM or ECM motor is also eligible.	$150	per unit
			Programmable Thermostat	New installation or replacement of a manual thermostat with a programmable thermostat setup with temperature set-points during specified unoccupied and nighttime hours. Only HVAC systems with electric resistance heating or direct expansion (DX) cooling are eligible.	$150	per unit

Appendix D-4: Calculation Methods and Assumptions - Rebate Strategy

Penelec

Sector	Program	Sub-Program	Measure	Eligibility / Description	Rebate Strategy (All values are "up to" values)[1,2,3]	Qualifiers
Res LI	Low Income Energy Efficiency Program	LI - EE Kits	LI Energy Efficiency Measures	Opt In Kit with energy efficiency measures including but not limited to: CFLs, Night Lights etc. mailed at customers request.	NA	
			LI Energy Efficiency Measures (Post 2020)	Opt In Kit with energy efficiency measures including but not limited to: CFLs, Night Lights etc. mailed at customers request.	NA	
		Weatherization	LI Weatherization (WARM Plus)	WARM Plus - weatherization services provided to customers that qualify within 200% of the Federal Poverty Income Guidelines	NA	
			LI WARM Extra Measures	WARM - Extra Measures - additional energy efficiency measures provided to customer who qualify within 200% of the Federal Income Poverty Guidelines	NA	
		Multifamily / LILU Single Family	LI ApRplc Refrigerators/Freezers	Removal of an existing refrigerator/freezer and replacement with an energy efficiency unit of the same size and type.	NA	
			LI ApRplc HVAC	Removal of an HVAC unit and replacement with an energy efficiency unit of the same size and type.	100% of the replacement cost of the appliance	
			LI ApRplc Water Heater	Removal of an existing electric hot water heater and replacement with an energy efficiency unit of the same size and type.	100% of the replacement cost of the appliance	
			LI Audit - MF & SF	Provides an audit with the direct installation of standard energy efficiency measures	NA	
		LI - Behavioral	LI Behavioral	Reports containing energy usage comparisons, recommendations and education emphasizing key points, general conservation tips and information on tools and resources supporting implementation of measures and efficiencies behaviors that reduces consumption of energy and demand.	NA	
		LI - New Homes	LI New Construction	New construction of low-income housing to be constructed in accordance applicable Energy Star standard or build at a higher efficiency level than the current adopted building code. Manufactured or modular homes to be constructed to higher efficiency than current adopted building code.	$1,875	per unit
		LI - Appliance Rebate	LI Clothes Washers	Purchase and installation of an Energy Star or CEE Tier 1 clothes washer (front or top load) per Federal Standard March 2015.	$125	per unit
			LI Clothes Dryer	Purchase and installation of an Energy Star rated Clothes Dryer per Federal Standard January 2015.	$125	per unit
			LI Freezers	Purchase and installation of a new unit meeting either Energy Star or greater efficiency level	$90	per unit
			LI Refrigerators	Purchase and installation of a new unit meeting Energy Star, Energy Star Most Efficient or CEE Tier 1 as proposed Sept. 15, 2014.	$180	per unit
			LI Dehumidifiers	Purchase and installation of a new Energy Star rated unit	$50	per unit
		LI - Appliance Turn In	LI Refrigerator Recycling	Removal of an existing inefficient unit generally older than 10 years from service prior to end of useful life via recycling	$90	per unit
			LI Freezer Recycling	Removal of an existing inefficient unit generally older than 10 years from service prior to end of useful life via recycling	$90	per unit
			LI Room Air Conditioner Recycling	Removal of an existing inefficient room air conditioner from service, prior to its natural end of life (early retirement).	$50	per unit
			LI Dehumidifier Recycling	Removal of an existing inefficient dehumidifier from service, prior to its natural end of life (early retirement).	$50	per unit
		LI - School Education	LI School Education	Adoption of an energy efficiency school curriculum provided by teachers or school districts which encourages efficient practices & installation of efficiency measures at home.	NA	
			LI School Education (Post 2020)	Adoption of an energy efficiency school curriculum provided by teachers or school districts which encourages efficient practices & installation of efficiency measures at home.	NA	

Appendix D-4: Calculation Methods and Assumptions - Rebate Strategy

Penelec

Sector	Program	Sub-Program	Measure	Eligibility / Description	Rebate Strategy (All values are "up to" values)[1,2,3]	Qualifiers
SCI	C&I Energy Solutions for Business Program - Small	HVAC - SCI	Room Air Conditioner - Level 2 - SCI	Purchase and installation of an Energy Star V4.0 room air conditioner, Tier 2, CEER>=10.2	$100	per unit
			Air Conditioning - Level 1 <=5.4 Tn - SCI	Replacement Single Package or Split System central units prior to end of life w/ Energy Star qualifying units w/ SEER ratings > or = 16 or 13 EER. Includes variable flow (VRF) systems.	$200	per ton
			Air Conditioning - Level 2 <=5.4 Tn - SCI	Replacement of Single Package or Split System central units prior to end of life w/ Energy Star qualifying units w/ SEER ratings > or = 18 or 13 EER. Includes variable flow (VRF) systems.	$300	per ton
			Air Conditioning - Level 1 >5.4 < 20 Tn - SCI	Replacement of a Single Package or Split System central units prior to end of life with unit exceeding IECC 2012 Includes variable flow (VRF)	$150	per ton
			Air Conditioning - Level 1 >=20 Tn - SCI	Replacement of a Single Package or Split System central units prior to end of life with unit exceeding IECC 2012 Includes variable flow (VRF)	$120	per ton
			Chiller - Water Cld w Full Load - Level 1 - SCI	Replacement or new installation of electric chiller w/efficiency exceeding baselines in IECC, 2009, Table 503.2.3(7). VFD retrofits of existing existing chiller is NOT included in this measure.	$45	per ton
			Heat Pump - Level 1 <=5.4 Tn - SCI	Replacement of Single Package or Split System central unit prior to end of life or a new system w/ Energy Star qualifying units w/ SEER ratings > or = 16 or 13 EER or 9 HSPF. Includes variable refrigerant flow (VRF) systems	$200	per ton
			Heat Pump - Level 2 <=5.4 Tn - SCI	Replacement of Single Package or Split System central units prior to end of life or a new system w/ Energy Star qualifying units w/ SEER ratings > or = 18 or 13 EER or 10 HSPF. Includes variable refrigerant flow (VRF) systems.	$300	per ton
			Heat Pumps - Level 1 >5.4 Tn - SCI	Replacement of a Single Package or Split System central unit prior to end of life with unit exceeding IECC 2012, Includes variable flow (VRF) systems	$150	per ton
			Heat Pumps - Water & GeoT - ES Tier 3 - SCI	Replacement or new installation of Ground & Water Source Heat Pumps < 135kBtuH, meeting CEE Tier 3 of >=17.1 EER Cool and >=3.6 COP Heating. The following retrofit scenarios are eligible: • Ground source heat pumps for existing or new non-residential HVAC applications • Groundwater source heat pumps for existing or new non-residential HVAC applications • Water source heat pumps for existing or new non-residential HVAC applications	$300	per ton
			Ductless Mini-Split HP - Level 3 – SCI	Purchase and installation of a new or replacement of Energy Star qualifying unit >=10 HSPF, variable refrigerant flow type.	$300	per ton
			PTAC - SCI	Replacement or new installation of Energy Star units >= 16 SEER	$150	per ton
			PTHP - SCI	Replacement or new installation of Energy Star units >= 8.2 HSPF	$150	per ton

Appendix D-4: Calculation Methods and Assumptions - Rebate Strategy

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Sector	Program	Sub-Program	Measure	Eligibility / Description	Rebate Strategy (All values are "up to" values)[1,2,3]	Qualifiers
SCI	C&I Energy Solutions for Business Program - Small	Lighting - SCI	CFL Fixtures - SCI	Purchase and installation of an energy efficient lighting fixture wired for exclusive use with pin-based (including the GU-24 base) compact fluorescent lamp(s) that is installed in an interior or exterior residential setting.	$20	per fixture
			CFL Lamps Speciality - SCI	Purchase and installation of energy efficient, specialty, compact fluorescent bulb (CFL)in place of an incandescent specialty bulb.	$5	NTE Cost of Lamp
			CFL Lamps - SCI	Purchase and installation of an energy efficient, general service, compact fluorescent light bulb (CFL) in place of an incandescent bulb.	$3	NTE Cost of Lamp
			CFL Lamps (Post 2020)- SCI	Purchase and installation of an energy efficient, general service, compact fluorescent light bulb (CFL) in place of an incandescent bulb.	$3	NTE Cost of Lamp
			Lighting Controls (Daylight & Occupancy) - SCI	Purchase and installation of new lighting controls, including but not limited to: daylight On/Off & dimming, occupancy sensors (wall plate, remote & fixture mounted), time clocks and switching controls.	$0.10 per kWh saved	
			Linear Fluorscent T5 - SCI	Replacement or new installation of linear fluorescent lighting equipment to T5, or a higher efficiency than existing or designed	$0.10 per kWh saved	
			Linear Fluorscent T8 - SCI	Replacement of existing T8 lamps with high performance T8 lamps, or higher efficiency than existing or designed.	$0.10 per kWh saved	
			LED Linear - SCI	Replacement or new installation of linear LED lighting equipment to a higher efficiency than existing or designed	$0.10 per kWh saved	
			LED Channel Signage - SCI	Replacement, retrofit or new installation of channel letter signs w/ LED technology.	$3	per linear foot
			Exit Signs - SCI	Replacement or retrofit of incandescent or fluorescent exit signs w/ LED type exit sign or photoluminscent type	$23	per sign
			LED Fixtures External - SCI	Replacement or new installation of a lighting fixture wired for exclusive use with LED lamps is installed in an exterior setting.	$55	per fixture
			LED Fixtures Internal - SCI	Replacement or new installation of a lighting fixture wired for exclusive use with LED lamps is installed in an interior setting.	$55	per fixture
			LED - Traffic Signals - Gov	Replacement of incandescent traffic & pedestrian signals with LED signals	$90	per signal
			LED Lamps - SCI	Purchase and installation of an energy efficient, general service, LED lamp in place of an incandescent lamp.	$20	NTE Cost of Lamp
			LED Lamps (Post 2020) - SCI	Purchase and installation of an energy efficient, general service, LED lamp in place of an incandescent lamp.	$20	NTE Cost of Lamp
			LED Reach in Refrigerator / Freezer Lights - SCI	Replacement of T8 or T12 linear fluorescent refrigerator, cooler or freezer lights lighting with LED lighting. Occupancy sensing controls are optional	$75	per door
			Street & Area Lighting (Customer Owned) - SCI	Replacement or new installation of Street and Area lighting equipment to a greater efficiency than existing or designed	$220	per fixture

Appendix D-4: Calculation Methods and Assumptions - Rebate Strategy

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Sector	Program	Sub-Program	Measure	Eligibility / Description	Rebate Strategy (All values are "up to" values)[1,2,3]	Qualifiers
SCI	C&I Energy Solutions for Business Program Small	Food Service	Refrigerators - Reach In - SCI	Purchase and installation of new ENERGY STAR, commercial, solid or glass door reach-in refrigerator that meets new Federal Standard dated March, 2017.	$100	per unit
			Freezers - Reach In - SCI	Purchase and installation of new ENERGY STAR, commercial, solid or glass door reach-in freezer that meets new Federal Standard, March 2017.	$100	per unit
			Ice Machines - SCI	Purchase and installation of new Energy Star rated ice machine to replace non Energy Star rated machine	$590 0-500 lbs $980 501-1000 lbs $1100 over 1000 lbs	per unit
			Refrigerated Case Cover - SCI	Purchase and installation of new case covers	$22	per linear foot
			Strip Curtains - SCI	Replacement or new installation of polyethylene strip curtains on walk in freezers and coolers covering the entire door fame. Eligible units must be open a least 2.5 hrs/day.	$3	per square-ft
			Anti Sweat Heater Controls - SCI	New installation of door heater controls on glass doors for refrigerators/coolers or freezers.	$60	per door
			Beverage Vending Machine - Controls - SCI	Retrofit controls for a non Energy Star rated vending machine	$115	per unit
			Beverage Vending Machine - Energy Star - SCI	Purchase and installation of new Energy Star rated vending machine	$130	per unit
			Combination Oven - SCI	Replacement or new installation of Energy Star qualified electric units.	$1,380	per unit
			Convection Oven - SCI	Replacement or new installation of Energy Star qualified electric units.	$700	per unit
			Steam Cookers - SCI	Replacement or new installation of Energy Star qualified electric units with 3-6 pans. A qualifying steam cooker must meet a minimum cooking efficiency of 50 percent and meet idle energy rates specified by pan capacity.	$250 - 3 pan $375 - 4 pan $500 - 5 pan $600 - 6 pan	per unit
			Fryers - SCI	Replacement or new installation of Energy Star qualified electric units.	$325	per unit
			Griddles - SCI	Replacement or new installation of Energy Star qualified electric units.	$500	per unit
			Hot Food Holding Cabinet - SCI	Replacement or new installation of full, three quarter and half sized ENERGY STAR qualified units with idle energy rate of 0.04 kW/CF.	$500 - full size $375 - 3/4 size $225 - 1/2 size	per unit

Appendix D-4: Calculation Methods and Assumptions - Rebate Strategy

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Sector	Program	Sub-Program	Measure	Eligibility / Description	Rebate Strategy (All values are "up to" values)[1,2,3]	Qualifiers
SCI	C&I Energy Solutions for Business Program Small	Appliances and Electronics - SCI	Refrigerator Recycling - SCI	Removal of an existing inefficient unit generally older than 10 years from service prior to end of useful life thru recycling	$75	per unit
			Freezer Recycling - SCI	Removal of an existing inefficient unit generally older than 10 years from service prior to end of useful life thru recycling	$75	per unit
			Room Air Conditioner Recycling - SCI	Removal of an existing inefficient room air conditioner from service, prior to its natural end of life (early retirement).	$38	per unit
			Clothes Washer - Level 1 - SCI	Purchase and installation of an Energy Star or CEE Tier 1, clothes washer per Federal Standard March 2015	$50	per unit
			Clothes Washer - Level 2 - SCI	Purchase and installation of an CEE Tier 2 clothes washer per Federal Standard March 2015	$75	per unit
			Clothes Washer - Level 3 - SCI	Purchase and installation of an CEE Tier 3 clothes washer per Federal Standard March 2015	$100	per unit
			Clothes Dryer (Elec w Moisture Sensor) - SCI	Purchase and installation of an Energy Star rated Clothes Dryer with moisture sensor	$75	per unit
			Clothes Dryer (Elec Heat Pump) - SCI	Purchase and installation of an Energy Star rated heat pump clothes dryer	$600	per unit
			Refrigerators - Level 1 - SCI	Purchase and installation of a new unit meeting CEE Tier 1 as proposed Sept. 15, 2014.	$75	per unit
			Refrigerators - Level 2 - SCI	Purchase and installation of a new unit meeting CEE Tier 2 as proposed Sept. 15, 2014.	$100	per unit
			Refrigerators - Level 3 - SCI	Purchase and installation of a new unit meeting CEE Tier 3 as proposed Sept. 15, 2014.	$150	per unit
			Water Heater - Heat Pump - SCI	Replacement of existing electric storage tank type units with heat pump type unit, EF>2.0	$700	per unit
			Water Heater - Solar - SCI	Replacement of existing electric storage tank type units w/ an Energy Star rated Solar w/ EF >= 1.8 for electric backup	$700	per unit
			Freezers - SCI	Purchase and installation of a new unit meeting either Energy Star or greater efficiency level	$40	per unit
			Pre-Rinse Sprayers - SCI	Replacement of existing sprayer with new unit that use 1.6 GPM or less, on/off squeeze lever, and cleaning of performance of at least 26 seconds. Electric water heating only.	$55	per unit
			Uninterruptible Power Supply - SCI	Replacement or new installation of a UPS (less than 12 kW) that exceeds the minimum average efficiency standard as determined by Table 1 o the Energy Star UPS standard. Table 2 of the standard shall be used in calculating the loading of the UPS.	$220	per kW
			Monitors - SCI	Purchase of Energy Star rated monitor	$15	per unit
			Computers - SCI	Purchase and installation of an Energy Star rated unit	$15	per unit
			Imaging - SCI	Purchase of Energy Star rated imaging equipment including but not limited to: scanners, copier, printers, fax machines and multi-function machines.	$30	per unit

Appendix D-4: Calculation Methods and Assumptions - Rebate Strategy

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Sector	Program	Sub-Program	Measure	Eligibility / Description	Rebate Strategy (All values are "up to" values)[1,2,3]	Qualifiers
SCI	C&I Energy Solutions for Business Program Small	Agricultural	Automatic Milker Takeoffs - SCI	Purchase and installation of a new automatic milker takeoffs to replace pre-existing manual takeoffs on dairy milking vacuum pump systems.	$975	per unit
			Dairy Scroll Compresors - SCI	Purchase and installation of a new scroll compressor to replace an existing reciprocating compressor or to be installed in a new construction application.	$650	per unit
			High Efficiency Ventilation Fans - SCI	Purchase and installation of a new high efficiency ventilation fans in retrofit applications where standard efficiency ventilation fans are replaced	$640	per unit
			High Volume LowSpeed Fans - SCI	Purchase and installation of High Volume Low Speed (HVLS) fans to replace conventional circulating fans. HVLS fans are a minimum of 16 feet long in diameter and move more cubic feet of air per watt than conventional circulating fans.	$2,080	per unit
			Livestock Waterer - SCI	Purchase and installation of an energy efficient livestock waterer that is thermostatically controlled and has a minimum of two inches of factory-installed insulation.	$350	per unit
			VFD on Dairy Vacuum Pumps - SCI	Purchase and installation of VFD and controls on dairy vacuum pumps, or the purchase of dairy vacuum pumps with variable speed capability. Pre-existing pumps with VSD's are not eligible for this measure.	$1,500	per unit
			Heat Reclaimers - SCI	Purchase and installation of heat reclaimer used in conjunction with an electric hot water tank system. The equipment installed must be one of the following pre-approved brands or equivalent: Century-Therm, Pre-Heater, Heat Bank, Sunset, Superheater, or Therma-Stor.	$975	per unit
			Low Pressure Irrigation System - SCI	Purchase and installation of low pressure irrigation system that reduces the irrigation pumping system pressure by at least 50% over a standard system.	$0.10 per kWh saved.	
		Custom - SCI	Custom Retrocommissioning - SCI	Adjust Electrical, Electric Mechanical, & Control System set points to improve system performance to existing building conditions and use, including the implementation of energy savings measures identified through building operations training.	$0.10 per kWh saved.	
			Custom - Process Improvement - SCI	All process improvements which result in electric energy savings. Replacement or retrofit of existing equipment or process changes or enhancements that result in the more efficiency use of electrical energy.	$0.10 per kWh saved.	
			Custom - HVAC & Chillers - SCI	Purchase and installation of new high-efficiency HVAC or electric water chilling package in place of standard efficiency equipment.	$0.10 per kWh saved.	
			Custom - Data Centers - SCI	Replacement or retrofit of existing data center equipment including, but not limited to: high efficiency server and storage devices, high efficiency computer room air conditioning (CRAC) and HVAC equipment, server virtualization, high efficiency power supplies, high efficiency dehumidification systems, economizers, airflow management and controls that improve systems cooling, and UPS efficiency upgrades.	$0.10 per kWh saved.	
			Custom - Compressed Air - SCI	Replacement or retrofit of existing air compressor systems, including but no limited to: new compressors, air dryers, or increased storage capacity. Other efficiency measures such as: leak repair, controls, high efficiency nozzles, piping enhancements, and no loss drains are also eligible.	$0.10 per kWh saved.	
			Custom - VFDs < 10HP - SCI	Purchase and installation of a new VFD for an existing motor (less than 10 hp) driving fans, pumps and other suitable applications.	$130	per hp
			Custom - VFDs > 10 HP - SCI	Purchase and installation of a new VFD for an existing motor (greater than 10 hp) driving fans, pumps and other suitable applications.	$100	per hp
			Custom-Motors - Three Phase - SCI	Purchase and installation of a new premium efficiency motor in lieu of rewinding an existing motor.	$35	per hp
			Custom - Refrigeration - SCI	The eligible measures are generally related to the application of retrofit measures on small commercial walk-in refrigeration and coolers, including but not limited to: high efficiency fan motors, evaporator fan controllers, floating head pressure controls, evaporator coil defrost controls and variable speed compressor motors.	$0.10 per kWh saved.	

Appendix D-4: Calculation Methods and Assumptions - Rebate Strategy

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Sector	Program	Sub-Program	Measure	Eligibility / Description	Rebate Strategy (All values are "up to" values)[1,2,3]	Qualifiers
SCI	C&I Energy Solutions for Business Program Small	Custom Buildings - SCI	Custom - Building Improvements - SCI	Retrofit of existing building shell, electrical & electric mechanical retrofits to greater efficiency components and processes, including but not limite to wall and ceiling insulation, windows, reduction of conditioned cubic feet (CF) with the square feet (SF) of floor space remaining the same, reduction in window size w/ improved R value.	$0.10 per kWh saved.	
		EE Kits - SCI	Energy Efficiency Measures - SCI	Opt In Kit with energy efficiency measures that include but are not limited to: CFLs, LEDs, Night Lights etc. The kit is mailed at the customers request.	NA	
			Energy Efficiency Measures - (Post 2020) - SCI	Opt In Kit with energy efficiency measures that include but are not limited to: CFLs, LEDs, Night Lights etc. The kit is mailed at the customers request.	NA	
		Multifamily	ApRplc Refrigerators/Freezers - SCI	Removal of an existing refrigerator/freezer and replacement with an energy efficiency unit of the same size and type.	NA	
			ApRplc HVAC - SCI	Removal of an HVAC unit and replacement with an energy efficiency unit of the same size and type.	100% of the replacement cost of the appliance	
			ApRplc Water Heater - SCI	Removal of an existing electric hot water heater and replacement with an energy efficiency unit of the same size and type.	100% of the replacement cost of the appliance	
			Audit - MF - SCI	Provides an audit with the direct installation of qualified energy efficiency measures. Only applicable to multi-family residence that is served on commercial rate tariff.	Audit - Up to $500 for the cost of the audit direct install measures, plus up to 100% of the replacement cost of the appliance	
		Audits - SCI	Audit - SCI	Comprehensive Energy Audit for commercial/industrial facilities or manufacturing processes recommending installation of efficient equipment, building shell/envelop improvments, manufacturing process changes, building operating changes, or other energy efficiency improvements. Audit must meet minimum audit requirements for buildings or for process equipment.	$0.10 per kWh saved towards cost of audit	Based on implementing measures recommended in the audit and NTE 75% of the audit cost or $10,000 (whichever is less).
			Audits w Direct Install - SCI	Provides an audit with the direct installation (DI) of qualified energy efficiency measures.	80% of the cost of the DI measuers NTE $10,000	
			Behavioral - SCI	Reports containing energy usage comparisons, recommendations and education emphasizing key points, general conservation tips and information on tools and resources supporting implementation of measures and efficiencies behaviors that reduces consumption of energy and demand.	NA	

Appendix D-4: Calculation Methods and Assumptions - Rebate Strategy

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Sector	Program	Sub-Program	Measure	Eligibility / Description	Rebate Strategy (All values are "up to" values)[1,2,3]	Qualifiers
LCI	C&I Energy Solutions for Business Program Large	HVAC - LCI	Air Conditioning - Level 1 <=5.4 Tn - LCI	Replacement of Single Package or Split System central units prior to end of life w/ Energy Star qualifying units w/ SEER ratings > or = 16 or 13 EER. Includes variable flow (VRF) systems.	$200	per ton
			Air Conditioning - Level 2 <=5.4 Tn - LCI	Replacement of Single Package or Split System central units prior to end of life w/ Energy Star qualifying units w/ SEER ratings > or = 18 or 13 EER. Includes variable flow (VRF) systems.	$300	per ton
			Chiller - Water Cld w Full Load - Level 1 - LCI	Replacement or new installation of electric chiller w/efficiency exceeding baselines in IECC, 2009, Table 503.2.3(7). VFD retrofits of existing existing chiller is NOT included in this measure.	$45	per ton
			Air Conditioning - Level 1 >5.4 < 20 Tn - LCI	Replacement of a Single Package or Split System central units prior to end of life with unit exceeding IECC 2012 Includes variable flow (VRF) systems	$150	per ton
			Air Conditioning - Level 1 >=20 Tn - LCI	Replacement of a Single Package or Split System central units prior to end of life with unit exceeding IECC 2012 Includes variable flow (VRF)	$120	per ton
			Heat Pump - Level 1 <=5.4 Tn - LCI	Replacement of Single System or Split Package central unit prior to end of life or a new system w/ Energy Star qualifying units w/ SEER ratings > or = 16 or 13 EER or 9 HSPF. Includes variable refrigerant flow (VRF) systems	$200	per ton
			Heat Pump - Level 2 <=5.4 Tn - LCI	Replacement of Single Package or Split System central units prior to end of life or a new system w/ Energy Star qualifying units w/ SEER ratings > or = 18 or 13 EER or 10 HSPF. Includes variable refrigerant flow (VRF) systems.	$300	per ton
			Heat Pumps - Level 1 >5.4 Tn - LCI	Replacement of a Single Package or Split System central units prior to end of life with unit exceeding IECC 2012, Includes variable flow (VRF) systems.	$150	per ton
			Heat Pumps - Water & GeoT - ES Tier 3 - LCI	Replacement or new installation of Ground & Water Source Heat Pumps < 135kBtuH, meeting CEE Tier 3 of >=17.1 EER Cool and >=3.6 COP Heating. The following retrofit scenarios are eligible: • Ground source heat pumps for existing or new non-residential HVAC applications • Groundwater source heat pumps for existing or new non-residential HVAC applications • Water source heat pumps for existing or new non-residential HVAC applications	$300	per ton
			Ductless Mini-Split HP - Level 3- LCI	Purchase and installation of a new or replacement of Energy Star unit >=10 HSPF, variable refrigerant flow type.	$300	per ton
			PTAC - LCI	Replacement or new installation of Energy Star units >= 16 SEER	$150	per ton
			PTHP - LCI	Replacement or new installation of Energy Star units >= 8.2 HSPF	$150	per ton

Appendix D-4: Calculation Methods and Assumptions - Rebate Strategy

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Sector	**Program**	**Sub-Program**	**Measure**	**Eligibility / Description**	**Rebate Strategy (All values are "up to" values)[1,2,3]**	**Qualifiers**
LCI	C&I Energy Solutions for Business Program Large	Lighting - LCI	CFL Fixtures - LCI	Purchase and installation of an energy efficient lighting fixture wired for exclusive use with pin-based (including the GU-24 base) compact fluorescent lamp(s) that is installed in an interior or exterior residential setting.	$20	per fixture
			CFL Lamps Speciality - LCI	Purchase and installation of energy efficient, specialty, compact fluorescent bulb (CFL)in place of an incandescent specialty bulb.	$5	NTE Cost of Lamp
			CFL Lamps - LCI	Purchase and installation of energy efficient, general service, compact fluorescent light bulb (CFL) in place of an incandescent bulb.	$3	NTE Cost of Lamp
			CFL Lamps (Post 2020)- LCI	Purchase and installation of energy efficient, general service, compact fluorescent light bulb (CFL) in place of an incandescent bulb.	$3	NTE Cost of Lamp
			Lighting Controls (Daylight & Occupancy) - LCI	Purchase and installation of new lighting controls, including but not limited to: daylight On/Off & dimming, occupancy sensors (wall plate, remote & fixture mounted), time clocks and switching controls.	$0.10 per kWh saved	
			Linear Fluorscent T5 - LCI	Replacement or new installation of linear fluorescent lighting equipment to T5, or a higher efficiency than existing or designed	$0.10 per kWh saved	
			Linear Fluorscent T8 - LCI	Replacement of existing T8 lamps with high performance T8 lamps, or higher efficiency than existing or designed.	$0.10 per kWh saved	
			LED Linear - LCI	Replacement or new installation of linear LED lighting equipment to a higher efficiency than existing or designed	$0.10 per kWh saved	
			LED Channel Signage - LCI	Replacement, retrofit or new installation of channel letter signs w/ LED technology.	$3	per linear foot
			Exit Signs - LCI	Replacement of incandescent or fluorescent exit signs w/ LED type exit sign or photoluminscent type	$23	per sign
			LED Fixtures External - LCI	Replacement or new installation of a lighting fixture wired for exclusive use with LED lamps is installed in an exterior setting.	$55	per fixture
			LED Fixtures Internal - LCI	Replacement or new installation of a lighting fixture wired for exclusive use with LED lamps is installed in an interior setting.	$55	per fixture
			LED Lamps - LCI	Purchase and installation of energy efficient, general service, LED lamp in place of an incandescent lamp.	$20	NTE Cost of Lamp
			LED Lamps 2020 - LCI	Purchase and installation of energy efficient, general service, LED lamp in place of an incandescent lamp.	$20	NTE Cost of Lamp
			Street & Area Lighting (Customer Owned) - LCI	Replacement or new installation of Street and Area lighting equipment to a greater efficiency than existing or designed	$220	per fixture

Appendix D-4: Calculation Methods and Assumptions - Rebate Strategy

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Sector	Program	Sub-Program	Measure	Eligibility / Description	Rebate Strategy (All values are "up to" values)[1,2,3]	Qualifiers
LCI	C&I Energy Solutions for Business Program Large	Custom - LCI	Custom - Process Improvement - LCI	All process improvements which result in electric energy savings. Replacement or retrofit of existing equipment or process changes or enhancements that result in the more efficiency use of electrical energy.	$0.10 per kWh saved.	
			Custom - HVAC & Chillers - LCI	Purchase and installation of new high-efficiency HVAC or electric water chilling package in place of standard efficiency equipment.	$0.10 per kWh saved.	
			Custom - Data Centers - LCI	Replacement or retrofit of existing data center equipment including, but not limited to: high efficiency server and storage devices, high efficiency computer room air conditioning (CRAC) and HVAC equipment, server virtualization, high efficiency power supplies, high efficiency dehumidification systems, economizers, airflow management and controls that improve systems cooling, and UPS efficiency upgrades.	$0.10 per kWh saved.	
			Custom - Compressed Air - LCI	Replacement or retrofit of existing air compressor systems, including but no limited to: new compressors, air dryers, or increased storage capacity. Other efficiency measures such as: leak repair, controls, high efficiency nozzles, piping enhancements, and no loss drains are also eligible.	$0.10 per kWh saved.	
			Custom - VFDs < 10HP - LCI	Purchase and installation of a new VFD for an existing motor (less than 10 hp) driving fans, pumps and other suitable applications.	$130	per hp
			Custom - VFDs > 10 HP - LCI	Purchase and installation of a new VFD for an existing motor (greater than 10 hp) driving fans, pumps and other suitable applications.	$100	per hp
			Custom-Motors - Three Phase - LCI	Purchase and installation of a new premium efficiency motor in lieu of rewinding an existing motor.	$35	per hp
			Custom - Refrigeration - LCI	The eligible measures are generally related to the application of retrofit measures on small commercial walk-in refrigeration and coolers, includin but not limited to: high efficiency fan motors, evaporator fan controllers, floating head pressure controls, evaporator coil defrost controls and variable speed compressor motors.	$0.10 per kWh saved.	
		Custom Buildings - LCI	Custom Retrocommissioning - LCI	Adjust Electrical, Electric Mechanical, & Control System set points to improve system performance to existing building conditions and use, including the implementation of energy savings measures identified through building operations training.	$0.10 per kWh saved.	
			Custom - Building Improvements - LCI	Retrofit of existing building shell, electrical & electric mechanical retrofits to greater efficiency components and processes, including but not limite to wall and ceiling insulation, windows, reduction of conditioned cubic feet (CF) with square feet (SF) of floor space remaining the same, reduction in window size w/ improved R value.	$0.10 per kWh saved.	
		Audits - LCI	Audit - LCI	Comprehensive Energy Audit for commercial/industrial facilities or manufacturing processes recommending installation of efficient equipment, building shell/envelop improvments, manufacturing process changes, building operating changes, or other energy efficiency improvements. Audit must meet minimum audit requirements for buildings or for process equipment.	$0.10 per kWh saved towards cost of audit	Based on implementing measures recommended in the audit and NTE 75% of the audit cost or $10,000 (whichever is less).

Appendix D-4: Calculation Methods and Assumptions - Rebate Strategy

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Sector	Program	Sub-Program	Measure	Eligibility / Description	Rebate Strategy (All values are "up to" values)[1,2,3]	Qualifiers
G/E/NP	Governmental & Institutional Tariff Program	HVAC - Gov't	Room Air Conditioner - Level 2 - Govt	Purchase and installation of an Energy Star V4.0 room air conditioner, Tier 2, CEER>=10.2	$100	per unit
			Air Conditioning - Level 1 <=5.4 Tn - Govt	Replacement of Single Package or Split System central units prior to end of life w/ Energy Star qualifying units w/ SEER ratings > or = 16 or 13 EER. Includes variable flow (VRF) systems.	$200	per ton
			Air Conditioning - Level 2 <=5.4 Tn - Govt	Replacement of Single Package or Split System central units prior to end of life w/ Energy Star qualifying units w/ SEER ratings > or = 18 or 13 EER. Includes variable flow (VRF) systems.	$300	per ton
			Air Conditioning - Level 1 >5.4 < 20 Tn - Govt	Replacement of a Single Package or Split System central units prior to end of life with unit exceeding IECC 2012 Includes variable flow (VRF)	$150	per ton
			Air Conditioning - Level 1 >=20 Tn - Govt	Replacement of a Single Package or Split System central unit prior to end of life with unit exceeding IECC 2012 Includes variable flow (VRF) systems	$120	per ton
			Chiller - Water Cld w Full Load - Level 1 - Govt	Replacement or new installation of electric chiller w/efficiency exceeding baselines in IECC, 2009, Table 503.2.3(7). VFD retrofits of existing existing chiller not included in this measure.	$45	per ton
			Heat Pump - Level 1 <=5.4 Tn - Govt	Replacement of Single Package or Split System central unit prior to end of life or a new system w/ Energy Star qualifying units w/ SEER ratings > or = 16 or 13 EER or 9 HSPF. Includes variable refrigerant flow (VRF) systems	$200	per ton
			Heat Pump - Level 2 <=5.4 Tn - Govt	Replacement of Single Package or Split System central units prior to end of life or a new system w/ Energy Star qualifying units w/ SEER ratings > or = 18 or 13 EER or 10 HSPF. Includes variable refrigerant flow (VRF) systems.	$300	per ton
			Heat Pumps - Level 1 >5.4 Tn - Govt	Replacement of a Single Package or Split System central unit prior to end of life with unit exceeding IECC 2012, Includes variable flow (VRF) systems.	$150	per ton
			Heat Pumps - Water & GeoT - ES Tier 3 - Govt	Replacement or new installation of Ground & Water Source Heat Pumps < 135kBtuH, meeting CEE Tier 3 of >=17.1 EER Cool and >=3.6 COP Heating. The following retrofit scenarios are eligible: • Ground source heat pumps for existing or new non-residential HVAC applications • Groundwater source heat pumps for existing or new non-residential HVAC applications • Water source heat pumps for existing or new non-residential HVAC applications	$300	per ton
			Ductless Mini-Split HP – Level 3 - Govt	Purchase and installation of a new or replacement of Energy Star unit >=10 HSPF, variable refrigerant flow type.	$300	per ton
			PTAC - Govt	Replacement or new installation of Energy Star units >= 16 SEER	$150	per ton
			PTHP - Govt	Replacement or new installation of Energy Star units >= 8.2 HSPF	$150	per ton

Appendix D-4: Calculation Methods and Assumptions - Rebate Strategy

Penelec

Sector	Program	Sub-Program	Measure	Eligibility / Description	Rebate Strategy (All values are "up to" values)[1,2,3]	Qualifiers
G/E/NP	Governmental & Institutional Tariff Program	Lighting - Gov't	CFL Fixtures - Govt	Purchase and installation of energy efficient lighting fixture wired for exclusive use with pin-based (including the GU-24 base) compact fluoresce lamp(s) that is installed in an interior or exterior residential setting.	$20	per fixture
			CFL Lamps Speciality - Govt	Purchase and installation of energy efficient, specialty, compact fluorescent bulb (CFL)in place of an incandescent specialty bulb.	$5	NTE Cost of Lamp
			CFL Lamps - Govt	Purchase and installation of energy efficient, general service, compact fluorescent light bulb (CFL) in place of an incandescent bulb.	$3	NTE Cost of Lamp
			CFL Lamps (Post 2020)- Govt	Purchase and installation of energy efficient, general service, compact fluorescent light bulb (CFL) in place of an incandescent bulb.	$3	NTE Cost of Lamp
			Lighting Controls (Daylight & Occupancy) - Govt	Purchase and installation of new lighting controls, including but not limited to: daylight On/Off & dimming, occupancy sensors (wall plate, remote & fixture mounted), time clocks and switching controls.	$0.10 per kWh saved	
			Linear Fluorscent T5 - Govt	Replacement or new installation of linear fluorescent lighting equipment to T5, or a higher efficiency than existing or designed	$0.10 per kWh saved	
			Linear Fluorscent T8 - Govt	Replacement of existing T8 lamps with high performance T8 lamps, or higher efficiency than existing or designed.	$0.10 per kWh saved	
			LED Linear - Govt	Replacement or new installation of linear LED lighting equipment to a higher efficiency than existing or designed	$0.10 per kWh saved	
			LED Channel Signage - Govt	Replacement, retrofit or new installation of channel letter signs w/ LED technology.	$3	per linear foot
			Exit Signs - Govt	Replacement of incandescent or fluorescent exit signs w/ LED type exit sign or photoluminscent type	$23	per sign
			LED Fixtures External - Govt	Replacement or new installation of a lighting fixture wired for exclusive use with LED lamps is installed in an exterior setting.	$55	per fixture
			LED Fixtures Internal - Govt	Replacement or new installation of a lighting fixture wired for exclusive use with LED lamps is installed in an interior setting.	$55	per fixture
			LED Lamps - Govt	Purchase and installation of energy efficient general service, LED lamp in place of an incandescent lamp.	$20	NTE Cost of Lamp
			LED Lamps 2020 - Govt	Purchase and installation of an energy efficient, general service, LED lamp in place of an incandescent lamp.	$20	NTE Cost of Lamp
			LED Reach in Refrigerator / Freezer Lights - Govt	Replacement of T8 or T12 linear fluorescent refrigerator, cooler or freezer lights lighting with LED lighting. Occupancy sensing controls are optional	$75	per door
			Street & Area Lighting (Customer Owned) - Govt	Replacement or new installation of Street and Area lighting equipment to a greater efficiency than existing or designed	$220	per fixture

Appendix D-4: Calculation Methods and Assumptions - Rebate Strategy

Penelec

Sector	Program	Sub-Program	Measure	Eligibility / Description	Rebate Strategy (All values are "up to" values)[1,2,3]	Qualifiers
G/E/NP	Governmental & Institutional Tariff Program	Appliances - Gov't	Refrigerator Recycling - Govt	Removal of an existing inefficient unit generally older than 10 years from service prior to end of useful life thru recycling	$75	per unit
			Freezer Recycling - Govt	Removal of an existing inefficient unit generally older than 10 years from service prior to end of useful life thru recycling	$75	per unit
			Room Air Conditioner Recycling - Govt	Removal of an existing inefficient room air conditioner from service, prior to its natural end of life (early retirement).	$38	per unit
			Dehumidifiers Recycling - Govt	Removal of an existing inefficient dehumidifier from service, prior to its natural end of life (early retirement).	$38	per unit
			Clothes Washer - Level 1 - Govt	Purchase and installation of an Energy Star or CEE Tier 1, clothes washer per Federal Standard March 2015	$50	per unit
			Clothes Washer - Level 2 - Govt	Purchase and installation of an CEE Tier 2 clothes washer per Federal Standard effective March 2015	$75	per unit
			Clothes Washer - Level 3 - Govt	Purchase and installation of an CEE Tier 3 clothes washer per Federal Standard effective March 2015	$100	per unit
			Clothes Dryer (Elec w Moisture Sensor) - Govt	Purchase and installation of an Energy Star rated Clothes Dryer with moisture sensor	$75	per unit
			Clothes Dryer (Elec Heat Pump) - Govt	Purchase and installation of an Energy Star rated heat pump clothes dryer	$600	per unit
			Refrigerators - Level 1 - Govt	Purchase and installation of a new unit meeting CEE Tier 1 as proposed Sept. 15, 2014.	$75	per unit
			Refrigerators - Level 2 - Govt	Purchase and installation of a new unit meeting CEE Tier 2 as proposed Sept. 15, 2014.	$100	per unit
			Refrigerators - Level 3 - Govt	Purchase and installation of a new unit meeting CEE Tier 3 as proposed Sept. 15, 2014.	$150	per unit
			Water Heater - Heat Pump - Govt	Replacement of existing electric storage tank type units with heat pump type unit, EF>2.0	$700	per unit
			Water Heater - Solar - Govt	Replacement of existing electric storage tank type units w/ an Energy Star rated Solar w/ EF >= 1.8 for electric backup	$700	per unit
			Freezers - Govt	Purchase and installation of a new unit meeting either Energy Star or greater efficiency level	$40	per unit
			Pre-Rinse Sprayers - Govt	Replacement of existing sprayer with new unit that use 1.6 GPM or less, on/off squeeze lever, and cleanable of performance of at least 26 seconds. Electric water heating only.	$55	per unit
		Street Lighting - Gov't	Street & Area Lighting (Tariff / Utility Owned) - Gov	Replacement or new installation of Street and Area lighting equipment to a greater efficiency than existing or designed	$220	per fixture
			Street & Area Lighting (Tariff / Customer Owned) - Gov	Replacement or new installation of Street and Area lighting equipment to a greater efficiency than existing or designed	$220	per fixture
		Audits - Gov't	Audit - Gov	Comprehensive Energy Audit for government recommending installation of efficient equipment, building shell/envelope improvements, changes to building operating systems, or other related energy effiency improvements. Audit must meet minimum audit requirements for buildings.	$0.10 per kWh saved towards cost of audit	Based on implementing measures recommended in the audit and NTE 75% of the audit cost or $10,000 (whichever is less).
			Audits w Direct Install - Gov	Provides an audit with the direct installation (DI) of qualified energy efficiency measures.	80% of the cost of the DI measuers NTE $10,000	

1. The Company may provide tiered rebate amounts within the incentive ranges listed above for qualifying products that have varying characteristics (e.g. size, features, etc.).
2. The Company may provide prescriptive rebates in lieu of the performance incentives listed above for certain measures and/or applications where the prescriptive value is within the equivalent performance incentive range.
3. The Company may establish incentive tiers and/or incentive block structures within the performance incentives listed above for different end use technology or sub-measures (lighting, HVAC, etc).

Appendix E:
PUC Tables 1 - 7

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Table 1A: Portfolio Summary of Lifetime Costs and Benefits of Energy Efficiency Measures

Portfolio	Discount Rate	Total Discounted Lifetime Costs ($000)	Total Discounted Lifetime Benefits ($000)	Total Discounted Net[1] Lifetime Benefits ($000)	Cost-Benefit Ratio (TRC)
Residential *(exclusive of Low-Income)*[2]	6.77%	$51,656	$61,669	$10,013	1.2
Residential Low-Income	6.77%	$17,576	$7,805	-$9,771	0.4
Commercial/Industrial Small	6.77%	$45,576	$60,683	$15,106	1.3
Commercial/Industrial Large	6.77%	$49,344	$65,281	$15,937	1.3
Governmental/Educational/Non-Profit	6.77%	$2,679	$3,333	$654	1.2
Total	**6.77%**	**$166,831**	**$198,770**	**$31,939**	**1.2**

[1] "Net" refers to the arithmetic difference between the previous two columns. It does not refer to net verified savings

[2] Excludes Behavioral DR

Table 1B: Portfolio Summary of Lifetime Costs and Benefits of Demand Response Measures

Portfolio	Discount Rate	Total Discounted Lifetime Costs ($000)	Total Discounted Lifetime Benefits ($000)	Total Discounted Net[1] Lifetime Benefits ($000)	Cost-Benefit Ratio (TRC)
Residential *(exclusive of Low-Income)*	6.77%	$872	$930	$59	1.1
Residential Low-Income	6.77%				
Commercial/Industrial Small	6.77%				
Commercial/Industrial Large	6.77%				
Governmental/Educational/Non-Profit	6.77%				
Total	**6.77%**	**$872**	**$930**	**$59**	**1.1**

[1] "Net" refers to the arithmetic difference between the previous two columns. It does not refer to net verified savings

Table 2: Summary of Portfolio Energy and Demand Savings

MWh and kW Saved for Consumption Reductions[2]	Program Year 2016		Program Year 2017		Program Year 2018		Program Year 2019		Program Year 2020		Total	
	MWh Saved	kW Saved	MWh Saved	kW Saved	MWh Saved	kW Saved	MWh Saved	kW Saved	MWh Saved	kW Saved	MWh Saved	kW Saved
Baseline[1]	14,399,289		14,399,289		14,399,289		14,399,289		14,399,289		14,399,289	
Residential Sector (*exclusive of Low-Income*) **– Cumulative Projected Portfolio Savings**	60,830	0	122,174	2,500	183,884	2,500	243,681	2,500	266,804	2,500	266,804	2,500
Residential Low-Income Sector – Cumulative Projected Portfolio Savings	7,243	0	14,569	0	22,060	0	29,552	0	33,819	0	33,819	0
Commercial/Industrial Small Sector – Cumulative Projected Portfolio Savings	20,066	0	42,691	0	69,709	0	96,699	0	123,050	0	123,050	0
Commercial/Industrial Large Sector – Cumulative Net Weather Adjusted Savings	20,209	0	46,599	0	78,072	0	109,642	0	140,695	0	140,695	0
Governmental/Educational/Non-Profit Sector – Cumulative Projected Portfolio Savings [4]	4,368	0	8,885	0	13,668	0	18,546	0	23,374	0	23,374	0
EE&C Plan Total – Cumulative Projected Savings [5]	112,716	0	234,918	2,500	367,393	2,500	498,121	2,500	587,742	2,500	587,742	2,500
EE&C Plan Total - Percentage of Target to be Met	20%	0%	41%	0%	65%	0%	88%	0%	104%	0%	104%	0%
Estimated Phase II Carryover Savings	0	0	0	0	0	0	0	0	0	0	0	0
Total Cumulative Projected Savings Phase III + Estimated Phase II Carryover Savings	**112,716**	**0**	**234,918**	**2,500**	**367,393**	**2,500**	**498,121**	**2,500**	**587,742**	**2,500**	**587,742**	**2,500**
EE&C Plan Total – Percentage of Target to be Met[3]	20%		41%		65%		88%		104%		104%	
Percent Reduction from Baseline	0.8%		1.6%		2.6%		3.5%		4.1%		4.1%	
Commission-Identified Goal[1]											566,168	0
Percent Savings due to Portfolio Above or Below Commission-Identified Goal											4%	

[1] As defined in the June 11, 2015 Implementation Order.

[2] kW Saved includes savings from DR programs only, not coincident peak savings from EE programs. See Appendix C-2 and Appendix E Table 7 for coincident peak savings from EE programs.

[3] The June 11, 2015 Implementation Order directed that at least 15% of an EDC's target amount in each program year.

[4] Includes particpation allocated to G/E/NP from Small/Large C&I Sector

Projected savings represent total incremental annual savings

Table 3: Summary of Portfolio Costs

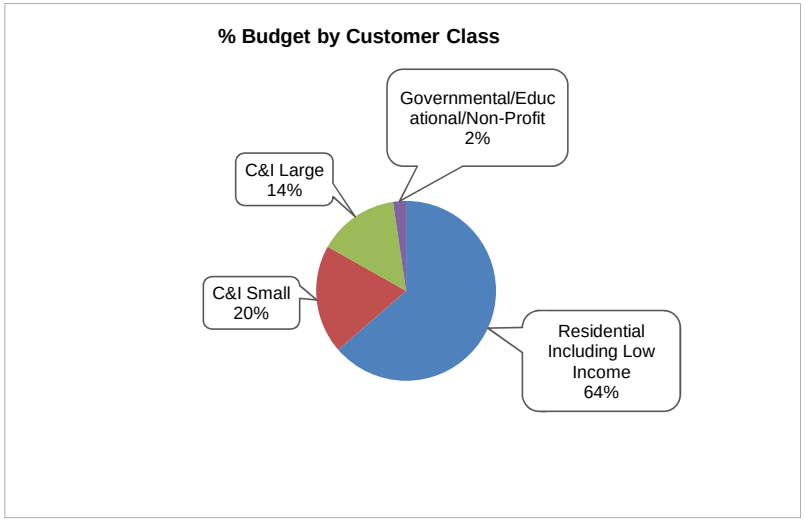
	Program Year 2016		Program Year 2017		Program Year 2018		Program Year 2019		Program Year 2020	
	($)	%	($)	%	($)	%	($)	%	($)	%
Residential Portfolio Annual Budget	$11,189,236	50%	$11,346,157	49%	$11,734,964	47%	$11,984,260	48%	$6,811,496	35%
Residential Low-Income Portfolio Annual Budget	$4,218,888	19%	$4,032,597	17%	$4,140,442	17%	$4,164,242	17%	$3,466,681	18%
Commercial/Industrial Small Portfolio Annual Budget	$4,119,558	18%	$4,124,082	18%	$4,713,399	19%	$4,718,894	19%	$4,777,139	25%
Commercial/Industrial Large Portfolio Annual Budget	$2,571,535	11%	$3,108,177	13%	$3,636,332	15%	$3,658,429	15%	$3,693,842	19%
Governmental/Educational/Non-Profit Portfolio Annual Budget	$464,377	2%	$481,961	2%	$560,950	2%	$577,401	2%	$576,746	3%
Total Portfolio Annual Budget	**$22,563,594**	**100%**	**$23,092,974**	**100%**	**$24,786,087**	**100%**	**$25,103,226**	**100%**	**$19,325,904**	**100%**

Table 4: Program Summaries

	Program Name	Program Market	Program Two-Sentence Summary	Program Years Operated	Lifetime MWh Savings	kW Savings	Percentage of Portfolio and Total Lifetime MWh Savings (% / %)	
Residential Portfolio Programs (*exclusive of Low-Income)*	Appliance Turn In Program	Residential	This program provides rebates to consumers for turning in working appliances.	5	275,107	32,491	21.6%	5.0%
	Energy Efficient Products Program	Residential	This program promotes the purchase of energy efficient products, such as HVAC equipment, appliances, lighting, home electronics and other home products, through consumer rebates or incentives and support to retailers and manufacturers.	5	499,175	71,013	39.3%	9.1%
	Energy Efficient Homes Program	Residential	This program provides customers with energy efficiency education and awareness along with measures and incentives to improve energy efficiency of homes. Additionally the program provides an opportunity for residential customers with smart meters to reduce usage during Act 129 demand response events.	5	496,799	69,931	39.1%	9.1%
			Totals for Residential Sector		**1,271,081**	**173,435**	**100%**	**23.2%**
Residential Low-Income Sector Programs	Low Income Energy Efficiency Program	Residential Low - Income	This program provides energy efficiency education and awareness along with basic to comprehensive whole house energy efficiency measures to qualified low-income customers, including appliance replacement and rebates for turning in working appliances or the purchase of energy efficient products.	5	161,841	22,764	100%	3.0%
			Totals for Low-Income Sector		**161,841**	**22,764**	**100%**	**3.0%**
Commercial/Industrial Small Portfolio Programs	C&I Energy Solutions for Business Program - Small	Small C&I	This program provides measures and financial incentives (prescriptive & performance) to small commercial and industrial customers, including small government and institutional customers, to purchase qualifying high efficiency measures, recycle inefficient appliances, retrofit specialized processes and applications to higher efficiency processes and applications, complete qualifying high efficiency building shell or system improvements or to complete an audit with qualifying audit installations or recommendations.	5	1,855,190	227,959	100.0%	33.9%
			Totals for C&I Small Sector		**1,855,190**	**227,959**	**100%**	**33.9%**
Commercial/Industrial Large Portfolio Programs	C&I Energy Solutions for Business Program - Large	Large C&I	This program provides financial incentives (prescriptive & performance) to large commercial and industrial customers, including large government and institutional customers, to implement qualifying high efficiency measures or retrofit specialized processes and applications to higher efficiency processes and applications, complete qualifying high efficiency building shell or system improvements or to complete an audit with qualifying audit recommendations.	5	2,091,455	227,851	100%	38.2%
			Totals for C&I Large Sector		**2,091,455**	**227,851**	**100%**	**38.2%**
Governmental/Educational/Non-Profit Portfolio Programs	Governmental & Institutional Tariff Program	Tariff Gov't Non Profit and Streetlighting	This program provides financial incentives (prescriptive or performance) to the Government, Education and Non-profit tariff customers to purchase or install qualifying high efficiency measures and recycle inefficient appliances.	5	93,957	5,700	100%	1.7%
			Totals for G/E/NP Sector		**93,957**	**5,700**	**100%**	**1.7%**
			Total for Plan		**5,473,524**			**100%**

Table 5: Budget and Parity Analysis Summary

Customer Class	Budget	% of Total EDC Budget	% of Total Budget Excluding Other Expenditures	% of Total Customer Revenue	Difference
Residential	$53,066,113	46.2%	46.2%		
Residential Low Income	$20,022,850	17.4%	17.4%		
Residential Subtotal	$73,088,963	63.6%	63.6%	65.4%	1.7%
C&I Small	$22,453,073	19.5%	19.5%	24.8%	5.3%
C&I Large	$16,668,315	14.5%	14.5%	9.4%	-5.2%
C&I Subtotal	$39,121,388	34.1%	34.1%	34.2%	0.1%
Governmental/Educational/Non-Profit	$2,661,435	2.3%	2.3%	0.4%	-1.9%
Governmental/Educational/Non-Profit Subtotal	$2,661,435	2.3%	2.3%	0.4%	-1.9%
Residential/C&I/Governmental/ Educational/Non-Profit Subtotal	$114,871,786	100%	100%		
Other Expenditures	0	0%			
Other Expenditures Subtotal	$0	0%			
EDC TOTAL	**$114,871,786**	**100%**			



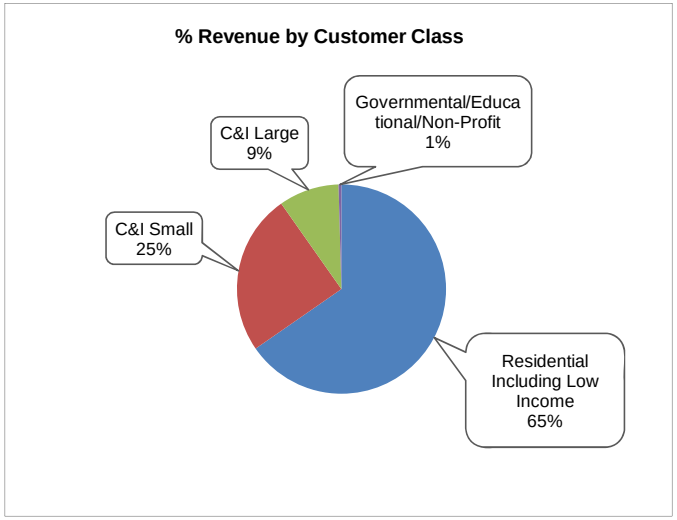


Table 6A: Portfolio-Specific Assignment of EE&C Costs

Residential Portfolio			
EE&C Program	**Cost Elements ($)**		**Totals**
	Program Administration	*Incentives*	
Appliance Turn In Program	$3,665,616	$1,657,488	$5,323,103
Energy Efficient Products Program	$5,157,154	$14,219,356	$19,376,510
Energy Efficient Homes Program	$12,224,136	$12,387,954	$24,612,090
Totals	**$21,046,906**	**$28,264,797**	**$49,311,703**

Residential Low Income Portfolio			
EE&C Program	**Cost Elements ($)**		**Totals**
	Program Administration	*Incentives*	
Low Income Energy Efficiency Program	$17,025,027	$312,567	$17,337,594
Totals	**$17,025,027**	**$312,567**	**$17,337,594**

Commercial/Industrial - Small			
EE&C Program	**Cost Elements ($)**		**Totals**
	Program Administration	*Incentives*	
C&I Energy Solutions for Business Program - Small	$7,420,891	$13,746,880	$21,167,772
Totals	**$7,420,891**	**$13,746,880**	**$21,167,772**

Commercial/Industrial - Large			
EE&C Program	**Cost Elements ($)**		**Totals**
	Program Administration	*Incentives*	
C&I Energy Solutions for Business Program - Large	$4,579,987	$11,321,088	$15,901,075
Totals	**$4,579,987**	**$11,321,088**	**$15,901,075**

Governmental/Educational/Non-Profit			
EE&C Program	**Cost Elements ($)**		**Totals**
	Program Administration	*Incentives*	
Governmental & Institutional Tariff Program	$607,496	$1,955,387	$2,562,883
Totals	**$607,496**	**$1,955,387**	**$2,562,883**

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

Common Cost Element	Total Cost ($)	Basis for Cost Allocation	Class Cost Allocation ($)			
			Residential (Including Low-Income)	Commercial/ Industrial -- Small	Commercial/ Industrial -- Large	Governmental/Educational/Non-Profit
Portfolio Administration	$6,753,597	Allocated to Sub-Programs based on program implementation and marketing costs, and summed to the program and sector level.	$5,118,837	$974,701	$585,262	$74,797
Other	$1,837,163	Allocated to Sub-Programs based on program implementation and marketing costs, and summed to the program and sector level.	$1,320,830	$310,600	$181,978	$23,755
Totals	**$8,590,760**		**$6,439,666**	**$1,285,301**	**$767,240**	**$98,552**

Table 6C: Summary of Customer Sector EE&C Costs

Customer Class	Total Sector Portfolio-specific Costs	Total Common Costs	Total of All Costs
Residential (Including Low-Income)	$66,649,297	$6,439,666	$73,088,963
Commercial/Industrial -- Small	$21,167,772	$1,285,301	$22,453,073
Commercial/Industrial -- Large	$15,901,075	$767,240	$16,668,315
Governmental/Educational/Non-Profit	$2,562,883	$98,552	$2,661,435
Totals	**$106,281,026**	**$8,590,760**	**$114,871,786**

Table 7A-Gross: TRC Benefits Table

Residential (exclusive of Low-Income)	TRC Benefits By Program Per Year ($000) [1]									
			TRC	Program	Capacity	Energy	Load Reductions in kW		MWh Saved	
					Annual	Annual				
Program	Program Year	TRC	Costs ($000)	Benefits ($000)			Annual	Lifetime	Annual	Lifetime
Appliance Turn In Program	*1*		*$885*	$352	$85	*$267*	860		6,925	
	2		*$856*	$696	$181	*$514*	1,721		13,851	
	3		*$855*	$1,030	$286	*$744*	2,581		20,776	
	4		*$858*	$1,379	$380	*$998*	3,441		27,702	
	5		*$886*	$1,749	$464	*$1,284*	4,302		34,627	
Program Total		***2.7***	***$3,822***	***$10,210***	***$2,540***	***$7,671***		**32,491**		**275,107**
Energy Efficient Products Program	*1*		*$5,316*	$1,754	$271	*$937*	2,798		24,141	
	2		*$5,995*	$3,509	$594	*$1,824*	5,702		48,778	
	3		*$6,646*	$5,028	$924	*$2,566*	8,698		73,743	
	4		*$6,874*	$5,809	$1,103	*$3,023*	11,521		97,067	
	5		*$3,908*	$5,153	$1,024	*$2,735*	12,383		101,778	
Program Total		***1.1***	***$25,415***	***$27,495***	***$5,533***	***$14,552***		**71,013**		**499,175**
Energy Efficient Homes Program	*1*		*$5,911*	$1,711	$342	*$1,143*	3,483		29,763	
	2		*$5,744*	$3,653	$999	*$2,203*	9,473		59,546	
	3		*$5,809*	$4,750	$1,294	*$2,779*	15,481		89,365	
	4		*$5,797*	$5,860	$1,528	*$3,441*	21,447		118,912	
	5		*$2,785*	$5,959	$1,527	*$3,539*	25,302		130,399	
Program Total		***1.1***	***$23,291***	***$24,894***	***$6,150***	***$14,912***		**69,931**		**496,799**
Total		***1.2***	**$52,528**	**$62,599**	**$14,222**	**$37,135**		**173,435**		**1,271,081**

1. Benefit and saving values are total for all measures in effect in the year shown

Table 7B-Gross: TRC Benefits Table

Residential Low-Income	TRC Benefits By Program Per Year ($000) [1]									
					Capacity	Energy	Load Reductions in kW		MWh Saved	
			TRC	Program	Annual	Annual				
Program	Program Year	TRC	Costs ($000)	Benefits ($000)			Annual	Lifetime	Annual	Lifetime
Low Income Energy Efficiency Program	*1*		*$4,188*	$428	$83	*$278*	845		7,243	
	2		*$4,001*	$856	$181	*$539*	1,717		14,569	
	3		*$4,108*	$1,204	$270	*$721*	2,644		22,060	
	4		*$4,132*	$1,506	$333	*$886*	3,571		29,552	
	5		*$3,434*	$1,526	$330	*$887*	4,127		33,819	
Program Total		***0.4***	***$17,576***	***$7,805***	***$1,774***	***$4,643***		**22,764**		**161,841**
Total		***0.4***	**$17,576**	**$7,805**	**$1,774**	**$4,643**		**22,764**		**161,841**

1. Benefit and saving values are total for all measures in effect in the year shown

Table 7C-Gross: TRC Benefits Table

Commercial/Industrial - Small	TRC Benefits By Program Per Year ($000) [1]									
					Capacity	Energy	Load Reductions in kW		MWh Saved	
					Annual	Annual				
Program	Program Year	TRC	TRC Costs ($000)	Program Benefits ($000)			Annual	Lifetime	Annual	Lifetime
C&I Energy Solutions for Business Program - Small	*1*		*$9,180*	$1,268	$265	*$880*	2,749		22,754	
	2		*$9,743*	$2,542	$584	*$1,718*	5,861		48,067	
	3		*$10,955*	$4,001	$988	*$2,658*	9,520		77,773	
	4		*$10,978*	$5,450	$1,356	*$3,660*	13,209		107,450	
	5		*$11,231*	$6,885	$1,714	*$4,755*	16,853		136,489	
Program Total		***1.3***	***$45,576***	***$60,683***	***$13,752***	***$44,417***		**227,959**		**1,855,190**
Total		***1.3***	**$45,576**	**$60,683**	**$13,752**	**$44,417**		**227,959**		**1,855,190**

1. Benefit and saving values are total for all measures in effect in the year shown

Table 7D-Gross: TRC Benefits Table

Commercial/Industrial - Large	TRC Benefits By Program Per Year ($000) [1]									
			TRC	Program	Capacity		Energy	Load Reductions in kW		MWh Saved	
					Annual		Annual				
Program	Program Year	TRC	Costs ($000)	Benefits ($000)	Generation	Trans/Dist		Annual	Lifetime	Annual	Lifetime
C&I Energy Solutions for Business Program - Large	*1*		*$8,330*	$1,088	$220		*$804*	2,283		20,783	
	2		*$10,665*	$2,443	$540		*$1,775*	5,230		47,747	
	3		*$12,498*	$4,005	$949		*$2,863*	8,740		79,794	
	4		*$12,549*	$5,586	$1,325		*$4,029*	12,268		111,939	
	5		*$12,673*	$7,195	$1,688		*$5,309*	15,722		143,566	
Program Total		***1.3***	***$49,344***	***$65,281***	***$13,924***		***$50,282***		**227,851**		**2,091,455**
Total		***1.3***	**$49,344**	**$65,281**	**$13,924**		**$50,282**		**227,851**		**2,091,455**

1. Benefit and saving values are total for all measures in effect in the year shown

Table 7E-Gross: TRC Benefits Table

Governmental/Educational/Non-Profit	TRC Benefits By Program Per Year ($000) [1]									
			TRC	Program	Capacity		Energy	Load Reductions in kW		MWh Saved	
					Annual		Annual				
Program	Program Year	TRC	Costs ($000)	Benefits ($000)	Generation	Trans/Dist		Annual	Lifetime	Annual	Lifetime
Governmental & Institutional Tariff Program	*1*		*$504*	$69	$8		*$43*	87		1,106	
	2		*$546*	$144	$19		*$88*	184		2,360	
	3		*$674*	$230	$33		*$139*	302		3,881	
	4		*$678*	$319	$43		*$196*	421		5,498	
	5		*$670*	$399	$51		*$256*	521		7,063	
Program Total		***1.2***	***$2,679***	***$3,333***	***$370***		***$2,302***		**5,700**		**93,957**
Total		***1.2***	**$2,679**	**$3,333**	**$370**		**$2,302**		**5,700**		**93,957**

1. Benefit and saving values are total for all measures in effect in the year shown

Table 7A-Net: TRC Benefits Table

Residential (exclusive of Low-Income)	**TRC Benefits By Program Per Year** ($000) [1]									
			TRC	Program	Capacity	Energy	Load Reductions in kW		MWh Saved	
					Annual	Annual				
Program	Program Year	TRC	Costs ($000)	Benefits ($000)			Annual	Lifetime	Annual	Lifetime
Appliance Turn In Program	*1*		*$885*	$222	$53	*$168*	542		4,363	
	2		*$856*	$438	$114	*$324*	1,084		8,726	
	3		*$855*	$649	$180	*$469*	1,626		13,089	
	4		*$858*	$869	$240	*$629*	2,168		17,452	
	5		*$886*	$1,102	$293	*$809*	2,710		21,815	
Program Total		***1.7***	***$3,822***	***$6,433***	***$1,600***	***$4,833***		**20,469**		**173,317**
Energy Efficient Products Program	*1*		*$3,390*	$886	$139	*$471*	1,430		12,120	
	2		*$3,760*	$1,776	$304	*$918*	2,921		24,520	
	3		*$4,133*	$2,549	$475	*$1,293*	4,468		37,117	
	4		*$4,281*	$2,954	$570	*$1,526*	5,928		48,896	
	5		*$2,616*	$2,642	$536	*$1,388*	6,408		51,371	
Program Total		***0.9***	***$16,067***	***$14,320***	***$2,953***	***$7,514***		**38,305**		**258,819**
Energy Efficient Homes Program	*1*		*$5,535*	$1,560	$314	*$1,050*	3,195		27,347	
	2		*$5,366*	$3,354	$938	*$2,024*	8,898		54,711	
	3		*$5,425*	$4,307	$1,198	*$2,521*	14,615		82,107	
	4		*$5,422*	$5,274	$1,401	*$3,098*	20,295		109,266	
	5		*$2,748*	$5,362	$1,401	*$3,185*	24,140		120,712	
Program Total		***1.0***	***$21,889***	***$22,359***	***$5,618***	***$13,417***		**63,697**		**446,163**
Total		***1.0***	**$41,778**	**$43,112**	**$10,170**	**$25,763**		**122,472**		**878,299**

1. Benefit and saving values are total for all measures in effect in the year shown

Table 7B-Net: TRC Benefits Table

Residential Low-Income	TRC Benefits By Program Per Year ($000) [1]									
			TRC	Program	Capacity	Energy	Load Reductions in kW		MWh Saved	
					Annual	Annual				
Program	Program Year	TRC	Costs ($000)	Benefits ($000)			Annual	Lifetime	Annual	Lifetime
Low Income Energy Efficiency Program	*1*		*$4,179*	$410	$79	*$265*	804		6,910	
	2		*$3,992*	$821	$172	*$514*	1,636		13,902	
	3		*$4,098*	$1,153	$256	*$685*	2,523		21,057	
	4		*$4,122*	$1,438	$316	*$840*	3,410		28,214	
	5		*$3,424*	$1,442	$310	*$830*	3,929		32,179	
Program Total		***0.4***	***$17,533***	***$7,298***	***$1,656***	***$4,290***		**21,243**		**149,077**
Total		***0.4***	**$17,533**	**$7,298**	**$1,656**	**$4,290**		**21,243**		**149,077**

1. Benefit and saving values are total for all measures in effect in the year shown

Table 7C-Net: TRC Benefits Table

Commercial/Industrial - Small	TRC Benefits By Program Per Year ($000) [1]									
			TRC	Program	Capacity	Energy	Load Reductions in kW		MWh Saved	
					Annual	Annual				
Program	Program Year	TRC	Costs ($000)	Benefits ($000)			Annual	Lifetime	Annual	Lifetime
C&I Energy Solutions for Business Program - Small	*1*		*$8,024*	$1,102	$225	*$762*	2,340		19,701	
	2		*$8,478*	$2,202	$495	*$1,483*	4,986		41,574	
	3		*$9,522*	$3,454	$835	*$2,287*	8,085		67,125	
	4		*$9,543*	$4,694	$1,146	*$3,144*	11,212		92,649	
	5		*$9,779*	$5,910	$1,445	*$4,078*	14,294		117,570	
Program Total		***1.3***	***$39,683***	***$51,654***	***$11,514***	***$37,797***		**189,696**		**1,572,300**
Total		***1.3***	**$39,683**	**$51,654**	**$11,514**	**$37,797**		**189,696**		**1,572,300**

1. Benefit and saving values are total for all measures in effect in the year shown

Table 7D-Net: TRC Benefits Table

Commercial/Industrial - Large	TRC Benefits By Program Per Year ($000) [1]									
			TRC	Program	Capacity		Energy	Load Reductions in kW		MWh Saved	
					Annual		Annual				
Program	Program Year	TRC	Costs ($000)	Benefits ($000)	Generation	Trans/Dist		Annual	Lifetime	Annual	Lifetime
C&I Energy Solutions for Business Program - Large	*1*		*$6,900*	$903	$180		*$663*	1,867		17,146	
	2		*$8,782*	$2,024	$441		*$1,463*	4,268		39,342	
	3		*$10,321*	$3,317	$775		*$2,361*	7,138		65,801	
	4		*$10,367*	$4,622	$1,082		*$3,322*	10,023		92,343	
	5		*$10,477*	$5,936	$1,376		*$4,373*	12,837		118,391	
Program Total		***1.3***	***$40,757***	***$53,504***	***$11,286***		***$41,207***		**184,186**		**1,711,061**
Total		***1.3***	**$40,757**	**$53,504**	**$11,286**		**$41,207**		**184,186**		**1,711,061**

1. Benefit and saving values are total for all measures in effect in the year shown

Table 7E-Net: TRC Benefits Table

Governmental/Educational/Non-Profit	TRC Benefits By Program Per Year ($000) [1]									
			TRC	Program	Capacity		Energy	Load Reductions in kW		MWh Saved	
					Annual		Annual				
Program	Program Year	TRC	Costs ($000)	Benefits ($000)	Generation	Trans/Dist		Annual	Lifetime	Annual	Lifetime
Governmental & Institutional Tariff Program	*1*		*$467*	$62	$7		*$39*	72		993	
	2		*$504*	$130	$16		*$79*	154		2,124	
	3		*$623*	$207	$27		*$126*	255		3,500	
	4		*$627*	$289	$37		*$177*	356		4,967	
	5		*$619*	$362	$44		*$232*	441		6,386	
Program Total		***1.2***	***$2,476***	***$3,039***	***$320***		***$2,099***		**4,957**		**85,784**
Total		***1.2***	**$2,476**	**$3,039**	**$320**		**$2,099**		**4,957**		**85,784**

1. Benefit and saving values are total for all measures in effect in the year shown

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Appendix F:
Phase III EE&C Rider

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RIDER xxxx
PHASE III ENERGY EFFICIENCY AND CONSERVATION CHARGE RIDER

An Energy Efficiency and Conservation ("EEC") Charge ("Phase III EE&C-C") shall be applied to each Billing Unit during a billing month to Customers served under this Tariff, with the exception of those served under Borderline Service rates. Billing Units are defined as follows:

Residential, Non-profit, Commercial, and Street Lighting Customer Classes:	Per kWh
Industrial Customer Class:	Per kW PLC

Residential, Non-profit, Commercial, and Street Lighting Customer Class rates will be calculated to the nearest one-thousandth of a cent per kWh. Industrial Customer Class rates will be calculated to the nearest one-hundredth of a dollar per kW PLC. The Phase III EEC-C rates shall be calculated separately for each Customer Class according to the provisions of this rider.

For service rendered June 1, 2016 through May 31, 2017 the Phase III EE&C-C rates billed by customer class are as follows:

Residential Customer Class (Rate RS):

0.322 cents per kWh.

Non-profit Customer Class (Rate GS – Volunteer Fire Company, and Non-Profit Ambulance Service, Rescue Squad and Senior Center Service Rate and Rate H):

1.526 cents per kWh.

Commercial Customer Class (Rate GS-Small, Rate GS-Medium and Outdoor Lighting Service):

0.055 cents per kWh.

Street Lighting Customer Class (High Pressure Sodium Vapor Street Lighting Service, Municipal Street Lighting Service, and LED Lighting Service):

(0.168) cents per kWh.

Industrial Customer Class (Rate GS-Large, Rate GP, and Rate LP):

$ 0.31 per kW PLC.

RIDERS

Rider xxxx(continued)

The Phase III EE&C-C rates by Customer Class shall be calculated in accordance with the formula set forth below:

$$EEC\text{-}C = [(EEC_C - E - E^2) / S] \text{ X } [1 / (1 - T)]$$

$$EEC_C = EEC_{Exp1} + EEC_{Exp2} + EEC_{Exp3}$$

Where:

EEC-C = The charge in cents or dollar per Billing Unit by customer class as defined by this rider applied to each Billing Unit for the Rate Schedules identified in this rider.

EEC_C = The Energy Efficiency and Conservation Costs by customer class incurred and projected to be incurred by the Company for the Phase III EEC-C Computational Period calculated in accordance with the formula shown above.

EEC_{Exp1} = Costs incurred and projected to be incurred associated with the customer class specific EEC Programs as approved by the Commission for the Phase III EEC-C Computational Period by customer class. These costs also include an allocated portion of any indirect costs incurred associated with all the Company's Phase III EEC Programs for the Phase III EEC-C Computational Period.

EEC_{Exp2} = An allocated portion of incremental administrative start-up costs incurred by the Company through May 31, 2016 in connection with the development of the Company's Phase III EEC Programs in response to the Commission's orders and guidance at Docket Nos. M-2012-2289411 and M-2008-2069887. These costs to design, create, and obtain Commission approval for the Company's Phase III EEC Programs include, but are not limited to, consultant costs, legal fees, and other direct and indirect costs associated with the development and implementation of the Company's Phase III EEC Programs in compliance with Commission directives.

RIDERS

Rider xxxx (continued)

EEC_{Exp3} = An allocated portion of the costs the Company incurs and projects to incur to fund the Commission's statewide evaluator contract which shall be excluded in the final determination of the Act 129 limitation on the Company's Phase III EEC Programs costs.

E = The cumulative over or under-collection of EEC costs by Customer Class that results from the billing of the Phase III EEC-C rates (an over-collection is denoted by a positive E and an under-collection by a negative E).

E^2 = Phase II EE&C final reconciliation over or under-collection of EEC costs by customer class that results from the billing of the Phase II EEC-C rates and remaining Phase II EEC costs incurred after March 31, 2016 (an over-collection is denoted by a positive E and an under-collection by a negative E).

S = The Company's projected Billing Units (kWh sales delivered to all Customers in the specific Customer Class or kW PLC demand for the Industrial Customer Class).

T = The Pennsylvania gross receipts tax rate in effect during the billing month expressed in decimal form as reflected in the Company's base rates.

All capitalized terms not otherwise defined in this rider shall have the definitions specified in the Definitions of Terms section of this tariff. For the purpose of this rider, the following additional definitions shall apply:

RIDERS

Rider xxxx (continued)

1. EE&C-C Phase III Computational Period – The 12-month period from June 1 through May 31.

2. Phase III EE&C-C Initial Reconciliation Period – June 1, 2016 through March 31, 2017 for the initial period of the rider,

3. Phase III EE&C-C Reconciliation Period – The 12-month period ending March 31 each year thereafter, except for the Initial Reconciliation Period, for the duration of this rider.

4. Peak Load Contribution ("PLC") – A Customer's contribution to the Company's transmission zone normalized summer peak load, as estimated by the Company in accordance with PJM rules and requirements.

5. Phase II EE&C – The energy efficiency plan that terminates on May 31, 2016. Revenues and EE&C Costs will continue to accrue past the termination date. A final reconciliation of the remaining balance will be included in the June 1, 2017 Phase III EE&C-C rate calculation.

The Company will submit to the Commission by May 1 of each year starting May 1, 2017: (1) a reconciliation between actual Phase III EE&C-C revenues and actual Phase III EE&C-C costs for the Phase III EE&C-C Reconciliation Period, except for the Phase III EE&C-C Initial Reconciliation Period, as adjusted for removal of gross receipts tax; (2) any adjustment to the forecasted Phase III EE&C-C revenues anticipated to be billed during April through May of that year, as adjusted for removal of gross receipts tax; (3) the Phase III EE&C program cost estimate for the forthcoming Phase III EE&C-C Computational Period by customer class; and (4) Phase II EE&C final reconciliation over or under-collection of EEC costs by customer class that results from the billing of the Phase II EEC-C rates and remaining Phase II EEC costs incurred after March 31, 2016. There shall also be a final reconciliation of amounts to be collected or refunded after May 31, 2021.

Upon determination that the Phase III EE&C-C rates, if left unchanged, would result in material over or under-collection of all recoverable costs incurred or expected to be incurred by customer class, the Company may request that the Commission approve one or more interim revisions to the Phase III EE&C-C rates to become effective thirty (30) days from the date of filing, unless otherwise ordered by the Commission.

The Company shall file an annual report of collections under this rider by June 30th of each year starting June 30, 2017 until the conclusion of this rider.

At the conclusion of the duration of this rider, the Company is authorized to recover or refund any remaining amounts not reconciled at that time under such mechanism as approved by the Commission.

Application of the Phase III EE&C-C rates shall be subject to annual review and audit by the Commission.