



*Met-Ed • Penelec • Penn Power • West Penn Power*

Metropolitan Edison Company

Docket No. M-2020-3020820

Pennsylvania Electric Company

Docket No. M-2020-3020821

Pennsylvania Power Company

Docket No. M-2020-3020822

West Penn Power Company

Docket No. M-2020-3020823

**Phase IV Energy Efficiency & Conservation Plan**

**(For the Period June 1, 2021, through May 31, 2026)**

**Revised ~~March 1, 2021~~ July 7, 2023**



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Program Year	Start Date	End Date
PY13	June 1, 2021	May 31, 2022
PY14	June 1, 2022	May 31, 2023
PY15	June 1, 2023	May 31, 2024
PY16	June 1, 2024	May 31, 2025
PY17	June 1, 2025	May 31, 2026

### Table of Acronyms

ACC	Avoided Cost Calculator
AEPS	Alternative Energy Portfolio Standard
AHU	Air Handling Unit
ASHRAE	American Society of Heating, Refrigerating, and Air Conditioning Engineers
BOC	Building Operations Certification
BPI	Building Professional Institute
BRA	Base Residual Auction
C&I	Commercial and Industrial
CBO	Community Based Organizations
CEE	Consortium for Energy Efficiency
CIAC	Contribution in Aid of Construction
CSP	Conservation Service Provider
DCED	Department of Community and Economic Development
DR	Demand Response
DER	Distributed Energy Resources
DSM	Demand Side Management
EDC	Electric Distribution Company
EE	Energy Efficiency
EE&C	Energy Efficiency and Conservation
EFLH	Equivalent Full Load Hours
EM&V	Evaluation, Measurement, and Verification
EPA	Environmental Protection Agency
EPRI	Electric Power Research Institute
FCM	Forward Capacity Market
FERC	Federal Energy Regulatory Commission
FPIG	Federal Poverty Income Guideline
FTP	File Transfer Protocol
GNI	Government, Non-Profit, Institutional
GRT	Gross Receipts Tax
HBA	Home Builder Associations
HER	Home Energy Report



HER	Home Energy Rater
HVAC	Heating, Ventilating, and Air Conditioning
IDER	Integrated Distributed Energy Resources
IMC	Incremental Measure Cost
IT	Information Technology
kW	Kilowatt
kWh	Kilowatt-hour
LCI	Large Commercial & Industrial
LED	Light-Emitting Diode
LI	Low-Income
LIURP	Low-Income Usage Reduction Program
M&V	Measurement and Verification
MPS	Market Potential Study
MW	Megawatt
MWh	Megawatt-hour
NGDC	Natural Gas Distribution Company
NPV	Net Present Value
NTG	Net-to-Gross
PA PUC	Pennsylvania Public Utility Commission
PHFA	Pennsylvania Housing Financing Agency
POS	Point of Sale
PDR	Peak Demand Reduction
PJM	Pennsylvania, Jersey, Maryland Power Pool
PLC	Peak Load Contribution
PUC	Public Utility Commission
QA/QC	Quality Assurance/Quality Control
RAD	Responsible Appliance Disposal
RCx	Retro-Commissioning
RESNET	Residential Energy Services Network
RFP	Request for Proposal
RTU	Roof Top Unit
SAP	System Applications and Products, is FirstEnergy's Enterprise Resource Planning (ERP) software
SCI	Small Commercial & Industrial
SWE	Statewide Evaluator
T&R	Tracking and Reporting
TRC	Total Resource Cost
TRM	Technical Reference Manual
VCx	Virtual Commissioning
XML	Extensible Markup Language

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## **1. OVERVIEW OF PLAN**

### ***Introduction***

FirstEnergy Corp. (“FirstEnergy”), through its Energy 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”) (collectively “Companies”), to meet statutory goals, achieve cost efficiencies and offer a consistent and effective set of EE&C programs to their customers. In accordance with Act 129 and the Commission’s Phase IV Implementation Order, issued on June 18, 2020 at Docket No. M-2020-3015228 (“Phase IV Implementation Order”), FirstEnergy developed this Energy Efficiency and Conservation Plan (“Phase IV Plan” or “EE&C Plan”) for the period June 1, 2021 through May 31, 2026 (“Phase IV Period”). As detailed below, the Companies’ Phase IV Plan is based on both the 2021 Pennsylvania Total Resource Cost (“PA TRC”) test and the 2021 Technical Reference Manual (“PA TRM”) and is designed to meet all requirements as set forth in the Phase IV Implementation Order.

### ***Historic Background***

On October 15, 2008, then Governor Rendell signed Act 129 of 2008, (“Act 129”)<sup>1</sup> 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 every EDC 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<sup>2</sup> (“Phase I”).

Act 129 also authorized the Commission to evaluate whether it was cost beneficial to continue the EE&C program beyond Phase I.<sup>3</sup> The Commission concluded in its August 3, 2012 Order at Docket Nos. M-2012-2289411 and M-2008-2069887 (“Phase II 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 for the period June 1, 2013 through May 31, 2016 (“Phase II Period”). The Companies submitted plans to comply with the 2012 Implementation Order, which were approved by the Commission (“Phase II Plans”).<sup>4</sup>

In accordance with Act 129, the Commission determined in its June 19, 2015 Order at Docket Nos. M-2014-2424864 (“Phase III Implementation Order”) that further energy efficiency and demand reduction programs would be cost effective and established Phase III

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<sup>1</sup> 66 Pa.C.S. §2806.1 *et seq.*

<sup>2</sup> 66 Pa.C.S. § 2806.1.

<sup>3</sup> 66 Pa.C.S. § 2806.1(c) (3).

<sup>4</sup> 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).

of the EE&C program, requiring EDCs to adopt and implement cost-effective plans to reduce energy consumption and demand throughout the Commonwealth for the period June 1, 2016 through May 31, 2021 (“Phase III Period”). The Companies submitted plans to comply with the Phase III Implementation Order, which were approved by the Commission and are currently being implemented (“Phase III Plans”).<sup>5</sup>

The Commission concluded in the Phase IV Implementation Order that additional energy efficiency programs would be cost effective and established Phase IV of the EE&C program, requiring EDCs to adopt and implement cost-effective plans to reduce energy consumption and demand throughout the Commonwealth. Pursuant to the Phase IV Implementation Order, the Companies submit this Phase IV 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 IV Plan, the EE&C Team set forth to develop a plan that meets all requirements as established in Act 129 and the Phase IV Implementation Order, including:

- Achieving the consumption reduction and coincident peak demand reduction targets within the allowable budgets;
- Achieving the consumption reduction target from the low-income sector from programs solely directed at low-income customers or low-income verified participants in multifamily housing programs;
- Meeting the budget requirement that at least 50% of EE&C Plan spending comes from incentives;
- Including at least one comprehensive program for residential and at least one comprehensive program for non-residential customer classes; and
- Offering a well-reasoned and balanced set of measures that are tailored to usage and to the potential for savings and reductions for each customer class.

*Description of the Plan and Strategy for Success:*

Keeping in mind these key objectives, the Phase IV Plan is generally an extension of the successful programs and measures included in the Companies’ Phase III Plan with the addition of new programs and measures, and revisions to some existing programs and measures. To meet the requirement that savings counted towards the 5.8% low-income savings target come from specific low-income programs or low-income verified participants in multifamily housing programs, the Phase IV Plan includes both a low-income program that specifically targets certain measures and services to this sector as well as multifamily offerings that will additionally serve low-income customers. The Phase IV Plan includes a broad portfolio of programs and measures, including a comprehensive program for both the

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<sup>5</sup> See Docket No. M-2015-2514767 (Met-Ed); Docket No. M-2015-2514768 (Penelec); Docket No. M-2015-2514769 (Penn Power); and Docket No. M-2015-2514772 (West Penn).

residential and the non-residential customer sectors. The Phase IV Plan incorporates both near-term and longer-term energy saving opportunities for all customers, including single and prescriptive measures, multiple prescriptive and custom measures, direct install, and comprehensive whole home/whole building solutions. Collectively, the proposed programs and subprograms across all sectors cover all the major energy-consuming devices in the home, building, or business, thus providing a broad portfolio of measures giving the opportunity for all customer classes to participate and benefit from one or more programs. Furthermore, the proposed programs promote and support comprehensive whole home/whole building/comprehensive solutions across all customer classes, targeting deeper savings and comprehensive retrofits.

The Phase IV Plan was developed based on experience gained through the completion of the Phase II Plans and the current implementation of the Phase III Plans, factoring in: (i) performance to date of not only the Companies' programs, but also the performance of similar programs of both affiliated and non-affiliated utilities; (ii) feedback and suggestions received from the Companies' energy efficiency consultant, vendors, and contractors; and (iii) input from stakeholders. The Phase IV Plan continues to rely on experienced outsourced Conservation Service Providers ("CSPs"), leverages prior experiences, and includes a mix of expanded and new measures or services that take advantage of leveraging opportunities, volume cost efficiencies, and a variety of delivery channels that will support successful and efficient program operations and customer participation.

The program designs presented in this Phase IV Plan are organized into the following customer sectors: (1) Residential; (2) Residential Low-Income; (2) Small Commercial and Industrial; and (4) Large Commercial and Industrial. The table below identifies the programs that are proposed in this Phase IV Plan for each of the customer sectors, and compares how these programs align with the programs in the Phase III Plan:

**Table 1: Existing & New Programs**

Phase III Program	Proposed Phase IV Program
<b>Residential Programs</b>	
Appliance Turn In Program	Energy Efficient Products Program
Energy Efficient Products Program	
Energy Efficient Homes Program	Energy Efficient Homes Program
Residential Demand Response Program	N/A
<b>Residential Low-Income Programs</b>	
Low Income Energy Efficiency Program	Low Income Energy Efficiency Program
<b>Small Commercial &amp; Industrial Programs</b>	
C&I Energy Solutions for Business Program - Small	C&I Energy Solutions for Business Program - Small
C&I Demand Response Program - Small	N/A
<b>Large Commercial &amp; Industrial Programs</b>	
C&I Energy Solutions for Business Program - Large	C&I Energy Solutions for Business Program - Large
C&I Demand Response Program - Large	N/A
<b>Governmental/Educational/Non-Profit Programs</b>	
Governmental & Institutional Tariff Program	N/A

**Residential Sector Programs** – Residential programs were designed to address both educational and initial cost barriers and to tap a variety of delivery channels and vendors to support customer engagement, education, and participation. The residential programs include direct or targeted programs that engage customers and serve as a portal for other program offerings because they serve a dual purpose of providing customers with energy efficiency education as well as information regarding other program services and opportunities upon which they can act. The residential programs incorporate strategies to change behaviors and include incentives to address the initial cost barrier to promote the participation of all residential customers. The programs provide opportunities for prescriptive equipment and direct install, so that customers who are unable or unwilling to undertake whole home/comprehensive solutions are still able to increase efficiency, and the programs also provide opportunities for customers interested in whole home/comprehensive solutions that encourage customers to consider a holistic approach to energy efficiency.

**Low-Income Customer Sub-Sector Programs** – Within the residential sector is a special sub-sector of low-income customers. The low-income customer program offerings outlined in this Phase IV 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 sub-sector to give households more control over their energy spending.

Like its Residential Sector program counterparts, the low-income customer sector program offerings are designed with a progression from general to specific in an effort to make EE&C

programs and services available to all low-income customers. The Companies will provide home energy efficiency kits, school education, and customized home energy reports that provide low-income customers with basic energy savings measures and/or energy efficiency education, recommendations, and information regarding other services upon which they can act. Additional low-income customer sector program offerings (e.g., appliance rebate and turn in, multifamily) will also be targeted to help identify new low-income customers, achieve additional energy savings opportunities, or promote energy efficiency in multifamily or other low-income homes. The Companies also plan to achieve additional new and incremental electric energy savings through the Weatherization subprogram as part of the delivery of the Companies' existing comprehensive 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 IV Plan enhances and accelerates the deployment of services to LIURP-eligible households by providing additional measures and services to achieve deeper savings in each visit or through serving additional homes. If deemed to be necessary to achieve their targets, the Companies will supplement the delivery system by adding additional subcontractors.

**Small and Large, Commercial & Industrial Sector Programs** – The Commercial and Industrial Programs were designed to provide customer engagement and education, incorporate energy controls and strategies to change behaviors, include incentives to address the initial cost barrier, and tap a variety of delivery channels and vendors that promote the participation of all customers. Commercial businesses and industrial customers are also addressed through programs that provide opportunities including prescriptive rebates, custom measures, building tune-up, and whole building/comprehensive solutions. The programs include specific opportunities that ensure access for small customers and provide opportunities for single or multiple prescriptive and/or custom measures, so that customers who are unable or unwilling to undertake whole building/comprehensive solutions are still able to increase efficiency. And the programs include opportunities that encourage customers to consider a holistic approach to Energy Efficiency for customers who are interested and able to participate in whole building/comprehensive solutions.

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

**Table 2: Program Summary Descriptions**

Proposed Phase IV Program	Program Description
<b>Residential Programs</b>	
Energy Efficient Products Program	The program provides financial incentives to residential customers and/or retailers, contractors, distributors or manufacturers to promote customers to purchase and install energy efficient products, such as EnergyStar qualified appliances, consumer electronics, and other energy efficient products. The program will also provide financial incentives to turn in and recycle inefficient appliances, and to promote customers to perform HVAC maintenance or to upgrade HVAC equipment to more efficient technology.
Energy Efficient Homes Program	This program promotes energy efficiency of customer homes through various measures that promote customer energy efficiency education, awareness and adoption of energy efficient behaviors and measures, including customized home energy reports, energy efficiency kits, school education, audits, direct install measures, and financial incentives for implementation of qualified energy efficiency measures in the home. The program also includes financial incentives for the construction of energy efficient new homes.
<b>Residential Low Income Programs</b>	
Low Income Energy Efficiency Program	This program provides customized energy efficiency education and awareness to promote energy efficient behaviors along with no-cost basic to comprehensive whole house energy efficiency measures, including appliance replacement, to qualified low-income customers. The program also promotes low-income customers to install other energy efficient products, such as EnergyStar qualified appliances, consumer electronics, and other energy efficient products, or to turn in and recycle inefficient appliances, through customer education and outreach, giveaways and enhanced financial incentives.
<b>Small Commercial &amp; Industrial Programs</b>	
C&I Energy Solutions for Business Program - Small	The Energy Solutions for Business Program provides financial incentives to small commercial and industrial customers, including government, institutional and multifamily customers, to purchase and install qualifying energy efficiency equipment, recycle inefficient appliances, upgrade less efficient equipment to more efficient end use technology, retrofit specialized equipment and processes, applications and end uses, complete qualifying high efficiency building shell or system improvements. The Program will also promote behavioral savings, adoption of energy saving technologies and efficient building operations through customer education and outreach, audits with direct install measures, building tune-up, energy management strategies, meter data analysis, or retrocommissioning or building operations training to achieve energy savings.
<b>Large Commercial &amp; Industrial Programs</b>	
C&I Energy Solutions for Business Program - Large	The Energy Solutions for Business Program provides financial incentives to large commercial and industrial customers, including government, institutional and multifamily customers, to purchase and install qualifying energy efficiency equipment, recycle inefficient appliances, upgrade less efficient equipment to more efficient end use technology, retrofit specialized equipment and processes, applications and end uses, complete qualifying high efficiency building shell or system improvements. The Program will also promote behavioral savings, adoption of energy saving technologies and efficient building operations through customer education and outreach, audits with direct install measures, building tune-up, energy management strategies, meter data analysis, or retrocommissioning or building operations training to achieve energy savings.

Table 3 below provides the delivery channels that are currently anticipated for the programs included in the Phase IV Plan. As programs are implemented, the Companies will consider and may pursue additional delivery channels to meet targets and/or to enhance the performance of a given program.



**Table 3: Program Delivery Channels**

Program	Sub-Program	Rebate	Kits	Up/Mid-Stream	Direct Install
<b>Residential Programs</b>					
Energy Efficient Products Program	Appliance Recycling	X			
	Appliance Rebate	X		X	
	Consumer Electronics			X	
	HVAC	X		X	
Energy Efficient Homes Program	Comprehensive Audits	X			X
	Behavioral				
	Multi Family - Res	X			X
	School Education		X		
	EE Kits		X		
	New Homes			X	
<b>Residential Low Income Programs</b>					
Low Income Energy Efficiency Program	Weatherization				X
	LI - Appliances	X			X
	LI - School Education		X		
	LI - EE Kits		X		
	LI - Behavioral				
	LI - Multifamily - Res				X
	LI - New Homes			X	
<b>Small Commercial &amp; Industrial Programs</b>					
C&I Energy Solutions for Business Program - Small	Multi Family - SCI	X			X
	Prescriptive - SCI	X		X	
	Prescriptive Other - SCI	X		X	
	Custom - SCI	X			
	Energy Management - SCI	X			X
<b>Large Commercial &amp; Industrial Programs</b>					
C&I Energy Solutions for Business Program - Large	Multi Family - LCI	X			X
	Prescriptive - LCI	X		X	
	Prescriptive Other - LCI	X		X	
	Custom - LCI	X			
	Energy Management - LCI	X			X

Like the Phase III Plan, the Phase IV Plan continues the use of incentive level ranges. Under this approach, the Companies have 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 that the Companies communicate changes with interested stakeholders. Based on these ranges, the Companies 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 Companies can increase incentives to enhance market response without missing potential opportunities while waiting for resolution through the regulatory process. This allows the Companies to quickly react to changing market conditions, thus, optimizing their efforts to cost-effectively achieve their energy savings goals.

Appendix B, PUC Table 7 lists the planned incentive level ranges associated with each of the measures included in the Phase IV 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 program operations, 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 IV Plan is \$124.3 million for Met-Ed, \$114.8 million for Penelec, \$33.3 million for Penn Power and \$117.8 million for West Penn as reported in Appendix B, PUC Table 4 and PUC Table 6. These costs will be recovered through the Companies' Phase IV EE&C-C Riders, which are summarized in Section 1.8 and are subject

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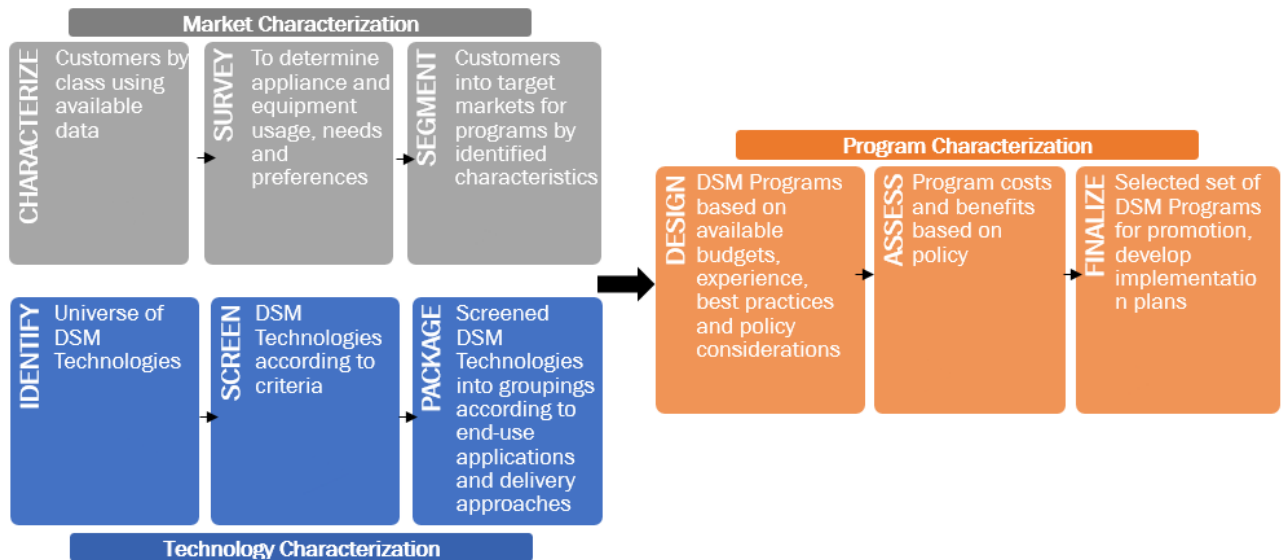
to Commission approval. The successful implementation of the Companies' Phase IV Plan is projected to be cost-effective at the portfolio level under the PA TRC test, with each Company having benefit-cost ratios greater than 1.0. Specifically, Met-Ed has a TRC ratio of 1.5, Penelec has a TRC ratio of 1.5, Penn Power has a TRC ratio of 1.3, and West Penn has a TRC ratio of 1.3. Additional details are provided in Appendix B, PUC Tables 1 and 13 for each Company. The Companies believe they have developed a successful strategy to achieve their Phase IV goals. This strategy includes the continued use of outsourced vendors with expertise in program implementation services, including managing program operations as well as marketing, customer enrollment, program and trade alley engagement, application and rebate processing, Evaluation, Measurement, and Verification (EM&V) and implementation of the tracking and reporting system. This network of contractors reports to a core team within the FirstEnergy Energy Efficiency group, who provides administration and oversight of this Phase IV Plan. Programs are closely monitored for performance and, if needed, adjustments are made to improve performance, including a shift of emphasis from lesser to higher performing programs and adjusting rebate levels based on market conditions and performance. This strategy was initially established during Phase I of Act 129 and has since continued and proven to be successful.

**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 IV Plan:

**Figure 1: FirstEnergy EE&C Plan Development Process**



When developing the Phase IV Plan, the EE&C Team reviewed the programs and measures included in the Companies’ Phase III Plan and other potential programs and measures that they identified through peer review and benchmarking of other utilities and affiliates, industry review, input from stakeholders, the Companies’ energy efficiency consultant, and vendors, and a review of both the PA TRM and the Market Potential Studies (“MPS”).<sup>6</sup> Potential programs and measures were assessed based on: (i) experience gained since the Phase III Plan was approved and implemented; (ii) participation results and costs from programs and measures offered in the Companies’ Phase III Plan; (iii) information related to the participation results and costs of programs and measures being offered by other Companies, other FirstEnergy affiliates and other utilities both within and outside of Pennsylvania; and (iv) input from stakeholders, vendors as well as the Companies’ energy efficiency consultant (collectively, “Assessment Input”). Based on this Assessment Input, the EE&C Team developed participation level estimates and corresponding program and measure savings and costs.

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

<sup>6</sup> Statewide Evaluator Pennsylvania Act 129 Phase IV Energy Efficiency and Peak Demand Reduction Market Potential Study dated February 28, 2020 and released via Secretarial Letter at Docket No. M-2020-3015229 on March 2, 2020, and Statewide Evaluator Act 129 Phase IV Demand Response Potential Study dated February 2020, released via Secretarial Letter at Docket No. M-2020-3015229 on March 2, 2020.

measure with the Companies' energy efficiency consultant and implementation team. This review included assessing the reasonableness of the projected results based on potential in the market, potential customer participation and savings, and estimated costs. Estimated program participation values were informed by program implementation experience through the Phase III Plan, the implementation of affiliate programs in other jurisdictions, the experiences of the Companies' energy efficiency consultant and vendors with other utility programs throughout the country, and the PA MPS. Potential program and measure savings were predominantly based upon the values and formulae included in the PA TRM, actual program and evaluation results to date, individual customer project results, and other states' TRMs that were established to support energy efficiency programs in those jurisdictions.

The Companies' approach to developing the Plan balanced and considered several key sources of information, including:

- Pennsylvania-specific information including the performance of the Companies' current programs, the PA MPS, the Statewide Evaluator (SWE) Database and the PA TRM;
- CSPs' expertise in delivering programs and program performance;
- Industry experience from market potential studies, the Companies' energy efficiency consultant, verification results, and TRMs from other states;
- External stakeholder and vendor experience and opinions captured in meetings and other discussions; and
- Customer attitudes and preferences based on program performance in Pennsylvania and other jurisdictions.

The Phase IV Plan adopts the Phase IV Implementation Order's assumptions on acquisition cost for the mandated reductions. The acquisition costs supported in the MPS as adopted by the Commission in setting targets dictate the budget available for incentives and administrative costs associated with plan administration, program implementation and marketing, program management, and reporting and evaluation. The Phase IV Plan incorporates these assumptions into its estimates of program participation, 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 IV Plan. To support the modeling effort, the Companies relied on the incentives and costs of various program elements based on both the Companies' experience with like programs and input from the Companies' EE&C consultant and vendors based on its industry experience throughout the country. Customer participation levels and other program/measure specific assumptions are set forth in Appendix B, PUC Tables 7 and 8, and Appendix D, Table D-2.

For purposes of cost effectiveness testing, the Companies' developed their avoided cost inputs based on the methodology prescribed by the Commission in the PA TRC Order<sup>7</sup> and utilized the SWE's avoided cost calculator. Cost effectiveness testing is more fully described in Section 8.

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<sup>7</sup> 2021 PA Total Resource Cost (TRC) Test, Docket No. M- M-2019-3006868 (Order entered December 19, 2019).

The Phase IV Plan is based on an assumption that the Commission will approve the plan in March 2021 to support CSP set-up, start-up, and implementation activities to ready programs for implementation as close to June 1, 2021 as possible. Based upon conditions as they exist today, the Companies’ Phase IV Plan is designed in a manner that will provide the Companies with the opportunity to achieve the goals within the spending caps established under Act 129 and the Phase IV Implementation Order.

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

The Companies’ Phase IV goals are shown in Table 4 below<sup>8</sup>:

**Table 4: Energy Savings Targets per Act 129**

EDC	Act 129 Mandated Reductions	
	MWh <sup>1</sup> (Five-Year)	MW <sup>1</sup> (Per Year)
Met-Ed	463,215	76
Penelec	437,676	80
Penn Power	128,909	20
West Penn	504,951	86

<sup>1</sup> 2020 Implementation Order at pg. 8

The Companies’ Phase IV goals are to be achieved within 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) <sup>1</sup>
Met-Ed	\$124,334,470
Penelec	\$114,873,710
Penn Power	\$33,298,945
West Penn	\$117,813,010

<sup>1</sup> 2020 Implementation Order at pg. 120

Appendix B, PUC Tables 1-4 provides the portfolio savings goals, budget and cost-effectiveness for the Companies.

<sup>8</sup> In addition to the tables required by the Commission (which are designated as “PUC Tables”), the Companies developed additional tables that have been included as additional support.

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

The proposed timeline for Phase IV Plan implementation is set forth below. The Companies anticipate that they will leverage the existing program implementation processes to the extent practical to support timely program transition and implementation. The Companies will use one or more CSPs to transition and implement the various programs identified in their Phase IV 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 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 program allies who either wish to participate or continue participation in new and existing programs that will be offered during Phase IV; (ii) maximize process efficiency and controls; and (iii) leverage the Companies' relationships and communications with customers.

The Companies 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 the Companies' Plan and program management, customers, program allies, and contractors. 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 IV 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 Companies. 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 Companies, and the Companies' 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 call center and the processes needed for the Companies to transfer calls they receive related to the programs;
- The development of detailed processes for providing and 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 Companies for processing;

- The identification of potential CSPs and the development of processes for transactions between the two, including electronic payments between the Companies 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 Companies, their consultant, and evaluation and tracking system contractors as necessary and appropriate to properly integrate the applicable program into the Companies' overall comprehensive Phase IV Plan.

To the extent possible, the Companies anticipate a seamless transition of programs and measures from the Phase III Plan to the Phase IV Plan, noting that: (i) Phase III transactions will be managed to conclusion concurrent with the introduction of Phase IV programs; and (ii) any installations completed prior to May 31, 2021, will be included in the Companies' documentation supporting compliance with Phase III targets. The Companies' implementation strategy for this Phase IV 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, deployment and implementation of the new programs and measures and suspension of programs and measures not being continued in Phase IV.

Consistent with the Phase IV Implementation Order, the Companies will not begin implementation of the Phase IV Plan prior to Commission approval of the program and CSP contracts and will initiate controls to ensure that the incentives and rebates offered under the Phase IV programs apply to only those measures installed and commercially operable after May 31, 2021, and before June 1, 2026. Program measures installed and commercially operable on or before May 31, 2021, as well as CSP or administrative fees related to Phase III, are considered Phase III expenses and will be tracked and reported accordingly. Program measures installed and commercially operable after May 31, 2021, as well as CSP or administrative fees related to Phase IV, are considered Phase IV expenses and will also be tracked and reported accordingly. Phase IV costs will be accounted for separately from Phase III costs. Details surrounding cost recovery are set forth in Section 1.8.

The Companies' goal is to maintain the momentum created through programs included in the Phase III Plan and to leverage in the Phase IV Plan the synergies created through implementation of those programs. The Phase IV Plan assumes approval in a time frame that allows the Companies to seamlessly transition from the Phase III Plan to the Phase IV Plan. The Companies will continue to use outside vendors to deliver services in support of many of their programs, with some vendors operating as turnkey program delivery contractors, and others providing specific functions across multiple programs. The Companies' Supply Chain group will be involved in the third-party contracting process by utilizing competitive bidding for the servicing of Phase IV programs, with such programs being implemented upon

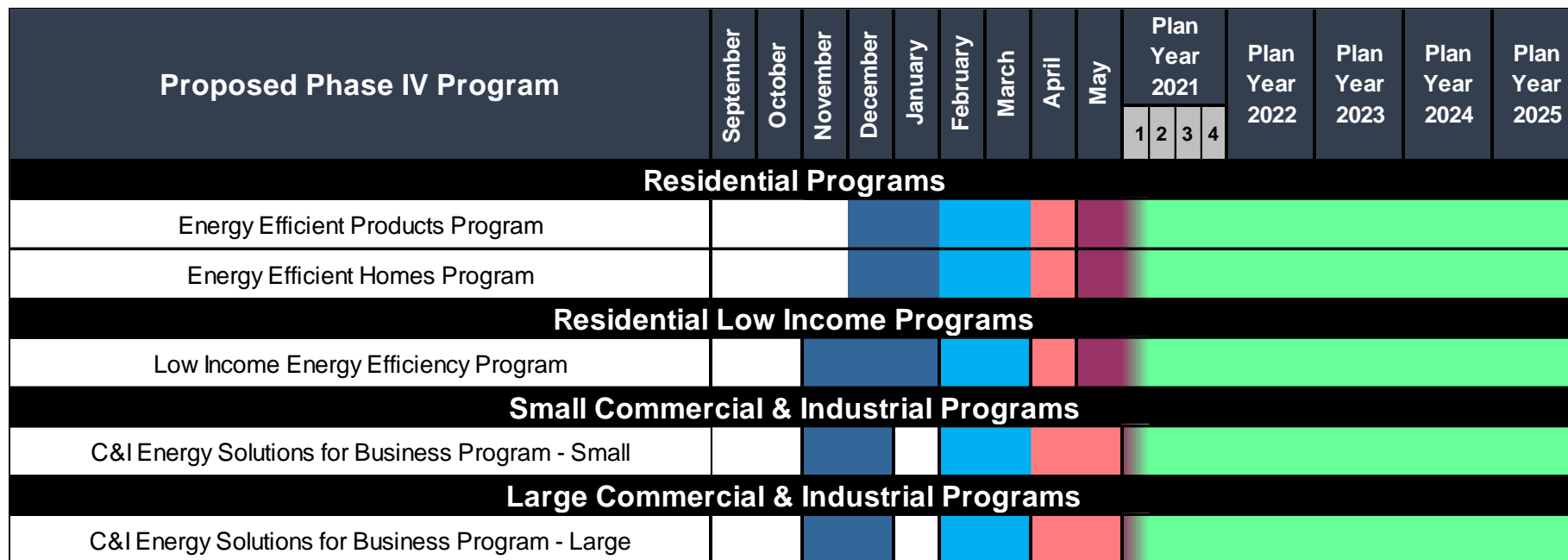
Commission approval of the proposed CSP contract(s).<sup>9</sup> The timeline listed below anticipates Commission approval of the Companies' Plan and programs during March 2021:

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<sup>9</sup> Secretarial Letter issued July 16, 2020 approving FirstEnergy Corp.'s "Procedure for Awarding Contracts to PA Act 129 Conservation Service Providers" filed by the Companies on July 14, 2020 pursuant to the Act 129 Phase IV Energy Efficiency and Conservation Program Final Implementation Order at Docket No. M-2020-3015228.



Figure 2: Gantt Chart of Program Schedule Summary



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

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**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 IV Plan is designed to achieve savings throughout the Phase IV Period. As indicated in Appendix B, PUC Table 2 and PUC Table 3, the Phase IV Plan is designed to achieve at least 15% of the consumption reduction and peak demand reduction targets in each year of the plan. In addition, the design of the Phase IV Plan and programs, along with the inclusion of incentive ranges rather than fixed incentive levels, provides the Companies with the flexibility to react quickly to changing market conditions and program performance to support meeting this requirement.

**1.6. Summary description of the programs or measure categories from which the EDC intends to nominate peak demand reductions (PDR) into PJM's Forward Capacity Market (FCM) along with a projected range of MW totals to be bid by year.**

The Companies plan to offer a portion of the peak demand reductions from its Phase IV Plan into PJM's Forward Capacity Market from the portfolio of programs and measures that are eligible for PJM. The Companies will base their actual offer values on their experience evaluating programs for PJM capacity market participation, taking into account capacity ownership rights, EM&V results and costs, changing PJM market rules, and other variables to balance the risk and cost of capacity market participation with the anticipated revenue.

The Companies anticipate measures being offered from primarily lighting, HVAC equipment, refrigeration, water heating and custom project programs. See Sections 3.2, 3.3 and 3.4 for the Companies' program and measure offerings from which resources will be considered in determining its offers into PJM's Forward Capacity Market. The Companies provided estimated ranges of the PJM Summer and Winter MW EE potential for each PJM delivery year as shown in Appendix C, Table C-3 based on the MWh savings as projected in the EE&C Plan, with the following assumptions and modifications:

- Identified and removed energy savings of all measures not eligible for PJM including:
  - online audits;
  - appliance recycling;
  - building lighting controls and occupancy sensors;
  - smart thermostats, energy management systems or smart homes;
  - behavioral programs;
  - educational programs;

- Assumed utilities retain all Phase IV Plan program Capacity Rights to support their offered EE resources and to ensure no double counting of EE resources by third parties<sup>10</sup>;
- Assigned an initial savings load shape to each PJM eligible EE measure;
- Estimated the potential kW savings values for each measure for the PJM defined Summer and Winter periods using the appropriate load shape curve; and
- Included T & D line losses to adjust retail kW values to wholesale kW values.

The Companies anticipate participation of Phase IV Plan resources installed starting June 1, 2021 in the 2023/24 Base Residual Auction (“BRA”). All EE sell offer values and buy bids shall remain confidential because they are considered market sensitive information; however, they can be provided to Commission Staff via confidential submission and after the applicable auction results are available. The Companies’ considerations and processes to further evaluate the potential values provided in Appendix C, Table C-3 for their participation in the PJM Capacity Auctions also include, but are not limited to, the following:

- Adjustment of the PJM kW estimates for any Point of Sales (POS), Mid-Stream, and Up-Stream Programs. Measures from these programs require additional PJM EM&V and annual persistence studies to ensure offered EE measures are initially installed in the applicable PJM zone and remain in service during each applicable delivery year.
- The Initial PJM EM&V Plan values are based on many assumptions including adoption/installation rates, more generic or composite measure savings curve shapes, initial incentives or rebate levels, line losses and current measure baselines. Adjustments to each must be considered for actual EE offers.
- Adjustments to recognize that EE resources have a limited offer duration of four years with additional installation period limitations and PJM auction parameter changes which will require true-up of market positions.
- Consideration of Capacity Market rule changes like the pending PJM Minimum Offer Price Rules (MOPR) and FERC Order 2222 – DER Aggregation which includes Energy Efficiency Resources.

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

As discussed above, the Companies will contract with CSPs with expertise in specific programs and program implementation services, including program operations and

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<sup>10</sup> Commercial and industrial customers, who have existing contracts with third party demand response service providers that were executed before June 1, 2021 (i.e., the start of Phase IV of Act 129 EE&C), have the option of retaining the PJM capacity rights associated with EE&C projects. For customers to retain those capacity rights, their project applications must: (a) be submitted to the Companies after the effective date of the Commission’s Order approving the Companies’ July 7, 2023 Petition to Modify the EE&C Plan; and (b) provide proof of the relevant contract with the third party demand response service provider.

marketing, customer enrollment, and program, subcontractor and trade alley engagement among other things. This network of CSPs reports to the implementation team within the FirstEnergy Energy Efficiency group, which provides oversight of program delivery, including program performance, marketing campaigns, customer and program alley engagement. Programs are closely monitored for performance, and, if needed, adjustments are made to improve performance. The Companies will also leverage their relationships with various parties through the stakeholder process, seeking input on how better to reach customers and program allies alike throughout implementation of the programs.

**1.8. *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 Companies have in place effective quality control processes and procedures that they currently utilize to manage the integrity of their programs being offered through the Phase III Plan. The Companies remain committed to designing and implementing robust processes and systems to achieve the energy savings and demand reduction goals established in Act 129 and, where appropriate, will continue to utilize or improve upon those processes already in place. The Companies' Phase IV Plan intends to continue the existing two-fold approach to ensure the quality of their 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 presents plans regarding the data management, quality assurance, and evaluation processes for the Phase IV Plan. The Companies are committed to working with the SWE to support its efforts evaluating the programs. The Companies will conduct both impact and process evaluations to gauge program performance, assess progress toward the achievement of goals, and identify issues requiring mid-course correction. All programs will benefit from periodic feedback from stakeholders and customer satisfaction surveys. In addition to making implementation adjustments to programs as identified through these feedback channels, the Companies will propose any program changes they feel are necessary in their annual reporting to the Commission or, alternatively, they 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 (entered June 10, 2011 in Docket No. M-2008-2069887) ("Minor Plan Change Order") and as affirmed in the Commission's Phase IV Implementation Order.

**1.9. *Summary description of cost recovery mechanism.***

The Companies' proposed EE&C Charge Phase IV Riders ("Phase IV EE&C-C Riders") 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 IV 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 Companies are proposing that the Phase IV EE&C-C Rider rates reflecting the programs and budgets of this Phase IV Plan become effective for service rendered on or after June 1, 2021, and continue through May 31, 2026. In addition to recovery and reconciliation of EE&C program costs, the cost of the SWE will be included in the Revenue Requirement and any PJM capacity market revenues (net of the costs associated with auction participation and including replacement capacity charges, capacity deficiency charges and any unavoidable PJM charges) will be credited in the Revenue Requirement, pursuant to the Phase IV Implementation Order. The amount of revenues that the Phase IV EE&C-C Rider rates can recover associated with the EE&C program costs (excluding the SWE and PJM expenses) are capped by Act 129's 2% spending limit. The Companies will submit to the Commission by May 1 of each year a reconciliation of the Phase IV EE&C-C Riders.

**2. Energy Efficiency Portfolio/Program Summary Tables and Charts**

**2.1. Residential (exclusive of Low-Income), Residential Low-Income, Commercial/Industrial Small, Commercial/Industrial Large Portfolio Summaries.**

See Appendix B, PUC Table 5, for the quantitative Residential, Residential Low-Income, Commercial/Industrial Small, and Commercial/Industrial Large Portfolio Summaries.

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

See Appendix B, PUC Tables 1-5 for the Costs, Cost-effectiveness and Savings by program, sector and portfolio.

**2.3. Budget and Parity Analysis.**

See Appendix B, PUC Table 6 for the Budget and Parity Analysis summary of the portfolio.

### **3. Program Descriptions**

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

The programs outlined in the Companies' EE&C Plan were selected and designed to comply with the Phase IV Implementation Order program requirements, including:

- Achieving the consumption reduction and coincident peak demand reduction targets within the allowable budgets;
- Achieving the consumption reduction target from the low-income sector from programs solely directed at low-income customers or low-income verified participants in multifamily housing programs;
- Meeting the budget requirement that at least 50% of EE&C Plan spending comes from incentives;
- Including at least one comprehensive program for residential and at least one comprehensive program for non-residential customer classes; and
- Offering a well-reasoned and balanced set of measures that are tailored to usage and to the potential for savings and reductions for each customer class.

In setting out to achieve these requirements, the Company pursued the following themes:

- Leverage the program offerings of the Companies and the Companies' affiliates in other jurisdictions that have proven to be successful;
- Align and coordinate program designs, measures, and services with its affiliates where appropriate;
- Incorporate additional programs or measures identified as successful from other peer utilities or based on the expertise and input from the Companies, their affiliates, or their consultant, vendors, and stakeholders;
- Incorporate new programs or measures that are considered promising to target new customer segments or end uses, increase participation or savings, or promote new innovative program concepts; and
- Establish a program framework that is adaptable and scalable to help the Companies meet their energy savings and peak demand reduction targets.

The EE&C Team strived to develop a program framework that not only would meet the Companies' targets and requirements for Phase IV but also would avoid potential market disruption or confusion from unnecessary changing program structures between plan cycles. The Companies sought to leverage the experience and successes of their affiliates in other jurisdictions, while seeking opportunities to improve and expand program offerings. The Companies strived to design a portfolio of programs that will be flexible enough to meet an assortment of customer needs to drive customer participation and to provide the opportunity for all customers to participate in the programs and for the Companies to meet their goals. The Companies also strived to develop consistent program offerings with its affiliates in other states to leverage economies of scale and target cost savings for its customers.

The Companies coordinated their EE&C development efforts to achieve cost efficiencies and offer a consistent set of EE&C programs. The FirstEnergy EE&C Team also coordinated program design with its plan development activities in both Maryland and New Jersey and reviewed both existing and potential new programs and measures to develop a broad and comprehensive program portfolio. As a result, the EE&C Team created a portfolio of potential programs and measures that draws upon the programs and measures offered through the EE&C Plans of the Companies' affiliates and other utilities, other industry programs and measures and incorporates stakeholder, consultant, and vendor input.

The program selection process included the following activities, with several activities encompassing the program development timeline and being performed coincidentally 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; and (iii) evaluation contractor and energy efficiency consultant. The team also reviewed other industry sources, the PA TRM, and the PA MPS, along with the programs and measures currently being offered through the Existing Plan and by other FirstEnergy affiliate utilities and non-FirstEnergy utilities.
2. The potential programs and measures underwent a screening process carried out by the EE&C Team, which included, among other things, consideration of the technology readiness, anticipated participation, implementation requirements, and cost and savings impacts. 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. Potential programs and measures were reviewed with the Companies' stakeholders, the Companies' implementation team, and their energy efficiency consultant.
3. Program cost characteristics were developed at the technology level, including, for example, incentive levels; marketing 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 the SWE Database for those measures covered, historic actuals, and from other industry sources, primarily including TRMs from other states. The Companies' results were reviewed by their energy efficiency consultant.
4. The economic modeling was completed on an iterative basis, and the savings, cost, and PA TRC values were determined for each program. Once all programs were designed and modeled, the Plan as a whole was evaluated to balance results and costs to ensure reasonableness and compliance in a cost-effective manner. The results from the PA MPS were also used to refine and confirm that the program designs and assumptions are supported by the market potential. The projections and results were reviewed with the Companies' implementation team and energy efficiency consultant, incorporating, when appropriate, suggestions for refinement. The PA TRC results for each of the programs included in this plan can be found in Appendix B, PUC Table 13.



Program designs were then finalized based on consideration of each programs’ contributions to meeting the Commission’s and Companies’ collective requirements and objectives for the Phase IV Plan.

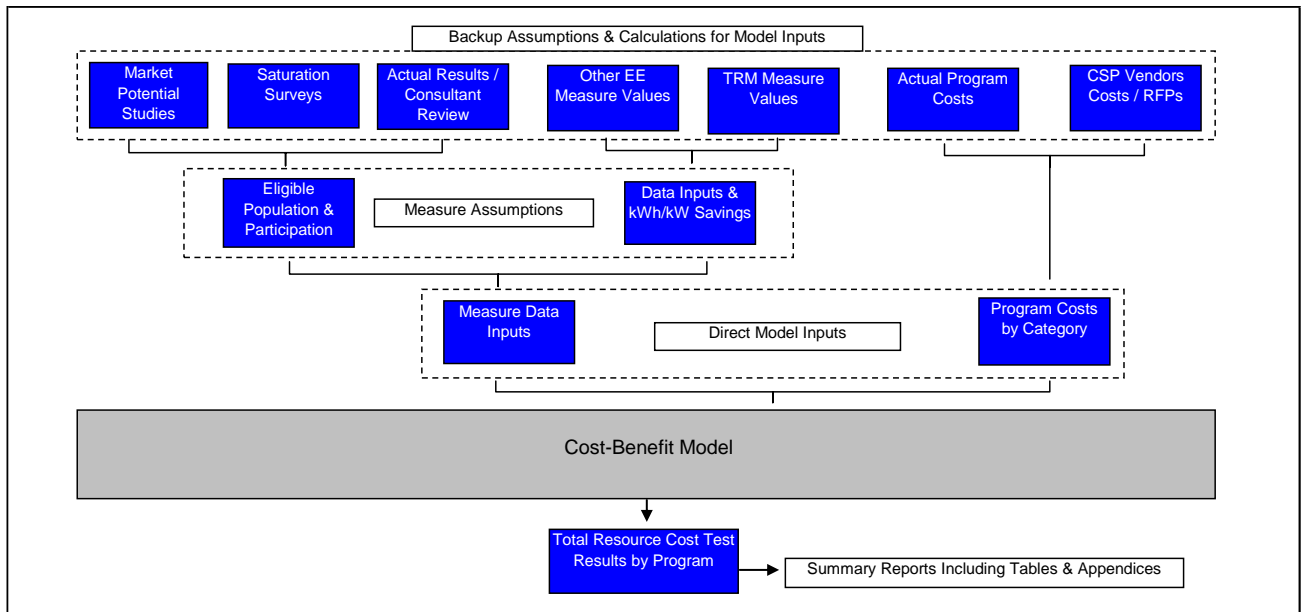
**3.1.1 Describe portfolio objectives and metrics that define program success (e.g., energy and demand savings, customers served, number of units installed).**

The portfolio design criteria and objectives are discussed in Section 3.1 above. General metrics for each program are associated with the number of participants, kWh savings, kW peak load reductions, dollars spent and cost-effectiveness. See Appendices B and D for the projected metrics associated with the Companies’ EE&C Plan and programs.

**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 Companies used to develop programs, based on available information, experience of the Companies and their affiliates and input from the Companies’ consultant and stakeholders.

**Figure 3: Model Process Diagram**



The Companies utilized a comprehensive bottom-up approach in designing the programs and selecting measures for inclusion in the Plan. Under this approach, the EE&C Team identified potential measures from extensive sources including but not limited to the Electric Power Research Institute (“EPRI”), ENERGY STAR, ESource, other utilities, other jurisdictions, and input from vendors, the Companies’ EE&C consultant, CSPs and stakeholders. The EE&C Team established measure eligibility in consideration of the PA TRM, industry ratings such as ENERGY STAR, the Consortium for Energy Efficiency (“CEE”) and other efficiency ratings.

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The Companies primarily utilized the PA TRM and the Mid-Atlantic TRM developed for Maryland and other jurisdictions to quantify the energy and demand savings, the “measure life” and other assumptions of the measures included in the Plan. The PA TRM and Mid-Atlantic TRM have been developed and frequently updated based on actual data when available, and with input of stakeholders with extensive experience in EE&C programs. In limited cases where these TRMs did not cover a proposed measure, the Companies utilized estimates based on other sources as listed in Appendix C, Table C-2. The Companies also utilized these TRMs, the SWE Database or Company calculation, as the source of the incremental costs of measures included in the Plan. The incentive values are based on targeting a portion of the incremental cost of the energy efficient equipment versus equipment meeting current standards, with consideration of the current programs, similar programs offered in other jurisdictions and of customer payback. For program modeling, the Companies incorporated the most recent realization rates established by evaluation for the current programs or similar program offerings in other jurisdictions.

One of the primary objectives was to make certain that participation would be straightforward for customers, contractors, and trade allies. The EE&C Team established projected participation rates for the proposed programs portfolio and measures through a multiple-step process leveraging their experience or the experiences of its affiliates in other jurisdictions. First, the Companies established participation rates based on the performance of their existing programs and measures or based on existing programs and measures operating in the Companies’ affiliates in other jurisdictions. The review of projected results for each program and measure included assessing the reasonableness of the projected results based on customer participation, estimated costs, and potential savings. 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, energy savings potential by major end use) to see how proportional the savings are to these figures. Logical and intuitive feasibility about the program assumptions were examined next, and adjustments were made as necessary, rebalancing the portfolio as appropriate.

**3.1.3 Describe how energy efficiency, combined heat and power, renewables, and other measures are included in the portfolio of programs as applicable.**

Sections 3.2, 3.3 and 3.4 present individual program descriptions. The Residential Energy Efficient Products Program includes measures for geothermal heat pumps and solar water heating equipment. Similarly, the Energy Solutions for Business Programs, Small and Large, includes measures for geothermal heat pumps, combined heat and power (“CHP”), and solar projects through its Prescriptive and Custom measures. See Appendix B, PUC Table 7 for the eligible measures, incentives, and rebate amounts.

**3.1.4 Describe how the EDC defines ‘comprehensive’ in the context of the EE&C plan design and delivery and the comprehensive program(s) to be offered to the residential and non-residential rate classes. Describe the measure mix or delivery mechanism that qualify each**

***program as comprehensive consistent with the requirements of the Phase IV Implementation Order.***

In the Phase IV Implementation Order, the Commission requires EDCs to develop EE&C Plans that contain at least one comprehensive program for residential and at least one comprehensive program for non-residential customer classes.<sup>11</sup> To comply with this Commission directive, the Companies' designed their EE&C Plan to include a broad portfolio of EE&C programs for the residential and the commercial and industrial customer sectors. In general, the EE&C Plan incorporates both near-term and longer-term energy saving opportunities for customers including single and prescriptive measures, multiple prescriptive and custom measures, direct install, and comprehensive whole home/whole building solutions.

Residential Sector Programs – Residential programs were designed to address both educational and initial cost barriers and to tap a variety of delivery channels and vendors to support customer engagement, education, and participation. The residential programs include direct or targeted programs that engage customers, including residential, low-income and multifamily, and serve as a portal for other program offerings because they serve a dual purpose of providing customers with energy efficiency education as well as information regarding other program services and opportunities upon which they can act. The residential programs incorporate strategies to change behaviors and include incentives to address the initial cost barrier to promote the participation of all residential customers. The programs provide opportunities for prescriptive equipment and direct install, so that customers who are unable or unwilling to undertake whole home/comprehensive solutions are still able to increase efficiency, and the programs also provide opportunities for customers interested in whole home/comprehensive solutions that encourage customers to consider a holistic approach to EE.

More specifically, the Companies offer comprehensive measures to residential customers including whole house treatments through the Residential Energy Efficiency Homes Program and the Low-Income Energy Efficiency 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.

Commercial and Industrial Sector Programs – Similar to the Residential Sector Programs, the Commercial and Industrial Programs were designed to provide customer engagement and education, incorporate energy controls and strategies to change behaviors, include incentives to address the initial cost barrier, and tap a variety of delivery channels and vendors that promote the participation of all customers, including commercial businesses, industrial customers, multifamily buildings, governmental, non-profit, and institutional customers. These non-residential customers are also addressed through programs that provide opportunities including prescriptive rebates, custom measures, direct install, and whole building/comprehensive solutions. The programs include specific opportunities that ensure access for small customers and provide opportunities for single or multiple prescriptive

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<sup>11</sup> Phase IV Implementation Order at 23.

and/or custom measures, so that customers who are unable or unwilling to undertake whole building/comprehensive solutions are still able to increase efficiency. And the programs include opportunities that encourage customers to consider a holistic approach to EE for customers who are interested and able to participate in whole building/comprehensive solutions.

Similarly, the Companies offer comprehensive measures to the commercial, industrial and government, non-profit, and institutional (“GNI”) customers 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.

Collectively, the proposed programs and subprograms across all sectors cover all the major energy-consuming devices in the home, building or business, thus providing a comprehensive portfolio of measures increasing the opportunity for more customers to participate and benefit from one or more programs. Furthermore, the proposed programs promote and support comprehensive whole home/whole building/comprehensive solutions, targeting deeper savings, and comprehensive retrofits. The table below details the major end uses that the programs target under the Phase IV Plan:

**Table 6: Program Major End Uses**

Program	End Use Category			
	Appliances and Electronics	HVAC	Lighting	Whole Building
<b>Energy Efficiency &amp; Conservation Plan</b>				
<b>Residential Programs</b>				
Energy Efficient Products Program	X	X		
Energy Efficient Homes Program	X	X	X	X
Low Income Energy Efficiency Program	X	X	X	X
<b>Small Commercial &amp; Industrial Programs</b>				
C&I Energy Solutions for Business Program - Small	X	X	X	X
<b>Large Commercial &amp; Industrial Programs</b>				
C&I Energy Solutions for Business Program - Large	X	X	X	X

**3.2. Residential Sector Programs:**

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

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

Phase III Program	Proposed Phase IV Program	Program Description
<b>Residential Programs</b>		
Appliance Turn In Program	Energy Efficient Products Program	The program provides financial incentives to residential customers and/or retailers, contractors, distributors or manufacturers to promote customers to purchase and install energy efficient products, such as EnergyStar qualified appliances, consumer electronics, and other energy efficient products. The program will also provide financial incentives to turn in and recycle inefficient appliances, and to promote customers to perform HVAC maintenance or to upgrade HVAC equipment to more efficient technology.
Energy Efficient Products Program		
Energy Efficient Homes Program	Energy Efficient Homes Program	This program promotes energy efficiency of customer homes through various measures that promote customer energy efficiency education, awareness and adoption of energy efficient behaviors and measures, including customized home energy reports, energy efficiency kits, school education, audits, direct install measures, and financial incentives for implementation of qualified energy efficiency measures in the home. The program also includes financial incentives for the construction of energy efficient new homes.
Residential Demand Response Program	N/A	N/A
<b>Residential Low-Income Programs</b>		
Low Income Energy Efficiency Program	Low Income Energy Efficiency Program	This program provides customized energy efficiency education and awareness to promote energy efficient behaviors along with no-cost basic to comprehensive whole house energy efficiency measures, including appliance replacement, to qualified low-income customers. The program also promotes low-income customers to install other energy efficient products, such as EnergyStar qualified appliances, consumer electronics, and other energy efficient products, or to turn in and recycle inefficient appliances, through customer education and outreach, giveaways and enhanced financial incentives.

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

**Table 8: Proposed Residential Portfolio**

Program	Sub-Program	Measure	Measure Status
Energy Efficient Products Program	Appliance Recycling	Freezer Recycling	Existing
		Refrigerator Recycling	Existing
		Room Air Conditioner Recycling	Existing
		Dehumidifier Recycling	Existing
	Appliance Rebate	Clothes Washer - Level 1	Existing
		Clothes Washer - Level 2	Existing
		Clothes Washer - Level 3	Existing
		Refrigerator - Level 1	Existing
		Refrigerator - Level 2	Existing
		Refrigerator - Level 3	Existing
		Freezer	Existing
		Clothes Dryer	Existing
		Air Purifier / Cleaner	New
		Room Air Conditioner - Level 1	New
		Room Air Conditioner - Level 2	Existing
		Dehumidifier	Existing
		Water Heater	Existing
		Pool Pump Variable Speed	New
		Dishwasher	New
		Water Cooler	New
		EV Charging Cord - Level 2 - Res	New
		Smart Thermostat - Aplncs	New
	Residential Occupancy Sensor	Existing	
	Ceiling Fan	New	
	Consumer Electronics	Monitor	Existing
		Computer	Existing
		Imaging	Existing
		Smart Strip Plug Outlet	New
		TV	Existing
		Sound Bar	New
		Smart Home	Existing

Program	Sub-Program	Measure	Measure Status
Energy Efficient Products Program	HVAC	Heat Pump - Level 2	Existing
		Heat Pump - Level 3	Existing
		Central Air Conditioner - Level 2	Existing
		Central Air Conditioner - Level 3	Existing
		Ductless Mini-Split Heat Pump - Level 3	Existing
		PTAC - Level 2 - Multi Family	Existing
		PTHP - Level 2 - Multi Family	Existing
		Heat Pump - Water & GeoT - ES Tier 3	Existing
		Furnace Fan (Retrofit or New to ECM)	Existing
		Smart Thermostat - HVAC	Existing
		HVAC - Custom	Existing
		Circulating Pump	New
		HE Bathroom Fans	New
		HVAC Quality Install	New
Energy Efficient Homes Program	Comprehensive Audits	Heat Pump (Air-Wtr) w Domestic Hot Water	New
		Comprehensive Audit	Existing
	Multi Family - Res	MF - Tenant - DI - Res	Existing
		MF - Tenant - Prescriptive - Res	Existing
		MF - Tenant - Custom - Res	New
		MF - Common - Prescriptive - Res	New
		MF - Common - Custom - Res	New
		MF - Common - DI - Res	New
	School Education	School Education	Existing
	EE Kits	Energy Efficiency Measures	Existing
	Behavioral	On-Line Audit	Existing
		Behavioral 2021	Existing
		Behavioral 2022	Existing
		Behavioral 2023	Existing
		Behavioral 2024	Existing
		Behavioral 2025	Existing
	New Homes	NC - Townhouse and duplex units	Existing
		NC - Two-on-Two condominium units	Existing
		NC - Single-family detached units	Existing
		NC - Multi Family Low Rise	Existing
NC - Manufactured Housing		Existing	
	NC - Multi Family High Rise	New	

Program	Sub-Program	Measure	Measure Status
Low Income Energy Efficiency Program	Weatherization	Weatherization (WARM PLUS)	Existing
		WARM Extra Measures	Existing
	LI - Appliances	Freezer Recycling - LI	Existing
		Refrigerator Recycling - LI	Existing
		Room Air Conditioner Recycling - LI	Existing
		Dehumidifier Recycling - LI	Existing
		Clothes Washer - Level 1	Existing
		Clothes Washer - Level 2	Existing
		Clothes Washer - Level 3	Existing
		Refrigerator - Level 1	Existing
		Refrigerator - Level 2	Existing
		Refrigerator - Level 3	Existing
		Freezer	Existing
		Clothes Dryer	Existing
		Air Purifier / Cleaner	New
		Room Air Conditioner - Level 1	New
		Room Air Conditioner - Level 2	New
		Dehumidifier	Existing
		Dishwasher	New
		Smart Thermostat - AplnCS	New
	LI - School Education	School Education - LI	Existing
	LI - EE Kits	Energy Efficiency Measures - LI	Existing
	LI - Behavioral	On-Line Audit - LI	New
		Behavioral 2021 - LI	Existing
		Behavioral 2022 - LI	Existing
		Behavioral 2023 - LI	Existing
		Behavioral 2024 - LI	Existing
	LI - Multifamily - Res	Behavioral 2025 - LI	Existing
		MF - Tenant - DI - Res - LI	Existing
		MF - Tenant - Prescriptive - Res - LI	Existing
		MF - Tenant - Custom - Res - LI	New
		MF - Common - Prescriptive - Res - LI	New
LI - New Homes	MF - Common - Custom - Res - LI	New	
	MF - Common - DI - Res - LI	New	
	NC - Townhouse and duplex units - LI	New	
	NC - Two-on-Two condominium units - LI	New	
	NC - Single-family detached units - LI	New	
	NC - Multi Family Low Rise - LI	New	
	NC - Manufactured Housing - LI	Existing	
	NC - Multi Family High Rise - LI	New	

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



### 3.2.1 RESIDENTIAL ENERGY EFFICIENT PRODUCTS PROGRAM

#### **Program years during which program will be implemented-**

June 2021 - May 2026

#### **Objective(s)**

The objective of the program is to promote the purchase and installation of energy efficient products and to remove older inefficient operating appliances to prevent them from being maintained as a second unit or transferred to another customer. The program targets the adoption of energy efficient products, such as appliances, lighting, consumer electronics, and HVAC equipment, as well as the recycling of qualifying inefficient, operating appliances. This program includes promotional support, point-of-sale materials, education to customers, retailers, contractors, and distributors, training, promotional events, rebates for select measures, and incentives for the pick-up and recycling of inefficient operating appliances.

#### **Target market**

Residential customers who purchase energy efficient qualifying products or have older appliances.

#### **Program description**

The program is designed to provide easy and cost-effective access to energy efficient measures through customers' preferred channels and also provide a means to encourage customers to take the first steps toward energy-efficiency. The program includes the following components:

- **Energy Efficient Products** – This program component promotes the purchase and installation of ENERGY STAR efficient products in the following residential categories: Appliances, Consumer Electronics, Lighting and HVAC. The program component will provide incentives for energy efficient lighting, appliances, electronics, and heating and cooling equipment, as well as other energy efficient products. These incentives will be offered through a variety of channels included downstream rebates to customers, reduced point of sale costs, and midstream or upstream incentives and support for manufacturers, distributors, and retailers that sell qualifying energy efficient products. This program component will provide marketing support and education to customers on energy efficient products.
- **Appliance Recycling** – This program component provides an incentive, pick-up, and recycle service to customers for turning in qualifying, inefficient, operating appliances. Qualifying appliances will be picked up at the customer's residence and recycled in a compliance with the U.S. Environmental Protection Agency's ("EPA") Responsible Appliance Disposal ("RAD") program criteria. In addition, periodic events may be offered at centralized drop-

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off locations where customers can drop off smaller qualified inefficient operating appliances such as, but not limited to, dehumidifiers and room air conditioners.

**Implementation strategy (including expected changes that may occur in different program years)**

The Companies will contract with implementation CSP(s) who will directly administer and manage delivery of the program. Implementation activities will include marketing the program through multiple channels, validating customer eligibility, processing incentives, conducting outreach to and securing partnerships with retailers, wholesalers, distributors, manufacturers and trade allies to ensure customers are able to easily purchase energy efficient products through the program, and educating customers to ensure they are aware they are receiving discounts through the utility to offset cost of the products. Customer engagement and sales channels may include:

- **Post Purchase (Downstream) Rebates:** Rebates will be made available to customers. Applications will be available online and/or in stores to submit either electronically or in hard copy with proof-of-purchase.
- **Point of Sale Rebates:** Prescriptive rebates will be made available at the point of sale for selected products. Point of sale rebates are paid to a retailer or manufacturer who apply the rebate to reduce the retail price paid by the residential customer in the retail store.
- **Appliance Recycling:** Incentives will be provided to customers for recycling qualifying, inefficient, operating appliances. Offering an incentive for the drop off or pick-up and removal of an appliance prevents the appliance from being maintained as a second unit or being transferred to another customer. Customers can schedule an appointment by phone or online.
- **Midstream or Upstream Rebates:** The Companies plan to pursue a midstream or upstream rebate component to encourage purchase of certain energy efficient products. The Companies will work with retail partners (such as Home Depot, Lowes, etc.), distributors, and/or manufacturers to assure that measures are available throughout their footprint. Midstream or upstream rebates encourage market transformation and wider availability of efficient equipment.
- **Trade Allies:** The Companies will establish a network of trade allies to promote certain components of the program to the customer where applicable. The trade ally network will consist of qualified installation contractors and other trade service professionals. Trade allies will be able to leverage the program and offer customers rebates through their normal course of business.

By developing relationships with both program and trade allies, the program will develop a broad reach across the marketplace and solicit feedback from the marketplace to ensure incentives and measures are impacting the market as designed. The Companies' implementation CSP(s) will work with trade allies supporting their installation of qualified energy efficient products and participation in the program.

Targeted program and trade allies may include:

- Efficient equipment retailers, distributors, and manufacturers
- HVAC & appliance contractors
- General contractors, plumbers, electricians, and other trade service professionals

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Appliance Recycling will be delivered through an implementation CSP that specializes in proper appliance recycling. The CSP will be responsible for marketing, scheduling appointments, picking up / recycling of qualified working appliances, processing rebates, and handling customer inquiries. The CSP will also market, schedule, staff, and manage the pick-up and recycling of qualified working appliances at special events. Each unit collected is disposed of in an environmentally responsible way, in compliance with EPA's RAD criteria. The Companies will perform overall administration and oversight of the subprogram.

The Companies plan to issue the RFP(s) for this program in early 2021 and plan to select the CSP(s) in a timeframe that supports a seamless transition and implementation from the current program beginning June 1, 2021, 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 obtaining sufficient customers to participate in the program based on the customers' ability to purchase qualified energy efficient products. 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 incentives for selling energy efficient qualifying products. Educational materials will focus on the lower operating costs and the savings customers may obtain from making the choice to purchase eligible high efficiency products. 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 key barriers that may pose a risk to this program include:

- **Initial Cost of Energy Efficient Products:** Relative to the market baseline, energy efficient products often carry a higher upfront cost but a lower lifetime operating cost. As a result, customers may not fully value the lifetime operating cost advantage of energy efficient products and, consequently, a higher upfront cost is a barrier to purchasing energy efficient products. To address this barrier, incentives are provided to the customer to reduce the initial cost.
- **Customer Awareness and Engagement:** Residential customers may not be aware of the benefits of installing energy efficient products and/or lack the time and resources to pursue energy efficient products when replacing existing equipment. To address this barrier, the Companies will educate customers on the benefits of installing energy efficient products through targeted marketing, ensure that incentives are easily accessible, and encourage market transformation and stocking of energy efficient products through midstream incentives. Through outreach efforts, the Companies will seek to partner with retail and wholesale entities to promote program offerings, and also focus marketing, education, and outreach efforts on the trade ally community to ensure that trade allies are aware of available incentives. To the extent possible, the Companies will cross-promote programs to spread awareness of the range of energy efficiency opportunities proposed in this Plan.

- **Sufficient Stocking and Availability of Energy Efficient Products:** The Companies will look for opportunities to develop and promote a midstream component for specific products to encourage high levels of participation by incenting midstream market actors and/or directly discounting the cost of the energy efficient products at the point of sale. In addition, stocking and availability of energy efficient products may be challenged in relation to supply chain disruptions.
- **Trade Ally Awareness and Training:** To meet certain subprogram participation goals, sufficient contractors must be available to undertake the work. The Companies will work with their implementation CSP(s) to address this barrier by trying to engage and recruit more program and trade allies to participate in select subprograms.

The Companies and the implementation CSP(s) will monitor program participation and performance through feedback channels to assess, where applicable, the effectiveness of program design, delivery methods, outreach efforts, incentive levels, marketing/advertising, program and trade ally suggestions, or other improvement opportunities to overcome barriers to program success.

#### **Anticipated costs to participating customers**

Customers will have to pay the balance of energy efficient products and installation costs not covered by the rebate. See Appendix B, PUC Table 7 for the incremental cost and incentive range for each measure in this program.

#### **Ramp up strategy**

The Companies anticipate a seamless transition and implementation upon Commission approval of the program and CSP contract(s). For the existing program measures being offered in the new Plan, there will be some ramp-up period needed to transition to the new Plan period with the implementation vendors. For new and expanded program measures, it is anticipated that it will take approximately three- to six-months to start-up new or expanded program measures after program approval. See discussion in Section 1.4 for more details on ramp up.

#### **Marketing strategy**

The Companies will implement both multi-pronged direct and indirect marketing campaigns to promote this program. Customers will be exposed to broad-based energy efficiency awareness campaigns, web-based engagement and information, digital advertising, social media, and hard-copy materials to promote awareness, as well as tie-ins with other programs. Retailers, wholesalers, distributors, manufacturers, and trade allies will be contacted directly and/or through trade associations to develop networks and promote involvement in the program where applicable. The program will be marketed, where practical, in conjunction with the online audit, residential audit, and home energy reports as a recommendation for achievement of the identified energy savings.

A combination of strategies will be used to train and support retailers, distributors, and other program allies, including media advertising, outreach community forums, events, and direct outreach to customers. Marketing activities may include:

- Point of purchase displays and materials and special “instant sales events” or limited time offers.
- Brochures that describe the benefits and features of the program. The brochures will be available for various public awareness events (community events, presentations, seminars etc.).
- Bill inserts, bill messages, email, direct mail, social media platforms, billboards, and pop-up stores.
- Company website content providing program information resources, contact information, online application forms and links to other relevant service and information resources.
- Customer representatives trained to promote the program to their customers.

**Eligible measures and incentive strategy showing incremental cost assumptions, gross measure-level TRC ratio, and incentive levels (e.g., \$ per measure, \$ per kWh or MW saved)**

Refer to Appendix B, PUC Table 7 for the eligible measures, eligibility, and incentive strategy for this program.

The minimum qualifying efficiency ratings for select program measures are based on meeting either ENERGY STAR® requirements or other requirements that exceed the current Federal Standard. The Companies have 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 PA TRM or other sources, which rely on ENERGY STAR®, 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 IV Plan, the Companies may implement tier level or incentive changes for certain applicable measures in conjunction with future specification changes to maintain program continuity and implement timely on-going energy efficiency improvements.

Incentives for select program measures will be available in several ways and are adapted to the retail partner or program needs and market response. Strategies may include:

- Mail-in applications that are available from participating retailers, the program website, or participating contractors; and
- Online rebate forms.

The Companies may change incentives after communicating incentive changes with stakeholders consistent with past practice.

In instances where incentives are not immediate, the Companies will complete consumer or contractor payments within 60 days following completion of contractor work, submission of complete and

required paperwork, and completion of program requirements, such as necessary field inspections (if required).

**The basis for proposed level of incentives and the sharing of incremental measure costs between participants and the EDC**

The Companies propose to provide a range of incentives depending on the subprogram and measure type, subject to changes within the “Up to” incentive amounts, based upon customer response and market conditions over the Plan period. The Companies strive to balance the sharing of incremental measure costs between the Companies and participants with subprogram performance and progress to goals. The Companies will set and adjust incentives based on many factors, including, but not limited to, their experience, the experience of their affiliates, consultant, or CSPs, stakeholder input, and industry benchmarking. Incentives will vary depending on factors including but not limited to the specific subprogram, end-use and measure, the incremental cost of the high-efficiency technology, and the product maturity in the marketplace.

**Maximum deadline for rebates including clear and reasonable rationale for any timeframe longer than 180 days**

Rebate applications must be submitted within 180 days of purchase and be postmarked by June 7, 2026.

**Program start date with key schedule milestones**

The Companies anticipate a seamless transition and implementation upon Commission approval of the program and CSP contract(s). For the existing program measures being offered in the new Plan, there will be some ramp-up period needed to transition to the new Plan period with the implementation vendors. For new and expanded program measures, it is anticipated that it will take approximately three- to six-months to start-up new or expanded program measures after program approval. See discussion in Section 1.4 and Figure 2 for more details on the program start date with schedule milestones.

**Assumed Evaluation, Measurement, and Verification (EM&V) requirements required to document savings by the Commission’s statewide EE&C Plan Evaluator**

The Companies will retain an Independent EM&V Contractor to perform evaluation, measurement, and verification of the program in accordance with the state’s Evaluation Framework. Activities for this program may include:

Energy Efficient Products

- Verify that qualified products have been sold by participating retailers, contractors, distributors, or manufacturers 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 participating retailers, contractors, distributors, or manufacturers, as well as individual participant rebate applications.

#### Appliance Recycling

- Verify that the planned number of targeted appliances are collected and properly recycled and 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 Companies plan to use selected indicators to verify periodically that energy savings and demand reduction are being realized as projected. A tracking and reporting system will be used for such monitoring. If EE&C program indicators show that projected EE&C targets are not likely to be achieved on schedule or within budget, the Companies will take appropriate corrective actions, such as changing marketing and/or incentive channels or amounts.

The Companies will document, store, and send measure data to the SWE, as requested, using specified data transmission protocols, processes and technology.

#### **Administrative requirements- include internal and external staffing levels**

The Companies will use a combination of internal and external resources to manage and implement the EE&C programs. The Companies 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.

#### **Savings targets and estimated participation – include tables with estimated total MWH/yr and MW goals per year and/or ranges per year and cumulative tables that document key assumptions of estimated savings ranges per measure as well as estimated participation**

See Appendix B, PUC Table 8, Appendix C, Table C-2, and Appendix D, Table D-2.

#### **Estimated program budget (total) by year- include table with budget per year**

See Appendix B, PUC Table 9 and Appendix C, Table C-1 for program budget by year.

#### **Estimated percentage of sector budget attributed to program**

See Appendix B, PUC Table 4, Appendix B, PUC Table 6, Appendix B, PUC Table 12 and Appendix C, Table C-1 for sector and program level budget results.

**Cost-effectiveness- include gross and net TRC and net-to-gross (NTG) ratio for each program**

See Appendix B, PUC Table 13 for PA TRC ratios for this program on both a gross and net basis and the net-to-gross ratios assumed for each program. See Appendix B, PUC Table 7 and Appendix D, Table 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.

**Bidding strategy for peak demand reductions into PJM’s FCM. Include a description of the strategy and approach of offering resources into the PJM capacity market. The description should include an estimated range of MW and a trajectory of that MW over time**

See Section 1.6 for a description of the Companies’ strategy and approach to offering resources into the PJM capacity market. See Appendix C, Table C-3 for the estimated range of MW over time associated with the Companies’ Phase IV Plan.

**Other information deemed appropriate**

None.



### 3.2.2 RESIDENTIAL ENERGY EFFICIENT HOMES PROGRAM

#### **Program years during which program will be implemented**

June 2021 - May 2026

#### **Objective(s)**

The primary objective of this program is to educate customers on energy efficiency and encourage customers to retrofit existing technologies with more efficient ones, adopt energy savings behaviors, and to promote other energy efficiency opportunities to customers to conserve and save energy in their homes. An additional program objective is to encourage residential developers, builders, and contractors to build energy efficient new homes.

In addition to the various educational components of this program, the program also provides low cost direct install items through several program components that customers can install by themselves to promote adoption of energy efficiency and conservation mindsets and measures. In addition, the program provides a gateway to other programs because the education directly relates to energy efficiency and conservation and promotes other residential program offerings available to customers.

#### **Target market**

All residential customers of the Companies, including residential developers, builders, and contractors in the Companies' service territories.

#### **Program Description**

The Energy Efficient Homes Program engages customers through various subprogram components to provide energy efficiency and energy usage education and awareness. The program also provides measures, recommendations, and/or incentives for customers to improve energy efficiency and conservation in their homes. The program provides the following subprogram components to customers:

- **EE Kits:** The subprogram provides customers with an energy efficiency kit to introduce and promote energy efficient technologies that can be easily installed in the home. The kits serve as a gateway to other programs by including energy efficiency and conservation educational materials and promotional materials regarding additional program opportunities available to customers.
- **Behavioral:** The Behavioral subprogram educates customers regarding their home energy usage and provides recommendations to implement and adopt energy efficiency and conservation measures to reduce their energy usage. This subprogram provides customized home energy reports about each customer's energy usage, as well as analysis regarding their usage over time, with specific tips and recommendations that promote energy efficiency and

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conservation opportunities and additional program offerings available to them. The reports help customers to understand how their energy consumption compares to similarly sized and equipped homes; understand how their energy use changes over time and across seasons; and develop goals and strategies to reduce their energy use. This subprogram also offers an online audit tool that similarly provides recommendations for home energy efficiency and conservation opportunities and information regarding other programs that may benefit the customer. The online audit tool converts the customers' input of their energy usage characteristics into information the customers can understand and act upon, such as the cost of heating and cooling their homes, a usage comparison graph, and tips on how to save energy.

- **School Education:** The School Education subprogram provides energy efficiency education and awareness through students for customers to conserve energy in their homes. This subprogram is a classroom-based education program that is delivered by educators and/or contracted performers in schools. This subprogram also utilizes low cost direct install items that customers can install by themselves to better promote adoption of energy efficiency and conservation mindsets and measures by having the students work with their families.
- **Comprehensive Audit:** The Comprehensive Audits subprogram provides a customer with a comprehensive audit with direct installation of low-cost measures performed by Building Professional Institute (BPI) Certified auditors. The audit includes a diagnostic test of the home's air infiltration, plus a customized report that provides recommendations for home energy efficiency improvements such as: insulation, air sealing and duct sealing. The subprogram provides financial incentives towards the installation of the recommended comprehensive measures.
- **Multifamily:** The Multifamily subprogram provides energy efficiency education to multifamily building owners and building tenants while completing energy assessments, installing standard energy savings measures, and recommending energy efficiency improvements. This subprogram will provide financial incentives towards the installation of audit recommended comprehensive energy savings opportunities, including prescriptive equipment replacement and custom retrofit projects, including but not limited to, insulation, air sealing, duct sealing, heat pumps, residential heat pump water heaters, and residential appliances.
- **New Homes:** The New Homes subprogram provides incentives to builders for achieving energy efficiency savings and targets through a combination of building shell and installed measures, including appliance and equipment upgrades. To qualify for this program, the builder must construct the home to meet the energy efficiency requirements established by the ENERGY STAR program or build at a higher efficiency level than the current adopted building code.

#### **Implementation strategy (including expected changes that may occur in different program years)**

The Companies will contract with implementation CSP(s) who will directly administer and manage delivery of the program. Implementation activities will include marketing the program through multiple channels, validating customer eligibility, processing incentives, and conducting outreach to

and securing partnerships with trade allies to ensure customers are able to easily participate in the program. Specific subprogram implementation strategies include:

- **EE Kits:** The implementation CSP will be responsible for marketing, outreach, enrollment, and fulfillment aspects of this subprogram. The subprogram will target new residents within the Companies' service territories. Customers may also be able to opt-in to the subprogram by phone or website by providing their account number and other information.
- **Behavioral:** The implementation CSP will conduct the energy usage analysis and develop and deliver customized home energy reports to customers by mail and/or email. The home energy reports will provide customers with meaningful comparisons regarding their usage relative to a peer group, based on home location, size, and other criteria. The reports deliver information in a simple way, providing customers with the necessary information to take appropriate actions to reduce their energy use, along with marketing modules that promote additional residential program offerings. Customers will also have access to online functionality provided under the subprogram that customers can easily utilize to see additional tips on how to save energy, complete the online audit tool, and review their historical usage. For the online audit, the Companies plan to utilize their enterprise-wide Online Audit tool.
- **School Education:** The implementation CSP will be responsible for marketing and fulfillment aspects of this subprogram. The CSP will develop an implementation plan that involves marketing activities to target schools to inform them of the subprogram's offering, components, and benefits and to achieve program buy-in from school administration. The CSP will also develop educational materials to support delivery of this subprogram. These items may include student curriculum with energy conservation lessons and teacher materials for classroom instruction. An energy efficiency kit will be utilized to introduce simple retrofit measures that the student can work with at home with their parent's involvement.
- **Comprehensive Audit:** The implementation CSP will be responsible for the ongoing implementation of the program, including staffing, promotional strategies, and processes ensuring quality and other controls supporting successful program implementation. The CSP will engage trade allies such as insulation, weatherization, heating and cooling contractors who will be recruited to partner in this subprogram in addition to Building Professional Institute (BPI) Certified auditors. The CSP will utilize the trade allies' network to promote further comprehensive retrofits recommended under this subprogram.
- **Multifamily:** The implementation CSP will be responsible for the ongoing implementation of the program, including staffing, promotional strategies, and processes ensuring quality and other controls supporting successful program implementation. The CSP will engage trade allies, such as insulation, weatherization, heating, and cooling contractors, who will be recruited to partner in this subprogram in addition to professional or Building Professional Institute (BPI) Certified auditors. The CSP will utilize the trade allies' network to promote further comprehensive retrofits recommended under this subprogram.
- **New Homes:** The CSP will be responsible for marketing activities, such as educational materials, promotional brochures, and presentations, to target and conduct outreach to home builders to inform them of the program offering, components, and benefits and to achieve program buy-in and their participation. This program supports implementation of builder or contractor-installed energy efficient appliances, HVAC, and other eligible systems and

equipment in new residential homes, as well as measures addressing building shell and other energy consuming features.

The Companies plan to issue the RFP(s) for this program by the end of first quarter 2021 and plan to select the implementation CSP(s) in a timeframe that supports a seamless transition and implementation from the current program beginning June 1, 2021, 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 Companies will monitor program performance and adjust marketing, outreach, and/or incentives where applicable to mitigate this risk.

Anticipated key barriers that may pose a risk to this program include:

- **Customer Awareness and Engagement:** Residential customers may not be fully aware of energy efficiency opportunities for their home. This program addresses this barrier by providing customers with energy efficiency and energy usage education and awareness, along with measures, specific tips, and recommendations that promote energy efficiency and conservation opportunities and programs available to them.
- **Initial Cost of Home Retrofits:** Home retrofits are more expensive and more involved than purchasing efficient equipment and, therefore, require more participant investment and commitment. Customers must be willing and able to invest in more expensive energy-efficiency projects. The Companies address this barrier by offering incentives for audit recommended retrofits.
- **Trade Ally Awareness and Training:** To meet certain subprogram participation goals, sufficient auditors and contractors must be available to undertake the work. The Companies will work with their implementation CSP(s) to address this barrier by trying to engage and recruit more program and trade allies to participate in select subprograms.

The Companies will seek to manage barriers to program success through a commitment to monitoring program performance and feedback channels for assessing effective program design, delivery, outreach, and marketing/advertising, and improvement opportunities. The Companies and/or the implementation CSP(s) will monitor participation and performance to assess, where applicable, the effectiveness of program services, outreach efforts, incentive levels, delivery methods, and both program ally and trade ally availability, so that they can provide suggestions on how to assure that the program is continually providing customers with their needs.

### **Anticipated costs to participating customers**

Customers will have to pay the balance of equipment and installation costs not covered by the rebate. See Appendix B, PUC Table 7 for the incremental cost and incentive range for each measure in this program.

The EE Kits, Behavioral, and School Education subprograms are provided at no additional cost to the customer.

### **Ramp up strategy**

The Companies anticipate a seamless transition and implementation upon Commission approval of the program and CSP contract(s). For the existing program measures being offered in the new Plan, there will be some ramp-up period needed to transition to the new Plan period with the implementation vendors. For new and expanded program measures, it is anticipated that it will take approximately three- to six-months to start-up new or expanded program measures after program approval. See discussion in Section 1.4 for more details on ramp up.

### **Marketing strategy**

In general, the Companies' implementation CSP(s) will develop and administer the marketing plan for each subprogram under management by the Companies. Marketing activities will target eligible customers to inform them of the subprogram, its components, and the associated benefits as needed to meet program goals through channels such as bill inserts, e-mail, online advertisements, direct mail, social media, Home Energy Reports, and the Companies' website. In addition, certain subprograms will implement cross marketing that will be used in conjunction with other residential programs to promote additional participation.

The CSP(s) for the Comprehensive Audit and Multifamily subprograms will also market and promote comprehensive retrofits to customers, including the cost-saving benefits, information on typical payback time frames and rebates. In addition, each participant will be given rebate applications and marketing materials for other applicable program offerings at the time of the audit. The CSP(s) will attempt to follow up with participants to measure satisfaction with the subprogram in general and with delivery personnel. The CSP(s) will also identify customers who did not complete additional retrofit measures to understand the barriers to moving forward with comprehensive projects. The follow-up will be considered on an ongoing basis to improve future marketing strategies and program design.

The marketing strategy for the Multifamily subprogram will focus on informing property owners, managers, associations, tenant groups, municipalities, and community organizations about the availability and benefits of the subprogram and how to participate.

Contractors participating in the subprogram may also market to potential customers through various

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activities (e.g., flyers, radio advertising, social media, home events, etc.).

The CSP for the New Homes subprogram will target home builders, HERs raters, and eligible customers to inform them of the program changes, the new measures, its components, and the associated benefits through education via discussions, newsletters, and e-mails to the building community and through the Companies' website. The CSP will actively recruit participants through existing builder and rater partners, other utility programs, local home builder associations (HBAs), green building programs, and other allies who have established relationships within the residential construction community.

Key elements of the marketing strategy for in-home/in-building and new construction subprograms may include:

- Targeted outreach through direct mailings and presentations to inform customers, builders, developers, property owners, property managers, apartment associations, tenant groups, municipalities, and community organizations about the benefits of the program offerings and participation processes.
- Printed collateral highlighting the benefits and features of the subprograms as well as the enrollment and participation processes.
- Website content providing subprogram information resources and contact information.
- In-person visits by program representatives to qualified customers.
- Energy assessments of properties that may include the direct installation of standard energy savings measures to engage, educate, and promote participation by the customer, building owner, or facility manager in the other subprogram offerings, thereby targeting deeper savings.

**Eligible measures and incentive strategy showing incremental cost assumptions, gross measure-level TRC ratio, and incentive levels (e.g., \$ per measure, \$ per kWh or MW saved)**

Refer to Appendix B, PUC Table 7 for the eligible measures, eligibility, and incentive strategy for this program.

The minimum qualifying efficiency ratings for select program measures are based on meeting either ENERGY STAR® requirements or other requirements that exceed the current Federal Standard. The Companies have 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 PA TRM or other sources, which rely on ENERGY STAR®, 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 IV Plan, the Companies may implement tier level or incentive changes for certain applicable measures in conjunction with future specification changes to maintain program continuity and implement timely on-going energy efficiency improvements.

Incentives for select program measures will be available in several ways and are adapted to the retail partner or program needs and market response. Strategies may include:

- Mail-in applications available from the retailer, program website or directly from participating contractors; and
- Online rebate forms.

The Companies may change incentives after communicating incentive changes with stakeholders consistent with past practices.

In instances where incentives are not immediate, the Companies will complete consumer or contractor payments within 60 days following completion of contractor work, submission of complete and required paperwork, and completion of program requirements, such as necessary field inspections (if required).

### **The basis for proposed level of incentives and the sharing of incremental measure costs between participants and the EDC**

The Companies propose to provide a range of incentives depending on the subprogram and measure type, subject to changes within the “Up to” incentive amounts, based upon customer response and market conditions over the Plan period. The Companies strive to balance the sharing of incremental measure costs between the Companies and participants with subprogram performance and progress to goals. The Companies will set and adjust incentives based on many factors, including, but not limited to, their experience, the experience of their affiliates, consultant, or CSPs, stakeholder input, and industry benchmarking. Incentives will vary depending on factors, including, but not limited to, the specific subprogram, end-use and measure, the incremental cost of the high-efficiency technology, and the product maturity in the marketplace.

### **Maximum deadline for rebates including clear and reasonable rationale for any timeframe longer than 180 days**

For the Comprehensive Audit and Multifamily subprograms, 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, 2026. All services must be purchased and installed between June 1, 2021, and May 31, 2026.

For the New Homes subprogram, the deadline for submittal of applications is 180 days after home construction is completed and no later than June 7, 2026. Home construction and rating must be completed between June 1, 2021, and May 31, 2026.

### **Program start date with key schedule milestones**

The Companies anticipate a seamless transition and implementation upon Commission approval of the program and CSP contract(s). For the existing program measures being offered in the new Plan, there will be some ramp-up period needed to transition to the new Plan period with the implementation vendors. For new and expanded program measures, it is anticipated that it will take approximately three- to six-months to start-up new or expanded program measures after program

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approval. See discussion in Section 1.4 and Figure 2 for more details on the program start date with schedule milestones.

**Assumed Evaluation, Measurement, and Verification (EM&V) requirements required to document savings by the Commission’s statewide EE&C Plan Evaluator**

The Companies will retain an Independent EM&V Contractor to perform evaluation, measurement, and verification of the program in accordance with the state’s Evaluation Framework. Activities for this program may include:

EE Kits and School Education:

- For provided measures, a sample of customers will be surveyed to assess receipt and installation of measures.

Behavioral:

- Program impacts will be measured through billing analysis with a randomized control trial approach in accordance to the PA Evaluation Framework. The EM&V Contractor will perform participation uplift adjustments and avoided decay calculations in accordance with the PA TRM.

Comprehensive Audit and Multifamily:

- Verify that the planned number of each type of audit is performed on time and within budget. A sample of audits will be reviewed to check that their actual costs do not exceed the contract cost and that customers are satisfied with the service.
- Verify that existing EE&C opportunities are properly quantified to enable accurate tracking and documentation of energy efficiency and demand reduction.
- For installed measures and retrofit projects, verify that the installed measures and comprehensive diagnostics are performed as supported on program applications.

New Homes:

- Select a representative sample of homes for comprehensive measurement and verification, including reviewing both the baseline and as-built home properties as documented in a RESNET accredited building simulation program.
- Verify the models and their associated impacts for sampled homes through on-site data collection. Gather as-built data through independent on-site visits and review of data gathered during quality assurance / quality control visits.

As part of the monitoring process, the Companies plan to use selected indicators to verify periodically that energy savings and demand reduction are being realized as projected. A tracking and reporting system will be used for such monitoring. If EE&C program indicators show that projected EE&C targets are not likely to be achieved on schedule or within budget, the Companies will take appropriate corrective actions such as changing marketing and/or incentive levels.

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The Companies will document, store, and send measure data to the SWE, as requested, using specified data transmission protocols, processes, and technology.

**Administrative requirements- include internal and external staffing levels**

The Companies will use a combination of internal and external resources to manage and implement the EE&C programs. The Companies 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.

**Savings targets and estimated participation – include tables with estimated total MWH/yr and MW goals per year and/or ranges per year and cumulative tables that document key assumptions of estimated savings ranges per measure as well as estimated participation**

See Appendix B, PUC Table 8, Appendix C, Table C-2, and Appendix D, Table D-2.

**Estimated program budget (total) by year- include table with budget per year**

See Appendix B, PUC Table 9 and Appendix C, Table C-1 for program budget by year.

**Estimated percentage of sector budget attributed to program**

See Appendix B, PUC Table 4, Appendix B, PUC Table 6, Appendix B, PUC Table 12 and Appendix C, Table C-1 for sector and program level budget results.

**Cost-effectiveness- include gross and net TRC and net-to-gross (NTG) ratio for each program**

See Appendix B, PUC Table 13 for PA TRC ratios for this program on both a gross and net basis and the net-to-gross ratios assumed for each program. See Appendix B, PUC Table 7 and Appendix D, Table 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.

**Bidding strategy for peak demand reductions into PJM’s FCM. Include a description of the strategy and approach of offering resources into the PJM capacity market. The description should include an estimated range of MW and a trajectory of that MW over time**

See Section 1.6 for a description of the Companies’ strategy and approach to offering resources into the PJM capacity market. See Appendix C, Table C-3 for the estimated range of MW over time associated with the Companies’ Phase IV Plan.

**Other information deemed appropriate**

None.

### 3.2.3 LOW-INCOME ENERGY EFFICIENCY PROGRAM

#### **Program years during which program will be implemented**

June 2021 - May 2026

#### **Objective(s)**

The primary objectives of this program are to achieve energy savings in low-income households through a variety of program offerings that: (i) provide energy efficiency and conservation and energy usage education; (ii) promote adoption of energy saving behaviors; (iii) provide or install basic to comprehensive, prescriptive energy efficiency, and comprehensive whole building measures; (iv) encourage customers to turn in inefficient appliances, retrofit existing end-use technologies with more efficient ones, or implement new end-use technologies; and (v) achieve the construction of energy efficient low-income new homes.

#### **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**

The Low-Income Energy Efficiency Program includes a variety of program services, delivery channels, and vendors to support customer engagement, education, and participation to achieve energy savings in low-income households. The program includes direct or targeted offerings that both engage customers by providing them with energy efficiency education as well as information regarding other available program services and opportunities.

The program offerings incorporate strategies to change behaviors and provide prescriptive measures, direct install measures, and whole home/comprehensive solutions at no-cost as well as enhanced incentives for select measures that collectively address the initial cost barrier to promote and achieve participation by low-income customers. The program also targets the construction of new energy efficient low-income housing. This program includes the following subprograms:

- **Appliances:** Includes enhanced incentives for ENERGY STAR and other energy efficient appliances and will promote higher efficiency levels, where available, through both marketing and enhanced tiered incentives. The subprogram will also provide enhanced incentives for the pick-up and recycle service to income-qualified customers for turning in qualifying, inefficient, operating appliances. Qualifying appliances will be picked up at the customer's residence. In addition, periodic events may be offered at centralized drop-off

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locations where customers can drop off smaller qualified inefficient operating appliances, such as dehumidifiers and room air conditioners.

- **EE Kits:** The Energy Efficiency Kits subprogram provides customers with an energy kit that includes easy to install energy efficiency measures as well as efficiency education and awareness for income-qualified customers to become more efficient and conserve energy in their homes. The subprogram will also target low-income participation through community events, non-profits and other target marketing. The kits serve as a gateway to other programs by including energy efficiency and conservation educational materials and promotional materials regarding additional opportunities available to customers.
- **Behavioral:** The Behavioral subprogram educates customers regarding their home energy usage and provides recommendations to implement and adopt energy efficiency and conservation measures to reduce their energy usage. The CSP will use utility and data analytics to identify and target participation among low-income customers and will provide customized Low Income Home Energy Reports to these customers promoting low to no-cost recommendations and other program opportunities available to them including income-qualified programs. The reports help customers to understand how their energy consumption compares to similarly sized and equipped homes; understand how their energy use changes over time and across seasons; and develop goals and strategies to reduce their energy use. This subprogram also offers an online audit tool that similarly provides recommendations for home energy efficiency and conservation opportunities and additional program opportunities available to customers. The online audit tool converts the customers' input of their energy usage characteristics into information the customers can understand and act upon, such as the cost of heating and cooling their homes, a usage comparison graph, and tips on how to save energy.
- **School Education:** The School Education subprogram provides energy efficiency education and awareness through students for customers to conserve energy in their homes. The CSP will seek to include schools in areas that have a higher population of low-income customers. This subprogram is a customized classroom-based education program that is delivered by educators and/or contracted performers in schools. This subprogram also utilizes low cost direct install items that customers can install by themselves to better promote adoption of energy efficiency and conservation mindsets and measures by having the students work with their families.
- **Multifamily:** The Multifamily subprogram provides energy efficiency education to multifamily building owners and tenants during energy assessments, installation of standard energy savings measures, and HVAC, water heating and/or appliance replacements. The subprogram also provides recommendations for energy efficiency improvements. The energy assessment will examine major end uses including appliances, lighting, and HVAC systems, including building systems and building shell, and will provide customers with a list of energy savings opportunities and measures and the associated energy savings impacts. Workshops providing energy education to tenants may be conducted as appropriate. The CSP for this subprogram will manage all residential and commercial multifamily programs to avoid duplicating efforts for projects and will strive to coordinate with national and state housing programs. The subprogram provides direct installation of measures and financial incentives towards the installation of recommended building and common area energy

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savings opportunities including prescriptive equipment replacement and custom retrofit projects, including but not limited to, insulation, air sealing, duct sealing, heat pumps, residential heat pump water heaters and residential appliances.

- **New Homes:** The New Homes subprogram provides incentives to builders for achieving energy efficiency savings and targets through a combination of building shell and installed measures, including appliance and equipment upgrades. To qualify for this program, the builder must construct the home to meet the energy efficiency requirements established by the ENERGY STAR program or build at a higher efficiency level than the current adopted building code. To identify potential projects, the Companies will work with the Pennsylvania Housing Financing Agency (PHFA) or other entities.
- **Weatherization:** This subprogram is an expansion of the existing comprehensive Low-Income Usage Reduction Program (LIURP), also known as the WARM program. The WARM Plus program serves additional homes with comprehensive weatherization services and HVAC, water heating and/or appliance replacements, including but not limited to, insulation, air sealing, duct sealing, heat pumps, residential heat pump water heaters and residential appliances. The WARM Extra Measures subprogram provides additional electric energy savings measures above and beyond those provided to customers in individually metered residential properties that are participating in LIURP, including but not limited to, heat pumps, residential heat pump water heaters and residential appliances. The Companies have pursued opportunities to coordinate providing these services to qualified customers with Natural Gas Distribution Companies (NGDCs) and the Department of Community and Economic Development (DCED) Weatherization Assistance Program during Phases I, II, and III, including providing program referrals and/or leveraging common contractors. The Companies plan to continue pursuing these and additional coordination opportunities with other programs in their service territory during Phase IV, where available.

**Implementation strategy (including expected changes that may occur in different program years)**

The Companies will contract with implementation CSP(s) who will directly administer and manage delivery of the program and providing program services. Implementation activities will include, where applicable, efforts to raise awareness of the subprogram, outreach, enrollment, and fulfillment of program delivery, on-going refinements to the program-provided services, validating customer eligibility, processing incentives, and conducting outreach to and securing partnerships with trade allies to ensure customers are able to easily participate in the program. Specific subprogram implementation strategies include:

- **Appliances:** The implementation CSP will directly administer and manage delivery of the program and fulfilling program services. Implementation activities will include efforts to raise awareness of the program, on-going refinements to the list of eligible measures, validating customer eligibility and processing incentives, and conducting outreach to and securing partnerships with retailers, wholesalers, distributors, manufacturers, and trade allies to ensure customers are able to easily purchase energy efficient products through the program.

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Appliance Recycling will be delivered through an implementation CSP that specializes in proper appliance recycling. The CSP will be responsible for marketing, scheduling appointments, picking up / recycling of qualified working appliances, processing rebates, and handling customer inquiries. The CSP will also market, schedule, staff, and handle pick up / recycling of qualified working appliances at special events. Each unit collected is disposed of in an environmentally responsible way, in compliance with the U.S. Environmental Protection Agency's ("EPA") Responsible Appliance Disposal ("RAD") criteria.

- **EE Kits:** The implementation CSP will be responsible for marketing, outreach, enrollment, and fulfillment aspects of this subprogram. The subprogram will target income qualified customers. 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. Customers may also be able to opt-in to the subprogram by phone or website by providing their account number and other information.
- **Behavioral:** The implementation CSP will conduct the energy usage analysis and develop and deliver customized Low Income Home Energy Reports to income qualified customers by mail and/or email. The Home Energy Reports will provide customers with meaningful comparisons regarding their usage relative to a peer group, based on home location, size, and other criteria. The reports deliver information in a simple way, providing customers with the necessary information to take appropriate actions, including low- to no-cost recommendations to reduce their energy use, along with marketing modules that promote additional residential program offerings. Customers will also have access to online functionality provided under the subprogram that customers can easily utilize to see additional tips on how to save energy, complete the online audit tool, and review their usage over a period of time. For the online audit, the Companies plan to utilize its enterprise-wide Online Audit tool.
- **School Education:** The implementation CSP will be responsible for marketing and fulfillment aspects of this subprogram. The CSP will develop an implementation plan that involves marketing activities to target schools in areas that have a higher population of low-income customers to inform them of the subprogram offering, components, and benefits and to achieve program buy-in from school administration. The CSP will also develop educational materials to support delivery of this subprogram. These items may include student curriculum with energy conservation lessons and teacher materials for classroom instruction. An energy efficiency kit will be utilized to introduce simple retrofit measures that the student can work with at home with their parent's involvement.
- **Multifamily:** The implementation CSP will be responsible for the ongoing implementation of the program, including staffing, development and maintenance of website(s), promotional strategies, and processes ensuring quality and other controls supporting successful program implementation. The CSP will engage trade allies and subcontractors, such as insulation, weatherization, heating, and cooling contractors who will be recruited to partner in this subprogram in addition to Building Professional Institute (BPI) Certified auditors. The CSP will utilize the trade allies' network and subcontractors to promote further comprehensive retrofits recommended under this subprogram.
- **New Homes:** The CSP will develop an implementation plan that involves marketing activities, educational materials, promotional brochures, and presentations to target and conduct outreach to home builders to inform them of the program offering, components, and benefits and to achieve program buy-in and their participation. This program supports implementation of builder or contractor-installed energy efficient appliances, HVAC, and

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other eligible systems and equipment in new residential homes, as well as measures addressing building shell and other energy consuming features.

- **Weatherization:** The implementation CSP will recruit professional or Building Professional Institute (BPI) Certified subcontractors and/or trade allies to participate in the program, including Community Based Organizations (“CBOs”) and/or additional vendors, to perform energy audits and installation services. The Companies will work with the CSP to ensure efficient program referrals and coordination with the Companies’ LIURP, DCED Weatherization Assistance Program, and the NGDC Programs.

The Companies will coordinate the low-income energy efficiency program offerings with other programs in the Companies’ service territories and will present and solicit input on their coordination efforts with stakeholders on an annual basis throughout Phase IV implementation.

The Companies plan to issue the RFP(s) for this program in early 2021 and plan to select the implementation CSP(s) in a timeframe that supports a seamless transition and implementation from the current program beginning June 1, 2021, 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 identifying income-qualified customers and getting enough customers to participate in some of the subprograms. Well-established and innovative outreach and marketing techniques will be used to help identify income-qualified customers and promote participation in this program. The Companies will monitor the program performance and adjust marketing, outreach, and/or incentives where applicable to mitigate this risk.

Anticipated key barriers that may pose a risk to this program include:

- **Customer Awareness and Engagement:** Low-income customers may not be fully aware of energy efficiency opportunities for their home. This program addresses this barrier by providing customers with targeted outreach, energy efficiency and energy usage education and awareness, and specific tips and recommendations that promote energy efficiency and conservation opportunities and available program services.
- **Customer Awareness and Engagement:** Many customers are unaware of the “whole house” approach to energy-efficiency or the fact that building science exists. The Companies will work to address this by:
  - Continuing to educate customers about the program and how the home occupants, the structure, and equipment work together;
  - Highlighting the extra training and BPI certification that contractors must have;
  - Identifying how the shell measure improvements can improve their comfort within the home;
  - Noting that the program includes health and safety testing and repairs to allow energy-saving measures to be installed; and

- Reinforcing that the installation of equipment and shell measures may increase the value of their home.
- **Initial Cost of Efficient Equipment:** Relative to the market baseline, efficient equipment often carries a higher upfront cost but a lower lifetime operating cost. Low-income customers often may not fully value the lifetime operating cost advantage of efficient equipment and, as a result, higher upfront cost is a barrier to purchasing efficient equipment. To address this barrier, select prescriptive measures are provided at no additional cost and enhanced incentives are provided on other select measures to reduce the initial cost to income qualified customers.
- **Cost of Home Retrofits:** Low-income customers may not have the financial ability to invest in home retrofits. The Companies address this barrier by providing direct install measures and whole home/comprehensive solutions at no-cost to addresses the initial cost barrier to promote and achieve participation by low-income customers.
- **Subcontractor and Trade Ally Awareness and Training:** To meet certain subprogram participation goals, sufficient auditors and contractors must be available to undertake the work. The Companies will work with its implementation CSP(s) to address this barrier by trying to engage and recruit more qualified program and trade allies to participate in select subprograms.

Additionally, health and safety issues may restrict providing certain program services to customers. The Companies will work with their universal service program administrators to develop and maintain a list of available housing rehabilitation providers that the implementation CSP will provide to households when these issues cannot be remediated through the Companies' programs.

The Companies will seek to manage barriers to program success through a commitment to monitoring program performance and feedback channels for assessing effective program design, delivery, outreach, and marketing/advertising, and improvement opportunities. The Companies and/or the implementation CSPs will monitor participation and performance to assess, where applicable, the effectiveness of program services, outreach efforts, incentive levels, delivery methods, and both program ally and trade ally availability, so that they can provide suggestions on how to assure that the program is continually providing customers with their needs.

### **Anticipated costs to participating customers**

Customers and/or landlords will have to pay the balance of equipment and installation costs not covered by the rebate/incentives for the Low-Income Appliances and Multifamily subprogram. See Appendix B, PUC Table 7 for the incremental cost and incentive range for each measure in this program.

The Low-Income EE Kits, Behavioral, School Education, and Weatherization subprograms are provided at no additional cost to income-qualified customers.

### **Ramp up strategy**

The Companies anticipate a seamless transition and implementation upon Commission approval of the program and CSP contract(s). For the existing program measures being offered in the new Plan, there will be some ramp-up period needed to transition to the new Plan period with the

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implementation vendors. For new and expanded program measures, it is anticipated that it will take approximately three- to six-months to start-up new or expanded program measures 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 will include, but is not limited to, marketing activities coordinated with other Act 129 programs, the Companies 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.

In general, the Companies' implementation CSP(s) will develop and administer the marketing plan for each subprogram under management by the Companies. Marketing activities will target income-eligible customers to inform them of the subprogram, its components, and the associated benefits as needed to meet program goals through channels such as Companies' bill inserts, Companies' 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. In addition, certain subprograms will implement cross marketing that will be used in conjunction with other low-income subprograms to promote additional participation.

The marketing strategy for the Multifamily low-income subprogram will focus on informing property owners, managers, associations, tenant groups, municipalities, and community organizations about the availability and benefits of the program and how to participate. The CSP for the Multifamily subprogram will also market and promote comprehensive retrofits to customers, including the cost-saving benefits, information on typical payback time frames and direct installation measures and cost-share rebates to better prepare the customer for the decisions and financial investments associated with and to promote the customer completing comprehensive retrofit projects. In addition, each participant will be given applications and marketing materials for other applicable program offerings at the time of the audit. The CSP will also attempt to follow up with participants, either through a telephone call or customer satisfaction survey to measure satisfaction with the subprogram in general and with delivery personnel. The CSP will also identify customers who did not complete additional retrofit measures to provide additional guidance or to understand the barriers to completing comprehensive projects. The follow-up will be considered on an ongoing basis to improve future marketing strategies and program design.

The CSP for the New Homes subprogram will target home builders, HERs raters, and eligible customers to inform them of the program changes, the new measures, its components, and the associated benefits through education via discussions, newsletters, and e-mails to the building community, and the Companies' website. The CSP will actively recruit participants through existing builder and rater partners, other utility programs, local home builder associations (HBAs), green

building programs, and other allies who have established relationships within the residential construction community.

Key elements of the marketing strategy for the low-income program may include:

- Brochures that describe the benefits and features of the program, including application forms and processes. The brochures will be available for various public awareness events (community events, presentations, seminars etc.).
- Bill inserts, bill messages, email, direct mail, social media platforms, billboards, and pop-up stores.
- Company website content providing program information resources, contact information, online application forms, and links to other relevant service and information resources.
- Customer representatives trained to promote the program to their customers.
- Presence at conferences and public events used to increase general awareness of the program and distribute program promotional materials.
- Targeted outreach through direct mailings and presentations to inform customers, builders, developers, property owners, property managers, apartment associations, tenant groups, municipalities and community organizations about the benefits of the low-income program offerings and participation processes.
- Printed collateral highlighting the benefits and features of the subprograms as well as the enrollment and participation processes.
- Website content providing subprogram information resources and contact information.
- In-person visits by program representatives to qualified customers.
- Energy assessments of properties may include the direct installation of standard energy savings measures to engage, educate, and promote participation by the customer, building owner, or facility manager in the other subprogram offerings, thereby targeting deeper savings.

**Eligible measures and incentive strategy showing incremental cost assumptions, gross measure-level TRC ratio, and incentive levels (e.g., \$ per measure, \$ per kWh or MW saved)**

Refer to Appendix B, PUC Table 7 for the eligible measures, eligibility, and incentive strategy for this program.

The minimum qualifying efficiency ratings for select program measures are based on meeting either ENERGY STAR® requirements or other requirements that exceed the current Federal Standard. The Companies have 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 PA TRM or other sources, which rely on ENERGY STAR®, 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 IV Plan, the Companies may implement tier level or incentive changes for certain applicable measures in conjunction with future specification changes to maintain program continuity and implement timely on-going energy efficiency improvements.

Incentives for select program measures will be available in several ways and are adapted to the retail partner or program needs and market response. Strategies may include:

- Mail-in applications available from participating retailers, the program website or directly from participating contractors; and
- Online rebate forms.

The Companies may change incentives after communicating incentive changes with stakeholders consistent with past practices.

In instances where incentives are not immediate, the Companies will complete consumer or contractor payments within 60 days following completion of contractor work, submission of complete and required paperwork, and completion of program requirements, such as necessary field inspections (if required).

### **The basis for proposed level of incentives and the sharing of incremental measure costs between participants and the EDC**

Most of the program measures are provided at no cost to income-qualified customers with the program paying the entire measure cost for participants. For the Appliances and New Construction subprograms, the Companies propose to provide a range of incentives depending on the subprogram and measure type, subject to changes within the “Up to” incentive amounts, based upon customer response and market conditions over the Plan period. The Companies strive to balance the sharing of incremental measure costs between the Companies and participants with subprogram performance and progress to goals. The Companies will set and adjust incentives based on many factors, including, but not limited to, their experience, the experience of their affiliates, consultant, or CSPs, stakeholder input, and industry benchmarking. Incentives will vary depending on factors, including, but not limited to, the specific subprogram, end-use and measure, the incremental cost of the high-efficiency technology, and the product maturity in the marketplace.

### **Maximum deadline for rebates including clear and reasonable rationale for any timeframe longer than 180 days**

For the Appliances subprogram, rebate applications must be submitted within 180 days of purchase and be postmarked by June 7, 2026.

For the Multifamily subprogram, installation of major measures (e.g., appliance replacement, comprehensive retrofits) must be completed within 180 days from the date of the energy audit, and rebate applications must be received within 180 days of measure installation and postmarked by June 7, 2026. All services must be purchased and installed between June 1, 2021, and May 31, 2026.

For the New Homes subprogram, the deadline for submittal of applications is 180 days after home construction is completed and no later than June 7, 2026. Home construction and rating must be completed between June 1, 2021, and May 31, 2026.

### **Program start date with key schedule milestones**

The Companies anticipate a seamless transition and implementation upon Commission approval of the program and CSP contract(s). For the existing program measures being offered in the new Plan, there will be some ramp-up period needed to transition to the new Plan period with the implementation vendors. For new and expanded program measures, it is anticipated that it will take approximately three- to six-months to start-up new or expanded program measures after program approval. See discussion in Section 1.4 and Figure 2 for more details on the program start date with schedule milestones.

### **Assumed Evaluation, Measurement, and Verification (EM&V) requirements required to document savings by the Commission's statewide EE&C Plan Evaluator**

The Companies will retain an Independent EM&V Contractor to perform evaluation, measurement and verification of the program in accordance with the state's Evaluation Framework. Activities for this program may include:

#### EE Kits and School Education:

- For provided measures, a sample of customers will be surveyed to assess receipt and installation of measures.

#### Behavioral:

- Program impacts will be measured through billing analysis with a randomized control trial approach in accordance to the PA Evaluation Framework. The EM&V Contractor will perform participation uplift adjustments and avoided decay calculations in accordance with the PA TRM.

#### Comprehensive Audit, Multifamily and Weatherization:

- Verify that the planned number of each type of audit is performed on time and within budget. A sample of audits will be reviewed to check that their actual costs do not exceed the contract cost, and that customers are satisfied with the service.
- Conduct surveys and check sample calculations of projected savings for accuracy and for compliance with the PA TRM guidelines.
- Verify that existing EE&C opportunities are properly quantified to enable accurate tracking and documentation of energy efficiency and demand reduction.
- For installed measures and retrofit projects, verify that the installed measures and comprehensive diagnostics are performed as supported on program applications.

#### New Homes:

- Select a representative sample of homes for comprehensive measurement and verification, including reviewing both the baseline and as-built home properties as documented in a RESNET accredited building simulation program.

- Verify the models and their associated impacts for sampled homes through on-site data collection: Gather as-built data through independent on-site visits and review of data gathered during quality assurance / quality control visits.

As part of the monitoring process, the Companies plan to use selected indicators to verify periodically that energy savings and demand reduction are being realized as projected. A tracking and reporting system will be used for such monitoring. If EE&C program indicators show that projected EE&C targets are not likely to be achieved on schedule or within budget, the Companies will take appropriate corrective actions such as changing marketing and/or incentive levels.

The Companies will document, store, and send measure data to the SWE, as requested, using specified data transmission protocols, processes, and technology.

**Administrative requirements- include internal and external staffing levels**

The Companies will use a combination of internal and external resources to manage and implement the EE&C programs. The Companies 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.

**Savings targets and estimated participation – include tables with estimated total MWH/yr and MW goals per year and/or ranges per year and cumulative tables that document key assumptions of estimated savings ranges per measure as well as estimated participation**

See Appendix B, PUC Table 8, Appendix C, Table C-2, and Appendix D, Table D-2.

**Estimated program budget (total) by year- include table with budget per year**

See Appendix B, PUC Table 9 and Appendix C, Table C-1 for program budget by year.

**Estimated percentage of sector budget attributed to program**

See Appendix B, PUC Table 4, Appendix B, PUC Table 6, Appendix B, PUC Table 12 and Appendix C, Table C-1 for sector and program level budget results.

**Cost-effectiveness- include gross and net TRC and net-to-gross (NTG) ratio for each program**

See Appendix B, PUC Table 13 for PA TRC ratios for this program on both a gross and net basis and the net-to-gross ratios assumed for each program. See Appendix B, PUC Table 7 and Appendix D, Table 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.

**Bidding strategy for peak demand reductions into PJM’s FCM. Include a description of the strategy and approach of offering resources into the PJM capacity market. The description should include an estimated range of MW and a trajectory of that MW over time**

See Section 1.6 for a description of the Companies’ strategy and approach to offering resources into the PJM capacity market. See Appendix C, Table C-3 for the estimated range of MW over time associated with the Companies’ Phase IV Plan.

**Other information deemed appropriate**

None.

**3.3 Commercial/Industrial Small Sector Programs:**

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

**Table 9: Existing & New Small C/I Programs**

Phase III Program	Proposed Phase IV Program	Program Description
<b>Small Commercial &amp; Industrial Programs</b>		
C&I Energy Solutions for Business Program - Small	C&I Energy Solutions for Business Program - Small	The Energy Solutions for Business Program provides financial incentives to small commercial and industrial customers, including government, institutional and multifamily customers, to purchase and install qualifying energy efficiency equipment, recycle inefficient appliances, upgrade less efficient equipment to more efficient end use technology, retrofit specialized equipment and processes, applications and end uses, complete qualifying high efficiency building shell or system improvements. The Program will also promote behavioral savings, adoption of energy saving technologies and efficient building operations through customer education and outreach, audits with direct install measures, building tune-up, energy management strategies, meter data analysis, or retrocommissioning or building operations training to achieve energy savings.
C&I Demand Response Program - Small	N/A	N/A

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**

Program	Sub-Program	Measure	Measure Status
C&I Energy Solutions for Business Program - Small	Multi Family - SCI	MF - Tenant - DI - SCI - LI	Existing
		MF - Tenant - Prescriptive - SCI - LI	Existing
		MF - Tenant - Custom - SCI - LI	New
		MF - Common - Prescriptive - SCI - LI	New
		MF - Common - Custom - SCI - LI	New
		MF - Common - DI - SCI - LI	New
		MF - Tenant - DI - SCI	Existing
		MF - Tenant - Prescriptive - SCI	Existing
		MF - Tenant - Custom - SCI	New
		MF - Common - Prescriptive - SCI	New
		MF - Common - Custom - SCI	New
		MF - Common - DI - SCI	New
	Prescriptive - SCI	Air Conditioning - Level 1 <=5.4 Tn - SCI	Existing
		Air Conditioning - Level 1 >5.4 < 20 Tn - SCI	Existing
		Air Conditioning - Level 1 >=20 Tn - SCI	Existing
		Heat Pump - Level 1 <=5.4 Tn - SCI	Existing
		Heat Pump - Water & GeoT - ES Tier 3 - SCI	Existing
		Ductless Mini-Split HP - Level 3 - SCI	Existing
		PTAC - SCI	Existing
		PTHP - SCI	Existing
		Room Air Conditioner- SCI	Existing
		Smart Thermostat -Rebate - SCI	New
		HVAC - Custom - SCI	New
		Circulating Pump (Mid Strm) - SCI	New
		HVAC - Maintenance - SCI	New
		Furnace Fan (Retrofit or New to ECM) - SCI	New
		Lighting Control (Daylight & Occupancy) - SCI	Existing
		Linear Fluorescent - SCI	Existing
		LED Linear - SCI	Existing
		LED Channel Signage - SCI	Existing
		Exit Sign - SCI	Existing
		LED Fixture External - SCI	Existing
		LED Fixture Internal - SCI	Existing
		LED Lamp - SCI	Existing
		Lighting - Other - SCI	New
		Street & Area Lighting (Customer Owned) - SCI	Existing
LED Reach in Refrig / Frzr Light - SCI	Existing		
Lighting - Custom - SCI	New		
Network Lighting Control - SCI	New		



Program	Sub-Program	Measure	Measure Status
C&I Energy Solutions for Business Program - Small	Prescriptive - SCI	Linear Lamp - MS - SCI	New
		High/Low Bay Lamp - MS - SCI	New
		LED Fixture - MS - SCI	New
		ECM Evap Fan Motor - SCI	New
		Evap Fan Controls - SCI	New
		Refrigerator - Reach In - SCI	Existing
		Freezer - Reach In - SCI	Existing
		Refrigerated Case Cover - SCI	Existing
		Anti Sweat Heater Controls - SCI	Existing
		Strip Curtain - SCI	Existing
		Ice Machine - SCI	Existing
		Beverage Vending Machine - Controls - SCI	Existing
		Beverage Vending Machine - Energy Star - SCI	Existing
		Steam Cooker - SCI	Existing
		Fryer - SCI	Existing
		Griddle - SCI	Existing
		Hot Food Holding Cabinet - SCI	Existing
		Combination Oven - SCI	Existing
		Convection Oven - SCI	Existing
		Dishwasher - SCI	New
		Induction Warmer/Rethermalizer Well - SCI	New
		Coffee Brewer - SCI	New
		Pre-Rinse Sprayer - SCI	Existing
		Agricultural Process Lighting	New
		Auto Milker Takeoff	Existing
		Dairy Scroll Compressor	Existing
		HE Ventilation Fans	Existing
		Heat Reclaimer	Existing
		High Volume Low Speed Fan	Existing
		Livestock Waterer	Existing
		Dairy Vac Pump VSD Control	Existing
		Low Pressure Irrigation	Existing
		Custom - Agricultural	New
	Dairy Refrigeration Tune-Up	New	
	Engine Block Heater Timer	New	
	Street Lighting (Tariff / Utility Owned(EMU))	Existing	
	Street Lighting (Tariff / Customer Owned(MU))	Existing	
	Refrigerator Recycling - SCI	Existing	
	Freezer Recycling - SCI	Existing	
	Room Air Conditioner Recycling - SCI	Existing	
Dehumidifiers Recycling - SCI	New		
	Prescriptive Other - SCI		

Program	Sub-Program	Measure	Measure Status
C&I Energy Solutions for Business Program - Small	Prescriptive Other - SCI	EV Charging Cord - Level 2 - SCI	New
		Clothes Washer Level 1&2 - SCI	Existing
		Clothes Washer Level 3 - SCI	Existing
		Clothes Dryer - SCI	Existing
		Refrigerator Level 1& 2 - SCI	Existing
		Refrigerator Level 3 - SCI	Existing
		Water Heater - Heat Pump - SCI	Existing
		Freezer - SCI	Existing
		Dehumidifier - SCI	New
		Water Cooler - SCI	New
		Monitor - SCI	Existing
		Computer - SCI	Existing
		Uninterruptible Power Supply (UPS) - SCI	Existing
		Imaging - SCI	Existing
	Small Network - SCI	New	
	Advanced Pwr Strip - SCI	New	
	Custom - SCI	Custom - Process Improvement - SCI	Existing
		Custom - Compressed Air - SCI	Existing
		Custom - Motors - Three Phase - SCI	Existing
		Custom - Refrigeration - SCI	Existing
		Custom - Equipment/Servers - SCI	Existing
		Custom - HVAC/Chlr/Cntrls - SCI	Existing
		Custom - VFDs < 10HP - SCI	Existing
		Custom - VFDs > 10 HP - SCI	Existing
		Custom - Bldg Improvements - SCI	Existing
		Custom - New Construction - SCI	New
	Custom - Audit & Education - SCI	Existing	
	Energy Management - SCI	Building Tune Up - SCI	Existing
		Virtual/Meter Data Commissioning - SCI	New
		Retrocommissioning - SCI	Existing
		Building Operations Training - SCI	Existing
		Energy Consultation - SCI	New
	Audits - SCI	Existing	

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

### 3.3.1 C/I ENERGY SOLUTIONS FOR BUSINESS PROGRAM- SMALL

#### **Program years during which program will be implemented**

June 2021 - May 2026

#### **Objectives**

A primary objective of this program is to provide a solution for smaller commercial and industrial customers, including GNI customers, who are “harder to reach” and/or are interested in becoming more energy efficient. Smaller business customers may have more barriers to participation because they lack the technical expertise, time, or capital to research and apply for incentives or implement energy efficiency measures offered under traditional prescriptive or custom program offerings. Another objective of the program is to promote the installation of energy efficient equipment and to increase the efficiency of processes, buildings, building operations, and systems among small business customers. The program overcomes these barriers by providing customer engagement with educational and efficiency measures in addition to prescriptive, calculated, or performance-based incentives or midstream or upstream incentives or buydowns and providing support to manufacturers, distributors, contractors, and retailers that sell energy efficient products.

#### **Target Market**

The Energy Solutions for Business Program - Small will be available to all small commercial, industrial, and other small non-residential customers, including GNI customers, located within the Companies’ service territories. The program includes the Multifamily, Prescriptive, Prescriptive-Other, Custom, and Energy Management subprograms, which target small business and GNI customers as follows:

- **Multifamily:** The Multifamily subprogram provides customer engagement with energy efficiency education through energy assessments, targets the installation of standard energy savings measures, and promotes energy savings opportunities including prescriptive equipment replacement and custom retrofit projects. This subprogram targets non-residential metered multifamily property owners, property managers, and residents, including income-qualified occupants and owners of multifamily buildings.
- **Prescriptive:** The Prescriptive subprogram promotes the sale and installation of commercial grade efficient equipment across major end-use categories, including lighting, heating, and cooling equipment, agricultural and food service equipment, among other efficiency measures, and is promoted to program allies and customers via prescriptive or calculated rebates. The target market will be small business and GNI customers with prescriptive equipment that is incentivized under this subprogram. Typical customers include, but are not limited to, office

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buildings, grocery stores, health care facilities, retail business, governmental facilities and small manufacturing.

- **Prescriptive – Other:** The Prescriptive – Other subprogram promotes the sale and installation of efficient residential grade appliances and consumer electronics, including office equipment, as well as the removal and recycling of qualifying inefficient, operating appliances by small business and GNI customers. The target market will be customers with residential grade appliances and consumer electronics, including office equipment, that are incentivized under this subprogram. Typical customers include, but are not limited to, small business, retail customers and GNI business administration.
- **Custom:** The Custom subprogram promotes the application of non-prescriptive efficiency measures, including equipment, processes, and building systems and improvements by small business and GNI customers. The target market will generally be customers with more complex needs and non-standard efficiency opportunities and typically include, but not be limited to, office buildings, health care facilities, governmental facilities, and light/medium industrial and manufacturing.
- **Energy Management:** The Energy Management subprogram provides customer engagement and energy efficiency education and provides or targets the installation of energy efficient equipment and efficient building operations and retro-commissioning/commissioning measures. The subprogram targets smaller business customers, including GNI customers, with audits with the installation of program eligible measures tailored to the customer’s business type. Typical customers include, but are not limited to, grocery and convenience stores, restaurants, retail businesses located in strip and shopping malls, warehouses, public assembly buildings, educational facilities, light/medium industrial, and GNI customers. The subprogram also provides building operations measures that target existing small businesses and buildings and is particularly relevant for building types within the small business sector that utilize traditional building systems and controls. Retro-commissioning targets existing commercial buildings and is particularly relevant for building types within the sector utilizing a building energy management system.

## **Program Description**

The Energy Solutions for Business Program - Small includes the Multifamily, Prescriptive, Prescriptive-Other, Custom, and Energy Management subprograms and are described as follows:

- **Multifamily:** The Multifamily subprogram provides customer engagement with energy efficiency education through energy assessments and the installation of standard energy savings measures and provides or promotes energy savings opportunities including prescriptive equipment replacement and custom retrofit projects, in both common areas and tenant spaces. In addition, the Multifamily subprogram will target low income/affordable housing properties with enhanced incentives and measures. Customers will begin participation in the Multifamily subprogram with an energy assessment and installation of standard energy savings measures to help encourage program participation. The assessment will identify and

recommend additional energy savings opportunities that are specific to each customer and building and could include incentives for prescriptive equipment replacement or custom retrofit opportunities.

- **Prescriptive and Custom:** The Prescriptive and Custom subprograms will promote the installation of high-efficiency equipment by the Companies' small commercial and industrial customers, including GNI customers, either via the installation of prescriptive or custom measures or projects.

The Prescriptive subprogram provides prescriptive-based incentives to small business customers to purchase and install energy efficient equipment. The subprogram will support and/or provide downstream approaches and may also provide midstream or upstream incentives or buydowns and support to manufacturers, distributors, contractors, and retailers that sell select energy efficient products. Prescriptive incentives will be offered for individual applications and retrofit projects employing standard efficient technologies where the anticipated energy savings are relatively consistent. These measures will incent energy efficient lighting, heating, and cooling equipment, agricultural and food service equipment, among other efficiency measures. Type and value of incentive provided will range and will include electric technologies that improve energy efficiency. Up-front rebates will be offered to reduce first cost barriers. Prescriptive measures are designed to provide easy and cost-effective access to energy efficient measures through customers' preferred channels. Prescriptive rebates are designed to:

- Provide incentives to facility owners and operators for the installation of high efficiency equipment and controls.
- Promote the marketing of high efficiency measures by trade allies such as electrical contractors, mechanical contractors, and their distributors to increase market demand.
- Ensure the participation process is clear and simple.

Prescriptive incentives will increase adoption of energy efficient equipment by harnessing the Companies' unique customer relationships to positively impact the sales process surrounding efficient equipment, from education and awareness with customers to engagement with trade ally contractors and equipment distributors for the high efficiency equipment.

The Custom subprogram includes custom measures that promote electric efficiency opportunities for small commercial and industrial customers, including GNI customers, that are non-standard and not captured by prescriptive equipment. Calculated or performance-based incentives will be provided to customers for upgrading less efficient specialized processes and applications (e.g., variable frequency drives, motors, compressed air, equipment replacement, CHP, industrial process changes, data centers, etc.) to high efficiency specialized processes and applications. This subprogram also provides incentives for customers to install specialized building shell or improvements for new construction or renovation projects. Calculated or performance-based incentives are designed to reduce the customer's capital investment for qualifying energy efficient measures. Typical custom measures that are eligible for incentives are either less common measures or efficiency opportunities in specialized applications that may include manufacturing or industry-specific processes, or non-traditional

use cases. In many cases, custom efficiency projects are more complex than prescriptive equipment replacement.

Potential participants in both the Prescriptive and Custom subprograms are recommended to submit an application for pre-approval to confirm project eligibility and reserve funding. The Companies and/or their CSP will develop electronic rebate application forms that will guide applicants through eligibility guidelines, subprogram requirements, terms and conditions, and general information. In addition, the Companies and/or their CSP will provide applications in web ready formats to ensure participants have easy access to the forms. The pre-approval process provides for the review of the customer's proposed project to confirm measure eligibility and incentive budget availability. This also supports the Companies' subprogram management because it communicates projects that are in the pipeline. If accepted and pre-approved by the Companies, a timeline is established for project completion to qualify for a rebate. The typical lead time for completing a project is 90 to 120 days but can be longer depending on the complexity of the project. Large projects, or subsets of projects, may be required to undergo pre-and post-inspection to validate project energy savings.

- **Prescriptive-Other:** Similar to the Prescriptive subprogram, this subprogram provides prescriptive-based incentives to small commercial and industrial customers, including GNI customers, to purchase and install energy efficient equipment that are residential type appliances that reside within a small commercial and industrial customers facility (e.g., break rooms, small kitchens, etc.) as well as the removal and recycling of qualifying inefficient, operating appliances. These measures include energy efficient appliances, electronics, plug load equipment, and appliance recycling measures. Prescriptive measures are designed to provide easy and cost-effective access to energy efficient measures through customers' preferred channels.

The subprogram will support and/or provide downstream approaches and may also provide midstream or upstream incentives or buydowns and support to manufacturers, distributors, contractors, and retailers that sell select energy efficient products. Type and value of incentive provided will range and will include electric technologies that improve energy efficiency. Up-front rebates will be offered to reduce first cost barriers.

Prescriptive incentives will increase adoption of energy efficient equipment by harnessing the Companies' unique customer relationships to positively impact the sales process surrounding efficient equipment, from education and awareness with customers to engagement with trade ally contractors and equipment distributors for the high efficiency equipment.

The Companies and/or their CSP will develop electronic rebate application forms that will guide applicants through eligibility guidelines, subprogram requirements, terms and conditions, and general information. In addition, the Companies and/or their CSP will provide applications in web ready formats to ensure participants have easy access to the forms.

- **Energy Management:** The new Energy Management subprogram targets energy savings for existing small commercial and industrial facilities by providing a holistic approach to improving building energy performance through the maintenance, retrofit, tune-up, and retro-commissioning services for existing buildings and through the implementation of energy savings strategies that improve the overall operation and energy performance of buildings and building systems. This subprogram complements the Prescriptive and Custom subprograms, which focus on capital equipment replacement or process improvement investments by improving the energy performance of a building by maintaining, retrofitting, adjusting, and optimizing the systems within the building and the implementation of complementary energy savings measures. The subprogram also provides paths to track the ongoing building energy performance by using retro-commissioning, which ensures continued energy performance. By implementing these measures, customers also receive ancillary benefits, including improved occupant comfort, lower maintenance costs, and extended equipment life.

This subprogram includes measures that focus on specific energy efficiency measures and management practices that can be categorized as follows:

1. **Building Tune-Up:** Provides a path for customers to implement a Building Tune-Up that will focus on the tune-up of central HVAC systems, Mini-Splits and Packaged Terminal units, adjustment and calibration of building systems and controls, diagnostic testing and the installation of other measures that enhance building energy performance and savings. The following Building Tune-Up program measures include, but are not limited to:
  - a. HVAC Tune-Up, including Refrigeration charge correction (if needed), cleaning evaporator and condenser coils, filter changes, verification of proper operation of fans and motors, and minor repairs to refrigerant lines and coils.
  - b. Calibration of building systems and controls, including energy management systems, lighting, and HVAC.
  - c. Diagnostic and function tests of applicable major systems and equipment.
  - d. HVAC controls to optimize Roof Top Units (RTU)/Air Handling Units (AHU).
  - e. Refrigeration controls to optimize refrigeration equipment.
  - f. Lighting upgrades, including application of lighting controls and optimization of installations.
  - g. Chiller system controls to optimize chiller performance.
  - h. Other program eligible energy saving measures identified through the building assessment.
  - i. Building Operations Training for qualified personnel to obtain Building Operations Certification (BOC) through a certified training program or other training programs as related to the efficient design, operations, and maintenance of buildings.

2. Retro-Commissioning (RCx): Provides a comprehensive assessment of a customer's commercial/industrial building by using a prescribed planning process that includes a building audit, development of an action plan for the building, and development of a Measurement and Verification (M&V) plan to ensure the optimum on-going performance of the building and building systems. A comprehensive assessment of a commercial/industrial building using a prescribed planning and implementation process, including:
  - a. Audit Phase – Customer confirms intent to participate in program and registers with the Company or the third-party implementation contractor. Customer and/or the customer's consultant completes the required level of an American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) audit based on the complexity of the facility and develops a retro-commissioning implementation plan, including project timelines and plan to implement audit identified operation and maintenance measures. There may be opportunities to complete this Phase without a full ASHRAE level audit.
  - b. Setup Phase – Contracted services to implement the plan are verified, long-term monitoring and reporting is developed and initiated, and project plan is implemented by customer.
  - c. Measurement and Verification (M&V) Phase – Savings verification and rebate payment from implementation of the plan are completed.

Typical Retro-Commissioning program measures include, but are not limited to:

- Optimizing chiller and boiler operations to better match building load conditions.
- Reducing ventilation in over-ventilated areas.
- Fixing ventilation dampers that are open when they should be closed or vice versa.
- Decreasing supply air pressure setpoint and system rebalancing.
- Aligning zone temperature setpoints to match the building's actual operating schedule.

As an option to performing an on-site audit to develop a retro-commissioning plan, or as an additional complementary measure, Virtual Commissioning (VCx) provides eligible customers with an analysis of their building's energy performance by using meter usage data, other data, and building modeling to identify and recommend energy efficiency measures and operational changes to improve a building's overall energy performance. The analysis will foster participation in the Companies' other programs by identifying and encouraging customers to implement other energy efficiency improvements. The VCx process can also utilize benchmarking and peer comparison metrics to help determine energy performance to identify facilities that are underperforming. This offering can also use continuous engagement, monitoring, and periodic reviews of the customer's energy usage to ensure that implemented measures or changes have been successfully completed. The use of building analysis

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using remote analysis techniques will also help customers to participate in the programs because of limited access to customers' facilities due to concerns and restrictions such as COVID-19.

**Implementation Strategy (including expected changes that may occur in different program years)**

The Companies will outsource the implementation of this program to CSP(s) who will be responsible to administer, promote, and provide the program to customers, including staffing, promotional strategies, and processes ensuring quality and other controls supporting successful program implementation. The CSP(s) will be responsible for administration, marketing, outreach, fulfilling program services, application processing and documentation regarding purchased products and completed projects, and processing incentives and rebates, where applicable. The Companies will review the application processes with its Phase IV CSP(s) to identify and make improvements, as warranted, and will require the program CSP(s) to consider innovative outreach activities to engage customers, program allies, and trade allies throughout the implementation of the program.

The Companies will perform overall administration and oversight of the program. The Companies plan to issue the RFP(s) for this program in early 2021 and to select the CSP(s) in a timeframe that supports a seamless transition and implementation from the current program beginning June 1, 2021, upon Commission approval of the CSP contract(s) and program.

Program information and links to program applications will be made available at the Companies' program website, [www.energysavepa.com](http://www.energysavepa.com). Completed applications to the subprograms will be processed online or be returned via email, where applicable. For Phase III pre-approved projects that are not completed prior to the conclusion of Phase III, applications will be processed as part of the same Phase IV programs without re-application, consistent with the Companies' review and eligibility requirements. The Companies will consider other methods for providing rebates and other rebate application processes based on market considerations and opportunities that are identified during program implementation.

The Prescriptive, Prescriptive-Other, and Custom subprograms will offer an on-line application portal for customers to submit rebates for energy efficient products or projects and may also develop a midstream approach, work with retailers, contractors, distributors, and/or manufacturers for midstream or upstream incentives or point of purchase buydowns for select measures. The CSP(s) will develop electronic rebate application forms that will guide applicants through eligibility guidelines, program requirements, terms and conditions, and general information. In addition, the CSP(s) will provide applications in web ready formats to ensure participants have easy access to the forms. Additionally, the CSP(s) will provide support and assistance to retailers or distributors to support identification and promotion of qualifying energy efficient products. The CSP(s) will also

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provide technical support to customers on the application of the energy efficiency measures and technologies included in these subprograms.

The CSP for the Multifamily subprogram will provide target marketing to both multifamily customers and program allies to ensure awareness of the program and enhance customer participation. The CSP may also contract with qualified auditor(s) to provide the subprogram services to customers, who will conduct marketing and the direct installation and retrofit aspects of this subprogram.

The CSP for the Energy Management subprogram will conduct implementation aspects of this subprogram to customers. Marketing will target specific customer types and program allies to ensure awareness of the program and enhance customer participation. Additional targeted marketing will be completed to promote this subprogram and enhance participation among hard to reach small business customers. The CSP will also conduct the services provided through this subprogram.

Customers can participate in the Multifamily and Energy Management subprograms by application to the subprogram or will be contacted directly by the CSP and/or auditors. The CSP will retrieve customer demographics and obtain customer agreement for the services to be provided and handle on-going customer engagement. Incentives for efficiency measures recommended by the subprograms will be issued after the measures are purchased or completed and required documentation is submitted to the subprogram.

### **Program issues and risks and risk management strategy**

The risks associated with this program include 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 Companies 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 key barriers that may pose a risk to this program include:

- **Initial Cost of Efficient Equipment:** Relative to the market baseline, efficient equipment often carries a higher upfront premium but a lower lifetime operating cost. Purchasers often may not fully value the lifetime operating cost advantage of efficient equipment and, as a result, higher upfront cost is a barrier to purchasing efficient equipment. To address this barrier, incentives are provided to the customer to reduce the initial cost through a variety of channels including at midstream and downstream.
- **Customer Awareness and Engagement:** Smaller businesses and GNI customers may have limited resources and time to consider, pursue, or prioritize energy efficiency and may have

efficiency needs not well aligned with traditional EE&C programs targeted at larger customers. This program is intended to confront these market barriers by providing turnkey, direct installation of efficiency measures tailored to these eligible customers, while identifying additional efficiency opportunities directly on-site, and through directly soliciting eligible customers for participation. This personalized approach builds trust and achieves results while increasing the likelihood of further participation. In addition to limited resources and time, other small customers may not be aware of the benefits of installing efficient equipment or completing other energy efficiency improvements. To address awareness and educational barriers, the Companies will educate small customers on the program opportunities and the benefits of installing efficient equipment or completing other efficiency improvement through targeted marketing and outreach, providing program services, ensuring that incentives are easily accessible, and encouraging market transformation and stocking of efficient equipment through midstream incentives. The Companies will also focus marketing, education, and outreach efforts on the trade ally community to ensure that trade allies are aware of the program opportunities and available incentives.

- **Business/Operational Constraints:** These facilities often have unique operational constraints that act as a barrier to implement energy-efficiency projects and the maintenance of equipment. This barrier will be addressed by ensuring the subprogram operates cooperatively with participants, provides technical assistance and support, provides maintenance services, and offers timely incentives.
- **Sufficient Stocking and Availability of Efficient Products:** To support a robust marketplace for efficient equipment, the Companies may promote midstream incentives for specific equipment types to encourage participation via incentives for distributors or retailers to stock and promote the purchase of and/or for marking down the cost of the efficient equipment at the point of sale.

The Companies will seek to manage barriers to program success through a commitment to monitoring program performance and feedback channels for assessing effective program design, delivery, outreach, marketing/advertising, and improvement opportunities. The Companies and/or the implementation CSPs will monitor participation and performance to assess, where applicable, the effectiveness of program services, outreach efforts, incentive levels, delivery methods, and feedback from both program and trade allies, so that they can provide suggestions on how to assure that the program is continually providing customers with their needs.

### **Anticipated costs to participating customers**

Customers will have to pay the balance of the energy efficient product, project and/or installation cost not covered by the rebate. See Appendix B, PUC Table 7 for the incremental cost and incentive range for each measure in this program.

### **Ramp up strategy**

The Companies anticipate a seamless transition and implementation upon Commission approval of the program and CSP contract(s). To the extent that the Companies change CSPs for Phase IV, the Companies will provide advance notice of such change through both the program website and program allies. For the existing program measures being offered in the new Plan, there will be some ramp-up period needed to transition to the new Plan period with the implementation vendors. For new and expanded program measures, it is anticipated that it will take approximately three- to six-months to start up new or expanded program measures after program approval. See discussion in Section 1.4 for more details on ramp up.

### **Marketing strategy**

The Companies will implement an aggressive, sector-based marketing campaign for the duration of the new Plan. Marketing will be used to target specific customer sectors to ensure awareness of the subprograms and enhance participation.

Marketing activities of the Prescriptive, Custom, and Energy Management subprograms will target eligible customers and program allies to inform them of the program, its components, and the associated benefits through direct mail, website, trade shows, the business customer newsletter, and key account managers. The Companies will also work with distributors and contractors to market eligible higher efficiency equipment than required by federal standards. Additionally, the expanding list of program allies will continue to be cultivated, as they are vital to the growth in customer participation. The Companies regularly communicate with their program allies and participating contractors and provides educational type seminars regarding eligibility, incentives, and other program details to promote and market the program to customers.

The CSP(s) for the Prescriptive, Custom, and Energy Management subprograms will target various market sectors (i.e., education, medical/health care, manufacturing, retail, food service) to enhance participation and promote a cross-section of measures applicable to each market. The Energy Management subprogram will also outreach to building maintenance and operations personnel to promote the subprogram including the Building Tune-Up and Retro-commissioning measures to enhance the energy performance of their facilities.

Since prescriptive retrofits are generally one-for-one replacements, measure-specific collateral pieces will be developed for new measures or enhanced for continuing measures. These will be delivered to sectors most likely to utilize the specific technology. Fact sheets, mailings, post cards, e-blasts, and on-location seminars will all be used to promote specific measures. Custom marketing efforts require a consistent and directed outreach to program allies, the Companies' managed accounts and government accounts whose processes are compatible with the Custom subprogram requirements. The CSP will be required to develop and implement a diligent marketing plan to identify and target customers to connect them to appropriate measures using e-blasts, webinars, on-site seminars, and large customer newsletters, among other marketing and outreach initiatives.

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Further, in order to attract multiple measure participation, the CSP will outreach via sectors (e.g., medical facilities for lighting, HVAC, custom processes, and CHP), as well as to program allies such as architects, engineers, and professional associations (e.g., the United States Green Business Council – USGBC). Targeted advertisements in industry/trade publications will also be required to bring awareness to the opportunities and savings available through the Prescriptive, Custom, and Energy Management subprograms. Furthermore, specialized marketing, engagement, and engineering assistance will be utilized to enhance program participation by utilizing CSP personnel to assist with specialized equipment applications, whole building type solutions and studies, and other technical assistance related to energy efficiency opportunities under these subprograms recognizing the increasing complexity of new lighting, HVAC, controls, energy management, and other technologies to foster subprogram participation.

The CSP for the Multifamily subprogram will develop and administer the marketing plan for this subprogram, which will be marketed to non-residential metered multifamily property owners, property managers, and residents, including income-qualified occupants and owners of multifamily buildings. The subprogram will be marketed to customers and program allies through the subprogram website. The subprogram will also use targeted outreach such as direct calls, direct mail, email, or other targeted outreach campaigns. Web-based information and online applications may be utilized. The CSP and auditors will also market and promote other energy savings and program opportunities available to customers through the delivery of this subprogram. The CSP will attempt to follow up with participants to measure satisfaction with the subprogram in general and with delivery personnel. The CSP will also identify customers who did not complete additional retrofit measures to understand the barriers to moving forward with comprehensive projects. The follow-up will be considered on an ongoing basis to improve future marketing strategies and program design.

The CSP for the Prescriptive-Other subprogram will implement both direct and indirect marketing campaigns to promote the Prescriptive-Other subprogram to customers. Small business customers will be exposed to broad-based energy efficiency awareness campaigns, web-based engagement and information, and hard-copy materials to promote awareness, as well as tie-ins with other program opportunities. Retailers, wholesalers, distributors, manufacturers, and trade allies will be contacted directly and/or through trade associations to develop networks and promote involvement in the subprogram where applicable. The subprogram will be marketed, where practical, in conjunction with the other Energy Solutions for Business program offerings as additional opportunities that are available or as a specific recommendation for energy savings to customers.

**Eligible measures and incentive strategy showing incremental cost assumptions, gross measure-level TRC ratio, and incentive levels (e.g., \$ per measure, \$ per kWh or MW saved)**

Refer to Appendix B, PUC Table 7 for the eligible measures, eligibility, and incentive strategy for this program.

This program has been designed based on applying established efficient conditions per the 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 IV Plan, the Companies may implement tier level or incentive changes for certain applicable measures in conjunction with future specification changes to maintain program continuity and implement timely on-going energy efficiency improvements.

The program will continue to support and/or provide downstream approaches to ensure the market is properly supported. In addition, the Companies may provide midstream or upstream incentives or buydowns and support to manufacturers, distributors, contractors, and retailers that sell select energy efficient products.

The Companies have adopted new Federal Standards and revised eligibility requirements for certain applicable measures.

#### **The basis for proposed level of incentives and the sharing of incremental measure costs between participants and the EDC**

The Companies propose to provide a range of incentives depending on the subprogram and measure type, subject to changes within the “Up to” incentive amounts, based upon customer response and market conditions over the Plan period. The Companies strive to balance the sharing of incremental measure costs between the Companies and participants with subprogram performance and progress to goals. The Companies will set and adjust incentives based on many factors, including, but not limited to, their experience, the experience of their affiliates, consultant, or CSPs, stakeholder input, and industry benchmarking. Incentives will vary depending on factors, including, but not limited to, the specific subprogram, end-use and measure, the incremental cost of the high-efficiency technology, and the product maturity in the marketplace.

#### **Maximum deadline for rebates including clear and reasonable rationale for any timeframe longer than 180 days**

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, 2026.

#### **Program start date with key schedule milestones**

The Companies anticipate a seamless transition and implementation upon Commission approval of the program and CSP contract(s). For the existing program measures being offered in the new Plan, there will be some ramp-up period needed to transition to the new Plan period with the implementation vendors. For new and expanded program measures, it is anticipated that it will take

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approximately three- to six-months to start-up new or expanded program measures after program approval. See discussion in Section 1.4 and Figure 2 for more details on the program start date with schedule milestones.

**Assumed Evaluation, Measurement, and Verification (EM&V) requirements required to document savings by the Commission’s statewide EE&C Plan Evaluator**

The Companies will retain an Independent EM&V Contractor to perform evaluation, measurement and verification of the program in accordance with the state’s Evaluation Framework.

For the pre-installation phase, for a sample of participants, the Companies will verify that inefficient equipment (e.g., HVAC, lighting, food services equipment plug loads and controls) are installed and working on customers’ premises. The Companies 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 the PA TRM guidelines. Pre-approval providing the opportunity for pre-installation inspections may be required for certain measures and projects.

For the post-installation phase, the Companies 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 Companies will use selected indicators to verify periodically that energy savings and demand reduction are being realized as projected. A tracking and reporting system will be used for such monitoring. If EE&C program indicators show that projected EE&C targets are not likely to be achieved on schedule and within budget, the Companies will take appropriate corrective actions, which may include adjusting incentives.

**Administrative requirements- include internal and external staffing levels**

The Companies will use a combination of internal and external resources to manage and implement the EE&C programs. The Companies 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.

**Savings targets and estimated participation – include tables with estimated total MWH/yr and MW goals per year and/or ranges per year and cumulative tables that document key assumptions of estimated savings ranges per measure as well as estimated participation**

See Appendix B, PUC Table 8, Appendix C, Table C-2, and Appendix D, Table D-2.

**Estimated program budget (total) by year- include table with budget per year**

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See Appendix B, PUC Table 9 and Appendix C, Table C-1 for program budget by year.

**Estimated percentage of sector budget attributed to program**

See Appendix B, PUC Table 4, Appendix B, PUC Table 6, Appendix B, PUC Table 12 and Appendix C, Table C-1 for sector and program level budget results.

**Cost-effectiveness- include gross and net TRC and net-to-gross (NTG) ratio for each program**

See Appendix B, PUC Table 13 for PA TRC ratios for this program on both a gross and net basis and the net-to-gross ratios assumed for each program. See Appendix B, PUC Table 7 and Appendix D, Table 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.

**Bidding strategy for peak demand reductions into PJM’s FCM. Include a description of the strategy and approach of offering resources into the PJM capacity market. The description should include an estimated range of MW and a trajectory of that MW over time**

See Section 1.6 for a description of the Companies’ strategy and approach to offering resources into the PJM capacity market. See Appendix C, Table C-3 for the estimated range of MW over time associated with the Companies’ Phase IV Plan.

**Other information deemed appropriate**

The Prescriptive subprogram includes streetlighting measures that leverage the Companies’ approved streetlight tariffs (including LED streetlights). The incentive provided under this subprogram will be applied to the streetlight 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.

All projects that require interconnection to the Companies’ systems must receive approval of such interconnection from the applicable Company to be eligible for participation in this program.

CHP projects may be approved as an eligible custom measure project, if found to be cost-effective. Each CHP project must not be above 10 MW in size, must be intended solely for the customer’s on-site use (not wholesale merchant projects), must produce retail energy savings to the applicable Company, must be installed and operations during Phase IV, and must comply with the applicable Company’s interconnection and standby service rules and requirements.



**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 IV Plan, along with a program description:

**Table 11: Existing & New Large C/I Programs**

Phase III Program	Proposed Phase IV Program	Program Description
<b>Large Commercial &amp; Industrial Programs</b>		
C&I Energy Solutions for Business Program - Large	C&I Energy Solutions for Business Program - Large	The Energy Solutions for Business Program provides financial incentives to large commercial and industrial customers, including government, institutional and multifamily customers, to purchase and install qualifying energy efficiency equipment, recycle inefficient appliances, upgrade less efficient equipment to more efficient end use technology, retrofit specialized equipment and processes, applications and end uses, complete qualifying high efficiency building shell or system improvements. The Program will also promote behavioral savings, adoption of energy saving technologies and efficient building operations through customer education and outreach, audits with direct install measures, building tune-up, energy management strategies, meter data analysis, or retrocommissioning or building operations training to achieve energy savings.
C&I Demand Response Program - Large	N/A	N/A

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**

Program	Sub-Program	Measure	Measure Status
C&I Energy Solutions for Business Program - Large	Multi Family - LCI	MF - Tenant - DI - LCI	New
		MF - Tenant - Prescriptive - LCI	New
		MF - Tenant - Custom - LCI	New
		MF - Common - Prescriptive - LCI	New
		MF - Common - Custom - LCI	New
		MF - Common - DI - LCI	New
	Prescriptive - LCI	Air Conditioning - Level 1 <=5.4 Tn - 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 - Water & GeoT - ES Tier 3 - LCI	Existing
		Ductless Mini-Split HP - Level 3 - LCI	Existing
		PTAC - LCI	Existing
		PTHP - LCI	Existing
		Room Air Conditioner- LCI	New
		Smart Thermostat -Rebate - LCI	New
		HVAC - Custom - LCI	New
		Circulating Pump (Mid Strm) - LCI	New
		HVAC - Maintenance - LCI	New
		Furnace Fan (Retrofit or New to ECM) - LCI	New
		Lighting Controls (Daylight & Occupancy) - LCI	Existing
		Linear Fluorescent - LCI	Existing
		LED Linear - LCI	Existing
		LED Channel Signage - LCI	Existing
		Exit Sign - LCI	Existing
		LED Fixture External - LCI	Existing
		LED Fixture Internal - LCI	Existing
		LED Lamp - LCI	Existing
		Lighting - Other - LCI	New
		Street & Area Lighting (Customer Owned) - LCI	Existing
		LED Reach in Refrig / Frzer Light - LCI	New
		Lighting - Custom - LCI	New
		Network Lighting Control - LCI	New
Linear Lamp - MS - LCI	New		
High/Low Bay Lamp - MS - LCI	New		
LED Fixture - MS - LCI	New		

Program	Sub-Program	Measure	Measure Status
C&I Energy Solutions for Business Program - Large	Prescriptive - LCI	ECM Evap Fan Motor - LCI	New
		Evap Fan Controls - LCI	New
		Refrigerator - Reach In - LCI	New
		Freezer - Reach In - LCI	New
		Refrigerated Case Cover - LCI	New
		Anti Sweat Heater Control - LCI	New
		Strip Curtain - LCI	New
		Ice Machine - LCI	New
		Beverage Vending Machine - Controls - LCI	New
		Beverage Vending Machine - Energy Star - LCI	New
		Steam Cooker - LCI	New
		Fryer - LCI	New
		Griddle - LCI	New
		Hot Food Holding Cabinet - LCI	New
		Combination Oven - LCI	New
		Convection Oven - LCI	New
		Dishwasher - LCI	New
	Induction Warmer/Rethermalizer Well - LCI	New	
	Coffee Brewer - LCI	New	
	Pre-Rinse Sprayer - LCI	New	
	Prescriptive Other - LCI	Refrigerator Recycling - LCI	New
		Freezer Recycling - LCI	New
		Room Air Conditioner Recycling - LCI	New
		Dehumidifiers Recycling - LCI	New
		EV Charging Cord - Level 2 - LCI	New
		Clothes Washer Level 1&2 - LCI	New
		Clothes Washer Level 3 - LCI	New
		Clothes Dryer - LCI	New
		Refrigerator Level 1& 2 - LCI	New
		Refrigerator Level 3 - LCI	New
		Water Heater - Heat Pump - LCI	New
		Freezer - LCI	New
		Dehumidifier - LCI	New
		Water Cooler - LCI	New
		Monitor - LCI	New
		Computer - LCI	New
		C&I Energy Solutions for Business Program - Large	Custom - LCI
Custom - Compressed Air - LCI	Existing		
Custom - Motors - Three Phase - LCI	Existing		
Custom - Refrigeration - LCI	Existing		
Custom - Equipment/Servers - LCI	Existing		
Custom - HVAC/Chlr/Cntrls - LCI	Existing		
Custom - VFDs < 10HP - LCI	Existing		
Custom - VFDs > 10 HP - LCI	Existing		
Custom - Bldg Improvements - LCI	Existing		
Custom - New Construction - LCI	New		
Custom - Audit & Education - LCI	Existing		
Energy Management - LCI	Building Tune Up - LCI		Existing
	Virtual/Meter Data Commissioning - LCI		New
	Retrocommissioning - LCI	Existing	
		Building Operations Training - LCI	Existing
		Energy Consultation - LCI	New
		Audits - LCI	Existing

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

### 3.4.1 C/I ENERGY SOLUTIONS FOR BUSINESS PROGRAM - LARGE

#### **Program years during which program will be implemented**

June 2021 - May 2026

#### **Objective(s)**

A primary objective of this program is to promote the installation of energy efficient equipment and to increase the efficiency of processes, buildings, building operations, and systems among large commercial and industrial customers, including GNI customers. The program provides customer engagement with educational and efficiency measures in addition to prescriptive, calculated, or performance-based incentives or midstream or upstream incentives or buydowns and provides support to manufacturers, distributors, contractors, and retailers that sell energy efficient products.

#### **Target Market**

The Energy Solutions for Business Program – Large will be available to all large commercial, industrial, and other large non-residential customers, including GNI customers, located within the Companies’ service territories. The program includes the Multifamily, Prescriptive, Prescriptive-Other, Custom, and Energy Management subprograms, which target large business and GNI customers as follows:

- **Multifamily:** The Multifamily subprogram provides customer engagement with energy efficiency education through energy assessments, targets the installation of standard energy savings measures, and promotes energy savings opportunities including prescriptive equipment replacement and custom retrofit projects. This subprogram targets non-residential metered multifamily property owners, property managers, and residents, including income-qualified occupants and owners of multifamily buildings.
- **Prescriptive:** The Prescriptive subprogram promotes the sale and installation of commercial grade efficient equipment across major end-use categories, including lighting, heating and cooling equipment, and food service equipment, among other efficiency measures, and is promoted to program allies and customers via prescriptive or calculated rebates. The target market will be large business and GNI customers with prescriptive equipment that is incentivized under this subprogram. Typical customers include, but are not limited to, office buildings, grocery stores, health care facilities, retail business, governmental facilities, and medium/large manufacturing.
- **Prescriptive – Other:** The Prescriptive – Other subprogram promotes the sale and installation of efficient residential grade appliances, and consumer electronics including office equipment, as well as the removal and recycling of qualifying inefficient, operating appliances, by large

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business and GNI customers. The target market will be customers with residential grade appliances and consumer electronics, including office equipment, that are incentivized under this subprogram. Typical customers include, but are not limited to, small business, retail customers and GNI business administration.

- **Custom:** The Custom subprogram promotes the application of non-prescriptive efficiency measures, including equipment, processes and building systems and improvements by large business and GNI customers. The target market will generally be customers with more complex needs and non-standard efficiency opportunities and typically include, but not be limited to, office buildings, health care facilities, governmental facilities, and medium/heavy industrial.
- **Energy Management:** The Energy Management subprogram provides customer engagement and energy efficiency education and provides or targets the installation of energy efficient equipment and efficient building operations and retro-commissioning/commissioning measures. Typical customers include, but are not limited to, larger grocery and retail stores, commercial office buildings, warehouses and distribution centers, educational facilities, medium/heavy industrial, and GNI customers. The subprogram also provides Building Operations measures that target existing large businesses and buildings and is particularly relevant for building types within the sector that utilize traditional building systems and controls. Retro-commissioning targets existing commercial buildings and is particularly relevant for building types within the sector utilizing a building energy management system.

### **Program description**

This program will provide financial support through prescriptive or performance-based incentives to the large commercial and industrial customers, including GNI customers, who implement qualifying high efficiency equipment, retrofit specialized processes and applications to higher efficiency processes and applications, or implement qualifying building tune-up, retro-commissioning, or 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. The Energy Solutions for Business Program – Large includes the Multifamily, Prescriptive, Prescriptive-Other, Custom, and Energy Management subprograms, and are described as follows:

- **Multifamily:** The Multifamily subprogram provides customer engagement with energy efficiency education through energy assessments and the installation of standard energy savings measures and provides or promotes energy savings opportunities, including prescriptive equipment replacement and custom retrofit projects, in both common areas and tenant spaces. In addition, the Multifamily subprogram will target low income/affordable housing properties with enhanced incentives and measures. Customers will begin participation in the Multifamily subprogram with an energy assessment and installation of standard energy savings measures to help encourage program participation. The assessment will identify and recommend additional energy savings opportunities that are specific to each customer and

building and could include incentives for prescriptive equipment replacement or custom retrofit opportunities.

- **Prescriptive and Custom:** The Prescriptive and Custom subprograms will promote the installation of high-efficiency equipment by the Companies' large commercial and industrial customers, including GNI customers, either via the installation of prescriptive or custom measures or projects.

The Prescriptive subprogram provides prescriptive-based incentives to large business customers to purchase and install energy efficient equipment. The subprogram will support and/or provide downstream approaches and may also provide midstream or upstream incentives or buydowns and support to manufacturers, distributors, contractors, and retailers that sell select energy efficient products. Prescriptive incentives will be offered for individual applications and retrofit projects employing standard efficient technologies where the anticipated energy savings are relatively consistent. These measures will incent energy efficient lighting, heating and cooling equipment, and food service equipment, among other efficiency measures. Type and value of incentive provided will range and will include electric technologies that improve energy efficiency. Up-front rebates will be offered to reduce first cost barriers. Prescriptive measures are designed to provide easy and cost-effective access to energy efficient measures through customers' preferred channels. Prescriptive rebates are designed to:

- Provide incentives to facility owners and operators for the installation of high efficiency equipment and controls.
- Promote the marketing of high efficiency measures by trade allies, such as electrical contractors, mechanical contractors, and their distributors, to increase market demand.
- Ensure the participation process is clear and simple.

Prescriptive incentives will increase adoption of energy efficient equipment by harnessing the Companies' unique customer relationships to positively impact the sales process surrounding efficient equipment, from education and awareness with customers to engagement with trade ally contractors and equipment distributors for the high efficiency equipment.

The Custom subprogram includes custom measures that promote electric efficiency opportunities for large commercial and industrial customers, including GNI customers, that are non-standard and not captured by prescriptive equipment. Calculated or performance-based incentives will be provided to customers for upgrading less efficient specialized processes and applications (e.g., variable frequency drives, motors, compressed air, equipment replacement, CHP, industrial process changes, data centers, etc.) to high efficiency specialized processes and applications. This subprogram also provides incentives for customers to install specialized building shell or improvements for new construction or renovation projects. Calculated or performance-based incentives are designed to reduce the customer's capital investment for qualifying energy efficient measures. Typical custom measures that are eligible for incentives are either less common measures or efficiency opportunities in specialized applications that may include manufacturing or industry-specific processes, or non-traditional use cases. In

many cases, custom efficiency projects are more complex than prescriptive equipment replacement.

Potential participants in both the Prescriptive and Custom subprograms are recommended to submit an application for pre-approval to confirm project eligibility and reserve funding. The Companies and/or their CSP will develop electronic rebate application forms that will guide applicants through eligibility guidelines, subprogram requirements, terms and conditions, and general information. In addition, the Companies and/or their CSP will provide applications in web ready formats to ensure participants have easy access to the forms. The pre-approval process provides for the review of the customer's proposed project to confirm measure eligibility and incentive budget availability. This also supports the Companies' subprogram management because it communicates projects that are in the pipeline. If accepted and pre-approved by the Companies, a timeline is established for project completion to qualify for a rebate. The typical lead time for completing a project is 90 to 120 days but can be longer depending on the complexity of the project. Large projects, or subsets of projects, may be required to undergo pre-and post-inspection to validate project energy savings.

- **Prescriptive-Other:** Similar to the Prescriptive subprogram, this subprogram provides prescriptive-based incentives to large commercial and industrial customers, including GNI customers, to purchase and install energy efficient equipment that are residential type appliances that reside within a large commercial and industrial customer's facility (e.g., break rooms, small kitchens, etc.) as well as the removal and recycling of qualifying inefficient, operating appliances. These measures include energy efficient appliances, electronics, plug load equipment, and appliance recycling measures. Prescriptive measures are designed to provide easy and cost-effective access to energy efficient measures through customers' preferred channels.

The subprogram will support and/or provide downstream approaches and may also provide midstream or upstream incentives or buydowns and support to manufacturers, distributors, contractors, and retailers that sell select energy efficient products. Type and value of incentive provided will range and will include electric technologies that improve energy efficiency. Up-front rebates will be offered to reduce first cost barriers.

Prescriptive incentives will increase adoption of energy efficient equipment by harnessing the Companies' unique customer relationships to positively impact the sales process surrounding efficient equipment, from education and awareness with customers to engagement with trade ally contractors and equipment distributors for the high efficiency equipment.

The Companies and/or their CSP will develop electronic rebate application forms that will guide applicants through eligibility guidelines, subprogram requirements, terms and conditions, and general information. In addition, the Companies and/or their CSP will provide applications in web ready formats to ensure participants have easy access to the forms.

- **Energy Management:** The new Energy Management subprogram targets energy savings for existing large commercial and industrial facilities by providing a holistic approach to improving building energy performance through the maintenance, retrofit, tune-up, and retro-commissioning services for existing buildings and through the implementation of energy savings strategies that improve the overall operation and energy performance of buildings and building systems. This subprogram complements the Prescriptive and Custom subprograms, which focus on capital equipment replacement or process improvement investments by improving the energy performance of a building by retrofitting, maintaining, adjusting, and optimizing the systems within the building and the implementation of complementary energy savings measures. The subprogram also provides paths to track the ongoing building energy performance by using retro-commissioning which ensures continued energy performance. By implementing these measures, customers also receive ancillary benefits, including improved occupant comfort, lower maintenance costs, and extended equipment life.

This subprogram includes measures that focus on specific energy efficiency measures and management practices that can be categorized as follows:

1. Building Tune-Up: Provides a path for customers to implement a Building Tune-Up that will focus on the tune-up of central HVAC systems, Mini-Splits, and Packaged Terminal units retrofit, the adjustment and calibration of building systems and controls, diagnostic testing, and the installation of other measures that enhance building energy performance and savings. Also includes application of controls to optimize operation of building systems, and includes the following measures:
  - a. HVAC Tune-Up, including Refrigeration charge correction (if needed), cleaning evaporator and condenser coils, filter changes, verification of proper operation of fans and motors, and minor repairs to refrigerant lines and coils.
  - b. Calibration of building systems and controls, including energy management systems, lighting, and HVAC.
  - c. Diagnostic and function tests of applicable major systems and equipment.
  - d. HVAC controls to optimize Roof Top Units (RTU)/Air Handling Units (AHU).
  - e. Refrigeration controls to optimize refrigeration equipment.
  - f. Lighting upgrades, including application of lighting controls and optimization.
  - g. Chiller system controls to optimize chiller performance.
  - h. Other program eligible energy saving measures identified through the building assessment.
  - i. Building Operations Training for qualified personnel to obtain Building Operations Certification (BOC) through a certified training program or other training programs as related to the efficient design, operations, and maintenance of buildings.



2. Retro-Commissioning (RCx): Provides a comprehensive assessment of a customer's commercial/industrial building by using a prescribed planning process that includes a building audit, development of an action plan for the building, and development of a Measurement and Verification (M&V) plan to ensure the optimum on-going performance of the building and building systems. A comprehensive assessment of a commercial/industrial building using a prescribed planning and implementation process, including:
  - a. Audit Phase – Customer confirms intent to participate in program and registers with the Company or the third-party implementation contractor. Customer and/or the customer's consultant completes the required level of an American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) audit based on the complexity of the facility and develops a retro-commissioning implementation plan, including project timelines and plan to implement audit identified operation and maintenance measures. There may be opportunities to complete this Phase without a full ASHRAE level audit.
  - b. Setup Phase – Contracted services to implement the plan are verified, long-term monitoring and reporting is developed and initiated, and project plan is implemented by customer.
  - c. Measurement and Verification (M&V) Phase – Savings verification and rebate payment from implementation of the plan are completed.

Typical Retro-Commissioning measures include, but are not limited to:

- Optimizing chiller and boiler operations to better match building load conditions.
- Reducing ventilation in over-ventilated areas.
- Fixing ventilation dampers that are open when they should be closed or vice versa.
- Decreasing supply air pressure setpoint and system rebalancing.
- Aligning zone temperature setpoints to match the building's actual operating schedule.

As an option to performing an on-site audit to develop a retro-commissioning plan, or as an additional complementary measure, Virtual Commissioning (VCx) provides eligible customers with an analysis of their building's energy performance by using meter usage data, other data, and building modeling to identify and recommend energy efficiency measures and operational changes to improve a building's overall energy performance. The analysis will foster participation in the Companies' other programs by identifying and encouraging customers to implement other energy efficiency improvements. The VCx process can also utilize benchmarking and peer comparison metrics to help determine energy performance to identify facilities that are underperforming. This offering can also use continuous engagement, monitoring, and periodic reviews of the customer's energy usage to ensure that implemented measures or changes have been successfully completed. The use of building analysis using remote analysis techniques will also help customers to participate in the

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programs because of limited access to customers' facilities due to concerns and restrictions such as COVID-19.

**Implementation strategy (including expected changes that may occur in different program years)**

The Companies will outsource the implementation of this program to CSP(s) who will be responsible to administer, promote, and provide the program to customers, including staffing, promotional strategies, and processes ensuring quality and other controls supporting successful program implementation. The CSP(s) will be responsible for administration, marketing, outreach, fulfilling program services, application processing, and documentation regarding purchased products and completed projects, and processing incentives and rebates, where applicable. The Companies will review the application processes with its Phase IV CSP(s) to identify and make improvements, as warranted, and will require the program CSP(s) to consider innovative outreach activities to engage customers, program allies, and trade allies throughout the implementation of the program.

The Companies will perform overall administration and oversight of the program. The Companies plan to issue the RFP(s) for this program in early 2021 and to select the CSP(s) in a timeframe that supports a seamless transition and implementation from the current program beginning June 1, 2021, upon Commission approval of the CSP contract(s) and program.

Program information and links to program applications will be made available at the Companies' program website, [www.energysavepa.com](http://www.energysavepa.com). Completed applications to the subprograms will be processed online or be returned via email, where applicable. For Phase III pre-approved projects that are not completed prior to the conclusion of Phase III, applications will be processed as part of the same Phase IV programs without re-application, consistent with the Companies' review and eligibility requirements. The Companies will consider other methods for providing rebates and other rebate application processes based on market considerations and opportunities that are identified during program implementation.

The Prescriptive, Prescriptive-Other, and Custom subprograms will offer an on-line application portal for customers to submit rebates for energy efficient products or projects and may also develop a midstream approach, work with retailers, contractors, distributors and/or manufacturers for midstream or upstream incentives or point of purchase buydowns for select measures. The CSP(s) will develop electronic rebate application forms that will guide applicants through eligibility guidelines, program requirements, terms and conditions, and general information. In addition, the CSP(s) will provide applications in web ready formats to ensure participants have easy access to the forms. Additionally, the CSP(s) will provide support and assistance to retailers or distributors to support identification and promotion of qualifying energy efficient products. The CSP(s) will also provide technical support to customers on the application of the energy efficiency measures and

technologies included in these subprograms.

The CSP for the Multifamily subprogram will provide targeted marketing to both multifamily customers and program allies to ensure awareness of the program and enhance customer participation. The CSP may also contract with qualified auditor(s) to provide the subprogram services to customers, who will conduct marketing and the direct installation and retrofit aspects of this subprogram.

The CSP for the Energy Management subprogram will conduct implementation aspects of this subprogram to customers. Marketing will target specific customer types and program allies to ensure awareness of the program and enhance customer participation. Additional targeted marketing will be completed to promote this subprogram and enhance participation among hard to reach large business customers. The CSP will also conduct the services provided through this subprogram.

Customers can participate in the Multifamily and Energy Management subprograms by application to the subprogram or will be contacted directly by the CSP(s) and/or auditors. The CSP(s) will retrieve customer demographics and obtain customer agreement for the services to be provided and handle on-going customer engagement. Incentives for efficiency measures recommended by the subprograms will be issued after the measures are purchased or completed and required documentation is submitted to the subprogram.

### **Program issues and risks and risk management strategy**

The risks associated with this program include 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 Companies 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 key barriers that may pose a risk to this program include:

- **Initial Cost of Efficient Equipment:** Relative to the market baseline, efficient equipment often carries a higher upfront premium but a lower lifetime operating cost. Purchasers often may not fully value the lifetime operating cost advantage of efficient equipment and, as a result, higher upfront cost is a barrier to purchasing efficient equipment. To address this barrier, incentives are provided to the customer to reduce the initial cost through a variety of channels, including at midstream and downstream.
- **Customer Awareness and Engagement:** Businesses and GNI customers may have limited resources and time to consider, pursue, or prioritize energy efficiency and may have efficiency needs not well aligned with traditional EE&C programs targeted at larger customers. In

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In addition to limited resources and time, other customers may not be aware of the benefits of installing efficient equipment or completing other energy efficiency improvements. To address awareness and educational barriers, the Companies will educate customers on the program opportunities and the benefits of installing efficient equipment or completing other efficiency improvement through targeted marketing and outreach, providing program services, ensuring that incentives are easily accessible, and encouraging market transformation and stocking of efficient equipment through midstream incentives. The Companies will also focus marketing, education, and outreach efforts on the trade ally community to ensure that trade allies are aware of the program opportunities and available incentives.

- **Business/Operational Constraints:** These facilities often have unique operational constraints that act as a barrier to implement energy-efficiency projects and the maintenance of equipment. This barrier will be addressed by ensuring the subprogram operates cooperatively with participants, provides technical assistance and support, provides maintenance services, and offers timely incentives.
- **Sufficient Stocking and Availability of Efficient Products:** To support a robust marketplace for efficient equipment, the Companies may promote midstream incentives for specific equipment types to encourage participation via incentives for distributors or retailers to stock and promote the purchase of and/or for marking down the cost of the efficient equipment at the point of sale.

The Companies will seek to manage barriers to program success through a commitment to monitoring program performance and feedback channels for assessing effective program design, delivery, outreach, marketing/advertising, and improvement opportunities. The Companies and/or the implementation CSPs will monitor participation and performance to assess, where applicable, the effectiveness of program services, outreach efforts, incentive levels, delivery methods, and feedback from both program and trade allies, so that they can provide suggestions on how to assure that the program is continually providing customers with their needs.

### **Anticipated costs to participating customers**

Customers will have to pay the balance of the energy efficient product, project and/or installation costs not covered by the rebate. See Appendix B, PUC Table 7 for the incremental cost and incentive range for each measure in this program.

### **Ramp up strategy**

The Companies anticipate a seamless transition and implementation upon Commission approval of the program and CSP contract(s). To the extent that the Companies change CSPs for Phase IV, the Companies will provide advance notice of such change through both the program website and program allies. For the existing program measures being offered in the new Plan, there will be some ramp-up period needed to transition to the new Plan period with the implementation vendors. For new and expanded program measures, it is anticipated that it will take approximately three- to six-

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months to start up new or expanded program measures after program approval. See discussion in Section 1.4 for more details on ramp up.

### **Marketing strategy**

The Companies will implement an aggressive, sector-based marketing campaign for the duration of the new Plan. Marketing will be used to target specific customer sectors to ensure awareness of the subprograms and enhance participation.

Marketing activities of the Prescriptive, Custom, and Energy Management subprograms will target eligible customers and program allies to inform them of the program, its components, and the associated benefits through direct mail, website, trade shows, the business customer newsletter, and key account managers. The Companies will also work with distributors and contractors to market eligible higher efficiency equipment than required by federal standards. Additionally, the expanding list of program allies will continue to be cultivated, as they are vital to the growth in customer participation. The Companies regularly communicate with their program allies and participating contractors and provides educational type seminars regarding eligibility, incentives, and other program details to promote and market the program to customers.

The CSPs for the Prescriptive, Custom and Energy Management subprograms will target various market sectors (i.e., education, medical/health care, manufacturing, retail, food service) to enhance participation and promote a cross-section of measures applicable to each market. The Energy Management subprogram will also outreach to building maintenance and operations personnel to promote the subprogram including the Building Operations and Retro-commissioning measures to enhance the energy performance of their facilities.

Since prescriptive retrofits are generally one-for-one replacements, measure-specific collateral pieces will be developed for new measures or enhanced for continuing measures. These will be delivered to sectors most likely to utilize the specific technology. Fact sheets, mailings, post cards, e-blasts, and on-location seminars will all be used to promote specific measures. Custom marketing efforts require a consistent and directed outreach to program allies, the Companies' managed accounts and government accounts whose processes are compatible with the Custom subprogram's requirements. The CSP will be required to develop and implement a diligent marketing plan to identify and target customers to connect them to appropriate measures using e-blasts, webinars, on-site seminars, and large customer newsletters, among other marketing and outreach initiatives. Further, in order to attract multiple measure participation, the CSP will conduct outreach via sectors (e.g., medical facilities for lighting, HVAC, custom processes, and CHP) and to program allies, such as architects, engineers and professional associations (e.g., the United States Green Business Council – USGBC). Targeted advertisements in industry/trade publications will also be required to bring awareness to the opportunities and savings available through the Prescriptive, Custom, and Energy Management subprograms. Furthermore, specialized marketing, engagement,

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and engineering assistance will be utilized to enhance program participation by utilizing CSP personnel to assist with specialized equipment applications, whole building type solutions and studies, and other technical assistance related to energy efficiency opportunities under these subprograms recognizing the increasing complexity of new lighting, HVAC, controls, energy management and other technologies to foster subprogram participation.

The CSP for the Multifamily subprogram will develop and administer the marketing plan for this subprogram, which will be marketed to non-residential metered multifamily property owners, property managers, and residents, including income-qualified occupants and owners of multifamily buildings. The subprogram will be marketed to customers and program allies through the subprogram website. The subprogram will also use targeted outreach, such as direct calls, direct mail, email, or other targeted outreach campaigns. Web-based information and online applications may be utilized. In addition, each participant will be given marketing materials for other applicable program offerings at the time of the audit.

The CSPs will attempt to follow up with participants, to measure satisfaction with the subprogram in general and with delivery personnel. The CSPs will also identify customers who did not complete additional retrofit measures to understand the barriers to moving forward with comprehensive projects. The follow-up will be considered on an ongoing basis to improve future marketing strategies and program design.

The CSP for the Prescriptive-Other subprogram will implement both direct and indirect marketing campaigns to promote the Prescriptive-Other subprogram to customers. Large business customers will be exposed to broad-based energy efficiency awareness campaigns, web-based engagement and information, and hard-copy materials to promote awareness, as well as tie-ins with other program opportunities. Retailers, wholesalers, distributors, manufacturers, and trade allies will be contacted directly and/or through trade associations to develop networks and promote involvement in the subprogram where applicable. The subprogram will be marketed, where practical, in conjunction with the other Energy Solutions for Business program offerings as additional opportunities that are available or as a specific recommendation for energy savings to customers.

**Eligible measures and incentive strategy showing incremental cost assumptions, gross measure-level TRC ratio, and incentive levels (e.g., \$ per measure, \$ per kWh or MW saved)**

Refer to Appendix B, PUC Table 7 for the eligible measures, eligibility, and incentive strategy for this program.

This program has been designed based on applying established efficient conditions per the 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 IV Plan, the Companies may implement tier level or incentive changes for certain applicable measures in conjunction with future specification changes to maintain program continuity and implement timely on-going energy efficiency improvements.

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The program will continue to support and/or provide downstream approaches to ensure the market is properly supported. In addition, the Companies may provide midstream or upstream incentives or buydowns and support to manufacturers, distributors, contractors, and retailers that sell select energy efficient products.

The Companies have adopted new Federal Standards and revised eligibility requirements for certain applicable measures.

**The basis for proposed level of incentives and the sharing of incremental measure costs between participants and the EDC**

The Companies propose to provide a range of incentives depending on the subprogram and measure type, subject to changes within the “Up to” incentive amounts, based upon customer response and market conditions over the Plan period. The Companies strive to balance the sharing of incremental measure costs between the Companies and participants with subprogram performance and progress to goals. The Companies will set and adjust incentives based on many factors, including, but not limited to, their experience, the experience of their affiliates, consultant, or CSPs, stakeholder input, and industry benchmarking. Incentives will vary depending on factors, including, but not limited to, the specific subprogram, end-use and measure, the incremental cost of the high-efficiency technology, and the product maturity in the marketplace.

**Maximum deadline for rebates including clear and reasonable rationale for any timeframe longer than 180 days**

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, 2026.

**Program start date with key schedule milestones**

The Companies anticipate a seamless transition and implementation upon Commission approval of the program and CSP contract(s). For the existing program measures being offered in the new Plan, there will be some ramp-up period needed to transition to the new Plan period with the implementation vendors. For new and expanded program measures, it is anticipated that it will take approximately three- to six-months to start-up new or expanded program measures after program approval. See discussion in Section 1.4 and Figure 2 for more details on the program start date with schedule milestones.

**Assumed Evaluation, Measurement, and Verification (EM&V) requirements required to document savings by the Commission’s statewide EE&C Plan Evaluator**

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The Companies will retain an Independent EM&V Contractor to perform evaluation, measurement, and verification of the program in accordance with the state's Evaluation Framework.

For the pre-installation phase, for a sample of participants, the Companies will verify that inefficient equipment (e.g., HVAC, lighting, food services equipment and plug loads and controls) are installed and working on customers' premises. The Companies 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 the PA TRM guidelines.

For the post-installation phase, the Companies will verify through verification inspections that new, more efficient equipment has been installed. They 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 Companies will use selected indicators to verify periodically that energy savings and demand reduction are being realized as projected. A tracking and reporting system will be used for such monitoring. If EE&C program indicators show that projected EE&C targets are not likely to be achieved on schedule and within budget, the Companies will take appropriate corrective actions, which may include adjustments to incentives.

**Administrative requirements- include internal and external staffing levels**

The Companies will use a combination of internal and external resources to manage and implement the EE&C programs. The Companies 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.

**Savings targets and estimated participation – include tables with estimated total MWH/yr and MW goals per year and/or ranges per year and cumulative tables that document key assumptions of estimated savings ranges per measure as well as estimated participation**

See Appendix B, PUC Table 8, Appendix C, Table C-2, and Appendix D, Table D-2.

**Estimated program budget (total) by year- include table with budget per year**

See Appendix B, PUC Table 9 and Appendix C, Table C-1 for program budget by year.

**Estimated percentage of sector budget attributed to program**

See Appendix B, PUC Table 4, Appendix B, PUC Table 6, Appendix B, PUC Table 12 and Appendix C, Table C-1 for sector and program level budget results.



**Cost-effectiveness- include gross and net TRC and net-to-gross (NTG) ratio for each program**

See Appendix B, PUC Table 13 for PA TRC ratios for this program on both a gross and net basis and the net-to-gross ratios assumed for each program. See Appendix B, PUC Table 7 and Appendix D, Table 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.

**Bidding strategy for peak demand reductions into PJM’s FCM. Include a description of the strategy and approach of offering resources into the PJM capacity market. The description should include an estimated range of MW and a trajectory of that MW over time**

See Section 1.6 for a description of the Companies’ strategy and approach to offering resources into the PJM capacity market. See Appendix C, Table C-3 for the estimated range of MW over time associated with the Companies’ Phase IV Plan.

**Other information deemed appropriate**

All projects that require interconnection to the Companies’ systems must receive approval of such interconnection from the applicable Company to be eligible for participation in this program.

CHP projects may be approved as an eligible custom measure project, if found to be cost-effective. Each CHP project must not be above 10 MW in size, must be intended solely for the customer on-site use (not wholesale merchant projects), must produce retail energy savings to the applicable Company, must be installed and operational during Phase IV, and must comply with the applicable Company’s interconnection and standby service rules and requirements.

**3.5 Government/Nonprofit/Institutional Sector** (as defined by 66 Pa. C.S. § 2806.1) – Qualitatively describe how the Government/Nonprofit/Institutional Sector will be served

The Phase IV Plan also continues to target and provide program services for governmental, non-profit and institutional (“GNI”) customers through the Energy Solutions for Business programs. The Energy Solutions for Business, Small and Large programs include subprograms and measures aimed at serving GNI customers, including direct install, single and multiple prescriptive measures, custom projects, and Energy Management services. As in Phase III, special efforts will be made to target the GNI customers for participation in these programs in recognition of their unique decision making and financing processes for making capital improvements to facilities. Marketing and outreach will specifically target GNI entities within the Companies’ service territories depending upon the subprogram offering. These efforts will include the leveraging of existing Companies’ relationships and employing experienced vendors who have expertise in working with GNI accounts.

#### **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.*

The Companies will provide administration and oversight of this Phase IV Plan and will utilize third-party vendors to perform various program implementation, delivery, and support activities as described in Section 3. Specific activities that the Companies will oversee include: (i) Plan development; (ii) the execution of marketing campaigns; (iii) quality assurance/quality control activities; (iv) Plan and program performance; and (v) tracking and reporting activities. The Companies will utilize third-party vendors to provide many program implementation services, including managing program operations as well as marketing, customer enrollment, program and trade alley engagement, application and rebate processing, EM&V, and implementation of the tracking and reporting system. The following are examples of third-party vendors that the Companies anticipate using for program implementation services, either directly or indirectly:

- 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.
- Online audit vendor.
- Energy efficiency kit vendor.
- Environmentally responsible appliance recycler.
- Qualified contractors, auditors and inspectors.
- Program allies who have attended training.

*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 IV 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 Companies note the conditions under which these programs will be implemented during

the Phase IV Period may change. Below is a list of some of the more material risks the Companies will face:

- Changing economic conditions over the life of the Plan causes concern that customers may not support the pace of investment estimated and may slow the pace of mass market penetration. As an example, the full implications and current uncertainty surrounding the COVID-19 pandemic and residual effects both on the Phase III Plan and into the Phase IV Plan are unclear and will not be fully understood for a long time, including the ability or interest of customer participation in the programs.
- Newly introduced programs and measures included in this Plan will not have a historical basis for participation rates or experience. As a result, participation and installation rates may be lower than estimated, particularly in the early years.
- There is uncertainty around the savings estimates associated with the PA TRM over the life of the Plan, including inputs to the savings protocols and changing standards, which may pose a risk to the Companies' 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 incentives is of paramount importance for the Companies to meet their targets and allows the Companies to proactively address rapidly evolving technology and market trends.

The Companies have taken steps to identify and manage risks as well as to prepare for contingencies that may be necessary during the Phase IV Period. Those steps are as follows:

- The Companies will continue open discussion with stakeholders, seeking input from them as circumstances dictate.
- The Companies will continue to consult with their CSPs to modify program implementation strategies and suggest program changes as indicated by participation and savings results.
- The Companies will continue to perform EM&V of their programs in order to ensure that all programs are reasonable in terms of dollars spent, participation rates achieved, and kWh and kW savings realized.
- The Companies will continue their participation in any proceedings, rulemakings, and working groups involving issues that may affect compliance, including, as examples, those related to the PA TRM and adjustments thereto, and unforeseen changes in the economy and/or Federal and state laws that may occur during the five year Phase IV Period.
- The Companies have developed their incentive strategy in a way that allows timely response to market trends. By employing incentive ranges as opposed to fixed

amounts, the Companies have the ability to timely adjust incentive levels within the approved range to maximize program participation with appropriate incentive levels.

- The Companies 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 Companies collect and assess 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 Companies will utilize the expedited review process implemented by the Commission for any necessary minor Plan changes.

Given the significant investment required to meet the energy and demand savings goals, the Companies believe 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 or market conditions as they change over time.

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 III 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 III Plan. The Companies have attempted to manage this risk by relying on their expert consultant, their experience with similar measures used by their 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 Companies will continue to participate in any proceedings, rulemakings, and working groups that address issues that may have an impact on compliance with the Phase IV EE&C targets.

3. Market Risk is the risk that customers, or other key market players, such as retailer 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 Companies to identify issues related to market risk and implement mid-course corrections to enable the programs to stay on track. The Companies' use of flexible incentive ranges, rather than fixed incentives, is a valuable tool that allows for such corrections in a timely manner. The Companies will continue to evaluate various approaches to building and enhancing awareness through communications in order to

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minimize market risk. The Companies' plan to further raise customers' awareness of the benefits of energy efficiency and conservation, as well as the availability of their programs offered through this Plan, through wide-reaching educational campaigns and targeted outreach. In addition, the Companies intends to utilize the relationships they have 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, result in different levels of savings than those estimated in this Plan. The Companies minimize this risk through their ongoing work with their EM&V consultant, insights gained through other companies' experiences in other jurisdictions, and by utilizing the PA TRM and other industry guidelines to estimate program savings. The Companies and their EM&V consultant will also work with the 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 Companies' ability to meet the requirements set forth in the Phase IV Implementation Order. The Companies will minimize this risk through active participation in regulatory proceedings, rulemakings, and working groups, through their ongoing work with Commission Staff, the SWE, and their EM&V consultant, and by following regulatory guidance. The Companies also will notify the Commission if they believe changes to their targets are necessary.

*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 Companies did not experience a shortage of resources during Phase I, Phase II, or Phase III and do not anticipate a significant problem in obtaining the necessary resources during Phase IV. Nevertheless, the Companies intend to use both in-house personnel and contractors to successfully implement this Plan.

This Plan also incorporates virtually all of the programs included in the Phase III Plan. The Companies' experience with these programs supports the availability of contractors to successfully implement this Phase IV Plan. For those new or existing measures that have been modified since being implemented under the Phase III Plan, the Companies have carefully developed implementation projections based on input from their expert consultant, implementation team, experience with similar measures used by sister utilities in other jurisdictions, and industry research to ensure that there will be a sufficient number of adequately qualified contractors to implement the programs 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 Companies leverage tracking and reporting processes to closely 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 provide additional 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 Companies’ 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 Companies 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 Companies’ Phase IV 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 leverage successful measures as needed 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 Companies will continue to monitor technologies reviewed but not incorporated into this Plan for potential inclusion throughout the duration of the Plan.
3. Adjust 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.
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 promote 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 consultant, 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

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- resources may need to be rebalanced among programs or sectors to ensure that the Plan's overall objectives 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 (e.g., limited time offer or special promotion) or long-term basis to affect market response.

***What mid-course corrections could be implemented?*** In addition to the steps discussed above, the Companies believes that certain programs can be ramped up through enhanced marketing efforts to outperform projected kWh and kW impacts to offset underperforming programs. This may require a re-balancing of program goals and budgets. Notwithstanding, the program tracking and reporting 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 Companies will use process evaluations to determine progress and to help 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 and kW impact/cost analysis in which each program's performance is compared with Plan expectations. On a monthly basis, the Companies conduct 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 Companies' 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 during March 2021. The Companies note that they will continue to receive and process rebate applications for participation in the Companies' existing programs based on participation prior to June 1, 2021. The Companies will track and report this participation with their existing programs in accordance with the Phase IV Implementation Order.



Figure 4: Subprogram Implementation Schedule

Proposed Phase IV Program	Proposed Phase IV Sub-Program	October	September	November	December	January	February	March	April	May	Plan Year 2021				Plan Year 2022	Plan Year 2023	Plan Year 2024	Plan Year 2025
											1	2	3	4				
<b>Residential Programs</b>																		
Energy Efficient Products Program	Appliance Recycling																	
	Appliance Rebate																	
	Consumer Electronics																	
	HVAC																	
Low Income Energy Efficiency Program	Comprehensive Audits																	
	Behavioral																	
	Multi Family - Res																	
	School Education																	
	EE Kits																	
	New Homes																	
<b>Residential Low-Income Programs</b>																		
Low Income Energy Efficiency Program	Weatherization																	
	LI - Appliances																	
	LI - School Education																	
	LI - EE Kits																	
	LI - Behavioral																	
	LI - Multifamily - Res																	
	LI - New Homes																	
<b>Small Commercial &amp; Industrial Programs</b>																		
C&I Energy Solutions for Business Program - Small	Multi Family - SCI																	
	Prescriptive - SCI																	
	Prescriptive Other - SCI																	
	Custom - SCI																	
	Energy Management - SCI																	
<b>Large Commercial &amp; Industrial Programs</b>																		
	Prescriptive - LCI																	
	Prescriptive Other - LCI																	
	Custom - LCI																	
	Energy Management - LCI																	

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

4.1.6 Provide a brief overview of how stakeholders will be engaged throughout Phase IV. Describe how low-income communities and other marginalized populations will be represented in stakeholder engagement.

During the development of this Plan, the Companies sought and obtained feedback on the proposed EE&C programs from stakeholders through a variety of methods. Stakeholder meetings discussing the Plan’s development and program design were held in December 2019, May 2020, and October 2020. The Companies also participated in numerous meetings with interested parties, including their current and potential CSPs and vendors. The Companies further involve stakeholders and stakeholder input on an on-going basis through outreach to both program allies and customers to inform program design and implementation – a practice the Companies intend to continue during the Phase IV Period.

During the Phase IV Period, the Companies plan to continue conducting a minimum of two stakeholder meetings per year, where the Companies will review the performance, progress, and operation of the programs with their stakeholders for collaborative discussion and

feedback. The Companies will also meet with stakeholders on an as-needed, requested, or on-going basis to discuss any Plan or program aspects that warrants discussion.

During the Phase IV Period, the Companies plan to continue engaging local contractors, quality assurance vendors, and Community Based Organizations (CBOs) in Advisory Panel meetings a few times each year to obtain feedback on how the low income and multifamily programs are operating in the field and if any updates to processes or procedures are recommended. The Companies also plan to continue holding Annual Meetings with all Act 129 and Low Income Usage Reduction Program (LIURP) contractors, quality assurance vendors, and CBOs to share ideas on the program and collaborate on how to better serve customers in their local communities.

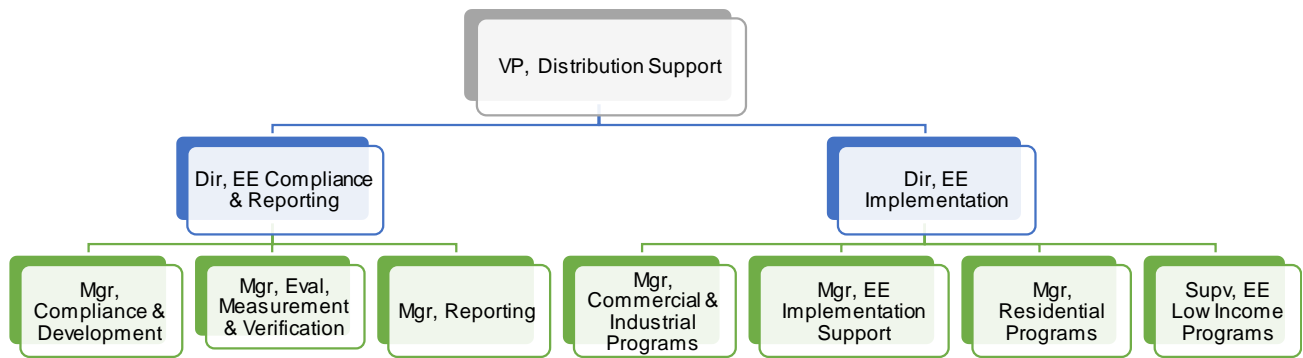
Multifamily stakeholder meetings will continue to be held during Phase IV with parties such as the Pennsylvania Utility Law Project, PA Housing Alliance, National Housing Trust, National Resource Defense Council, Pennsylvania Housing Finance Agency, and others each year to obtain feedback and garner assistance from them on marketing opportunities to reach multifamily buildings owners and tenants.

**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 Department is entrusted with ensuring that the Companies comply with all statutory energy efficiency and demand reduction requirements and that the approved programs are successfully implemented. The group reports to the Vice President, Distribution Support. This group also has responsibility for similar activities for FirstEnergy’s other utility subsidiaries in other states. The organization chart set forth below depicts the management team and their primary areas of responsibility as they currently exist.

**Figure 5: Organization Chart**



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 the program implementation vendors to ensure successful 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.*

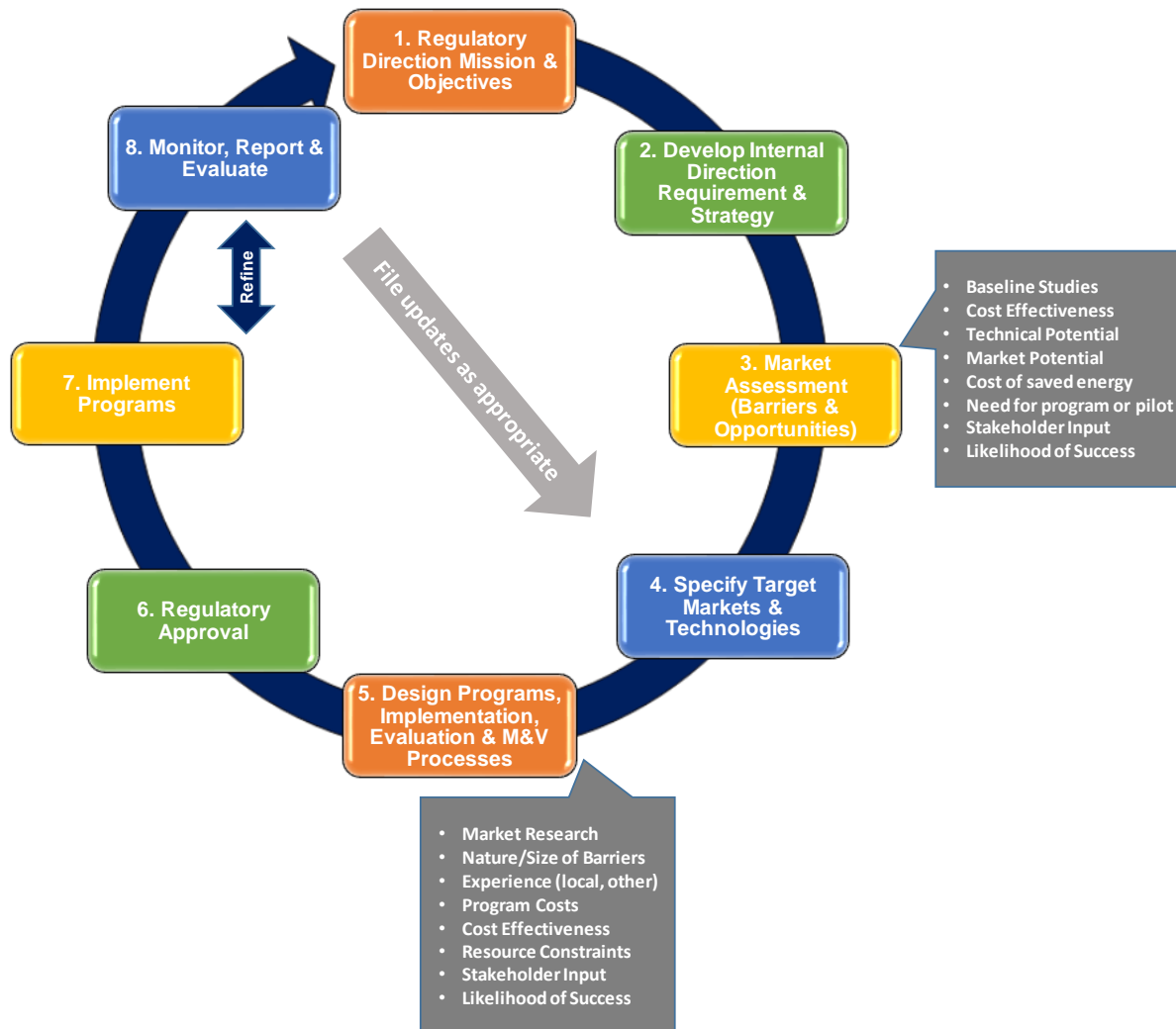
The Companies will provide administrative, contract management, program implementation, and marketing oversight of the selected CSPs primarily through the Energy Efficient Department staff who are dedicated for this purpose. Not only will such monitoring be accomplished using the tracking and reporting 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, marketing campaigns and, additionally, engage with the contractor team daily when working through strategy, policy, or implementation activities or issues.
- Review and approval of implementation contractor invoices to ensure program activities are according to contract, 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 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 program delivery as needed.
- Performance of periodic review of program metrics and evolving program design.

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

**Figure 6: High Level Overview of EM&V**



The Companies believe that this framework, in conjunction with agility, flexibility, and a well-trained staff, will assist in their efforts to achieve the targets established by Act 129 and the Phase IV 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 measure-level projections, both of which are then aggregated to the program level. Common costs are estimated at the State level and allocated to each Company based on each Company's savings and targets and then allocated to each program based on each program's ratio of program specific administrative costs.

Program cost elements are categorized into Incentives and Non-Incentives consistent with the Phase IV Implementation Order and the Phase IV Energy Efficiency and Conservation Plan Template.<sup>12</sup> The following terms are used in the budget tables located throughout the Plan.

- **Incentives** – includes program specific costs for (1) rebates paid to customers, (2) upstream/midstream buydowns, (3) material cost of giveaways (e.g., kits) and (4) program direct install labor and material cost provided to customers.
- **Non-Incentives** – includes both program specific and common costs associated with program design, (utility) administration, (CSP) delivery, marketing, EM&V, and other costs, as follows:
  - Program Design – includes common costs associated with the development of the Plan and programs, including costs incurred by the utility for employee labor, software fees for Plan development, and research, design, and development related association fees.
  - Administration – includes common costs incurred by the utility for employee labor and expenses to oversee and manage the portfolio, costs to develop and maintain a data collection, tracking, and reporting system, and costs to perform duties associated with activities such as regulatory reporting or meetings to support the Plan (e.g., Stakeholder meetings, technical utility staff meetings, program evaluation group meetings).
  - Delivery – includes program specific CSP administration costs associated with the implementation and ongoing management of programs, including staffing, contractors, websites(s), call centers, quality assurances, and control processes, and other program specific activities supporting successful program implementation.
  - Marketing – includes common utility costs and program specific CSP costs associated with marketing for program messaging, general awareness, and education of the Plan and programs.
  - EM&V – includes program specific CSP costs associated with the evaluation, measurement, and verification of the programs.

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<sup>12</sup> See *Implementation of Act 129 of 2008 – Phase IV Energy Efficiency and Conservation Plan Template*, Docket No. M-2020-3015228 (Secretarial Letter dated Sept. 9, 2020).

- Other – includes other common costs associated with the development and implementation of the Plan, including outside consulting and legal fees.

### **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 A of the Plan. No other CSPs have been selected. However, the Companies have issued a RFP for the Tracking and Reporting System (“T&R System” or “System”), and now that the programs included in the Plan have been finalized, the Companies expect to issue RFPs to complete the CSP selection process in early 2021 (conditioned on Commission approval of the CSP contracts and related programs), so as to enable a timely transition and implementation of the programs and measures once Phase IV begins.. The timeline for selection of the other CSPs is included in Section 1.4 of this Plan.

The Companies have and will continue to adhere to the requirements as set forth in the Phase IV Implementation Order and will select all CSPs that provide consultation, design, administration and management, or advisory services to the Companies through a competitive bidding process. The RFP will be distributed to all qualified CSPs registered on the Commission’s website, and the Companies will try 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 Companies will contract with CSPs to implement the portfolio of programs. The CSPs will be responsible for the start-up, set-up and ongoing management and delivery of the programs including staffing, development of website(s), promotional strategies, and processes ensuring quality and other controls supporting successful program implementation. During program set-up and for the duration of the program, the CSPs will meet with the Companies, their 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 CSPs will support consumer education initiatives and be the interface with the customer and program allies on many of the programs being offered. The CSP will be required to maintain and strengthen constructive relationships with the Companies’ program management staff, customers, program allies, contractors, and other energy program partners.

In addition to the development of the startup and implementation plan, implementation CSPs will also be responsible for, but not limited to, the following activities:

- Managing advertising and marketing activities that promote the programs, including:

- Telemarketing, sales training, participation in and sponsorship of program/industry seminars, community events, 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, and the program website. 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, and others;
- Developing and launching promotional strategies, including use of the website [energysavepa.com](http://energysavepa.com);
- Developing rebate application forms, detailed processes for managing rebate/incentive applications, rebate/incentive payment processes, reporting procedures, data collection and data recording processes, internal billing, and related documentation;
- Performing energy savings calculations, collecting data, and maintaining auditable records required to support program reporting, measurement, and verification consistent with the PA 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, distributors, and/or manufacturers, as appropriate; and
- Performing and/or managing fulfillment of all requests for services or energy efficient products offered through the programs.

The Companies will host or contract for website services, linked through the Companies’ public internet domain, [www.firstenergycorp.com](http://www.firstenergycorp.com), the program website at [energysavepa.com](http://energysavepa.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 Companies have issued RFPs for the following CSP services:

- EM&V activities; and
- Tracking/Reporting system

The Companies anticipate issuing the remaining RFPs for the following programs/subprograms in early 2021:

- Residential sector programs/subprograms implementation vendors

- Commercial and Industrial sector program implementation vendors

The Companies plan to award contracts with all program implementation CSPs in early 2021, 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 18, 2020 Implementation Order:***

The Companies have the following tracking and reporting plan to comply with the Commission's reporting requirements as prescribed in the Phase IV Implementation Order, including both the semiannual and annual reports. As more fully discussed in Section 5.2, the Companies have issued an RFP to provide a T&R System to provide the required reports as prescribed 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 SWE. 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 Companies 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 individual service territories. Additional enhancements will be made to the System as deemed necessary as requirements change. In addition, the Companies will utilize SAP<sup>13</sup> enterprise software for financial management and reporting of program costs.

#### **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 CSP databases wherever necessary to gather data to upload key program metrics on a routine basis (e.g., daily, weekly or monthly) and will ensure data integrity through routine reconciliation processes. The Companies will work with the implementation CSPs and the Companies' EM&V consultant on a regular basis to verify the accuracy of data transferred from implementation CSP databases to the T&R

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<sup>13</sup> SAP, which stands for System Applications and Products, is FirstEnergy's Enterprise Resource Planning (ERP) software.

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 where appropriate, 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 how CSPs will integrate with the tracking system and the procedures to ensure the upload and exchange of data from CSPs to the EDCs is sound.*

During the set-up period of each program, the Companies' program management and evaluation teams will work with the implementation CSP to define the list of data fields that the CSP will send to the Companies' T&R System. This Data Mapping Document will include, at a minimum, all the vendor's fields, the Companies' fields that they map to, and a definition of what that field is called in the vendor's source system for all the required fields. The CSPs are required to pass this data through an XML interface and to format program participation data as defined by this interface.

A File Transfer Protocol (FTP) process will be established to exchange the data between the implementation CSP and Companies' T&R System. During program start-up, a testing process including test files for the data exchange will be completed, and the test data will be validated by the implementation CSP, the Companies' T&R System CSP, and the Companies' Energy Efficiency Reporting team. Once technical testing is successful, an

upload schedule is established, and data uploads will be scheduled on a minimum monthly basis but can be more frequent as determined by the Companies to support successful program implementation.

Once production data exchanges begin with each implementation CSP, monthly validation occurs by the Companies' Energy Efficiency Reporting team to ensure the data between the implementation CSP's system and Companies' T&R System reconcile. Additional QA / QC validations occur for critical required fields, missing document attachments where applicable, and kWh and kW reasonability. Any discrepancies that are identified between the implementation CSP's source system and Companies' T&R System are reviewed and reconciled on an on-going basis between the implementation CSP and the Companies' program management, evaluation and/or reporting teams as necessary.

*5.2.4. Indicate that the EDC will fulfill all quarterly and annual data requests issued by the Commission and its statewide evaluator. Describe the level of access and mechanism for access for Commission and statewide evaluator.*

The Companies will comply with the Commission's reporting requirements as prescribed in the Phase IV Implementation Order, including both the semiannual and annual reports. The Companies will contract with a CSP to implement a T&R System to provide the required reports for all of the Companies. The format and content will be consistent with that defined by the Commission and the SWE. 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, and 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 Companies took toward quality assurance and quality control during the design phase of this Plan:

- Use of qualified and experienced personnel, including the Companies' expert consultant, to provide input to the design of the EE&C programs;
- Selection of EE&C measures compliant with the requirements of the PA TRM or otherwise proven in the industry;
- Use of proven approaches to reach both the energy savings and demand reduction targets set for the Companies;
- Communication with interested parties and other stakeholders on EE&C program design and objectives throughout the program development process; and
- Validation of EE&C program projections and assumptions with the Companies' expert consultant and implementation team.

During the implementation phase of this Plan, the Companies intends to acquire selected program implementation CSPs who will provide 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 Companies' EM&V contractor and the SWE. The Companies will perform, directly or through third-party evaluators, their own quality assurance and control 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 Companies will engage an EM&V CSP who will develop and implement EM&V processes and procedures. While EM&V plans are written on a program-by-program basis, the Companies 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 Companies and their EM&V CSP. The EM&V CSP 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 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**

The Companies will perform processes to meet standards specified in the Evaluation Framework and consistent with the PA TRM. Programs include documentation requirements supporting expected (“ex-ante”) impact estimates following protocols defined in the PA TRM. Samples of participant applications are selected for EM&V. After the statistically valid samples of projects are selected, and the implementation 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 forecasted savings estimates. The realization rates are calculated as the ratio of the EM&V CSP’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 and kW savings contribute significantly to the variance in expected savings and are included in the sample with certainty. The EM&V CSP will select a site-level ex ante kWh and kW 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 and/or kW stratum according to the level of the expected site-level kWh and kW 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 CSP 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. 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.

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Throughout the implementation phase of this plan, the Companies will obtain additional direct input from various sources, including implementation CSPs, stakeholders and other EDCs for relevant developments, as well as the PUC and the SWE for insights into the evolution of the process.

*6.1.4 Describe any planned market and process evaluations and how results will be used to improve programs.*

There is a feedback loop among program design and implementation, impact evaluation, and process evaluation. Program design, 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 Companies' EM&V CSP will conduct process evaluations to identify issues that may require mid-course correction, gauge progress toward goals, and measure customer, trade ally, and vendor knowledge and satisfaction with various program features. The evaluations will help identify possible ways to improve implementation of the programs, including potential market or process barriers that could be addressed in the program design or implementation plan.

*6.1.5 Describe strategy for coordinating with the EM&V contractor and statewide evaluator.*

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

Additionally, the EM&V CSP will conduct evaluations on each program included in the Phase IV 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 CSP will facilitate ongoing communications with the SWE and the Companies' representatives to ensure the highest practicable level of coordination, particularly for any EM&V field activities and other time-sensitive EM&V tasks and processes.

## **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 Companies' Total Allowable Plan Costs pursuant to Act 129. This amount reflects the annual amount determined by the Commission in the Phase IV Implementation Order (Table 26 at page 120).

- 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 proposed by the Companies. The cost recovery mechanism will include all costs as described in Appendix D, Table D-1, including administrative costs currently incurred by the Companies in connection with the development of this Plan. The costs to design, create, and obtain Commission approval of the Companies' Phase IV EE&C Plan include consultant costs, outside legal fees, and other specific and common costs associated with the development and implementation of the Companies' Plan consistent with Commission directives.

- 7.3. Provide data tables (see Tables 10, 11, and 12).**

PUC Tables 10, 11, and 12 are provided in Appendix B.

- 7.4. Provide and describe tariffs and a Section 1307 cost recovery mechanism, pursuant to the requirements of the June 18, 2020 Implementation Order, that will be specific to Phase IV Program costs. Provide all calculations and supporting cost documentation.**

The Companies' *pro forma* tariff supplements for their proposed cost recovery mechanisms ("Phase IV EE&C-C Riders") are included in Met-Ed/Penelec/Penn Power/West Penn Power Statement No. 3. Consistent with Act 129, the Companies' tariffs will contain Section 1307 cost recovery mechanisms for the recovery of all Phase IV energy efficiency and conservation program costs. There is also a provision in the riders to allow for a reconciliation adjustment to collect any remaining Phase III Period costs not recovered prior to the end of the Phase III Period. This component will be shown as a separate E factor (E2) and will be in place through May 31, 2023.



Under the Companies' proposal, the Phase IV EE&C-C Riders would remain in effect during the Phase IV Period (June 1, 2021 through May 31, 2026).<sup>14</sup> On an annual basis, to be effective June 1 of each year starting June 1, 2021, the Companies will file by May 1st of the same year the following information:

1. A reconciliation between actual Phase IV EE&C-C revenues and actual Phase IV EE&C-C costs for the Phase IV EE&C-C Reconciliation Period, as adjusted for removal of gross receipts tax. Because these are new riders, this information is not being provided in support of the Phase IV EE&C-C Rider rates for the period June 1, 2021 through May 31, 2022. Such reconciliations will be provided starting in Program Year 2 for rates to be effective June 1, 2022.
2. Any adjustment to the forecasted Phase IV EE&C-C revenues anticipated to be billed during April and May of the applicable program year, as adjusted for the removal of Gross Receipts Tax ("GRT"). Because these are new riders, this information is not being provided in support of the Phase IV EE&C-C Rider rates being proposed for the period June 1, 2021 through May 31, 2022. Such adjustments will be provided starting in Program Year 2.
3. The Phase IV EE&C budget estimate for the forthcoming Phase IV EE&C-C Computational Period by rate class.
4. A reconciliation adjustment for any remaining Phase III EE&C costs that were not collected by the end of the Phase III Period. This adjustment will only be included in the initial EE&C-C rate that will become effective on June 1, 2021, and the subsequent EE&C-C rate that will be in effect for the period June 1, 2022 through May 31, 2023. The reconciliation process is described in Section 7.6 below.

The Companies' proposed Phase IV EE&C-C Riders include the corresponding rates to be charged during Program Year 1 of the Plan. The Companies are requesting approval of both the riders and related rates as part of this proceeding. Worksheets demonstrating how these rates were determined are set forth in Exhibit AJW-6, which is attached to the direct testimony of Anthony J. Woytko (Met-Ed/Penelec/Penn Power/West Penn Statement No. 3).

As can be seen in the *pro forma* tariff supplements, the Phase IV EE&C-C rates are expressed as a price per kWh for the residential, commercial and street lighting classes. The industrial class will be billed based upon the individual customer's Peak Load Contribution ("PLC") kW. The Phase IV EE&C-C rates will be calculated and stated separately for the residential, commercial, street lighting, and industrial customer classes. The rate schedules that comprise the residential, commercial, street lighting, and industrial customer classes are identified on page 1 of the Companies' Phase IV EE&C-C Riders.

The Phase IV EE&C-C rates to be billed to the residential, commercial, street lighting, and industrial classes consist of four principal components. The first is the EEC<sub>c</sub> or "current

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<sup>14</sup> If the Commission concludes that additional cost-effective energy efficiency and/or demand reduction can be attained post Phase IV, the Companies anticipate recovering any Phase IV costs not recovered by the end of Phase IV through a Phase V cost recovery mechanism. Should there be no Phase V 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 IV EE&C-C Rider beyond the end of Phase IV in order to collect any remaining Phase IV costs and/or to recover any remaining costs through another surcharge mechanism.

cost” component; the second is the reconciliation component or “E” factor for Phase IV costs; the third is a second “E” Factor ( $E_2$ ) for collection of Phase III related costs remaining to be collected after May 31, 2021; and the fourth is a credit for any PJM Forward Capacity Market (FCM) revenues (net of costs associated with auction participation and including replacement capacity charges, capacity deficiency charges and any unavoidable PJM charges).

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 IV EE&C-C rates will be in effect for each customer class. As shown on the second and third pages of the Companies’ Phase IV EE&C-C Rider tariff supplements, the  $EEC_C$  component is customer class specific. The costs included in each customer class’s  $EEC_C$  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 common costs, such as marketing costs, that will be incurred by the Companies.
- $EEC_{Exp2}$  represents an allocated portion of incremental administrative start-up costs incurred by the Companies in connection with the development of each Company’s Phase IV EE&C Plan and related programs in response to the Commission’s orders and guidance in its Phase IV Implementation Order. These costs are incurred to design, create, and obtain Commission approval of the Companies’ Phase IV EE&C Plan, and include, but are not limited to, consultant costs, outside legal fees, and other specific and common costs associated with the development and implementation of the Companies’ Phase IV 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.<sup>15</sup>

The E-factor component of each Companies’ residential, commercial, street lighting, and industrial class specific Phase IV EE&C-C rates represents a reconciliation of actual Phase IV EE&C program costs incurred by customer class to actual Phase IV 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 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, 2022, in order to collect any remaining Phase III Period costs not recovered prior to the end of the Phase III Period.

The PJM component of each Companies’ residential, commercial, street lighting, and industrial class specific Phase IV EE&C-C rates represents a credit for any PJM FCM

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<sup>15</sup> Phase IV Implementation Order at 119.

revenues (net of costs associated with auction participation and including replacement capacity charges, capacity deficient charges and any unavoidable PJM charges). The credit will be assigned to the specific customer class associated with the kW values of the EE&C programs and measures that cleared in the PJM FCM for each delivery period.

The Phase IV EE&C-C Rider will include a reconciliation process that will calculate annual over- or under-collection by rate class.

All Plan costs (net-of-tax) and revenues included in the Companies' EE&C revenues will be excluded from distribution base rate treatment and subject to Commission review and audit. Further, to the extent that the Companies are reimbursed through the Phase IV EE&C-C Riders 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 Phase IV Implementation Order and Act 129, the Companies' proposed Phase IV EE&C-C Riders will permit the Companies to bill annual, levelized Phase IV EE&C-C rates on a per kWh or kW basis, as applicable to all residential, commercial, street lighting, and industrial customers. Throughout the Phase I, II, and III 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 Companies 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 Companies' proposed Phase IV EE&C-C Riders, the Phase IV 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's available EE&C programs as approved by the Commission in this proceeding.

**7.6. *Describe how Phase IV costs will be accounted for separately from costs incurred in the prior phase.***

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 III costs will be reconciled in two distinct steps. The first step will reconcile the total actual recoverable Phase III Plan expenditures incurred through March 31, 2021, to the actual Phase III Plan revenues collected through March 31, 2021. Since the Phase III Riders will end on May 31, 2021, the result of the Phase III reconciliation through March 31, 2021, will appear as a separate line item in the Phase IV EE&C-C Riders, which will go into effect on June 1, 2021. The second

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step will account for all actual Phase III revenues and expenses that are realized during the period April 1, 2021, through March 31, 2022, 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 IV EE&C-C rate calculation that will be effective on June 1, 2022.

**7.7. Describe how proceeds from PJM FCM participation will be incorporated into the cost recovery mechanism.**

Pursuant to the Phase IV Implementation Order, any projected revenues received from any future source (relating to the Companies' Phase IV EE&C Plan) will be credited as a reduction to the total Projected Program Costs including the SWE. For example, PJM Revenues include PJM capacity market revenues (net of the costs associated with auction participation and including replacement capacity charges, capacity deficiency charges, and any unavoidable PJM charges) to be credited in the rate calculation.

## **8. Cost Effectiveness**

- 8.1. *Provide in table format the values contained in the Outputs tab of the Avoided Cost Calculator. Additionally, a completed copy of the Avoided Cost Calculator should be provided with the filing. Discuss any sensitivities or key considerations associated with the forecast of avoided costs.***

The 2021 TRC Test Final Order (“PA TRC Order”) included a companion Avoided Costs Calculator (“ACC”) tool. The ACC was developed by the SWE and executes the methodology outlined within the PA TRC Order to develop the avoided energy and capacity costs for the PA TRC test calculations. This calculator also includes the costs of compliance with the Pennsylvania Alternative Energy Portfolio Standard (“AEPS”) within the avoided energy cost calculations. The Companies used the ACC to develop the Phase IV forecasts of avoided costs used in the cost-effectiveness testing of their EE&C Plan and programs. See Appendix D Table D-3 for the Avoided Cost “Outputs” from the ACC, and see Exhibits ACC-Met Ed, ACC-Penelec, ACC-Penn Power, and ACC-West Penn for a complete ACC for each Company.

- 8.2. *Confirm use of a 3% real discount rate (5% nominal discount rate) called for in the 2021 TRC Order.***

The Companies used a 3% real discount rate in its calculations pursuant the PA TRC Order.

- 8.3. *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 PA TRM, the PA TRC Order, and other sources, which have been used in developing the key inputs to the analysis of the EE&C measures proposed in this plan, including but not limited to the following:

- SWE Database;
- Northeast Energy Efficiency Partnerships, Mid-Atlantic TRM; and
- ENERGY STAR.

The PA TRC test considers the combined effects of this Plan on both participating and non-participating customers. The sum of costs incurred by both the Companies and any participating customers were used to calculate the costs. The benefits calculated in the PA TRC test include the avoided energy costs, including generation, transmission, and distribution capacity costs, the avoided energy supply costs, fossil fuel and water savings, and operations and maintenance benefits as prescribed in the PA TRC Order.

Avoided costs are calculated using the ACC tool as set forth in the PA TRC Order. The calculator developed by the SWE executes the methodology to develop avoided energy supply costs, including AEPS compliance, avoided capacity costs including generation,

transmission, and distribution, and avoided natural gas for the PA TRC calculations. The energy prices were calculated by the ACC using futures prices quoted by the New York Mercantile Exchange (“NYMEX”) and Intercontinental Exchange (“ICE”) on July 31, 2020. Other inputs to the ACC were as provided or prescribed in the PA TRC Order.

Avoided operation and maintenance costs were included as a benefit where quantified in the PA SWE database. Additionally, any measures that produced “reasonably quantifiable” savings in fossil fuel and water were also included as a benefit, as prescribed in the PA TRM and TRC Orders.

The Companies used the line loss factors as provided in Table 1-4 of the PA TRM.

The Companies escalated all cost projections by the 2% inflation rate and did not include the application of any additional escalation index as directed by the Commission in the PA TRC Order.

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 lifetime using 3% real discount rate (5% nominal discount rate).

On the costs side, the PA TRC test includes the costs of the various programs incurred by the Companies and the participating customers, including all program administration and overhead costs (i.e., treated as a PA TRC cost regardless of whether the labor, materials, and other fees are incurred by participating customers, EDC staff, a CSP, or evaluation contractor) and incremental customer costs. Giveaways (e.g., EE Kits) and directly installed equipment and labor costs are also treated as Incremental Measure Cost (IMCs) and incentives.

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.

As discussed in Section D of the PA TRC Order, kits and direct install labor and material costs will be treated as both incentives and incremental costs.

The Companies also included estimated net-to-gross (NTG) ratios and realization rates based on previous program evaluations or other industry experience in their planning and in performing cost-effectiveness calculations on a net basis as prescribed in the PA 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.”<sup>16</sup> 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

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<sup>16</sup> *Net Savings: An Overview*, GDS Associates, Inc., Nexant & Mondre Energy, October 19, 2011

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 “[t]he challenge of interpreting the NTG studies and converting study results and observations into NTGR is a complex process riddled with uncertainty and subjective judgment.”<sup>17</sup> Therefore in the evaluation of any TRC results that incorporate NTG ratios, the speculative nature of the ratios should be recognized.

The results of the PA TRC test as described above are presented in PUC Tables 1 & 13 located in Appendix B 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.

**8.4. *Provide TRC data tables on a gross and net TRC basis. See Tables 13.***

See Appendix B, PUC Tables 13, for the PA TRC test results of the Companies’ Plan and programs on both a gross and net TRC basis.

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<sup>17</sup> *Net Savings: An Overview, GDS Associates, Inc., Nexant, & Mondre Energy, October 19, 2011.*

## **9. Plan Compliance Information and Other Key Issues**

### **9.1. Plan Compliance Issues.<sup>18</sup>**

#### **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 18, 2020 Implementation Order.**

As demonstrated throughout this Plan, a variety of programs are being offered, with at least one comprehensive program for residential and non-residential customer classes. The EE&C Plan includes a comprehensive portfolio of programs for the residential, small commercial and industrial, large commercial and industrial, low income, and governmental/non-profit/institutional (GNI) customer sectors. The Plan incorporates a variety of subprograms and measures that offer a broad range of services based on enhancements to existing programs and successful programs in other jurisdictions. The Plan incorporates both near-term and longer-term energy saving opportunities for customers, including single and prescriptive measures, multiple prescriptive and custom measures, direct install, and comprehensive whole building solutions. It provides opportunities for all customer classes to participate in EE programs. The Plan relies on experienced outsourced CSPs and leverages prior experiences and a variety of delivery channels that will support customer participation across all classes of customers.

Residential and low-income programs and subprograms were designed to address both educational and initial cost barriers and to tap a variety of delivery channels and vendors to support customer engagement, education, and participation. The residential and low income programs include direct or targeted offerings that engage customers and serve as a portal for other program offerings because they serve a dual purpose of providing customers with energy efficiency education as well as information regarding other program services and opportunities upon which they can act. The residential and low-income programs incorporate strategies to change behaviors and include incentives to address the initial cost barrier to promote the participation of all residential customers. The programs provide opportunities for prescriptive equipment so that customers who are unable or unwilling to undertake whole home/comprehensive solutions are still able to increase efficiency, and the programs also provide opportunities for customers interested in whole home/comprehensive solutions that encourage customers to consider a holistic approach to EE.

The commercial and industrial programs were designed to provide customer engagement and education, incorporate energy controls and strategies to change behaviors, include incentives to address the initial cost barrier, and tap a variety of delivery channels and vendors that promote the participation of all customers, including GNI customers. Commercial, industrial, and GNI customers are also addressed through subprograms that provide opportunities, including prescriptive rebates, custom measures, direct install, and whole building/comprehensive solutions. The programs include specific opportunities that ensure access for small customers, provide opportunities for single or multiple prescriptive and/or

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<sup>18</sup> 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.



custom measures, so that customers who are unable or unwilling to undertake whole building/comprehensive solutions are still able to increase efficiency. And the programs include opportunities that encourage customers to consider a holistic approach to EE for customers who are interested and able to participate in whole building/comprehensive solutions.

The residential programs and commercial and industrial programs are also designed to serve multifamily buildings. The Multifamily subprograms will be targeted to engage customers, provide energy efficiency education, and provide information regarding program services and opportunities upon which they can act.

Collectively, the proposed programs and subprograms across all sectors cover all the major energy-consuming devices in the home, building, or business, thus increasing the opportunity for more customers to participate and benefit from one or more programs. Furthermore, the proposed programs promote and support comprehensive whole home/whole building/comprehensive solutions for both the residential and non-residential customer classes. Section 1, Table 2 presents a summary description of the programs by sector, and detailed descriptions and a listing of measures are provided in Section 3.

*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 IV Plan has been developed to incorporate a comprehensive set of programs that, based on known conditions, are designed to allow the Companies to achieve the goals for energy and coincident demand reductions as set forth in the Phase IV Implementation Order, all within the statutory spending caps. See PUC Table 2 in Appendix B for the projected energy and demand reductions by each year and in total for the Phase IV 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 18, 2020 Implementation Order. Additionally, describe any EDC plans to harmonize Act 129 program delivery with Low Income Usage Reduction Programs and other external energy efficiency, conservation, and healthy housing programs (such as the Weatherization Assistance Program).*

There are two low-income targets more fully described in Act 129 or the Phase IV Implementation Order. The first requires the Companies to obtain a minimum of 5.8% of their consumption reduction requirements from programs specifically targeted to 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.<sup>19</sup> Table 13 below provides the Low-Income targets established in the Phase IV Implementation Order:

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<sup>19</sup> 66 Pa. C.S. § 2806.1(b)(1)(i)(G)

**Table 13: Phase IV Low-Income Savings Targets**

<b>EDC</b>	<b>Proportionate Number of Measures</b>	<b>2021-2026 Potential Savings (MWh) <sup>1</sup></b>	<b>Low Income Savings Target (MWh)</b>
Met-Ed	8.79	463,215	26,866
Penelec	10.23	437,676	25,385
Penn Power	10.64	128,909	7,477
West Penn	8.79	504,951	29,287

<sup>1</sup> 2020 Implementation Order at pg. 35

The Phase IV Plan includes a comprehensive suite of subprograms within the Low-Income Program for the low-income sector that are collectively designed to achieve the consumption reduction requirements.

The Low-Income Energy Efficiency Program outlined in this Phase IV 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. The Low-Income Energy Efficiency Program includes a variety of program services, delivery channels, and vendors to support customer engagement, education, and participation to achieve energy savings in low-income households. The program includes direct or targeted offerings that engage customers and serve as a portal for other program offerings because they serve a dual purpose of providing customers with energy efficiency education as well as information regarding other available program services and opportunities. The program offerings: (i) incorporate strategies to change behaviors; (ii) provide prescriptive measures, direct install measures, and whole home/comprehensive solutions at no-cost; and (iii) include enhanced incentives for select measures that collectively addresses the initial cost barrier to promote and achieve the participation of low-income customers. The program also targets the construction of new energy efficient low-income housing.

Through the Weatherization subprogram, the Companies will continue to endeavor to capture electric energy savings as part of the delivery of the Companies’ existing Low-Income Usage Reduction Program (“LIURP”) by tapping the considerable expertise and existing infrastructure of LIURP contractors, which consist of both Community Based Organizations (“CBOs”) and private contractors. LIURP has offered comprehensive energy efficiency services to eligible Pennsylvania households for years. This aspect of the Phase IV Plan continues to enhance and accelerate the deployment of services to LIURP-eligible households by providing additional measures and services to achieve more savings in each visit or through serving additional homes.

Appendix B, PUC Table 2 shows that the projected savings from the Low-Income Energy Efficiency Program exceeds the requirement to achieve 5.8% of the consumption reduction requirements from the low-income sector.

The requirement that each EE&C Plan include specific energy efficiency measures for households at or below 150% of the FPIG in proportion to that sector's share of the total energy usage in the EDC's service territory has been achieved by including measures that number at least proportional to low-income sector energy usage in the program targeted directly to low-income customers.

Appendix B, PUC Table 7 and Table 14 below lists 64 measures that are provided directly or targeted to Low-Income customers through the Phase IV Plan. The measures listed in PUC Table 7 in Appendix B and Tables 8, 10 and 12 include a total of 108 additional non-low-income measures (without double counting measures offered in multiple sectors or measure tiers) resulting in a total of 172 measures, of which low-income represents 37%, significantly greater than the target percentages (all under 11%).

**Table 14: Residential Low-Income Sub-Measures**

Available to Low-Income Customers
AC/Heating System Filter Replacement and Tune-Up
Air Sealing
Appliance Timers
Caulk
Central Air Conditioner
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
Pipe Insulation
Plumbing Repairs
Refrigerator Replacement
Refrigerator/Freezer Thermometers
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)
Weather Stripping
Window Quilt
Window Tint
Windows

The Companies have been harmonizing, coordinating, and leveraging their LIURP and Act 129 low-income offerings and funding, and they intend to continue those efforts during Phase IV as follows:

- The Companies' Act 129 low-income direct install programs fully harmonize with their LIURP by using the same website for both programs and conducting joint marketing; and
- The Companies' LIURP contractors are engaged to install additional measures funded by the Act 129 low-income programs in every income-qualifying home during the LIURP audit. This allows both programs to coordinate funding sources and more comprehensively serve the low-income customers' homes than would have occurred if each program worked independently.

In addition, the Companies' Act 129 low-income programs further harmonize and coordinate with their LIURP offerings by:

- Referring customers whose incomes are above 150% of Federal Poverty Income Guidelines (FPIG) (and do not qualify for Act 129 low-income programs) to LIURP;
- Referring customers with high electric use to LIURP to leverage LIURP funding; and
- Referring customers with low electric use (who do not qualify for the LIURP program) to the Companies' Act 129 low-income programs for service.

Harmonizing, coordinating, and leveraging both Act 129 low-income and LIURP offerings and funding allow the Companies to serve the needs of their unique income-qualifying customers comprehensively and efficiently.

In addition to coordination with their LIURP offerings, the Companies also coordinate on the delivery of their low-income programs with other external programs. Some examples of this coordination include the following:

- Vendors who implement low-income programs are required to use commercially reasonable efforts to coordinate program services and installations with the PA State Weatherization Assistance Program and Natural Gas Distribution Companies ("NGDC") providers located within the Companies' service territories.
- A Company representative participates in a Pennsylvania Weatherization Advisory Council's Coordination Committee, in which barriers to coordination of all low-income programs have been identified and are being resolved by the group.
- The Companies' Energysavepa.com website allows efficient coordination through the on-line application process by obtaining the customer's NGDC information and the customer's sign off allowing the Companies to share customer information. The customer information is then automatically sent to the

appropriate NGDC in an e-mail at the same time the application is received by the Companies.

- Existing relationships are leveraged with the overlapping NGDCs and have agreed upon joint procedures.

The Companies believe that their efforts to coordinate both with their LIURP and with external programs has been successful to date, and they plan to continue these efforts and coordination with their peer utilities and partners in Pennsylvania. The Companies will present and solicit input on their coordination efforts with stakeholders on an annual basis throughout Phase IV implementation.

*9.1.4. Describe how the 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 IV, the EE&C Team plans to continue collaborating with the Electric Power Research Institute (EPRI) and participating 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 Companies do not exceed this limitation, the EE&C Team continuously evaluates costs incurred for the implementation of various aspects of the Companies' EE&C Plan. 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 Companies will adjust their spending accordingly. Further, the Phase IV 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 PUC Table 7 in Appendix B for the measures included in the Phase IV Plan and their eligibility requirements.

*9.1.5 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 Companies regardless of that customer's source of generation service and, thus, will be offered on a non-discriminatory basis. Likewise, the Phase IV EE&C-C tariffs will collect the costs from like customers, thereby assuring the Phase IV 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 IV 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 Companies' service territories and beyond. Energy use will depend on the demand for energy services and the technologies used to supply those services.

The Companies' Phase IV Plan is intended to: (i) elevate customers' 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 and comprehensive energy efficiency options. In addition, many measures installed and appliances retired and/or replaced as a result of the execution of the Companies' Phase IV Plan have lengthy lifetimes. The measures will save energy for years to come, bridging customers to even better and more efficient technologies as they become available. So, the benefits of this Plan will 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 Companies' approach will be to encourage customers to use financial resources to gain the greatest possible financial support available to purchase and install energy-efficiency technologies. The Companies' implementation CSPs will educate customers on the funding mechanisms and resources that are available not only through the Phase IV Plan, but also through other sources such as third party 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 costs and expenses to undertake energy efficiency improvements. Furthermore, 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 low-income 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 are essential to the success of these programs. The Companies will continue to market their existing programs and measures to build awareness and interest in both the existing programs and the programs proposed under

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the Phase IV Plan. Since the Phase IV Plan leverages many of the programs currently being offered through the Phase III Plan, and the response to many of the Phase III programs has been positive, the Companies do not anticipate significant changes in their marketing and education strategy for Phase IV. Once the Commission approves the Phase IV Plan, the Companies will pursue educational and 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 Companies' implementation 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 Companies assign program managers and other staff to help manage customer communication and education efforts. This staff will be tasked with continually evaluating and, when appropriate, modifying the energy efficiency education messages and delivery strategies.

The Companies and/or the implementation CSPs 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 Companies will also provide and seek input on marketing and other communication materials from interested parties through the stakeholder process.

The Companies' consumer website, [energysavepa.com](http://energysavepa.com), contains information and tools to support customer energy-efficiency strategies, including information regarding their existing programs. The Companies will increase the information available on their website for the Phase IV Plan by posting customer educational and marketing materials developed for their new programs and measures.

*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 Companies will provide a list of all known eligible federal and state funding programs that are available to customers for energy efficiency and conservation as part of their 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 Companies provide reports to the Commission as part of their regular reporting responsibilities, which are then posted on the Public Utility Commission's website. These reports will also be posted on the Companies' website for review by the public.



## **10. Appendices**

### **Appendix A: CSP Contract(s)**

### **Appendix B: PUC Tables 1-13**

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

Table 2: Summary of Portfolio Energy and Demand Savings

Table 3: Summary of Portfolio Energy and Demand Savings

Table 4: Summary of Portfolio Costs

Table 5: Program Summaries

Table 6: Budget and Parity Analysis Summary

Table 7: Eligible Measures

Table 8: Estimated Savings and Participation

Table 9: Program Budget

Table 10: Sector-Specific Summary of EE&C Costs

Table 11: Allocation of Common Costs to Applicable Customer Sector

Table 12: Summary of Portfolio EE&C Costs

Table 13: TRC Benefits Table

### **Appendix C: Company Tables**

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

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

Table C-3: Energy Efficiency as a Resource

### **Appendix D: Calculation Methods and Assumptions**

Table D-1: Costs Assumptions

Table D-2: Measure Assumptions

Table D-3: Avoided Costs