



# Semiannual Report to the Pennsylvania Public Utility Commission

**Phase III of Act 129**

**Program Year 10**

**(June 1, 2018 – May 31, 2019)**

**For Pennsylvania Act 129 of 2008**

**Energy Efficiency and Conservation Plan**

**Prepared for:**



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July 15, 2019

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## ACRONYMS

AC	Air Conditioner
BDR	Behavioral Demand Response
C&I	Commercial and Industrial
CFL	Compact Fluorescent Lamp
CHP	Combined Heat and Power
CSP	Conservation Service Provider or Curtailment Service Provider
DLC	Direct Load Control
DR	Demand Response
DRA	Demand Response Aggregator
EDC	Electric Distribution Company
EDT	Eastern Daylight Time
EE	Energy Efficiency
EE&C	Energy Efficiency and Conservation
EM&V	Evaluation, Measurement, and Verification
EPA	Environmental Protection Agency
EUL	Effective Useful Life
G/E/NP	Government/Education/Non-Profit
HVAC	Heating, Ventilation, and Air Conditioning
ICSP	Implementation Conservation Service Provider
kW	Kilowatt
kWh	Kilowatt-Hour
LED	Light-Emitting Diode
LI	Low-Income
LIURP	Low-Income Usage Reduction Program
M&V	Measurement and Verification
MW	Megawatt
MWh	Megawatt-Hour
NTG	Net-to-Gross
P3TD	Phase III to Date
PA PUC	Pennsylvania Public Utility Commission
PSA	Phase III to Date Preliminary Savings Achieved; Equal to VTD + PYTD
PSA+CO	PSA plus Carryover from Phase II
PY	Program Year: e.g., PY8, from June 1, 2016, to May 31, 2017
PYRTD	Program Year Reported to Date
PYTD	Program Year to Date
PYVTD	Program Year Verified to Date
RTD	Phase III to Date Reported Gross Savings
RTO	Regional Transmission Organization
SKU	Stock Keeping Unit

SWE	Statewide Evaluator
T&D	Transmission and Distribution
TRC	Total Resource Cost
TRM	Technical Reference Manual
VTD	Phase III to Date Verified Gross Savings

## TYPES OF SAVINGS

**Gross Savings:** The change in energy consumption and/or peak demand that results directly from program-related actions taken by participants in an Energy Efficiency and Conservation (EE&C) program, regardless of why they participated.

**Net Savings:** The total change in energy consumption and/or peak demand that is attributable to an EE&C program. Depending on the program delivery model and evaluation methodology, the net savings estimate may differ from the gross savings estimate due to adjustments for the effects of free riders, changes in codes and standards, market effects, participant and nonparticipant spillover, and other causes of changes in energy consumption or demand not directly attributable to the EE&C program.

**Reported Gross:** Also referred to as ex ante (Latin for “beforehand”) savings. The energy and peak demand savings values calculated by the electric distribution company (EDC) or its program implementation conservation service provider (ICSP) and stored in the program tracking system.

**Verified Gross:** Also referred to as ex post (Latin for “from something done afterward”) gross savings. The energy and peak demand savings estimates reported by the independent evaluation contractor after the gross impact evaluation and associated measurement and verification (M&V) efforts have been completed.

**Verified Net:** Also referred to as ex post net savings. The energy and peak demand savings estimates reported by the independent evaluation contractor after application of the results of the net impact evaluation. Typically calculated by multiplying the verified gross savings by a net-to-gross (NTG) ratio.

**Annual Savings:** Energy and demand savings expressed on an annual basis, or the amount of energy and/or peak demand an EE&C measure or program can be expected to save over the course of a typical year. Annualized savings are noted as megawatt-hours (MWh) or megawatts (MW). The Pennsylvania Technical Reference Manual (TRM) provides algorithms and assumptions to calculate annual savings, and Act 129 compliance targets for consumption reduction are based on the sum of the annual savings estimates of installed measures.

**Lifetime Savings:** Energy and demand savings expressed in terms of the total expected savings over the useful life of the measure. Typically calculated by multiplying the annual savings of a measure by its effective useful life (EUL). The Total Resource Cost (TRC) test uses savings from the full lifetime of a measure to calculate the cost-effectiveness of EE&C programs.

**Program Year Reported to Date (PYRTD):** The reported gross energy and peak demand savings achieved by an EE&C program or portfolio within the current program year. PYTD values for energy efficiency will always be reported gross savings in a semiannual or preliminary annual report.

**Program Year Verified to Date (PYVTD):** The verified gross energy and peak demand savings achieved by an EE&C program or portfolio within the current program year.

**Phase III to Date (P3TD):** The energy and peak demand savings achieved by an EE&C program or portfolio within Phase III of Act 129. Reported in several permutations described below.

- **Phase III to Date Reported (RTD):** The sum of the reported gross savings recorded to date in Phase III of Act 129 for an EE&C program or portfolio.
- **Phase III to Date Verified (VTD):** The sum of the verified gross savings recorded to date in Phase III of Act 129 for an EE&C program or portfolio, as determined by the impact evaluation finding of the independent evaluation contractor.
- **Phase III to Date Preliminary Savings Achieved (PSA):** The sum of the verified gross savings (VTD) from previous program years in Phase III where the impact evaluation is complete plus the reported gross savings from the current program year (PYTD). For example, for Program Year 10 (PY10), the PSA savings equal the PYTD savings and the verified savings from PY8 and PY9.
- **Phase III to Date Preliminary Savings Achieved + Carryover (PSA+CO):** The sum of the verified gross savings from previous program years in Phase III plus the reported gross savings from the current program year plus any verified gross carryover savings from Phase II of Act 129. This is the best estimate of an EDC's progress toward the Phase III compliance targets.

Per guidance from the Pennsylvania Statewide Evaluator (SWE), all demand savings that were achieved from energy efficiency measures are shown in this report without line losses (i.e., at the meter). All demand savings that were achieved from demand response (DR) measures are shown in this report with line losses (i.e., at the generator).

***Note that all values in the report are summed prior to rounding. Therefore, table totals may not equal the sum of all rows.***

## 1. INTRODUCTION

Pennsylvania Act 129 of 2008, signed on October 15, 2008, mandated energy savings and demand reduction goals for the largest electric distribution companies (EDCs) in Pennsylvania for Phase I (2008 through 2013). Phase II of Act 129 began in 2013 and concluded in 2016. In late 2015, each EDC filed a new Energy Efficiency and Conservation (EE&C) Plan with the Pennsylvania Public Utility Commission (PA PUC) detailing the proposed design of its portfolio for Phase III. These plans were updated based on stakeholder input and subsequently approved by the PUC in 2016.

Implementation of Phase III of the Act 129 programs began on June 1, 2016. This report documents the progress of the Phase III EE&C accomplishments for PECO in Program Year 10 (PY10), as well as the cumulative accomplishments of the Phase III programs since inception. This report also documents the energy savings carried over from Phase II. The Phase II carryover savings count toward EDC savings compliance targets for Phase III.

This report details the participation, spending, and reported gross impacts of the energy efficiency (EE) programs in PY10. Compliance with Act 129 savings goals will ultimately be based on verified gross savings. PECO has retained Navigant Consulting, Inc. (Navigant) as an independent evaluation contractor for Phase III of Act 129. Navigant is responsible for the measurement and verification (M&V) of the savings and the calculation of verified gross savings. The verified gross savings for PY10 EE programs will be reported in the final annual report to be filed on November 15, 2019.

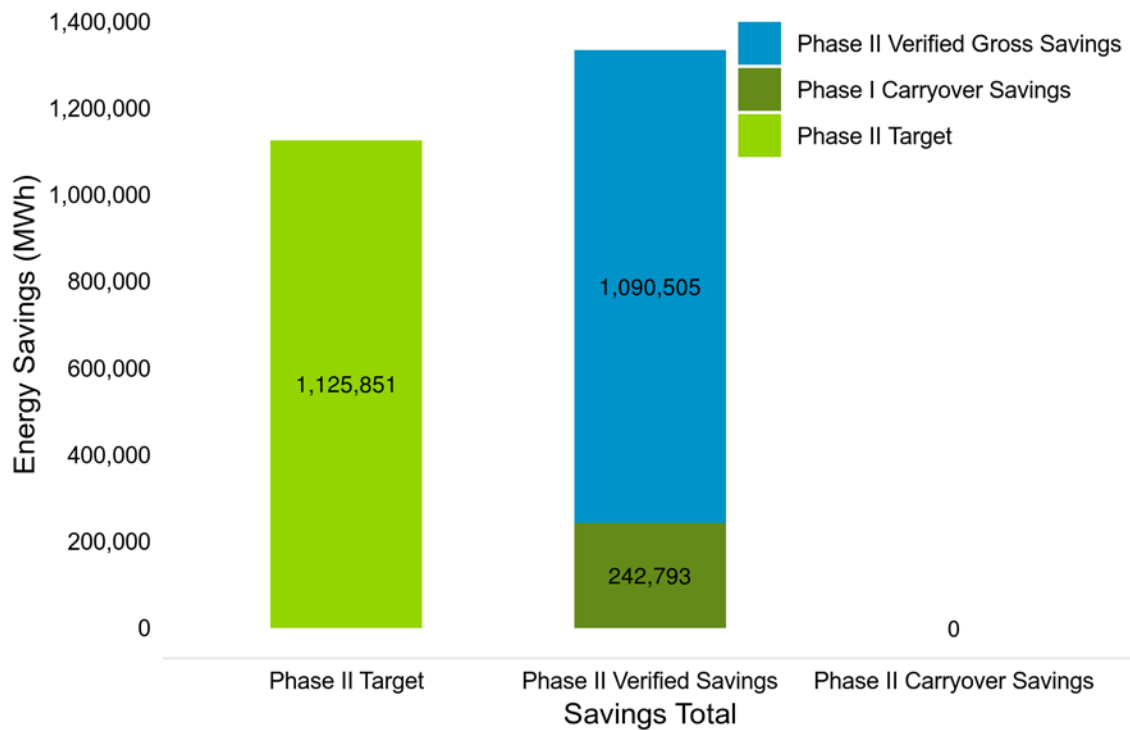
Phase III of Act 129 includes a demand response (DR) goal for PECO. DR events are limited to the months of June through September, which are the first 4 months of the Act 129 program year. Because the DR season is completed early in the program year, it is possible to complete the independent evaluation of verified gross savings for DR sooner than is possible for EE programs. Section 6.2 of this report includes the verified gross DR impacts for PY10 and the cumulative DR performance of the EE&C program to date for Phase III of Act 129.

## 2. SUMMARY OF ACHIEVEMENTS

### 2.1 Carryover Savings from Phase II of Act 129

PECO has reported zero portfolio-level carryover savings from Phase II to Phase III. The Commission’s Phase III Implementation Order<sup>1</sup> allowed EDCs to carryover savings achieved within Phase II that were in excess of the Phase II portfolio savings target. Phase I carryover savings cannot be counted in the calculation of Phase II carryover savings. Figure 2-1 compares PECO’s Phase II verified gross savings total to the Phase II compliance target to illustrate the carryover calculation. Because PECO’s Phase II verified gross savings did not exceed PECO’s Phase II target, they were not eligible to carry over savings from Phase II toward their Phase III overall compliance target.<sup>2</sup>

Figure 2-1. Carryover Savings from Phase II of Act 129



Sources: PECO’s eTrack database, Conservation Service Provider (CSP) tracking data

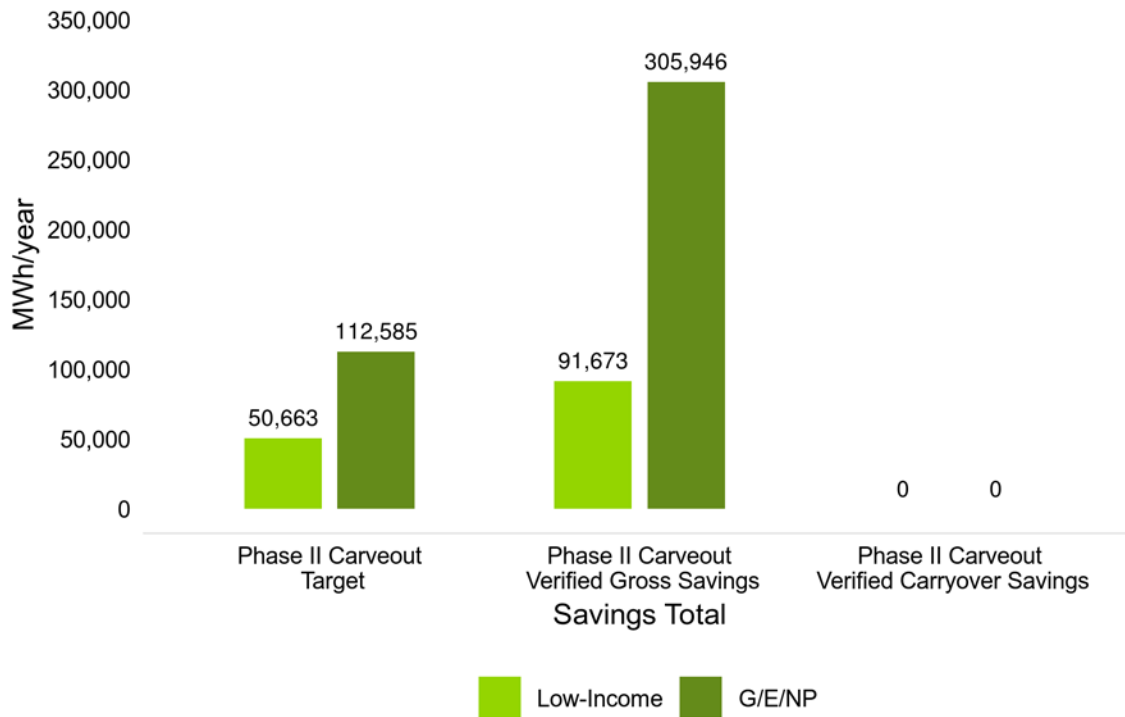
<sup>1</sup> Pennsylvania Public Utility Commission, *Energy Efficiency and Conservation Program Implementation Order*, at Docket No. M-2014-2424864, (*Phase III Implementation Order*), entered June 11, 2015.

<sup>2</sup> Pennsylvania Public Utility Commission, *Energy Efficiency and Conservation Program Compliance Order*, at Docket No. M-2012-2289411, (*Phase II Compliance Determination Order*), entered August 3, 2017.



The Commission’s Phase III Implementation Order<sup>3</sup> also allowed EDCs to carry over savings in excess of the Phase II government, educational, and non-profit (G/E/NP) savings goal and excess savings from the low-income customer segment.<sup>4</sup> PECO carried over 0 MWh of G/E/NP and 0 MWh of low-income customer segment savings.<sup>5</sup> Figure 2-2 shows the calculation of carryover savings for the low-income and G/E/NP targets.<sup>6</sup>

**Figure 2-2. Customer Segment-Specific Carryover from Phase II**



Sources: PECO’s eTrack database, CSP tracking data

## 2.2 Phase III Energy Efficiency Achievements to Date

Since the beginning of PY10 on June 1, 2018, PECO has claimed:

- 443,837 MWh of reported gross electric energy savings (PYRTD)
- 48.86 MW of reported gross peak demand savings (PYRTD) from EE programs

Since the beginning of Phase III of Act 129 on June 1, 2016, PECO has achieved:

<sup>3</sup> Pennsylvania Public Utility Commission, *Energy Efficiency and Conservation Program Implementation Order*, at Docket No. M-2014-2424864, (*Phase III Implementation Order*), entered June 11, 2015.

<sup>4</sup> Proportionate to those savings achieved by dedicated low-income programs in Phase III.

<sup>5</sup> Pennsylvania Public Utility Commission, *Energy Efficiency and Conservation Program Compliance Order*, at Docket No. M-2012-2289411, (*Phase II Compliance Determination Order*), entered August 3, 2017.

<sup>6</sup> Pennsylvania Public Utility Commission, *Energy Efficiency and Conservation Program Compliance Order*, 2017.

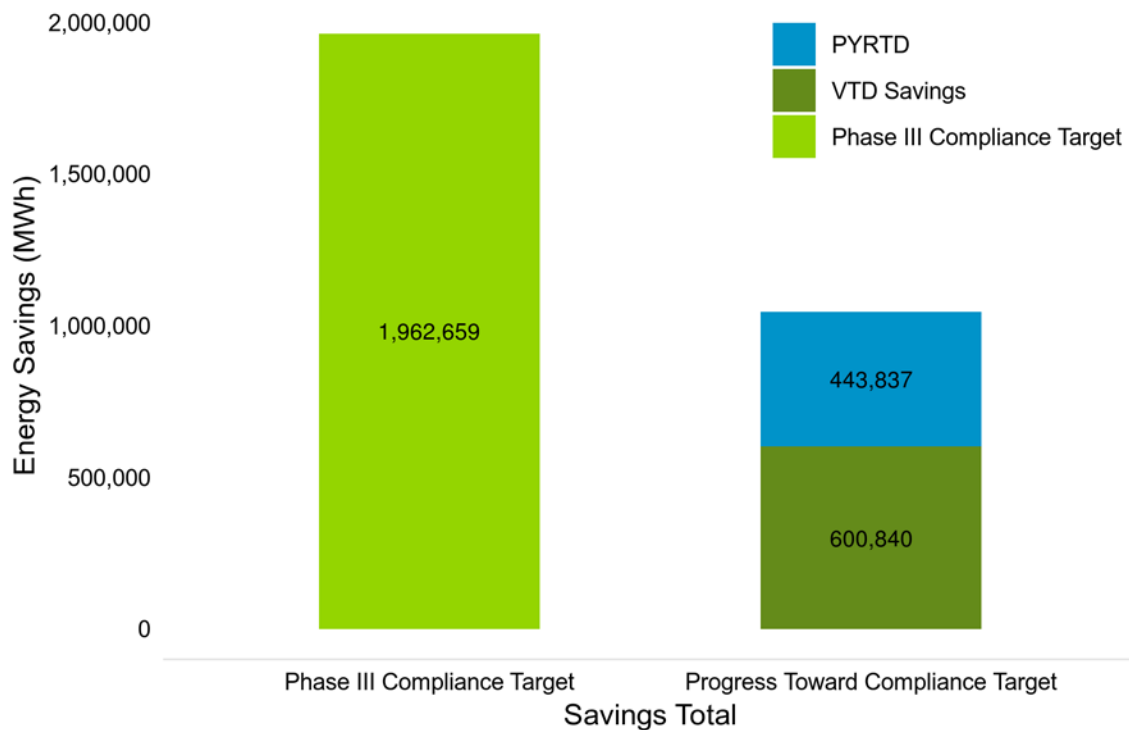
- 1,054,126 MWh of reported gross electric energy savings (RTD)
- 111.77 MW of reported gross peak demand savings (RTD) from EE programs
- 1,044,677 MWh of gross electric energy savings (PSA)<sup>7</sup>
  - This total includes verified gross savings from all Phase III program years and the PYTD reported gross savings from PY10
- 127.23 MW of gross peak demand savings (PSA) from EE programs

Including carryover savings from Phase II, PECO has achieved:

- 1,044,677 MWh of PSA+CO energy savings recorded to date in Phase III
  - This represents 53.2% of the May 31, 2021 energy savings compliance target of 1,962,659 MWh

Figure 2-3 summarizes PECO's progress toward the Phase III portfolio compliance target.

**Figure 2-3. EE&C Plan Performance Toward Phase III Portfolio Compliance Target**



Sources: PECO's eTrack, CSP tracking data

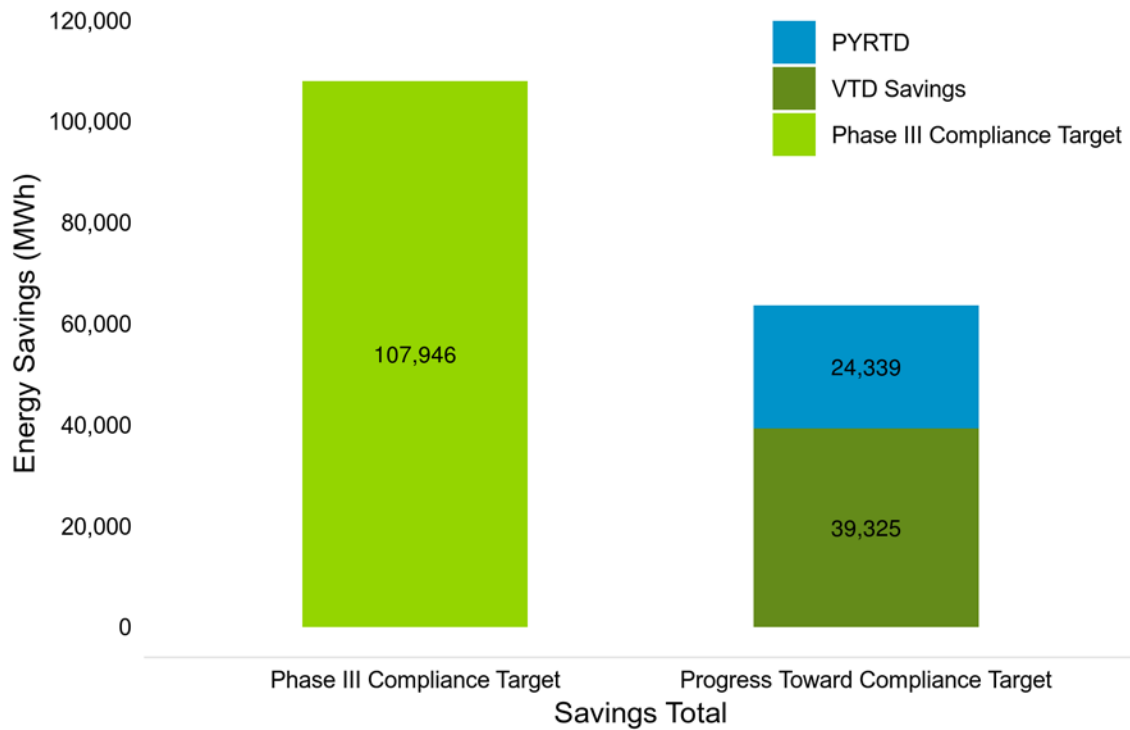
The Phase III Implementation Order directed EDCs to offer conservation measures to the low-income customer segment based on the proportion of electric sales attributable to low-income households. The proportionate number of measures targeted for PECO is 8.8%. PECO offers a total of 269 EE&C

<sup>7</sup> The SWE adjusted PY9 verified energy (kWh) and demand (kW) savings filed in PECO's PY9 Annual Report. Those adjustments are reflected throughout this report in the relevant phase-to-date values. At the overall portfolio level, the SWE increased savings by 2,132 MWh and decreased demand by 0.19 MW.

measures to its residential and non-residential customer classes. There are 117 measures available to the low-income customer segment at no cost to the customer. This represents 43.5% of the total measures offered in the EE&C Plan and exceeds the proportionate number of measures target.

The PA PUC also established a low-income energy savings target of 5.5% of the portfolio savings goal. The Phase III low-income savings target for PECO is 107,946 MWh. Figure 2-4 compares the PSA+CO performance to date for the low-income customer segment to the Phase III savings target. Based on the latest available information, PECO has achieved 59.0% of the Phase III low-income energy savings target.

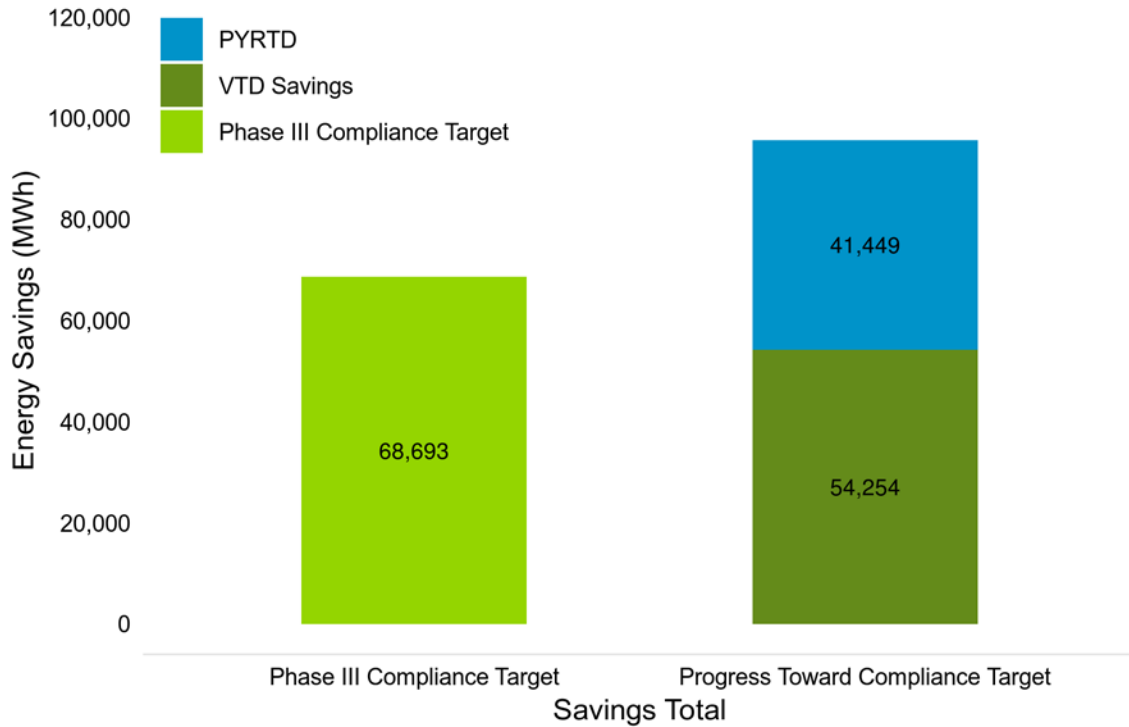
**Figure 2-4. EE&C Plan Performance Toward Phase III Low-Income Compliance Target**



Sources: PECO's eTrack database, CSP tracking data

The Phase III Implementation Order established a G/E/NP energy savings target of 3.5% of the portfolio savings goal. The G/E/NP savings target for PECO is 68,693 MWh. Figure 2-5 compares the PSA+CO performance to date for the G/E/NP customer segment to the Phase III savings target. Based on the latest available information, PECO has achieved 139.3% of the Phase III G/E/NP energy savings target.

Figure 2-5. EE&C Plan Performance Against Phase III G/E/NP Compliance Target



Sources: PECO's eTrack database, CSP tracking data

### 2.3 Phase III DR Achievements to Date

The Phase III DR performance target for PECO is 161 MW. Compliance targets for DR programs are based on average performance across events and are established at the system level, which means the load reductions measured at the customer meter must be escalated to reflect transmission and distribution (T&D) losses.

Act 129 DR events are triggered by PJM's day-ahead load forecast. When the day-ahead forecast is above 96% of the peak load forecast for the year, a DR event is initiated for the following day.

In PY10, PECO called six DR events, on July 2, July 3, August 6, August 28, September 4, and September 5. The average performance for these six events is presented in Table 2-1. The full methodology and results are available in the standalone PY10 DR report, submitted to the Statewide Evaluator (SWE) on January 15, 2019. Table 2-1 shows a summary of the DR performance to date.

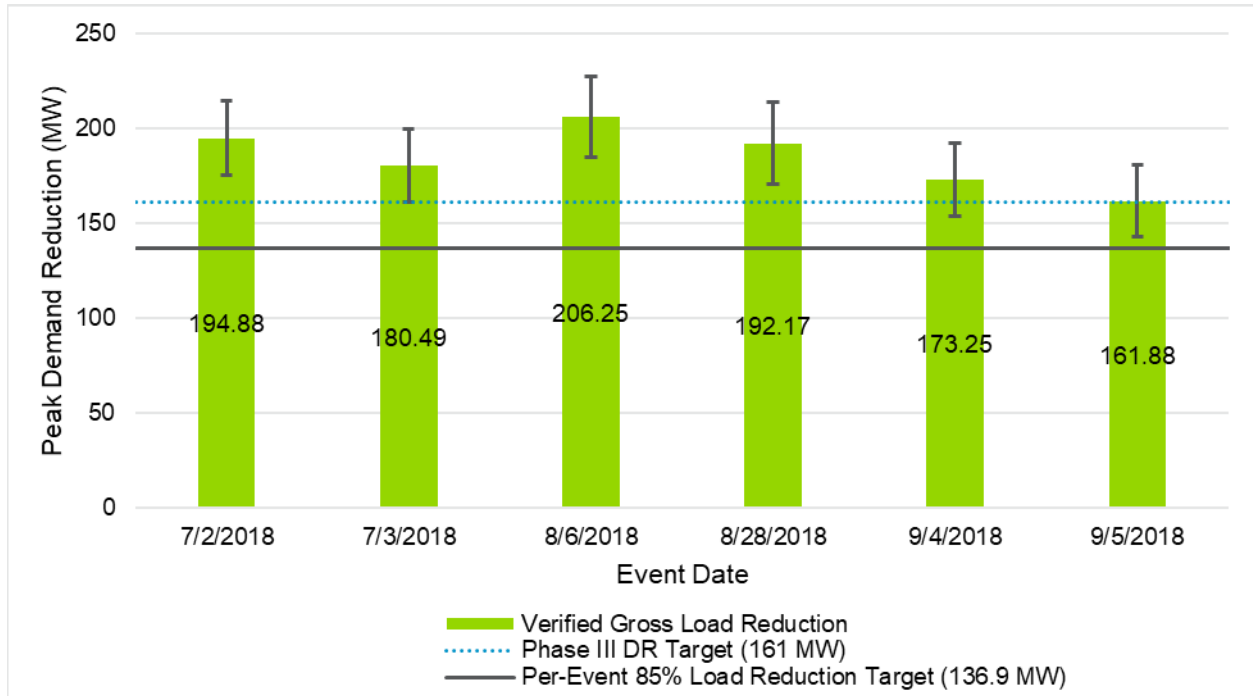
**Table 2-1. Phase to Date DR Performance by Event**

PY	Event Date	Residential DR (MW)	Small C&I DR (MW)	Large C&I DR (MW)	Portfolio (MW)	Relative Precision at 90% Confidence
PY9	June 13, 2017	39.53	0.00	118.21	157.74	8.8%
PY9	July 20, 2017	33.48	0.00	107.88	141.36	9.6%
PY9	July 21, 2017	23.34	0.00	125.82	149.16	8.9%
PY10	July 2, 2018	38.90	0.00	155.98	194.88	10.0%
PY10	July 3, 2018	33.73	0.00	146.76	180.49	10.8%
PY10	August 6, 2018	24.97	1.15	180.12	206.25	10.4%
PY10	August 28, 2018	30.50	0.92	160.76	192.17	11.3%
PY10	September 4, 2018	29.79	0.77	142.69	173.25	11.1%
PY10	September 5, 2018	29.28	0.84	131.75	161.88	11.8%
<b>PYVTD - Average PY10 DR Event Performance</b>		<b>31.19</b>	<b>0.61</b>	<b>153.01</b>	<b>184.82</b>	<b>10.9%</b>
<b>P3TD - Average Phase III DR Event Performance</b>		<b>31.50</b>	<b>0.41</b>	<b>141.11</b>	<b>173.02</b>	<b>10.3%</b>

Source: Navigant analysis

The Commission’s Phase III Implementation Order also established a requirement that EDCs achieve at least 85% of the Phase III compliance reduction target in each DR event. For PECO, this translates to a 136.9 MW minimum for each DR event. Figure 2-6 compares the performance of each of the DR events in PY10 to the event-specific minimum and average targets.

Figure 2-6. Event Performance Compared to 85% Per-Event Target



Source: Navigant analysis

## 2.4 Phase III Performance by Customer Segment

Table 2-2 presents the participation, savings, and spending by customer sector for PY10. The residential, small commercial and industrial (C&I), and large C&I sectors are defined by EDC tariff, and the residential low-income and G/E/NP customer segment carve-outs are defined by statute (66 Pa. C.S. § 2806.1). The residential low-income segment is a subset, and not additive, of the residential customer class; however, some low-income savings may occur on a small C&I or large C&I meter due to participation of low-income occupants living in multifamily, master-metered buildings. Similar to the low-income segment, the G/E/NP customer segment will include customers who are part of the small C&I or large C&I rate classes and is not additive to the portfolio. Table 2-2 represents the cumulative savings, spending, and participation by customer sector, inclusive of all low-income and G/E/NP participation. Table 2-3 represents the savings, spending, and participation values for the low-income and G/E/NP customer segment carve-outs only.

Table 2-2. PY10 Summary Statistics by Customer Segment

Customer Segment	No. of Participants	PYRTD MWh	Parameter		
			PYRTD MW (EE)	PYVTD MW (DR)	Incentives (\$1,000)
Residential	1,658,428	268,993	24.99	31.19	\$11,540
Small C&I	3,583	58,477	9.25	0.61	\$3,121
Large C&I	1,377	116,367	14.61	152.88	\$6,144
<b>Total</b>	<b>1,663,388</b>	<b>443,837</b>	<b>48.86</b>	<b>184.69</b>	<b>\$20,804</b>

Sources: PECO's eTrack database, CSP tracking data

**Table 2-3. PY10 Summary Statistics by Carve-Out**

Carve-Out	Parameter				
	No. of Participants	PYRTD MWh	PYRTD MW (EE)	PYVTD MW (DR)	Incentives (\$1,000)
Low-Income (0-50% of FPL)	3,853	4,246	0.47	0.0	\$0
Low-Income (51-150% of FPL)	15,549	20,093	2.46	0.0	\$130
G/E/NP	1,052	41,449	5.55	0.0	\$2,736

Sources: PECO's eTrack database, CSP tracking data

Table 2-4 and Table 2-5 summarize plan performance by sector and customer segment carve-outs since the beginning of Phase III.

**Table 2-4. Phase III Summary Statistics by Customer Segment**

Customer Segment	Parameter				
	No. of Participants	PSA MWh	PSA MW (EE)	PSA MW (DR)	Incentives (\$1,000)
Residential	4,329,840	689,354	78.16	31.50	\$30,768
Small C&I	6,440	130,031	18.74	0.41	\$6,286
Large C&I	2,034	225,292	30.34	141.02	\$11,029
<b>Total</b>	<b>4,338,314</b>	<b>1,044,677</b>	<b>127.23</b>	<b>172.93</b>	<b>\$48,084</b>

Sources: PECO's eTrack database, CSP tracking data

**Table 2-5. Phase III Summary Statistics by Carve-Out**

Carve-Out	Parameter				
	No. of Participants	PSA MWh	PSA MW (EE)	PSA MW (DR)	Incentives (\$1,000)
Low-Income (0-50% of FPL)	8,216	9,993	1.15	0.0	\$1
Low-Income (51-150% of FPL)	197,373	53,671	6.34	0.0	\$1,034
G/E/NP	1,490	95,703	11.91	0.0	\$5,827

Sources: PECO's eTrack database, CSP tracking data

### 3. UPDATES AND FINDINGS

#### 3.1 Implementation Updates and Findings

This section summarizes PECO's EE&C Plan and program implementation updates, as well as findings available at the time of this report's writing.

- **Residential EE Program:** The residential program continues to represent the majority of savings in the portfolio in PY10. The program includes multiple solutions that are implemented by ARCA, CLEAResult, Franklin, Oracle and PSD.
  - **Behavioral Solution:** Oracle implements the Behavioral Solution and has been active throughout PY8, PY9, and into PY10. Similar to PY9, the Behavioral Solution continues to represent a significant portion of the Residential EE Program reported savings.
  - **Lighting, Appliance & HVAC Solution:** The Lighting, Appliance & HVAC Solution, implemented by CLEAResult, continues to represent a significant portion of the Residential EE Program's reported savings, with the majority of the solution's savings originating from LED measures. CFL offerings were discontinued during PY8. Non-lighting measures, including appliances and HVAC, represent less than 10 percent of solution savings.
  - **Appliance Recycling Solution:** The Appliance Recycling Solution offers rebates for refrigerators, freezers, and room air conditioners (ACs). The utility offers \$75 rebates for each working refrigerator or freezer picked up for recycling. The utility offers \$10 rebates per room AC recycled with the pickup of a refrigerator or freezer.
  - **Whole Home Solution:** The Whole Home Solution offers participants a low-cost home energy assessment that includes direct installation of a range of deemed measures such as lighting, water conservation, smart strips, etc. In addition, the Whole Home Solution provides incentives for ceiling, attic, and wall insulation, air and duct sealing, and mechanical equipment (e.g., fuel switching from electric heat to natural gas heat pump water heaters).
  - **Multifamily Targeted Market Segment:** The Multifamily Targeted Market Segment includes projects and savings related to residential EE occurring within the dwellings of multifamily buildings. The projects and savings for master-metered multifamily facilities are allocated to the Small C&I EE and Large C&I EE Programs.
  - **New Construction Solution:** The Residential New Construction Solution's activities continue to represent a smaller share of the Residential EE Program's savings activities. This solution is intended to accelerate the adoption of EE in the design, construction, and operation of new single-family homes, duplexes, and townhomes by leveraging the US Environmental Protection Agency's (EPA's) ENERGY STAR Homes certification. The program also includes an additional above-code track (Code-Plus) designed to transition builders toward ENERGY STAR standards.
- **Low-Income EE Program:** CMC Energy Services, the Energy Coordinating Agency (ECA) and ARCA, Inc. are implementing the Low-Income Whole Home Solution in PY10.
  - **Whole Home Solution:** The Whole Home Solution encompasses several activities to deliver energy savings services to income eligible households including PECO's Free Home Energy Check Up with free measure direct installation, low-income multifamily



building audit and measure direct installation, appliance recycling, and distribution of free energy efficiency products at events targeting income eligible households by Rosales Communications. For customers with electric heat and domestic hot water, the Home Energy Check Up measures include improving mechanical systems and the thermal performance of building envelopes and water heaters. Additionally, the solution supports the Low-Income Usage Reduction Program (LIURP) and Philadelphia Gas Works income-eligible weatherization program providing additional free efficient electric products for direct installation.

- **Lighting Solution:** The Lighting Solution was closed on December 31, 2017.
- **Small C&I EE Program:** ICF, Franklin, and SmartWatt have implemented projects in three of the program’s solutions and two targeted market segments: the Equipment and Systems Solution, New Construction Solution, Whole Building Solution, Multifamily Targeted Market Segment, and the Data Center Targeted Market Segment. Each of these programs typically includes a mixture of lighting improvements, lighting controls, HVAC, compressed air, refrigeration, and custom projects. The Equipment and Systems Solution targets existing buildings, while the New Construction Solution is for new buildings and major retrofits. The Whole Building Solution encourages direct-install projects that target entire facilities, while the Multifamily Targeted Market Segment focuses on the commercially metered common areas in multifamily residential buildings.
- **Large C&I EE Program:** ICF and Franklin have implemented projects in two of the program’s solutions and two targeted market segments: the Equipment and Systems Solution, New Construction Solution, Multifamily Targeted Market Segment, and the Data Center Targeted Market Segment. Each of these programs typically includes a mixture of lighting improvements, lighting controls, HVAC, compressed air, refrigeration, and custom projects. The Equipment and Systems Solution targets existing buildings, while the New Construction Solution is for new buildings and major retrofits. The Multifamily Targeted Market Segment focuses on the commercially metered common areas in multifamily residential buildings, while the Data Center Targeted Market Segment primarily targets efficient HVAC projects in data centers and other IT facilities.
- **CHP Program:** PECO is currently accepting and processing applications for combined heat and power (CHP) projects. Three participants completed CHP projects during PY10. The program is tracking additional leads that have projected completion dates within PIII including a megawatt scale project with a high certainty of completion during PY11.
- **Residential DR Program:** The Residential DR Program ran six DR events during the summer of 2018: July 2, July 3, August 6, August 28, September 4, and September 5. As in years past, the program is implemented by Itron (formerly Comverge). This year, and for the remainder of Phase III, the incentive is \$40 per direct load control (DLC) unit per year.
- **Small C&I DR Program:** The Small C&I DR Program ran six DR events during the summer of 2018: July 2, July 3, August 6, August 28, September 4, and September 5. As in years past, the program is implemented by Itron (formerly Comverge). This year, and for the remainder of Phase III, the incentive is \$40 per thermostat per year.
- **Large C&I DR Program:** The Large C&I DR Program ran six DR events during the summer of 2018: July 2, July 3, August 6, August 28, September 4, and September 5. The program is implemented by two CSPs: CPower and EnelX (formerly EnerNOC).

## 3.2 Evaluation Updates and Findings

Navigant has written, received SWE comments, and revised the Phase III evaluation plan and sampling plan for each program and solution. The team is conducting interviews with PECO staff and CSPs and reviewing program tracking databases and engineering files for each solution. These activities inform the design of participant surveys exploring customer satisfaction and experience, and the verification of measure installations for specific solutions per the evaluation plan. Navigant's progress on each program and solution is summarized below.

- **Residential EE Program:** Navigant updated the evaluation plan ahead of the PY10 activities for the Residential EE Program's solutions. Navigant is finalizing the preparation of data collection tools and processes to aid onsite and phone verification research for PY10. Activities from PY8 and PY9, recent findings and conclusions, and SWE feedback inform the team's research plan updates for PY10 that support both impact and process evaluation efforts.
- **Low-Income EE Program:** Navigant conducted on-site verification visits in PY9, and the team has updated the evaluation and sampling plans for PY10 activities. In PY10, Navigant will conduct an impact evaluation of the comprehensive direct installation activities for PY10, including engineering file reviews and phone verification for a sample of projects. Low-Income EE Program evaluation activities are focused on the Whole Home Solution.
- **Small C&I EE Program:** Navigant updated its data collection tools and processes to ensure faster and more robust data collection as well as more collaboration with the SWE. Impact evaluations for all solutions are ongoing. Over the next several months, Navigant will continue to review the solution measure data, call and visit sampled project sites, and continue the evaluation process for PY10.
- **Large C&I EE Program:** Navigant updated its data collection tools and processes to ensure faster and more robust data collection as well as more collaboration with the SWE. Navigant has also been working with ICF to review large and complex projects before incentives will be reserved. Impact evaluations for all solutions are ongoing. Over the next several months, Navigant will review the solution measure data, call and visit sampled project sites, and continue the evaluation process for PY10.
- **CHP Program:** The CHP Program had three participants in PY10 and expects several more projects to be completed during PY11. Prior targeted research by Navigant found that CHP projects take 18-24 months to construct which limits the ability of the program to recruit new participants able to complete projects within Phase III.
- **Residential DR Program:** The team evaluated peak load reductions for DR events on all summer event days in 2018. Peak load reduction evaluation findings are reported in the separate DR Annual Report.
- **Small C&I DR Program:** The team evaluated peak load reductions for DR events on all summer event days in 2018. Peak load reduction evaluation findings are reported in the separate DR Annual Report.
- **Large C&I DR Program:** The team evaluated peak load reductions for DR events on all summer event days in 2018. Peak load reduction evaluation findings are reported in the separate DR Annual Report.

## 4. SUMMARY OF PARTICIPATION BY PROGRAM

Table 4-1 provides the current participation totals for PY10 and Phase III. Certain programs and solutions define participation differently depending on the delivery channel and data tracking practices. Appendix A includes an overview of the different participation definitions by program and solution.

Table 4-1. EE&C Plan Participation by Program

Program and Solution	PYTD Participation	P3TD Participation
Lighting, Appliances & HVAC	1,186,451	2,802,576
Appliance Recycling	17,134	41,746
Whole Home	6,204	13,928
New Construction	706	1,577
Behavioral	363,076	1,183,436
Multifamily Targeted	9,817	20,444
<b>Residential EE Total</b>	<b>1,583,388</b>	<b>4,063,707</b>
Lighting	0	167,058
Whole Home	19,402	38,531
<b>Low-Income EE Total</b>	<b>19,402</b>	<b>205,589</b>
Equipment and Systems	1,418	2,907
New Construction	59	123
Whole Building	290	725
Data Centers	2	2
Multifamily Targeted	117	353
<b>Small C&amp;I EE Total</b>	<b>1,886</b>	<b>4,110</b>
Equipment and Systems	814	1,304
New Construction	41	101
Data Centers	1	4
Multifamily Targeted	48	120
<b>Large C&amp;I EE Total</b>	<b>904</b>	<b>1,529</b>
<b>CHP</b>	<b>3</b>	<b>5</b>
<b>Residential DR</b>	<b>56,030</b>	<b>61,440<sup>a</sup></b>
<b>Small C&amp;I DR</b>	<b>1,427</b>	<b>1,586<sup>a</sup></b>
<b>Large C&amp;I DR</b>	<b>348</b>	<b>348<sup>a</sup></b>
<b>Portfolio Total</b>	<b>1,663,388</b>	<b>4,338,314</b>

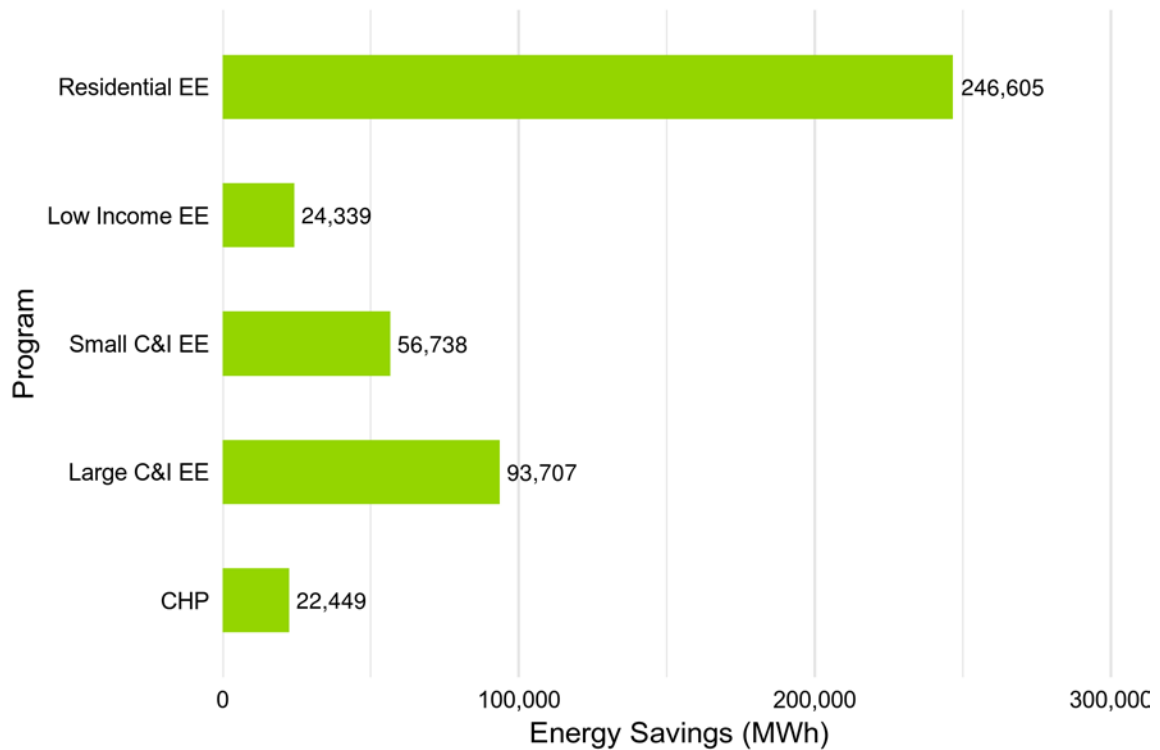
<sup>a</sup> DR participation is not additive like other programs because the same participants tend to remain in the program with only small attrition. Therefore, total participation in the DR programs for Phase III is equal to the highest program year participation count for each of the three programs.

Sources: PECO's eTrack database, CSP tracking data

## 5. SUMMARY OF ENERGY IMPACTS BY PROGRAM

Figure 5-1 presents a summary of the PYTD reported gross energy savings by program for PY10. The energy impacts in this report are presented at the meter level and do not reflect adjustments for T&D losses.

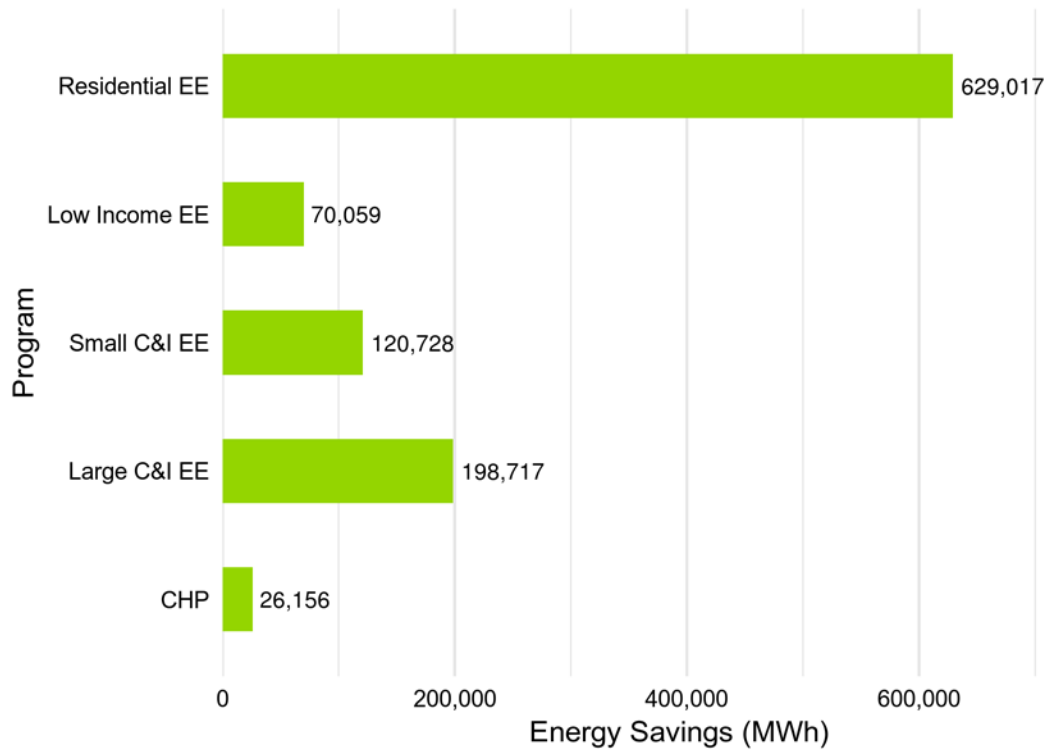
Figure 5-1. PYTD Reported Gross Energy Savings by Program



Sources: PECO's eTrack database, CSP tracking data

Figure 5-2 presents a summary of the PSA gross energy savings by program for Phase III of Act 129. PSA savings include verified gross savings from previous program years and the PYTD savings from the current program year.

Figure 5-2. PSA Energy Savings by Program for Phase III



Sources: PECO's eTrack database, CSP tracking data

Table 5-1 presents a summary of energy impacts by program and solution through the current reporting period.

Table 5-1. Energy Savings by Program and Solution (MWh)

Program and Solution	PYRTD	RTD	VTD	PSA
Lighting, Appliances & HVAC	137,639	335,106	200,982	338,621
Appliance Recycling	16,939	41,415	22,480	39,419
Whole Home	7,616	17,353	9,672	17,288
New Construction	1,872	4,062	2,182	4,054
Behavioral	78,154 <sup>a</sup>	222,512	141,781	219,935
Multifamily Targeted	4,384	9,862	5,316	9,700
<b>Residential EE Total</b>	<b>246,605</b>	<b>630,310</b>	<b>382,412</b>	<b>629,017</b>
Lighting	0	9,086	9,081	9,081
Whole Home	24,339	64,221	36,640	60,978
<b>Low-Income EE Total</b>	<b>24,339</b>	<b>73,307</b>	<b>45,720</b>	<b>70,059</b>
Equipment and Systems	40,550	89,780	47,844	88,394
New Construction	3,379	7,816	4,562	7,941
Whole Building	8,471	17,345	8,848	17,319
Data Centers	119	119	0	119
Multifamily Targeted	4,219	8,033	2,735	6,955
<b>Small C&amp;I EE Total</b>	<b>56,738</b>	<b>123,093</b>	<b>63,990</b>	<b>120,728</b>
Equipment and Systems	83,053	176,925	90,960	174,012
New Construction	6,661	15,735	9,105	15,766
Data Centers	36	546	507	543
Multifamily Targeted	3,957	8,507	4,438	8,395
<b>Large C&amp;I EE Total</b>	<b>93,707</b>	<b>201,713</b>	<b>105,010</b>	<b>198,717</b>
<b>CHP</b>	<b>22,449</b>	<b>25,703</b>	<b>3,707</b>	<b>26,156</b>
<b>Portfolio Total</b>	<b>443,837</b>	<b>1,054,126</b>	<b>600,840</b>	<b>1,044,677</b>

<sup>a</sup> The reported savings for the behavioral solution in PY10 represents the savings from June 1, 2018 through April 30, 2019. The reported savings for the behavioral solution will be updated in the PY10 annual report to include the savings from May 1 through May 31, 2019 as well.

Sources: PECO's eTrack database, CSP tracking data

## 6. SUMMARY OF DEMAND IMPACTS BY PROGRAM

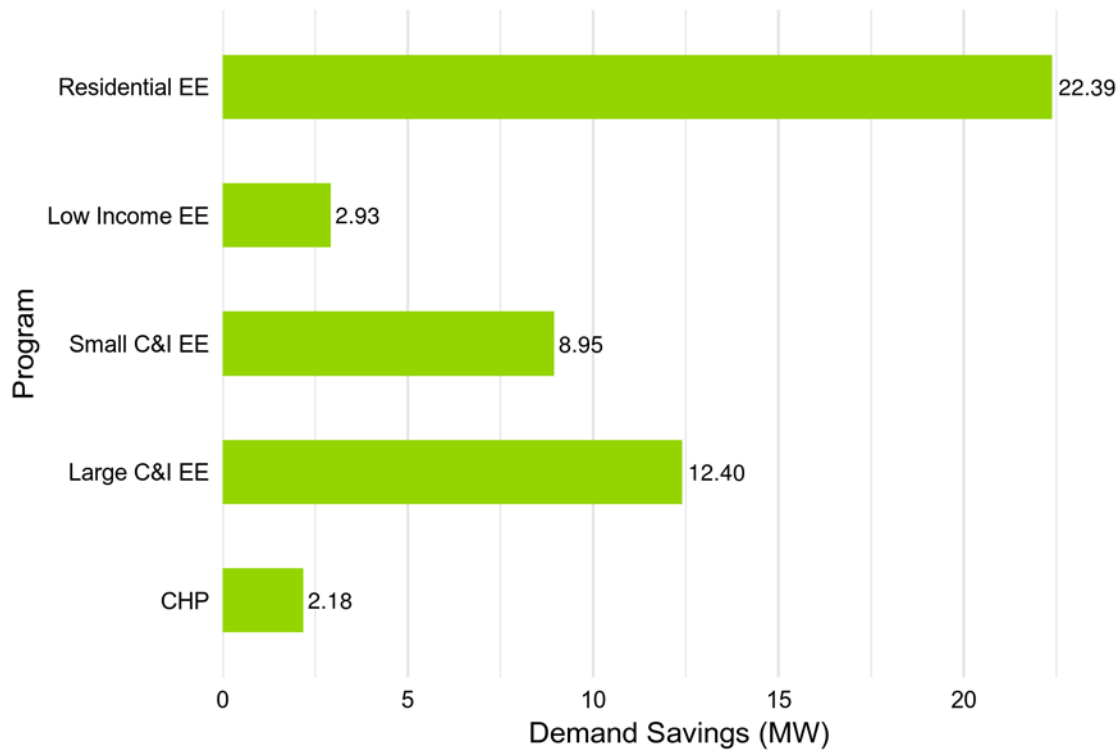
PECO's Phase III EE&C programs achieve peak demand reductions primarily in two ways. The first is through coincident reductions from EE measures and the second is through dedicated DR offerings that exclusively target temporary demand reductions on peak days. EE reductions coincident with system peak hours are reported and used in the calculation of benefits in the Total Resource Cost (TRC) test but do not contribute to Phase III peak demand reduction compliance goals. Phase III peak demand reduction targets are exclusive to DR programs.

The two types of peak demand reduction savings are also treated differently for reporting purposes. Peak demand reductions from EE are generally additive across program years, meaning that the P3TD savings reflect the sum of the first-year savings in each program year. Conversely, DR goals are based on average portfolio impacts across all events, so cumulative DR performance is expressed as the average performance of each of the DR events called in Phase III to date. Because of these differences, demand impacts from EE and DR are reported separately in Sections 6.1 and 6.2.

### 6.1 Energy Efficiency

Act 129 defines peak demand savings from EE as the average expected reduction in electric demand from 2:00 p.m. to 6:00 p.m. EDT on non-holiday weekdays from June to August. The peak demand impacts from EE in this report are presented at the meter level and do not reflect adjustments for T&D losses. Figure 6-1 presents a summary of the PYRTD reported gross peak demand savings by EE program for PY10.

Figure 6-1. PYRTD Gross Demand Savings by EE Program

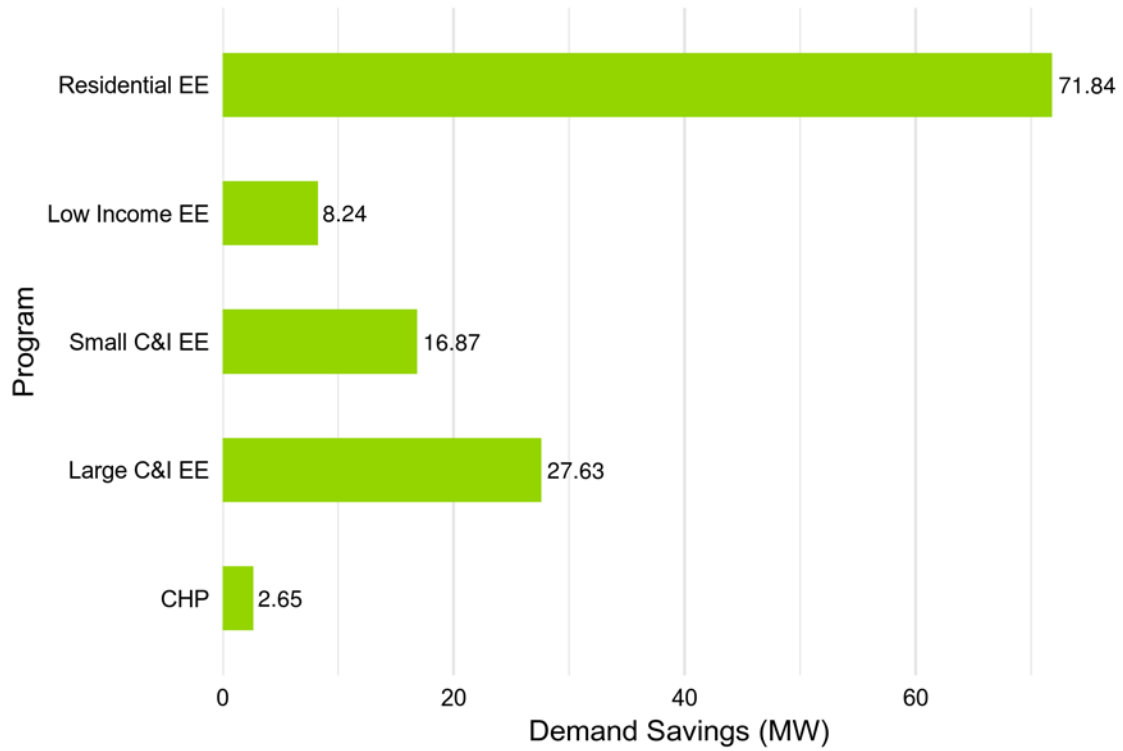


Sources: PECO's eTrack database, CSP tracking data

Figure 6-2 presents a summary of the PSA gross demand savings by EE program for Phase III of Act 129.



Figure 6-2. PSA Demand Savings by EE Program for Phase III



Sources: PECO's eTrack database, CSP tracking data

Table 6-1 presents a summary of the peak demand impacts by EE program and solution through the current reporting period.

Table 6-1. Peak Demand Savings by EE Program and Solution (MW)

Program and Solution	PYRTD	RTD	VTD	PSA
Lighting, Appliances & HVAC	17.88	43.95	27.75	45.62
Appliance Recycling	2.49	6.11	3.32	5.81
Whole Home	0.92	2.01	1.05	1.98
New Construction	0.54	1.22	0.62	1.16
Behavioral	0.00	0.00	16.19	16.19
Multifamily Targeted	0.56	1.26	0.52	1.08
<b>Residential EE Total</b>	<b>22.39</b>	<b>54.55</b>	<b>49.44</b>	<b>71.84</b>
Lighting	0.00	1.07	1.07	1.07
Whole Home	2.93	7.58	4.23	7.17
<b>Low-Income EE Total</b>	<b>2.93</b>	<b>8.65</b>	<b>5.30</b>	<b>8.24</b>
Equipment and Systems	6.22	12.26	5.63	11.85
New Construction	0.52	1.34	0.86	1.38
Whole Building	1.82	3.53	1.25	3.07
Data Centers	0.02	0.02	0.00	0.02
Multifamily Targeted	0.37	0.80	0.18	0.55
<b>Small C&amp;I EE Total</b>	<b>8.95</b>	<b>17.94</b>	<b>7.93</b>	<b>16.87</b>
Equipment and Systems	11.02	24.84	13.52	24.54
New Construction	0.86	1.97	1.15	2.01
Data Centers	0.00	0.04	0.03	0.04
Multifamily Targeted	0.52	1.10	0.53	1.05
<b>Large C&amp;I EE Total</b>	<b>12.40</b>	<b>27.96</b>	<b>15.22</b>	<b>27.63</b>
<b>CHP</b>	<b>2.18</b>	<b>2.67</b>	<b>0.47</b>	<b>2.65</b>
<b>Portfolio Total</b>	<b>48.86</b>	<b>111.77</b>	<b>78.36</b>	<b>127.23</b>

Sources: PECO's eTrack database, CSP tracking data

## 6.2 Demand Response

Act 129 defines peak demand savings from DR as the average reduction in electric demand during the hours when a DR event is initiated. Act 129 peak demand reduction targets were set for PY9 through PY12; there was no PY8 peak demand reduction target. Phase III DR events are initiated according to the following guidelines<sup>8</sup>:

1. Curtailment events shall be limited to the months of June through September.
2. Curtailment events shall be called for the first 6 days of each program year (starting in PY10) in which the peak hour of PJM's day-ahead forecast for the PJM regional transmission organization (RTO) is greater than 96% of the PJM RTO summer peak demand forecast for the months of June through September.
3. Each curtailment event shall last 4 hours.

<sup>8</sup> Pennsylvania Public Utility Commission, *Energy Efficiency and Conservation Program Implementation Order*, at Docket No. M-2014-2424864, (*Phase III Implementation Order*), entered June 11, 2015.

4. Each curtailment event shall be called such that it will occur during the day's forecast peak hour(s) above 96% of PJM's RTO summer peak demand forecast.
5. Once six curtailment events have been called in a program year, the peak demand reduction program shall be suspended for that program year.

The peak demand impacts from DR in this report are presented at the system level and reflect adjustments to account for T&D losses. The PA 2016 Technical Reference Manual (TRM) specified the T&D line loss adjustment factors that each EDC must use for Act 129 Phase III.<sup>9</sup> PECO uses the following line loss percentages/multipliers by sector.

- Residential = 7.4% or 1.0799
- Small C&I = 7.4% or 1.0799
- Large C&I = 7.4% or 1.0799

Table 6-2 summarizes the demand reductions for each of the DR programs in PECO's EE&C Plan and for the DR portfolio as a whole. Verified gross demand savings are the average performance across all Phase III DR events independent of how many events occurred in a given program year.

**Table 6-2. PY10 DR PYVTD Performance by Event**

PY	Event Date	Residential DR	Small C&I DR	Large C&I DR	Portfolio	Relative Precision at 90% CI
PY10	July 2, 2018	38.90	0.00	155.98	194.88	10.0%
PY10	July 3, 2018	33.73	0.00	146.76	180.49	10.8%
PY10	August 6, 2018	24.97	1.15	180.12	206.25	10.4%
PY10	August 28, 2018	30.50	0.92	160.76	192.17	11.3%
PY10	September 4, 2018	29.79	0.77	142.69	173.25	11.1%
PY10	September 5, 2018	29.28	0.84	131.75	161.88	11.8%
<b>PYVTD - Average PY10 DR Event Performance</b>		<b>31.19</b>	<b>0.61</b>	<b>153.01</b>	<b>184.82</b>	<b>10.9%</b>

Sources: Navigant analysis

<sup>9</sup> 2016 PA TRM. *Pennsylvania Public Utility Commission Technical Reference Manual; State of Pennsylvania Act 129 Energy Efficiency and Conservation Program and Act 213 Alternative Energy Portfolio Standards*. Section 1.14 Transmission and Distribution System Losses. June 2016, Errata Update February 2017.

## 7. SUMMARY OF FINANCES

Section 7 provides an overview of the expenditures associated with PECO's portfolio and the recovery of those costs from ratepayers.

### 7.1 Program Financials

Program-specific and portfolio total finances for PY10 are shown in Table 7-1. The columns in Table 7-1 and Table 7-2 are adapted from the Direct Program Cost categories in the Commission's EE&C Plan template<sup>10</sup> for Phase III. EDC Materials, Labor, and Administration includes costs associated with an EDC's own employees. ICSP Materials, Labor, and Administration includes both the program implementation contractor and the costs of any other outside vendors EDCs employ to support program delivery.

Table 7-1. PYTD Financials

Program	Incentives to Participants and Trade Allies (\$1,000)	EDC Materials, Labor, and Administration (\$1,000)	ICSP Materials, Labor, and Administration (\$1,000)	Total Cost (\$1,000)
Residential EE	\$8,782	\$5,730	\$11,432	\$25,943
Low-Income EE	\$130	\$490	\$7,237	\$7,857
Small C&I EE	\$2,989	\$2,242	\$4,180	\$9,411
Large C&I EE	\$5,250	\$896	\$4,750	\$10,897
CHP	\$878	\$0	\$44	\$922
Residential DR	\$2,669	\$1	\$1,360	\$4,030
Small C&I DR	\$106	\$0	\$42	\$149
Large C&I DR	\$0	\$2	\$4,958	\$4,961
Common Portfolio Costs <sup>a</sup>	N/A	N/A	N/A	\$9,616
Portfolio Total	\$20,804	\$9,361	\$34,004	\$73,785
SWE Costs <sup>b</sup>	N/A	N/A	N/A	\$0
<b>Total</b>	<b>\$20,804</b>	<b>\$9,361</b>	<b>\$34,004</b>	<b>\$73,785</b>

<sup>a</sup> Includes the administrative CSP, tracking system, general administration, and clerical costs; EDC program management; CSP program management; general management; oversight of major accounts; and technical assistance.

<sup>b</sup> Statewide evaluation costs are outside of the 2% spending cap.

Sources: PECO's eTrack database, CSP tracking data

<sup>10</sup> <http://www.puc.pa.gov/pdocs/1372426.doc> Section 10

Table 7-2 shows program-specific and portfolio total finances since the inception of Phase III.

**Table 7-2. Phase III to Date Financials**

Program	Incentives to Participants and Trade Allies (\$1,000)	EDC Materials, Labor, and Administration (\$1,000)	ICSP Materials, Labor, and Administration (\$1,000)	Total Cost (\$1,000)
Residential EE	\$21,298	\$17,062	\$33,401	\$71,762
Low-Income EE	\$1,035	\$1,210	\$21,887	\$24,131
Small C&I EE	\$5,893	\$6,569	\$10,673	\$23,136
Large C&I EE	\$9,912	\$2,209	\$13,417	\$25,539
CHP	\$1,089	\$0	\$87	\$1,176
Residential DR	\$8,513	\$33	\$3,338	\$11,884
Small C&I DR	\$343	\$2	\$92	\$437
Large C&I DR	\$0	\$65	\$8,675	\$8,740
Common Portfolio Costs <sup>a</sup>	N/A	N/A	N/A	\$28,807
<b>Portfolio Total</b>	<b>\$48,085</b>	<b>\$27,151</b>	<b>\$91,570</b>	<b>\$195,612</b>
SWE Costs <sup>b</sup>	N/A	N/A	N/A	\$700
<b>Total</b>	<b>\$48,085</b>	<b>\$27,151</b>	<b>\$91,570</b>	<b>\$196,312</b>

<sup>a</sup> Includes the administrative CSP, tracking system, general administration, and clerical costs; EDC program management; CSP program management; general management; oversight of major accounts; and technical assistance.

<sup>b</sup> Statewide evaluation costs are outside of the 2% spending cap.

## 7.2 Cost Recovery

Act 129 allows Pennsylvania EDCs to recover EE&C Plan costs through a cost recovery mechanism. PECO's cost recovery charges are organized separately by four customer sectors to ensure that the electric rate classes that finance the programs are the rate classes that receive the direct energy and conservation benefits. Cost recovery is necessarily tied to the way customers are metered and charged for electric service. Readers should be mindful of the differences between Table 7-3 and Section 2. For example, the low-income customer segment is a subset of PECO's residential tariff(s) and may also include low-income customers in master-metered, multifamily facilities and is, therefore, not listed in Table 7-3.

**Table 7-3. EE&C Plan Expenditures by Cost Recovery Category<sup>11</sup>**

Cost Recovery Sector	Rate Classes Included	PYTD Spending (\$1,000)	P3TD Spending (\$1,000)
Residential	R, RH, and CAP	\$41,675	\$120,342
Small C&I	GS	\$12,024	\$30,164
Large C&I	PD, HT, and EP	\$20,056	\$45,019
Municipal	SLE, AL, and TLCL	\$30	\$89
<b>Portfolio Total</b>		<b>\$73,785</b>	<b>\$195,612</b>

Source: PECO

<sup>11</sup> Excludes SWE costs.

## APPENDIX A. PARTICIPATION COUNT

Across PECO's portfolio, there are significant differences in how participation is calculated across solutions and CSPs, ranging from:

1. Number of measures sold (see LAH - Lighting)
2. Number of rebates issued (see LAH – Appliance and HVAC)
3. Number of unique premises served (see Whole Home)
4. Number of orders on distinct days (see Appliance Recycling)
5. Number of participants (see Residential New Construction and Behavioral)
6. Number of utility accounts served (see Multifamily)
7. Number of projects (see Small and Large C&I EE solutions)

Table A-1 provides an overview of the different participation definitions by program and solution.

**Table A-1. Overview of Participation Definitions**

Program	Solution	Conservation Service Provider	Participation Definition
Residential	LAH (Lighting)	CLEAResult	Sum number of total lamp packs sold
	LAH (Appliance and HVAC)	CLEAResult	Count of rebates issued
	Whole Home	CLEAResult	Count of unique premise ID
	Appliance Recycling	ARCA	Count of all orders on distinct days
	New Construction	PSD	Sum No. of Participants
	Behavioral	Oracle	Sum No. of Participants
	Multifamily	Franklin	Distinct Count of Utility Account ID by Program, Solution and Invoice Number
Low Income	Whole Home	CMC	Count of unique Premise Numbers for Component 1 and 2
	Whole Home	ARCA	Count of all orders on distinct days
	Whole Home	ECA	Count unique Premise Numbers
Small C&I	Equipment and Systems	ICF	Count of unique Project Number
	New Construction	ICF	Count of unique Project Number

Program	Solution	Conservation Service Provider	Participation Definition
Large C&I	Whole Building	SmartWatt	Count of unadjusted projects
	Multifamily	Franklin	Distinct Count of Utility Account ID by Program, Solution and Invoice Number
	Equipment and Systems	ICF	Count of unique Project Number
	New Construction	ICF	Count of unique Project Number
	Data Centers	ICF	Count of unique Project Number
	Multifamily	Franklin	Distinct Count of Utility Account ID by Program, Solution and Invoice Number

Five solutions and one targeted market segment make up the Residential EE Program: Lighting, Appliance & HVAC Solution, Appliance Recycling Solution, Whole Home Solution, New Construction Solution, Behavioral Solution, and the Multifamily Targeted Market Segment. PECO has defined participation counts in each solution as follows:

- For Lighting, Appliance & HVAC, upstream lighting participation is defined as the sum of the stock keeping unit (SKU) sales. A SKU describes a sold lighting product, which can be a single bulb or a multi-pack of bulbs. For the appliance and HVAC participants, participation is defined as the total number of non-adjusted records in PECO’s tracking data with an associated bill account number. A record may represent one or more rebated items (e.g., a single participant purchasing multiple thermostats during the same purchase event).
- For Appliance Recycling, a participant is a customer who schedules a pickup for one or more units. If the same customer initiates multiple pickup orders during the year, each order is counted as an individual participant. However, if a customer initiates more than one order in the same day it counts as a single participant.
- For Residential Whole Home, a participant is considered a unique project number for non-adjusted records with a project type that does not include Other Installations or CAC Other Installations.
- For Residential New Construction, a participant is a new home.
- For Behavioral, a participant is a utility account included in the program’s treatment group.
- For the Multifamily Targeted Market Segment, a participant is a unique combination of utility account ID and invoice number.

Two solutions make up the Low-Income EE Program: Lighting and Whole Home. Low-income participants are those participants with incomes at or below 150% of the federal poverty level. PECO has defined participation counts in each solution as follows:

- For Lighting, there was no activity in PY10. For Phase III, participation is defined as a package of one or more light bulbs identified by a unique SKU number. As in the Residential EE Program, a SKU describes a sold lighting product that can be a single bulb or a multi-pack of bulbs.

- For Low-Income Whole Home, a participant is considered:
  - Free Home Energy Check Ups and Low-Income Usage Reduction Program: A unique premise number (for both multifamily and single-family audits).
  - Appliance Recycling: A low-income Appliance Recycling customer who schedules pickup for one or more units. If the same customer initiates multiple pickup orders during the year, each order is counted as an individual participant. However, if a customer initiates more than one order in the same day it counts as a single participant.
  - Product giveaways are also part of the Whole Home Solution but are not included in the participant count.

Four solutions and two targeted market segments make up the Small C&I EE Program: Equipment and Systems Solution, Whole Building Solution, Behavioral Solution, New Construction Solution, Data Centers Targeted Market Segment, and Multifamily Targeted Market Segment. The Behavioral Solution is not currently active. PECO has defined participation counts in each active solution as follows:

- For Small C&I Equipment and Systems, participation is defined as an activity with a unique project number. More than one measure per participant is permitted, with the impact sample defined on the project level.
- For Small C&I Whole Building, participation is defined as an activity with a unique project number. More than one measure per participant is permitted, with the impact sample defined on the project level.
- For Small C&I New Construction, participation is defined as an activity with a unique project number. More than one measure per participant is permitted, with the impact sample defined on the project level.
- For the Data Centers Targeted Market Segment, participation is defined as an activity with a unique project number. More than one measure per participant is permitted, with the impact sample defined on the project level.
- For the Multifamily Targeted Market Segment, participation is defined as an activity with a unique combination of utility account ID and invoice number. More than one measure per participant is permitted. A building may consist of multiple participants with measures installed in the dwellings and common areas of master-metered multifamily buildings.

Two solutions and two targeted market segments make up the Large C&I EE Program: Equipment and Systems Solution, New Construction Solution, Data Centers Targeted Market Segment, and Multifamily Targeted Market Segment. PECO has defined participation counts in each solution as follows:

- For Large C&I Equipment and Systems, participation is defined as an activity with a unique project number. More than one measure per participant is permitted, with the impact sample defined on the project level.
- For Large C&I New Construction, participation is defined as an activity with a unique project number. More than one measure per participant is permitted, with the impact sample defined on the project level.
- For the Data Centers Targeted Market Segment, participation is defined as an activity with a unique project number. More than one measure per participant is permitted, with the impact sample defined on the project level.



- For the Multifamily Targeted Market Segment, participation is defined as an activity with a unique combination of utility account ID and invoice number. More than one measure per participant is permitted. A building may consist of multiple participants with measures installed in the dwellings and common areas of master-metered multifamily buildings.

The CHP Program consists of the CHP Solution only. PECO has defined participation counts in the solution as follows:

- For CHP, participation is defined as an activity with a unique project number.

Three solutions make up the Residential DR Program; however, only the DLC Solution is currently active. PECO has defined participation counts in the solution as follows:

- For Residential DLC, a participant is defined as a unique account number where device status is recorded in the PECO database as installed or swapped and the measure code is CACS (central air conditioner switch). One participant may have more than one DLC device installed at the home. Customers whose accounts are disconnected, have opted out of the program, or for whom the DLC device was removed are not counted as participants.

The Small C&I DR Program consists of the Small C&I DLC Solution. PECO has defined participation counts in the solution as follows:

- For Small C&I DLC, a participant is defined as a unique account number where device status is recorded in the PECO database as installed or swapped and the measure code is PCT (programmable communicating thermostat). One participant may have more than one DLC device installed on the premise. Customers whose accounts are disconnected, have opted out of the program, or for whom the DLC device was removed are not counted as participants.

The Large C&I DR Program consists of the Demand Response Aggregator (DRA) Solution. PECO has defined participation counts in the solution as follows:

- For DRA, a participant is defined as a large C&I customer (defined by PECO account number) enrolled with a DR program CSP for at least 1 hour of at least one event occurring in any given program year.