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January 17, 2017

RECEIVED

**Via Federal Express**

Rosemary Chiavetta, Secretary  
Pennsylvania Public Utility Commission  
Commonwealth Keystone Building  
400 North Street  
Second Floor  
Harrisburg, Pennsylvania 17120

JAN 17 2017

PA PUBLIC UTILITY COMMISSION  
SECRETARY'S BUREAU

**Re: PUC Docket No. M-2015-2515691  
Phase III Energy Efficiency and Conservation Program Semi-Annual Report for  
June 1, 2016 through November 30, 2016**

Dear Secretary Chiavetta:

In accordance with Section IV.D.2 of the Commission's Opinion and Order Letter dated March 17, 2016 (Docket No. M-2015-2515691), enclosed is PECO's Phase III Semi-Annual Energy Efficiency & Conservation Report for the period June 1, 2016 through November 30, 2016.

PECO is providing a copy of the report to the Act 129 Statewide Evaluator (NMR Group) and is also posting the report on the PECO website.

Please acknowledge receipt of the foregoing on the enclosed copy of this letter.

If you have any further questions regarding this matter, please call me at 215-841-5777.

Sincerely,



cc: C. Walker-Davis, Director, Office of Special Assistants  
P. T. Diskin, Director, Bureau of Technical Utility Services  
K. Monaghan, Director, Bureau of Audits  
R. Kanaskie, Director, Bureau of Investigation & Enforcement  
Office of Consumer Advocate  
Office of Small Business Advocate  
McNees, Wallace & Nurick

Enclosures

# **Semi-Annual Report to the Pennsylvania Public Utility Commission**

**Semi-Annual Report for the Period**

**June 1, 2016 – November 30, 2016**

**Phase III of Act 129**

**Program Year 8 (June 1, 2016 – May 31, 2017)**

For Pennsylvania Act 129 of 2008

Energy Efficiency and Conservation Plan

Prepared by Navigant

For

PECO

January 17, 2017

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## Acronyms

BDR	Behavioral Demand Response
C&I	Commercial and Industrial
CFL	Compact Fluorescent Lamp
CSP	Conservation Service Provider or Curtailment Service Provider
DLC	Direct Load Control
DR	Demand Response
EDC	Electric Distribution Company
EDT	Eastern Daylight Time
EE&C	Energy Efficiency and Conservation
EM&V	Evaluation, Measurement, and Verification
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 + Program year to date (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
PYVTD	Program Year Verified to Date
RTD	Phase III To Date Reported Gross Savings
RTO	Regional Transmission Organization
SIDS	Smart Ideas Data System
SWE	Statewide Evaluator
TRC	Total Resource Cost
TRM	Technical Reference Manual

VTD	Phase III To Date Verified Gross Savings
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## 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 providers (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)/year or megawatts (MW)/year. 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. 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 semi-annual 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 PY8, the PSA savings will always equal the PYTD savings because PY8 is the first program year of the phase (no savings will be verified until the PY8 final annual report).
- **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.

## Section 1 Introduction

Pennsylvania Act 129 of 2008, signed on October 15, 2008, mandated energy savings and demand reduction goals for the largest 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 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 and effectiveness of the Phase III EE&C accomplishments for PECO in the first two quarters (June 1, 2016 through November 30, 2016) of Program Year 8 (PY8). 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 the 1<sup>st</sup> two quarters of PY8. Compliance with Act 129 savings goals are ultimately 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 M&V of the savings and calculation of verified gross savings. A preliminary annual report for the program year that outlines the second half of the program year will be filed on July 15, 2017. The verified gross savings for PY8 EE programs will be reported in the final annual report to be filed on November 15, 2017.

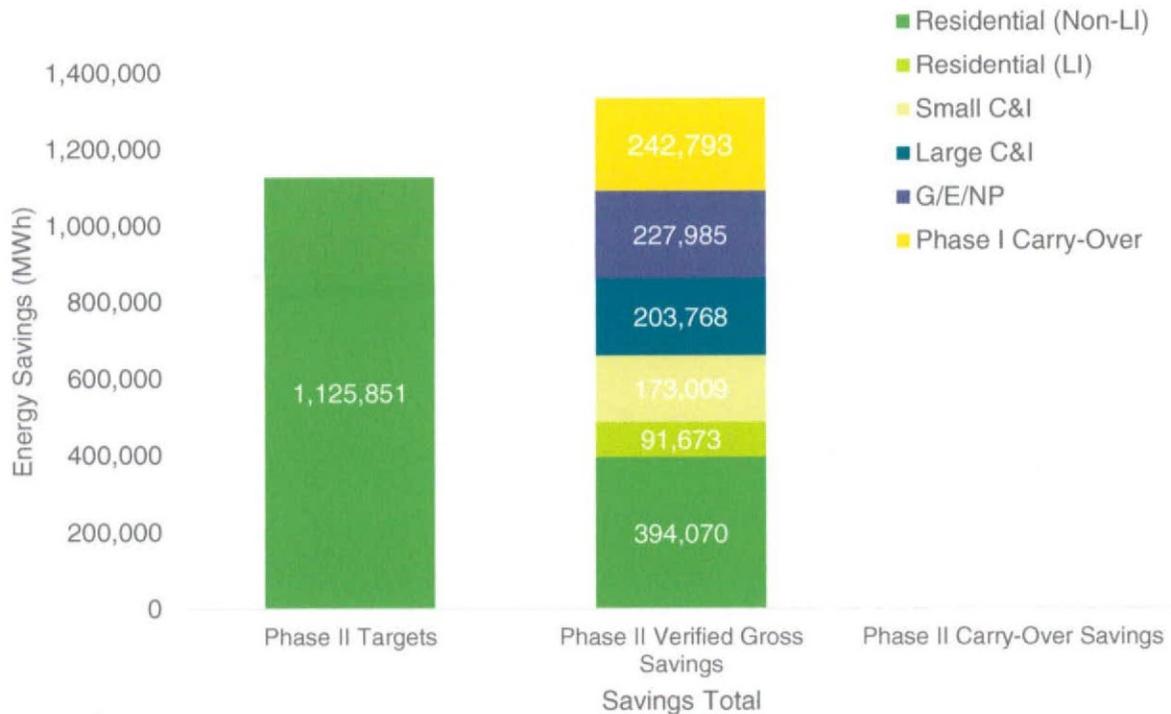
Phase III of Act 129 includes a demand response (DR) goal for PECO. DR events are limited to the months of June through September, which are the first 4 months of the Act 129 program year.

## Section 2 Summary of Achievements

### 2.1 CARRYOVER SAVINGS FROM PHASE II OF ACT 129

PECO has no portfolio level carryover savings from Phase II; however, PECO does have a total of 119,129 MWh of carryover savings from Phase II, which will apply towards the customer segment specific carve-outs. Figure 1 compares PECO's Phase II verified gross savings total to the Phase II compliance target to illustrate the carryover calculation.

**Figure 1: Carryover Savings from Phase II of Act 129**



Source: Smart Ideas Data System (SIDS) database, CSP tracking data

The Commission's Phase III Implementation Order<sup>1</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

<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.

excess savings from the low-income customer segment.<sup>2</sup> PECO carried over 3,729 MWh and 115,400 MWh of low-income and G/E/NP customer segment savings, respectively. PECO's Phase II Residential low-income savings used to determine Phase II carryover includes only the 54,392 MWh of Phase II savings achieved through PECO's low-income specific EE program. PECO's G/E/NP carryover calculation does not include Phase I G/E/NP carryover savings. Figure 2 shows the calculation of carryover savings for the low-income and G/E/NP targets.

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



Source: SIDS database, CSP tracking data

<sup>2</sup> Proportionate to those savings achieved by dedicated low-income programs in Phase III.

## 2.2 PHASE III ENERGY EFFICIENCY ACHIEVEMENTS TO DATE

Since the beginning of PY8 on June 1, 2016, PECO has claimed:

- 44,920 MWh/year of reported gross electric energy savings (PYRTD)
- 7.2 MW/year of reported gross peak demand savings (PYRTD)

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

- 44,920 MWh/year of reported gross electric energy savings (RTD)
- 7.2 MW/year of reported gross peak demand savings (RTD) from EE programs
- 44,920 MWh/year of gross electric energy savings (PSA)
  - This total includes verified gross savings from previous Phase III program years and the PYTD reported gross savings from PY8.
- 7.2 MW/year of gross peak demand savings (PSA) from EE programs

Including carryover savings from Phase II, PECO has achieved:

- 54,920 MWh/year of PSA+CO energy savings recorded to date in Phase III
  - This represents 2 percent of the May 31, 2021 energy savings compliance target of 1,962,659 MWh/year.

**Figure 3: EE&C Plan Performance Toward Phase III Portfolio Compliance Target**

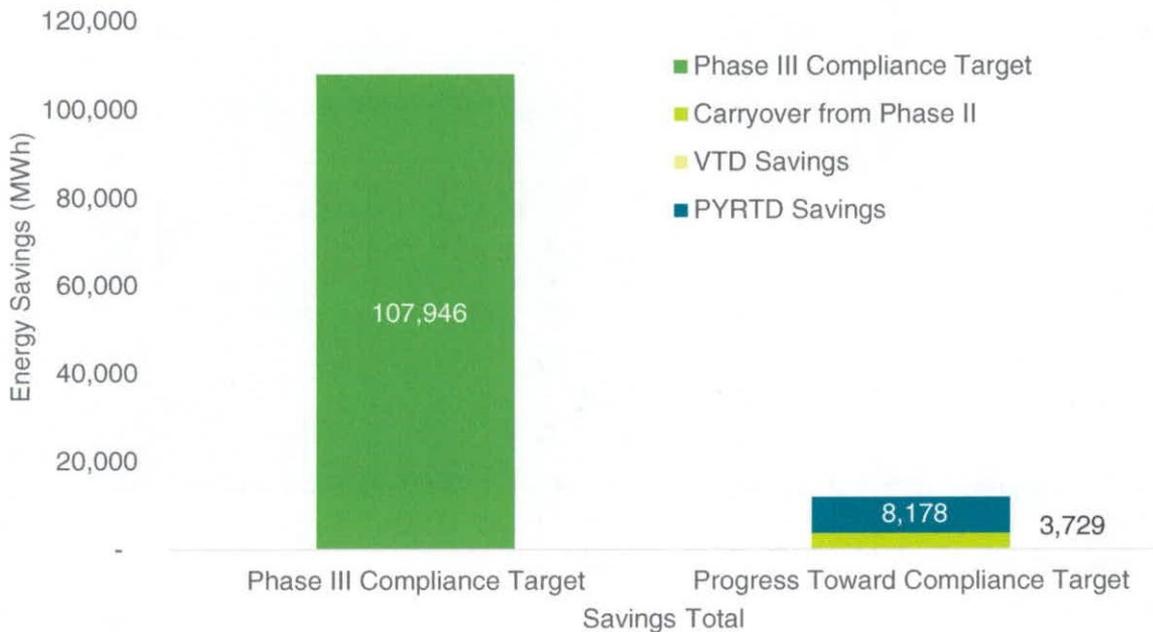


Source: SIDS database, CSP tracking data

The Phase III Implementation Order directed EDCs to offer conservation measures to the LI customer segment based on the proportion of electric sales attributable to LI households. The proportionate number of measures target for PECO is 8.8 percent. PECO offers a total of 269 EE&C measures to its residential and non-residential customer classes. There are 117 measures available to the LI customer segment at no cost to the customer. This represents 47 percent of the total measures offered in the EE&C Plan and exceeds the proportionate number of measures target.

The PA PUC also established a LI energy savings target of 5.5 percent of the portfolio savings goal. The LI savings target for PECO is 107,946 MWh and is based on verified gross savings. Figure 4 compares the PSA+CO performance to date for the LI customer segment to the Phase III savings target. Based on the latest available information, PECO has achieved 11 percent of the Phase III LI energy savings target.

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



Source: SIDS database, CSP tracking data

The Phase III Implementation Order established a G/E/NP energy savings target of 3.5 percent of the portfolio savings goal. The G/E/NP savings target for PECO is 68,693 MWh/year and is based on verified gross savings. Figure 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 168 percent of the Phase III G/E/NP energy savings target.

**Figure 5: EE&C Plan Performance Against Phase III G/E/NP Compliance Target**



Source: SIDS database, CSP tracking data

### 2.3 PHASE III DR ACHIEVEMENTS TO DATE

Phase III DR programs begin operating in PY9. Their performance targets and achievements will be reported in this section of next year's report.

## 2.4 PHASE III PERFORMANCE BY CUSTOMER SEGMENT

Table 1 presents the participation, savings, and spending by customer sector for PY8. The residential, small commercial and industrial (C&I), and large C&I sectors are defined by EDC tariff, and the residential LI and G/E/NP sector are defined by statute (66 Pa. C.S. § 2806.1). The residential LI segment is a subset of the residential customer class, and the G/E/NP segment will include customers who are part of the small C&I or large C&I rate classes. The savings, spending, and participation values for the LI and G/E/NP segments have been removed from the parent sectors in Table 1.

**Table 1: PY8 Summary Statistics by Customer Segment**

Parameter	Residential (Non-LI)	Residential LI	Small C&I (Non-G/E/NP)	Large C&I (Non-G/E/NP)	G/E/NP
No. of participants	401,657	13,814	1,702	2	0
PYRTD MWh/year	36,477	8,178	187	78	0
PYRTD MW/year (EE)	6.0	1.1	0.0	0.0	0.0
PYVTD MW (DR)	0	0	0	0	0
Incentives (\$1,000)	\$5,343	\$65	\$124	\$0	\$0

*Source: SIDS database, CSP tracking data*

Table 2 summarizes plan performance by sector since the beginning of Phase III.

**Table 2: Phase III Summary Statistics by Customer Segment**

Parameter	Residential	LI	Small C&I	Large C&I	G/E/NP
No. of participants	401,657	13,814	1,702	2	0
PSA MWh/year	36,477	8,178	187	78	0
PSA MW/year (EE)	6.0	1.1	0.0	0.0	0.0
Phase III MW (DR)	0	0	0	0	0
Incentives (\$1,000)	\$5,343	\$65	\$124	\$0	\$0

*Source: SIDS database, CSP tracking data*

### 2.4.1 Residential EE Program

PECO designed the Residential EE Program to offer our residential customers opportunities to save energy across all their electric end uses and to market those opportunities in ways that minimize lost savings opportunities. The solutions in the Residential EE Program include approaches that cut across major channels for communicating with customers or trade allies and reflect the various ways a customer may take advantage of the EE opportunities available. Table 3 shows the combined program achievements of these solutions.

**Table 3: PY8 Residential EE Program by Customer Segment**

Parameter	Residential	LI	Small C&I	Large C&I	G/E/NP
No. of participants	338,752	0	52	1	0
PYRTD MWh/year	36,477	0	57	1	0
PYRTD MW/year (EE)	6.0	0.0	0.0	0.0	0.0
PYVTD MW (DR)	N/A	N/A	N/A	N/A	N/A
Incentives (\$1,000)	\$2,338	\$0	\$2	\$0	\$0

*Source: SIDS database, CSP tracking data*

Five solutions and one targeted market segment make up the Residential EE Program: Lighting, Appliances, & HVAC Solution, Appliance Recycling Solution, Whole Home Solution, New Construction Solution, Behavioral Solution, and multifamily targeted market segment. Through a network of trade allies and retail pathways PECO provides incentives for lighting, appliances, and HVAC measures. Table 4 shows the performance of the Lighting, Appliance, & HVAC Solution.

**Table 4: PY8 Residential EE Program Lighting, Appliance, & HVAC Solution by Customer Segment**

Parameter	Residential	LI	Small C&I	Large C&I	G/E/NP
No. of participants	333,449	0	0	0	0
PYRTD MWh/year	31,542	0	0	0	0
PYRTD MW/year (EE)	5.2	0.0	0.0	0.0	0.0
PYVTD MW (DR)	N/A	N/A	N/A	N/A	N/A
Incentives (\$1,000)	\$2,114	\$0	\$0	\$0	\$0

Source: SIDS database, CSP tracking data

PECO provides residential customers convenience and financial incentives by recycling used appliances through direct action. Table 5 shows the performance of the Appliance Recycling Solution.

**Table 5: PY8 Residential EE Program Appliance Recycling Solution by Customer Segment**

Parameter	Residential	LI	Small C&I	Large C&I	G/E/NP
No. of participants	4,138	0	52	1	0
PYRTD MWh/year	4,127	0	57	1	0
PYRTD MW/year (EE)	0.7	0.0	0.0	0.0	0.0
PYVTD MW (DR)	N/A	N/A	N/A	N/A	N/A
Incentives (\$1,000)	\$176	\$0	\$2	\$0	\$0

Source: SIDS database, CSP tracking data

PECO uses a direct-action pathway for customers to participate with no-cost and reduced-cost measures through the Whole Home Solution. Table 6 shows the performance of the Whole Home Solution.

**Table 6: PY8 Residential EE Program Whole Home Solution by Customer Segment**

Parameter	Residential	LI	Small C&I	Large C&I	G/E/NP
No. of participants	448	0	0	0	0
PYRTD MWh/year	386	0	0	0	0
PYRTD MW/year (EE)	0.1	0.0	0.0	0.0	0.0
PYVTD MW (DR)	N/A	N/A	N/A	N/A	N/A
Incentives (\$1,000)	\$0	\$0	\$0	\$0	\$0

*Source: SIDS database, CSP tracking data*

Through a network of trade allies and contractors PECO provides incentives for energy efficient residential new construction (C&I new construction is a separate solution). Table 7 shows the performance of the residential New Construction Solution.

**Table 7: PY8 Residential EE Program New Construction Solution by Customer Segment**

Parameter	Residential	LI	Small C&I	Large C&I	G/E/NP
No. of participants	81	0	0	0	0
PYRTD MWh/year	169	0	0	0	0
PYRTD MW/year (EE)	0.1	0.0	0.0	0.0	0.0
PYVTD MW (DR)	N/A	N/A	N/A	N/A	N/A
Incentives (\$1,000)	\$48	\$0	\$0	\$0	\$0

*Source: SIDS database, CSP tracking data*

With its Behavioral Solution, PECO spurs residential customers to direct action by leveraging the power of social norming. Table 8 shows the performance of the Behavioral Solution.

**Table 8: PY8 Residential EE Program Behavioral Solution by Customer Segment**

Parameter	Residential	LI	Small C&I	Large C&I	G/E/NP
No. of participants	0	0	0	0	0
PYRTD MWh/year	0	0	0	0	0
PYRTD MW/year (EE)	0.0	0.0	0.0	0.0	0.0
PYVTD MW (DR)	N/A	N/A	N/A	N/A	N/A
Incentives (\$1,000)	\$0	\$0	\$0	\$0	\$0

Source: SIDS database, CSP tracking data

Multifamily buildings will be a particular focus of the Residential EE Program (and the Small C&I EE and Large C&I EE Programs). Families in multifamily buildings will have access to participation opportunities for both low-cost, in-unit, direct-install measures (e.g., LEDs, CFLs, power strips, showerheads, and faucet aerators) as well as opportunities to participate in higher-cost incentivized measures such as appliance replacements. Multifamily building owners will have efficiency opportunities addressing whole building components such as HVAC updates or maintenance and building shell upgrades. Table 9 shows the performance of the multifamily targeted market segment.

**Table 9: PY8 Residential EE Program Multifamily Targeted Market Segment by Customer Segment**

Parameter	Residential	LI	Small C&I	Large C&I	G/E/NP
No. of participants	636	0	0	0	0
PYRTD MWh/year	252	0	0	0	0
PYRTD MW/year (EE)	0.0	0.0	0.0	0.0	0.0
PYVTD MW (DR)	N/A	N/A	N/A	N/A	N/A
Incentives (\$1000)	\$0	\$0	\$0	\$0	\$0

Source: SIDS database, CSP tracking data

### 2.4.2 Low-Income EE Program

The PECO Low-Income EE Program is designed to offer PECO's income-qualified customers opportunities to save energy across all their electric end uses. The program encompasses a variety of participant solutions and measures to achieve this goal. Table 10 shows the combined program achievement of these solutions.

**Table 10: PY8 Low-Income EE Program by Customer Segment**

Parameter	Residential	LI	Small C&I	Large C&I	G/E/NP
No. of participants	0	13,814	0	0	0
PYRTD MWh/year	0	8,178	0	0	0
PYRTD MW/year (EE)	0.0	1.1	0.0	0.0	0.0
PYVTD MW (DR)	N/A	N/A	N/A	N/A	N/A
Incentives (\$1,000)	\$0	\$65	\$0	\$0	\$0

Source: SIDS database, CSP tracking data

The eligible population for the PECO Low-Income EE Program is PECO residential electric customers with a household income of less than or equal to 150 percent of the federal poverty level. PECO also specially targets electric customers with a household income of less than or equal to 50 percent of the federal poverty level. Table 11 shows performance in several low-income sub-segments.

**Table 11: PY8 Low-Income Program EE Customer Segment Supplement**

Parameter	Residential 0%-50% LI	Residential LI MF	Residential LI SF	Residential Total	Commercial LI MF
No of. participants	955	44	12,815	13,814	0
PYRTD MWh/year	1,151	43	6,984	8,178	0
PYRTD MW/year (EE)	0.1	0.0	0.9	1.1	0.0
PYVTD MW (DR)	N/A	N/A	N/A	N/A	N/A
Incentives (\$1,000)	\$1	\$2	\$63	\$65	\$0

Source: SIDS database, CSP tracking data

The Low-Income EE Program encompasses two solutions: Lighting Solution and Whole Home Solution. The Lighting Solution includes enhanced incentives for low-income customers through a retail pathway to reduce financial barriers to purchasing the most efficient technology when they are shopping for new products. These upstream retail incentives target stores and ZIP codes with primarily low-income customers and will include higher incentives than the non-low-income targeted retail measures (the Residential EE Program also provides lighting incentives). Table 12 shows the performance of the Lighting Solution.

**Table 12: PY8 Low-Income EE Program Lighting Solution by Customer Segment**

Parameter	Residential	LI	Small C&I	Large C&I	G/E/NP
No. of participants	0	10,384	0	0	0
PYRTD MWh/year	0	405	0	0	0
PYRTD MW/year (EE)	0.0	0.1	0.0	0.0	0.0
PYVTD MW (DR)	N/A	N/A	N/A	N/A	N/A
Incentives (\$1,000)	\$0	\$52	\$0	\$0	\$0

Source: SIDS database, CSP tracking data

The Low-Income EE program also includes participation in the Whole Home Solution to help customers recycle and replace energy-wasting appliances with new ENERGY STAR® appliances at no cost to the customer; this solution is also part of the Residential EE Program). Table 13 shows the performance of the Whole Home Solution.

**Table 13: PY8 Low-Income EE Whole Home Solution by Customer Segment**

Parameter	Residential	LI	Small C&I	Large C&I	G/E/NP
No. of participants	0	3,430	0	0	0
PYRTD MWh/year	0	7,773	0	0	0
PYRTD MW/year (EE)	0.0	1.0	0.0	0.0	0.0
PYVTD MW (DR)	N/A	N/A	N/A	N/A	N/A
Incentives (\$1,000)	\$0	\$13	\$0	\$0	\$0

Source: SIDS database, CSP tracking data

### 2.4.3 Small C&I EE Program

The purpose of the Small C&I EE Program is to offer a comprehensive and cross-cutting array of opportunities to assist small C&I customers in reducing their energy consumption and costs. The program encompasses a variety of energy solutions and measures to achieve this goal. Table 14 shows the combined program achievement of these solutions.

**Table 14: PY8 Small C&I EE Program by Customer Segment**

Parameter	Residential	LI	Small C&I	Large C&I	G/E/NP
No. of participants	0	0	12	0	0
PYRTD MWh/year	0	0	130	0	0
PYRTD MW/year (EE)	0.0	0.0	0.0	0.0	0.0
PYVTD MW (DR)	N/A	N/A	N/A	N/A	N/A
Incentives (\$1,000)	\$0	\$0	\$0	\$0	\$0

*Source: SIDS database, CSP tracking data*

The Small C&I EE Program is made up of four solutions and two targeted market segments: Equipment and Systems Solution, New Construction Solution, Whole Building Solution, Behavioral Solution, data centers targeted market segment, and multifamily targeted market segment. Several solutions cut across multiple programs.

The Equipment and Systems Solution (also part of the Large C&I EE Program) assists customers in purchasing and installing the most efficient technology when they are acquiring new equipment. This relies on the retail and participant-initiated pathways. Table 15 shows the performance of the Equipment and Systems Solution. Although the solution is currently incentivizing participants, there is no data available to publish in this report due to delays in getting the data base operational.

**Table 15: PY8 Small C&I EE Program Equipment and Systems Solution by Customer Segment**

Parameter	Residential	LI	Small C&I	Large C&I	G/E/NP
No. of participants	0	0	0	0	0
PYRTD MWh/year	0	0	0	0	0
PYRTD MW/year (EE)	0.0	0.0	0.0	0.0	0.0

PYVTD MW (DR)	N/A	N/A	N/A	N/A	N/A
Incentives (\$1,000)	\$0	\$0	\$0	\$0	\$0

Source: SIDS database, CSP tracking data

Through a network of trade allies and contractors PECO provides incentives for energy efficient C&I new construction (also a solution in the Large C&I EE program). Table 16 shows the performance of the C&I New Construction Solution. Although the solution is currently incentivizing participants, there is no data available to publish in this report due to delays in getting the data base operational.

**Table 16: PY8 Small C&I EE Program New Construction Solution by Customer Segment**

Parameter	Residential	LI	Small C&I	Large C&I	G/E/NP
No. of participants	0	0	0	0	0
PYRTD MWh/year	0	0	0	0	0
PYRTD MW/year (EE)	0.0	0.0	0.0	0.0	0.0
PYVTD MW (DR)	N/A	N/A	N/A	N/A	N/A
Incentives (\$1,000)	\$0	\$0	\$0	\$0	\$0

Source: SIDS database, CSP tracking data

PECO uses direct action with no cost measures through the Whole Building Solution. Table 17 below shows the performance of the Whole Building Solution.

**Table 17: PY8 Small C&I EE Program Whole Building Solution by Customer Segment**

Parameter	Residential	LI	Small C&I	Large C&I	G/E/NP
No. of participants	0	0	9	0	0
PYRTD MWh/year	0	0	91	0	0
PYRTD MW/year (EE)	0.0	0.0	0.0	0.0	0.0
PYVTD MW (DR)	N/A	N/A	N/A	N/A	N/A
Incentives (\$1,000)	\$0	\$0	\$0	\$0	\$0

Source: SIDS database, CSP tracking data

With its Behavioral Solution, PECO spurs small C&I customers to direct-action by leveraging the power of social norming. Table 18 shows the performance of the Behavioral Solution. Although the solution is currently incentivizing participants, there is no data available to publish in this report due to delays in getting the data base operational.

**Table 18: PY8 Small C&I EE Program Behavioral Solution by Customer Segment**

Parameter	Residential	LI	Small C&I	Large C&I	G/E/NP
No. of participants	0	0	0	0	0
PYRTD MWh/year	0	0	0	0	0
PYRTD MW/year (EE)	0.0	0.0	0.0	0.0	0.0
PYVTD MW (DR)	N/A	N/A	N/A	N/A	N/A
Incentives (\$1,000)	\$0	\$0	\$0	\$0	\$0

Source: SIDS database, CSP tracking data

Data centers are a unique market segment that PECO will target through the trade ally pathway in the Small C&I EE Program (also in the Large C&I EE Program). Table 19 shows the performance of the Data Centers Solution.

**Table 19: PY8 Small C&I EE Program Data Centers Solution by Customer Segment**

Parameter	Residential	LI	Small C&I	Large C&I	G/E/NP
No. of participants	0	0	0	0	0
PYRTD MWh/year	0	0	0	0	0
PYRTD MW/year (EE)	0.0	0.0	0.0	0.0	0.0
PYVTD MW (DR)	N/A	N/A	N/A	N/A	N/A
Incentives (\$1,000)	\$0	\$0	\$0	\$0	\$0

Source: SIDS database, CSP tracking data

A major element of the Small C&I EE Program is education and awareness for those multifamily building owners that want an easy entry to, and benefit from, energy efficient products and broader education. Master-metered multifamily buildings will be a deliberately targeted market segment of the Small C&I EE Program (and both Residential EE and Large C&I EE Programs). Table 20 shows the performance of the multifamily targeted market segment.

**Table 20: PY8 Small C&I EE Program Multifamily Targeted Market Segment by Customer Segment**

Parameter	Residential	LI	Small C&I	Large C&I	G/E/NP
No. of participants	0	0	3	0	0
PYRTD MWh/year	0	0	39	0	0
PYRTD MW/year (EE)	0.0	0.0	0.0	0.0	0.0
PYVTD MW (DR)	N/A	N/A	N/A	N/A	N/A
Incentives (\$1,000)	\$0	\$0	\$0	\$0	\$0

Source: SIDS database, CSP tracking data

#### 2.4.4 Large C&I EE Program

The Large C&I EE Program is designed to offer PECO's large C&I customers opportunities to save energy across all their electric end uses and to market those opportunities in a way that minimizes lost savings opportunities. The EE solutions in the Large C&I EE Program include approaches that cut across major channels for communicating with customers or trade allies and reflect the various ways a large business customer may take advantage of the EE

opportunities available. The program encompasses a variety of energy solutions and measures to achieve this goal. Table 21 shows the combined program achievement of these solutions.

**Table 21: PY8 Large C&I EE Program by Customer Segment**

Parameter	Residential	LI	Small C&I	Large C&I	G/E/NP
No. of participants	0	0	0	1	0
PYRTD MWh/year	0	0	0	77	0
PYRTD MW/year (EE)	0.0	0.0	0.0	0.0	0.0
PYVTD MW (DR)	N/A	N/A	N/A	N/A	N/A
Incentives (\$1,000)	\$0	\$0	\$0	\$0	\$0

*Source: SIDS database, CSP tracking data*

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.

The Equipment and Systems Solution (also part of the Small C&I EE program) assists customers in purchasing and installing the most efficient technology when they are acquiring new equipment. This relies on the retail and participant-initiated pathways. Table 22 shows the performance of the Equipment and Systems Solution. Although the solution is currently incentivizing participants, there is no data available to publish in this report due to delays in getting the data base operational.

**Table 22: PY8 Large C&I EE Program Equipment and Systems Solution by Customer Segment**

Parameter	Residential	LI	Small C&I	Large C&I	G/E/NP
No. of participants	0	0	0	0	0
PYRTD MWh/year	0	0	0	0	0
PYRTD MW/year (EE)	0.0	0.0	0.0	0.0	0.0
PYVTD MW (DR)	N/A	N/A	N/A	N/A	N/A
Incentives (\$1,000)	\$0	\$0	\$0	\$0	\$0

Source: SIDS database, CSP tracking data

Through a network of trade allies and contractors PECO provides incentives for energy efficient C&I new construction (also a solution in the Large C&I EE Program). Table 23 shows the performance of the New Construction Solution. Although the solution is currently incentivizing participants, there is no data available to publish in this report due to delays in getting the data base operational.

**Table 23: PY8 Large C&I EE Program New Construction Solution by Customer Segment**

Parameter	Residential	LI	Small C&I	Large C&I	G/E/NP
No. of participants	0	0	0	0	0
PYRTD MWh/year	0	0	0	0	0
PYRTD MW/year (EE)	0.0	0.0	0.0	0.0	0.0
PYVTD MW (DR)	N/A	N/A	N/A	N/A	N/A
Incentives (\$1,000)	\$0	\$0	\$0	\$0	\$0

Source: SIDS database, CSP tracking data

Data centers are a unique market segment that PECO will target through the trade ally pathway in the Large C&I EE Program (also in the Small C&I Program). Table 24 shows the performance of the data centers targeted market segment. Although the program is currently incentivizing participants, there is no data available to publish in this report due to delays in getting the data base operational.

**Table 24: PY8 Large C&I EE Program Data Centers Targeted Market Segment by Customer Segment**

Parameter	Residential	LI	Small C&I	Large C&I	G/E/NP
No. of participants	0	0	0	0	0
PYRTD MWh/year	0	0	0	0	0
PYRTD MW/year (EE)	0.0	0.0	0.0	0.0	0.0
PYVTD MW (DR)	N/A	N/A	N/A	N/A	N/A
Incentives (\$1,000)	\$0	\$0	\$0	\$0	\$0

Source: SIDS database, CSP tracking data

A major element of the Large C&I EE Program is education and awareness for those multifamily building owners that want an easy entry to, and benefit from, energy efficient products and broader education. Master-metered multifamily buildings will be a deliberately targeted market segment of the Large C&I EE Program (and both Residential EE and Small C&I EE Programs). Table 25 shows the performance of the multifamily targeted market segment.

**Table 25: PY8 Large C&I EE Program Multifamily Targeted Market Segment by Customer Segment**

Parameter	Residential	LI	Small C&I	Large C&I	G/E/NP
No. of participants	0	0	0	1	0
PYRTD MWh/year	0	0	0	77	0
PYRTD MW/year (EE)	0.0	0.0	0.0	0.0	0.0
PYVTD MW (DR)	N/A	N/A	N/A	N/A	N/A
Incentives (\$1,000)	\$0	\$0	\$0	\$0	\$0

Source: SIDS database, CSP tracking data

#### 2.4.5 Combined Heat and Power Program

PECO designed the Combined Heat and Power (CHP) Program to influence customer behavior and purchasing decisions. The program encourages the installation of CHP projects that maximize operational savings and minimize operational and maintenance costs. The CHP Program makes project economics attractive by providing incentives and technical assistance to customers who install CHP technologies to reduce facility energy use. The eligible population

for the CHP Program is all PECO small C&I and large C&I rate class electric customers, including customers in the G/E/NP sector and those who reside in master-metered multifamily buildings. While applicable to a wide swath of customers, the program encompasses a single energy solution: CHP Solution. Table 26 shows the performance of the program and its solution.

**Table 26: PY8 CHP EE Program by Customer Segment**

Parameter	Residential	LI	Small C&I	Large C&I	G/E/NP
No. of participants	0	0	0	0	0
PYRTD MWh/year	0	0	0	0	0
PYRTD MW/year (EE)	0.0	0.0	0.0	0.0	0.0
PYVTD MW (DR)	N/A	N/A	N/A	N/A	N/A
Incentives (\$1,000)	\$0	\$0	\$0	\$0	\$0

Source: SIDS database, CSP tracking data

#### 2.4.6 Residential DR Program

The PECO Residential DR Program encompasses opportunities designed to engage customers in demand reduction. The eligible population and target markets for the PECO Residential DR Program are all PECO residential electric customers. The program encompasses three solutions: Residential Direct Load Control (DLC) Solution, Smart Thermostat for DR Savings Solution, and Behavioral DR Savings Solution. Only the Residential DLC Solution is currently active. Table 27 shows the performance of the program and the Residential DLC Solution.

**Table 27: PY8 Residential DR Program by Customer Segment**

Parameter	Residential	LI	Small C&I	Large C&I	G/E/NP
No. of participants	62,905	0	0	0	0
PYRTD MWh/year	0	0	0	0	0
PYRTD MW/year (EE)	N/A	N/A	N/A	N/A	N/A
PYVTD MW (DR)	0.0	0.0	0.0	0.0	0.0
Incentives (\$1,000)	\$3,004	\$0	\$0	\$0	\$0

Source: SIDS database, CSP tracking data

### 2.4.7 Small C&I DR Program

PECO designed the PECO Small C&I DR Program to engage customers in demand reduction predominately through direct load control (DLC) of major electrical end-use equipment during designated peak load hours. The eligible population and target markets for the Small C&I DR Program are all PECO small C&I customers, which includes customers in the G/E/NP sector. The program encompasses a single solution: Direct Load Control (DLC) Solution. Table 28 shows the performance of the program and its solution.

**Table 28: PY8 Small C&I DR Program by Customer Segment**

Parameter	Residential	LI	Small C&I	Large C&I	G/E/NP
No. of participants	0	0	1,638	0	0
PYRTD MWh/year	0	0	0	0	0
PYRTD MW/year (EE)	N/A	N/A	N/A	N/A	N/A
PYVTD MW (DR)	0.0	0.0	0.0	0.0	0.0
Incentives (\$1,000)	\$0	\$0	\$122	\$0	\$0

*Source: SIDS database, CSP tracking data*

### 2.4.8 Large C&I DR Program

PECO designed the Large C&I DR Program to engage customers in demand reduction through DR aggregation across multiple customers. The eligible population and target markets for the PECO Large C&I DR Program are all PECO large C&I electric customers, including those in the G/E/NP sector. The program encompasses a single solution: Demand Response Aggregator (DRA) Solution. Table 29 below shows the performance of the program and its solution.

**Table 29: PY8 Large C&I DR Program by Customer Segment**

Parameter	Residential	LI	Small C&I	Large C&I	G/E/NP
No. of participants	0	0	0	0	0
PYRTD MWh/year	0	0	0	0	0
PYRTD MW/year (EE)	N/A	N/A	N/A	N/A	N/A
PYVTD MW (DR)	0.0	0.0	0.0	0.0	0.0
Incentives (\$1,000)	\$0	\$0	\$0	\$0	\$0

*Source: SIDS database, CSP tracking data*

## Section 3 Updates and Findings

### 3.1 IMPLEMENTATION UPDATES AND FINDINGS

EE&C Plan updates, best practices, program improvements, and other implementation updates are summarized below.

- **Residential EE Program:** Ecova, ARCA, CLEAResult, PSD, and Franklin have started to implement projects in five of the program's six solutions. Opower started activities for PY8 although no behavioral savings are reported at this time. The Lighting, Appliance, and HVAC Solution implemented by Ecova reported savings from over 325,000 lighting products (i.e., bulbs as tracked by stock keep units). The majority (approximately 85 percent) of those were LEDs while the remainder were CFLs. To date for the Phase, these represent the majority of activities in the program.
- **Low-Income EE Program:** ARCA and CMC are implementing the Low-Income Whole Home Solution in Phase III as a continuation of core Phase II activities. Ecova is implementing the new Low-Income Lighting Solution. PECO anticipates meeting the program year goal.
- **Small C&I EE Program:** ICF, Franklin, PSD, and SmartWatt have started to implement projects in five of the program solutions. Although there has been a slight delay in transitioning over to Phase III, PECO currently anticipates meeting the program year goal with a stronger second half of the program year. PECO does not anticipate as slow of a start to Phase III as it saw in Phase II. Measure specific data for ICF's programs have taken longer than expected to get finalized and therefore do not appear in this report.
- **Large C&I EE Program:** ICF and Franklin have started to implement projects in four of the program's solutions. Although there has been a slight delay in transitioning over to Phase III, PECO anticipates meeting the program year goal with a stronger second half of the program year. PECO does not anticipate as slow of a start to Phase III as it saw in Phase II. Measure specific data for ICF's programs have taken longer than expected to get finalized and, therefore, do not appear in this report.
- **CHP Program:** Although there has been a slight delay in transitioning over to Phase III, PECO anticipates completing the new CHP program material and enrollment processes by Q1.
- **Residential DR Program:** The Residential DR program ran two direct load control events during the summer of 2016. The program, as in years past, is implemented by Comverge. As the DR season runs from June through September, no further events will occur during this program year. Comverge-calculated savings estimates from the 2016 events are forthcoming.
- **Small C&I DR Program:** The Small C&I DR program ran two direct load control events during the summer of 2016. The program, as in years past, is implemented by

Comverge. As the DR season runs from June through September, no further events will occur during this program year. Comverge-calculated savings estimates from the 2016 events are forthcoming.

- **Large C&I DR Program:** Program implementation is moving from one CSP to multiple CSPs and the evaluation team is awaiting final updates on program operation and structure. As planned, this program is not operational in PY8 and will commence in Q1 of PY9.

### 3.2 EVALUATION UPDATES AND FINDINGS

Progress on sample selection, surveys, site visits, revised EM&V plans, and other activities are summarized below.

- **Residential EE Program:** Navigant has written, received SWE comments, and revised the Phase III evaluation plan for the Residential EE Program section. Navigant has also reviewed program tracking data with PECO's program managers to vet data tracking and reporting for accuracy. The program tracking data for the first two quarters of the Phase are also informing Navigant's development and refinement of sampling for research activities. In the coming months, Navigant will implement the approved evaluation plan and sample designs to commence PY8 evaluation activities.
- **Low-Income EE Program:** Navigant has written, received SWE comments, and revised the Phase III evaluation plan for the Low-Income EE Program section. In the coming months, Navigant expects to collaborate with PECO and Ecova to facilitate Lighting Solution surveys to verify participant incomes, in conformance with the PECO low-income targets.
- **Small C&I EE Program:** Navigant has written, received SWE comments, and revised the Phase III evaluation plan for the Small C&I EE Program section. In the next several months, Navigant will review the solution measure data, develop samples, and start the evaluation process for PY8.
- **Large C&I EE Program:** Navigant has written, received SWE comments, and revised the Phase III evaluation plan for the Large C&I EE Program section. Navigant has been working with ICF to review large and complex projects before incentives will be reserved. In the next several months, Navigant will review the solution measure data, develop samples, and start the evaluation process for PY8.
- **CHP Program:** Navigant has written, received SWE comments, and revised the Phase III evaluation plan for the CHP EE Program section. In the next several months, Navigant will review the program data, develop samples if necessary, and start the evaluation process for PY8.
- **Residential DR Program:** The evaluation plan has been developed and is pending submission to SWE. Navigant has submitted a data request to PECO in order to begin building tools for the impacts analysis of this program.

- **Small C&I DR Program:** The evaluation plan has been developed and is pending submission to SWE. Navigant has submitted a data request to PECO in order to begin building tools for the impacts analysis of this program.
- **Large C&I DR Program:** Original plan for single CSP is being reviewed and other CSPs added due to shortfall in estimated achievable savings. The evaluation plan has been developed and is pending submission to SWE. DRA program was not operational for PY8 and is gearing up for first active year in PY9.

## Section 4 Summary of Participation by Program

Table 30 provides the current participation totals for PY8 and Phase III. Sections 2.4.1 through 2.4.8 present the solution-level participation. Certain programs define participation differently depending on the program delivery channel and data tracking practices.

**Table 30: EE&C Plan Participation by Program**

Program	PYTD Participation	P3TD Participation
Residential EE	338,805	338,805
Low-Income EE	13,814	13,814
Small C&I EE	12	12
Large C&I EE	1	1
CHP	0	0
Residential DR	62,905	62,905
Small C&I DR	1,638	1,638
Large C&I DR	0	0
<b>Portfolio Total</b>	<b>417,175</b>	<b>417,175</b>

*Source: SIDS database, CSP tracking data*

Five solutions and one targeted market segment make up the Residential EE program: Appliance Recycling, Behavioral, Whole Home, Residential New Construction, and the Lighting, Appliance, and HVAC Solution, Multifamily targeted market segment. The business rules below govern participation counts in each solution:

- For Lighting, Appliance, and HVAC, upstream lighting participation is defined as the sum of the stock keeping unit (SKU) sales. A SKU describes a sold lighting product that 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. 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 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.

Two solutions make up the Low-Income EE Program. Low-income participants are those participants with incomes at or below 150 percent of the Federal Poverty Level. Additionally, PECO determines Low-Income Solution participation following these additional definitions:

- For Lighting, participation is defined as a package of one or more light bulbs identified by a unique SKU number.
- For Whole Home, a participant is considered a unique audit number. 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, Whole Building, Behavioral, C&I New Construction, Data Centers, and Multifamily targeted. The business rules below govern participation counts in each solution:

- For 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 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 Behavioral, participation is defined as an activity within a unique home. There can be only one measure per participant, and the impact sample is defined on the home level.
- For 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 Data Centers, 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 multifamily targeted, participation is defined as an activity with a unique account ID (meter number). More than one measure per participant is permitted, with the impact sample defined on the meter level.

Four solutions make up the Large C&I EE Program: Equipment and Systems, C&I New Construction, Data Centers, and Multifamily targeted. The business rules below govern participation counts in each solution:

- For 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 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 Data Centers, 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 multifamily targeted, participation is defined as an activity with a unique account ID (meter number). More than one measure per participant is permitted, with the impact sample defined on the meter level.

One solution makes up the CHP Program. The business rule below governs participation counts:

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

One solution makes up the Residential DR Program. The business rule below governs its participation counts:

- For Residential DR, a participant is defined as a unique account number where device status is “install” or “swap” and measure code is “CACS” (central air conditioner switch). One participant may have more than one direct load control device installed at the home. The categories not included in the participant count include disconnect, opt-out, and removal.

One solution makes up the Small C&I DR Program. The business rule below governs its participation counts:

- For Small C&I DR, a participant is defined as a unique account number where device status is “install” or “swap” and measure code is “PCT” (program controlled thermostat). One participant may have more than one direct load control device installed on the premise. The categories not included in the participant count include disconnect, opt-out, and removal.

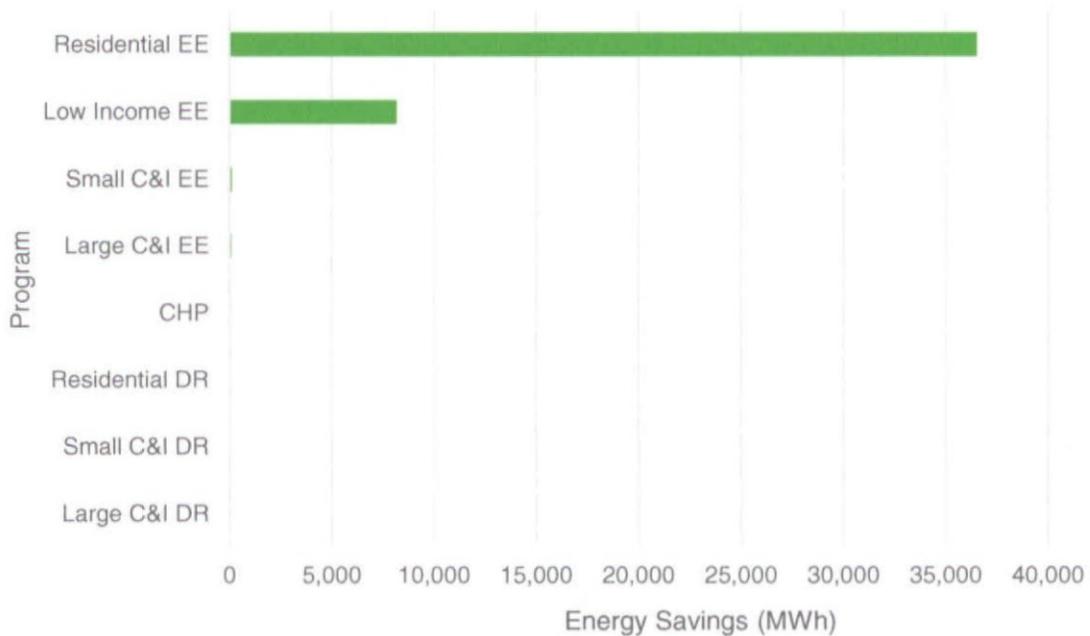
One solution makes up the Large C&I DR Program. The business rule below governs its participation counts:

- For Large C&I DR, the business rule for participation has not yet been defined.

## Section 5 Summary of Energy Impacts by Program

Figure 6 presents a summary of the PYTD reported gross energy savings by program for PY8. The energy impacts in this report are presented at the meter level and do not reflect adjustments for transmission and distribution losses.

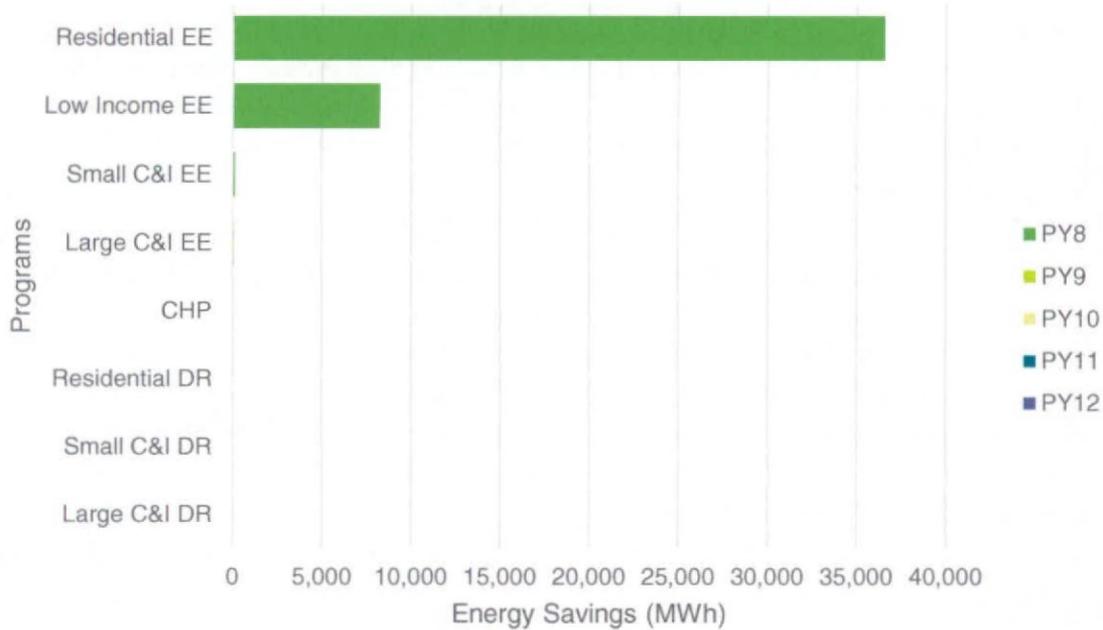
**Figure 6: PYTD Reported Gross Energy Savings by Program**



Source: SIDS database, CSP tracking data

Figure 7 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 7: PSA Energy Savings by Program for Phase III**



Source: SIDS database, CSP tracking data

Table 31 presents a summary of energy impacts by program through the current reporting period. Sections 2.4.1 through 2.4.8 present the solution-level savings.

**Table 31: Energy Savings by Program (MWh/Year)**

Program	PYRTD	RTD	VTD	PSA
Residential EE	36,535	36,535	*	36,535
Low-Income EE	8,178	8,178	*	8,178
Small C&I EE	130	130	*	130
Large C&I EE	77	77	*	77
CHP	0	0	*	0
Residential DR	DR programs do not create non-peak energy savings.			
Small C&I DR				
Large C&I DR				
<b>Portfolio Total</b>	<b>44,920</b>	<b>44,920</b>	<b>*</b>	<b>44,920</b>

\*Pending

Source: SIDS database, CSP tracking data

## Section 6 Summary of Demand Impacts by Program

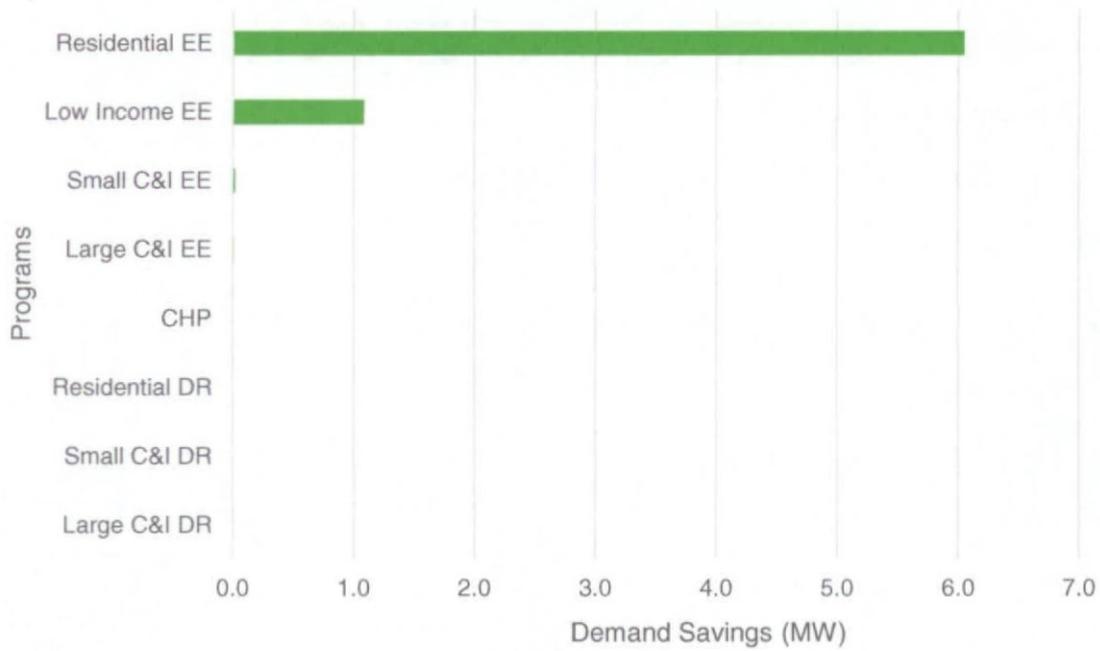
PECO's Phase III EE&C programs achieve peak demand reductions in two primary ways. The first is through coincident reductions from EE measures and the second is through dedicated DR offerings that exclusively target temporary demand reductions on peak days. EE reductions coincident with system peak hours are reported and used in the calculation of benefits in the 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 the following sub-sections.

### 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 transmission and distribution losses. Figure 8 presents a summary of the PYRTD reported gross peak demand savings by EE program for PY8.

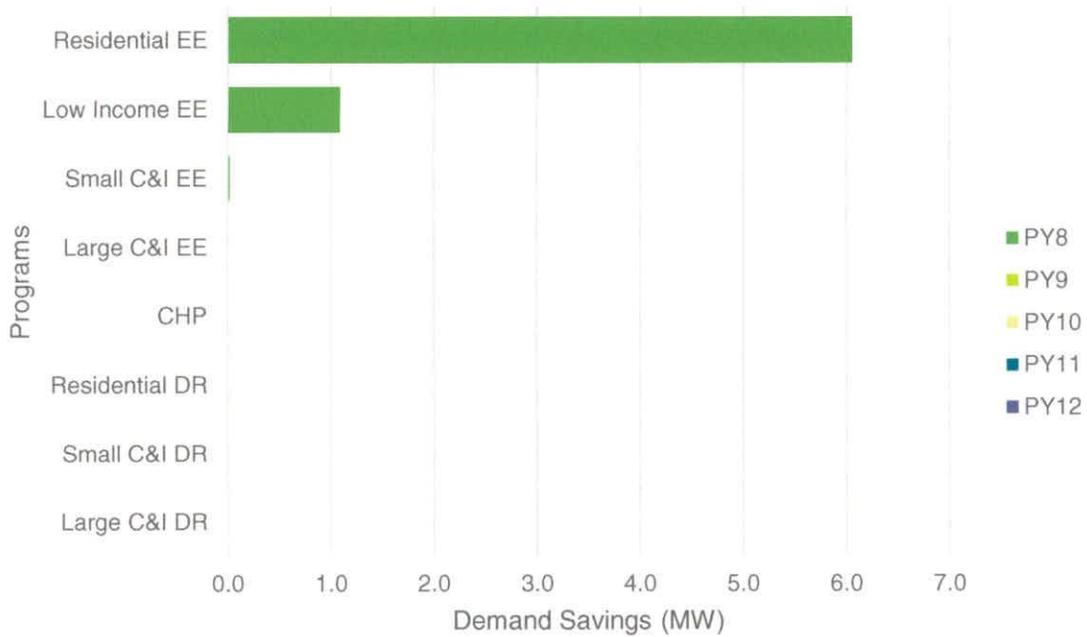
**Figure 8: PYRTD Gross Demand Savings by EE Program**



Source: SIDS database, CSP tracking data

Figure 9 presents a summary of the PSA gross demand savings by EE program for Phase III of Act 129.

**Figure 9: PSA Demand Savings by EE Program for Phase III**



Source: SIDS database, CSP tracking data

Table 32 presents a summary of the peak demand impacts by program through the current reporting period. Sections 2.4.1 through 2.4.8 present the solution-level savings.

**Table 32: Peak Demand Savings by Program (MW/Year)**

Program	PYRTD	RTD	VTD	PSA
Residential EE	6.1	6.1	*	6.1
Low-Income EE	1.1	1.1	*	1.1
Small C&I EE	0.0	0.0	*	0.0
Large C&I EE	0.0	0.0	*	0.0
CHP	0.0	0.0	*	0.0
Residential DR	0.0	0.0	*	0.0
Small C&I DR	0.0	0.0	*	0.0
Large C&I DR	0.0	0.0	*	0.0
<b>Portfolio Total</b>	<b>7.2</b>	<b>7.2</b>	<b>*</b>	<b>7.2</b>

\*Pending

Source: SIDS 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. Phase III DR events are initiated according to the following guidelines:

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 PY9) in which the peak hour of PJM's day-ahead forecast for the PJM regional transmission organization (RTO) is greater than 96 percent of the PJM RTO summer peak demand forecast for the months of June through September.
3. Each curtailment event shall last 4 hours.
4. Each curtailment event shall be called such that it will occur during the day's forecasted peak hour(s) above 96 percent 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 transmission and distribution losses. PECO uses the following line loss percentages/multipliers by sector.

- Residential = [84% or 1.1926]
- Small C&I = [90% or 1.11721]
- Large C&I = [90% or 1.111]

Table 33 summarizes the PYVTD and VTD demand reductions for each of the DR programs in the EE&C Plan and for the DR portfolio as a whole. VTD demand reductions are the average performance across all Phase III DR events independent of how many events occurred in a given program year. The relative precision columns in Table 33 indicate the margin of error (at the 90 percent confidence interval) around the PYVTD and VTD demand reductions.

**Table 33: Verified Gross DR Impacts by Program**

Program	PYVTD Gross MW	Relative Precision (90%)	VTD Gross MW	Relative Precision (90%)
Residential DR	*	*	*	*
Small C&I DR	*	*	*	*
Large C&I DR	*	*	*	*
<b>Total</b>	*	*	*	*

*\*Pending*

*Source: SIDS database, CSP tracking data*

## Section 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 PY8 are shown in Table 34. The columns in Table 34 and Table 35 are adapted from the 'Direct Program Cost' categories in the Commission's EE&C Plan template<sup>3</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 and EDCs employs to support program delivery. Sections 2.4.1 through 2.4.8 present the solution-level spending.

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<sup>3</sup> <http://www.puc.pa.gov/pcdocs/1372426.doc> Section 10

**Table 34: Program Year 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)	EM&V (\$1,000)	Total Cost (\$1,000)
Residential EE	\$2,341	\$2,503	\$3,658	\$0	\$8,501
Low-Income EE	\$65	\$34	\$2,068	\$0	\$2,168
Small C&I EE	\$0	\$952	\$944	\$0	\$1,896
Large C&I EE	\$0	\$66	\$1,754	\$0	\$1,820
CHP	\$0	\$0	\$10	\$0	\$10
Residential DR	\$3,004	\$45	\$751	\$0	\$3,800
Small C&I DR	\$122	\$1	\$23	\$0	\$147
Large C&I DR	\$0	\$0	\$0	\$0	\$0
<b>Common Portfolio Costs<sup>4</sup></b>					<b>\$3,031</b>
<b>Portfolio Total</b>	<b>\$5,533</b>	<b>\$3,601</b>	<b>\$9,208</b>	<b>\$0</b>	<b>\$21,373</b>
<b>SWE Costs<sup>5</sup></b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>\$0</b>
<b>Total</b>	<b>\$5,533</b>	<b>\$3,601</b>	<b>\$9,208</b>	<b>\$0</b>	<b>\$21,373</b>

Source: SIDS database, CSP tracking data

Table 35 shows program-specific and portfolio total finances since the inception of Phase III.

**Table 35: 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)	EM&V (\$1,000)	Total Cost (\$1,000)
Residential EE	\$2,341	\$2,503	\$3,658	\$0	\$8,501
Low-Income EE	\$65	\$34	\$2,068	\$0	\$2,168
Small C&I EE	\$0	\$952	\$944	\$0	\$1,896
Large C&I EE	\$0	\$66	\$1,754	\$0	\$1,820
CHP	\$0	\$0	\$10	\$0	\$10
Residential DR	\$3,004	\$45	\$751	\$0	\$3,800
Small C&I DR	\$122	\$1	\$23	\$0	\$147
Large C&I DR	\$0	\$0	\$0	\$0	\$0
<b>Common Portfolio Costs<sup>6</sup></b>					<b>\$3,031</b>

<sup>4</sup> Includes the administrative CSP (rebate processing), tracking system, general administration and clerical costs, EDC program management, CSP program management, general management, oversight of major accounts, and technical assistance.

<sup>5</sup> Statewide evaluation costs are outside of the two percent spending cap

Program	Incentives to Participants and Trade Allies (\$1,000)	EDC Materials, Labor, and Administration (\$1,000)	ICSP Materials, Labor, and Administration (\$1,000)	EM&V (\$1,000)	Total Cost (\$1,000)
Portfolio Total	\$5,533	\$3,601	\$9,208	\$0	\$21,373
SWE Costs <sup>7</sup>	N/A	N/A	N/A	N/A	\$0
Total	\$5,533	\$3,601	\$9,208	\$0	\$21,373

Source: SIDS database, CSP tracking data

Cost-effectiveness testing for Act 129 EE&C programs is performed using the TRC test. Benefit-cost modeling is conducted annually using verified gross and verified net savings once the results of the independent impact evaluation are completed. TRC test results for PY8 will be presented in the final annual report to the PA PUC on November 15, 2017 along with a more granular breakdown of portfolio costs.

<sup>6</sup> Includes the administrative CSP (rebate processing), tracking system, general administration and clerical costs, EDC program management, CSP program management, general management, oversight of major accounts, and technical assistance.

<sup>7</sup> Statewide Evaluation costs are outside of the two percent spending cap

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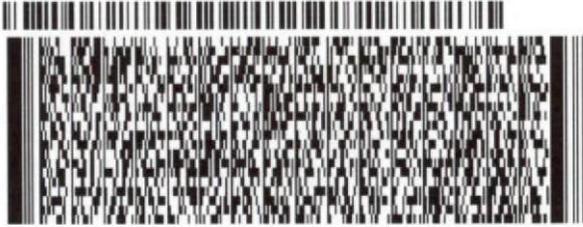
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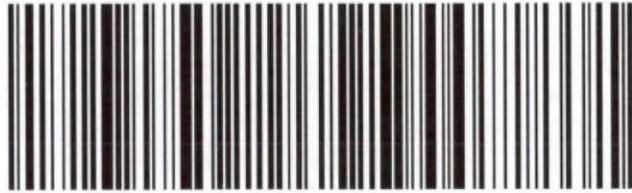
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