

Amy E. Hirakis  
Counsel

**PPL**  
Two North Ninth Street  
Allentown, PA 18101-1179  
Tel. 610.774.4254 Fax 610.774.6726  
AEHirakis@pplweb.com



July 16, 2018

**FEDERAL EXPRESS**

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

**Re: Semi-Annual Report for the Period June 2017  
through May 2018, Program Year Nine (9)  
PPL Electric Utilities Corporation's Act 129 Plan  
Docket No. M-2015-2515642**

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Dear Ms. Chiavetta:

Enclosed on behalf of PPL Electric Utilities Corporation ("PPL Electric") is the Semi-Annual Report for Program Year Nine (9), of PPL Electric's Act 129 Plan.

Pursuant to 52 Pa. Code § 1.11, the enclosed document is to be deemed filed on July 16, 2018, which is the date it was deposited with an overnight express delivery service as shown on the delivery receipt attached to the mailing envelope.

In addition, please date and time-stamp the enclosed extra copy of this letter and return it to me in the envelope provided.

Respectfully submitted,

*15/ Amy E. Hirakis hmg*

Amy E. Hirakis

Enclosure

cc: Greg Clendenning- NMR Group Inc.—Act 129 Statewide Evaluator --Email and Fed-Ex  
Salil Gogte- Ecometric Consulting --Email  
Jesse Smith- Demand Side Analytics --Email

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

**Phase III of Act 129**

**Program Year 9**

**(June 1, 2017 – May 31, 2018)**

For Pennsylvania Act 129 of 2008

Energy Efficiency and Conservation Plan

Prepared by Cadmus

For

**PPL Electric Utilities**

July 16, 2018

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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
GNE	Government, Non-Profit, Education
HVAC	Heating, Ventilating, and Air Conditioning
ICSP	Implementation Conservation Service Provider
kW	Kilowatt
kWh	Kilowatt-hour
LED	Light-Emitting Diode
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 savings 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
SWE	Statewide Evaluator
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 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 estimates 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 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 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 MWh/year or MW/year. The Pennsylvania 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 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.

Table 1 lists savings values for a hypothetical EDC as of the PY10 semi-annual report, when the first six months of PY10 reported savings are available. The calculations below are then used to illustrate the differences between various savings values.

**Table 1: P3TD Savings Calculation Example**

Program Period	Reported Gross (MWh/year)	Verified Gross (MWh/year)
Phase II (Carryover)	N/A	400
PY8	800	700
PY9	900	850
PY10 (Q1+Q2)	500	N/A

PYRTD (PY10) = 500 MWh/year

RTD = 800 + 900 + 500 = 2,200 MWh/year

VTD = 700 + 850 = 1,550 MWh / year

PSA = 1,550 + 500 = 2,050 MWh/year

PSA + CO = 2,050 + 400 = 2,450 MWh/year



## 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 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 PPL Electric Utilities in Program Year 9 (PY9), as well as the cumulative accomplishments of the Phase III programs since inception. This report additionally documents the energy savings carried over from Phase II. The Phase II carryover savings count towards EDC savings compliance targets for Phase III.

This report details the participation, spending, and reported gross impacts of the energy efficiency programs in PY9. Compliance with Act 129 savings goals are ultimately based on verified gross savings. PPL Electric Utilities has retained Cadmus as an independent evaluation contractor for Phase III of Act 129. Cadmus is responsible for the measurement and verification of the savings and calculation of verified gross savings. The verified gross savings for PY9 energy efficiency programs will be reported in the final annual report, to be filed on November 15, 2018.

Phase III of Act 129 includes a demand response goal for PPL Electric Utilities. Demand response events are limited to the months of June through September, which are the first four months of the Act 129 program year. Because the demand response season is completed early in the program year, it is possible to complete the independent evaluation of verified gross savings for demand response sooner than is possible for energy efficiency programs. Section 6.2 of this report includes the verified gross demand response impacts for PY9 as well as the cumulative demand response performance of this 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

PPL Electric Utilities does not have carryover savings from Phase II in any of the sectors. The Commission's Phase III Implementation Order<sup>1</sup> also allowed EDCs to carry over savings in excess of the overall (portfolio) Phase II savings compliance target, in excess of the Phase II GNE savings compliance target and in excess of the Phase II low-income savings compliance target.<sup>2</sup> PPL Electric Utilities did not have carry over savings for the portfolio but did exceed its Phase II compliance targets for GNE and low-income. However, in the August 3, 2017, Compliance Order,<sup>3</sup> the PA PUC determined that because PPL Electric Utilities did not obtain Phase II savings in excess of its Phase II consumption reduction requirement, PPL Electric Utilities was not entitled to any GNE or low-income sector carryover savings into Phase III.

### 2.2 PHASE III ENERGY EFFICIENCY ACHIEVEMENTS TO DATE

Since the beginning of Program Year 9 on June 1, 2017, PPL Electric Utilities has claimed:

- 400,339 MWh/yr of reported gross electric energy savings (PYRTD)
- 55.56 MW/yr of reported gross peak demand savings (PYRTD) from energy efficiency programs
- 115.64 MW/yr of reported gross peak demand savings (PYRTD) from demand response programs

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

- 780,367 MWh/yr of reported gross electric energy savings (RTD)
- 156.37 MW/yr of reported gross peak demand savings (RTD) from energy efficiency programs
- 115.64 MW/yr of reported gross peak demand savings (RTD) from demand response programs
- 731,683 MWh/yr of gross electric energy savings (PSA). This total includes verified gross savings from previous Phase III program years<sup>4</sup> and the PYTD reported gross savings from PY9.
  - 27,432 MWh/yr from PY8 remain unverified, thus are not included in PSA. These savings will be verified and included in the PY9 Annual Report.
- 102.37 MW/yr of gross peak demand savings (PSA) from energy efficiency programs
- 126.68 MW/yr of verified gross peak demand savings (PSA) from demand response programs

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

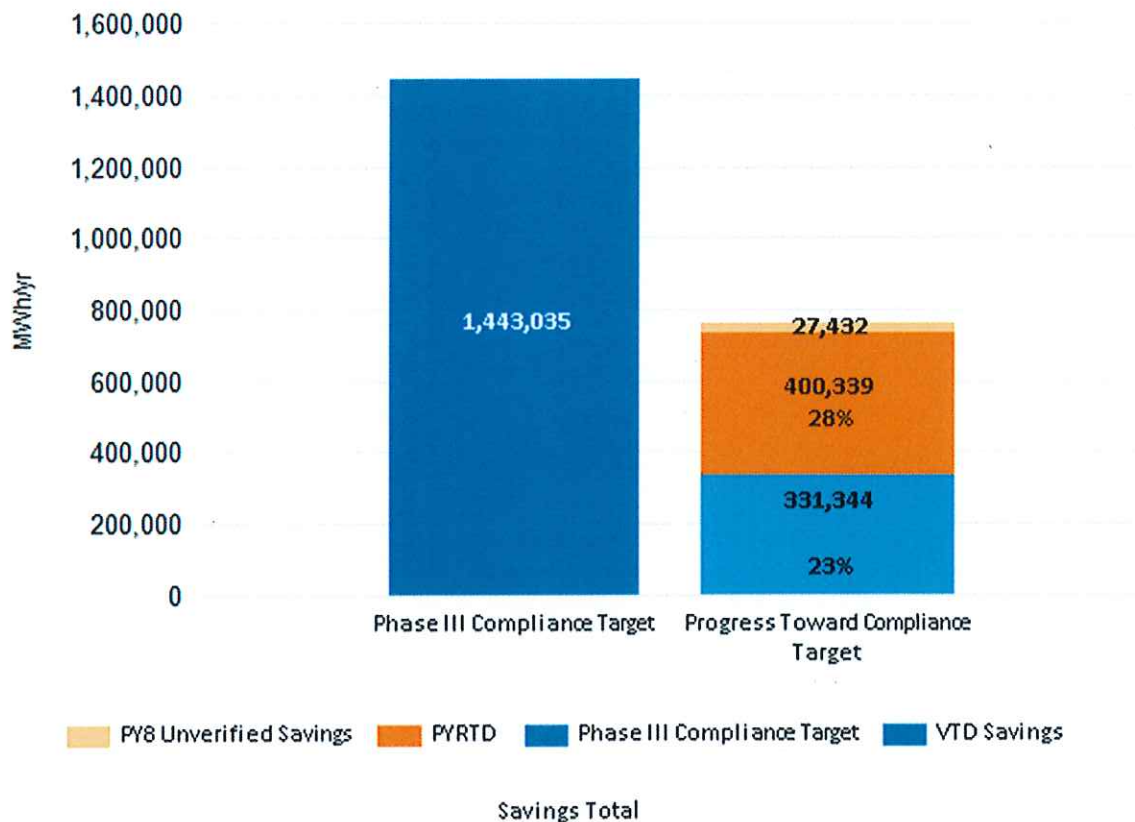
<sup>3</sup> The Order addresses the EDCs' compliance with the Phase II energy reduction targets and the Petitions for reconsideration of the April 6, 2017, Compliance Order filed by Duquesne, PECO, and PPL Electric Utilities. Pennsylvania Public Utility Commission. Act 129 Phase II Final Compliance Order. Docket No. M-2012-2289411. Adopted August 3, 2017. Available online: [http://www.puc.pa.gov/filing\\_resources/issues\\_laws\\_regulations/act\\_129\\_information/energy\\_efficiency\\_and\\_conservation\\_e\\_c\\_program.aspx](http://www.puc.pa.gov/filing_resources/issues_laws_regulations/act_129_information/energy_efficiency_and_conservation_e_c_program.aspx)

<sup>4</sup> Verified savings from previous program years have been adjusted to account for Home Energy Education Program energy savings uplift (see Appendix C in the PY8 Annual Report). Uplift results in savings counted in more than one program; therefore, an adjustment is made to prevent double counting. Unverified savings from PY8 are not included in PSA.

PPL Electric Utilities has achieved:

- 731,683 MWh/yr of PSA+CO energy savings recorded to date in Phase III<sup>5</sup>
  - This represents 51 percent of the May 31, 2021, energy savings compliance target of 1,443,035 MWh/yr

**Figure 1: EE&C Plan Performance Toward Phase III Portfolio Compliance Target**

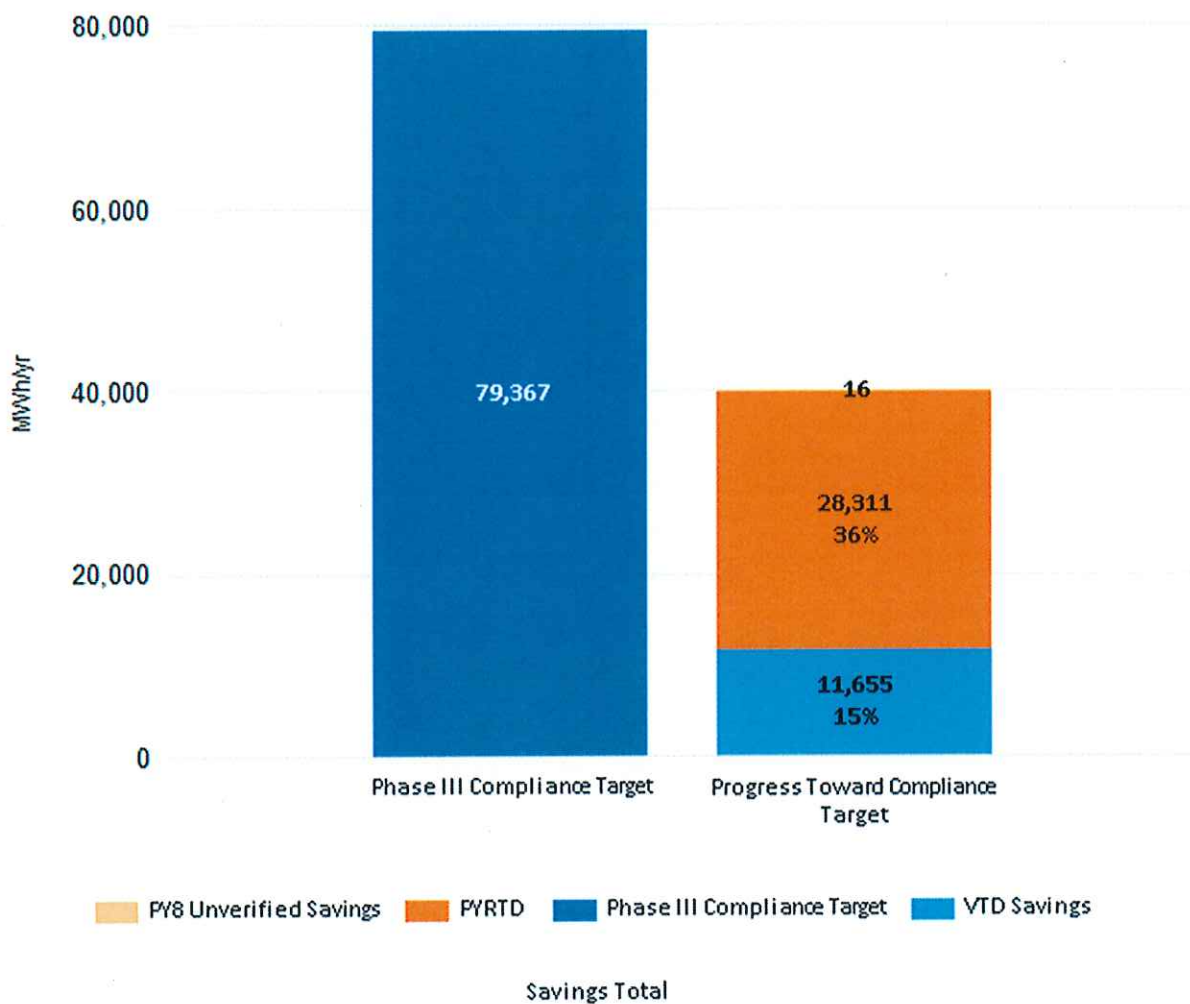


The Phase III Implementation Order directed EDCs to offer conservation measures to the low-income customer segment based on the proportion of electric sales attributable to low-income households. The proportionate number of measures target for PPL Electric Utilities is 9.95%. PPL Electric Utilities offers a total of 96 EE&C measures to its residential and non-residential customer classes. There are 21 measures available to the low-income customer segment at no cost to the customer. This represents 22% of the total measures offered in the EE&C plan and exceeds the proportionate number of measures target.

<sup>5</sup> Verified savings from previous program years have been adjusted to account for Home Energy Education Program energy savings uplift (see Appendix C in the PY8 Annual Report). Uplift results in savings counted in more than one program; therefore, an adjustment is made to prevent double counting. Unverified savings from PY8 are not included in PSA.

The PA PUC also established a low-income energy savings target of 5.5% of the portfolio savings goal. The low-income savings target for PPL Electric Utilities is 79,367 MWh/yr and is based on verified gross savings. Figure 2 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, PPL Electric Utilities has achieved approximately 50% of the Phase III low-income energy savings target.

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

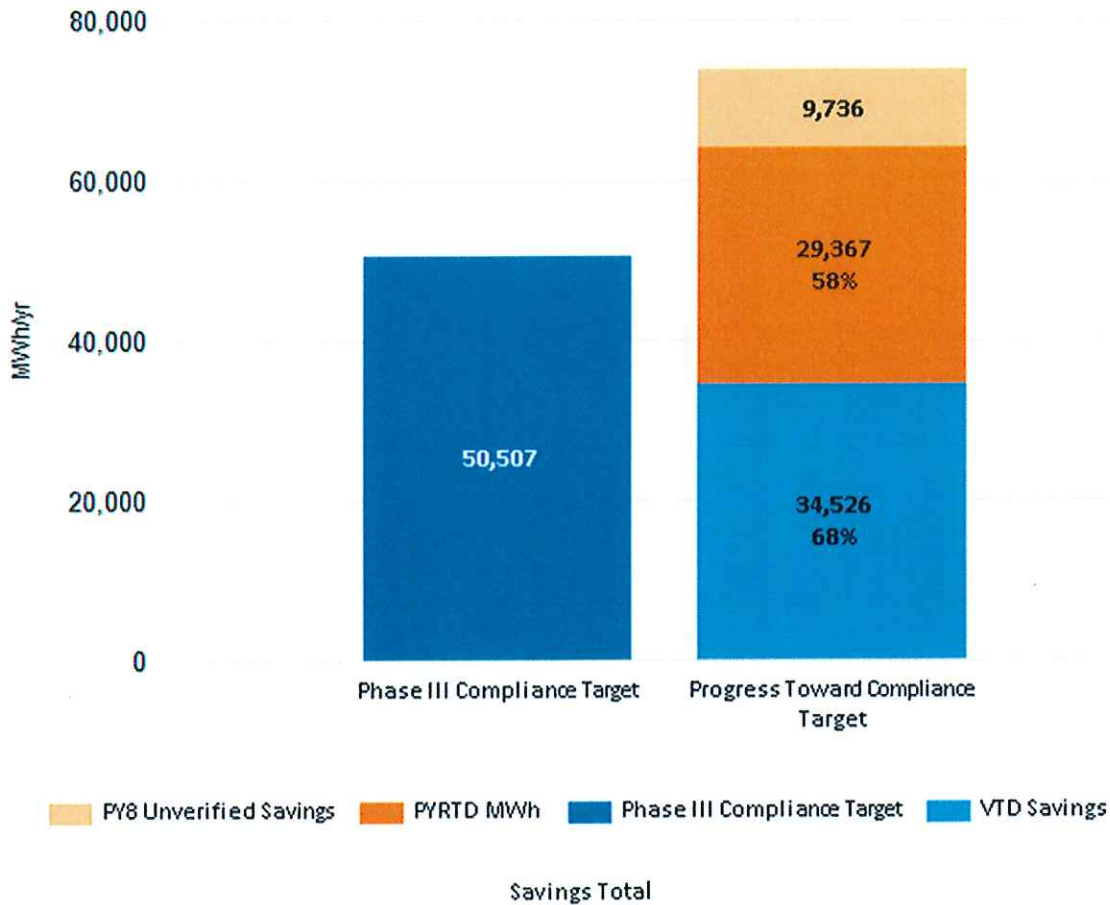


The Phase III Implementation Order established a government, non-profit, and educational energy savings target of 3.5% of the portfolio savings goal. The GNE savings target for PPL Electric Utilities is 50,507 MWh/yr and is based on verified gross savings. Figure 3 compares the PSA+CO performance to date for the GNE customer



segment to the Phase III savings target. Based on the latest available information, PPL Electric Utilities has achieved 127% of the Phase III GNE energy savings target.

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



### 2.3 PHASE III DEMAND RESPONSE ACHIEVEMENTS TO DATE

The Phase III demand response performance target for PPL Electric Utilities is 92 MW per event hour. Compliance targets for demand response programs are based on average performance across events and were established at the system level, which means the load reductions measured at the customer meter must be escalated to reflect transmission and distribution line losses.

Act 129 demand response 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 demand response event is initiated for the following day. In

PY9, there were three demand response events called. Table 2 lists the days that DR events were called along with the verified gross demand reductions achieved by each sector. Table 2 also lists the average DR performance for PY9 and for Phase III to date. PPL Electric Utilities' average DR performance to date is above the Phase III compliance reduction target of 92 MW per event by 38%.

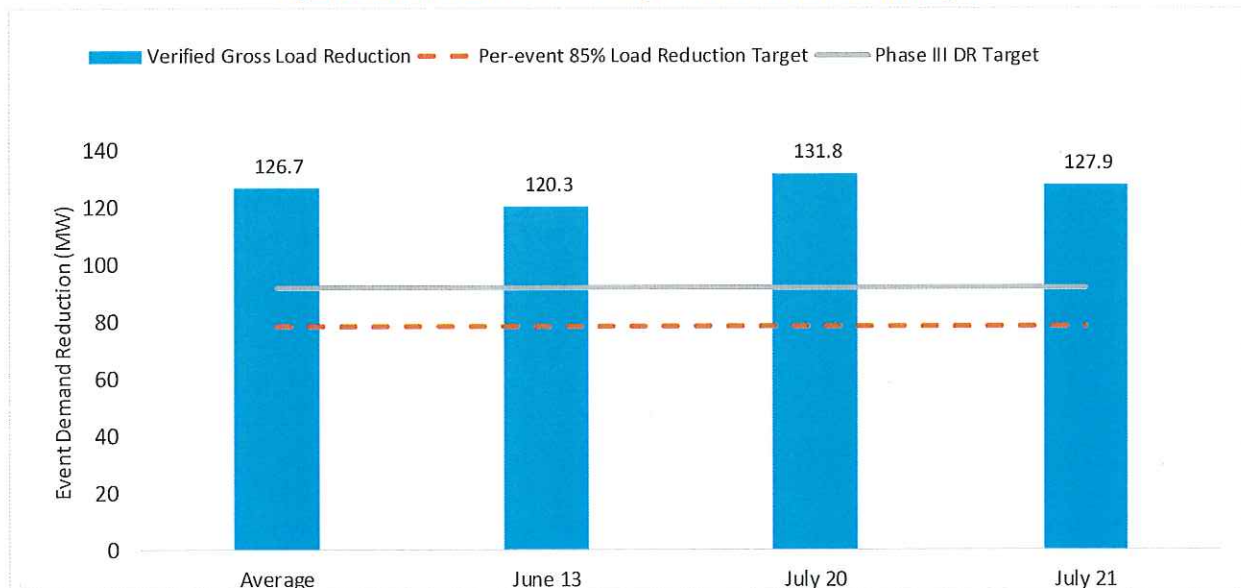
**Table 2: PY9 Demand Response PYVTD Performance by Event**

Event Date	Start Hour	End Hour	Small CI Load Curtailment (MW/event)	Large CI Load Curtailment (MW/event)	GNE Load Curtailment (MW/event)	Portfolio MW/event Impact <sup>[1]</sup>
June 13	14	17	3.0	113.9	3.5	120.3
July 20	14	17	0.2	127.0	4.7	131.8
July 21	14	17	-	123.0	4.9	127.9
PYVTD - Average PY9 DR Event Performance						126.7
VTD - Average Phase III DR Event Performance						126.7

<sup>[1]</sup> Portfolio MW/event may not equal sum of customer segment MW/event because of rounding.

The PA 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 PPL Electric Utilities, this translates to a 78.2 MW minimum for each DR event. Figure 4 compares the performance of each of the DR events in PY9 to the event-specific minimum and average targets.

**Figure 4: Event Performance Compared to 85% Per-Event Target**



Note: The load impacts reported in this figure are based on Cadmus' analysis of participant AMI consumption data and have been grossed up to reflect transmission and distribution losses.

## 2.4 PHASE III PERFORMANCE BY CUSTOMER SEGMENT

Table 3 presents the participation, savings, and incentives by customer sector for PY9. The residential, small C&I, large C&I sectors are defined by EDC tariff and the residential low-income and governmental/educational/non-profit sector were defined by statute (66 Pa. C.S. § 2806.1). The residential low-income segment is a subset of the residential customer class and the GNE segment includes customers who are part of the small C&I or large C&I rate classes. The savings, incentives, and participation values for the LI and GNE segments have been removed from the parent sectors in Table 3.

**Table 3: PY9 Summary Statistics by Customer Segment**

Parameter	Residential <sup>[1]</sup>	Low-Income	Small C&I <sup>[1]</sup>	Large C&I	GNE	Total <sup>[2]</sup>
Number of Participants	504,044	25,484	18,732	540	1,873	550,674
PYRTD MWh/yr	171,922	28,311	105,920	64,819	29,367	400,339
PYRTD MW/yr (Energy Efficiency)	23.80	2.53	17.20	7.90	4.13	55.56
PYVTD MW/yr (Demand Response) <sup>[3]</sup>	-	-	1.05	121.29	4.34	126.68
Incentives (\$1000)	\$8,791	\$0	\$3,882	\$3,926	\$1,978	\$18,578

<sup>[1]</sup> 31,577 of reported MWh/yr from Efficient Lighting are attributed to Small C&I.

<sup>[2]</sup> Total may not sum due to rounding.

<sup>[3]</sup> Savings are presented as the average of the total demand response savings per event across the June 13, July 20, and July 21 Act 129 events.

Table 4 summarizes plan performance by sector since the beginning of Phase III.

**Table 4: Phase III Summary Statistics by Customer Segment**

Parameter	Residential <sup>[1]</sup>	Low Income	Small C&I <sup>[1]</sup>	Large C&I	GNE	Total <sup>[2]</sup>
Number of Participants	910,347	40,084	37,577	723	2,425	991,156
PSA MWh/yr <sup>[3]</sup>	345,516	39,965	174,789	111,913	63,894	736,078
PSA MW/yr (Energy Efficiency)	47.47	3.69	28.94	13.62	8.67	102.37
Phase III MW/yr (Demand Response) <sup>[4]</sup>	-	-	1.05	121.29	4.34	126.68
Incentives (\$1000)	\$20,972	\$0	\$8,042	\$7,481	\$4,541	\$41,036

<sup>[1]</sup> 64,348 of PSA MWh/yr and from Efficient Lighting are attributed to Small C&I.

<sup>[2]</sup> Total may not sum due to rounding.



Parameter	Residential <sup>[1]</sup>	Low Income	Small C&I <sup>[1]</sup>	Large C&I	GNE	Total <sup>[2]</sup>
<sup>(3)</sup> The residential verified savings included in PSA MWh/yr have not been adjusted to account for energy savings uplift (double counting) in the Home Energy Education Program <sup>(4)</sup> Savings are presented as the average of the total demand response savings per event across the June 13, July 20, and July 21 Act 129 events.						

## 3 Updates and Findings

### 3.1 IMPLEMENTATION UPDATES AND FINDINGS

The Pennsylvania Utility Commission approved PPL Electric Utilities' revised EE&C plan on October 26, 2017. The plan update posted in December 2017 combined budgets and savings for the nonresidential custom and efficient equipment programs into a single program.

The program updates and graphs are listed in alphabetical order.

- Appliance Recycling:** Customers continue to provide PPL Electric with positive feedback for this program. There were over 9,700 customers and over 12,800 units recycled in PY9. Phase to date, there were over 18,000 customers who recycled refrigerators, freezers, and room air conditioners with over 24,000 units. Dehumidifiers were added to the program for PY9. A small appliance recycling event was well received by customers; it provided a convenient drop-off location for room air conditioners and dehumidifiers without the necessity of recycling a large appliance at the same time.
- Demand Response:** PPL Electric Utilities' ICSP enrolled 93 customers' facilities in the program either through their prime ICSP, Cpower, or sub-contractors during PY8 (June 1, 2016, to May 31, 2017). Using PJM forecasts, PPL Electric Utilities initiated three events during the summer of PY9. The average performance of the three events was 126.7 MWs, exceeding the program performance requirement of 92 MW per event and a minimum of 78.2 MWs per event.
- Efficient Lighting:** PPL Electric continued to see strong LED bulb sales with sales in PY9 exceeding 2,790,000 bulbs. Over 6,300,000 bulbs were sold phase-to-date. There was a diverse mix of bulbs sold – General Service lamps 71%, Reflector 16%, Specialty 9%, and Indoor Fixtures 4%. A residential connected lighting pilot was launched in February 2018. The goal of 300 participants was reached. The kit sent to participants consisted of one central hub (Wink 2) and five pre-configured bulbs, including three A19 general service bulbs and two BR30 reflector bulbs used for recessed lighting. Throughout the pilot period, PPL will collect information about usage and usability from participating customers. The intent of the pilot is to evaluate the adoption, use and energy savings potential of home automation and smart lighting technologies.
- Energy Efficiency Kits and Education:** The Energy Efficiency Kits and Education program, targeting income eligible customers, delivered over 13,000 kits in PY9 through direct mail or through one of the 20 participating agencies. The program enjoys an extremely high customer satisfaction level.
- Energy Efficient Home:** Phase-to-date, over 36,000 customers have completed the online home energy assessment and over 26,500 received an energy efficiency kit for their home. Ductless heat pumps are still the

most popular HVAC measure with more than 1,400 projects in PY9. There is significant interest in efficient new home construction with 837 homes in PY9, which is a 147% growth in incentivized homes over PY8. Measures included duct sealing, air sealing, high-efficiency HVAC systems, Energy Star appliances, high-performance windows, and insulation.

- **Home Energy Education:** This program sends Home Energy Reports to customers; it is not a rebate program. In February, PPL Electric Utilities began treatment of low income customers with emails via eHERs, and in April, PPL Electric Utilities resumed treatment of the low propensity customers removed from treatment at the beginning of PY8. Weekly email challenges were launched in February and as a result engagement more than doubled. A new and improved Home Energy Report was rolled out. The ICSP reports that customers like the new look and feel, comparisons are more accurate, recommendations are personalized, and there has been a much lower opt out rate.
- **Low-Income WRAP:** Due to a slow start and less than ideal realization rates, Low-Income WRAP increased the number of jobs completed to more than 12,000 in PY9 (approximately 1,700 completed in PY8 were not reported until PY9). In PY9, approximately 5,000 jobs (~400 completed in PY8, but reported in PY9) were multi-family participants, of which nearly 1,750 (~350 completed in PY8, but reported in PY9) were in master metered multi-family facilities. The Manufactured Home initiative continues to make progress.
- **Non-Residential Energy Efficiency**
  - **CEI:** The Continuous Energy Improvement program launched successfully and completed Year 1 during PY9. There are four new school districts participating with a total of 17 schools and four school districts who had participated in the program in Phase II, with a total of 27 schools in Phase III. The reported savings in PY9 from the four new districts was 887,087 kWh.
  - **Custom:** In PY9 there were a total of 114 projects in the custom program. Reported savings in PY9 was 25,310.69 MWH/yr In PY9 there was 1 CHP project completed, for a reported savings of 6,438,169.57 kWh. There continues to be a significant number of CHP projects, especially from the GNE customer sector. Due to the high demand by the GNE sector, PPL started a waitlist on 1/15/2018.
  - **Efficient Equipment Prescriptive Equipment:** PY9 reported gross savings were 4,535,728 kWh. Commercial refrigeration and HVAC rebates were the most popular in this category, followed closely by commercial motors.
  - **Efficient Equipment Prescriptive Lighting:**
    - Direct Discount continues to be a key delivery channel for small business customers. While Direct Discount is available for several measures, lighting is the primary measure installed through this program component. PY9 reported savings for Direct Discount was 8,216,310 kWh. On January 1, 2018, the Direct Discount incentive increased from \$0.13 to \$0.15/kWh. The usage (kWh) cap was also removed for GS1 and GS3 rate classes, which increased savings in the small business sector.
    - Customers continue to participate in the prescriptive lighting program for larger projects. PY9 reported savings for this prescriptive downstream lighting program component were 105,877,857 kWh.
  - **Midstream Lighting:** The number of distributors participating in this program component continues to grow, from 14 distributors in PY8 to 26 in PY9 with 94 locations. PPL Electric Utilities' ICSP continues to improve QA/QC for projects and provide education to distributors to improve program performance. A SPIFF was offered to drive participation and awareness of the



midstream program. Additional eligible items were added at the beginning of PY10, June 1, 2018. The reported savings in PY9 were 19,934,961 kWh.

- **Student Energy Efficient Education:** The program was fully subscribed for PY9 and distributing energy efficiency kits and delivering classroom energy education to over 24,000 children at approximately 200 schools. Two pilots ran in PY9, one for high school students that included a Tier II power strip and one for middle school students that introduced an app aimed at driving student/parent engagement and increasing installation rates.

### 3.2 EVALUATION UPDATES AND FINDINGS

This section summarizes evaluation activities occurring within each program during PY9. For each program offered in PY9, Cadmus updated the evaluation plans, and submitted them to PPL Electric Utilities and the SWE for approval.

- **Appliance Recycling:** Cadmus received participant data from PPL Electric Utilities' tracking database for Q2, Q3, and Q4, and confirmed that it contains the necessary data for evaluation activities. Cadmus received Q1 and Q2 ICSP tracking data from Recleim, completed a reconciliation analysis with Q1 and Q2 data from PPL Electric Utilities' tracking database, and discussed findings with PPL. Cadmus completed the PY9 Q3 quarterly data request for the SWE and is currently preparing the PY9 Q4 data request. Cadmus launched Q2 online participant surveys in January 2018. In February, Cadmus submitted and received approval for a revised EM&V plan that details the use of EDC data gathering as inputs to calculate savings rather than TRM default values.
- **Demand Response:** Cadmus met with PPL Electric Utilities and the ICSP to discuss program design and changes. Cadmus reviewed the program materials and received participant data, and completed the target number (10) of participant interviews. Cadmus estimated load impacts for each of 93 participant facilities during event hours of the June 13, July 21, and July 22 Act 129 events. Cadmus completed the PY9 annual report and delivered it and the data request to the SWE on January 15, 2018.
- **Efficient Lighting:** Cadmus received Q3 and Q4 data from PPL Electric Utilities' tracking database, and copies of Q3 invoices and tracking data from the ICSP. Cadmus provided data to the SWE to fulfill the PY9 Q3 data request and is preparing the PY9 Q4 data request. In PY9, Cadmus will sample the top-selling SKUs and verify they are ENERGY STAR products using current and historical ENERGY STAR Qualified Product Lists.
- **Energy-Efficiency Kits and Education:** Cadmus received Q1 through Q4 enrollment and survey data from the ICSP. Cadmus reviewed the PY9 Q1 and Q4 tracking data from PPL Electric Utilities' tracking database, and has conducted a records review with Q3 and Q4 data provided by the subcontracting ICSP. Cadmus provided data to the SWE to fulfill the PY9 Q3 data requests, and is preparing the PY9 Q4 data request. Since January 2018, Cadmus has conducted stakeholder interviews with PPL Electric Utilities ICSP, and subcontracting ICSP program staff, and completed phone surveys with responders and nonresponders to the paper surveys included in the kits.
- **Energy Efficient Home:** Cadmus developed the equipment, online assessment, in-home audit, and weatherization participant survey instruments. Cadmus fielded the Q3 participant surveys between March and June 2018. Cadmus received the PY9 Q4 data for all program components and confirmed that it contains the necessary data for evaluation activities. Cadmus began fielding the Q4 participant surveys, including the telephone surveys, towards the end of June 2018. Cadmus received PY9 Q3 data and requested PY9 Q4 records for the following components: in-home audit, weatherization and efficient equipment (ductless heat



pumps, and heat pump water heaters). Cadmus will conduct a database review for the remaining measures. We also provided data to the SWE to fulfill the PY9 Q3 and PY9 Q4 data requests.

- **Home Energy Education:** In January and February 2018, Cadmus conducted stakeholder interviews with PPL Electric Utilities' program manager, the ICSP, and the home energy reports subcontractor. Cadmus launched telephone and online customer satisfaction surveys in March 2018. Also in March, Cadmus met with the ICSP and subcontractor to discuss PY9 impact evaluation data preparation and the savings analysis, especially concerning the savings from the low-income waves. In April and May 2018, Cadmus conducted benchmarking research on home energy management systems (for plausible ideas for the future of the program and customer engagement) and presented findings to PPL Electric Utilities.
- **Low-Income WRAP:** Cadmus reviewed the PY9 Q3 and Q4 tracking data from PPL Electric Utilities' tracking database, and has conducted a records review with Q3 data provided by the ICSP. Cadmus began conducting a records review with recently provided Q4 data by the ICSP. Cadmus provided data to the SWE to fulfill the PY9 Q3 data requests, and is currently preparing the PY9 Q4 data request. Cadmus has conducted the first wave of participant surveys in January 2018 and the second wave of participant surveys in June 2018. Cadmus is going to complete the trade ally interviews with WRAP contractors and property manager interviews with multifamily and manufactured home park managers in early July 2018. Cadmus is planning to present PY9 preliminary results to PPL Electric Utilities and the ICSP in early September.
- **Non-Residential Energy Efficiency**
  - **CEI:** Cadmus conducted stakeholder interviews in January and February 2018 and participant surveys in May and June 2018. Cadmus received participant data from the ICSP (CLEAResult) and participants' AMI billing data from PPL. We started building the regression models to estimate energy savings.
  - **Custom:** Cadmus verified savings for nine PY9 large sample projects and three PY8 projects that were originally presented as "unverified" in the PY8 Annual Report (savings that were claimed in PY8 for projects that were installed and operating in PY8, but for which M&V activities were not completed in PY8.) The verified savings for these projects will be reported in the PY9 annual report. Ongoing evaluation activities, including review of project documentation, creation of site-specific measurement and verification plans, deployment of evaluator-installed metering equipment, determination of project savings using a high-rigor approach, and presenting finalized savings in a verification report, are currently underway for a sample of three small stratum projects and approximately 40 large stratum projects. Cadmus launched online quarterly customer satisfaction surveys in November 2017 and continued these surveys through July 2018.
  - **Efficient Equipment Prescriptive Equipment:** Cadmus received the final PY9 Q4 database for the Prescriptive Equipment program and selected the Q3 and Q4 project sample. Cadmus sent a data request for the sampled projects to the ICSP and requested PPL account manager outreach to the sampled sites. Cadmus will begin scheduling site visits in June. Online quarterly customer satisfaction surveys launched in November 2017 and continued through July 2018.
  - **Efficient Equipment Prescriptive Lighting:** Cadmus received the final PY9 Q4 database for the Prescriptive Lighting program component, selected a final evaluation sample for both the prescriptive and Direct Discount delivery channel, and requested project data from the ICSP. Cadmus will start scheduling site visits in July. Online quarterly customer satisfaction surveys launched in November 2017 and continued through July 2018.

- **Midstream Lighting:** Cadmus selected the PY9 Q1, Q2, and Q3 evaluation samples, and requested project data from the ICSP. Cadmus completed site visits and analysis for 21 Q1 sites, and is completing verification site visits for the Q2 and Q3 sample of 16 facilities. Cadmus received the PY9 Q4 database and is preparing the PY9 Q4 data request. To inform the process and net savings evaluations, Cadmus completed interviews with 25 end users (15 purchasers and 10 non-purchasers), 16 contractor purchasers and 6 distributors.
- **Student Energy Efficient Education:** The ICSP provides program data once per year. Cadmus received and reviewed the PY9 program data from the subcontracting ICSP in PY9 Q4, and will review these records in July 2018. Upon completion, Cadmus will conduct the annual impact analysis for SEEE. In May 2018, Cadmus conducted two online focus groups with 15 participating teachers. Cadmus also conducted in-depth interviews with six teachers who had participated in prior years, but did not participate in PY9.

## 4 Summary of Participation by Program

Participation is defined differently for each program depending on the program delivery channel and data tracking practices. The nuances of the participant definition vary by program and are summarized by program in Table 5. The table provides the current participation totals for PY9 and Phase III.

**Table 5: EE&C Plan Participation by Program**

Program	Participant Definition	PY9TD Participation	P3TD Participation
Appliance Recycling (ARP)	Unique job number; corresponds with each unique appliance decommissioned through the program during the program year	12,852	24,220
Demand Response	Unique job number; corresponds to a customer that participated in a demand response event	93	93
Efficient Lighting	Person or business purchasing discounted bulbs. See Table 6 and the corresponding text describing the approach to computing number of participants.	287,024	623,244
Energy-Efficiency Kits and Education	Unique job number; corresponds to an energy-savings kit delivered to an income-eligible customer through the agency or the direct-mail delivery channel Participation is determined by the unique job numbers. Returned kits are assigned two unique job numbers: one for the distributed kit, and one for the returned kit	13,406	25,523
Energy Efficient Home (EE Home)	Unique job number; corresponds to a rebated project Households could have more than one rebated project	33,334	44,735
Home Energy Education (HEE)	Unique bill account number (household) that receives a home energy report	161,589	202,509
Low-Income Winter Relief Assistance Program (WRAP)	Unique bill account number; corresponds to an income-eligible household that receives an audit and program services. In PY8, a participant was defined as a unique job, but the PY9 updated definition is applied retroactively here. Therefore, the P3TD total will not match the PY8 total plus PY9TD.	12,242	14,729
Nonresidential Energy Efficiency	Prescriptive Lighting and Equipment: Unique job number; corresponds to each unique job that received a rebate Custom: Unique job number; commercially operable job that received an incentive payment during the reporting period Midstream Program: Unique job number (RBT); corresponds to each purchase of discounted products	5,920	7,744
Student Energy Efficient Education (SEEE)	Number of participants is counted as the number of kits delivered	24,214	48,359
<b>Portfolio Total</b>		<b>550,674</b>	<b>991,156</b>



Because of the upstream design of the Efficient Lighting Program, the identities of purchasers are not known. The proportional breakdown of bulbs between the residential and small commercial sectors was estimated in PY8, as were bulbs-per-customer counts. These metrics were derived from residential and commercial customer data collected in a general population telephone survey. Participation is estimated by dividing the total number of bulbs discounted or given away by the bulbs-per-customer estimates.

**Table 6: Efficient Lighting Participant Estimates**

Year	Delivery Channel	Residential Quantity	Small C&I Quantity	Total Quantity	Bulbs per Small C&I Customer	Bulbs per Residential Customer	Estimated Small C&I Participants	Estimated Residential Participants	Total Estimated Participants
PY8	Retail Buy Down	3,174,906	352,767	3,527,673	20.21	9.96	17,455	318,766	336,221
PY9	Retail Buy Down	2,708,338	300,927	3,009,265			14,890	271,921	286,811
PY9	Giveaway	2,112	0	2,112			0	212	212
Total *		5,885,355	653,695	6,539,050			32,435	590,899	623,244

\*The sum of rows for Residential Quantity and Small C&I Quantity does not sum to Total because of rounding.

## 5 Summary of Energy Impacts by Program

Figure 5 presents a summary of the PYTD reported gross energy savings by program for Program Year 9. The energy impacts in this report are presented at the meter level and do not reflect adjustments for transmission and distribution losses. The following graphs and tables list programs in reverse alphabetical order.

Figure 5: PYTD Reported Gross Energy Savings by Program

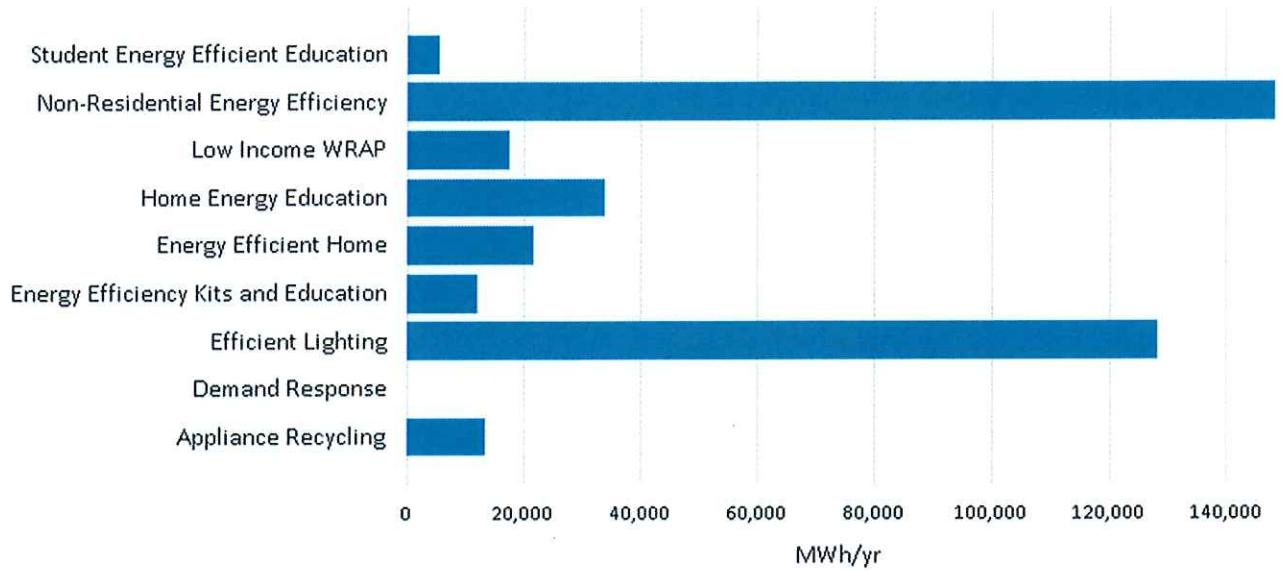
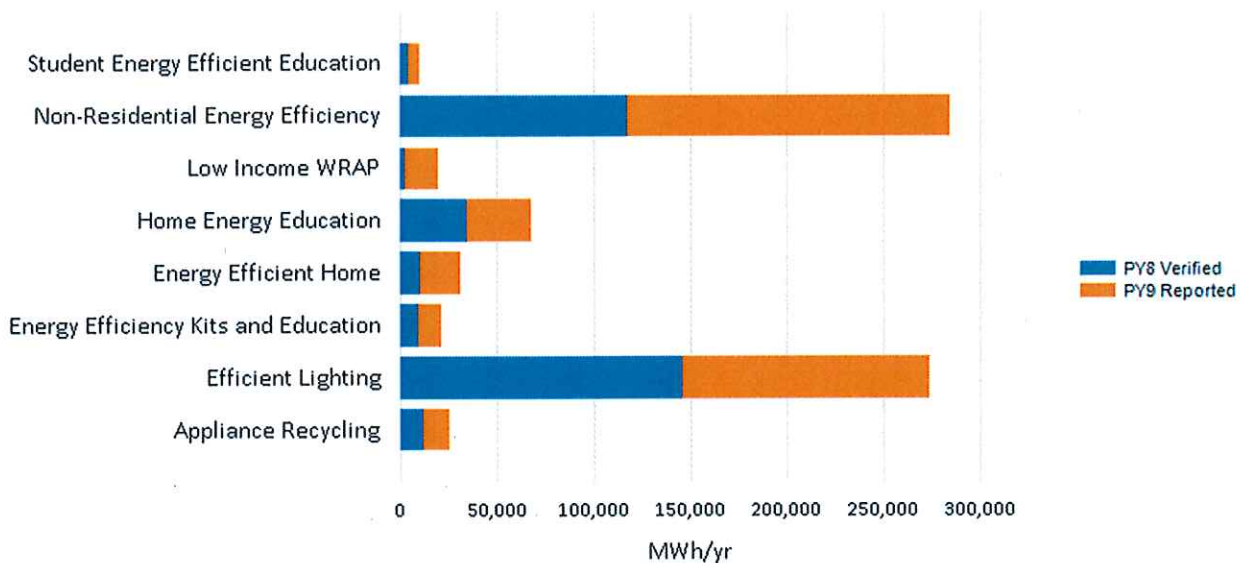


Figure 6 presents a summary of the PSA gross energy savings by program for Phase III of Act 129. PSA savings include verified gross savings from previous program years and the PYTD savings from the current program year.

Figure 6: PSA Energy Savings by Program for Phase III



A summary of energy impacts by program through the current reporting period is presented in Table 7.

**Table 7: Energy Savings by Program (MWh/Year)**

Program Name	PYTD MWh/yr	RTD MWh/yr	VTD MWh/yr	Unverified Savings from PY8 MWh/yr	PSA MWh/yr <sup>[1], [3]</sup>
Appliance Recycling	13,454	25,489	11,844		25,298
Efficient Lighting	128,298	278,674	145,929		274,227
Energy Efficiency Kits and Education	12,205	22,625	9,219		21,425
Energy Efficient Home	21,705	32,327	9,943		31,649
Home Energy Education	33,876	74,343	34,326		68,202
Low Income WRAP	17,530	21,021	2,652	16	20,182
Non-Residential Energy Efficiency	167,674	315,175	117,285	27,417	284,959
Student Energy Efficient Education	5,597	10,715	4,539		10,136
<b>Portfolio Total <sup>[2]</sup></b>	<b>400,339</b>	<b>780,367</b>	<b>335,739</b>	<b>27,432</b>	<b>736,078</b>
Adjustment for Home Energy Education Double-Counted Savings			(4,395)		(4,395)
<b>Adjusted Portfolio Savings <sup>[2]</sup></b>			<b>331,344</b>		<b>731,683</b>
<sup>[1]</sup> 64,348 of PSA MWh/yr from Efficient Lighting are attributed to Small C&I.					
<sup>[2]</sup> Portfolio total does not equal total of column due to rounding.					
<sup>[3]</sup> PSA total may not equal total of PYTD and VTD due to rounding.					



## 6 Summary of Demand Impacts by Program

PPL Electric Utilities' Phase III EE&C programs achieve peak demand reductions in two ways. The first is through coincident reductions from energy efficiency measures and the second is through dedicated demand response programs that exclusively target temporary demand reductions on peak days. Energy efficiency 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 demand response programs.

The two types of peak demand reduction savings are also treated differently for reporting purposes. Peak demand reductions from energy efficiency are generally additive across program years, meaning that the P3TD savings reflect the sum of the first-year savings in each program year. Conversely, demand response 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 energy efficiency and demand response are reported separately in the following sub-sections.

### 6.1 PEAK DEMAND REDUCTION FROM ENERGY EFFICIENCY PROGRAMS

Act 129 defines peak demand savings from energy efficiency 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 energy efficiency in this report are presented at the meter level and do not reflect adjustments for transmission and distribution losses. Figure 7 presents a summary of the PYRTD reported gross peak demand savings by energy efficiency program for PY 9.

**Figure 7: PYRTD Gross Demand Savings by Energy Efficiency Program**

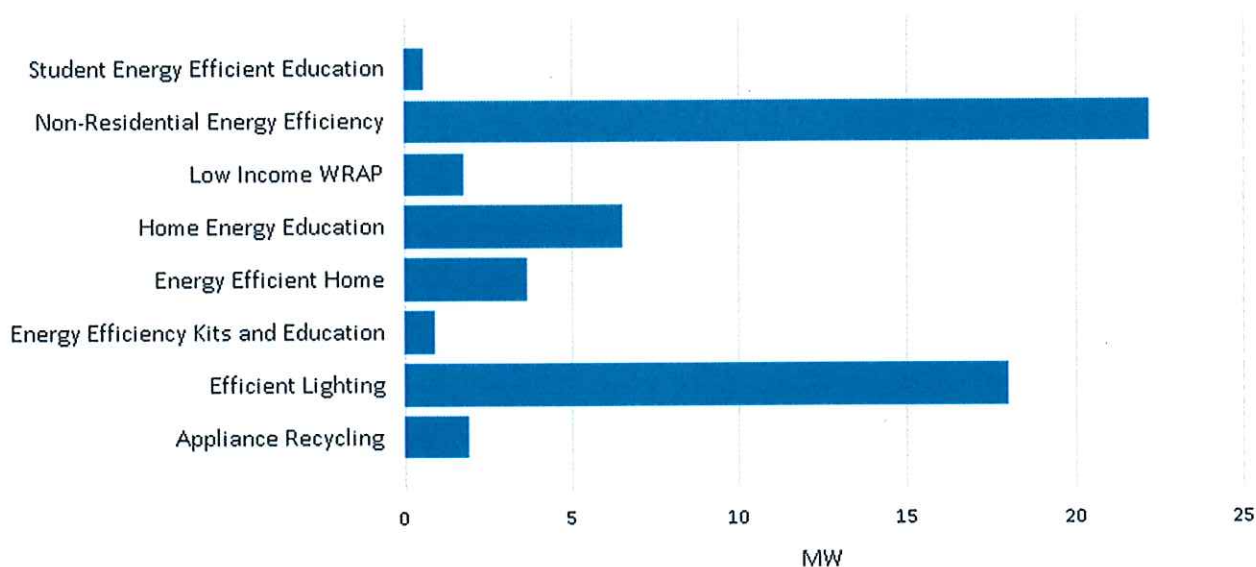
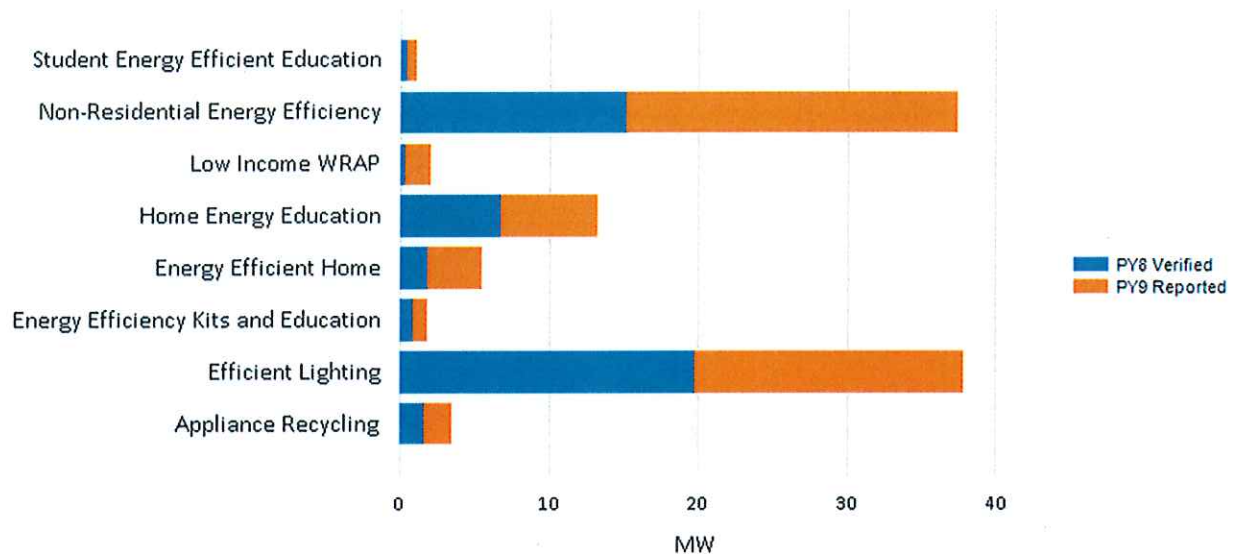


Figure 8 presents a summary of the PSA gross demand savings by energy efficiency program for Phase III of Act 129.

**Figure 8: PSA Demand Savings by Energy Efficiency Program for Phase III**



A summary of the peak demand impacts achieved by energy efficiency programs through the current reporting period is presented in Table 8.

**Table 8: Peak Demand Savings by Energy Efficiency Program (MW/Year)**

Program Name	PYTD MW/yr	RTD MW/yr	VTD MW/yr	Unverified Savings from PY8 MW/yr	PSA MW/yr <sup>[1]</sup>
Appliance Recycling	1.89	3.54	1.63		3.52
Efficient Lighting	18.01	40.15	19.82		37.83
Energy-Efficiency Kits and Education	0.90	1.65	0.88		1.78
Energy Efficient Home	3.68	5.63	1.78		5.46
Home Energy Education	6.54	60.93	6.75		13.29
Low-Income WRAP	1.76	2.10	0.29	0.00	2.05
Non-Residential Energy Efficiency	22.22	41.34	15.17	3.09	37.39
Student Energy Efficient Education	0.56	1.02	0.49		1.05
<b>Portfolio Total <sup>[2]</sup></b>	<b>55.56</b>	<b>156.37</b>	<b>46.81</b>	<b>3.09</b>	<b>102.37</b>

<sup>[1]</sup> 13.63 of PSA MW from Efficient Lighting are attributed to Small C&I.

<sup>[2]</sup> Portfolio total does not equal total of column due to rounding.

## 6.2 PEAK DEMAND REDUCTION FROM DEMAND RESPONSE

Act 129 defines peak demand savings from demand response as the average reduction in electric demand during the hours when a demand response 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 six days of each program year (starting in PY9) in which the peak hour of PJM's day-ahead forecast for the PJM 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 four hours.
- 4) Each curtailment event shall be called such that it will occur during the day's forecasted 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 demand response in this report are presented at the system level and reflect adjustments to account for transmission and distribution losses. PPL Electric Utilities uses the following line loss percentages/multipliers by sector.

- Residential = [8.75% or 1.0875]
- Small C&I = [8.75% or 1.0875]
- Large C&I = [4.2% or 1.0420]

Table 9 summarizes the PYVTD and VTD demand reductions for each of the demand response programs in the EE&C plan and for the demand response portfolio as a whole. VTD demand reductions are the average performance across all Phase III demand response events independent of how many events occurred in a given program year. The relative precision columns in Table 9 indicate the margin of error (at the 90% confidence interval) around the PYVTD and VTD demand reductions.

**Table 9: Verified Gross Demand Response Impacts by Program**

Program	PYVTD Gross MW	Relative Precision (90%) <sup>[1]</sup>	VTD Gross MW	Relative Precision (90%) <sup>[1]</sup>
Demand Response	126.68	3%	126.68	3%
<b>Portfolio Total</b>	126.68	3%	126.68	3%
<sup>[1]</sup> Precision accounts for the covariance of a participant facility's savings over hours of an event; however, it does not account for the covariance of a participant facility's savings across events.				



## 7 Summary of Finances

Section 7 provides an overview of the expenditures associated with PPL Electric Utilities' portfolio and the recovery of those costs from ratepayers.

### 7.1 PROGRAM FINANCIALS

Program-specific and portfolio total finances for PY9 are shown in Table 10. The columns in Table 10 and Table 11 are adapted from the 'Direct Program Cost' categories in the Commission's EE&C Plan template<sup>6</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 an EDC employs to support program delivery.

**Table 10: Program Year to Date Financials (\$1000)**

Program	Incentives to Participants and Trade Allies	EDC Materials, Labor, and Administration	ICSP Materials, Labor, and Administration	EM&V	Total <sup>[1]</sup>
Appliance Recycling Program	\$363	\$40	\$1,672		\$2,074
Demand Response Program	\$980	\$53	\$703		\$1,736
Efficient Lighting Program	\$6,553	\$44	\$1,519		\$8,116
Energy Efficiency Kits & Education Program <sup>[2]</sup>		\$40	\$1,992		\$2,032
Energy Efficient Home Program	\$2,520	\$45	\$3,577		\$6,143
Home Energy Education Program		\$25	\$1,598		\$1,623
Low-Income WRAP Program <sup>[2]</sup>		\$178	\$9,193		\$9,371
Non-Residential Energy Efficiency	\$8,162	\$151	\$5,537		\$13,849
Student Energy Efficiency Education Program		\$31	\$1,071		\$1,103
<b>Common Portfolio Costs <sup>[3]</sup></b>		\$3,585	\$929	\$3,737	\$8,250
<b>Portfolio Total <sup>[4]</sup></b>	<b>\$18,578</b>	<b>\$4,192</b>	<b>\$27,792</b>	<b>\$3,737</b>	<b>\$54,298</b>
<b>SWE Costs <sup>[5]</sup></b>					<b>\$400</b>
<b>Total <sup>[1]</sup></b>	<b>\$18,578</b>	<b>\$4,192</b>	<b>\$27,792</b>	<b>\$3,737</b>	<b>\$54,698</b>

<sup>[1]</sup> Total may not equal sum of column due to rounding.

<sup>[2]</sup> Costs associated with low income program measures provided to customers at no cost are categorized as administrative costs.

<sup>[3]</sup> Common Portfolio Costs are costs applicable to more than one customer class, to more than one program, or those that provide portfolio-wide benefits. These include PPL Electric labor and materials, costs related to the EEMIS tracking system, EE&C plan development, etc.

<sup>[4]</sup> Portfolio Total and Total may not equal total of column due to rounding.

<sup>6</sup> Pennsylvania Public Utility Commission Phase III Energy Efficiency and Conservation Plan Template (Docket No. M-2014-2424864) dated July 21, 2015. (<http://www.puc.pa.gov/pcdocs/1372426.doc>)

Program	Incentives to Participants and Trade Allies	EDC Materials, Labor, and Administration	ICSP Materials, Labor, and Administration	EM&V	Total <sup>[1]</sup>
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<sup>[5]</sup> Statewide Evaluation costs are outside of the 2% spending cap.

Program-specific and portfolio total finances since the inception of Phase III are shown in Table 11.

**Table 11: Phase III to Date Financials (\$1000)**

Program	Incentives to Participants and Trade Allies	EDC Materials, Labor, and Administration	ICSP Materials, Labor, and Administration	EM&V	Total <sup>[5]</sup>
Appliance Recycling Program	\$704	\$77	\$3,238		\$4,019
Demand Response Program	\$980	\$202	\$1,202		\$2,383
Efficient Lighting Program	\$18,066	\$138	\$3,075		\$21,278
Energy Efficiency Kits & Education Program <sup>[1]</sup>		\$103	\$3,824		\$3,926
Energy Efficient Home Program	\$4,254	\$119	\$6,707		\$11,080
Home Energy Education Program		\$63	\$2,405		\$2,468
Low-Income WRAP Program <sup>[1]</sup>		\$465	\$12,918		\$13,383
Non-Residential Energy Efficiency	\$17,033	\$418	\$11,029		\$28,480
Student Energy Efficiency Education Program		\$126	\$1,881		\$2,007
<b>Common Portfolio Costs <sup>[2]</sup></b>		\$5,950	\$3,376	\$5,847	\$15,172
<b>Portfolio Total <sup>[3] [5]</sup></b>	<b>\$41,036</b>	<b>\$7,660</b>	<b>\$49,654</b>	<b>\$5,847</b>	<b>\$104,197</b>
<b>SWE Costs <sup>[4]</sup></b>					<b>\$1,100</b>
<b>Total <sup>[5]</sup></b>	<b>\$41,036</b>	<b>\$7,660</b>	<b>\$49,654</b>	<b>\$5,847</b>	<b>\$105,298</b>

<sup>1</sup> Costs associated with low income program measures provided to customers at no cost are categorized as administrative costs.

<sup>2</sup> Common Portfolio Costs are costs applicable to more than one customer class, to more than one program, or those that provide portfolio-wide benefits. These include PPL Electric labor and materials, costs related to the EEMIS tracking system, EE&C plan development, etc.

<sup>3</sup> Portfolio Total may not equal total of column due to rounding.

<sup>4</sup> Statewide Evaluation costs are outside of the 2% spending cap.

<sup>5</sup> Total may not equal sum of column due to rounding.

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 PY9 will be presented in the final annual report to the PA PUC on November 15, 2018 along with a more granular breakdown of portfolio costs.

## 7.2 COST RECOVERY

Act 129 allows Pennsylvania EDCs to recover EE&C plan costs through a cost-recovery mechanism. PPL Electric Utilities' cost-recovery charges organized separately by 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 12 and Section 2.4. For example, the low-income customer segment is a subset of PPL Electric Utilities' residential tariff(s) and therefore are not listed in Table 12. In addition, the spending below includes all costs shown in Table 11, whereas only incentives are reported in Section 2.4.

**Table 12: EE&C Plan Expenditures by Cost-Recovery Category (\$1,000)**

Cost Recovery Customer Sector	Rate Schedules Included	PYTD Spending	P3TD Spending
Residential & Low Income	Residential (primarily RS)	\$31,051	\$58,649
Small Commercial and Industrial (Small C&I)	Small C&I (primarily GS1 & GS3)	\$6,896	\$13,355
Large Commercial and Industrial (Large C&I)	Large C&I (primarily LP4 & LP5)	\$7,497	\$14,008
GNE	Residential, Small C&I, and Large C&I	\$3,565	\$7,995
No Sector <sup>[1] [2]</sup>	N/A	\$5,690	\$11,291
<b>Portfolio Total <sup>[3]</sup></b>	-	<b>\$54,698</b>	<b>\$105,298</b>

<sup>[1]</sup> Costs not collected at the sector level, including both direct program costs and common portfolio costs. These costs will be allocated to the sectors at the conclusion of Phase III.

<sup>[2]</sup> Includes SWE costs.

<sup>[3]</sup> Portfolio total may not equal sum of rows due to rounding.