

Semi-Annual Report to the Pennsylvania Public Utility Commission

Phase III of Act 129

Program Year 10

(June 1, 2018 – November 30, 2018)

For Pennsylvania Act 129 of 2008

Energy Efficiency and Conservation Plan

Prepared by ADM

and the FirstEnergy Pennsylvania EDCs for:

| | |
|-------------------------------|----------------|
| Metropolitan Edison Company | M-2015-2514767 |
| Pennsylvania Electric Company | M-2015-2514768 |
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| West Penn Power Company | M-2015-2514772 |

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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 |
| GNI | Government, Non-Profit, Institutional |
| 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 A below 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 A - 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 |

$PYRTD (PY10) = 500 \text{ MWh/year}$

$RTD = 800 + 900 + 500 = 2,200 \text{ MWh/year}$

$VTD = 700 + 850 = 1,550 \text{ MWh / year}$

$PSA = 1,550 + 500 = 2,050 \text{ MWh/year}$

$PSA + CO = 2,050 + 400 = 2,450 \text{ MWh/year}$

Section 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 in Program Year 10 (PY10) for Metropolitan Edison Company (“Met-Ed” or “ME”), Pennsylvania Electric Company (“Penelec” or “PN”), Penn Power Company (“Penn Power” or “PP”), and West Penn Power Company (“West Penn Power” or “WPP”) (known collectively as the “FirstEnergy Pennsylvania EDCs” or “FirstEnergy” or “Companies”), 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 PY10. Compliance with Act 129 savings goals is ultimately based on verified gross savings. FirstEnergy has retained ADM Associates as an independent evaluation contractor for Phase III of Act 129. ADM Associates is responsible for the measurement and verification of the savings and calculation of verified gross savings. The verified gross savings for PY10 energy efficiency programs will be reported in the final annual report, to be filed on November 15, 2019.

Phase III of Act 129 includes a demand response goal for three of the FirstEnergy Pennsylvania EDCs: Metropolitan Edison, Penn Power and West Penn Power starting in 2017, or PY9. Beginning in 2017, 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. Starting with the first semi-annual report in PY9, Section 6.2 of this report will include the verified gross demand response impacts as well as the cumulative demand response performance of the EE&C program to date for Phase III of Act 129.

Section 2 Summary of Achievements

2.1 CARRYOVER SAVINGS FROM PHASE II OF ACT 129

Table 2-1 shows total MWh/year carryover savings from Phase II for each of the FirstEnergy EDCs.

Table 2-1: Phase II Carryover Savings

| FirstEnergy EDC | Phase II Carryover Savings (MWh/Year) |
|------------------------|--|
| Met-Ed | 30,482 |
| Penelec | 49,695 |
| Penn Power | 13,866 |
| West Penn Power | 20,540 |

Figures 1A-1D: Carryover Savings from Phase II of Act 129 compare each of the EDC’s Phase II verified gross savings total to the Phase II compliance target to illustrate the carryover calculation.

Figures 1A-1D: Carryover Savings from Phase II of Act 129

Figure 1A: Carryover Savings from Phase II of Act 129 - Met-Ed

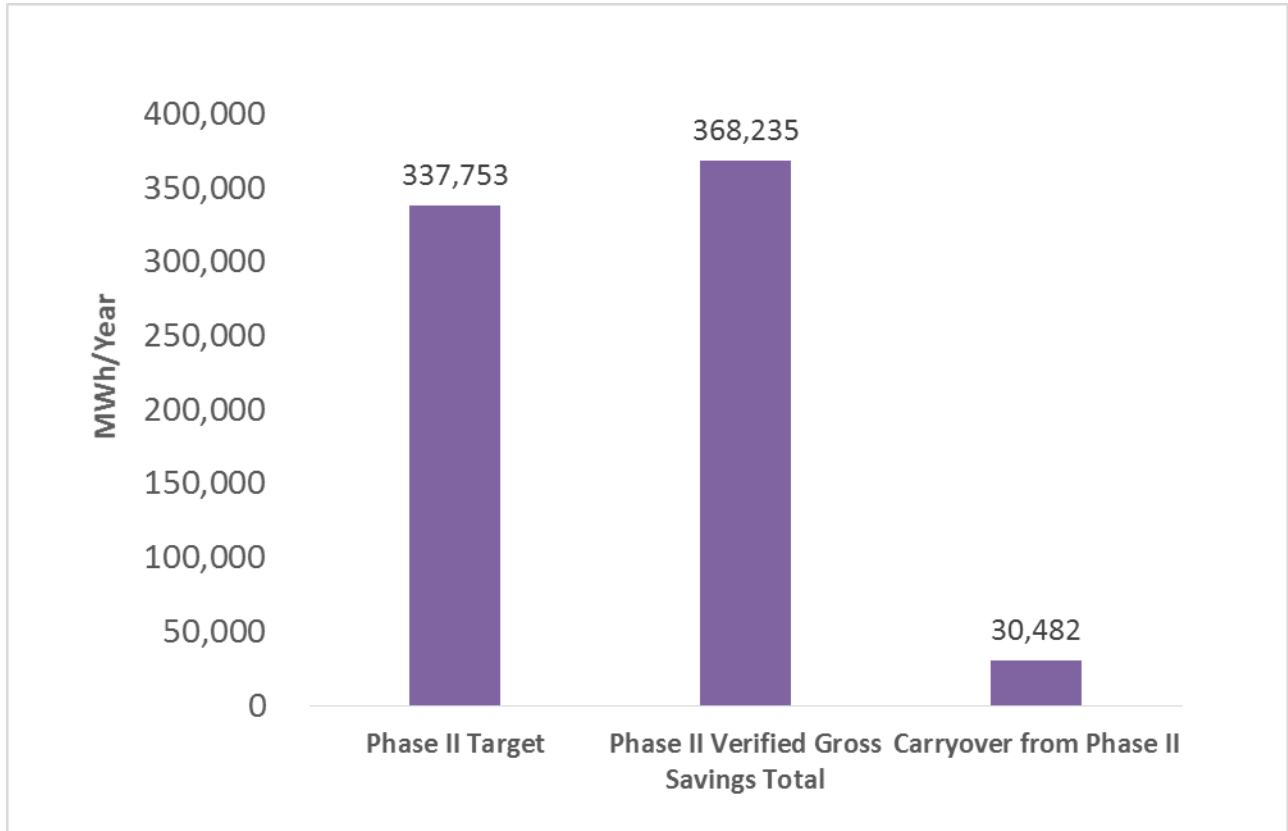


Figure 1B: Carryover Savings from Phase II of Act 129 – Penelec

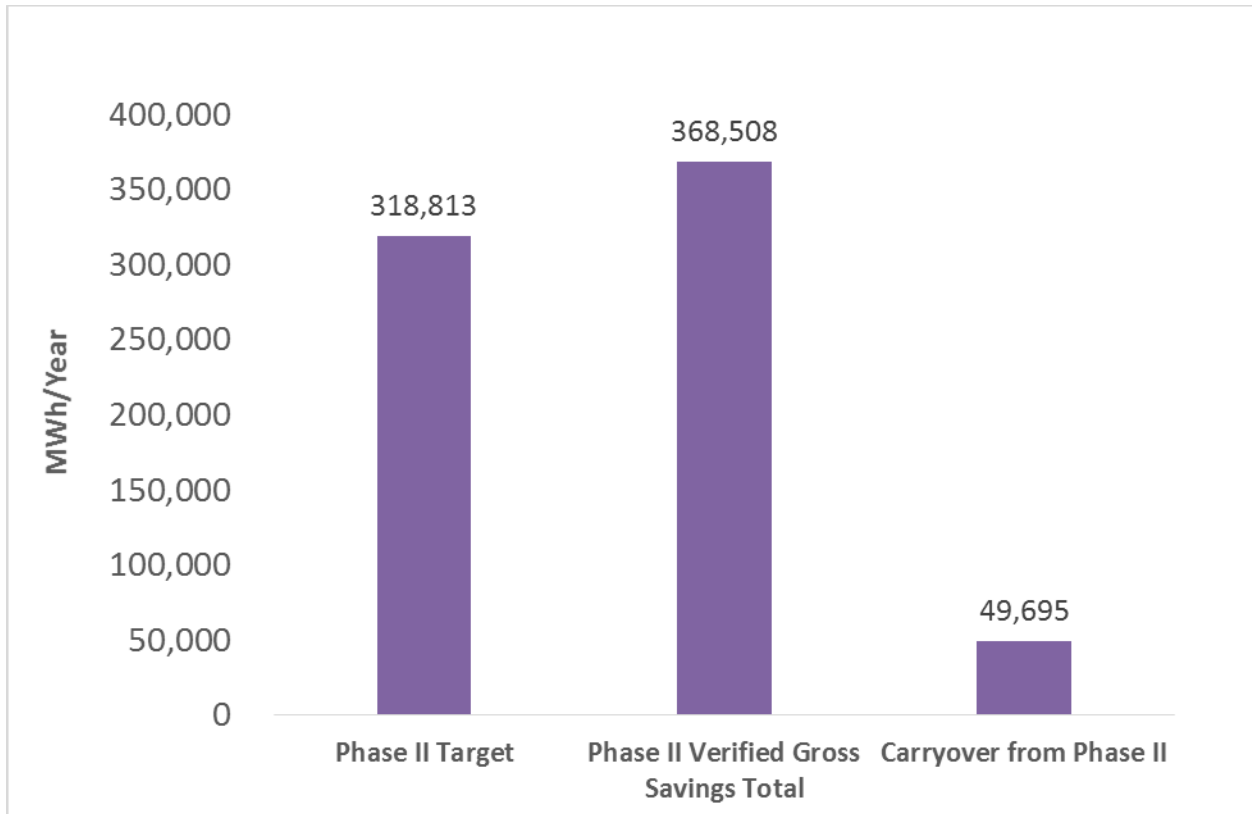


Figure 1C: Carryover Savings from Phase II of Act 129 – Penn Power

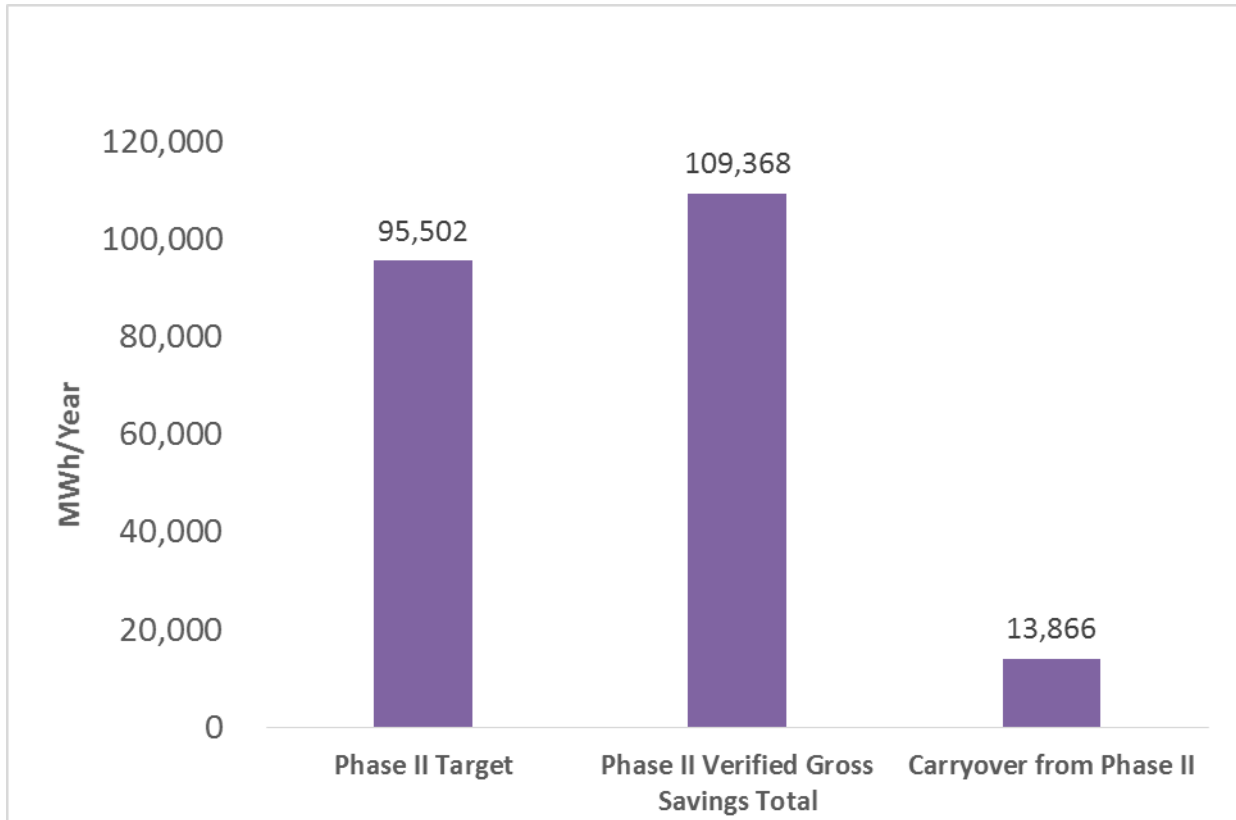
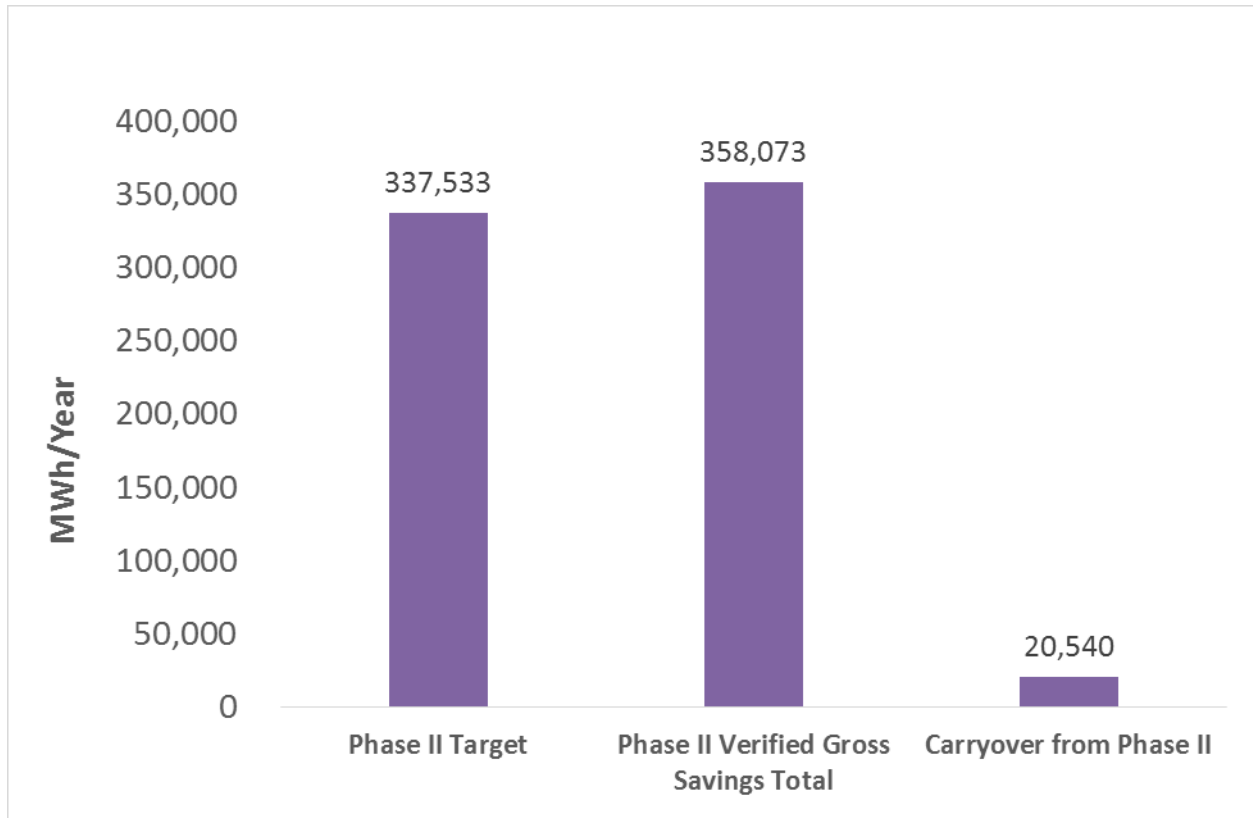


Figure 1D: Carryover Savings from Phase II of Act 129 – West Penn Power

The Commission's Phase III Implementation Order¹ also allowed EDCs to carry over savings in excess of the Phase II Government, Non-Profit, and Institutional (GNI) savings goal and excess savings from the low-income customer segment.² **Figures 2A-2D:** Customer Segment Specific Carryover from Phase II show the calculation of carryover savings for the low-income and GNI targets. To be eligible for Phase II carryover, all of the Phase II target must have been met and exceeded by Phase II program spending. For example, if the Phase II target was 1,000 MWh and 500 MWh was carried over from Phase I, the EDC would have had to show verified savings of at least 1,501 MWh to realize a Phase II carryover of 1 MWh. Carryover is calculated according to the allocation factor methodology explained on page 85 of Phase III Implementation order and as reported in the Companies' Phase II Final Annual reports.

¹ 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.

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

Figures 2A-2D: Customer Segment-Specific Carryover from Phase II

Figure 2A: Customer Segment-Specific Carryover from Phase II - Met-Ed

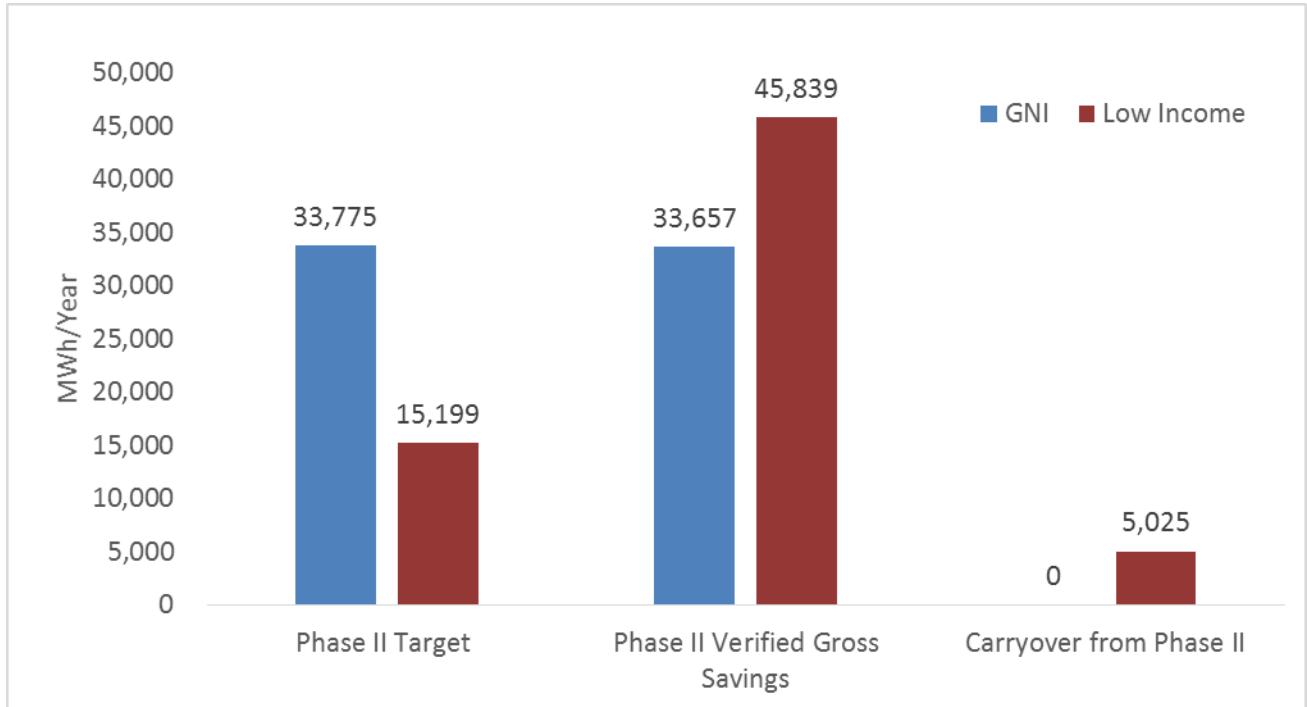


Figure 2B: Customer Segment-Specific Carryover from Phase II – Penelec

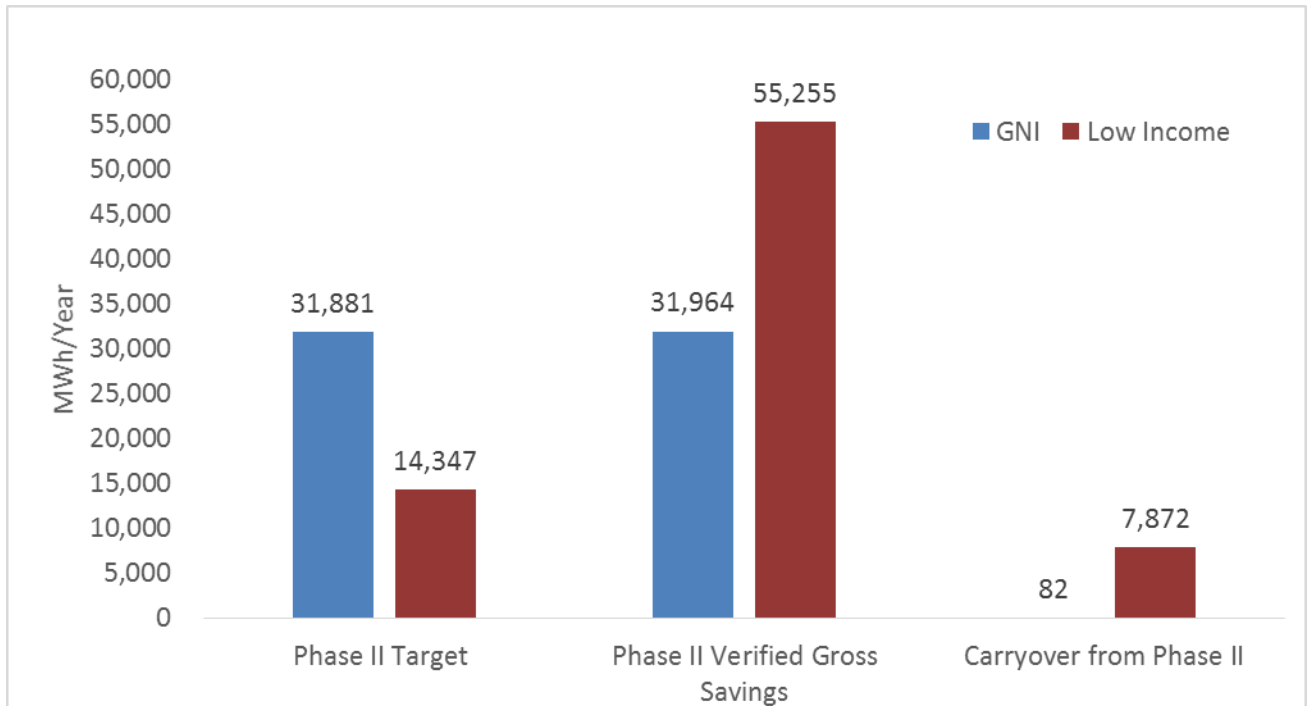


Figure 2C: Customer Segment-Specific Carryover from Phase II – Penn Power

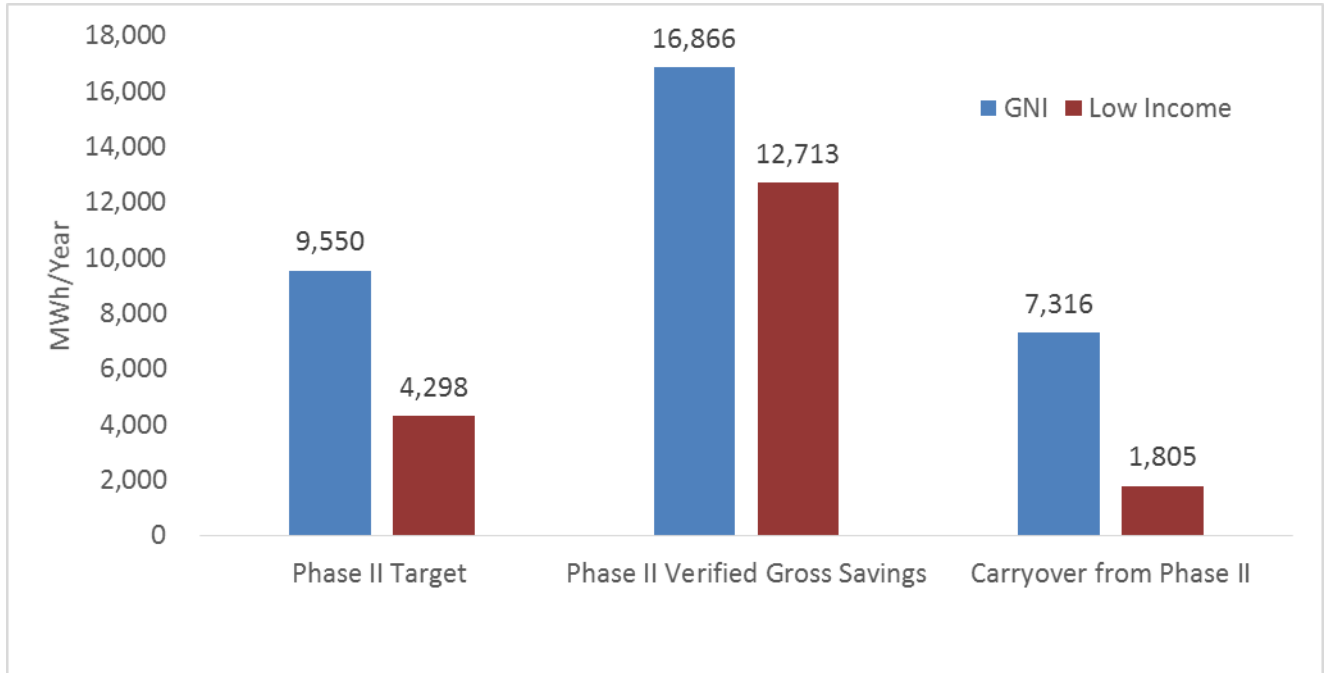
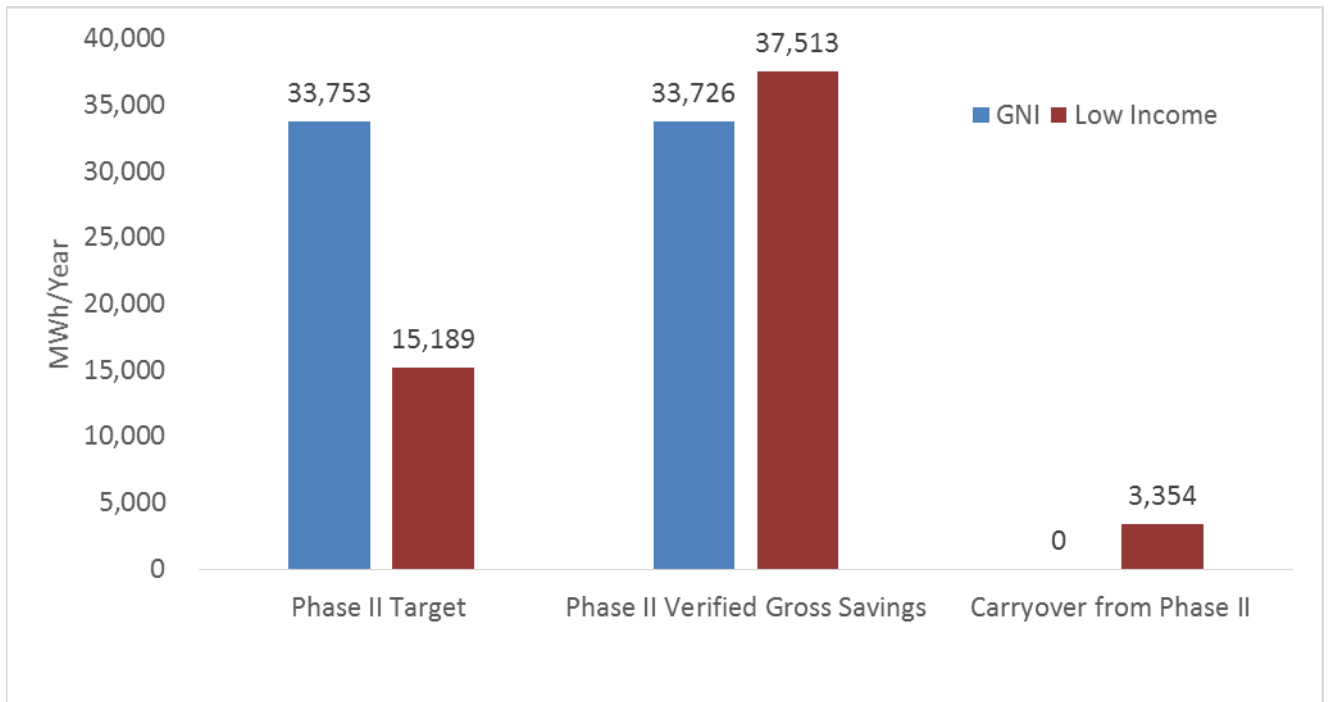


Figure 2D: Customer Segment-Specific Carryover from Phase II – West Penn Power



2.2 PHASE III ENERGY EFFICIENCY ACHIEVEMENTS TO DATE

Table 2-2 presents performance to date for each of the FirstEnergy EDCs since the beginning of Program Year 10 on June 1, 2018. **Table 2-3** and **Table 2-4** show achievements to date in Phase III; **Figures 3A-3D**: Plan Performance toward Phase III Portfolio Compliance show results in graphic form.

Since the beginning of Phase III of Act 129 on June 1, 2016, the FirstEnergy EDCs have achieved:

Table 2-2: Gross Electric and Demand Savings for PY10

| EDC | Gross MWh/yr Savings (PYRTD) | Gross Peak Demand MW Savings (PYRTD) |
|-----------------|------------------------------|--------------------------------------|
| Met-Ed | 77,474 | 12.90 |
| Penelec | 74,731 | 10.77 |
| Penn Power | 24,687 | 3.88 |
| West Penn Power | 68,160 | 12.30 |

Table 2-3: Gross Electric and Demand Savings since the beginning of Phase III of Act 129

| EDC | Reported Gross Electric Energy Savings MWh/yr Savings (RTD) | Reported Gross Peak Demand MW Savings (RTD) | Gross Electric Energy Savings MWh/yr Savings (PSA) | Gross Peak Demand MW Savings (PSA) |
|-----------------|---|---|--|------------------------------------|
| Met-Ed | 370,193 | 52.13 | 394,069 | 54.73 |
| Penelec | 350,032 | 45.67 | 361,885 | 46.19 |
| Penn Power | 112,758 | 15.80 | 119,171 | 16.45 |
| West Penn Power | 370,429 | 52.59 | 395,033 | 52.45 |

Table 2-4: Phase III Electric Savings including Phase II carryover

| EDC | Gross/Verified MWh/yr Savings (PSA) | Carryover Savings MWh/yr (CO) | CO + Gross/Verified MWh/yr Savings (PSA + CO) | % of Compliance Target |
|-----------------|-------------------------------------|-------------------------------|---|------------------------|
| Met-Ed | 394,069 | 30,482 | 424,551 | 71% |
| Penelec | 361,885 | 49,695 | 411,580 | 73% |
| Penn Power | 119,171 | 13,866 | 133,037 | 85% |
| West Penn Power | 395,033 | 20,540 | 415,573 | 77% |

Figures 3A-3D: Plan Performance toward Phase III Portfolio Compliance

Figure 3A: EE&C Plan Performance toward Phase III Portfolio Compliance Target – Met-Ed

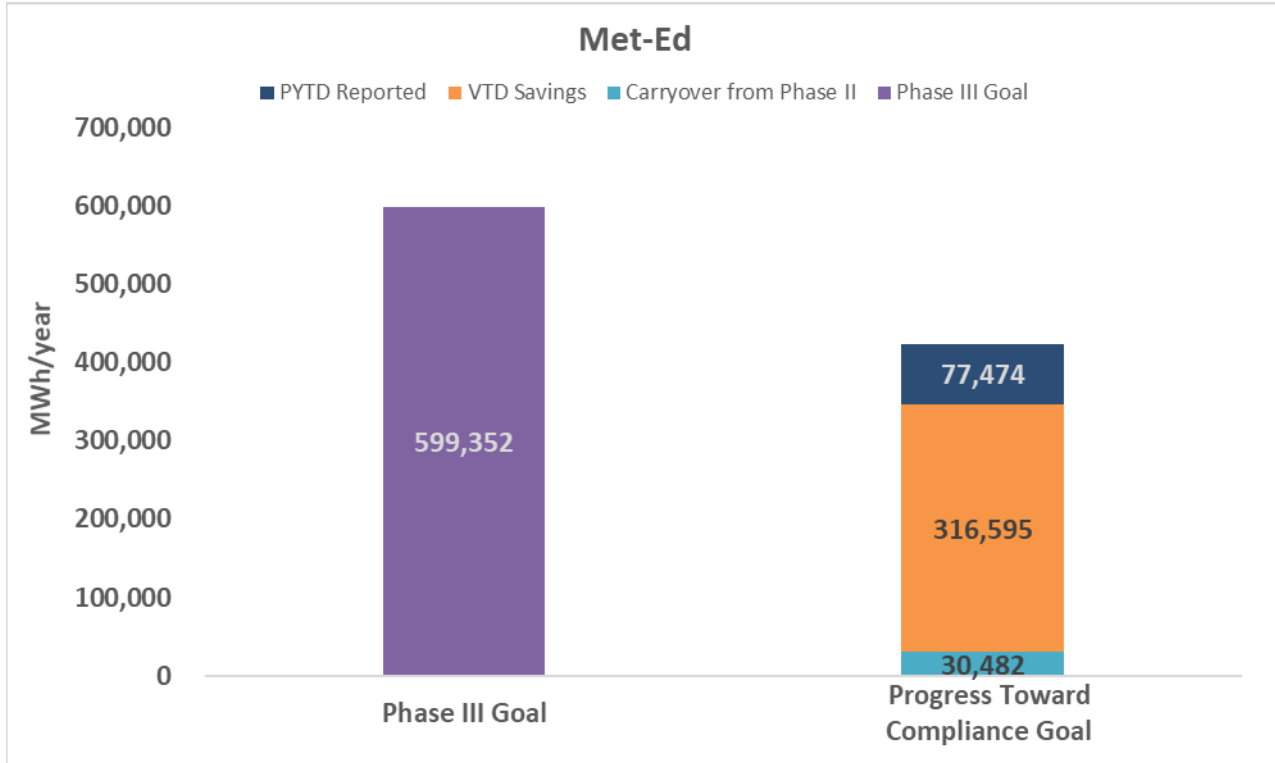


Figure 3B: EE&C Plan Performance toward Phase III Portfolio Compliance Target – Penelec

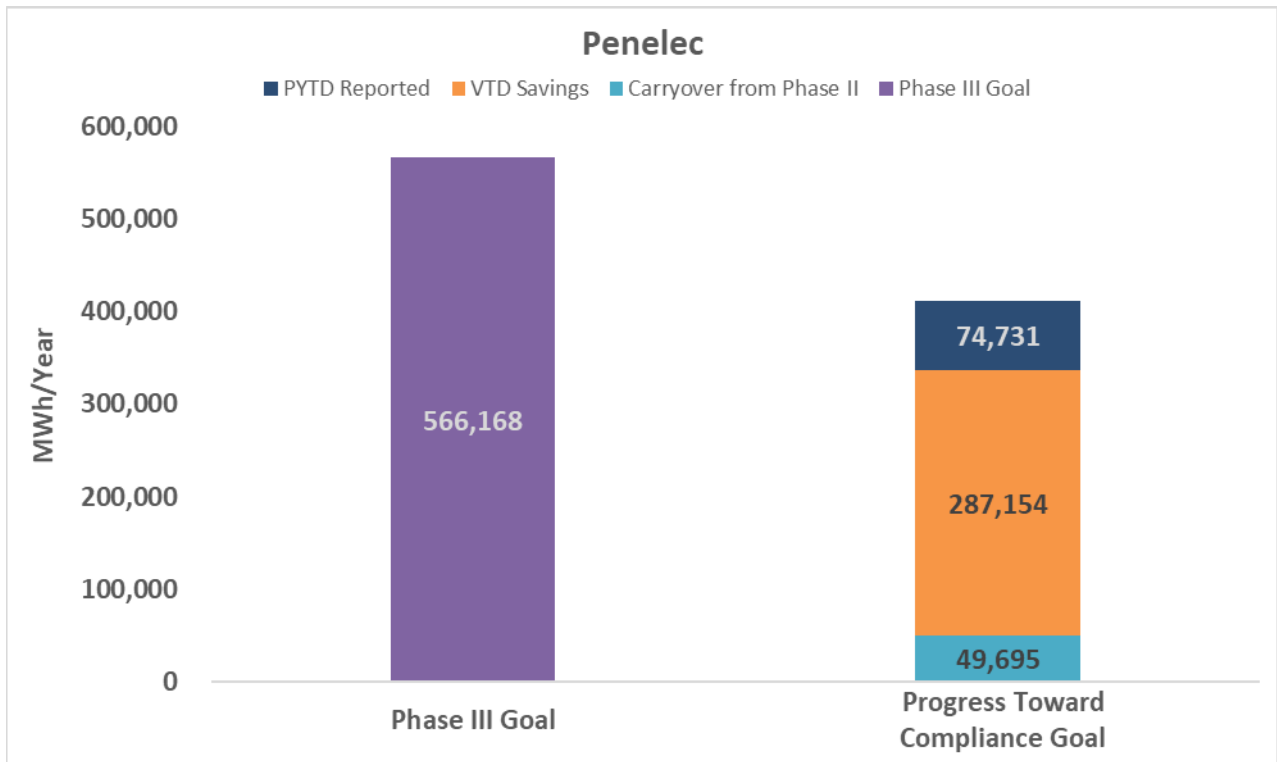


Figure 3C: EE&C Plan Performance toward Phase III Portfolio Compliance Target – Penn Power

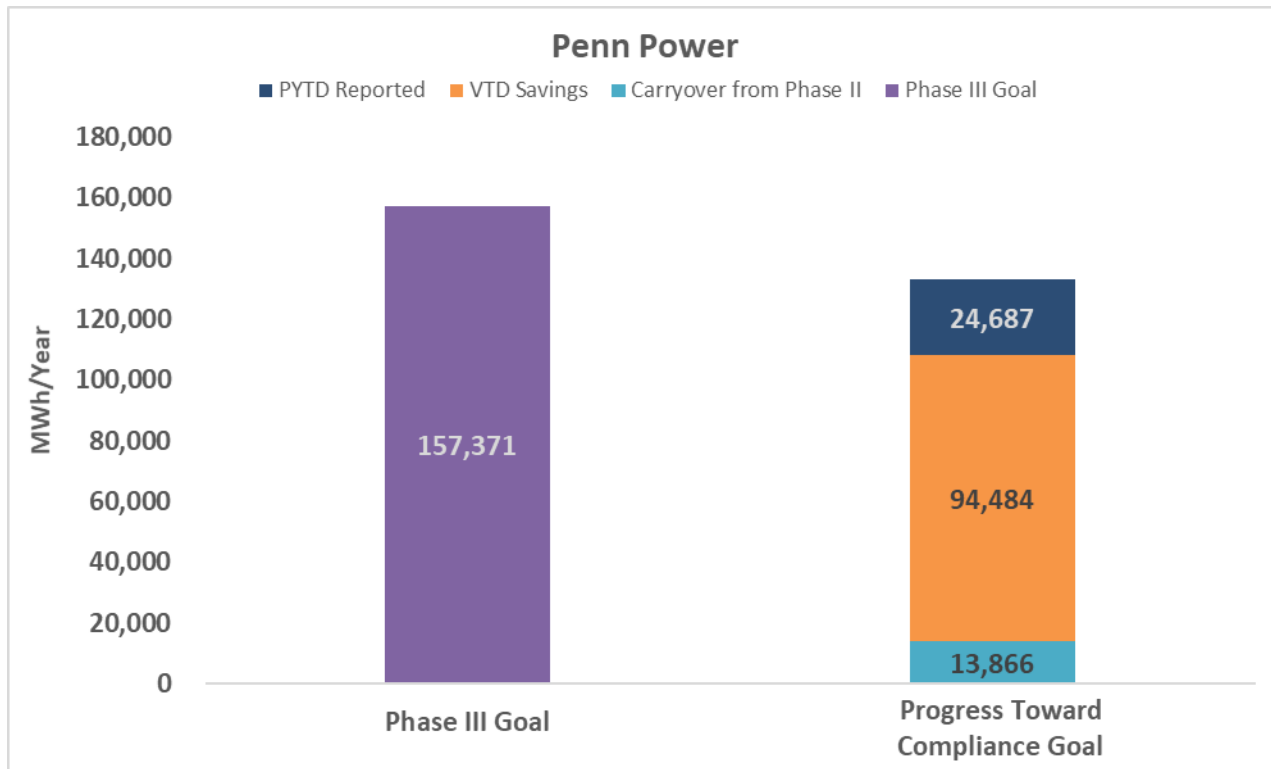
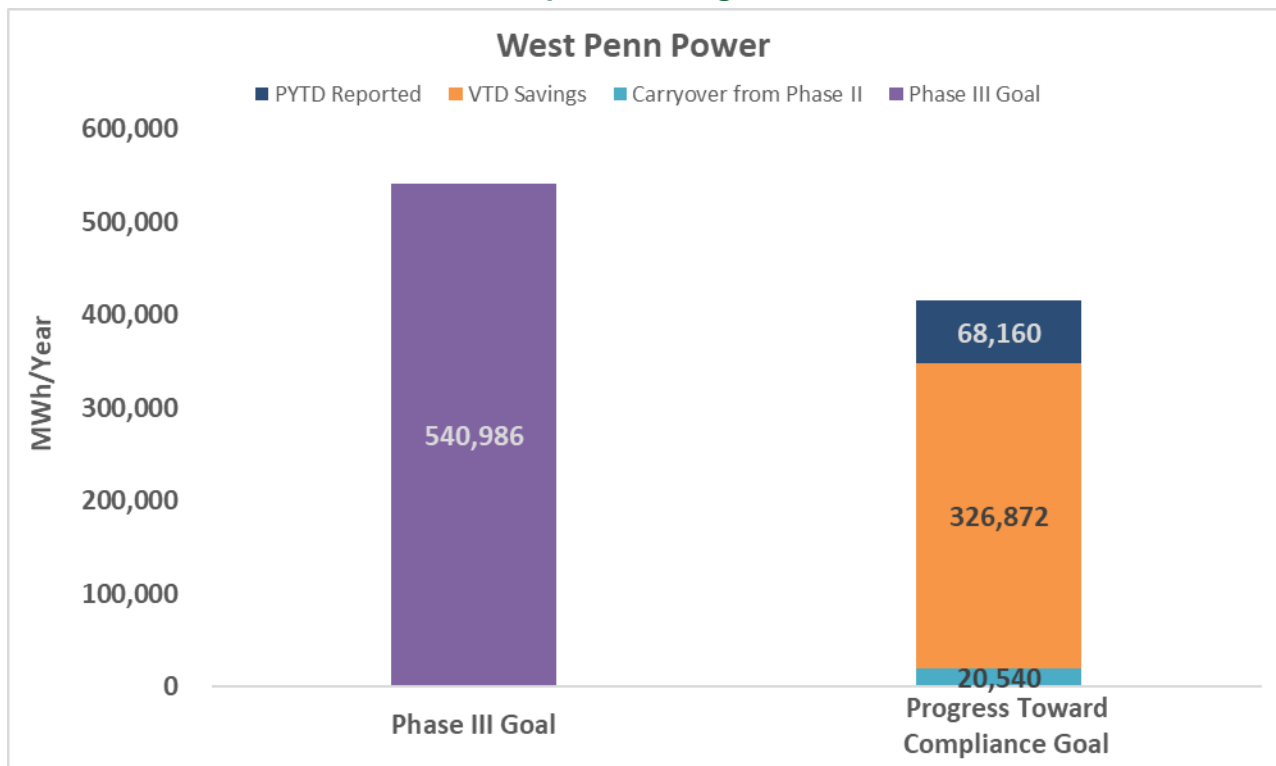


Figure 3D: EE&C Plan Performance toward Phase III Portfolio Compliance Target – West Penn Power



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 each FirstEnergy EDC is 8.79% for Met-Ed, 10.23% for Penelec, 10.64% for Penn Power and 8.79% for West Penn Power. Each FirstEnergy EDC offers a total of 158 EE&C measures to its residential and non-residential customer classes. There are 59 measures available to each of the FirstEnergy EDC low-income customer segments at no cost to the customer. This represents 37.34% of the total measures offered in the EE&C plan and exceeds the proportionate number of measures target for each of the EDCs.

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 the FirstEnergy EDCs is presented in **Table 2.5** and is based on verified gross savings. **Table 2-5** and **Figures 4A-4D: Plan Performance toward Phase III Low-Income Compliance Target** compare the PSA+CO performance to date for the low-income customer segments to the Phase III savings targets as well as the percent achievement of each EDC's Phase III low-income energy savings target based on the latest available information.

Table 2-5: Low-Income Program Energy Savings and Targets

| EDC | Low-Income Target (MWh/yr) | PSA + CO (MWh/yr) | % of Low-Income Savings Target Achieved |
|-----------------|----------------------------|-------------------|---|
| Met-Ed | 32,964 | 32,936 | 100% |
| Penelec | 31,139 | 37,376 | 120% |
| Penn Power | 8,655 | 10,316 | 119% |
| West Penn Power | 29,754 | 30,232 | 102% |

Figures 4A-4D: Plan Performance toward Phase III Low-Income Compliance Target

Figure 4A: EE&C Plan Performance toward Phase III Low-Income Compliance Target – Met-Ed

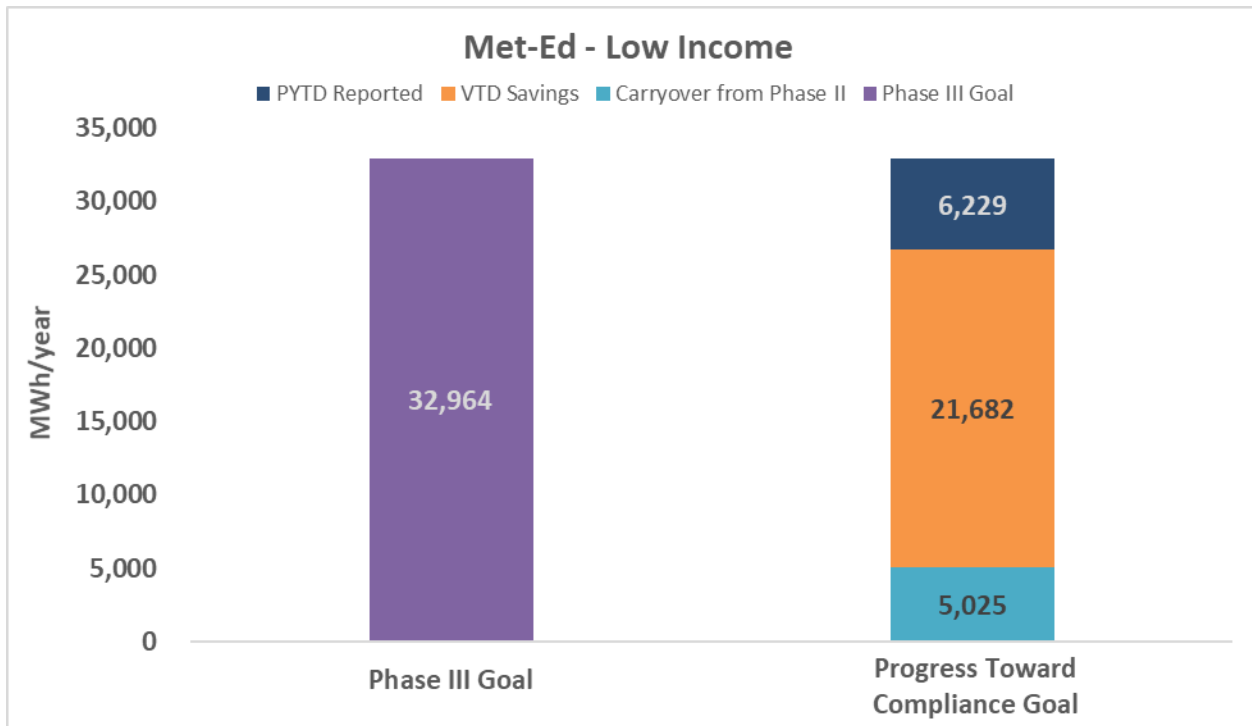


Figure 4B: EE&C Plan Performance toward Phase III Low-Income Compliance Target – Penelec

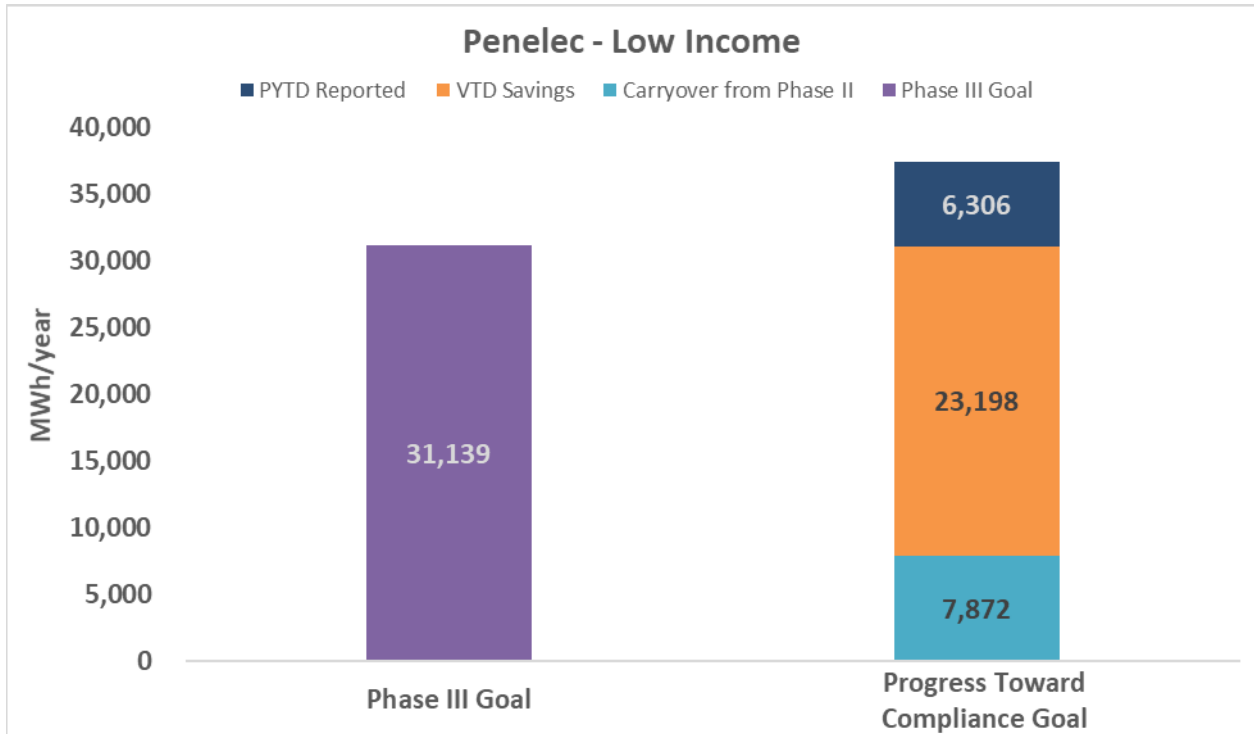


Figure 4C: EE&C Plan Performance toward Phase III Low-Income Compliance Target – Penn Power

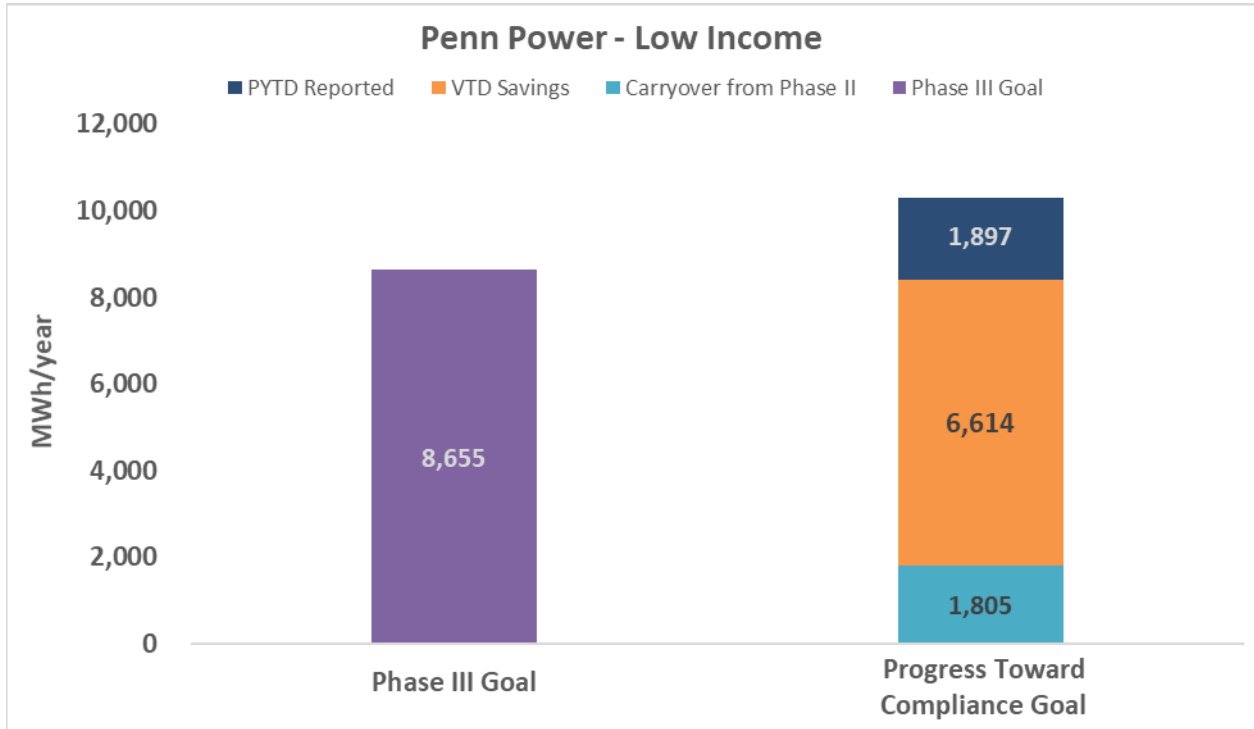
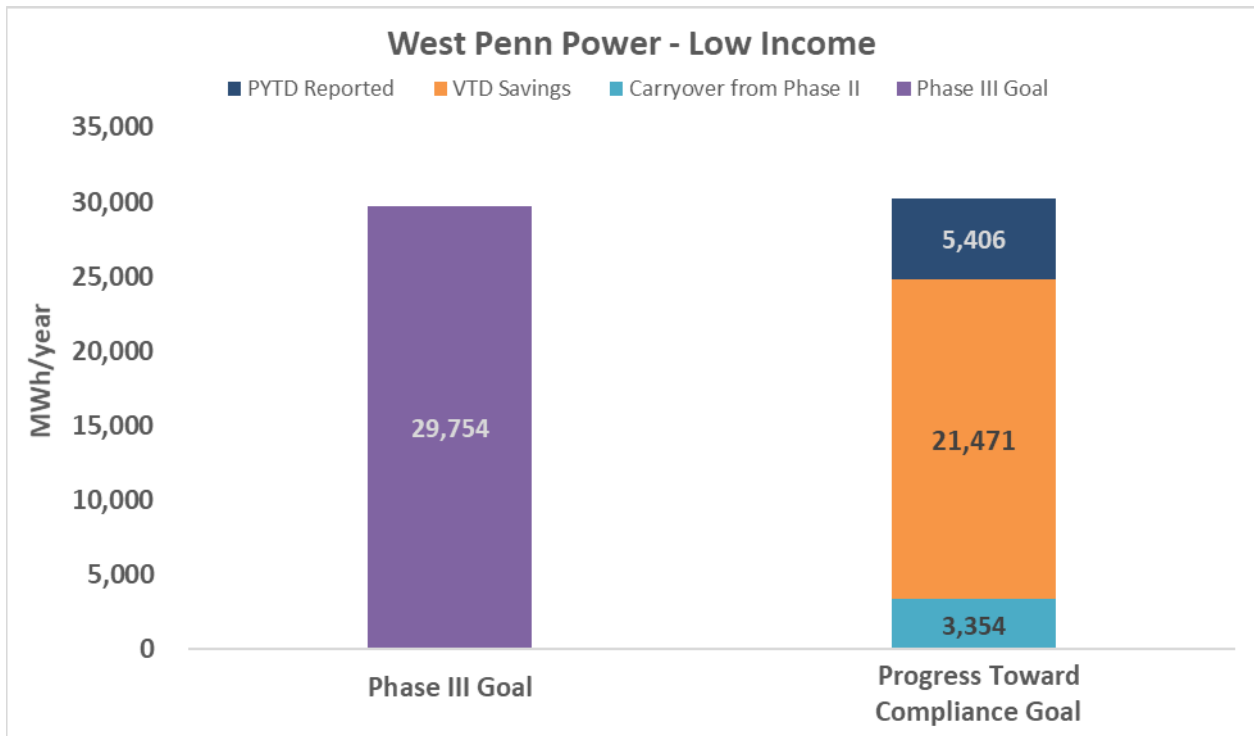


Figure 4D: EE&C Plan Performance toward Phase III Low-Income Compliance Target – West Penn Power



The Phase III Implementation Order established a government, non-profit, and institutional energy savings target of 3.5% of the portfolio savings goal. The GNI savings targets for the FirstEnergy EDCs is presented in **Table 2-6** and is based on verified gross savings.

Table 2-6: GNI Savings and Targets

| EDC | GNI Target (MWh/yr) | GNI Savings PSA + CO (MWh/yr) | % of GNI Savings Target Achieved |
|-----------------|---------------------|-------------------------------|----------------------------------|
| Met-Ed | 20,977 | 16,092 | 77% |
| Penelec | 19,816 | 20,799 | 105% |
| Penn Power | 5,508 | 14,261 | 259% |
| West Penn Power | 18,935 | 55,677 | 294% |

Figures 5A-5D: Plan Performance against Phase III GNI Compliance Target compare the PSA+CO performance to date for the GNI customer segment to the Phase III savings target, as well as the percent achievement of each EDC’s Phase III GNI energy savings target based on the latest available information.

Figures 5A-5D: Plan Performance against Phase III GNI Compliance Target

Figure 5A: EE&C Plan Performance against Phase III GNI Compliance Target – Met-Ed

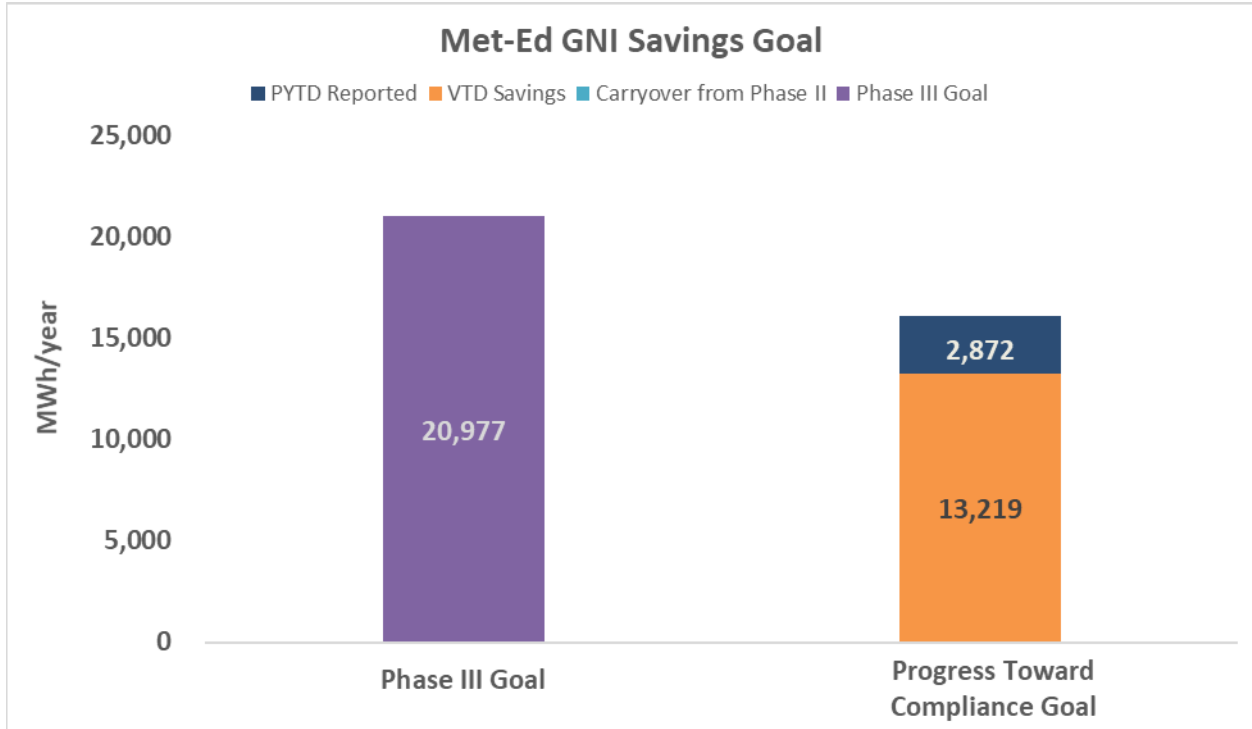


Figure 5B: EE&C Plan Performance against Phase III GNI Compliance Target – Penelec

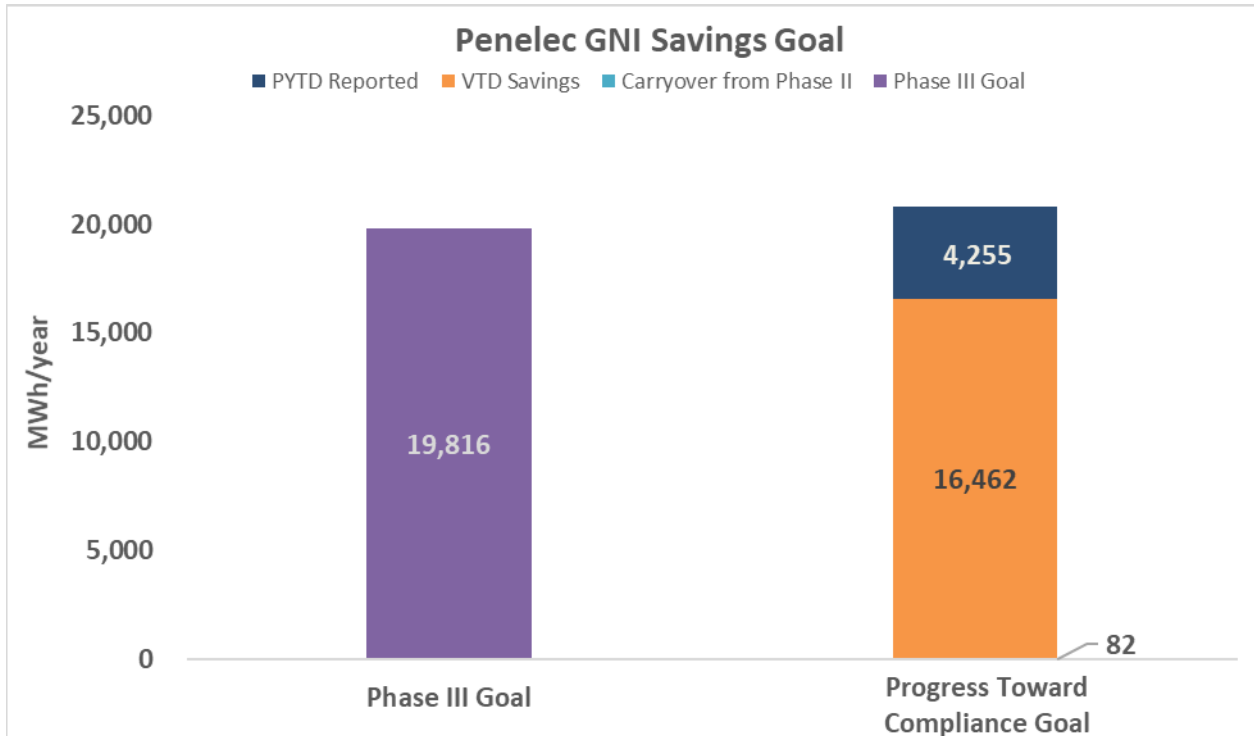


Figure 5C: EE&C Plan Performance against Phase III GNI Compliance Target – Penn Power

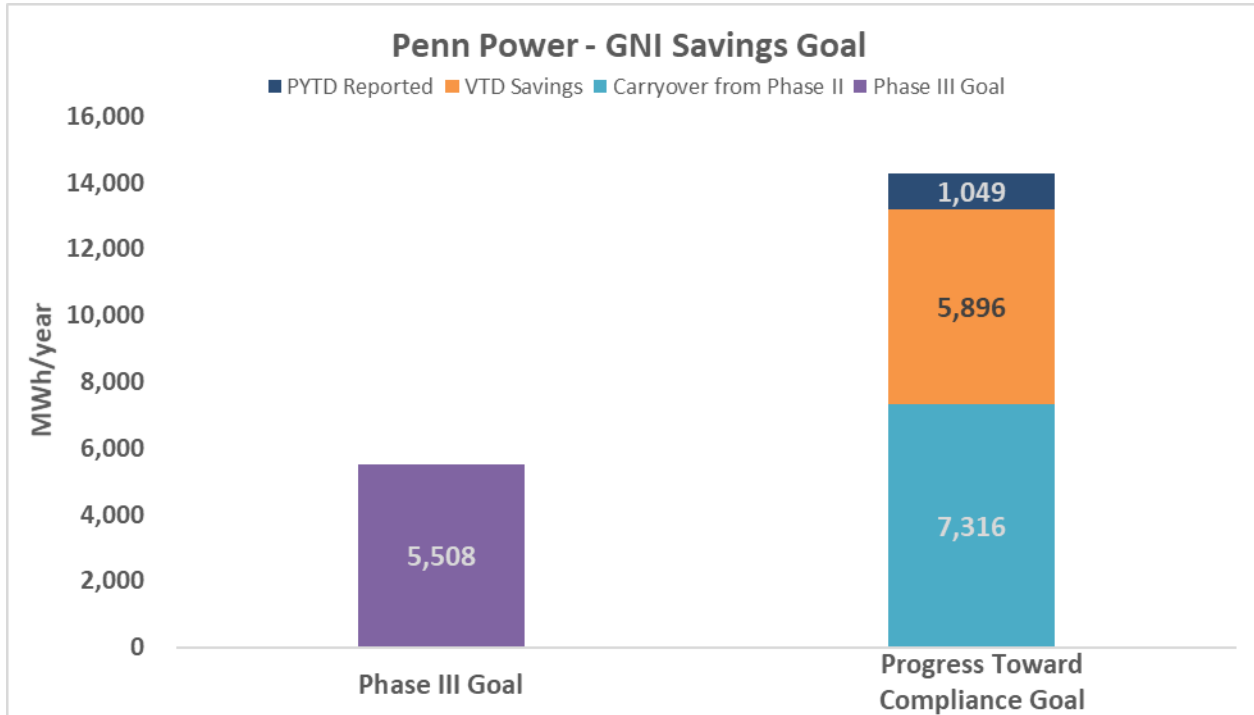
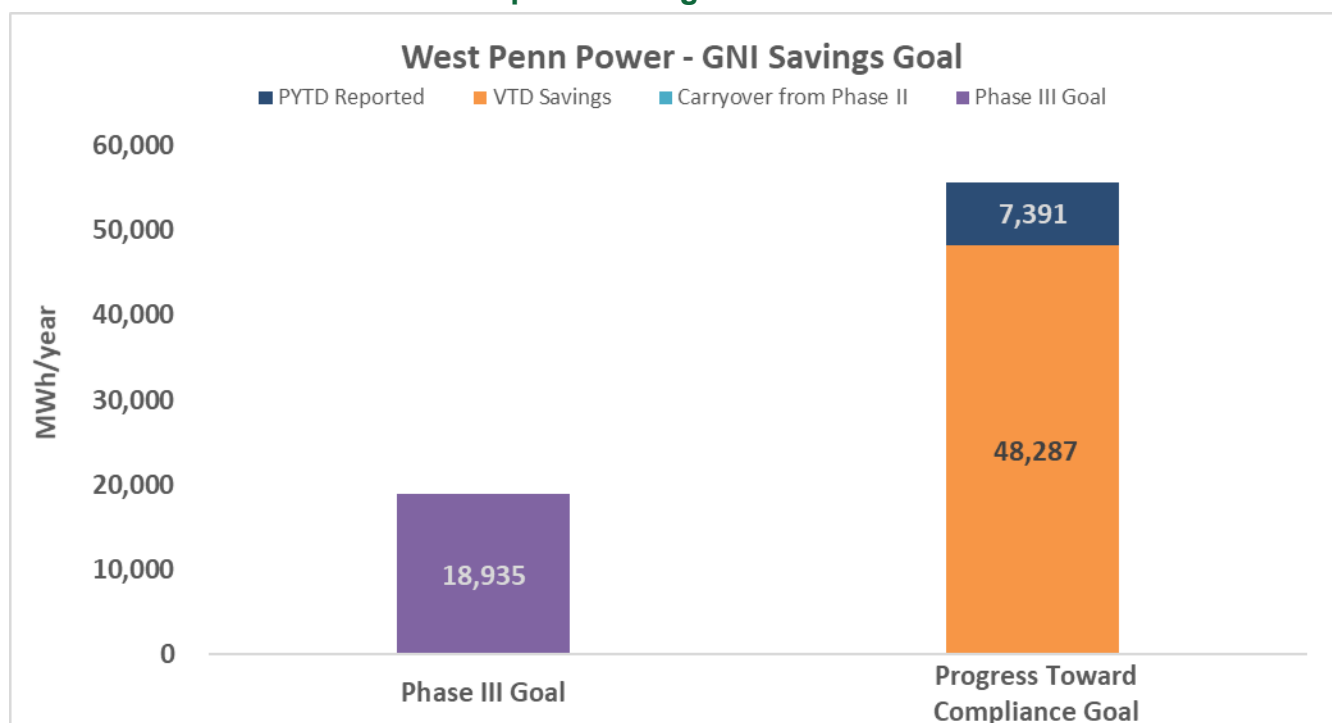


Figure 5D: EE&C Plan Performance against Phase III GNI Compliance Target – West Penn Power



2.3 PHASE III DEMAND RESPONSE ACHIEVEMENTS TO DATE

The Phase III demand response performance targets for the FirstEnergy EDCs are 49, 17 and 64 MW for Met-Ed, Penn Power, and West Penn Power, respectively. Penelec does not have a demand response target. Compliance with targets for demand response programs will be based on average performance across events for the entire phase, and targets were established at the system level, which means the load reductions measured at the customer meter must be escalated to reflect transmission and distribution losses.

Based on the magnitude of the DR goals, heavy reliance on a small number of large C&I customers' ability to curtail committed load on back to back events days, and events surrounding holidays, attainment of the DR goals remained challenging in PY10. Additionally, several large C&I customers were unwilling to curtail load for all six events during 2018. To alleviate some of the challenges during the summer of 2018, the EDCs expanded C&I DR customer enrollment across all EDCs. Additionally, ME and WP offered residential Behavior Demand Response (BDR) programs in ME and WP for PY10.

Act 129 DR events are triggered by PJM's day-ahead load forecast. When the day-ahead forecast is above 96% of the peak load forecast for the year, an Act 129 DR event is initiated for the following day. In PY10, six (6) Act 129 DR events were called. **Tables 2-7A-C** list the days that DR events were called along with the verified gross demand reductions achieved by each program. **Tables 2-7A-C** also list the average DR performance for PY10 and for Phase III to date.

The FirstEnergy EDCs' DR performance to date, with consideration of the measurement confidence intervals reflecting the uncertainty of average values³, is 14% above, 233% above, and 145% above the Phase III compliance reduction targets for Met-Ed, Penn Power and West Penn Power respectively. Without consideration of measurement confidence intervals around the average values, the EDC's average DR performance is 10% above, 171% above, and 116% above the Phase III compliance reduction target for Met-Ed, Penn Power and West Penn Power respectively.

Taking into consideration each EDCs' demand response achievements to date, the confidence interval of the performance calculations, each EDC demonstrated compliance with Act 129 DR targets, as shown in the following tables below.

Tables 2-7A-C: PY10 Demand PYVTD Performance by Event

**Table 2-7A: PY10 Demand Response PYVTD Performance by Event
Met-Ed**

| <i>Event Date</i> | <i>Start Hour*</i> | <i>End Hour*</i> | <i>C&I Demand Response - Small</i> | <i>C&I Demand Response - Large</i> | <i>Residential Energy Efficient Homes</i> | <i>Average Portfolio MW Impact</i> |
|--|--------------------|------------------|--|--|---|------------------------------------|
| Jul 2 | 15 | 18 | 6.0 +/- 0.8 | 51.9 +/- 4.4 | 6.3 +/- 1.1 | 64.3 +/- 4.7 |
| Jul 3 | 15 | 18 | 6.7 +/- 0.9 | 51.1 +/- 4.4 | 3.4 +/- 1.1 | 61.2 +/- 4.6 |
| Aug 6 | 15 | 18 | 6.3 +/- 0.8 | 39.2 +/- 3.8 | 4.4 +/- 1.1 | 49.9 +/- 4.1 |
| Aug 28 | 15 | 18 | 4.9 +/- 1.0 | 44.2 +/- 3.6 | 8.1 +/- 1.1 | 57.2 +/- 3.8 |
| Sep 4 | 15 | 18 | 3.8 +/- 0.7 | 35.1 +/- 3.5 | 7.8 +/- 1.1 | 46.7 +/- 3.8 |
| Sep 5 | 15 | 18 | 2.6 +/- 0.4 | 35.1 +/- 3.5 | 7.1 +/- 1.1 | 44.8 +/- 3.7 |
| PYVTD - Average PYX DR Event Performance | | | | | | 54 ± 2.2 |
| | | | | | | 51.8 - 56.2 |
| VTD - Average Phase III DR Event Performance | | | | | | 51.3 +/- 1.9 |
| | | | | | | 49.4 - 53.2 |

* Hours reflect "hour ending" convention (e.g., hour 14 is 1-2PM).

³ Measurement error includes adjustments for model correlations between the individual hours in each given event, as well as model correlations for subsequent events or events that are near enough in time to share candidate baseline days.

**Table 2-7B: PY10 Demand Response PYVTD Performance by Event
Penn Power**

| Event Date | Start Hour* | End Hour* | C&I Demand Response - Small | C&I Demand Response - Large | Residential Energy Efficient Homes | Average Portfolio MW Impact |
|---|--------------------|------------------|--|--|---|------------------------------------|
| Jul 2 | 15 | 18 | 0.0 +/- 0.0 | 50.7 +/- 20.6 | 2.6 +/- 0.4 | 53.3 +/- 20.6 |
| Jul 3 | 15 | 18 | 0.0 +/- 0.0 | 31.8 +/- 18.9 | 1.4 +/- 0.4 | 33.2 +/- 18.9 |
| Aug 6 | 15 | 18 | 0.0 +/- 0.0 | 54.9 +/- 22.5 | 1.9 +/- 0.4 | 56.8 +/- 22.5 |
| Aug 28 | 15 | 18 | 0.0 +/- 0.0 | 43.1 +/- 18.6 | 1.9 +/- 0.3 | 45.0 +/- 18.6 |
| Sep 4 | 15 | 18 | 0.0 +/- 0.0 | 56.9 +/- 22.4 | 2.7 +/- 0.4 | 59.6 +/- 22.4 |
| Sep 5 | 15 | 18 | 0.0 +/- 0.0 | 26.7 +/- 12.9 | 2.3 +/- 0.3 | 29.1 +/- 12.9 |
| PYVTD - Average PYX DR Event Performance | | | | | | 46.1 ± 10.5 |
| | | | | | | 35.6 - 56.7 |
| VTD - Average Phase III DR Event Performance | | | | | | 41.9 +/- 9.2 |
| | | | | | | 32.7 - 51.2 |

* Hours reflect "hour ending" convention (e.g., hour 14 is 1-2PM).

**Table 2-7C: PY10 Demand Response PYVTD Performance by Event
West Penn Power**

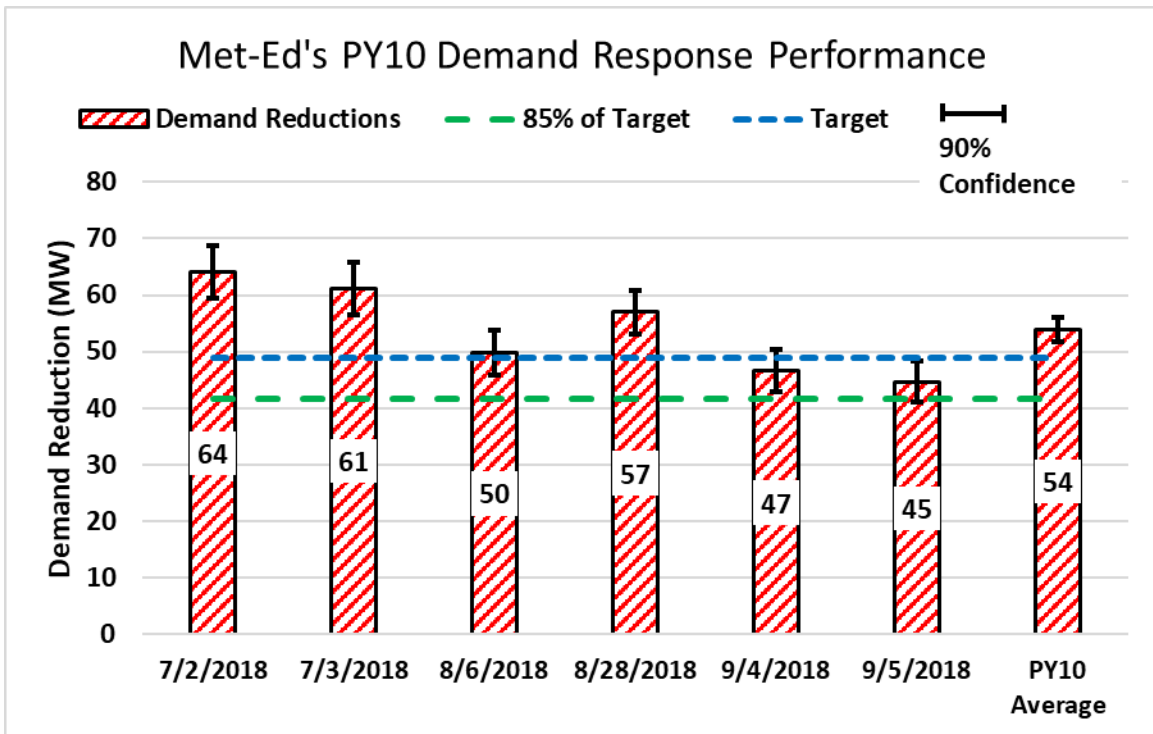
| Event Date | Start Hour* | End Hour* | C&I Demand Response - Small | C&I Demand Response - Large | Residential Energy Efficient Homes | Average Portfolio MW Impact |
|---|--------------------|------------------|--|--|---|------------------------------------|
| Jul 2 | 15 | 18 | 1.1 +/- 0.2 | 145.2 +/- 31.1 | 4.0 +/- 0.6 | 150.3 +/- 31.1 |
| Jul 3 | 15 | 18 | 1.1 +/- 0.2 | 132.5 +/- 31.0 | 2.2 +/- 0.6 | 135.7 +/- 31.0 |
| Aug 6 | 15 | 18 | 1.2 +/- 0.2 | 152.6 +/- 33.7 | 3.3 +/- 0.6 | 157.0 +/- 33.7 |
| Aug 28 | 15 | 18 | 1.2 +/- 0.2 | 127.0 +/- 34.5 | 2.8 +/- 0.5 | 131.0 +/- 34.5 |
| Sep 4 | 15 | 18 | 1.2 +/- 0.2 | 122.9 +/- 34.1 | 3.5 +/- 0.5 | 127.6 +/- 34.1 |
| Sep 5 | 15 | 18 | 1.1 +/- 0.2 | 125.6 +/- 34.4 | 2.6 +/- 0.5 | 129.3 +/- 34.4 |
| PYVTD - Average PYX DR Event Performance | | | | | | 138.5 ± 18.3 |
| | | | | | | 120.2 - 156.8 |
| VTD - Average Phase III DR Event Performance | | | | | | 119.6 +/- 15.8 |
| | | | | | | 103.9 - 135.4 |

* Hours reflect "hour ending" convention (e.g., hour 14 is 1-2PM)

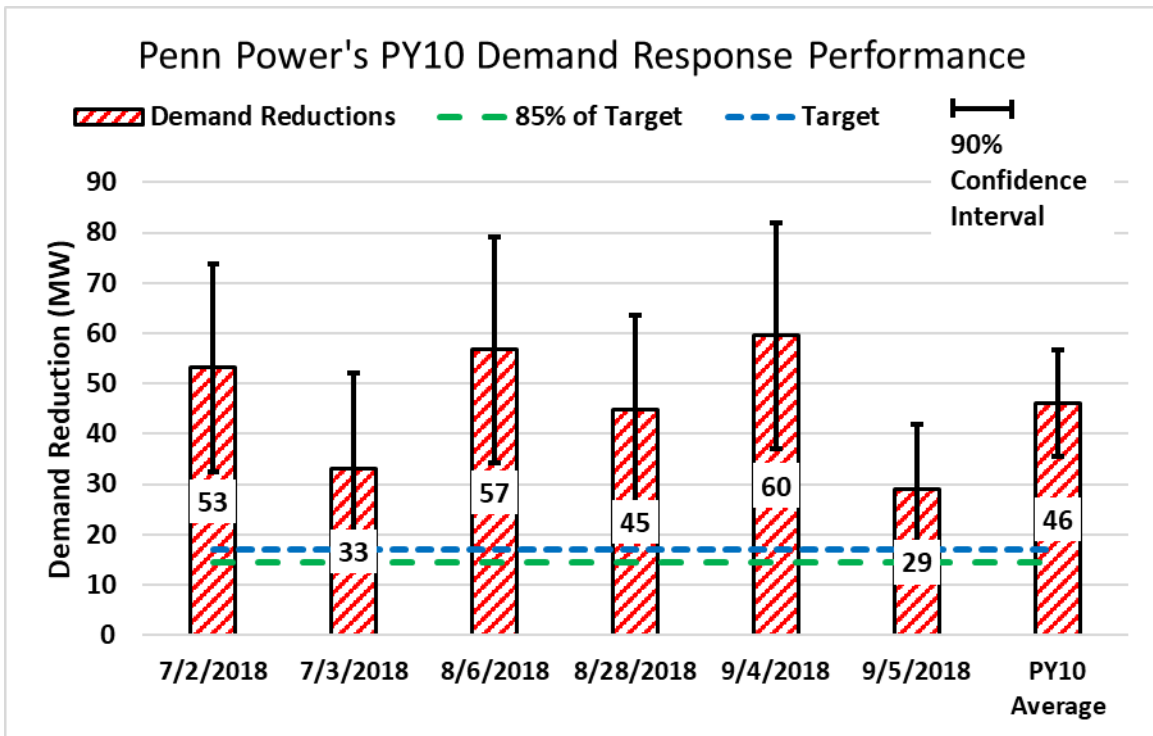
The Commission’s Phase III Implementation Order also established a requirement that EDCs achieve at least 85% of the Phase III compliance reduction target in each DR event. This translates to a 41.7, 14.5, and 54.4 MW minimum for each DR event for Met-Ed, Penn Power and West Penn Power respectively. **Figures 6 A-C** compare the performance of each of the DR events in PY10 to the event-specific minimum and average targets for Met-Ed, Penn Power and West Penn Power including presentation of error bands.

Figures 6A-6C: Event Performance Compared to 85% Per-Event Target

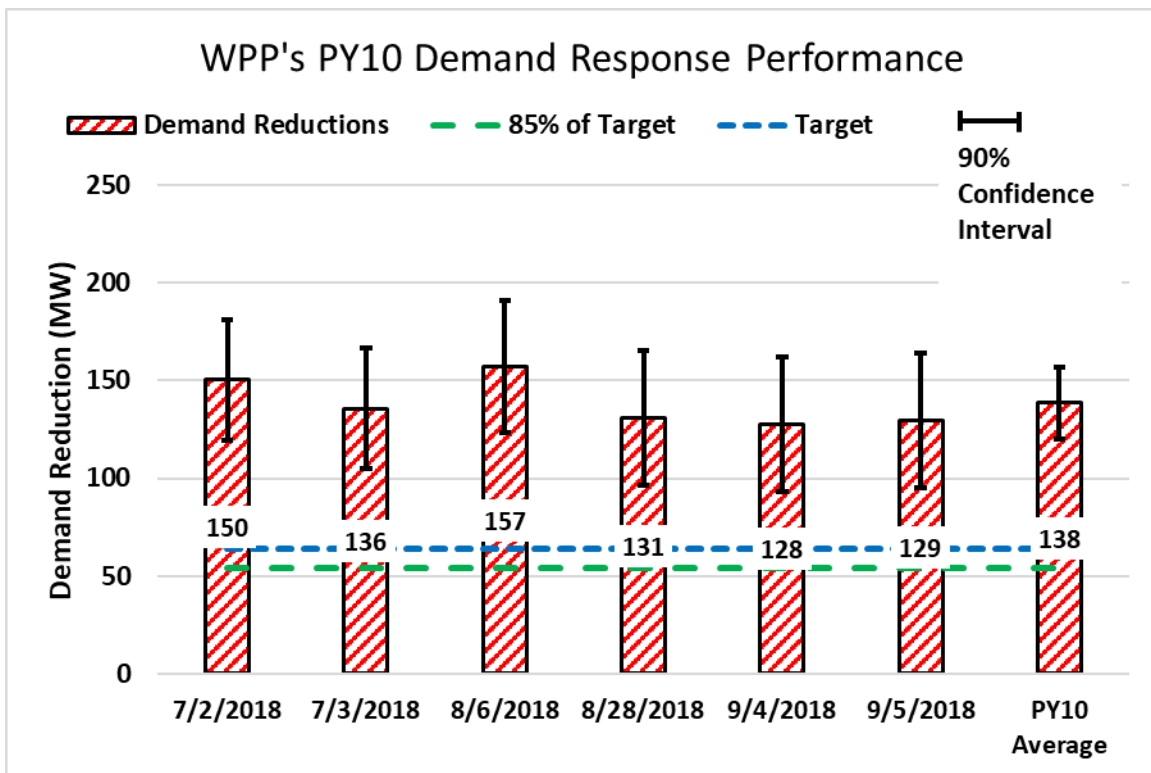
**Figure 6A: Event Performance Compared to 85% Per-Event Target
Met-Ed**



**Figure 6B: Event Performance Compared to 85% Per-Event Target
Penn Power**



**Figure 6C: Event Performance Compared to 85% Per-Event Target
West Penn Power**



2.4 PHASE III PERFORMANCE BY CUSTOMER SEGMENT

Table 2-8 below presents the participation, savings, and spending by customer sector for PY10. 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 GNI 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 GNI segments are presented individually after being removed from the parent sectors in **Table 2-8**.

Table 2-8: PY10 Summary Statistics by Customer Segment

| EDC | Parameter | Residential (Non-LI) | Residential LI | Small C&I (Non-GNI) | Large C&I (Non-GNI) | GNI |
|------------------------|------------------------------------|-------------------------|-------------------|------------------------|------------------------|----------|
| Met-Ed | # participants | 472,765 | 27,436 | 281 | 135 | 132 |
| | PYRTD MWh/yr | 44,042 | 6,229 | 8,650 | 15,681 | 2,872 |
| | PYRTD MW/yr (Energy Efficiency) | 8.4 | 1.0 | 1.2 | 2.0 | 0.3 |
| | PYVTD MW (Demand Response) | 6.2 | 0 | 3.7 | 39.4 | 4.8 |
| | Incentives (\$1000) | \$3,409.54 | \$47.95 | \$524.51 | \$685.13 | \$142.98 |
| Penelec | # participants | 340,378 | 28,876 | 313 | 65 | 175 |
| | PYRTD MWh/yr | 41,221 | 6,306 | 10,914 | 12,035 | 4,255 |
| | PYRTD MW/yr (Energy Efficiency) | 6.2 | 0.8 | 1.7 | 1.5 | 0.5 |
| | PYVTD MW (Demand Response) | 0 | 0 | 0 | 0 | 0 |
| | Incentives (\$1000) | \$3,370.88 | \$58.46 | \$627.38 | \$589.74 | \$208.79 |
| Penn Power | # participants | 117,439 | 6,380 | 128 | 22 | 21 |
| | PYRTD MWh/yr | 12,953 | 1,897 | 5,501 | 3,286 | 1,049 |
| | PYRTD MW/yr (Energy Efficiency) | 2.2 | 0.3 | 0.9 | 0.4 | 0.1 |
| | PYVTD MW (Demand Response) | 2.1 | 0 | 0.0 | 43.9 | 0.1 |
| | Incentives (\$1000) | \$1,060.66 | \$21.76 | \$308.51 | \$140.08 | \$52.50 |
| West Penn Power | # participants | 360,441 | 28,127 | 284 | 85 | 219 |
| | PYRTD MWh/yr | 35,299 | 5,406 | 11,437 | 8,628 | 7,391 |
| | PYRTD MW/yr (Energy Efficiency) | 8.0 | 0.9 | 1.7 | 0.9 | 0.8 |
| | PYVTD MW (Demand Response) | 3.1 | 0 | 1.2 | 134.3 | 0 |
| | Incentives (\$1000) | \$1,972.93 | \$45.75 | \$664.90 | \$399.94 | \$374.55 |

Table 2-9 summarizes plan performance by sector since the beginning of Phase III.

Table 2-9: Phase III Summary Statistics by Customer Segment

| EDC | Parameter | Residential (Non-LI) | Residential LI | Small C&I (Non-GNI) | Large C&I (Non-GNI) | GNI |
|--------------------|-----------------------------------|-------------------------|-------------------|------------------------|------------------------|------------|
| Met-Ed | # participants | 1,249,157 | 52,764 | 48,911 | 407 | 4,509 |
| | PSA MWh/yr | 220,109 | 27,752 | 62,162 | 67,955 | 16,092 |
| | PSA MW (Energy Efficiency) | 29.9 | 3.5 | 9.8 | 9.2 | 2.3 |
| | Phase III MW (Demand Response) | 4.1 | 0.0 | 3.1 | 39.3 | 4.8 |
| | Incentives (\$1000) | \$13,062.80 | \$239.63 | \$2,514.09 | \$3,369.43 | \$677.45 |
| Penelec | # participants | 1,116,089 | 63,719 | 51,485 | 272 | 5,283 |
| | PSA MWh/yr | 198,771 | 29,227 | 53,179 | 59,990 | 20,717 |
| | PSA MW (Energy Efficiency) | 23.5 | 3.3 | 8.9 | 7.8 | 2.7 |
| | Phase III MW (Demand Response) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | Incentives (\$1000) | \$12,010.57 | \$223.82 | \$2,882.69 | \$3,274.18 | \$932.62 |
| Penn Power | # participants | 283,702 | 15,613 | 12,363 | 87 | 1,398 |
| | PSA MWh/yr | 60,391 | 8,456 | 26,280 | 17,099 | 6,945 |
| | PSA MW (Energy Efficiency) | 8.5 | 1.0 | 4.2 | 2.0 | 0.7 |
| | Phase III MW (Demand Response) | 2.1 | 0.0 | 0.0 | 39.6 | 0.1 |
| | Incentives (\$1000) | \$3,969.95 | \$95.23 | \$1,344.85 | \$1,052.31 | \$338.78 |
| West Penn Power | # participants | 1,134,516 | 52,239 | 48,331 | 249 | 5,011 |
| | PSA MWh/yr | 212,523 | 26,347 | 60,774 | 39,711 | 55,677 |
| | PSA MW (Energy Efficiency) | 30.8 | 3.3 | 9.0 | 4.8 | 4.6 |
| | Phase III MW (Demand Response) | 2.0 | 0.0 | 1.7 | 115.9 | 0.0 |
| | Incentives (\$1000) | \$11,232.02 | \$204.88 | \$2,790.95 | \$2,591.92 | \$2,143.47 |

Section 3 Updates and Findings

3.1 IMPLEMENTATION UPDATES AND FINDINGS

Implementation updates and findings through Q2 of PY10 are as follows:

- **Appliance Turn-In:** This program has been marketed through a variety of avenues including bill inserts, e-mail, direct mail campaigns, newspaper ads, internet searches, and radio ads. Most customers that schedule a recycling appointment with ARCA cite hearing about the program through bill inserts. Honeywell also cross-promotes this program while educating retailers about the Appliance Rebates program.
- **Energy Efficient Products Program:** This program continues to be marketed through a variety of avenues including in-store displays, outreach events, radio ads, digital ads, bill inserts, and e-mail and direct mail campaigns. The CSP for this program is Honeywell. Below are each of the subprogram updates for this program:
 - **Appliances & Electronics:** This subprogram is performing well and is expected to remain under budget and continue to accumulate savings across all four PA EDCs.
 - **Lighting:** This subprogram is performing well and is expected to remain under budget and continue to accumulate savings across all four PA EDCs.
 - **HVAC:** This subprogram is performing well and is expected to remain under budget and continue to accumulate savings across all four PA EDCs.
- **Energy Efficient Homes Program:**
 - **Behavioral:** Customers enrolled in the program received 2-print reports from Oracle during the first half of PY10. The HVAC Program was highlighted in the March 2018 reports to customers. Customers with e-mail addresses receive monthly energy reports with energy consumption patterns and tips on how to save energy.
 - **Energy Audits:** This subprogram implemented by GoodCents is performing well. Through multiple marketing efforts such as bill inserts and Facebook ads, it is expected to remain under budget and continue to accumulate savings across all four PA EDCs.
 - **New Homes:** The New Homes subprogram continued with the vendor, Performance Systems Development (PSD), across all four PA EDCs. The program is currently performing above targets and we expect to continue this trend through PY10.
 - **School Kits:** This subprogram implemented by AM Conservation is performing well and is expected to remain under budget and continue to accumulate savings across all four PA EDCs.

- **Energy Efficiency Kits:** The Kits subprogram implemented by Power Direct has been marketed through outbound phone calls, e-mails, bill inserts, and direct mail pieces during the first half of PY10.
- **The Online Audit:** The Companies launched new Online Audit tool with Oracle in April 2018. The software tool, referred to the Home Energy Analyzer, is available on the Companies' website. Customers enter information about their home into the Analyzer and customers receive tips on how to save energy. Some of the tip's direct customers to other Energy Efficiency programs. There is also a graph that displays where most of the energy use in the home occurs. Upon completion of an online audit, a kit is sent to a customer to help assist customers in saving energy in the home. There is also educational material in the kit – such as 100 Ways to Save Electricity and a brochure with other energy efficiency programs.
- **Low Income Energy Efficiency Program:**
 - **Appliance Rebate:** This subprogram is performing well and is expected to remain under budget and continue to accumulate savings across all four PA EDCs. The CSP for this subprogram is Honeywell.
 - **New Homes:** Subprogram for this semi-annual period performed well with the CSP Performance Systems Development and is on track to meet the target in all four PA EDCs.
 - **School Kits:** The CSP AM Conservation is performing well and is expected to remain under budget and continue to accumulate savings across all four PA EDCs.
 - **Appliance Turn-in subprogram:** Customers identified as low-income receive an enhanced incentive when recycling a refrigerator, freezer, room air conditioner, or dehumidifier. The low-income portion of this program is marketed primarily through e-mails and direct mail. Customers are asked questions at enrollment to identify additional low-income customers. The CSP for this program is ARCA.
 - **Behavioral subprogram:** Oracle has continued to implement the LI Behavioral subprogram. Customers identified as low-income receive Home Energy Reports with low or no cost tips to educate customers on how to use less energy.
 - **Energy Efficiency Kits:** Customers identified as low-income will receive an enhanced kit through the Low-Income Energy Efficiency Kits subprogram. The kit also contains educational material on ways to save electricity, other energy efficiency programs available through the Companies, and information about the WARM program. The CSP for this program is Power Direct.
 - **Weatherization and Residential and SCI Multifamily:** Subprograms continued to perform well and are on track to meet the target in all four PA EDCs. A new measure, Smart Thermostats, was added to the WARM Plus Program, Residential and SCI Multifamily Programs for installation by contractors. Also,

FirstEnergy staff met with UGI and PPL in July to discuss coordination efforts for low-income customers and potential joint contractor training in 2019.

- **C/I Efficient Solutions for Business – Small:** The CSP Sodexo continues to promote and market the program through multiple channels – outreach to program allies, participation in trade shows, hosting customer outreach events and use of social media platforms – e.g., Facebook and Google. During this reporting period – Sodexo utilized Facebook Ads, Google AdWords, Google Display Ads and Google Landing Pages to reach a wider audience and promote the outreach events. Sodexo also completely redesigned the program website to give it a new look and feel and improve the overall navigation across the website. Working with FirstEnergy’s External Affairs team, Sodexo leveraged the relationship with Chamber of Commerce by promoting outreach events through the community bulletin board. During this Reporting Period, Sodexo participated in two (2) trade shows and hosted six (6) workshops which were mainly targeted at C&I customers. To support the CSP’s outreach team, the Companies leverage their internal resources – Customer Support Staff and Area Managers – to promote its Act129 portfolio to their assigned accounts. Sodexo also made presentation at events that were sponsored and hosted by other entities, e.g., West Penn Power Sustainable Energy Fund, PA DEP and the Pennsylvania Society of Professional Engineers. These events help the Company reach a wider audience and increase program participation.
- **C/I Efficient Solutions for Business – Large:** The CSP Sodexo continues to promote and market the program through multiple channels – outreach to program allies, participation in trade shows, hosting customer outreach events and use of social media platforms – e.g., Facebook and Google. During this reporting period – Sodexo utilized Facebook Ads, Google AdWords, Google Display Ads and Google Landing Pages to reach a wider audience and promote the outreach events. Sodexo also completely redesigned the program website to give it a new look and feel and improve the overall navigation across the website. Working with FirstEnergy’s External Affairs team, Sodexo leveraged the relationship with Chamber of Commerce by sending e-Blasts to their members and promoting outreach events through the community bulletin board. During this Reporting Period, Sodexo participated in two (2) trade shows and hosted six (6) workshops which were mainly targeted at C&I customers. To support the CSP’s outreach team, the Companies leverage their internal resources – Customer Support Staff and Area Managers – to promote its Act129 portfolio to their assigned accounts. Sodexo also made presentation at events that were sponsored and hosted by other entities, e.g., West Penn Power Sustainable Energy Fund, PA DEP and the Pennsylvania Society of Professional Engineers. These events help the Company reach a wider audience and increase program participation.
- **Government & Institutional Tariff Program:** Sodexo continues with its marketing and outreach efforts working closely with government and institutional customers. During

this Reporting Period, Sodexo utilized social media platforms – e.g., Facebook and Google – to broaden the outreach of the Companies programs. Sodexo presented at outreach events – sponsored by County Commissioners and a State Senator – where municipal customers were the main invited audience. Sodexo also hosted six (6) outreach events that were targeted at C&I customers; municipal government were a part of the invited audience at these events. The CSP’s outreach team continues to expand the universe of program allies that specialize in working with customers in this market segment. To support the CSP’s outreach team, the Companies leverage Area Managers to target their assigned municipal accounts.

- **Demand Response Residential, Small, and Large:** C&I DR contracts for ME, PP and WPP were executed with two Conservation Service Providers and received Commission approval in late December 2016. Program implementation meetings began in late October 2016 with the C&I DR Conservation Service Providers. Residential Behavior DR contracts were executed with Oracle in May 2017 for Penn Power and May 2018 for Met-Ed and West Penn Power for administration of the Residential Demand Response Program. Approximately 200,000 residential customers received postcards in May educating them about conserving energy during peak days. The C&I DR Programs and Residential Behavioral Programs were both implemented starting in June of 2017.

3.2 EVALUATION UPDATES AND FINDINGS

Evaluation updates and findings through Q2 of PY10 are as follows:

- **Portfolio level:** ADM has reviewed the Companies' Tracking and Reporting (T&R) database and has collaborated with the T&R vendor, AEG, to update values for an automated QA/QC process.
- **Appliance Turn-In Program:** Participant surveys for PY10 are conducted on an ongoing basis.
- **Energy Efficient Products Program:** ADM has requested invoices and applications to support our desk review process in PY10. ADM has also reviewed a proposed tracking system update with the program ICSP, Honeywell.
- **Energy Efficient Homes Program:** ADM has started a tracking system review for the program and has made data requests for supporting materials for the direct install program component and the kits program component. ADM has performed several on-site visits for the New Homes program, with more field work expected in Q1 of 2019.
- **Low-Income Energy Efficiency Program:** ADM has launched participant surveys for the Low-Income Appliance Turn-In program. ADM has also started to review data from on-site inspections for the direct install program component.
- **C&I Energy Solutions for Business – Small, C&I Energy Solutions for Business – Large, and Governmental & Institutional Tariff programs:** ADM has started evaluation work on several large lighting and custom projects in our “certainty” evaluation strata. The first formal sample was pulled in October 2018.
- **C&I Demand Response Programs:** ADM has completed initial evaluation of the C&I Demand Response Programs, with results reported herein.
- **Residential Behavior Demand Response:** ADM has concluded our initial evaluation of the Behavioral Demand Response program component for PY10, with results reported herein.

Section 4 Summary of Participation by Program

Participation is defined differently for certain programs 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 the bullets below, and **Table 4-1** provides the current participation totals for PY10 and Phase III.

- **Appliance Turn-In Program:** the count of customer recycling pick-up incidents. If a homeowner recycles multiple appliances at one pick-up event, it is recorded as a single participant.

- **Energy Efficient Homes Program**
 - **School kits:** the number of energy savings kits delivered to students' homes.
 - **Energy Efficiency Kits:** the number of energy savings kits delivered to customer homes.
 - **Energy Audits:** the count of customers who have had an energy audit with direct install measures installed.
 - **Behavioral:** the number of customers currently receiving energy usage reports. P3TD participation numbers reflect the total number of customers that participated in the program since the beginning of Phase III.
 - **Behavioral Demand Response:** the number of individual accounts in Oracle's treatment group. P3TD participation numbers reflect the total number of customers that participated in the program since the beginning of Phase III.
 - **New Homes:** the count of new energy efficient homes being built with EnergyStar standards or higher efficiency level than the current building code.

- **Energy Efficient Products Program**
 - **Appliances and Electronics:** the count of appliances sold.
 - **Lighting:** the number of packages that are sold
 - **HVAC:** the number of HVAC units or programmable thermostats that are purchased and installed. If a customer purchases and installs both units at the same time they are counted as one participant.

- **Low Income Energy Efficiency Program**
 - **Energy Efficiency Kits:** the number of energy savings kits delivered to customer's homes.
 - **Weatherization:** the count of applications including weatherization measures.
 - **Multifamily/LILU:** the number of energy savings kits delivered to multifamily units.
 - **Behavioral:** the number of customers currently receiving energy usage reports. P3TD participation numbers reflect the total number of customers that participated in the program since the beginning of Phase III.

- **New Homes:** the count of new energy efficient homes being built with EnergyStar standards or higher efficiency level than the current building code.
- **Appliances and Electronics:** the count of appliances sold.
- **Appliance Turn In:** the count of customer recycling pick-up incidents. If a homeowner recycles multiple appliances at one pick-up event, it is recorded as a single participant.
- **School Kits:** the number of energy savings kits delivered to students' homes.

- **C&I Energy Solutions for Business Program – Small:** The count of completed project applications.

- **C&I Energy Solutions for Business Program –Large:** The count of completed project applications.

- **C&I Demand Response Program – Small:** The number of participants who participated in one or more demand response events.

- **C&I Demand Response Program – Large:** The number of participants who participated in one or more demand response events.

- **Government & Institutional Tariff Program:** The count of completed project applications.

Table 4-1: EE&C Plan Participation by Program⁴

| Utility | Program | PYTD Participation | P3TD Participation |
|-----------------|---|--------------------|--------------------|
| Met-Ed | Appliance Turn-in | 2,948 | 11,709 |
| | Energy Efficient Homes | 279,903 | 431,186 |
| | Energy Efficient Products | 189,914 | 858,253 |
| | Low Income Energy Efficiency | 27,436 | 52,764 |
| | C&I Energy Solutions for Business - Small | 281 | 1,053 |
| | C&I Demand Response - Small | 57 | 94 |
| | C&I Energy Solutions for Business - Large | 105 | 428 |
| | C&I Demand Response - Large | 76 | 143 |
| | Governmental & Institutional Tariff | 29 | 118 |
| | Portfolio Total | 500,749 | 1,355,748 |
| Penelec | Appliance Turn-in | 2,630 | 10,268 |
| | Energy Efficient Homes | 166,191 | 308,852 |
| | Energy Efficient Products | 171,557 | 851,281 |
| | Low Income Energy Efficiency | 28,876 | 63,719 |
| | C&I Energy Solutions for Business - Small | 384 | 1,733 |
| | C&I Demand Response - Small | 0 | 0 |
| | C&I Energy Solutions for Business - Large | 87 | 373 |
| | C&I Demand Response - Large | 0 | 0 |
| | Governmental & Institutional Tariff | 82 | 622 |
| | Portfolio Total | 369,807 | 1,236,848 |
| Penn Power | Appliance Turn-in | 950 | 3,645 |
| | Energy Efficient Homes | 57,572 | 65,982 |
| | Energy Efficient Products | 58,917 | 226,809 |
| | Low Income Energy Efficiency | 6,380 | 15,613 |
| | C&I Energy Solutions for Business - Small | 143 | 743 |
| | C&I Demand Response - Small | 0 | 3 |
| | C&I Energy Solutions for Business - Large | 19 | 86 |
| | C&I Demand Response - Large | 9 | 15 |
| | Governmental & Institutional Tariff | 0 | 267 |
| | Portfolio Total | 123,990 | 313,163 |
| West Penn Power | Appliance Turn-in | 3,201 | 13,361 |
| | Energy Efficient Homes | 195,906 | 328,975 |
| | Energy Efficient Products | 161,334 | 843,133 |
| | Low Income Energy Efficiency | 28,127 | 52,239 |
| | C&I Energy Solutions for Business - Small | 338 | 1,633 |
| | C&I Demand Response - Small | 14 | 33 |
| | C&I Energy Solutions for Business - Large | 78 | 272 |
| | C&I Demand Response - Large | 35 | 47 |
| | Governmental & Institutional Tariff | 123 | 653 |
| | Portfolio Total | 389,156 | 1,240,346 |

⁴ Results for the Small & Large Energy Solutions for Business programs include GNI customers who participated in these programs.

Section 5 Summary of Energy Impacts by Program

A summary of energy impacts by program through the current Reporting Period is presented in Table 5-1⁵.

Table 5-1: Energy Savings by Program (MWh/Year)

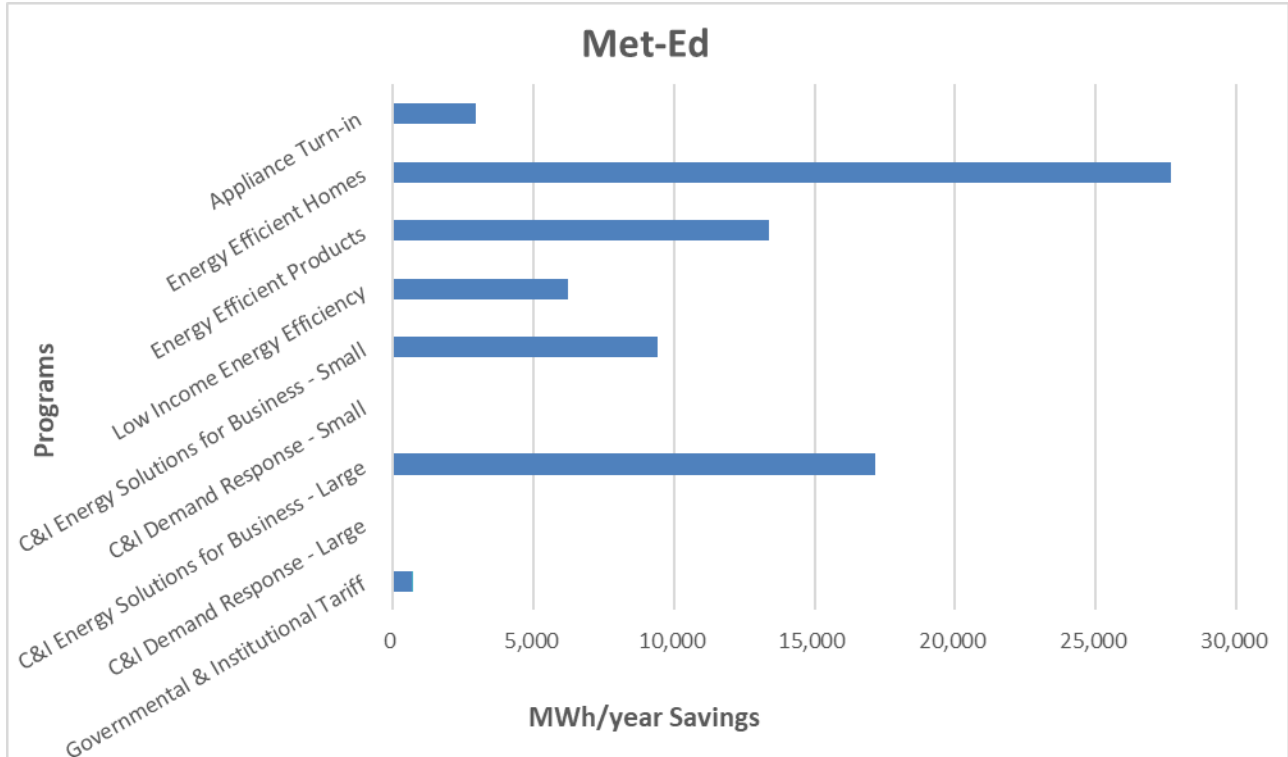
| Utility | Program | PYRTD | VTD | PSA | RTD |
|-----------------|---|---------------|----------------|----------------|----------------|
| Met-Ed | Appliance Turn-in | 2,970 | 8,607 | 11,577 | 11,787 |
| | Energy Efficient Homes | 27,674 | 113,816 | 141,489 | 130,039 |
| | Energy Efficient Products | 13,399 | 61,603 | 75,002 | 62,941 |
| | Low Income Energy Efficiency | 6,229 | 21,523 | 27,752 | 25,617 |
| | C&I Energy Solutions for Business - Small | 9,400 | 48,893 | 58,292 | 58,861 |
| | C&I Demand Response - Small | n/a | n/a | n/a | n/a |
| | C&I Energy Solutions for Business - Large | 17,139 | 61,276 | 78,415 | 79,392 |
| | C&I Demand Response - Large | n/a | n/a | n/a | n/a |
| | Governmental & Institutional Tariff | 664 | 878 | 1,542 | 1,557 |
| | Portfolio Total | 77,474 | 316,595 | 394,069 | 370,193 |
| Penelec | Appliance Turn-in | 2,895 | 7,708 | 10,603 | 11,287 |
| | Energy Efficient Homes | 23,957 | 87,196 | 111,154 | 99,761 |
| | Energy Efficient Products | 14,368 | 71,484 | 85,853 | 74,918 |
| | Low Income Energy Efficiency | 6,306 | 22,921 | 29,227 | 26,985 |
| | C&I Energy Solutions for Business - Small | 13,230 | 42,043 | 55,272 | 60,199 |
| | C&I Demand Response - Small | n/a | n/a | n/a | n/a |
| | C&I Energy Solutions for Business - Large | 13,595 | 54,015 | 67,610 | 74,498 |
| | C&I Demand Response - Large | n/a | n/a | n/a | n/a |
| | Governmental & Institutional Tariff | 380 | 1,786 | 2,166 | 2,384 |
| | Portfolio Total | 74,731 | 287,154 | 361,885 | 350,032 |
| Penn Power | Appliance Turn-in | 1,054 | 2,419 | 3,473 | 4,038 |
| | Energy Efficient Homes | 6,225 | 26,565 | 32,791 | 29,409 |
| | Energy Efficient Products | 5,673 | 21,041 | 26,714 | 22,125 |
| | Low Income Energy Efficiency | 1,897 | 6,558 | 8,456 | 8,393 |
| | C&I Energy Solutions for Business - Small | 6,107 | 21,873 | 27,979 | 28,539 |
| | C&I Demand Response - Small | n/a | n/a | n/a | n/a |
| | C&I Energy Solutions for Business - Large | 3,730 | 14,085 | 17,814 | 18,225 |
| | C&I Demand Response - Large | n/a | n/a | n/a | n/a |
| | Governmental & Institutional Tariff | 0 | 1,943 | 1,943 | 2,030 |
| | Portfolio Total | 24,687 | 94,484 | 119,171 | 112,758 |
| West Penn Power | Appliance Turn-in | 3,429 | 10,385 | 13,815 | 14,312 |
| | Energy Efficient Homes | 17,301 | 105,300 | 122,601 | 117,022 |
| | Energy Efficient Products | 14,568 | 70,047 | 84,615 | 72,968 |
| | Low Income Energy Efficiency | 5,406 | 20,941 | 26,347 | 25,400 |
| | C&I Energy Solutions for Business - Small | 13,104 | 50,312 | 63,416 | 59,193 |
| | C&I Demand Response - Small | n/a | n/a | n/a | n/a |
| | C&I Energy Solutions for Business - Large | 11,569 | 53,435 | 65,004 | 63,837 |
| | C&I Demand Response - Large | n/a | n/a | n/a | n/a |
| | Governmental & Institutional Tariff | 2,782 | 16,453 | 19,235 | 17,697 |
| | Portfolio Total | 68,160 | 326,872 | 395,033 | 370,429 |

⁵ Results for the Small & Large Energy Solutions for Business programs include GNI customers who participated in these programs.

Figures 7A-7D: Reported Gross Energy Savings by Program present a summary of the PYTD reported gross energy savings by program for Program Year 10. The energy impacts in this report are presented at the meter level and do not reflect adjustments for transmission and distribution losses.

Figures 7A-7D: Reported Gross Energy Savings by Program⁶

Figure 7A: PYTD Reported Gross Energy Savings by Program - Met-Ed



⁶ Results for the Small & Large Energy Solutions for Business programs include GNI customers who participated in these programs.

Figure 7B: PYTD Reported Gross Energy Savings by Program – Penelec

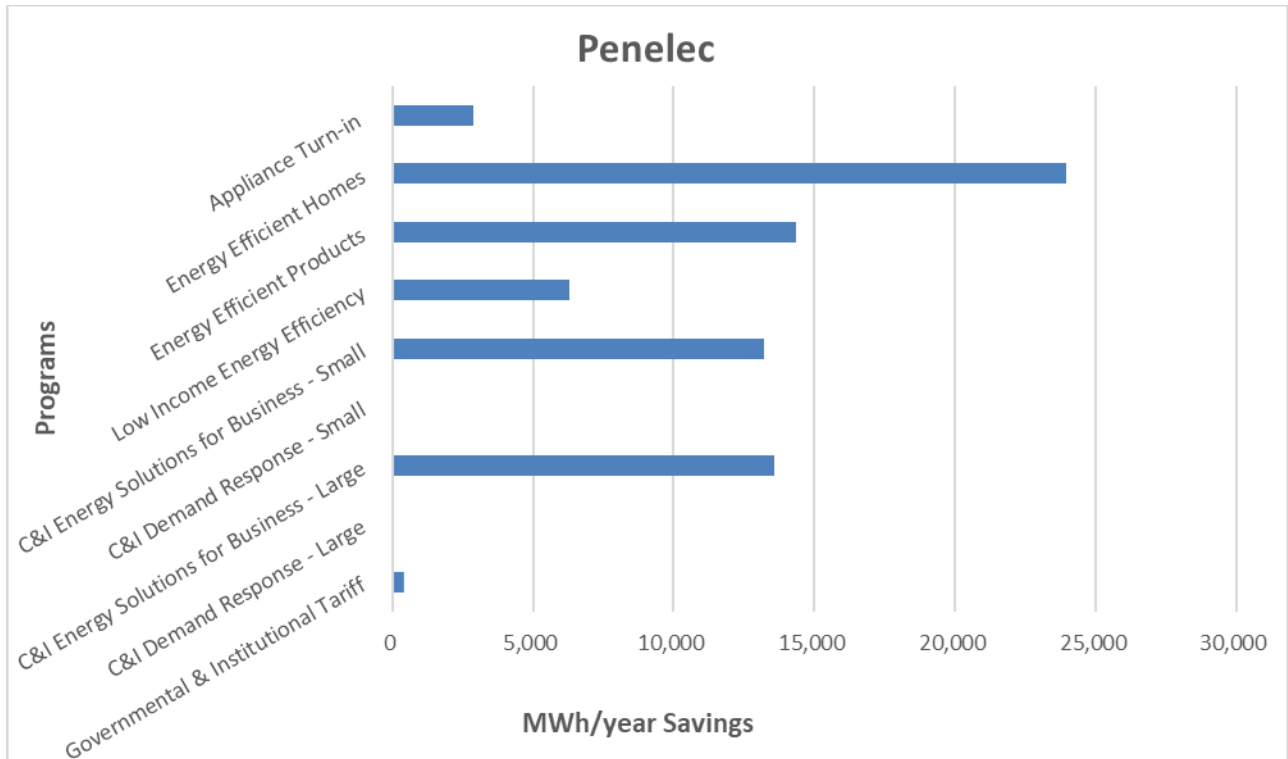


Figure 7C: PYTD Reported Gross Energy Savings by Program - Penn Power

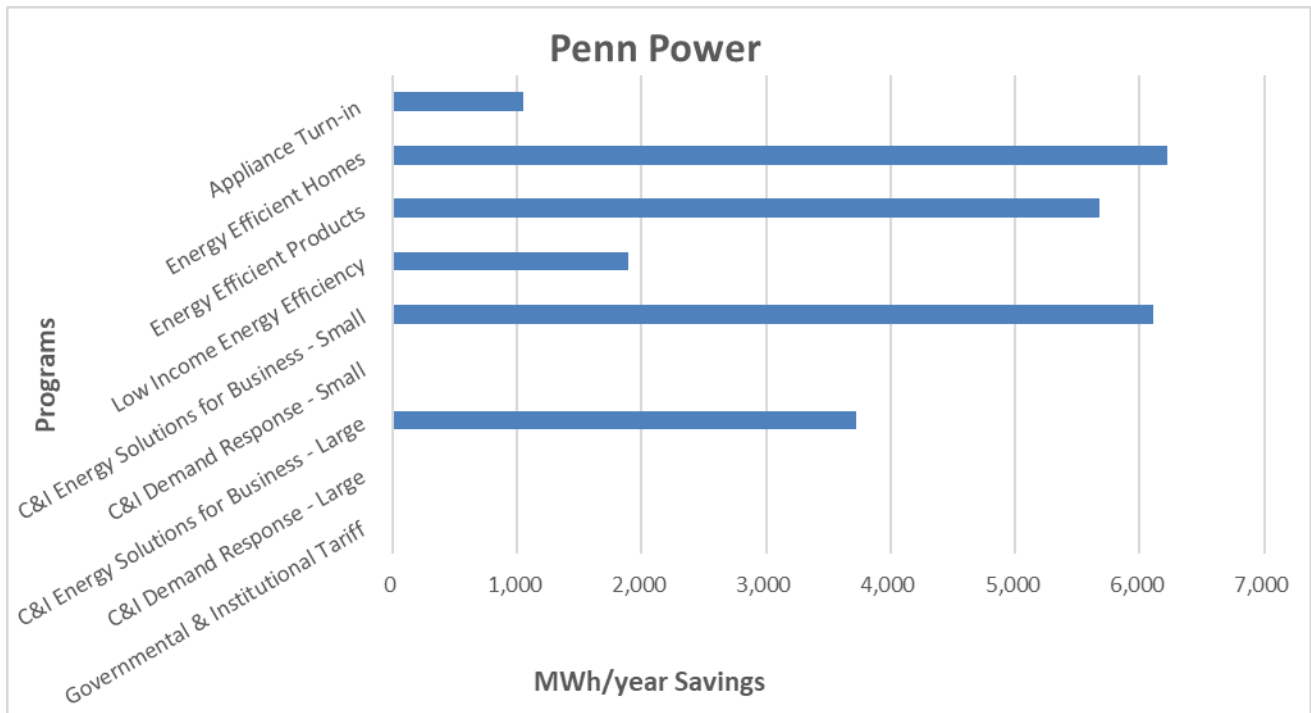
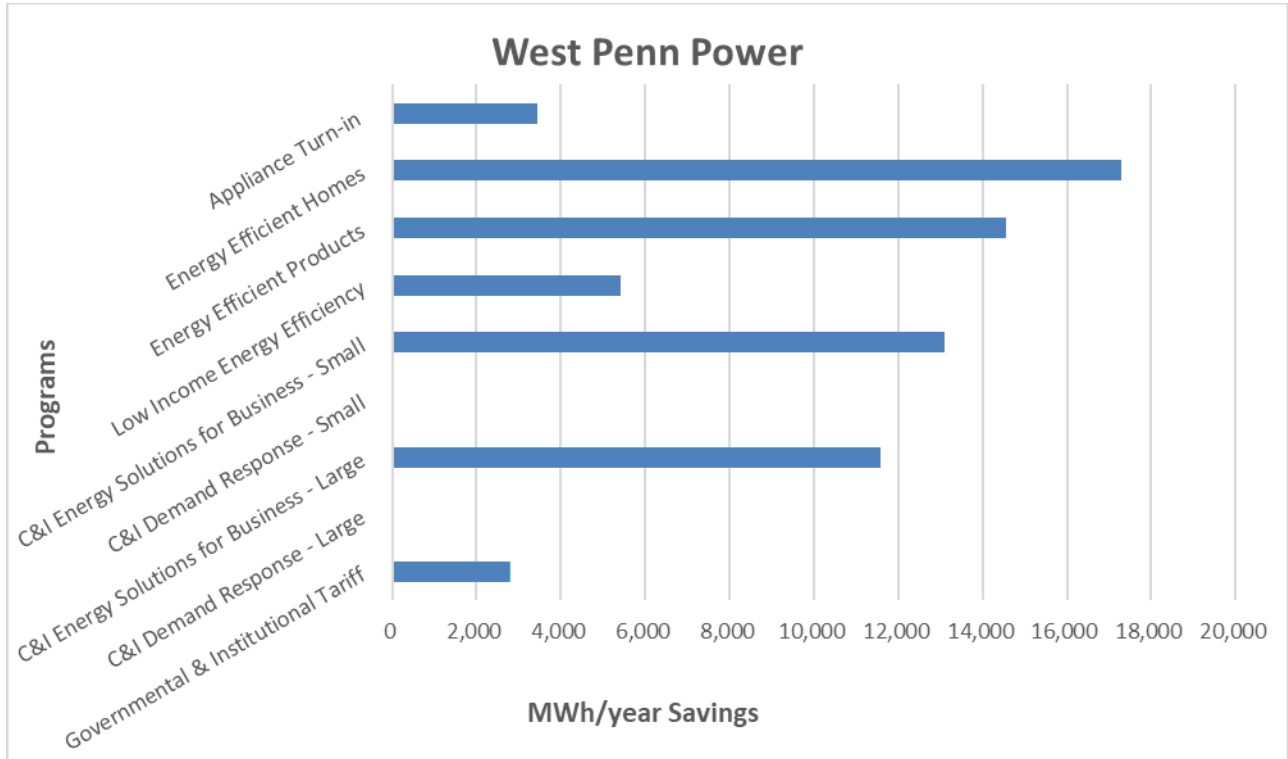


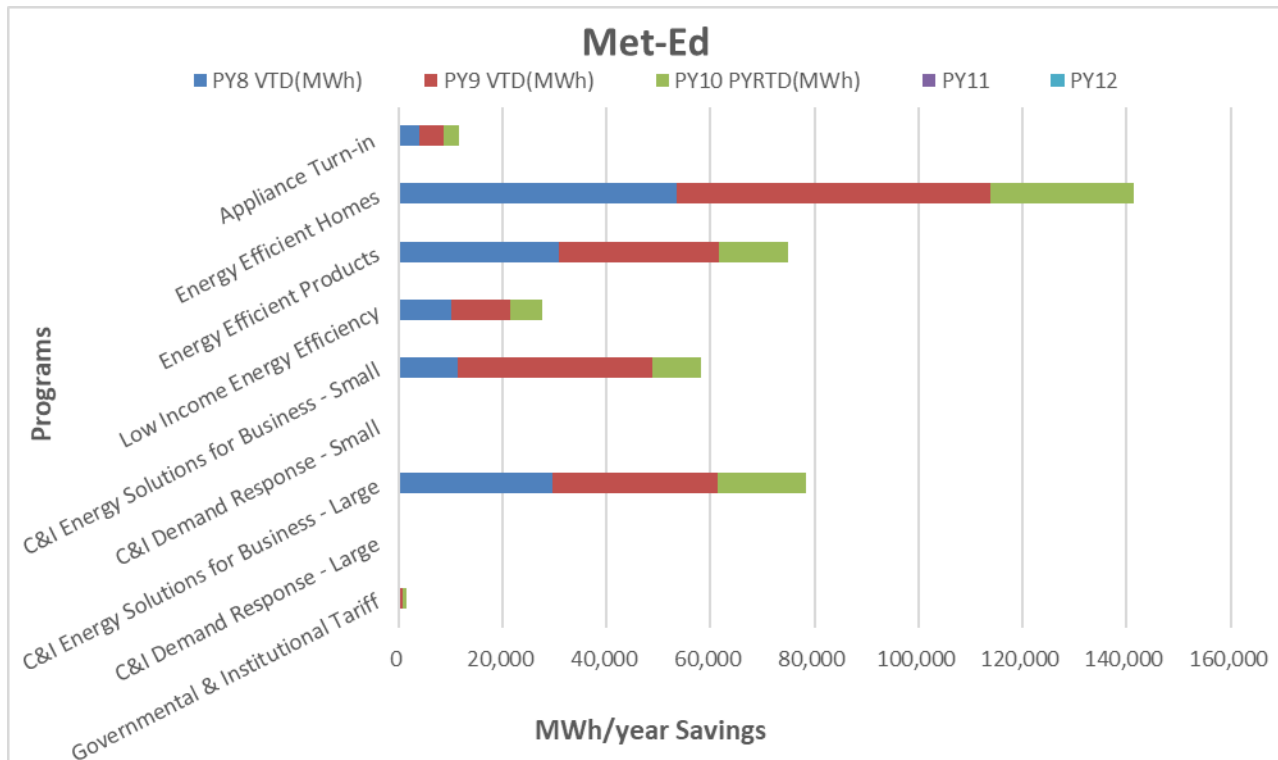
Figure 7D: PYTD Reported Gross Energy Savings by Program - West Penn Power



Figures 8A-8D: PSA Energy Savings by Program for Phase III present 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.

Figures 8A-8D: PSA Energy Savings by Program for Phase III⁷

Figure 8A: PSA Energy Savings by Program for Phase III - Met-Ed



⁷ Results for the Small & Large Energy Solutions for Business programs include GNI customers who participated in these programs.

Figure 8B: PSA Energy Savings by Program for Phase III – Penelec

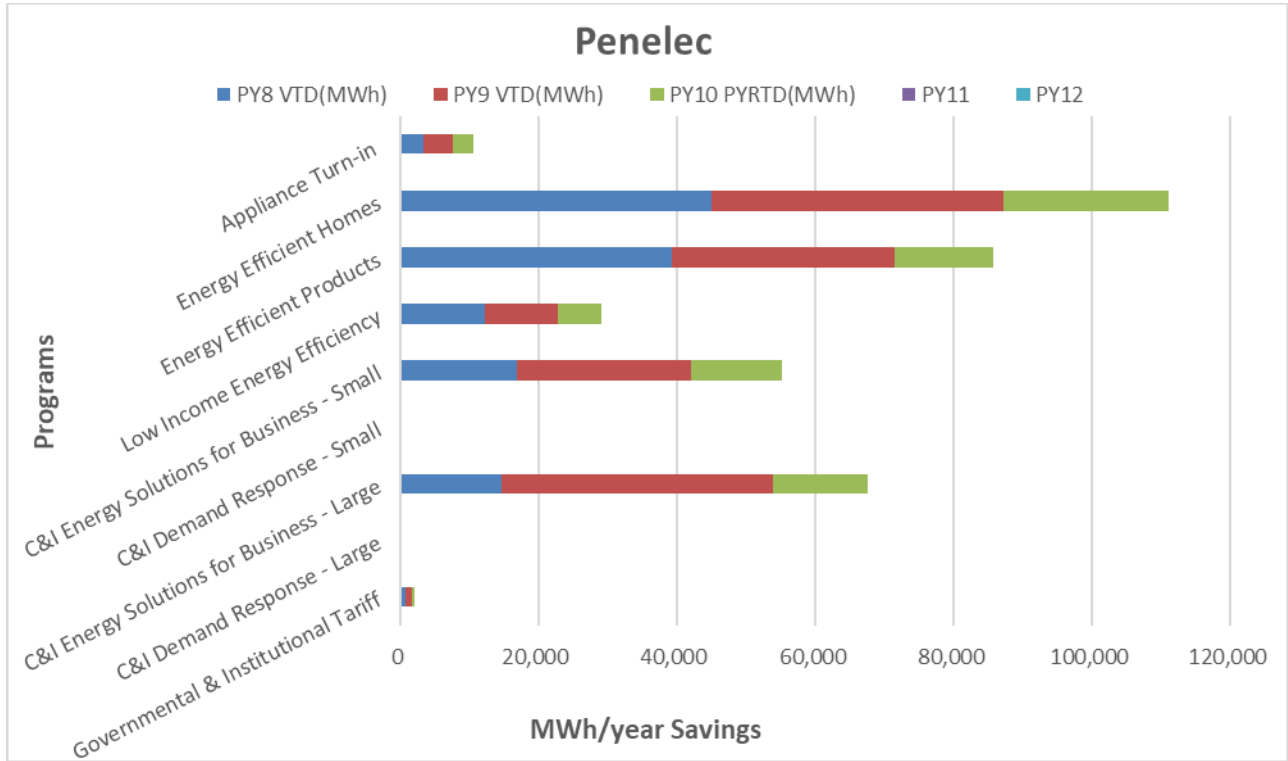


Figure 8C: PSA Energy Savings by Program for Phase III - Penn Power

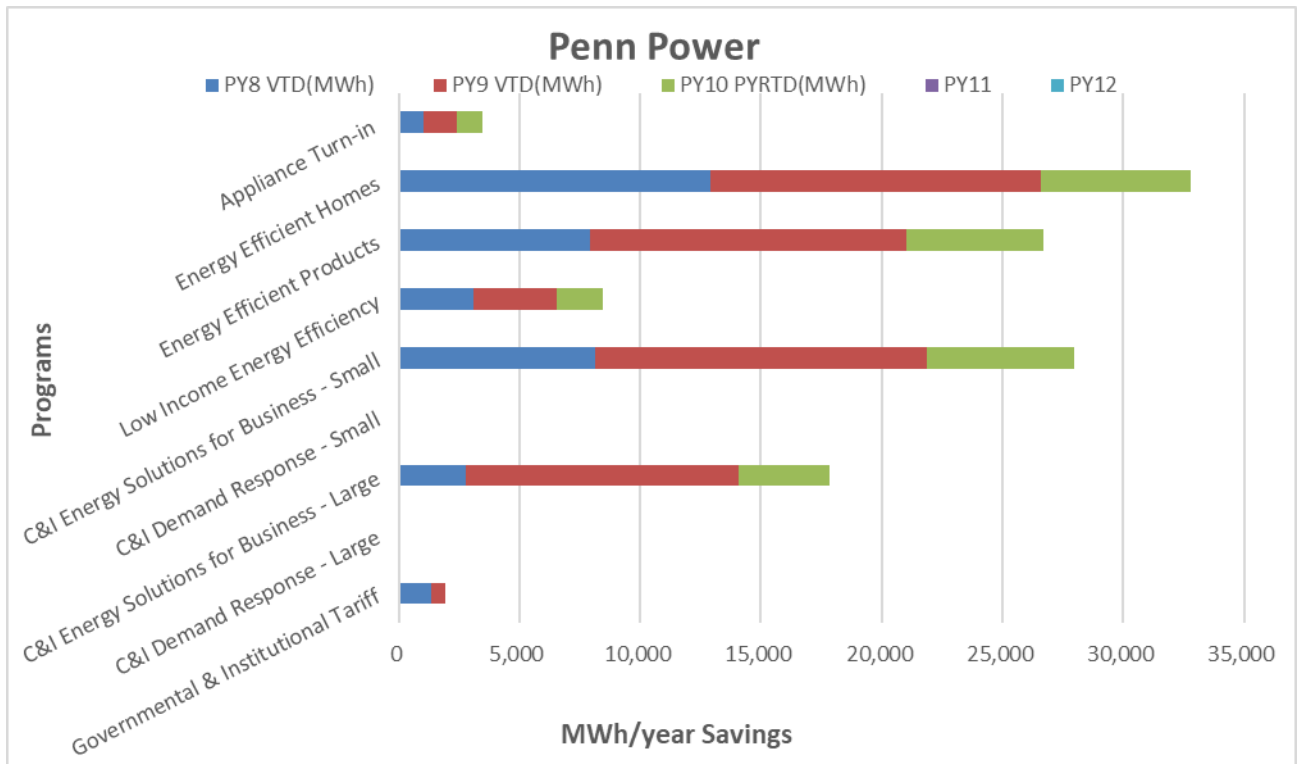
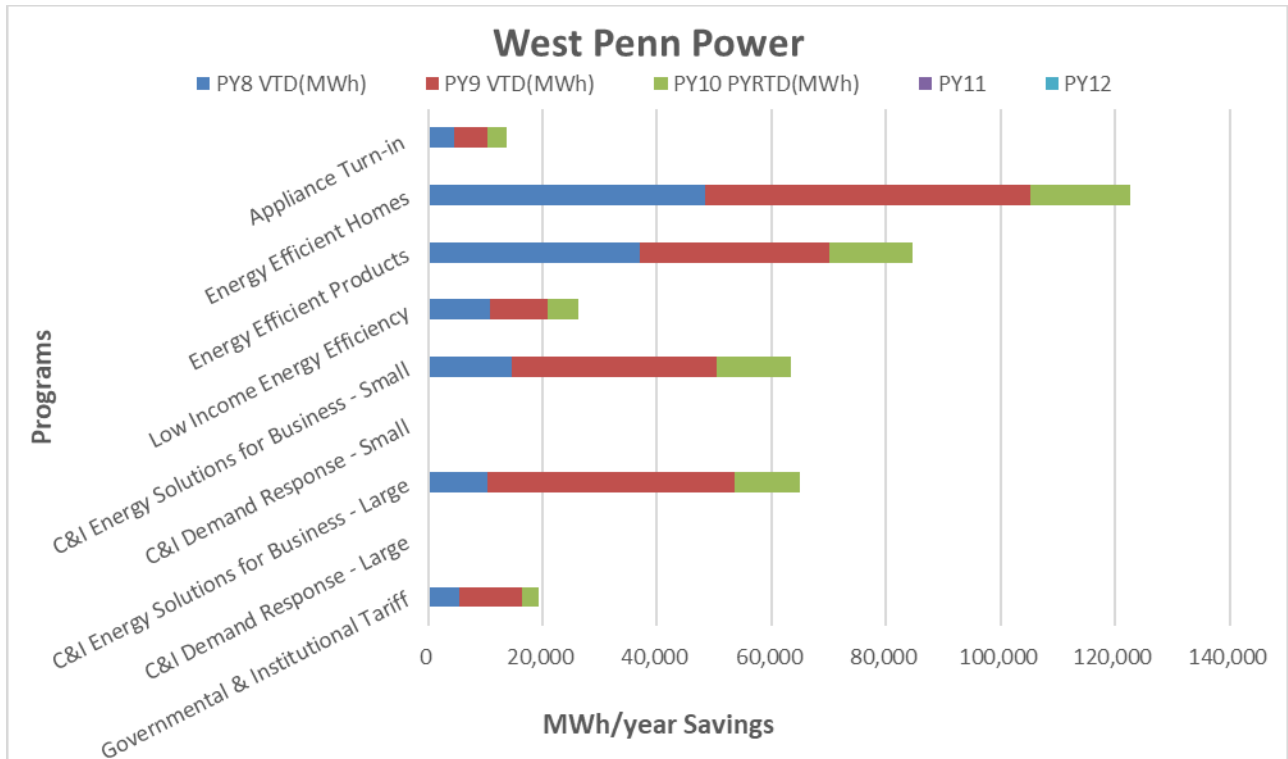


Figure 8D: PSA Energy Savings by Program for Phase III - West Penn Power



Section 6 Summary of Demand Impacts by Program

FirstEnergy Pennsylvania EDCs Phase III EE&C programs achieve peak demand reductions in two primary ways. The first is through coincident reductions from energy efficiency measures and the second is through dedicated demand response offerings 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 ENERGY EFFICIENCY

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.

A summary of the peak demand impacts by energy efficiency program through the current Reporting Period are presented in **Table 6-1**:

Table 6-1: Peak Demand Savings by Program (MW/Year)⁸

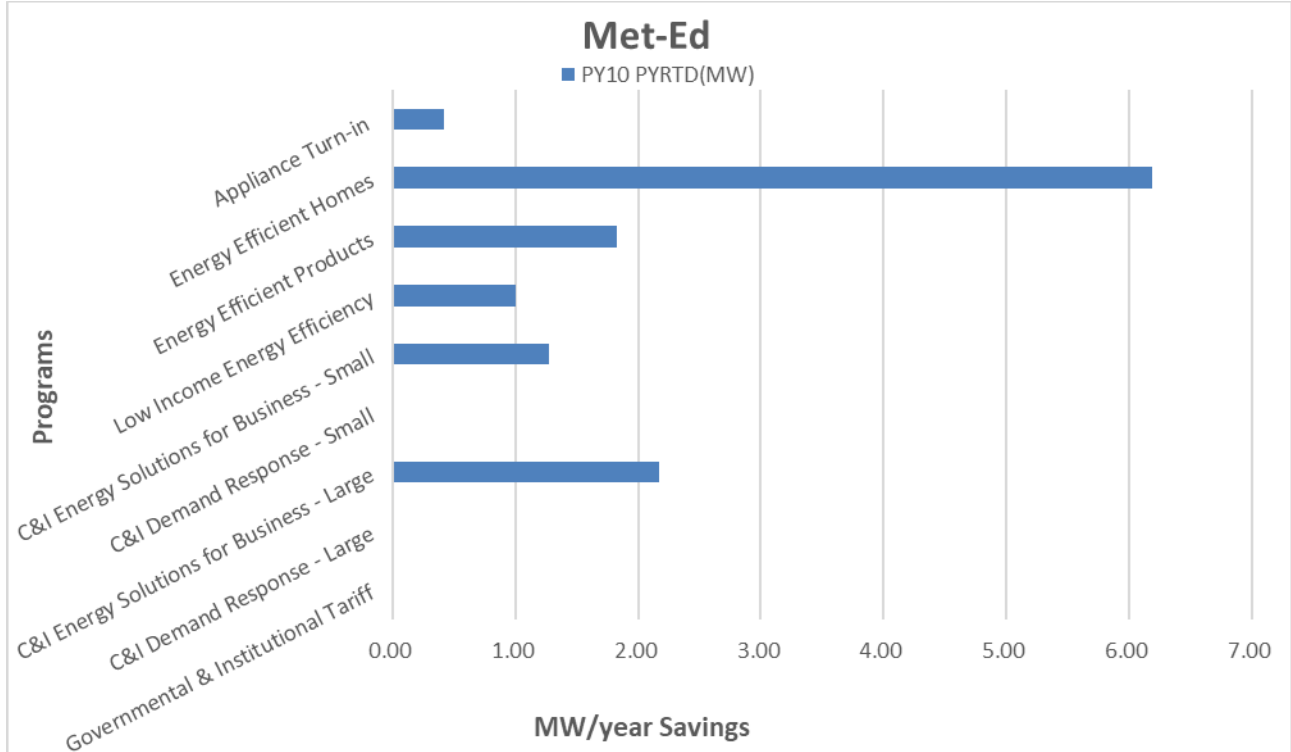
| | Program | PYRTD | VTD | PSA | RTD |
|-----------------|---|--------------|--------------|--------------|--------------|
| Met-Ed | Appliance Turn-in | 0.42 | 1.16 | 1.58 | 1.66 |
| | Energy Efficient Homes | 6.20 | 13.61 | 19.81 | 19.46 |
| | Energy Efficient Products | 1.83 | 8.36 | 10.19 | 8.06 |
| | Low Income Energy Efficiency | 1.00 | 2.48 | 3.48 | 3.34 |
| | C&I Energy Solutions for Business - Small | 1.28 | 7.44 | 8.71 | 8.63 |
| | C&I Demand Response - Small | n/a | n/a | n/a | n/a |
| | C&I Energy Solutions for Business - Large | 2.17 | 8.76 | 10.93 | 10.97 |
| | C&I Demand Response - Large | n/a | n/a | n/a | n/a |
| | Governmental & Institutional Tariff | 0.01 | 0.01 | 0.02 | 0.02 |
| | Portfolio Total | 12.90 | 41.83 | 54.73 | 52.13 |
| | Program | PYRTD | VTD | PSA | RTD |
| Penelec | Appliance Turn-in | 0.40 | 1.00 | 1.40 | 1.51 |
| | Energy Efficient Homes | 4.02 | 9.54 | 13.56 | 13.90 |
| | Energy Efficient Products | 1.80 | 8.63 | 10.43 | 8.48 |
| | Low Income Energy Efficiency | 0.82 | 2.44 | 3.26 | 3.27 |
| | C&I Energy Solutions for Business - Small | 2.13 | 6.78 | 8.91 | 9.23 |
| | C&I Demand Response - Small | n/a | n/a | n/a | n/a |
| | C&I Energy Solutions for Business - Large | 1.59 | 7.00 | 8.59 | 9.23 |
| | C&I Demand Response - Large | n/a | n/a | n/a | n/a |
| | Governmental & Institutional Tariff | 0.02 | 0.03 | 0.05 | 0.05 |
| | Portfolio Total | 10.77 | 35.42 | 46.19 | 45.67 |
| | Program | PYRTD | VTD | PSA | RTD |
| Penn Power | Appliance Turn-in | 0.13 | 0.31 | 0.45 | 0.51 |
| | Energy Efficient Homes | 1.36 | 3.79 | 5.15 | 5.05 |
| | Energy Efficient Products | 0.73 | 2.76 | 3.48 | 2.71 |
| | Low Income Energy Efficiency | 0.28 | 0.77 | 1.04 | 1.12 |
| | C&I Energy Solutions for Business - Small | 0.93 | 3.33 | 4.27 | 4.28 |
| | C&I Demand Response - Small | n/a | n/a | n/a | n/a |
| | C&I Energy Solutions for Business - Large | 0.45 | 1.55 | 1.99 | 2.08 |
| | C&I Demand Response - Large | n/a | n/a | n/a | n/a |
| | Governmental & Institutional Tariff | 0.00 | 0.07 | 0.07 | 0.06 |
| | Portfolio Total | 3.88 | 12.57 | 16.45 | 15.80 |
| | Program | PYRTD | VTD | PSA | RTD |
| West Penn Power | Appliance Turn-in | 0.44 | 1.35 | 1.79 | 1.84 |
| | Energy Efficient Homes | 5.36 | 13.37 | 18.73 | 20.35 |
| | Energy Efficient Products | 2.16 | 9.87 | 12.04 | 10.03 |
| | Low Income Energy Efficiency | 0.89 | 2.46 | 3.35 | 3.53 |
| | C&I Energy Solutions for Business - Small | 2.04 | 6.87 | 8.91 | 8.78 |
| | C&I Demand Response - Small | n/a | n/a | n/a | n/a |
| | C&I Energy Solutions for Business - Large | 1.41 | 6.05 | 7.45 | 7.88 |
| | C&I Demand Response - Large | n/a | n/a | n/a | n/a |
| | Governmental & Institutional Tariff | 0.00 | 0.18 | 0.18 | 0.18 |
| | Portfolio Total | 12.30 | 40.15 | 52.45 | 52.59 |

⁸ Results for the Small & Large Energy Solutions for Business programs include GNI customers who participated in these programs.

Figures 9A-9D: PYRTD Gross Demand Savings by Energy Efficiency Program present a summary of the PYRTD reported gross peak demand savings by energy efficiency program for Program Year 10.

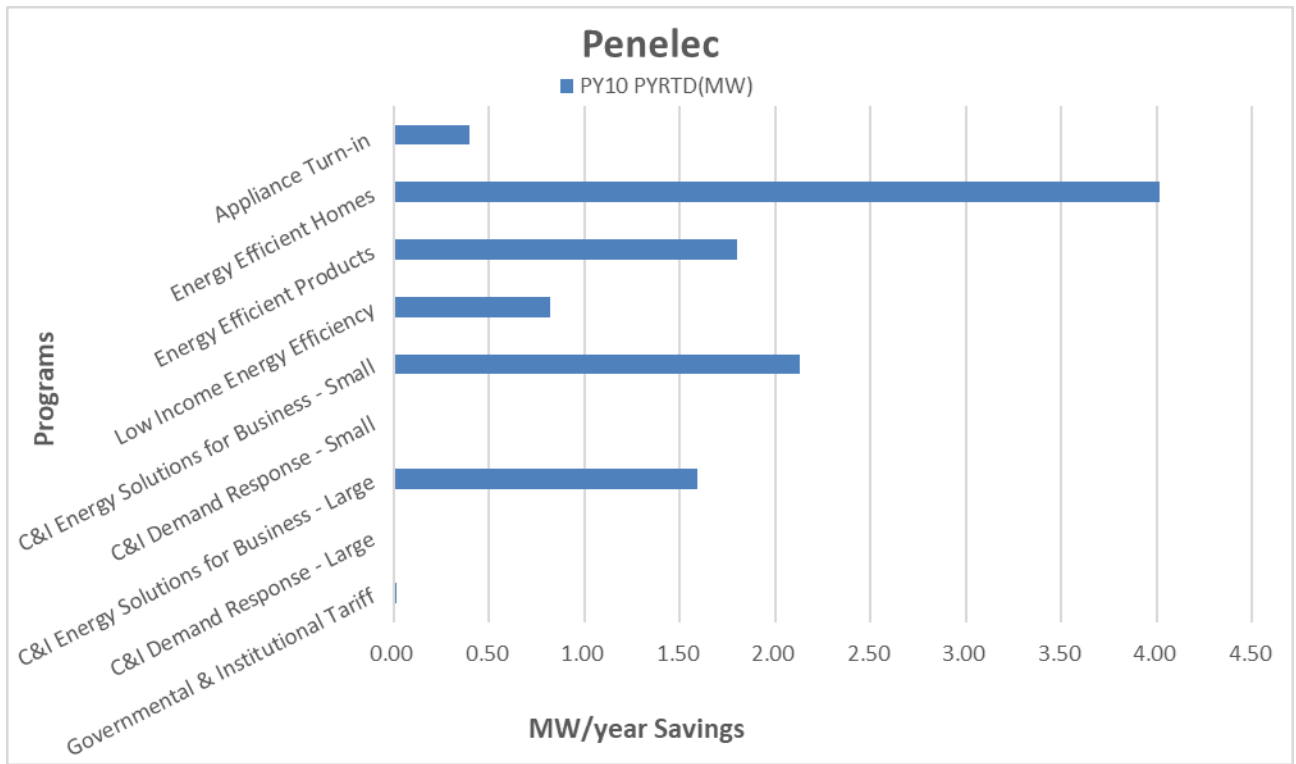
Figures 9A-9D: PYRTD Gross Demand Savings by Energy Efficiency Program⁹

Figure 9A: PYRTD Gross Demand Savings by Energy Efficiency Program - Met-Ed



⁹ Results for the Small & Large Energy Solutions for Business programs include GNI customers who participated in these programs.

Figure 9B: PYRTD Gross Demand Savings by Energy Efficiency Program – Penelec



**Figure 9C: PYRTD Gross Demand Savings
by Energy Efficiency Program - Penn Power**

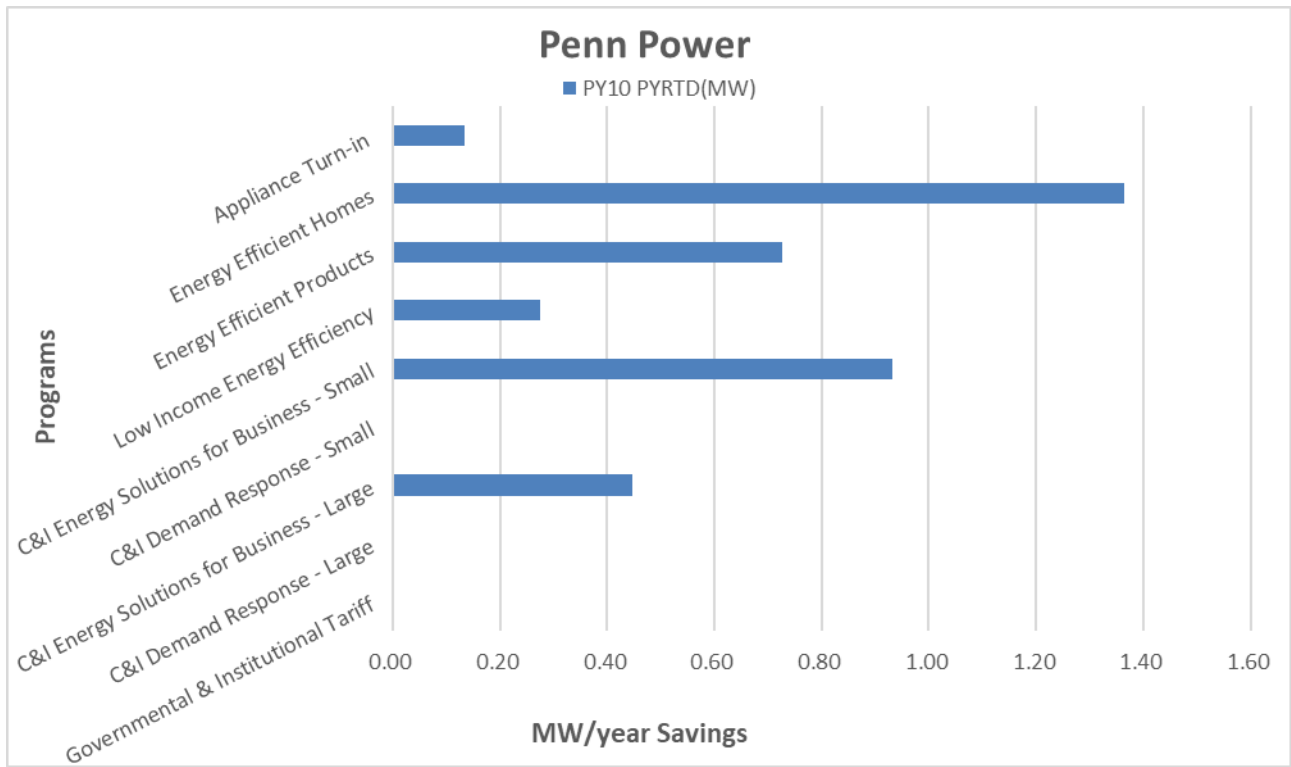
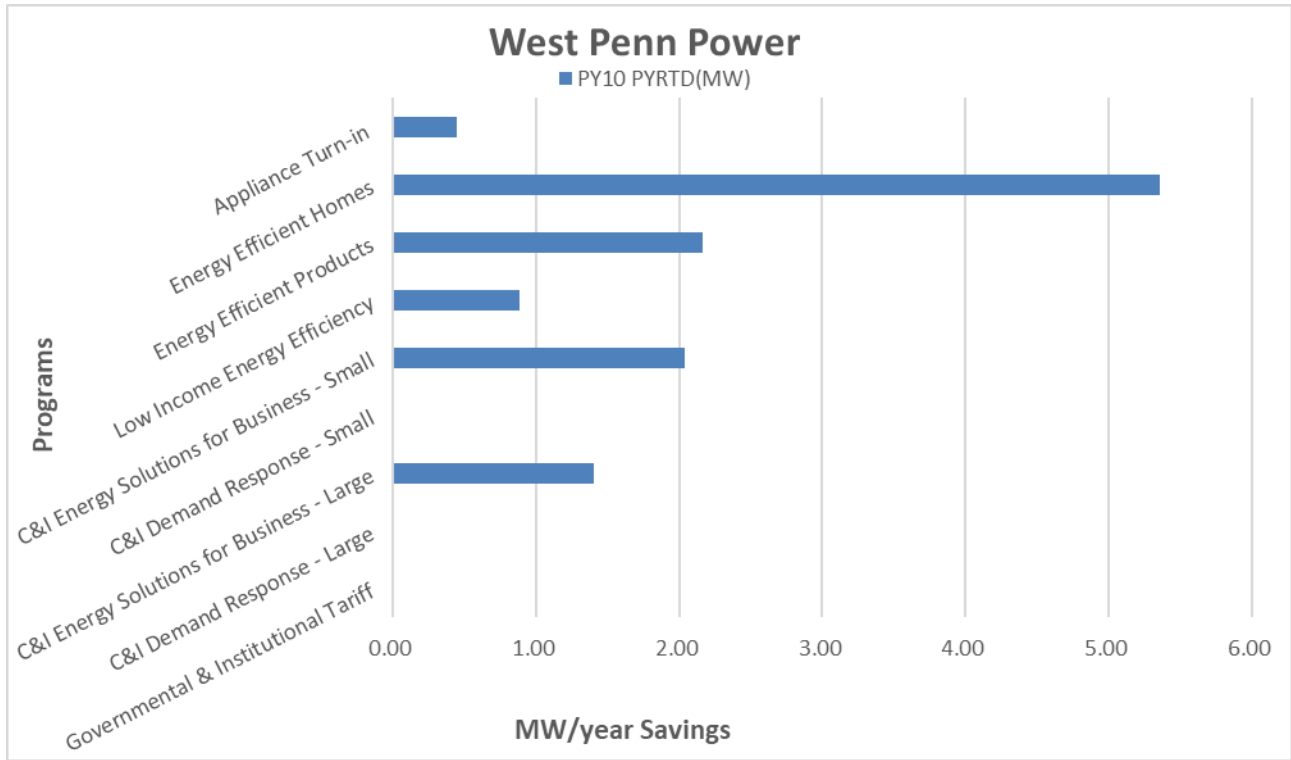


Figure 9D: PYRTD Gross Demand Savings by Energy Efficiency Program - West Penn Power

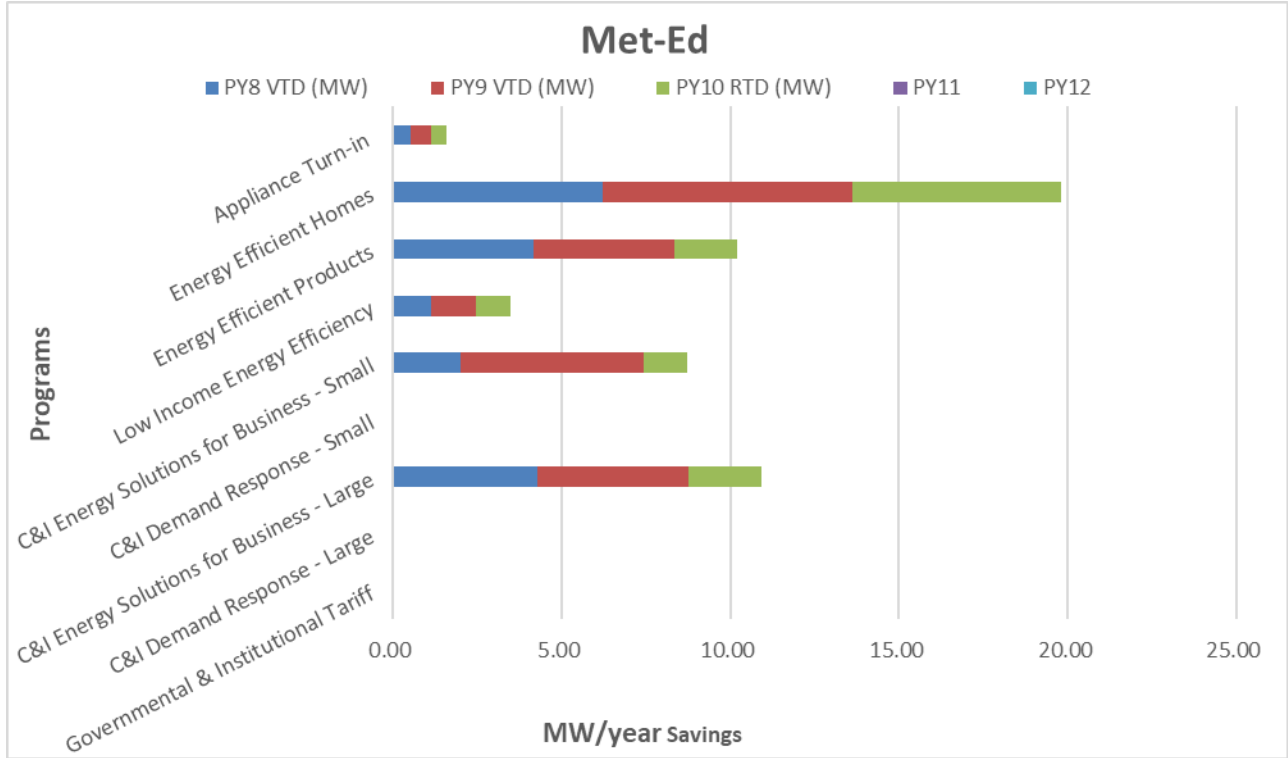


Figures 10A-10D: PSA Demand Savings by Energy Efficiency Program for Phase III present a summary of the PSA gross demand savings by energy efficiency program for Phase III of Act 129.¹⁰

¹⁰ Results for the Small & Large Energy Solutions for Business programs include GNI customers who participated in these programs.

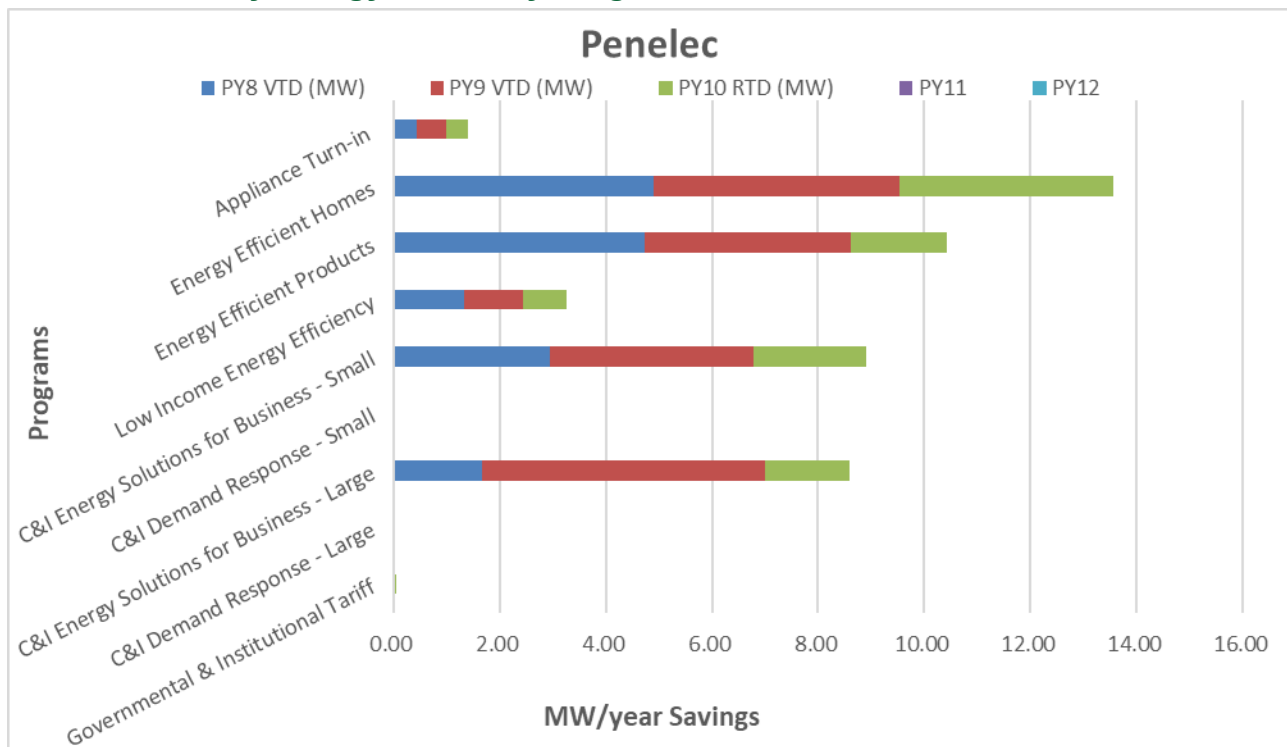
Figures 10A-10D: PSA Demand Savings by Energy Efficiency Program for Phase III¹¹

Figure 10A: PSA Demand Savings by Energy Efficiency Program for Phase III – Met-Ed

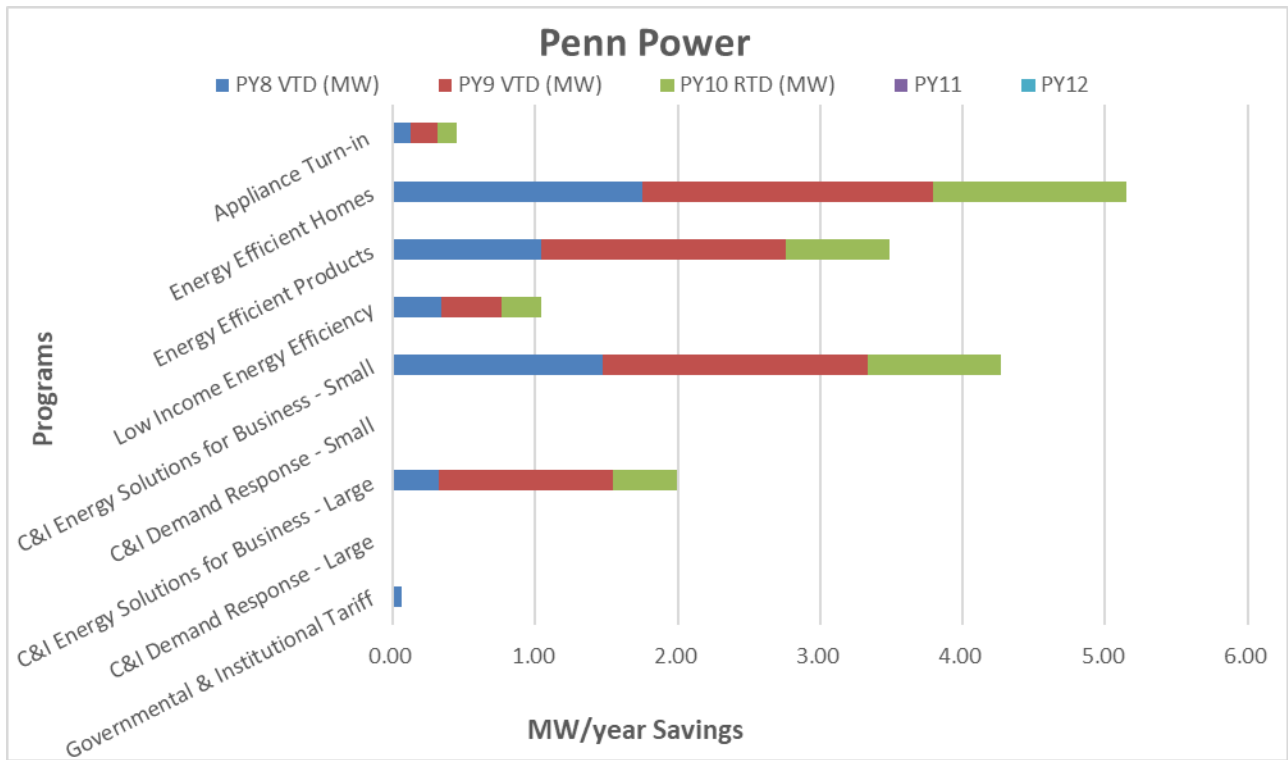


¹¹ Results for the Small & Large Energy Solutions for Business programs include GNI customers who participated in these programs.

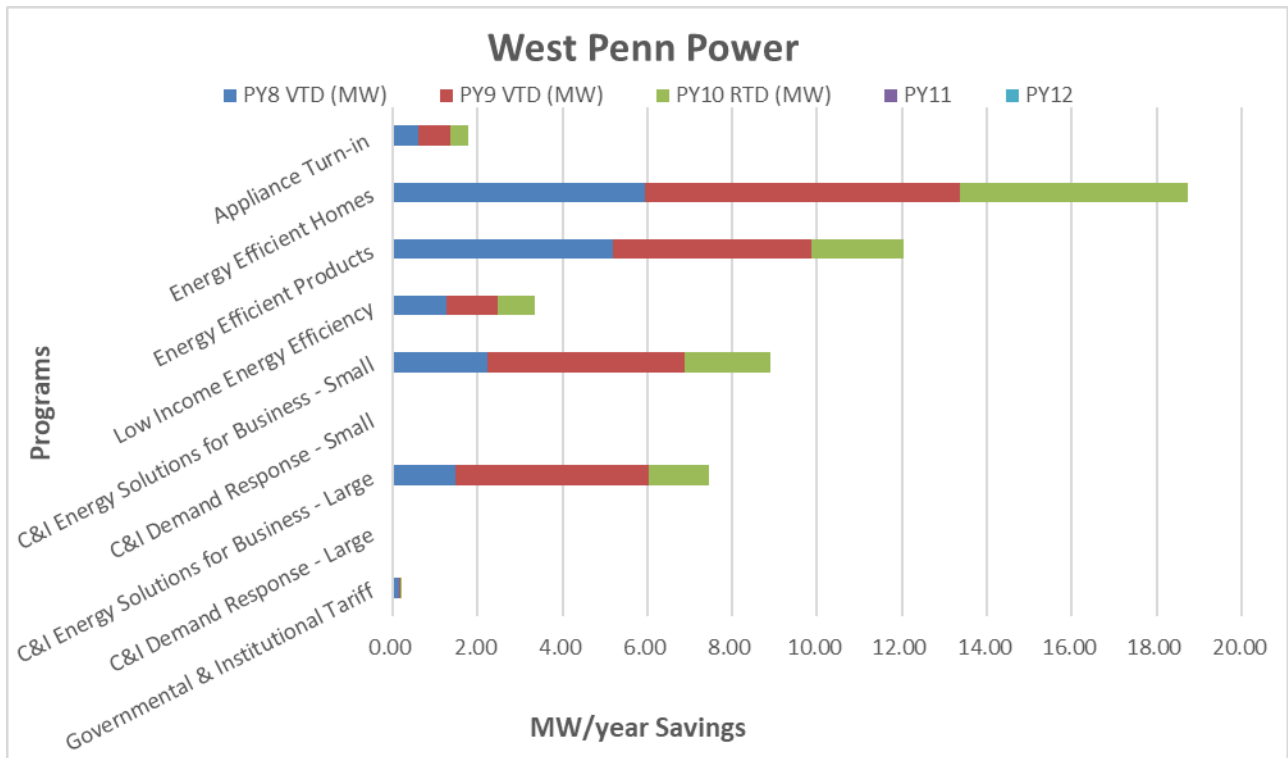
**Figure 10B: PSA Demand Savings
by Energy Efficiency Program for Phase III – Penelec**



**Figure 10C: PSA Demand Savings
by Energy Efficiency Program for Phase III – Penn Power**



**Figure 10D: PSA Demand Savings
by Energy Efficiency Program for Phase III – West Penn Power**



6.2 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 contiguous 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 day-ahead 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 line losses.

FirstEnergy uses the following line loss percentages/multipliers by sector.

| Sector | Met-Ed | Penelec | Penn Power | West Penn Power |
|-------------|--------|---------|------------|-----------------|
| Residential | 1.0945 | 1.0945 | 1.0949 | 1.0943 |
| Small C&I | 1.0720 | 1.0720 | 1.0545 | 1.0790 |
| Large C&I | 1.0720 | 1.0720 | 1.0545 | 1.0790 |

Table 6-2 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 6-2 indicate the margin of error (at the 90% confidence interval) around the PYVTD and VTD demand reductions.

Table 6-2: Verified Gross Demand Response Impacts by Program

| | Program | PYVTD Gross MW | Relative Precision (90%) | VTD Gross MW | Relative Precision (90%) |
|------------------------|--|-------------------------------|---|-----------------------------|---|
| Met-Ed | Energy Efficient Homes | 6.2 | 7.2% | 4.1 | 7.2% |
| | C&I Demand Response - Small | 5.1 | 4.6% | 4.3 | 3.9% |
| | C&I Demand Response - Large | 42.8 | 5.1% | 42.9 | 4.4% |
| | Portfolio Total | 54.0 | 4.1% | 51.3 | 3.7% |
| | Portfolio Total (Confidence Interval) | 51.8 - 56.2 | | 49.4 - 53.2 | |
| Penn Power | Energy Efficient Homes | 2.1 | 6.8% | 2.1 | 10.8% |
| | C&I Demand Response - Small | 0.0 | 0.0% | 0.1 | 50.0% |
| | C&I Demand Response - Large | 44.0 | 23.9% | 39.7 | 23.3% |
| | Portfolio Total | 46.1 | 22.8% | 41.9 | 22.1% |
| | Portfolio Total (Confidence Interval) | 35.6 - 56.7 | | 32.7 - 51.2 | |
| West Penn Power | Energy Efficient Homes | 3.1 | 7.4% | 2.0 | 7.4% |
| | C&I Demand Response - Small | 1.2 | 13.5% | 1.7 | 20.9% |
| | C&I Demand Response - Large | 134.3 | 13.6% | 115.9 | 13.6% |
| | Portfolio Total | 138.5 | 13.2% | 119.6 | 13.2% |
| | Portfolio Total (Confidence Interval) | 120.2 - 156.8 | | 103.9 - 135.4 | |

Section 7 Summary of Finances

Section 7 provides an overview of the expenditures associated with the FirstEnergy EDCs' portfolios and the recovery of those costs from ratepayers.

7.1 PROGRAM FINANCIALS

Program-specific and portfolio total finances for PY10 are shown in **Table 7-1A to 7-1D**.¹² The columns in these tables are adapted from the 'Direct Program Cost' categories in the Commission's EE&V Plan template¹³ 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.

¹² Any negative values reflected within this section are due to issues such as, but not limited to, reversals of prior period accruals, accounting journal entries, and/or revenues received from participation in historic capacity auctions during prior Phases of Act 129.

¹³ <http://www.puc.pa.gov/pcdocs/1372426.doc> Section 10

Table 7-1A to 7-1D: Program Year to Date Financials¹⁴

Table 7-1A: Program Year to Date Financials – Met-Ed

| Program | Incentives to Participants and Trade Allies | EDC Materials, Labor, and Administration | ICSP Materials, Labor, and Administration | EM&V | Total EDC Cost |
|--|---|--|---|-----------|----------------|
| <i>Appliance Turn-in</i> | \$170,100 | \$26,380 | \$406,566 | \$15,215 | \$618,261 |
| <i>Energy Efficient Homes</i> | \$2,170,877 | \$103,784 | \$757,120 | \$91,957 | \$3,123,738 |
| <i>Energy Efficient Products</i> | \$1,068,563 | \$58,618 | \$407,662 | \$73,754 | \$1,608,598 |
| <i>Low Income Energy Efficiency</i> | \$47,950 | \$131,223 | \$1,743,563 | \$59,284 | \$1,982,021 |
| <i>C&I Energy Solutions for Business - Small</i> | \$563,713 | \$109,873 | \$299,919 | \$98,097 | \$1,071,602 |
| <i>C&I Demand Response - Small</i> | \$0 | (\$876) | \$25,457 | \$5,366 | \$29,946 |
| <i>C&I Energy Solutions for Business - Large</i> | \$755,846 | \$76,510 | \$410,749 | \$119,434 | \$1,362,540 |
| <i>C&I Demand Response - Large</i> | \$0 | (\$7,735) | \$305,282 | \$48,123 | \$345,670 |
| <i>Governmental & Institutional Tariff</i> | \$33,059 | \$6,115 | \$16,476 | (\$1,539) | \$54,111 |
| Common Portfolio Costs | | | | | \$0 |
| Total Portfolio | \$4,810,108 | \$503,892 | \$4,372,795 | \$509,692 | \$10,196,486 |
| SWE Costs | \$0 | \$0 | \$0 | \$0 | \$128,000 |
| Total | \$4,810,108 | \$503,892 | \$4,372,795 | \$509,692 | \$10,324,486 |

¹⁴ Results for the Small & Large Energy Solutions for Business programs include GNI customers who participated in these programs.

Table 7-1B: Program Year to Date Financials – Penelec

| Program | Incentives to Participants and Trade Allies | EDC Materials, Labor, and Administration | ICSP Materials, Labor, and Administration | EM&V | Total EDC Cost |
|--|--|---|--|-----------------|-----------------------|
| <i>Appliance Turn-in</i> | \$150,875 | \$29,392 | \$367,348 | \$16,426 | \$564,040 |
| <i>Energy Efficient Homes</i> | \$2,324,813 | \$94,967 | \$478,262 | \$85,282 | \$2,983,324 |
| <i>Energy Efficient Products</i> | \$895,188 | \$58,693 | \$393,283 | \$71,213 | \$1,418,376 |
| <i>Low Income Energy Efficiency</i> | \$58,460 | \$168,577 | \$1,727,947 | \$60,579 | \$2,015,563 |
| <i>C&I Energy Solutions for Business - Small</i> | \$742,195 | \$76,539 | \$395,847 | \$102,622 | \$1,317,203 |
| <i>C&I Demand Response - Small</i> | \$0 | \$0 | \$0 | \$0 | \$0 |
| <i>C&I Energy Solutions for Business - Large</i> | \$664,774 | \$41,653 | \$290,192 | \$104,204 | \$1,100,822 |
| <i>C&I Demand Response - Large</i> | \$0 | \$0 | \$0 | \$0 | \$0 |
| <i>Governmental & Institutional Tariff</i> | \$18,944 | \$5,364 | \$27,670 | (\$2,105) | \$49,874 |
| Common Portfolio Costs | | | | | \$0 |
| Total Portfolio | \$4,855,248 | \$475,184 | \$3,680,548 | \$438,222 | \$9,449,202 |
| SWE Costs | \$0 | \$0 | \$0 | \$0 | \$116,000 |
| Total | \$4,855,248 | \$475,184 | \$3,680,548 | \$438,222 | \$9,565,202 |

Table 7-1C: Program Year to Date Financials – Penn Power

| Program | Incentives to Participants and Trade Allies | EDC Materials, Labor, and Administration | ICSP Materials, Labor, and Administration | EM&V | Total EDC Cost |
|--|--|---|--|-----------------|-----------------------|
| <i>Appliance Turn-in</i> | \$54,375 | \$6,770 | \$140,375 | \$3,776 | \$205,296 |
| <i>Energy Efficient Homes</i> | \$663,455 | \$29,740 | \$231,023 | (\$14,554) | \$909,664 |
| <i>Energy Efficient Products</i> | \$342,828 | \$12,890 | \$115,643 | \$15,773 | \$487,134 |
| <i>Low Income Energy Efficiency</i> | \$21,761 | \$57,529 | \$434,852 | \$20,388 | \$534,530 |
| <i>C&I Energy Solutions for Business - Small</i> | \$338,845 | \$55,007 | \$139,019 | \$24,819 | \$557,690 |
| <i>C&I Demand Response - Small</i> | \$0 | (\$2,026) | \$0 | \$1,838 | (\$187) |
| <i>C&I Energy Solutions for Business - Large</i> | \$162,245 | \$30,366 | \$79,086 | \$22,525 | \$294,222 |
| <i>C&I Demand Response - Large</i> | \$0 | (\$18,048) | \$78,064 | \$16,499 | \$76,515 |
| <i>Governmental & Institutional Tariff</i> | \$0 | \$4,379 | \$4,337 | (\$507) | \$8,208 |
| Common Portfolio Costs | | | | | \$0 |
| Total Portfolio | \$1,583,510 | \$176,607 | \$1,222,398 | \$90,557 | \$3,073,072 |
| SWE Costs | \$0 | \$0 | \$0 | \$0 | \$36,000 |
| Total | \$1,583,510 | \$176,607 | \$1,222,398 | \$90,557 | \$3,109,072 |

Table 7-1D: Program Year to Date Financials - West Penn Power

| Program | Incentives to Participants and Trade Allies | EDC Materials, Labor, and Administration | ICSP Materials, Labor, and Administration | EM&V | Total EDC Cost |
|--|--|---|--|-----------------|-----------------------|
| <i>Appliance Turn-in</i> | \$179,250 | \$26,760 | \$429,298 | \$15,279 | \$650,588 |
| <i>Energy Efficient Homes</i> | \$720,322 | \$104,065 | \$487,901 | \$84,273 | \$1,396,562 |
| <i>Energy Efficient Products</i> | \$1,073,354 | \$65,393 | \$496,903 | \$79,717 | \$1,715,367 |
| <i>Low Income Energy Efficiency</i> | \$45,745 | \$135,886 | \$1,569,041 | \$62,184 | \$1,812,857 |
| <i>C&I Energy Solutions for Business - Small</i> | \$753,545 | \$123,033 | \$454,617 | \$108,005 | \$1,439,200 |
| <i>C&I Demand Response - Small</i> | \$0 | \$432 | \$3,547 | \$6,765 | \$10,744 |
| <i>C&I Energy Solutions for Business - Large</i> | \$543,079 | \$62,939 | \$298,629 | \$96,211 | \$1,000,858 |
| <i>C&I Demand Response - Large</i> | \$0 | \$4,061 | \$288,933 | \$60,939 | \$353,932 |
| <i>Governmental & Institutional Tariff</i> | \$142,770 | \$8,682 | \$30,757 | (\$1,915) | \$180,294 |
| Common Portfolio Costs | | | | | \$0 |
| Total Portfolio | \$3,458,066 | \$531,252 | \$4,059,626 | \$511,457 | \$8,560,401 |
| SWE Costs | \$0 | \$0 | \$0 | \$0 | \$120,000 |
| Total | \$3,458,066 | \$531,252 | \$4,059,626 | \$511,457 | \$8,680,401 |

Program-specific and portfolio total finances since the inception of Phase III are shown in Table 7-2A to 7-2D.

Table 7-2A to 7-2D: Phase III to Date Financials¹⁵

Table 7-2A: Phase III to Date Financials- Met-Ed

| Program | Incentives to Participants and Trade Allies | EDC Materials, Labor, and Administration | ICSP Materials, Labor, and Administration | EM&V | Total EDC Cost |
|--|---|--|---|-------------|----------------|
| <i>Appliance Turn-in</i> | \$671,400 | \$123,304 | \$1,615,155 | \$64,791 | \$2,474,650 |
| <i>Energy Efficient Homes</i> | \$8,097,512 | \$473,087 | \$5,655,257 | \$301,302 | \$14,527,157 |
| <i>Energy Efficient Products</i> | \$4,293,884 | \$92,336 | \$1,978,639 | \$252,297 | \$6,617,156 |
| <i>Low Income Energy Efficiency</i> | \$239,629 | \$666,163 | \$7,605,916 | \$257,150 | \$8,768,858 |
| <i>C&I Energy Solutions for Business - Small</i> | \$2,657,782 | \$344,536 | \$1,888,704 | \$339,329 | \$5,230,351 |
| <i>C&I Demand Response - Small</i> | \$1,172 | \$30,167 | \$106,342 | \$16,911 | \$154,592 |
| <i>C&I Energy Solutions for Business - Large</i> | \$3,794,744 | \$209,907 | \$2,187,169 | \$394,974 | \$6,586,794 |
| <i>C&I Demand Response - Large</i> | \$28,748 | \$270,383 | \$1,173,151 | \$151,811 | \$1,624,092 |
| <i>Governmental & Institutional Tariff</i> | \$78,516 | \$6,397 | \$92,356 | \$27,975 | \$205,243 |
| Common Portfolio Costs | | | | | \$0 |
| Total Portfolio | \$19,863,387 | \$2,216,280 | \$22,302,688 | \$1,806,539 | \$46,188,894 |
| SWE Costs | \$0 | \$0 | \$0 | \$0 | \$831,987 |
| Total | \$19,863,387 | \$2,216,280 | \$22,302,688 | \$1,806,539 | \$47,020,881 |

¹⁵ Results for the Small & Large Energy Solutions for Business programs include GNI customers who participated in these programs.

Table 7-2B: Phase III to Date Financials- Penelec

| Program | Incentives to Participants and Trade Allies | EDC Materials, Labor, and Administration | ICSP Materials, Labor, and Administration | EM&V | Total EDC Cost |
|--|--|---|--|-----------------|-----------------------|
| <i>Appliance Turn-in</i> | \$582,800 | \$136,733 | \$1,483,359 | \$70,201 | \$2,273,093 |
| <i>Energy Efficient Homes</i> | \$7,441,249 | \$457,335 | \$5,062,221 | \$277,485 | \$13,238,291 |
| <i>Energy Efficient Products</i> | \$3,986,522 | \$102,179 | \$2,056,508 | \$243,175 | \$6,388,383 |
| <i>Low Income Energy Efficiency</i> | \$223,819 | \$814,915 | \$7,461,911 | \$283,689 | \$8,784,333 |
| <i>C&I Energy Solutions for Business - Small</i> | \$3,363,750 | \$371,819 | \$1,953,648 | \$356,569 | \$6,045,786 |
| <i>C&I Demand Response - Small</i> | \$0 | \$0 | \$0 | \$0 | \$0 |
| <i>C&I Energy Solutions for Business - Large</i> | \$3,606,807 | \$208,771 | \$1,927,895 | \$349,881 | \$6,093,354 |
| <i>C&I Demand Response - Large</i> | \$0 | \$0 | \$0 | \$0 | \$0 |
| <i>Governmental & Institutional Tariff</i> | \$118,942 | \$23,258 | \$174,691 | \$43,486 | \$360,377 |
| Common Portfolio Costs | | | | | \$0 |
| Total Portfolio | \$19,323,889 | \$2,115,011 | \$20,120,232 | \$1,624,486 | \$43,183,618 |
| SWE Costs | \$0 | \$0 | \$0 | \$0 | \$754,000 |
| Total | \$19,323,889 | \$2,115,011 | \$20,120,232 | \$1,624,486 | \$43,937,618 |

Table 7-2C: Phase III to Date Financials- Penn Power

| Program | Incentives to Participants and Trade Allies | EDC Materials, Labor, and Administration | ICSP Materials, Labor, and Administration | EM&V | Total EDC Cost |
|---|--|---|--|-----------------|-----------------------|
| <i>Appliance Turn-in</i> | \$205,250 | \$31,712 | \$576,526 | \$15,911 | \$829,400 |
| <i>Energy Efficient Homes</i> | \$2,522,652 | \$182,442 | \$1,653,553 | \$107,132 | \$4,465,780 |
| <i>Energy Efficient Products</i> | \$1,242,044 | (\$6,125) | \$471,067 | \$52,585 | \$1,759,571 |
| <i>Low Income Energy Efficiency</i> | \$95,225 | \$280,803 | \$2,215,428 | \$91,381 | \$2,682,838 |
| <i>C&I Energy Solutions for Business - Small</i> | \$1,555,377 | \$123,585 | \$725,347 | \$85,957 | \$2,490,267 |
| <i>C&I Demand Response - Small</i> | \$0 | \$10,500 | \$3,408 | \$5,788 | \$19,697 |
| <i>C&I Energy Solutions for Business - Large</i> | \$839,645 | \$76,274 | \$445,608 | \$75,804 | \$1,437,332 |
| <i>C&I Demand Response - Large</i> | \$231,282 | \$94,094 | \$338,339 | \$51,913 | \$715,629 |
| <i>Governmental & Institutional Tariff</i> | \$109,638 | \$6,220 | \$77,220 | \$9,827 | \$202,906 |
| <i>Common Portfolio Costs</i> | | | | | \$0 |
| <i>Total Portfolio</i> | \$6,801,115 | \$799,506 | \$6,506,498 | \$496,299 | \$14,603,418 |
| <i>SWE Costs</i> | \$0 | \$0 | \$0 | \$0 | \$234,000 |
| <i>Total</i> | \$6,801,115 | \$799,506 | \$6,506,498 | \$496,299 | \$14,837,418 |

Table 7-2D: Phase III to Date Financials- West Penn Power

| Program | Incentives to Participants and Trade Allies | EDC Materials, Labor, and Administration | ICSP Materials, Labor, and Administration | EM&V | Total EDC Cost |
|--|--|---|--|-----------------|-----------------------|
| <i>Appliance Turn-in</i> | \$747,475 | \$129,584 | \$1,837,309 | \$64,471 | \$2,778,839 |
| <i>Energy Efficient Homes</i> | \$5,848,669 | \$548,336 | \$5,516,636 | \$288,419 | \$12,202,059 |
| <i>Energy Efficient Products</i> | \$4,635,877 | \$185,162 | \$2,429,648 | \$265,652 | \$7,516,339 |
| <i>Low Income Energy Efficiency</i> | \$204,876 | \$682,229 | \$7,225,768 | \$275,804 | \$8,388,678 |
| <i>C&I Energy Solutions for Business - Small</i> | \$3,199,242 | \$388,972 | \$2,227,595 | \$365,144 | \$6,180,952 |
| <i>C&I Demand Response - Small</i> | \$2,265 | \$38,107 | \$48,684 | \$21,267 | \$110,323 |
| <i>C&I Energy Solutions for Business - Large</i> | \$2,852,283 | \$181,419 | \$1,839,342 | \$319,698 | \$5,192,742 |
| <i>C&I Demand Response - Large</i> | \$573,904 | \$342,590 | \$1,308,336 | \$191,429 | \$2,416,259 |
| <i>Governmental & Institutional Tariff</i> | \$898,642 | \$19,897 | \$470,035 | \$36,485 | \$1,425,059 |
| Common Portfolio Costs | | | | | \$0 |
| Total Portfolio | \$18,963,232 | \$2,516,296 | \$22,903,353 | \$1,828,369 | \$46,211,250 |
| SWE Costs | \$0 | \$0 | \$0 | \$0 | \$780,000 |
| Total | \$18,963,232 | \$2,516,296 | \$22,903,353 | \$1,828,369 | \$46,991,250 |

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 were 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. FirstEnergy's cost-recovery charges are organized separately by five 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 charges for electric service. Readers should be mindful of the differences between Table 2-7 Section 2.4 and Tables 7-3A-7-3D EE&C Plan Expenditures by Cost-Recovery Category. For example, the low-income customer segment is a subset of the FirstEnergy EDCs' residential tariff(s) and therefore not listed in Tables 7-3A to 7-3D Plan Expenditures by Cost-Recovery Category.

Table 7-3A to 7-3D: EE&C Plan Expenditures by Cost-Recovery Category¹⁶

Table 7-3A: EE&C Plan Expenditures by Cost-Recovery Category – Met-Ed

| Operating Company | Cost Recovery Sector | Rate Classes Included | PYTD \$ Spending (\$1,000) | P3TD \$ Spending (\$1,000) |
|------------------------|--------------------------------|---|----------------------------|----------------------------|
| Met-Ed | Residential (incl. Low Income) | Rate RS | \$7,416 | \$32,928 |
| | Small C&I | Rate GS-Small, Rate GS-Medium, and Outdoor Lighting Service | \$1,121 | \$5,510 |
| | Large C&I | Rate GS-Large, Rate GP and Rate TP | \$1,733 | \$8,371 |
| | Street Lighting | Street Lighting Service, LED Street Lighting Service and Ornamental Street Lighting Service | \$35 | \$108 |
| | Government & Non-Profit Tariff | Rate GS - Volunteer Fire Company, and Non-Profit Ambulance Service, Rescue Squad and Senior Center Service Rate and Rate MS | \$20 | \$105 |
| Portfolio Total | | | \$10,324 | \$47,021 |

¹⁶ Includes allocation of SWE costs in each Cost Recovery Sector.

Table 7-3B: EE&C Plan Expenditures by Cost-Recovery Category – Penelec

| Operating Company | Cost Recovery Sector | Rate Classes Included | PYTD \$ Spending (\$1,000) | P3TD \$ Spending (\$1,000) |
|------------------------|--------------------------------|--|----------------------------|----------------------------|
| Penelec | Residential (incl. Low Income) | Rate RS | \$7,064 | \$31,228 |
| | Small C&I | Rate GS-Small, Rate GS-Medium, and Outdoor Lighting Service | \$1,337 | \$6,170 |
| | Large C&I | Rate GS-Large, Rate GP, and Rate LP | \$1,113 | \$6,170 |
| | Street Lighting | Street Lighting Service, LED Street Lighting Service, and Ornamental Street Lighting Service | \$17 | \$158 |
| | Government & Non-Profit Tariff | Rate GS – Volunteer Fire Company, and Non-Profit Ambulance Service, Rescue Squad and Senior Center Service Rate and Rate H | \$35 | \$212 |
| Portfolio Total | | | \$9,565 | \$43,938 |

Table 7-3C: EE&C Plan Expenditures by Cost-Recovery Category – Penn Power

| Operating Company | Cost Recovery Sector | Rate Classes Included | PYTD \$ Spending (\$1,000) | P3TD \$ Spending (\$1,000) |
|------------------------|--------------------------------|--|----------------------------|----------------------------|
| Penn Power | Residential (incl. Low Income) | Rate RS | \$2,160 | \$9,890 |
| | Small C&I | Rate GS, GS Special Rider GSDS, Rate GM, Rate GS-Large and POL | \$563 | \$2,545 |
| | Large C&I | Rate GP, and Rate GT | \$378 | \$2,197 |
| | Street Lighting | Rate Schedules SV, SVD, SM and LED | \$0 | \$163 |
| | Government & Non-Profit Tariff | Rate GS – Volunteer Fire Company, and Non-Profit Ambulance Service, Rescue Squad and Senior Center Service Rate and Rate PNP | \$8 | \$43 |
| Portfolio Total | | | \$3,109 | \$14,837 |

**Table 7-3D: EE&C Plan Expenditures by Cost-Recovery Category –
West Penn Power**

| Operating Company | Cost Recovery Sector | Rate Classes Included | PYTD \$ Spending (\$1,000) | P3TD \$ Spending (\$1,000) |
|--------------------------|---|--|-----------------------------------|-----------------------------------|
| West Penn Power | Residential (incl. Low Income) | Rate 10 | \$5,652 | \$31,383 |
| | Small C&I | Rates GS 20, GS 30 | \$1,469 | \$6,416 |
| | Large C&I | Rates GS 35, 40, 44, 46, and Tariff No. 38 | \$1,378 | \$7,758 |
| | Street Lighting | Rate Schedules 51 through 58, 71, 72 | \$157 | \$1,267 |
| | Government & Non-Profit Tariff | Rate GS 20 – Volunteer Fire Company, and Non-Profit Ambulance Service, Rescue Squad and Senior Center Service Rate | \$24 | \$166 |
| Portfolio Total | | | \$8,680 | \$46,991 |

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