

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

**Phase III of Act 129**

**Program Year 9**

**(June 1, 2017 – November 30, 2017)**

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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## 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 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

## 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 9 (PY9) 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 PY9. 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 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 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**

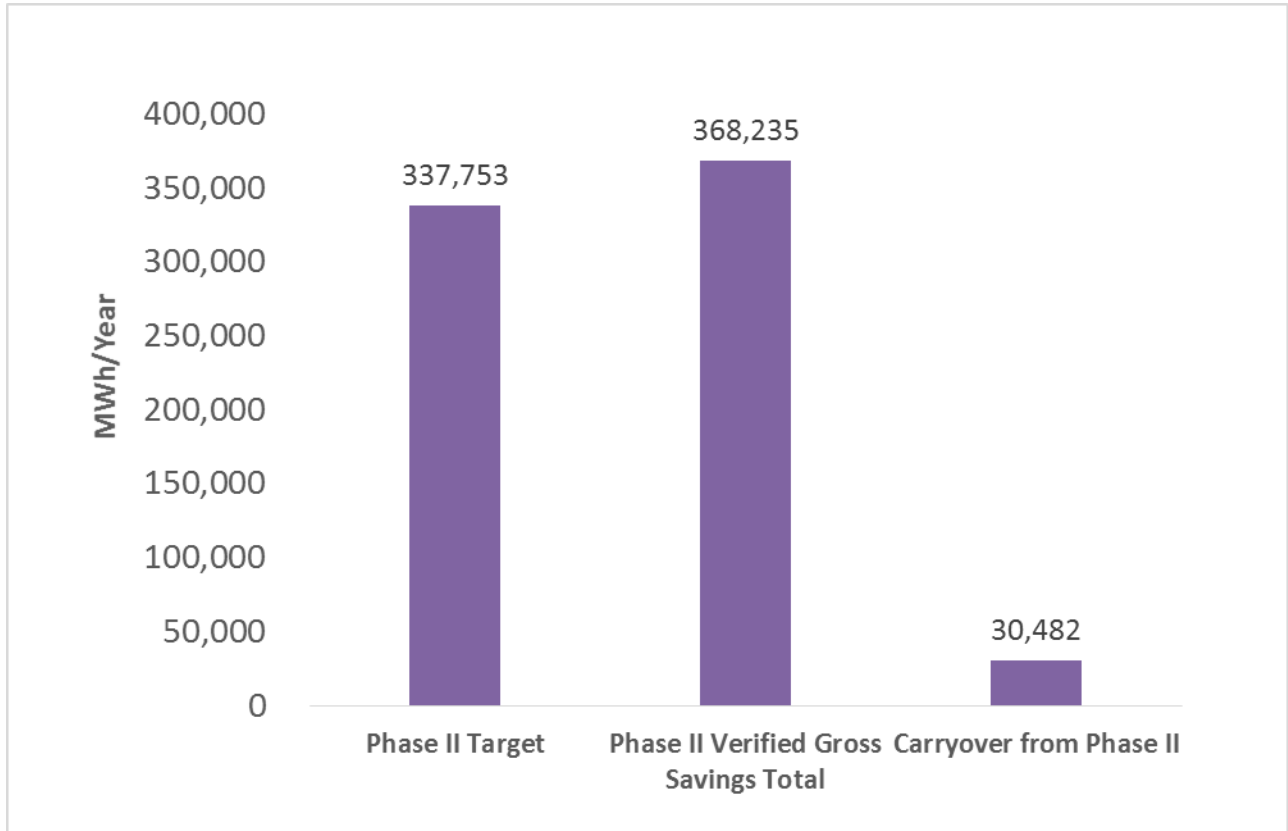
<b>FirstEnergy EDC</b>	<b>Phase II Carryover Savings (MWh/Year)</b>
<b>Met-Ed</b>	30,482
<b>Penelec</b>	49,695
<b>Penn Power</b>	13,866
<b>West Penn Power</b>	20,540



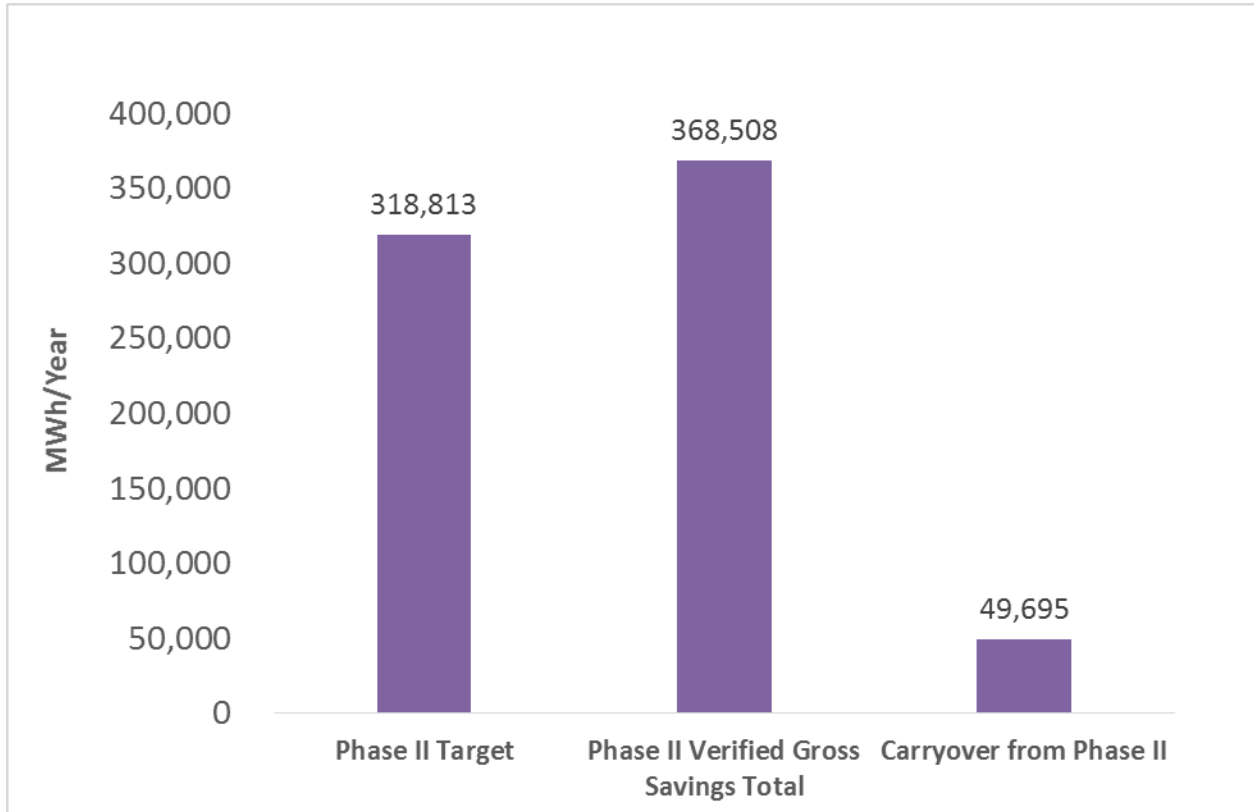
**Figures 1A-1D:** Carryover Savings from Phase II of Act 129 compare each of the EDC’s Phase II verified gross savings total to the Phase II compliance target to illustrate the carryover calculation.

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

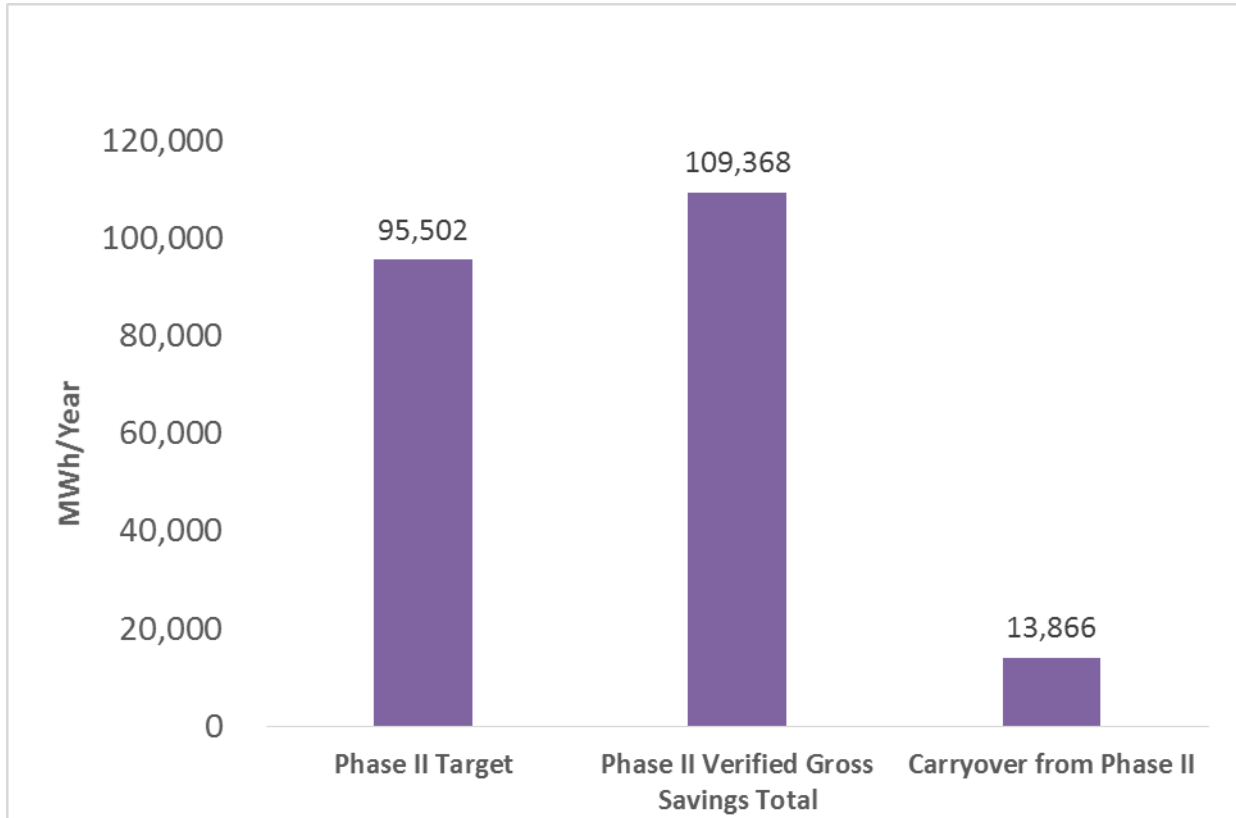
**Figure 1A: Carryover Savings from Phase II of Act 129 - Met-Ed**

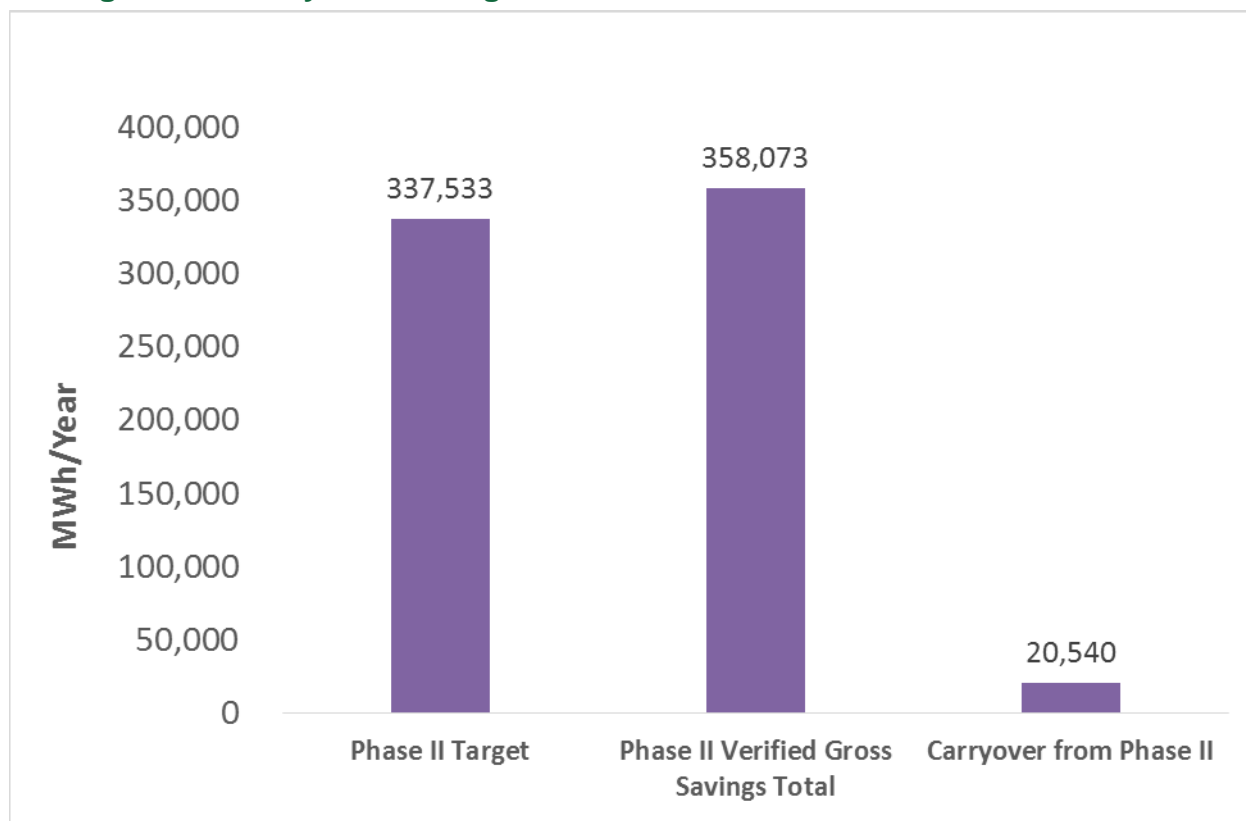


**Figure 1B: Carryover Savings from Phase II of Act 129 – Penelec**



**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**

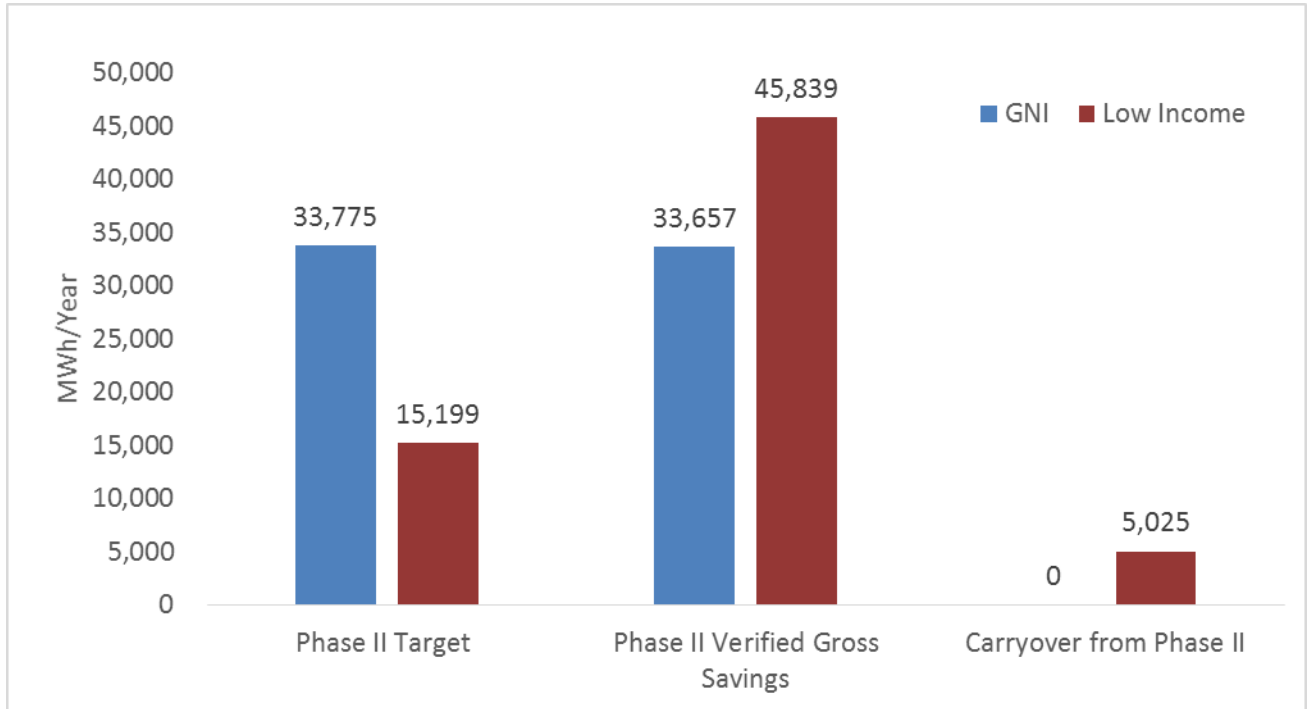
The Commission's Phase III Implementation Order<sup>1</sup> also allowed EDCs to carry over savings in excess of the Phase II Government, Non-Profit, and Institutional (GNI) savings goal and excess savings from the low-income customer segment.<sup>2</sup> **Figures 2A-2D:** Customer Segment Specific 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.

<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.

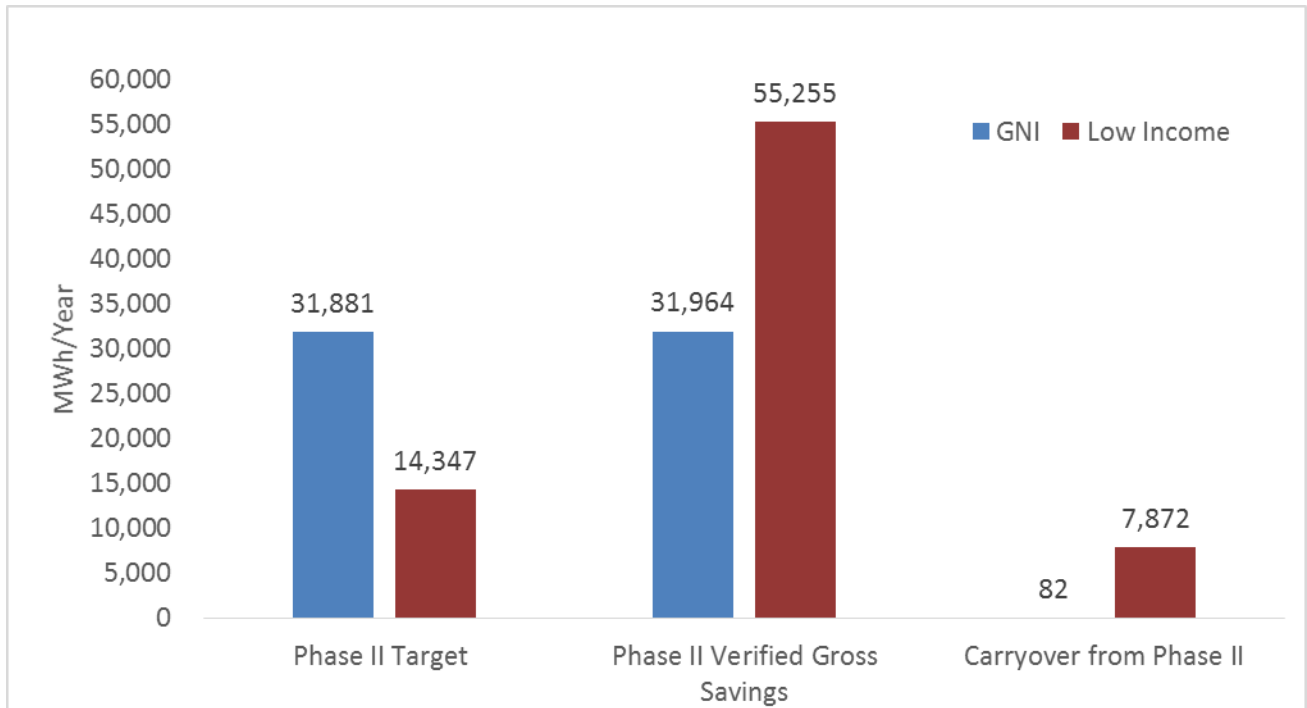
<sup>2</sup> Proportionate to those savings achieved by dedicated low-income programs in Phase III.

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

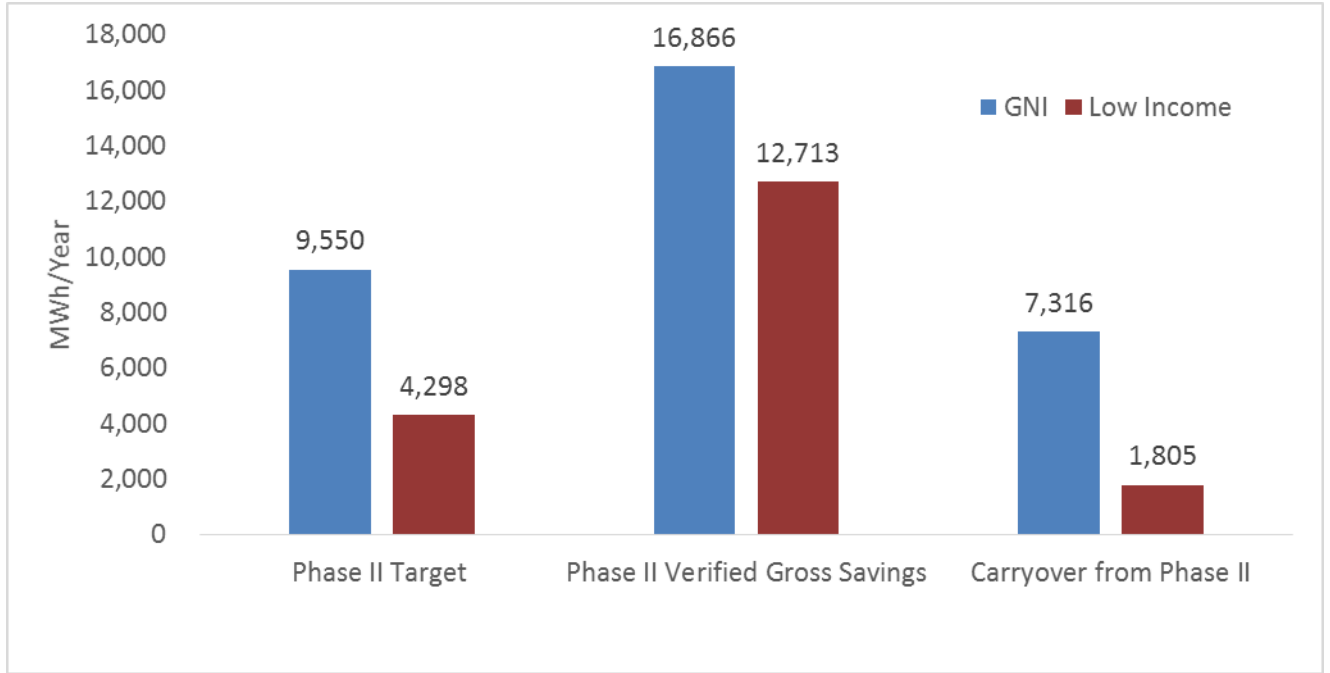
**Figure 2A: Customer Segment-Specific Carryover from Phase II - Met-Ed**



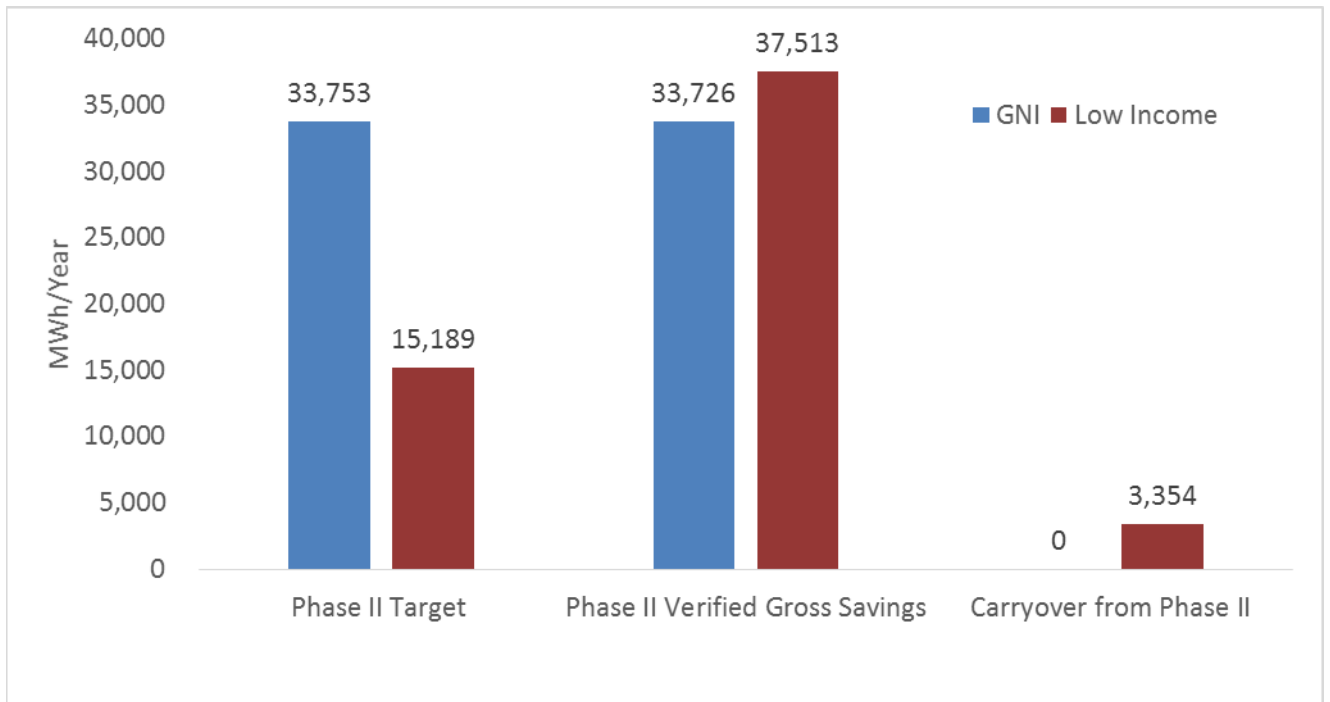
**Figure 2B: Customer Segment-Specific Carryover from Phase II – Penelec**



**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 9 on June 1, 2017. **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 PY9**

EDC	Gross MWh/yr Savings (PYRTD)	Gross Peak Demand MW Savings (PYRTD)
Met-Ed	60,489	10.92
Penelec	64,606	9.94
Penn Power	17,859	3.17
West Penn Power	87,401	13.43

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

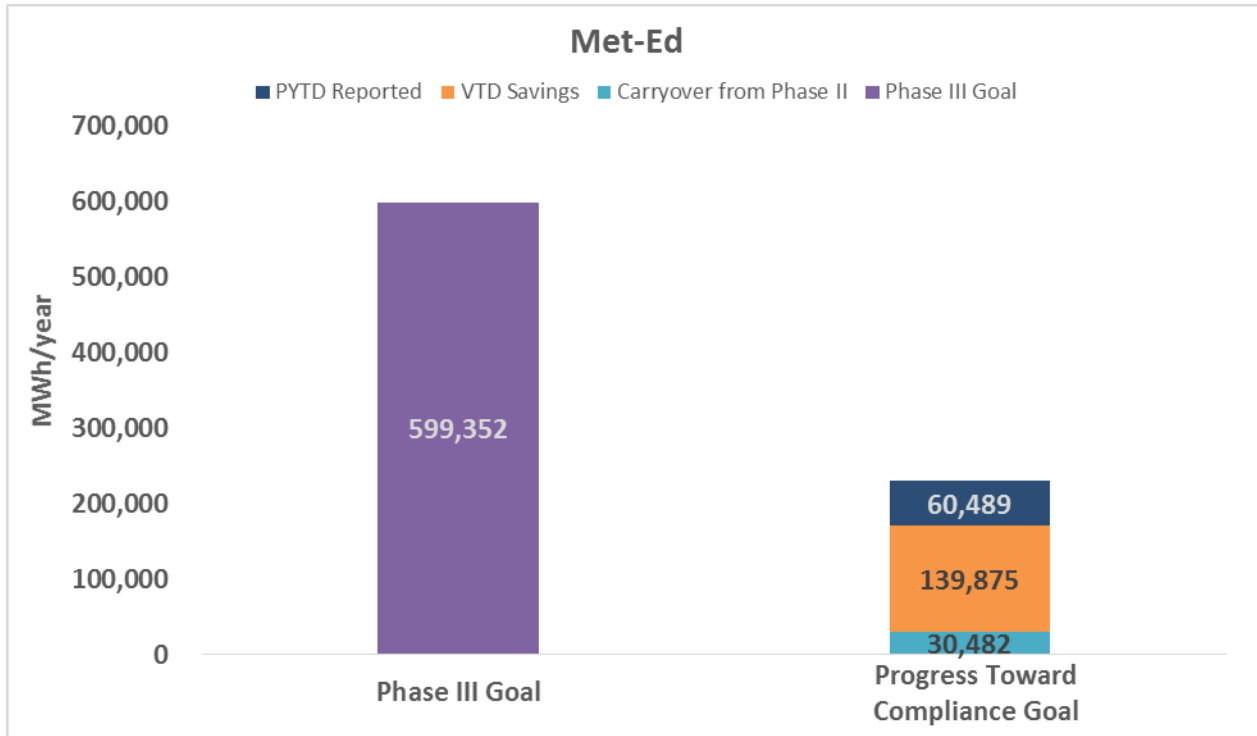
EDC	Reported Gross Electric Energy Savings MWh/yr Savings (RTD)	Reported Gross Peak Demand MW Savings (RTD)	Gross Electric Energy Savings MWh/yr Savings (PSA)	Gross Peak Demand MW Savings (PSA)
Met-Ed	190,911	28.39	200,365	29.29
Penelec	186,141	25.17	197,056	25.96
Penn Power	52,705	8.00	54,988	8.30
West Penn Power	209,862	30.61	218,732	30.27

**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	200,365	30,482	230,847	39%
Penelec	197,056	49,695	246,751	44%
Penn Power	54,988	13,866	68,854	44%
West Penn Power	218,732	20,540	239,272	44%

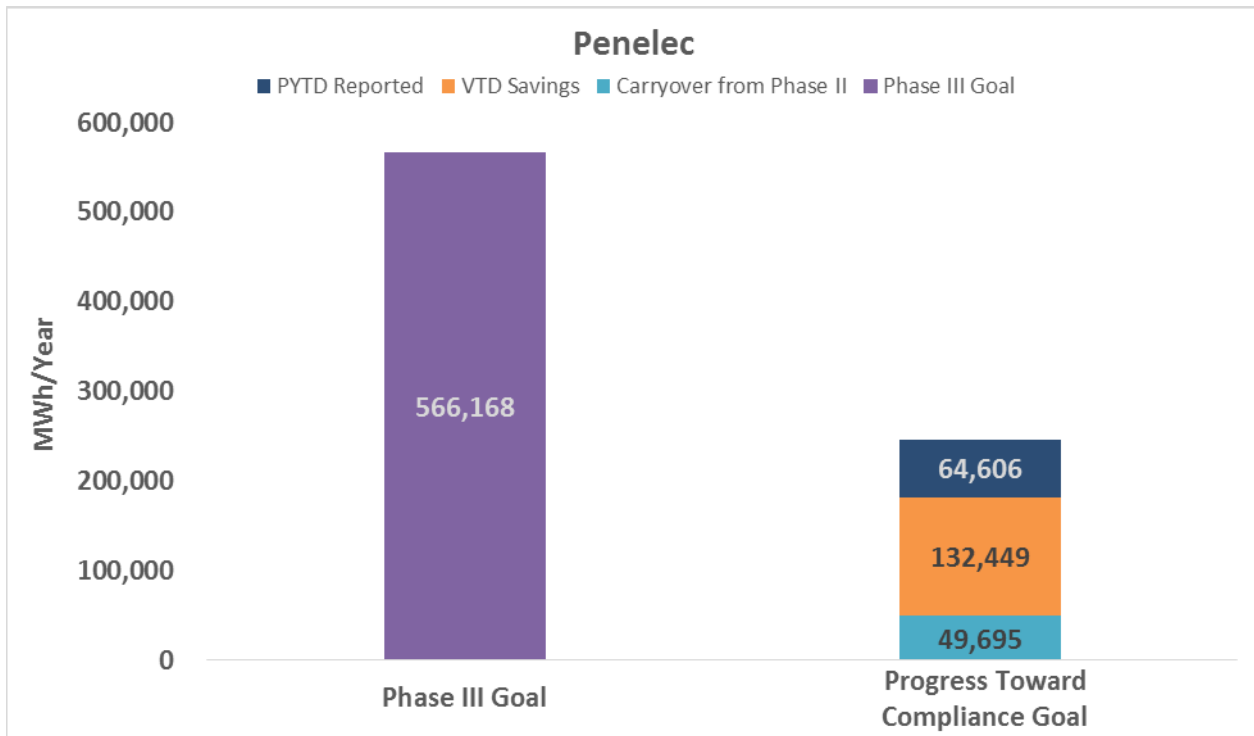
**Figures 3A-3D: Plan Performance toward Phase III Portfolio Compliance**

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

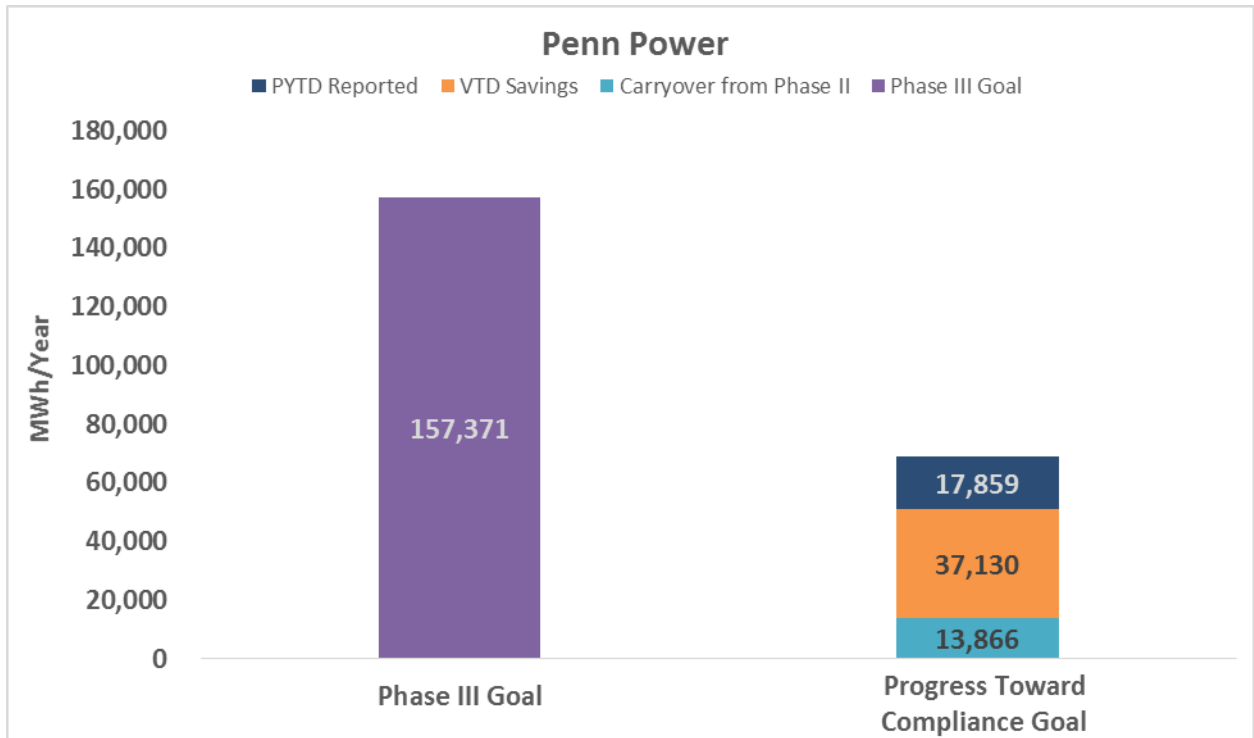




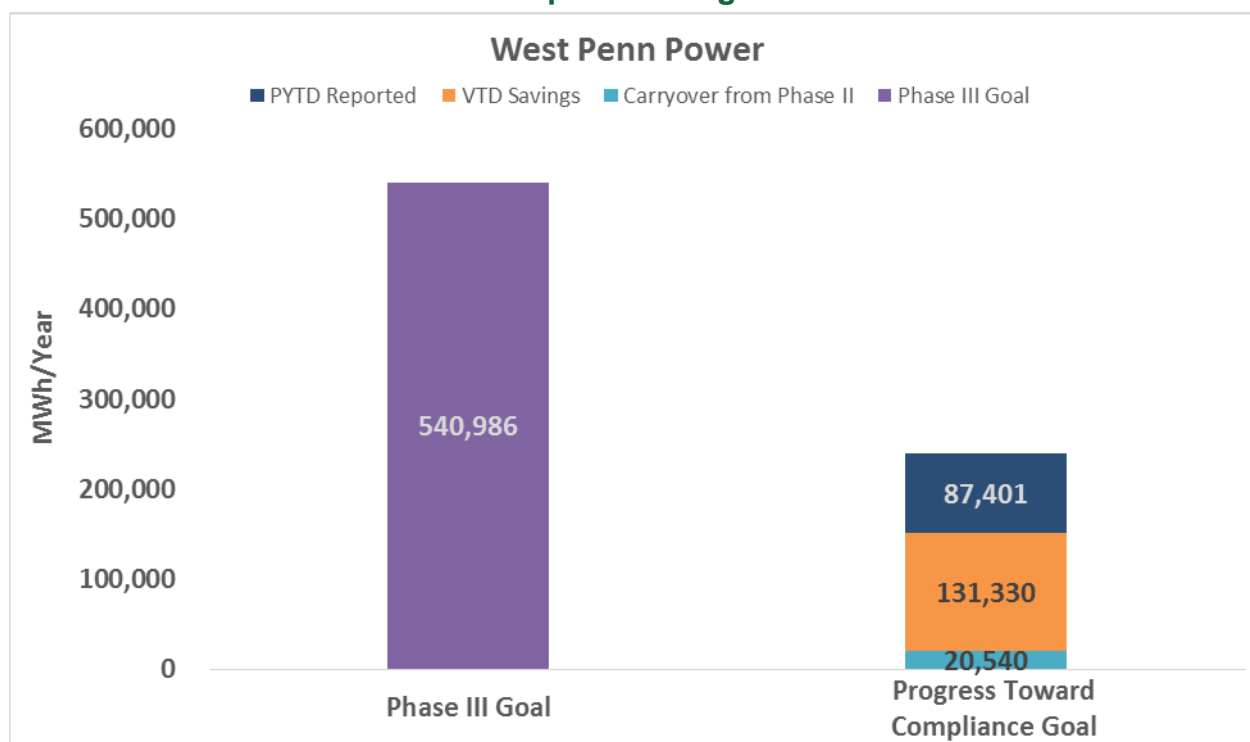
**Figure 3B: EE&C Plan Performance toward Phase III Portfolio Compliance Target – Penelec**



**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

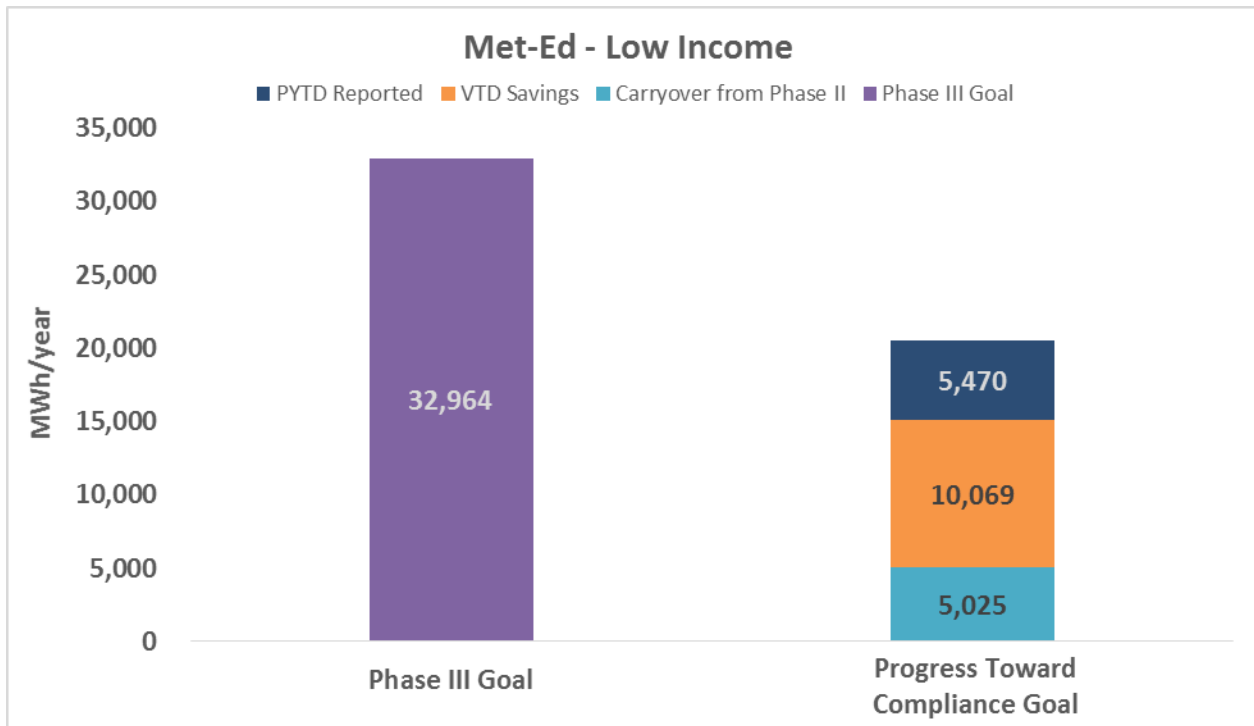
Low-Income Compliance Target compare the PSA+CO performance to date for the low-income customer segments to the Phase III savings targets as well as the percent achievement of each EDC's Phase III low-income energy savings target based on the latest available information.

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

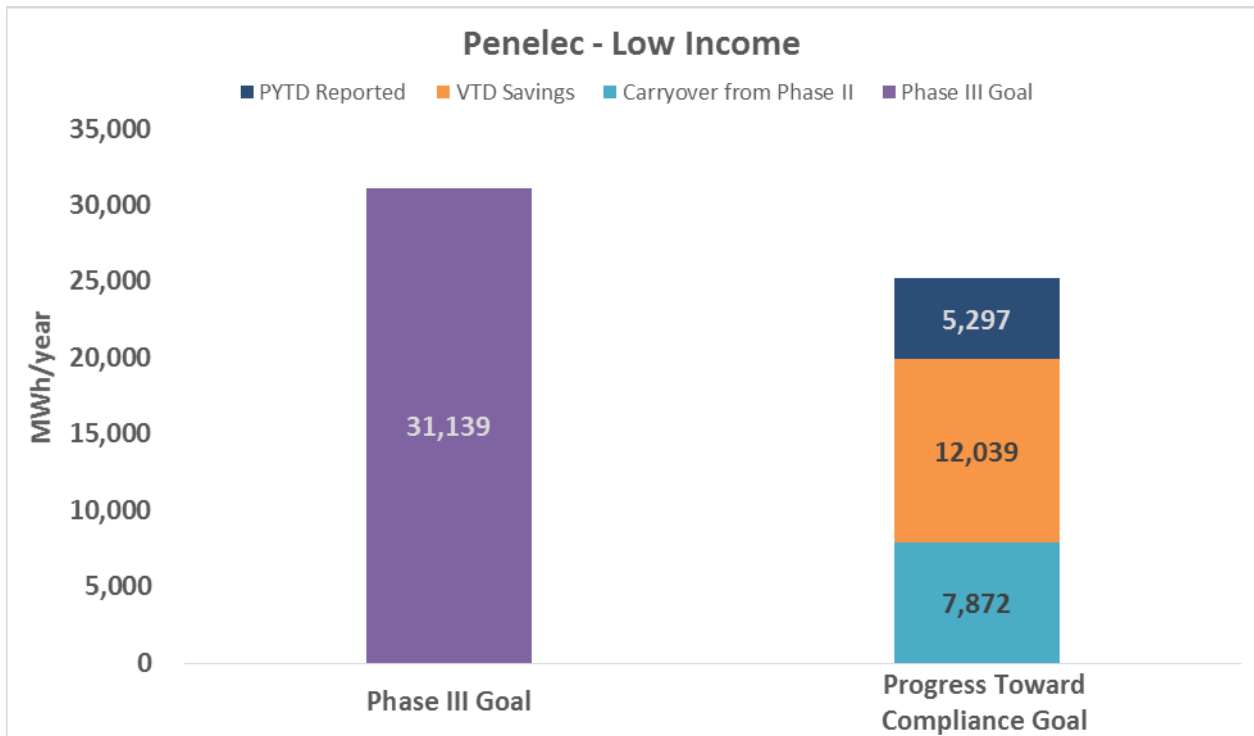
EDC	Low-Income Target (MWh/yr) (PYRTD)	PSA + CO (MWh/yr)	% of Low-Income Savings Target Achieved
Met-Ed	32,964	20,564	62%
Penelec	31,139	25,208	81%
Penn Power	8,655	6,823	79%
West Penn Power	29,754	18,991	64%

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

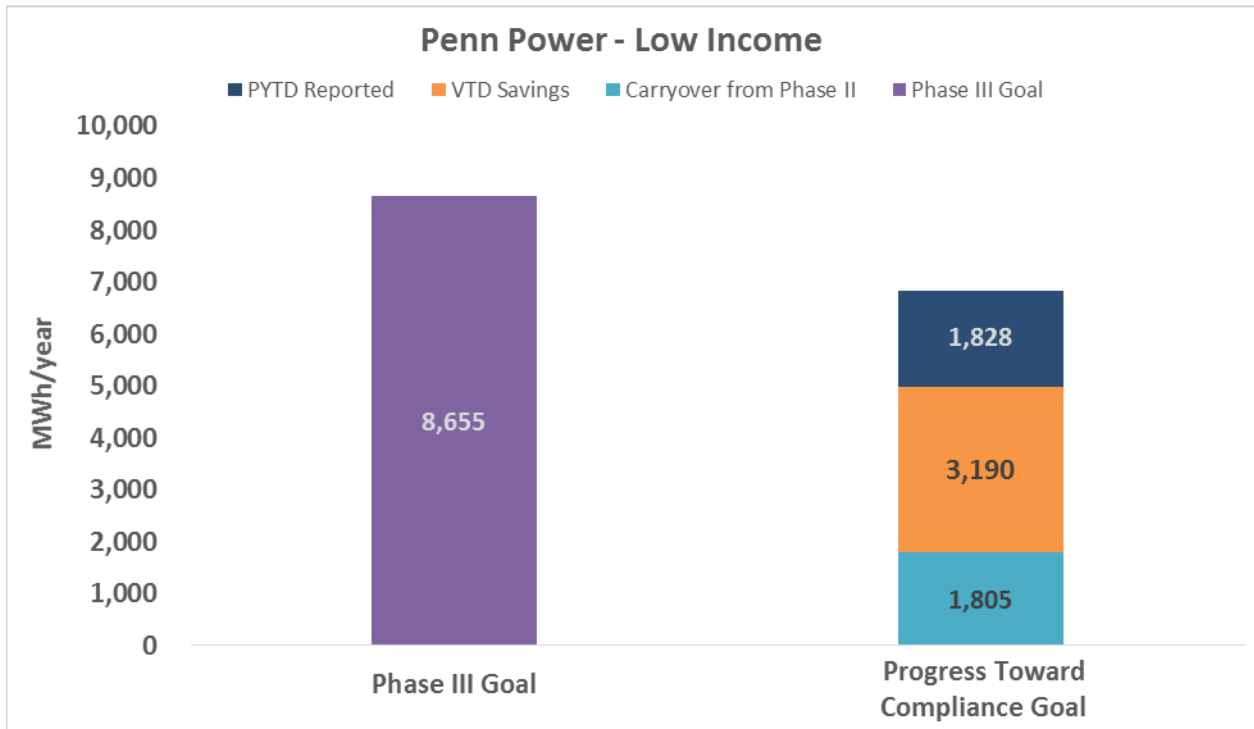
**Figure 4A: EE&C Plan Performance toward Phase III Low-Income Compliance Target – Met-Ed**



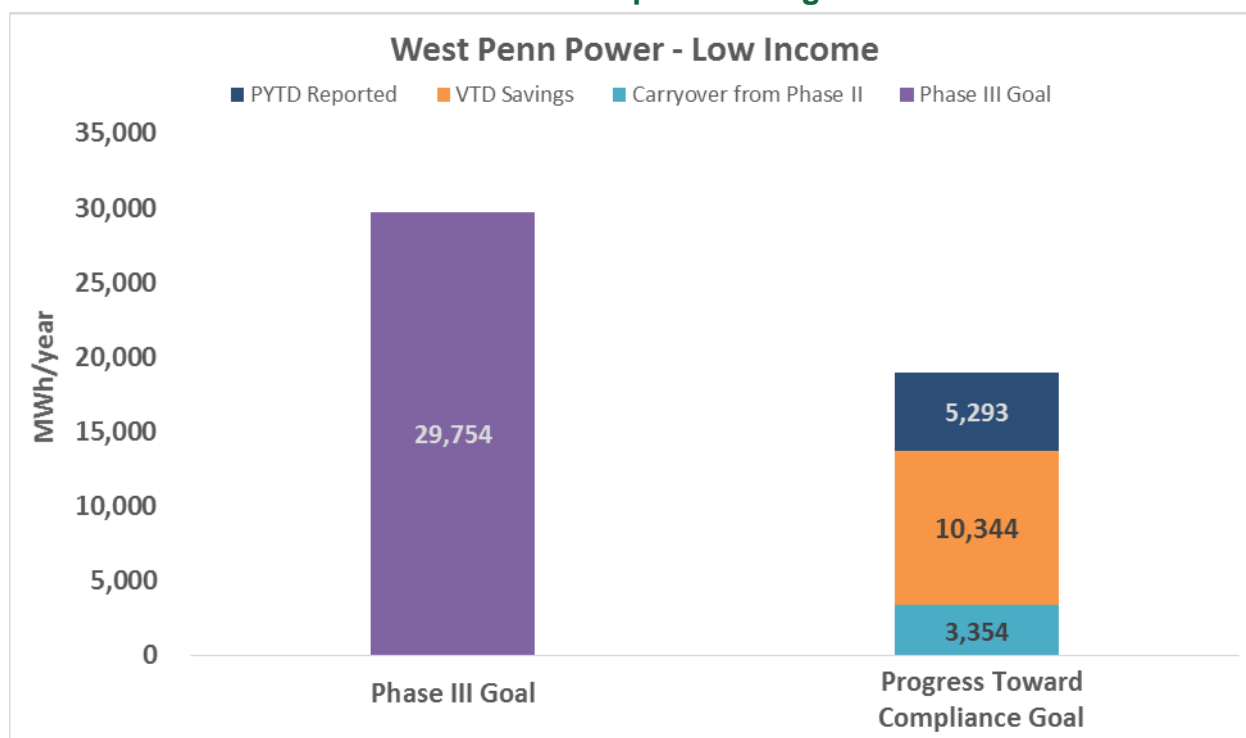
**Figure 4B: EE&C Plan Performance toward Phase III Low-Income Compliance Target – Penelec**



**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.

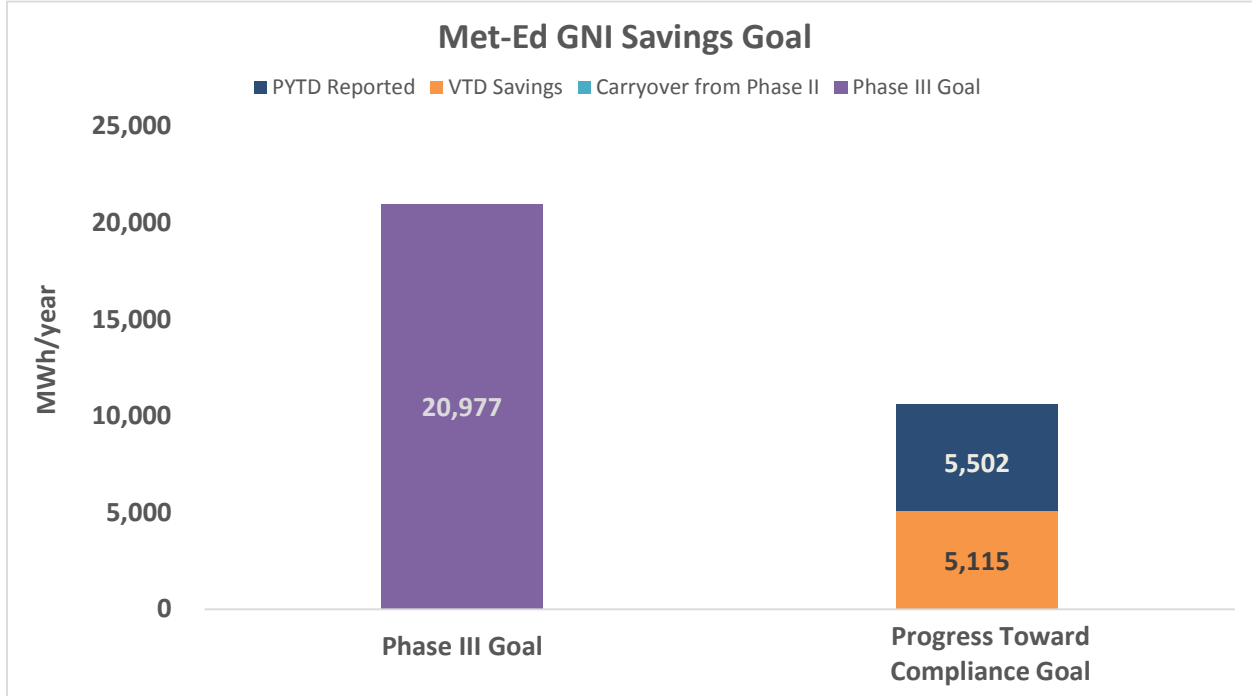
**Table 2-6: GNI Savings and Targets**

EDC	GNI Target (MWh/yr)	GNI Savings PSA + CO (MWh/yr)	% of GNI Savings Target Achieved
Met-Ed	20,977	10,616	51%
Penelec	19,816	11,084	56%
Penn Power	5,508	11,085	201%
West Penn Power	18,935	35,902	190%

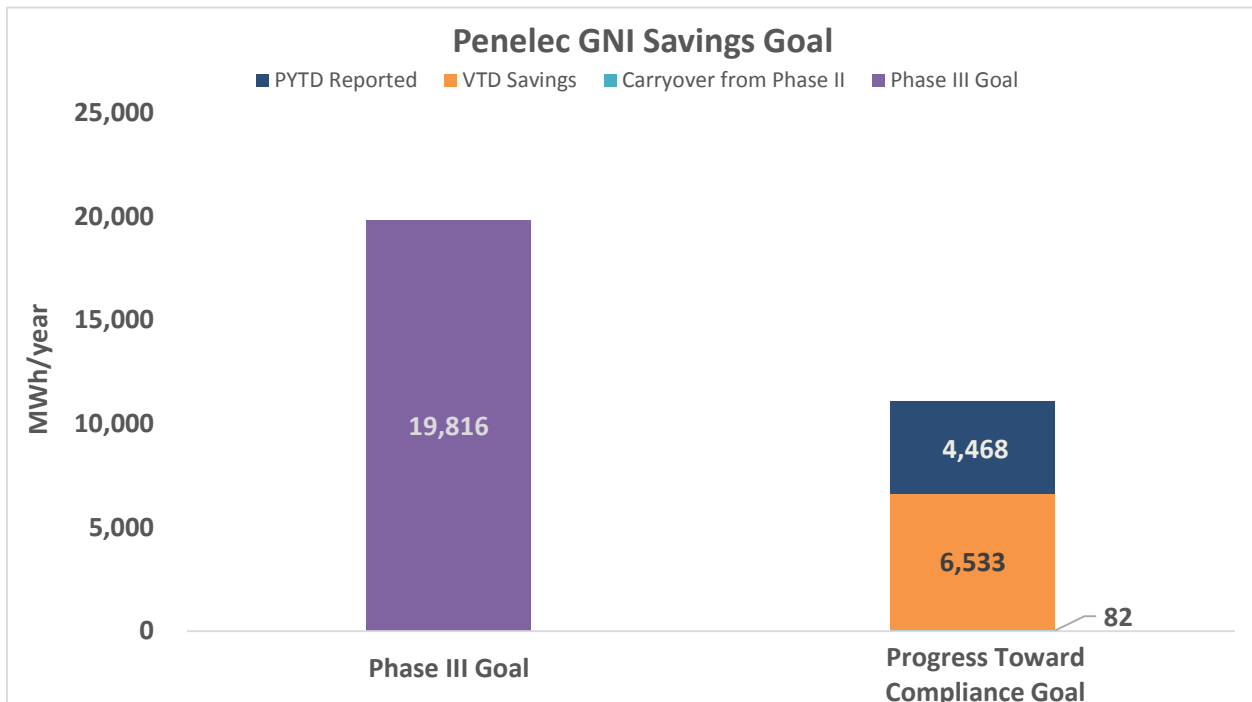
**Figures 5A-5D:** Plan Performance against Phase III GNI Compliance Target compare the PSA+CO performance to date for the GNI customer segment to the Phase III savings target, as well as the percent achievement of each EDC's Phase III GNI energy savings target based on the latest available information.

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

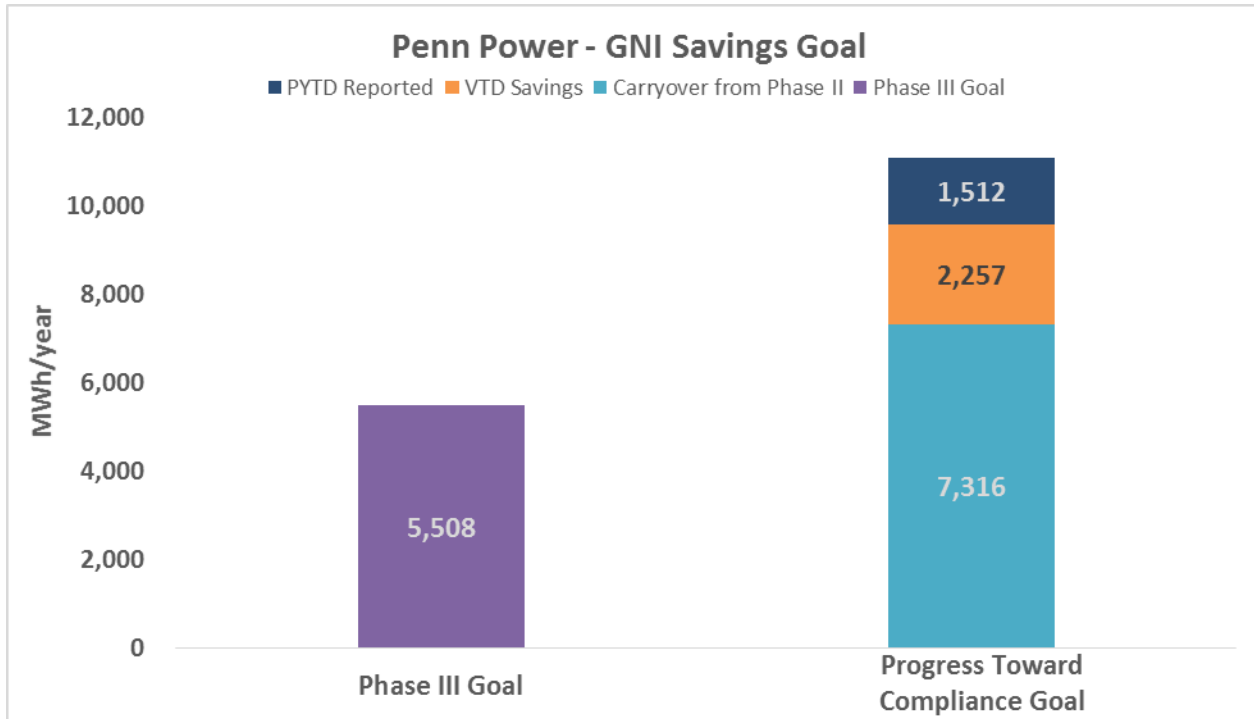
**Figure 5A: EE&C Plan Performance against Phase III GNI Compliance Target – Met-Ed**



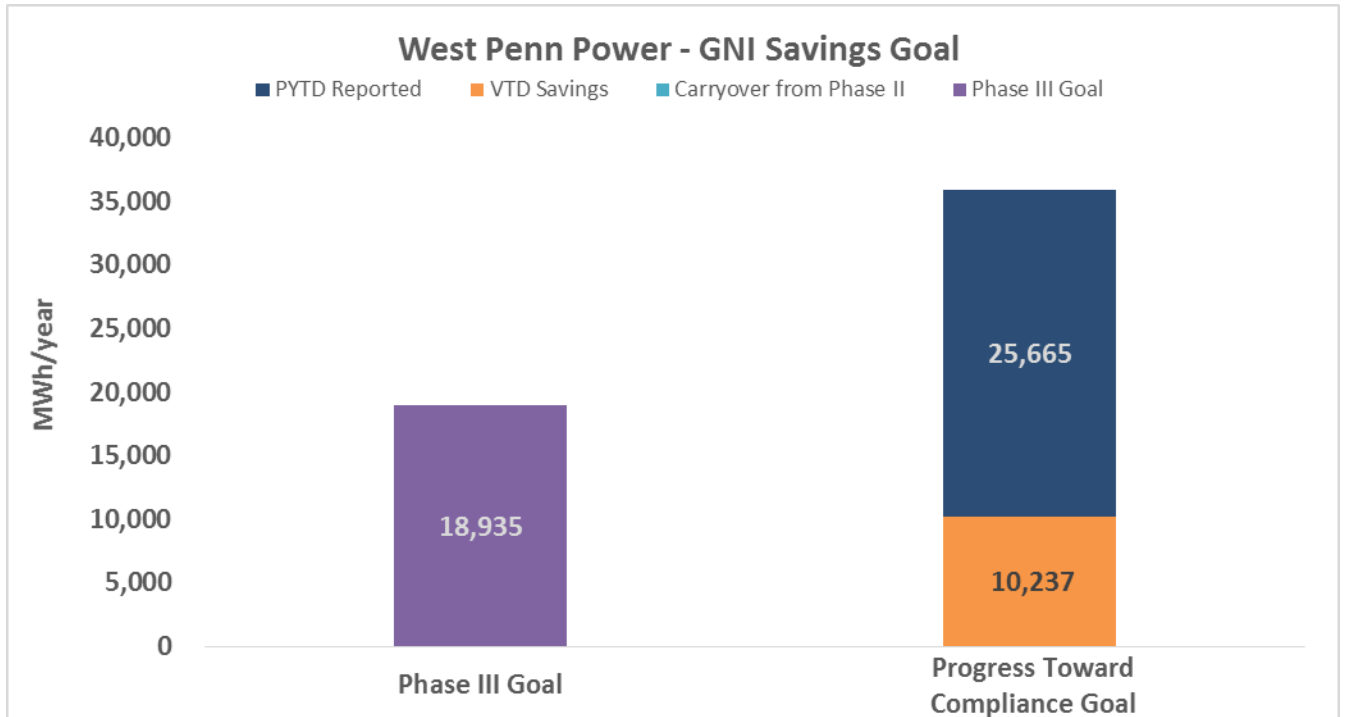
**Figure 5B: EE&C Plan Performance against Phase III GNI Compliance Target – Penelec**



**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 and the reliance on a small number of large customers' ability and willingness to curtail sufficient load on Act 129 event days with a one-day notice, attainment of the DR goals can be challenging. Thus, the Companies will continue to work closely with its implementation providers, evaluation CSPs, and customers to enhance participation and performance to achieve the aggressive Act 129 DR targets.

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 PY9, three (3) 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 PY9 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 values, is 1% above, 203% above, and 75% 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 6% below,<sup>3</sup> 96% above, and 28% above the Phase III compliance reduction target for Met-Ed, Penn Power and West Penn Power respectively.

Met-Ed's demand response achievement to date demonstrates compliance with Act 129 target, as the confidence interval associated with measurements exceeds the Act 129 target value. The 42.3 – 49.6 MW confidence interval of the measurement exceeds the 49.0 MW target from a statistical point of view.

Penn Power's demand response achievement to date demonstrates compliance with Act 129 target, as the confidence interval associated with measurements exceeds the Act 129 target value. The 15.4 – 51.5 MW confidence interval of the measurement exceeds the 17.0 MW target from a statistical point of view.

West Penn Power's demand response achievement to date demonstrates compliance with Act 129 target, as the confidence interval associated with measurements exceeds the Act 129 target value. The 52.0 – 111.8 MW confidence interval of the measurement exceeds the 64.0 MW target from a statistical point of view.

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<sup>3</sup> This is based on a central estimate of 45.9 MW for Met-Ed, which is obtained by taking the weighted average of the top three performing customer baseline load (CBL) algorithms (based on relative root mean square error calculations) for each participant. It is also possible to measure results based solely on the best performing CBL algorithm for each participant. This would increase the central estimate to 46.9 MW. We report the lower result to be consistent with ADM's PY9 Demand Response Evaluation Plan, but take the 0.9 MW difference as a systematic uncertainty (we call it "CBL selection uncertainty" instead of "CBL uncertainty").



### Tables 2-7A-C: PY9 Demand PYVTD Performance by Event

**Table 2-7A: PY9 Demand Response PYVTD Performance by Event  
Met-Ed**

<i>Event Date</i>	<i>Start Hour*</i>	<i>End Hour*</i>	<i>C&amp;I Demand Response - Small</i>	<i>C&amp;I Demand Response - Large</i>	<i>Residential Energy Efficient Homes</i>	<i>Average Portfolio MW Impact</i>
June 13	15	18	3.0 +/- 0.3	45.0 +/- 5.2	0.0 ± 0.0	48.0 ± 5.2
July 20	15	18	3.0 +/- 0.4	44.0 +/- 5.7	0.0 ± 0.0	47.0 ± 5.7
July 21	15	18	1.9 +/- 0.3	40.8 +/- 6.2	0.0 ± 0.0	42.7 ± 6.2
PYVTD - Average PYX DR Event Performance						45.9 ± 3.6
						(42.3 - 49.6)
VTD - Average Phase III DR Event Performance						45.9 ± 3.6
						(42.3 - 49.6)

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

**Table 2-7B: PY9 Demand Response PYVTD Performance by Event  
Penn Power**

<i>Event Date</i>	<i>Start Hour*</i>	<i>End Hour*</i>	<i>C&amp;I Demand Response - Small</i>	<i>C&amp;I Demand Response - Large</i>	<i>Residential Energy Efficient Homes</i>	<i>Average Portfolio MW Impact</i>
June 13	15	18	0.1 +/- 0.1	48.7 +/- 24.2	2.0 ± 0.6	50.8 ± 24.2
July 20	15	18	0.2 +/- 0.2	26.4 +/- 24.3	2.5 ± 0.6	29.2 ± 24.3
July 21	15	18	0.2 +/- 0.3	18.1 +/- 24.1	2.0 ± 0.6	20.4 ± 24.1
PYVTD - Average PYX DR Event Performance						33.5 ± 18.1
						(15.4-51.5)
VTD - Average Phase III DR Event Performance						33.5 ± 18.1
						(15.4-51.5)

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

**Table 2-7C: PY9 Demand Response PYVTD Performance by Event  
West Penn Power**

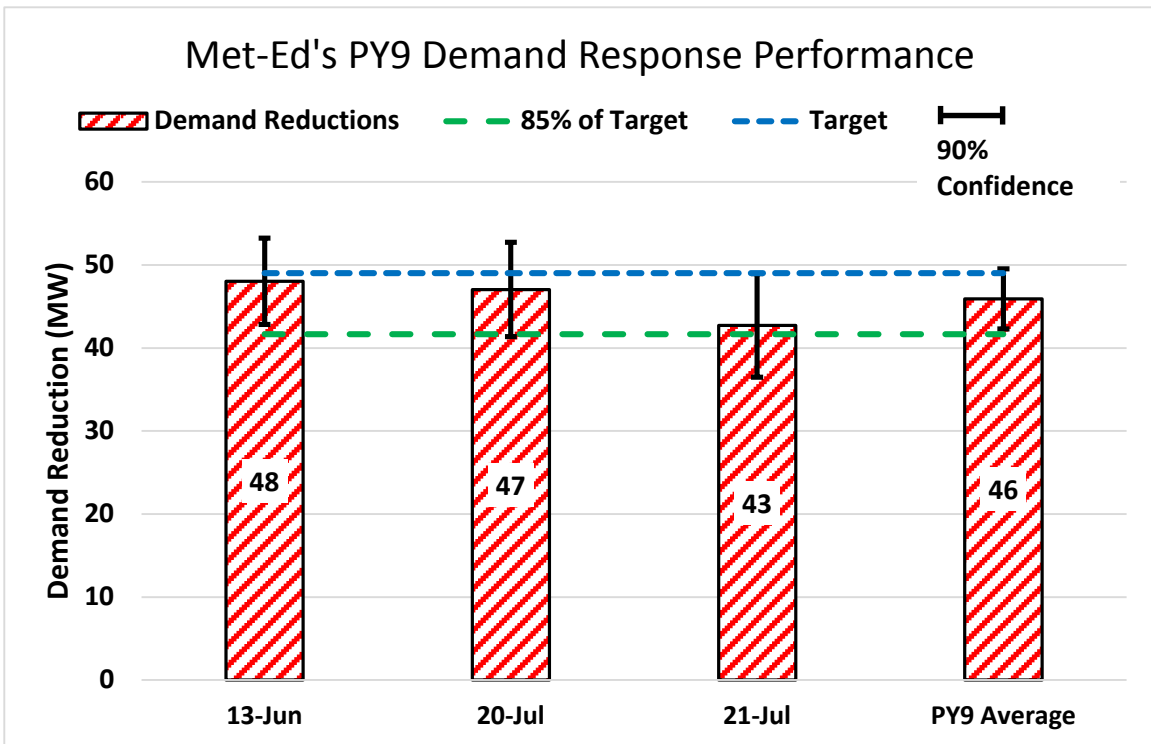
<b>Event Date</b>	<b>Start Hour*</b>	<b>End Hour*</b>	<b>C&amp;I Demand Response - Small</b>	<b>C&amp;I Demand Response - Large</b>	<b>Residential Energy Efficient Homes</b>	<b>Average Portfolio MW Impact</b>
June 13	15	18	3.3 +/- 1.4	119.9 +/- 48.5	0.0 ± 0.0	123.3 ± 48.5
July 20	15	18	2.4 +/- 1.6	72.3 +/- 46.7	0.0 ± 0.0	74.7 ± 46.7
July 21	15	18	2.3 +/- 2.4	45.4 +/- 47.0	0.0 ± 0.0	47.7 ± 47
PYVTD - Average PYX DR Event Performance						81.9 ± 29.9
						(52.0-111.8)
VTD - Average Phase III DR Event Performance						81.9 ± 29.9
						(52.0-111.8)

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

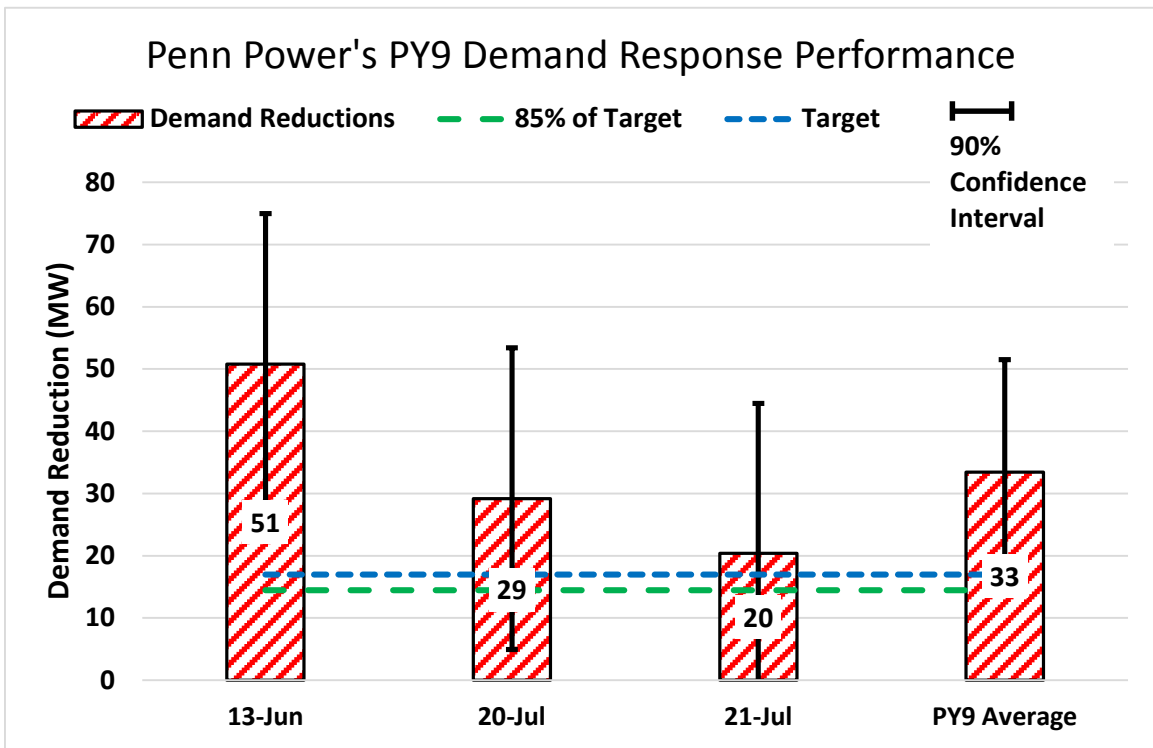
The Commission’s Phase III Implementation Order also established a requirement that EDCs achieve at least 85% of the Phase III compliance reduction target in each DR event. This translates to a 41.7, 14.5, and 54.4 MW minimum for each DR event for Met-Ed, Penn Power and West Penn Power respectively. **Figures 6 A-C** compare the performance of each of the DR events in PY9 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**

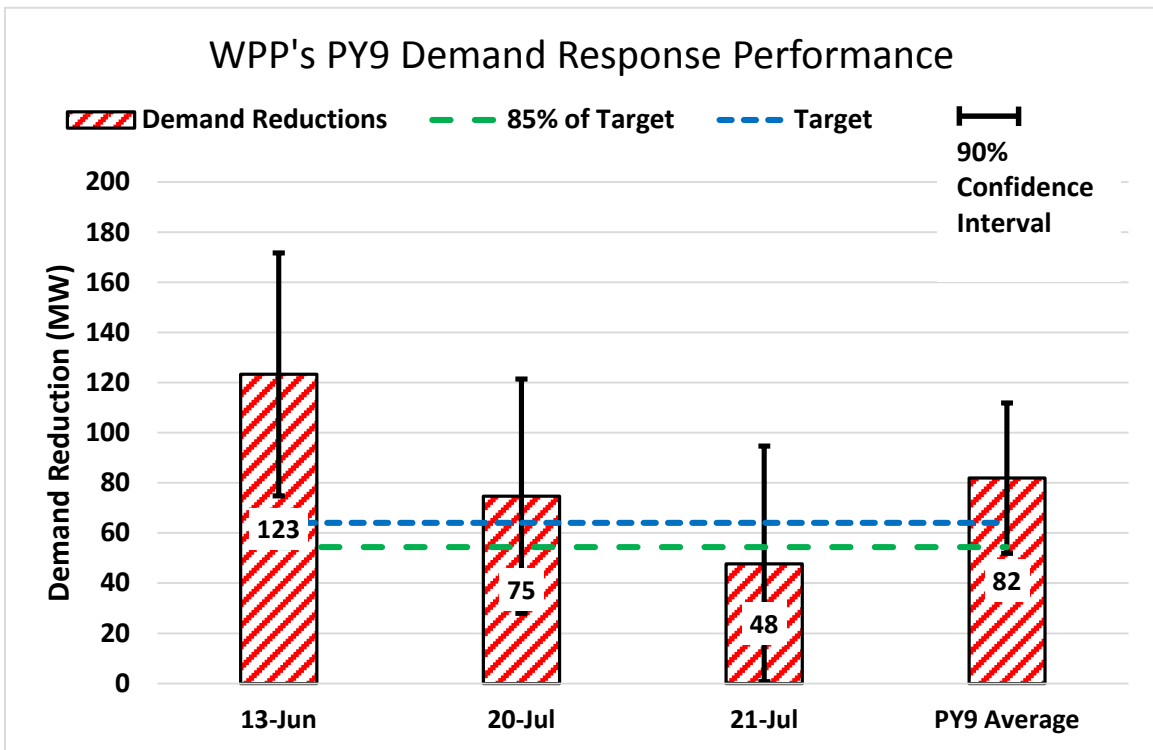
*Figure 6A: Event Performance Compared to 85% Per-Event Target  
Met-Ed*



**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 PY8. 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: PY9 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	307,049	22,235	238	111	90
	PYRTD MWh/yr	37,310	5,470	7,422	4,786	5,502
	PYRTD MW/yr (Energy Efficiency)	7.3	0.9	1.1	0.6	1.0
	PYVTD MW (Demand Response)	0	0	2.7	43.3	0
	Incentives (\$1000)	\$2,497.84	\$88.11	\$479.11	\$246.60	\$275.59
Penelec	# participants	307,578	27,560	268	47	268
	PYRTD MWh/yr	34,882	5,297	9,999	9,960	4,468
	PYRTD MW/yr (Energy Efficiency)	5.9	0.8	1.4	1.3	0.6
	PYVTD MW (Demand Response)	0	0	0	0	0
	Incentives (\$1000)	\$2,215.11	\$48.56	\$637.43	\$487.19	\$234.44
Penn Power	# participants	106,798	5,959	110	14	71
	PYRTD MWh/yr	11,092	1,828	3,164	263	1,512
	PYRTD MW/yr (Energy Efficiency)	2.1	0.3	0.5	0.0	0.2
	PYVTD MW (Demand Response)	2.1	0	0.2	31.1	0
	Incentives (\$1000)	\$746.88	\$38.51	\$178.97	\$13.07	\$94.86
West Penn Power	# participants	319,671	23,626	308	51	305
	PYRTD MWh/yr	38,014	5,293	11,636	6,793	25,665
	PYRTD MW/yr (Energy Efficiency)	8.5	1.0	1.8	1.0	1.2
	PYVTD MW (Demand Response)	0	0	2.7	79.2	0
	Incentives (\$1000)	\$2,083.75	\$56.92	\$676.56	\$329.04	\$1,002.57

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	805,216	49,190	23,087	190	2,103
	PSA MWh/yr	121,712	15,575	21,497	30,964	10,616
	PSA MW (Energy Efficiency)	17.4	2.1	3.8	4.2	1.8
	Phase III MW (Demand Response)	0.0	0.0	2.7	43.3	0.0
	Incentives (\$1000)	\$6,874.64	\$146.38	\$1,058.74	\$1,609.61	\$524.21
Penelec	# participants	862,742	64,889	28,329	129	2,957
	PSA MWh/yr	117,745	17,656	28,749	21,904	11,002
	PSA MW (Energy Efficiency)	14.9	2.1	4.9	2.7	1.3
	Phase III MW (Demand Response)	0.0	0.0	0.0	0.0	0.0
	Incentives (\$1000)	\$6,533.39	\$127.66	\$1,523.93	\$1,085.47	\$588.63
Penn Power	# participants	210,769	13,440	4,921	30	679
	PSA MWh/yr	31,917	4,908	11,373	3,021	3,769
	PSA MW (Energy Efficiency)	4.8	0.7	2.0	0.4	0.4
	Phase III MW (Demand Response)	2.1	0.0	0.2	31.1	0.0
	Incentives (\$1000)	\$2,009.48	\$61.34	\$614.39	\$180.16	\$223.08
West Penn Power	# participants	869,779	54,864	25,923	107	2,730
	PSA MWh/yr	123,389	16,208	29,033	14,199	35,902
	PSA MW (Energy Efficiency)	19.2	2.3	4.7	1.9	2.2
	Phase III MW (Demand Response)	0.0	0.0	2.7	79.2	0.0
	Incentives (\$1000)	\$5,946.40	\$117.26	\$1,375.17	\$702.48	\$1,504.15

## Section 3 Updates and Findings

### 3.1 IMPLEMENTATION UPDATES AND FINDINGS

Implementation updates and findings through Q2 of PY9 are as follows:

- **Appliance Turn-In:** This program has been marketed through a variety of avenues including bill inserts, e-mail and direct mail campaigns, internet searches and internet radio ads. Honeywell also cross-promotes this program while educating retailers about the Appliance Rebates program. Most customers that schedule a recycling appointment with ARCA cite hearing about the program through bill inserts.
- **Energy Efficient Products Program:** This program continues to be marketed by Honeywell through a variety of avenues including in-store displays, outreach events, radio ads, digital ads, bill inserts, and e-mail and direct mail campaigns. Below are the subprogram updates:
  - **Appliances & Electronics:** Subprogram is performing well and is expected to remain under budget and continue to accumulate savings across all four PA EDCs.
  - **Lighting:** Subprogram is performing well and is expected to remain under budget and continue to accumulate savings across all four PA EDCs.
  - **HVAC:** 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 (formerly Opower) during the first half of the year and those 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 and 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 PY9.
  - **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 primarily marketed through outbound phone calls and emails during the first half of PY9.



- **The Online Audit:** This software tool Aclara is available on the Companies' website. Upon completion of an online audit and specific energy tips being given to a customer, 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. The Companies will change the Online Audit program provider from Aclara to Oracle in March 2018.
  
- **Low Income Energy Efficiency Program:**
  - **Appliance Rebate:** The CSP Honeywell is performing well and is expected to remain under budget and continue to accumulate savings across all four PA EDCs.
  - **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:** The CSP ARCA provides an enhanced incentive for customers identified as low income. The low-income portion of this program is marketed primarily through e-mails and direct mail. Customers are also asked questions at enrollment to identify additional low-income customers.
  - **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:** Power Direct identified customers 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.
  - **Weatherization:** Subprograms are performing well and continue to accumulate savings across all four PA EDCs.
  - **Multifamily:** Subprogram is a direct install program to provide energy efficient measures to low-income customers in multifamily buildings. Marketing and promotion efforts for this program continue throughout all four operating companies.
  
- **C/I Efficient Solutions for Business – Small:** The CSP Sodexo continues to promote and market the program through multiple channels – outreach and presentation to program allies, participation in trade shows and hosting customer outreach events. The CSP's outreach team continues to recruit new program allies into the program. From June 1, 2017 through November 30, 2017, the CSP developed and put into production four (4) new marketing pieces that were designed to increase participation in the

Agriculture, Appliances and Electronics, Food Service and HVAC sub-programs. Sodexo also launched a simplified compressed air calculator to increase participation in the Company's Custom Program. During this Reporting Period, the CSP participated and made presentation at six (6) trade shows and conferences plus hosted seven (7) workshops, across all four Operating Companies, which were targeted at customers and program allies. To support the CSP's outreach team in their effort to promote these workshops, the Companies leverage their internal resources – Customer Support Staff and Area Managers – to promote the workshops to their assigned accounts.

- **C/I Efficient Solutions for Business – Large:** The CSP Sodexo continues to promote and market the program through multiple channels – outreach and presentation to program allies, participation in trade shows and hosting customer outreach events. The CSP's outreach team continues to recruit new program allies into the program. During the current Semi-Annual Reporting Period – from June 1, 2017 through November 30, 2017, the CSP developed and put into production four (4) new marketing pieces that were designed to increase participation in the Agriculture, Appliances and Electronics, Food Service and HVAC sub-programs. The CSP also launched a simplified compressed air calculator to increase participation in the Company's Custom Program. During this Reporting Period, the CSP participated and made presentation at six (6) trade shows and conferences plus hosted seven (7) workshops, across all four Operating Companies, which were targeted at customers and program allies. To support the CSP's outreach team in their effort to promote these workshops, the Companies leverage their internal resources – Customer Support Staff and Area Managers – to promote the workshops to their assigned accounts.
- **Government & Institutional Tariff Program:** Sodexo continues with its marketing and outreach efforts working closely with government and institutional customers. During this Reporting Period, the CSP participated and made presentation two trade shows that target municipal customers. In July, the CSP sent out an e-Blast that targeted municipal customers. The CSP's outreach team continues to recruit new program allies that specialize in working with customers in this market segment. To support the CSP's outreach team in their efforts to promote and market this program, the Companies leverage Area Managers to promote the program to their assigned 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 (formerly Opower) in May 2017 for administration of the Residential Demand Response Program in Penn Power only. Approximately 30,000 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 PY9 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 develop automated QA/QC processes. The QA/QC process is in place now and tracking data entered by CSPs are subject to automated checks within the T&R system.
- **Appliance Turn-In Program:** ADM developed a customer survey instrument for impact and process evaluation. Participant surveys for PY9 were launched in December 2017 and are conducted on an ongoing basis.
- **Energy Efficient Products Program:** ADM has requested invoices and applications to support our desk review process in PY9.
- **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. Formal evaluation samples for residential new construction and kits will be pulled in early 2018.
- **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 December 2017.
- **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 PY9, 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 PY9 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 for the summer of 2017.
  - **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 Program<sup>4</sup>

Utility	Program	PYTD Participation	P3TD Participation
Met-Ed	Appliance Turn-in	2,628	6,602
	Energy Efficient Homes	158,643	361,599
	Energy Efficient Products	145,778	461,459
	Low Income Energy Efficiency	22,235	49,190
	C&I Energy Solutions for Business - Small	212	560
	C&I Demand Response - Small	37	37
	C&I Energy Solutions for Business - Large	80	196
	C&I Demand Response - Large	67	67
	Governmental & Institutional Tariff	33	65
	<b>Portfolio Total</b>	<b>329,713</b>	<b>879,775</b>
Penelec	Appliance Turn-in	2,457	5,940
	Energy Efficient Homes	158,129	367,217
	Energy Efficient Products	146,992	519,467
	Low Income Energy Efficiency	27,560	64,889
	C&I Energy Solutions for Business - Small	351	959
	C&I Demand Response - Small	0	0
	C&I Energy Solutions for Business - Large	67	177
	C&I Demand Response - Large	0	0
	Governmental & Institutional Tariff	165	398
	<b>Portfolio Total</b>	<b>335,721</b>	<b>959,047</b>
Penn Power	Appliance Turn-in	938	2,105
	Energy Efficient Homes	59,575	99,979
	Energy Efficient Products	46,280	113,662
	Low Income Energy Efficiency	5,959	13,440
	C&I Energy Solutions for Business - Small	148	397
	C&I Demand Response - Small	3	3
	C&I Energy Solutions for Business - Large	7	25
	C&I Demand Response - Large	6	6
	Governmental & Institutional Tariff	31	217
	<b>Portfolio Total</b>	<b>112,947</b>	<b>229,834</b>
West Penn Power	Appliance Turn-in	3,328	7,988
	Energy Efficient Homes	167,744	376,165
	Energy Efficient Products	148,599	512,919
	Low Income Energy Efficiency	23,626	54,864
	C&I Energy Solutions for Business - Small	361	867
	C&I Demand Response - Small	19	19
	C&I Energy Solutions for Business - Large	47	115
	C&I Demand Response - Large	12	12
	Governmental & Institutional Tariff	225	454
	<b>Portfolio Total</b>	<b>343,961</b>	<b>953,403</b>

<sup>4</sup> 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 5-1<sup>5</sup>.

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

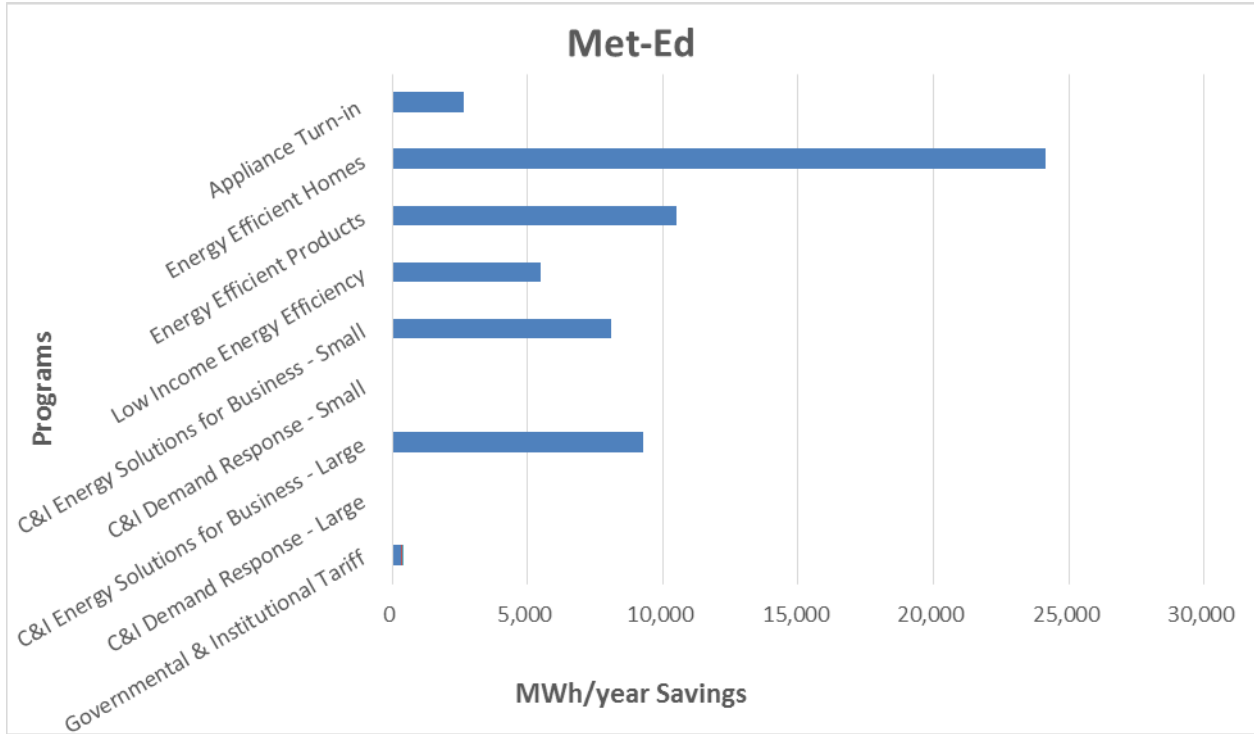
Utility	Program	PYRTD	VTD	PSA	RTD
Met-Ed	Appliance Turn-in	2,635	4,014	6,649	6,644
	Energy Efficient Homes	24,154	53,569	77,723	72,280
	Energy Efficient Products	10,521	30,825	41,347	35,981
	Low Income Energy Efficiency	5,470	10,105	15,575	14,578
	C&I Energy Solutions for Business - Small	8,088	11,469	19,557	20,614
	C&I Demand Response - Small	n/a	n/a	n/a	n/a
	C&I Energy Solutions for Business - Large	9,276	29,643	38,919	40,195
	C&I Demand Response - Large	n/a	n/a	n/a	n/a
	Governmental & Institutional Tariff	345	250	595	619
	Portfolio Total	<b>60,489</b>	<b>139,875</b>	<b>200,365</b>	<b>190,911</b>
	<b>Program</b>	<b>PYRTD</b>	<b>VTD</b>	<b>PSA</b>	<b>RTD</b>
Penelec	Appliance Turn-in	2,701	3,407	6,108	6,527
	Energy Efficient Homes	19,401	45,106	64,507	57,924
	Energy Efficient Products	12,780	39,241	52,021	46,282
	Low Income Energy Efficiency	5,297	12,359	17,656	16,247
	C&I Energy Solutions for Business - Small	12,460	16,874	29,334	30,531
	C&I Demand Response - Small	n/a	n/a	n/a	n/a
	C&I Energy Solutions for Business - Large	11,345	14,666	26,011	27,156
	C&I Demand Response - Large	n/a	n/a	n/a	n/a
	Governmental & Institutional Tariff	622	796	1,418	1,475
	Portfolio Total	<b>64,606</b>	<b>132,449</b>	<b>197,056</b>	<b>186,141</b>
	<b>Program</b>	<b>PYRTD</b>	<b>VTD</b>	<b>PSA</b>	<b>RTD</b>
Penn Power	Appliance Turn-in	1,041	1,007	2,048	2,329
	Energy Efficient Homes	5,342	12,883	18,225	16,244
	Energy Efficient Products	4,709	7,896	12,605	10,911
	Low Income Energy Efficiency	1,828	3,080	4,908	5,108
	C&I Energy Solutions for Business - Small	4,465	8,151	12,616	13,167
	C&I Demand Response - Small	n/a	n/a	n/a	n/a
	C&I Energy Solutions for Business - Large	263	2,768	3,031	3,309
	C&I Demand Response - Large	n/a	n/a	n/a	n/a
	Governmental & Institutional Tariff	211	1,345	1,557	1,636
	Portfolio Total	<b>17,859</b>	<b>37,130</b>	<b>54,988</b>	<b>52,705</b>
	<b>Program</b>	<b>PYRTD</b>	<b>VTD</b>	<b>PSA</b>	<b>RTD</b>
West Penn Power	Appliance Turn-in	3,547	4,565	8,112	8,546
	Energy Efficient Homes	22,047	48,291	70,338	67,266
	Energy Efficient Products	12,420	37,095	49,514	43,768
	Low Income Energy Efficiency	5,293	10,915	16,208	15,681
	C&I Energy Solutions for Business - Small	13,682	14,523	28,204	28,222
	C&I Demand Response - Small	n/a	n/a	n/a	n/a
	C&I Energy Solutions for Business - Large	23,176	10,414	33,590	33,653
	C&I Demand Response - Large	n/a	n/a	n/a	n/a
	Governmental & Institutional Tariff	7,237	5,528	12,765	12,726
	Portfolio Total	<b>87,401</b>	<b>131,330</b>	<b>218,732</b>	<b>209,862</b>

<sup>5</sup> 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 9. 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 Program<sup>6</sup>**

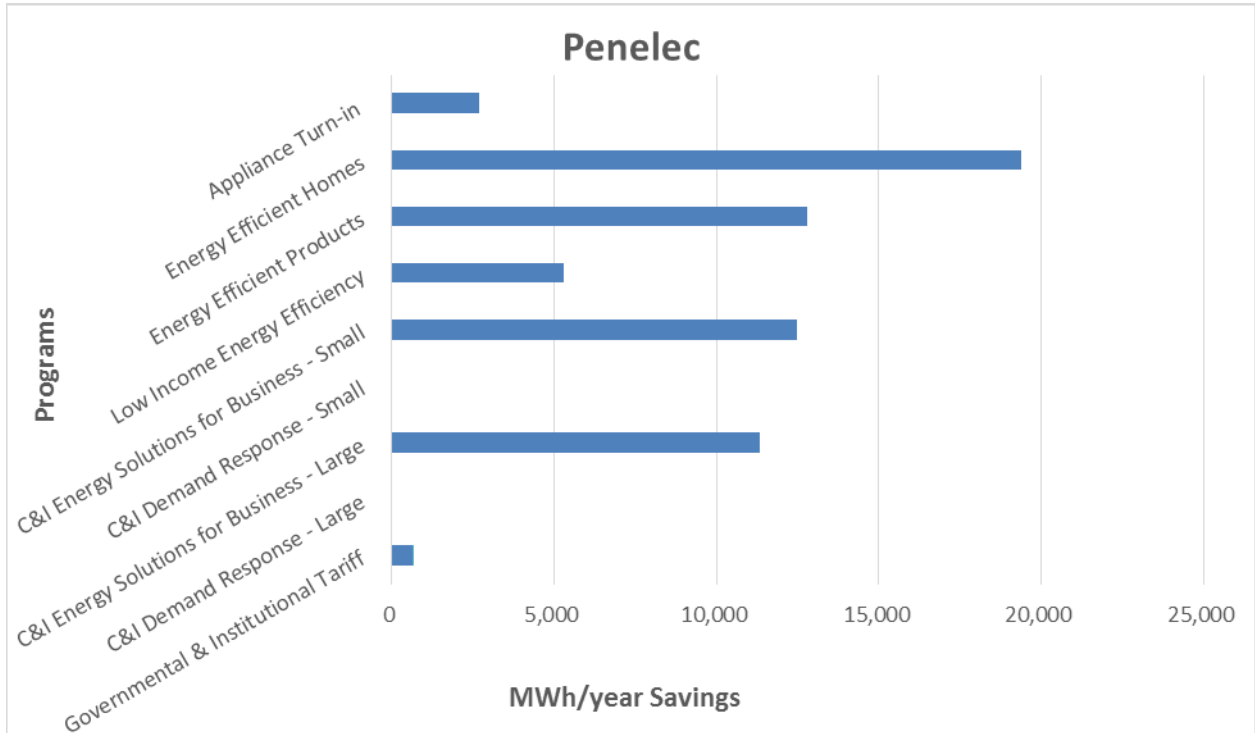
**Figure 7A: PYTD Reported Gross Energy Savings by Program - Met-Ed**



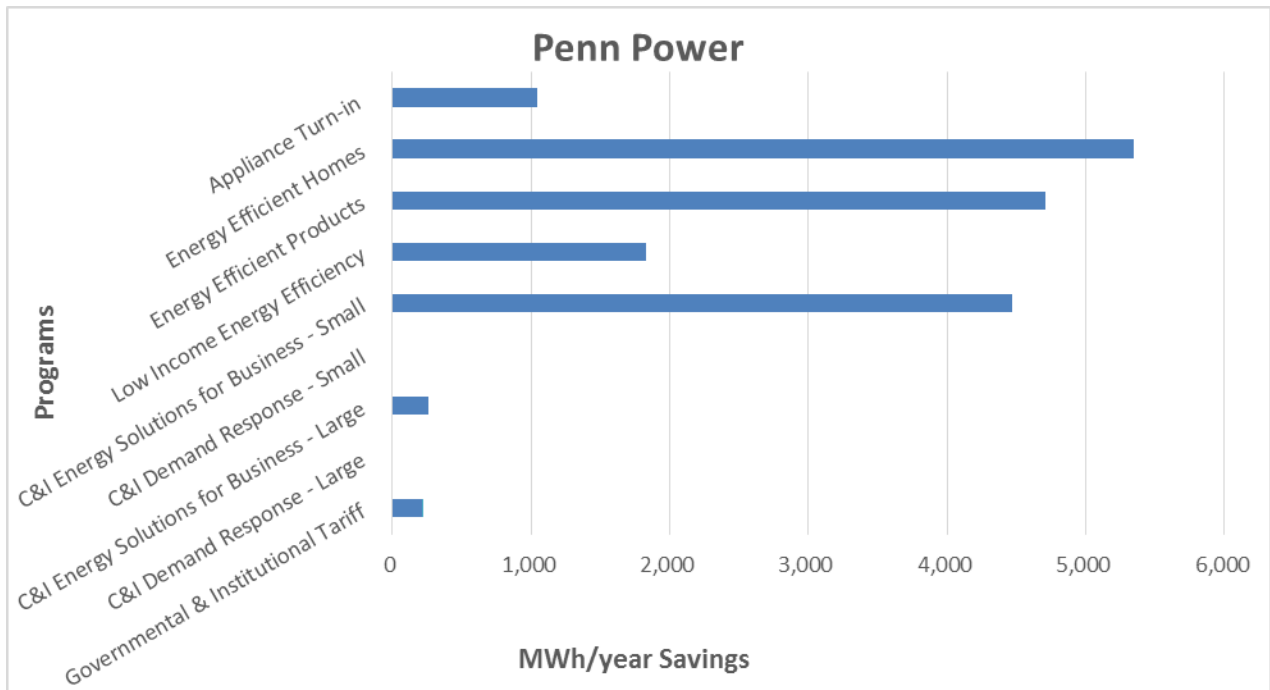
<sup>6</sup> Results for the Small & Large Energy Solutions for Business programs include GNI customers who participated in these programs.



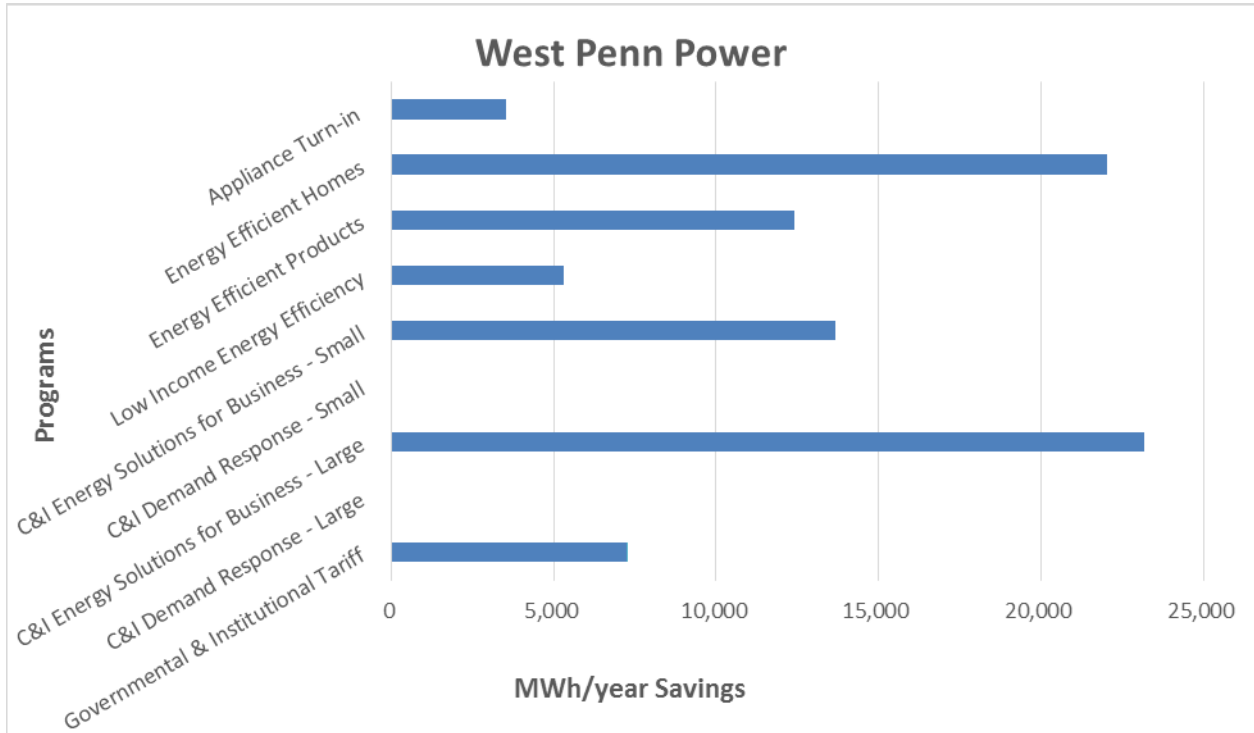
**Figure 7B: PYTD Reported Gross Energy Savings by Program – Penelec**



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



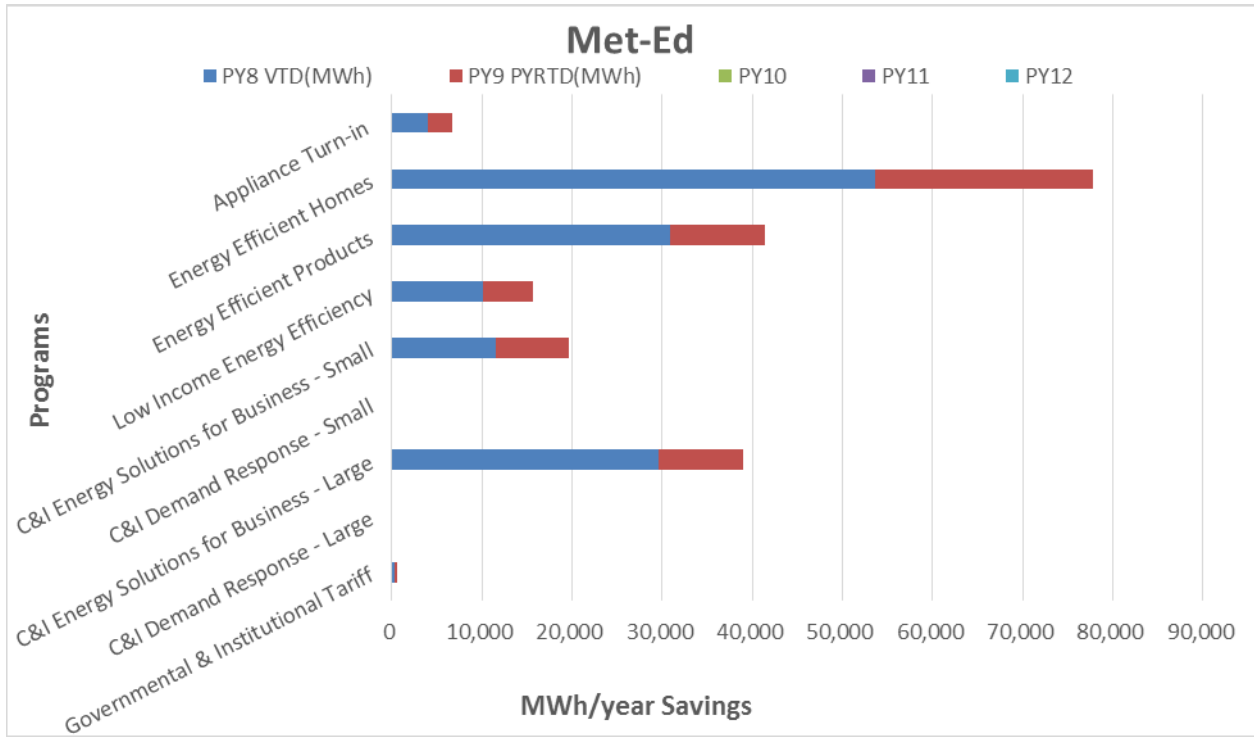
**Figure 7D: PYTD Reported Gross Energy Savings by Program - West Penn Power**



**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.

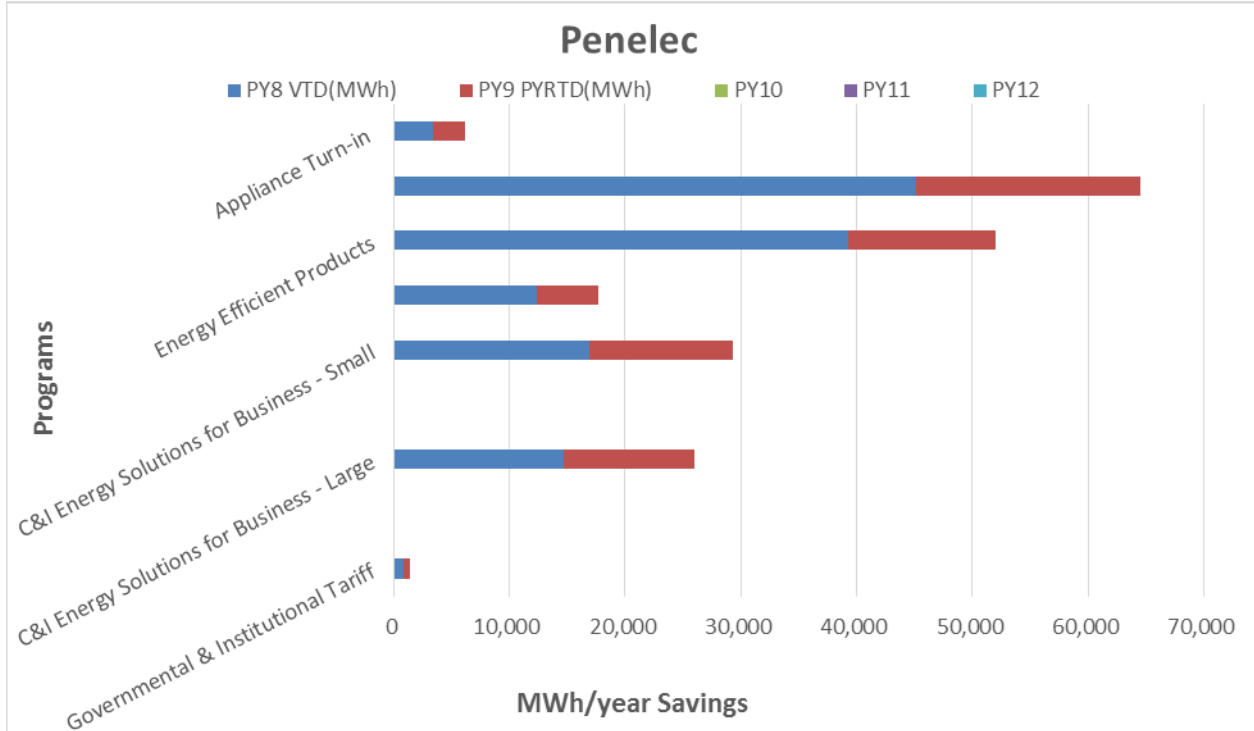
**Figures 8A-8D: PSA Energy Savings by Program for Phase III<sup>7</sup>**

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

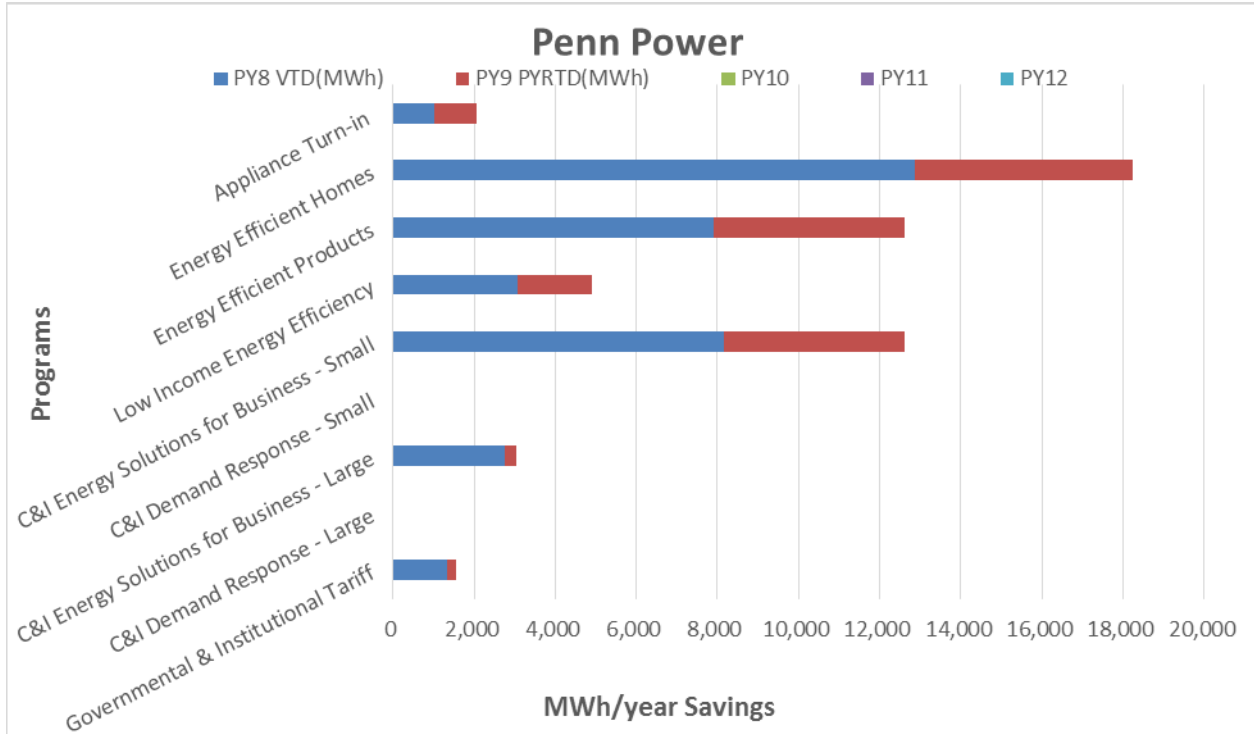


<sup>7</sup> Results for the Small & Large Energy Solutions for Business programs include GNI customers who participated in these programs.

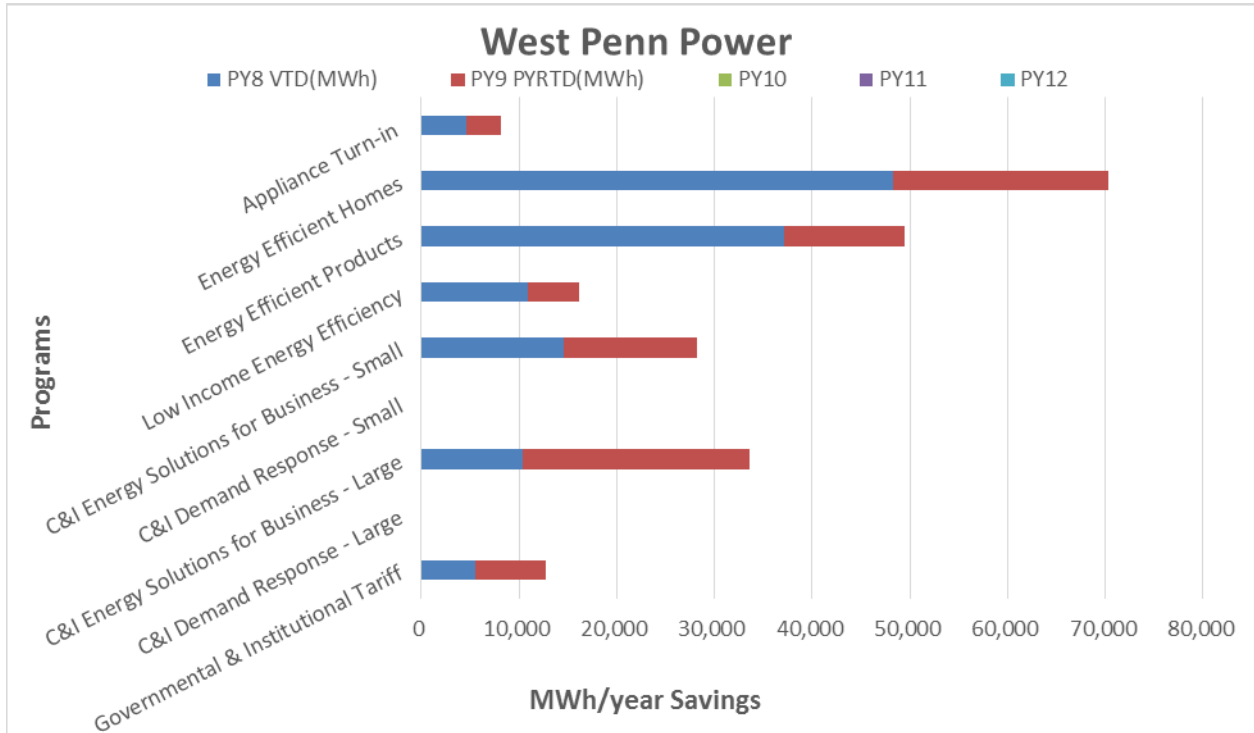
**Figure 8B: PSA Energy Savings by Program for Phase III – Penelec**



**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)<sup>8</sup>**

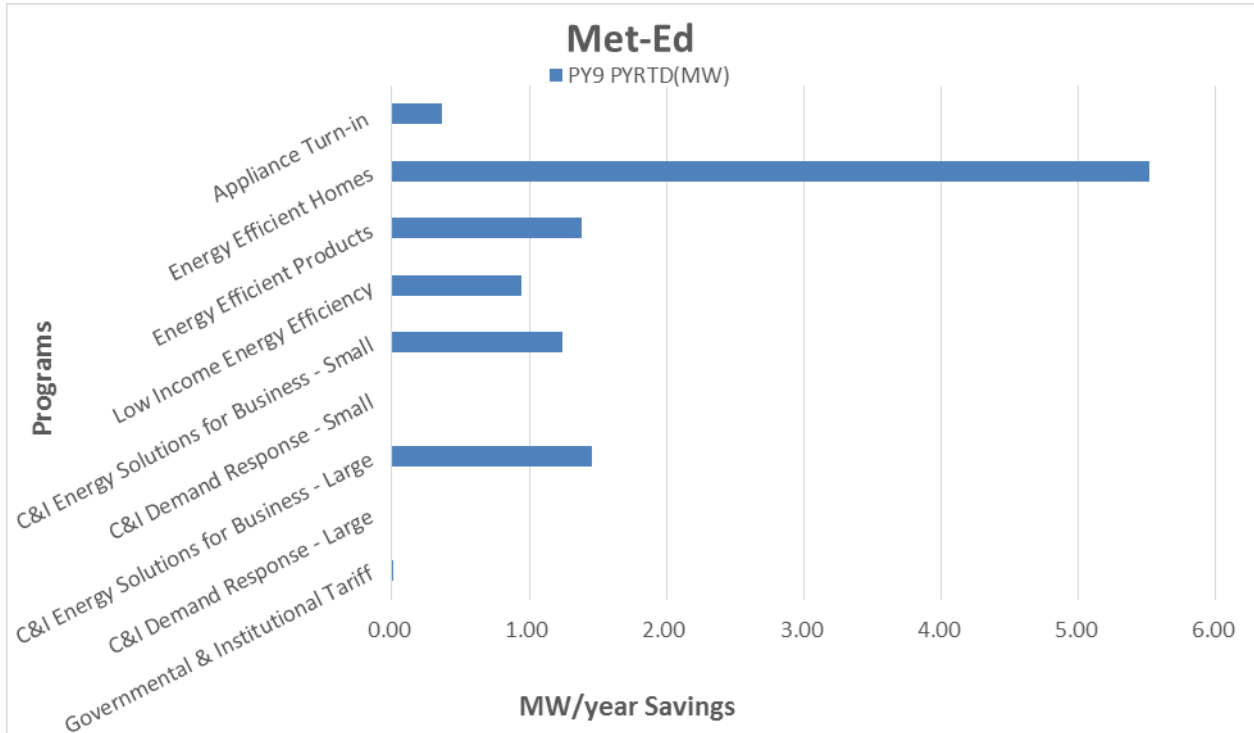
	Program	PYRTD	VTD	PSA	RTD
Met-Ed	Appliance Turn-in	0.37	0.53	0.89	0.93
	Energy Efficient Homes	5.52	6.22	11.74	12.07
	Energy Efficient Products	1.38	4.17	5.55	4.56
	Low Income Energy Efficiency	0.94	1.16	2.10	2.09
	C&I Energy Solutions for Business - Small	1.25	2.01	3.26	3.16
	C&I Demand Response - Small	n/a	n/a	n/a	n/a
	C&I Energy Solutions for Business - Large	1.46	4.27	5.73	5.56
	C&I Demand Response - Large	n/a	n/a	n/a	n/a
	Governmental & Institutional Tariff	0.00	0.01	0.01	0.01
	Portfolio Total	<b>10.92</b>	<b>18.37</b>	<b>29.29</b>	<b>28.39</b>
	Program	PYRTD	VTD	PSA	RTD
Penelec	Appliance Turn-in	0.36	0.44	0.80	0.86
	Energy Efficient Homes	4.00	4.90	8.90	8.97
	Energy Efficient Products	1.50	4.74	6.24	5.10
	Low Income Energy Efficiency	0.81	1.33	2.14	2.11
	C&I Energy Solutions for Business - Small	1.79	2.94	4.73	4.78
	C&I Demand Response - Small	n/a	n/a	n/a	n/a
	C&I Energy Solutions for Business - Large	1.48	1.66	3.14	3.33
	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	<b>9.94</b>	<b>16.02</b>	<b>25.96</b>	<b>25.17</b>
	Program	PYRTD	VTD	PSA	RTD
Penn Power	Appliance Turn-in	0.13	0.13	0.26	0.30
	Energy Efficient Homes	1.42	1.75	3.17	3.14
	Energy Efficient Products	0.58	1.04	1.61	1.32
	Low Income Energy Efficiency	0.31	0.35	0.65	0.74
	C&I Energy Solutions for Business - Small	0.69	1.48	2.17	2.10
	C&I Demand Response - Small	n/a	n/a	n/a	n/a
	C&I Energy Solutions for Business - Large	0.04	0.32	0.36	0.33
	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	<b>3.17</b>	<b>5.13</b>	<b>8.30</b>	<b>8.00</b>
	Program	PYRTD	VTD	PSA	RTD
West Penn Power	Appliance Turn-in	0.46	0.61	1.07	1.09
	Energy Efficient Homes	6.24	5.93	12.17	13.25
	Energy Efficient Products	1.77	5.18	6.96	5.92
	Low Income Energy Efficiency	1.02	1.26	2.28	2.41
	C&I Energy Solutions for Business - Small	2.20	2.22	4.42	4.51
	C&I Demand Response - Small	n/a	n/a	n/a	n/a
	C&I Energy Solutions for Business - Large	1.74	1.47	3.21	3.26
	C&I Demand Response - Large	n/a	n/a	n/a	n/a
	Governmental & Institutional Tariff	0.01	0.16	0.18	0.17
	Portfolio Total	<b>13.43</b>	<b>16.84</b>	<b>30.27</b>	<b>30.61</b>

<sup>8</sup> 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 9.

**Figures 9A-9D: PYRTD Gross Demand Savings by Energy Efficiency Program<sup>9</sup>**

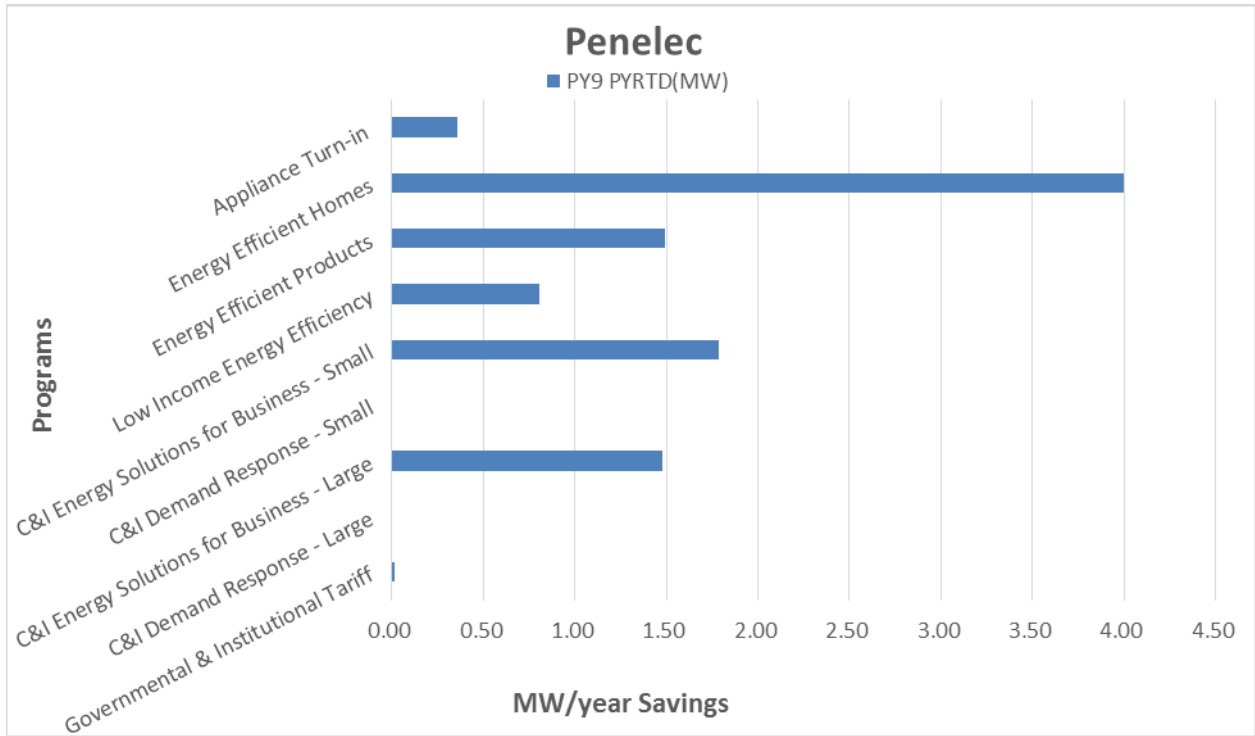
**Figure 9A: PYRTD Gross Demand Savings by Energy Efficiency Program - Met-Ed**



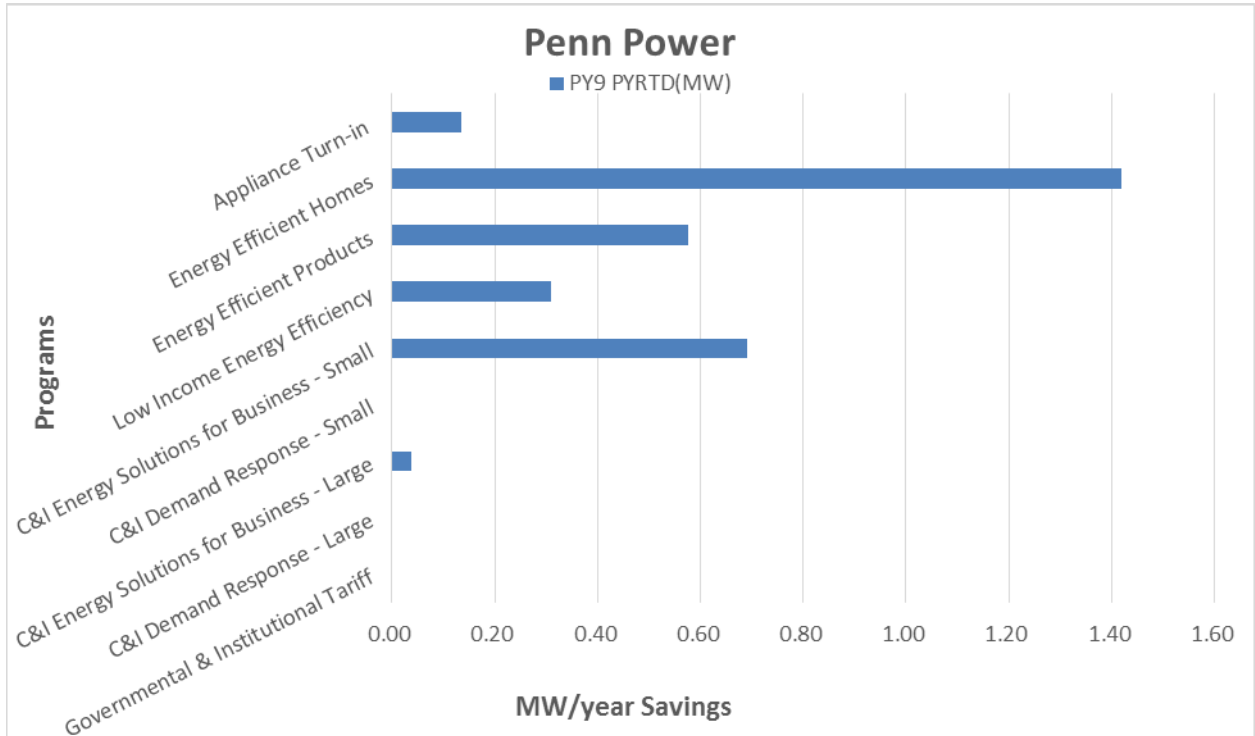
<sup>9</sup> Results for the Small & Large Energy Solutions for Business programs include GNI customers who participated in these programs.



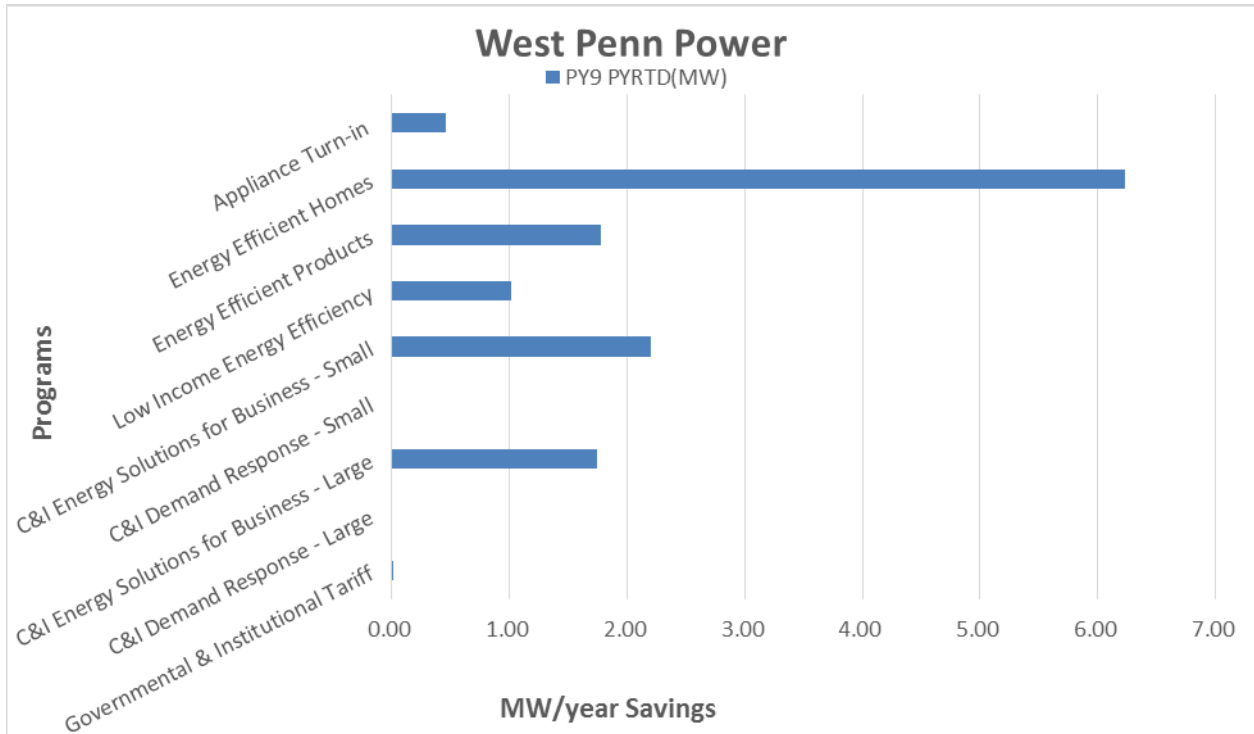
**Figure 9B: PYRTD Gross Demand Savings by Energy Efficiency Program – Penelec**



**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**

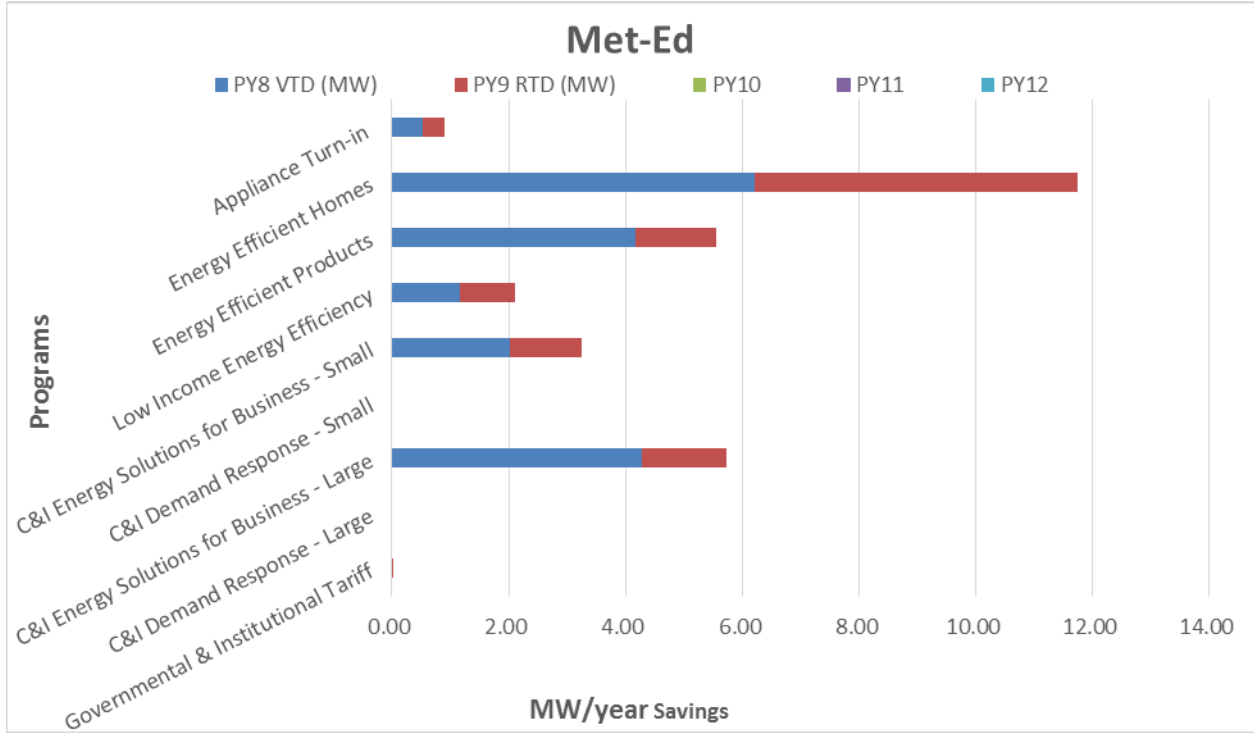


**Figures 10A-10D:** PSA Demand Savings by Energy Efficiency Program for Phase III present a summary of the PSA gross demand savings by energy efficiency program for Phase III of Act 129.<sup>10</sup>

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

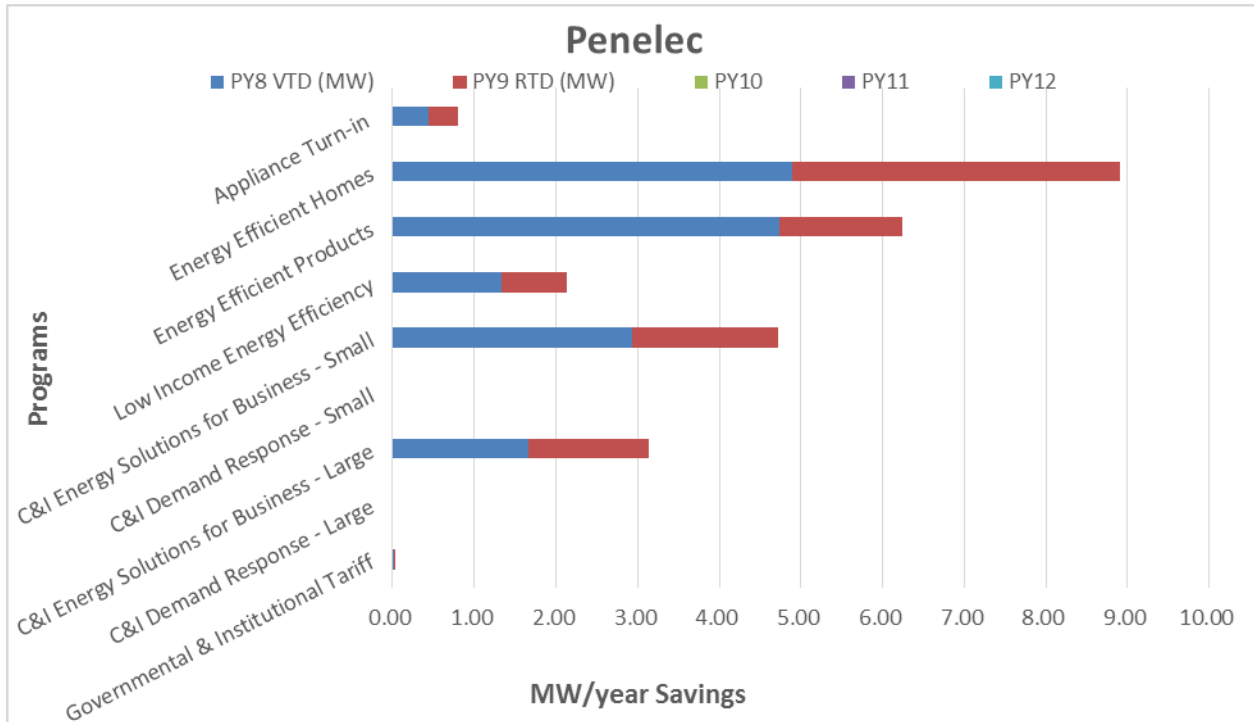
**Figures 10A-10D: PSA Demand Savings by Energy Efficiency Program for Phase III<sup>11</sup>**

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

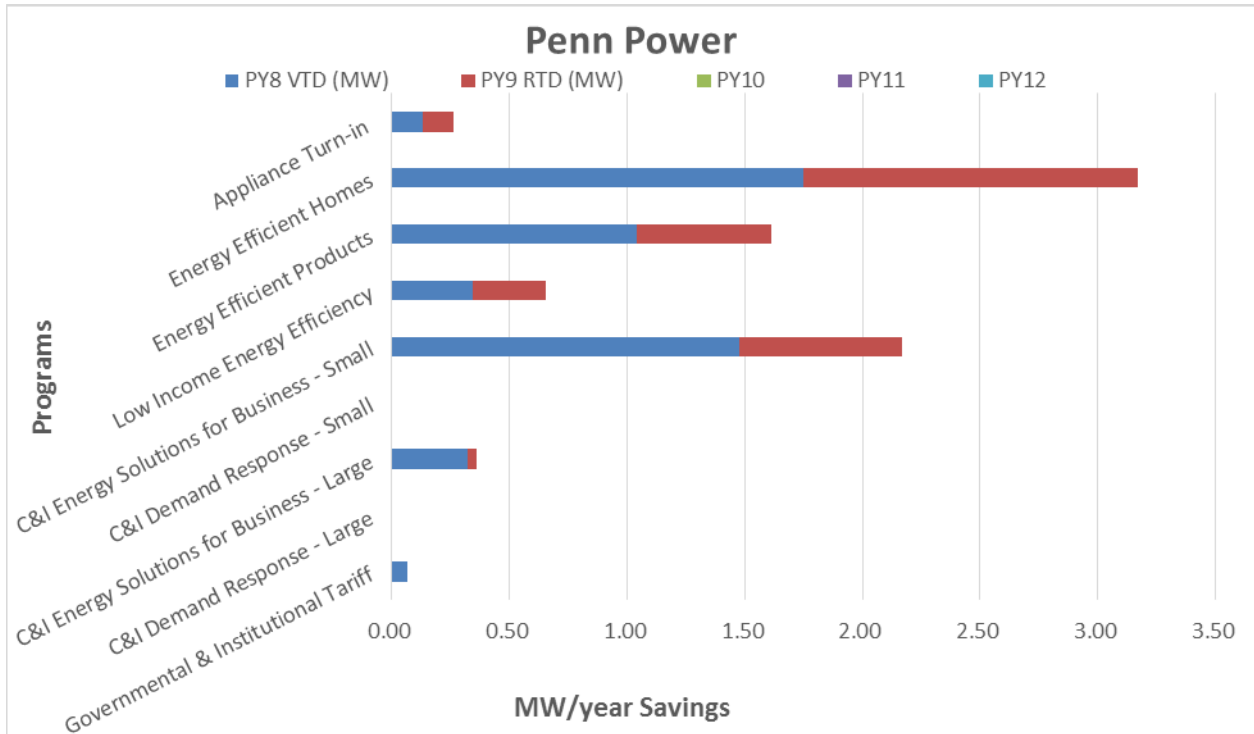


<sup>11</sup> Results for the Small & Large Energy Solutions for Business programs include GNI customers who participated in these programs.

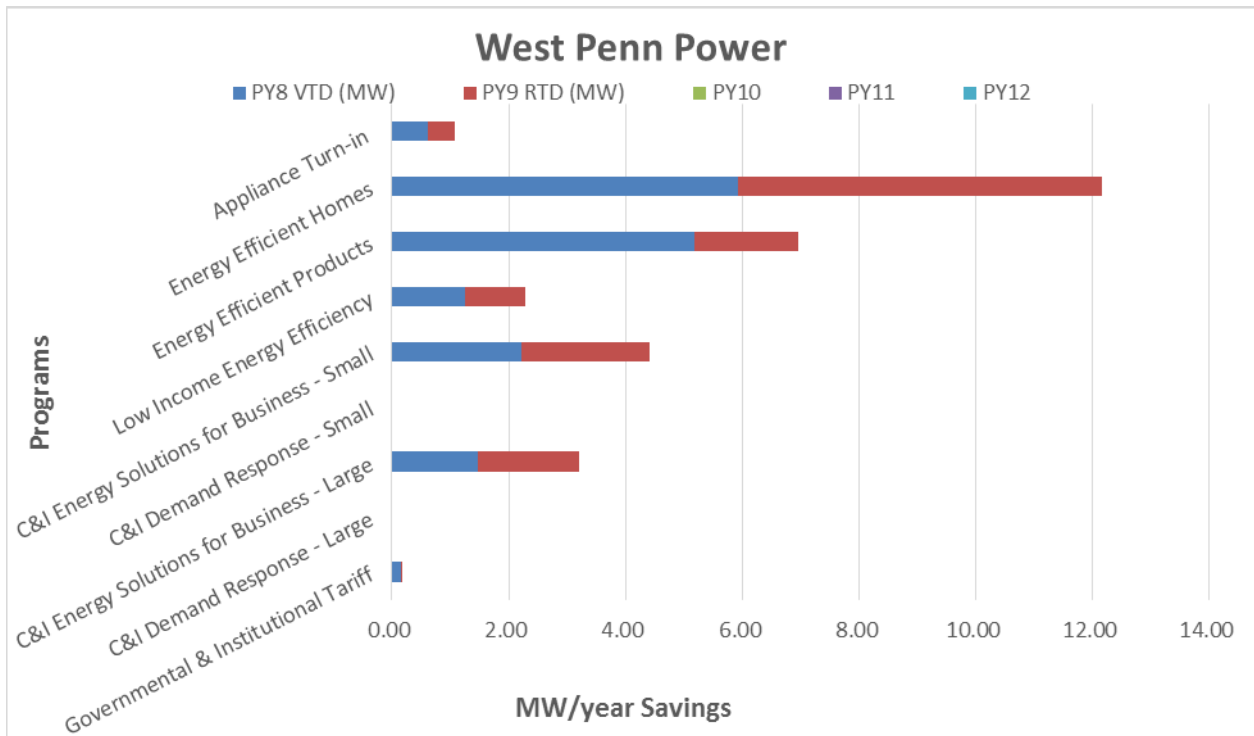
**Figure 10B: PSA Demand Savings  
by Energy Efficiency Program for Phase III – Penelec**



**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 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. 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**

	<b>Program</b>	<b>PYVTD Gross MW</b>	<b>Relative Precision (90%)</b>	<b>VTD Gross MW</b>	<b>Relative Precision (90%)</b>
<b>Met-Ed</b>	<b>Energy Efficient Homes</b>	n/a	n/a	n/a	n/a
	<b>C&amp;I Demand Response - Small</b>	2.7	7.4%	2.7	7.4%
	<b>C&amp;I Demand Response - Large</b>	43.3	8.3%	43.3	8.3%
	<b>Portfolio Total</b>	45.9	7.9%	45.9	7.9%
	<b>Portfolio Total (Confidence Interval)</b>	(42.3-49.6)		(42.3-49.6)	
<b>Penn Power</b>	<b>Energy Efficient Homes</b>	2.1	9.3%	2.2	28.6%
	<b>C&amp;I Demand Response - Small</b>	0.2	50.0%	0.2	50.0%
	<b>C&amp;I Demand Response - Large</b>	31.1	58.1%	31.1	58.1%
	<b>Portfolio Total</b>	33.4	54.2%	33.5	54.0%
	<b>Portfolio Total (Confidence Interval)</b>	(15.4-51.5)		(15.4-51.5)	
<b>West Penn Power</b>	<b>Energy Efficient Homes</b>	n/a	n/a	n/a	n/a
	<b>C&amp;I Demand Response - Small</b>	2.7	37.0%	2.7	37.0%
	<b>C&amp;I Demand Response - Large</b>	79.2	37.8%	79.2	37.8%
	<b>Portfolio Total</b>	81.9	36.6%	81.9	36.6%
	<b>Portfolio Total (Confidence Interval)</b>	(52.0-111.8)		(52.0-111.8)	

## 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 PY9 are shown in **Table 7-1A to 7-1D**.<sup>12</sup> The columns in these tables are adapted from the 'Direct Program Cost' categories in the Commission's EE&V Plan template<sup>13</sup> for Phase III. EDC Materials, Labor, and Administration includes costs associated with an EDC's own employees. ICSP Materials, Labor, and Administration includes both the program implementation contractor and the costs of any other outside vendors and EDCs employs to support program delivery.

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<sup>12</sup> 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.

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



Table 7-1A to 7-1D: Program Year to Date Financials<sup>14</sup>

## 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>	\$149,450	\$22,692	\$364,339	\$8,150	\$544,631
<i>Energy Efficient Homes</i>	\$1,624,888	\$69,248	\$516,089	\$122,408	\$2,332,632
<i>Energy Efficient Products</i>	\$723,507	\$3,546	\$346,530	\$88,987	\$1,162,570
<i>Low Income Energy Efficiency</i>	\$88,115	\$136,864	\$1,468,252	\$113,460	\$1,806,690
<i>C&amp;I Energy Solutions for Business - Small</i>	\$512,831	\$43,894	\$287,919	\$127,340	\$971,985
<i>C&amp;I Demand Response - Small</i>	\$1,172	\$7,666	\$23,220	\$4,481	\$36,539
<i>C&amp;I Energy Solutions for Business - Large</i>	\$441,209	\$28,424	\$265,711	\$116,860	\$852,204
<i>C&amp;I Demand Response - Large</i>	\$28,837	\$68,643	\$356,686	\$40,159	\$494,325
<i>Governmental &amp; Institutional Tariff</i>	\$17,255	\$3,589	\$21,231	\$12,167	\$54,241
<b>Common Portfolio Costs</b>					\$0
<b>Total Portfolio</b>	\$3,587,263	\$384,566	\$3,649,976	\$634,013	\$8,255,818
<b>SWE Costs</b>	\$0	\$0	\$0	\$0	\$128,000
<b>Total</b>	\$3,587,263	\$384,566	\$3,649,976	\$634,013	\$8,383,818

<sup>14</sup> 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**

<b>Program</b>	<b>Incentives to Participants and Trade Allies</b>	<b>EDC Materials, Labor, and Administration</b>	<b>ICSP Materials, Labor, and Administration</b>	<b>EM&amp;V</b>	<b>Total EDC Cost</b>
<i><b>Appliance Turn-in</b></i>	\$138,975	\$25,052	\$343,634	\$8,948	\$516,609
<i><b>Energy Efficient Homes</b></i>	\$1,411,913	\$65,816	\$442,330	\$115,513	\$2,035,572
<i><b>Energy Efficient Products</b></i>	\$664,224	\$5,080	\$353,442	\$87,059	\$1,109,804
<i><b>Low Income Energy Efficiency</b></i>	\$48,564	\$165,016	\$1,375,531	\$130,229	\$1,719,339
<i><b>C&amp;I Energy Solutions for Business - Small</b></i>	\$772,001	\$50,672	\$374,190	\$131,353	\$1,328,217
<i><b>C&amp;I Demand Response - Small</b></i>	\$0	\$0	\$0	\$0	\$0
<i><b>C&amp;I Energy Solutions for Business - Large</b></i>	\$556,336	\$42,729	\$278,188	\$102,736	\$979,989
<i><b>C&amp;I Demand Response - Large</b></i>	\$0	\$0	\$0	\$0	\$0
<i><b>Governmental &amp; Institutional Tariff</b></i>	\$30,725	\$6,018	\$39,824	\$17,283	\$93,850
<i><b>Common Portfolio Costs</b></i>					\$0
<i><b>Total Portfolio</b></i>	\$3,622,738	\$360,384	\$3,207,137	\$593,120	\$7,783,380
<i><b>SWE Costs</b></i>	\$0	\$0	\$0	\$0	\$116,000
<i><b>Total</b></i>	\$3,622,738	\$360,384	\$3,207,137	\$593,120	\$7,899,380

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

<b>Program</b>	<b>Incentives to Participants and Trade Allies</b>	<b>EDC Materials, Labor, and Administration</b>	<b>ICSP Materials, Labor, and Administration</b>	<b>EM&amp;V</b>	<b>Total EDC Cost</b>
<i>Appliance Turn-in</i>	\$52,025	\$4,942	\$138,554	\$2,048	\$197,569
<i>Energy Efficient Homes</i>	\$460,692	\$23,968	\$331,227	\$46,442	\$862,328
<i>Energy Efficient Products</i>	\$234,162	(\$5,464)	\$97,508	\$18,541	\$344,747
<i>Low Income Energy Efficiency</i>	\$38,509	\$57,098	\$613,700	\$41,759	\$751,066
<i>C&amp;I Energy Solutions for Business - Small</i>	\$260,075	\$16,262	\$112,993	\$31,741	\$421,071
<i>C&amp;I Demand Response - Small</i>	\$0	\$3,380	\$17,375	\$1,531	\$22,285
<i>C&amp;I Energy Solutions for Business - Large</i>	\$13,072	\$13,207	\$12,673	\$22,213	\$61,165
<i>C&amp;I Demand Response - Large</i>	\$0	\$30,210	\$329,889	\$13,717	\$373,817
<i>Governmental &amp; Institutional Tariff</i>	\$13,763	\$508	\$10,945	\$4,139	\$29,355
<b>Common Portfolio Costs</b>					\$0
<b>Total Portfolio</b>	\$1,072,297	\$144,111	\$1,664,864	\$182,130	\$3,063,402
<b>SWE Costs</b>	\$0	\$0	\$0	\$0	\$36,000
<b>Total</b>	\$1,072,297	\$144,111	\$1,664,864	\$182,130	\$3,099,402

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

<b>Program</b>	<b>Incentives to Participants and Trade Allies</b>	<b>EDC Materials, Labor, and Administration</b>	<b>ICSP Materials, Labor, and Administration</b>	<b>EM&amp;V</b>	<b>Total EDC Cost</b>
<i><b>Appliance Turn-in</b></i>	\$186,175	\$23,035	\$443,968	\$8,246	\$661,424
<i><b>Energy Efficient Homes</b></i>	\$1,074,567	\$89,656	\$465,703	\$122,434	\$1,752,360
<i><b>Energy Efficient Products</b></i>	\$823,006	\$14,705	\$448,570	\$97,900	\$1,384,181
<i><b>Low Income Energy Efficiency</b></i>	\$56,923	\$143,713	\$1,450,479	\$124,363	\$1,775,479
<i><b>C&amp;I Energy Solutions for Business - Small</b></i>	\$780,467	\$50,424	\$458,688	\$138,502	\$1,428,081
<i><b>C&amp;I Demand Response - Small</b></i>	\$0	\$9,680	\$27,831	\$5,652	\$43,163
<i><b>C&amp;I Energy Solutions for Business - Large</b></i>	\$865,425	\$26,901	\$574,240	\$94,432	\$1,560,998
<i><b>C&amp;I Demand Response - Large</b></i>	\$0	\$86,547	\$995,985	\$50,828	\$1,133,360
<i><b>Governmental &amp; Institutional Tariff</b></i>	\$362,274	\$3,596	\$193,531	\$15,359	\$574,760
<i><b>Common Portfolio Costs</b></i>					\$0
<i><b>Total Portfolio</b></i>	\$4,148,837	\$448,257	\$5,058,995	\$657,716	\$10,313,804
<i><b>SWE Costs</b></i>	\$0	\$0	\$0	\$0	\$120,000
<i><b>Total</b></i>	\$4,148,837	\$448,257	\$5,058,995	\$657,716	\$10,433,804

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 Financials<sup>15</sup>**

**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>	\$377,850	\$75,218	\$897,249	\$38,510	\$1,388,827
<i>Energy Efficient Homes</i>	\$4,259,000	\$294,460	\$3,548,807	\$186,405	\$8,288,672
<i>Energy Efficient Products</i>	\$2,237,786	\$31,578	\$1,181,184	\$157,067	\$3,607,615
<i>Low Income Energy Efficiency</i>	\$146,381	\$415,671	\$4,368,346	\$169,798	\$5,100,197
<i>C&amp;I Energy Solutions for Business - Small</i>	\$1,148,512	\$183,104	\$931,089	\$192,912	\$2,455,617
<i>C&amp;I Demand Response - Small</i>	\$1,172	\$23,513	\$38,612	\$8,430	\$71,726
<i>C&amp;I Energy Solutions for Business - Large</i>	\$1,982,987	\$104,818	\$1,265,588	\$197,681	\$3,551,073
<i>C&amp;I Demand Response - Large</i>	\$28,837	\$210,655	\$495,209	\$75,756	\$810,457
<i>Governmental &amp; Institutional Tariff</i>	\$31,061	(\$3,324)	\$56,923	\$24,856	\$109,517
<b>Common Portfolio Costs</b>					\$0
<b>Total Portfolio</b>	\$10,213,587	\$1,335,693	\$12,783,006	\$1,051,416	\$25,383,702
<b>SWE Costs</b>	\$0	\$0	\$0	\$0	\$575,987
<b>Total</b>	\$10,213,587	\$1,335,693	\$12,783,006	\$1,051,416	\$25,959,689

<sup>15</sup> 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**

<b>Program</b>	<b>Incentives to Participants and Trade Allies</b>	<b>EDC Materials, Labor, and Administration</b>	<b>ICSP Materials, Labor, and Administration</b>	<b>EM&amp;V</b>	<b>Total EDC Cost</b>
<i><b>Appliance Turn-in</b></i>	\$336,425	\$84,051	\$860,624	\$41,933	\$1,323,034
<i><b>Energy Efficient Homes</b></i>	\$3,927,273	\$291,873	\$3,415,101	\$170,430	\$7,804,677
<i><b>Energy Efficient Products</b></i>	\$2,269,692	\$42,728	\$1,284,517	\$150,355	\$3,747,293
<i><b>Low Income Energy Efficiency</b></i>	\$127,664	\$506,021	\$4,285,914	\$192,631	\$5,112,229
<i><b>C&amp;I Energy Solutions for Business - Small</b></i>	\$1,823,932	\$233,178	\$1,121,460	\$203,101	\$3,381,672
<i><b>C&amp;I Demand Response - Small</b></i>	\$0	\$0	\$0	\$0	\$0
<i><b>C&amp;I Energy Solutions for Business - Large</b></i>	\$1,300,441	\$125,322	\$902,656	\$177,834	\$2,506,252
<i><b>C&amp;I Demand Response - Large</b></i>	\$0	\$0	\$0	\$0	\$0
<i><b>Governmental &amp; Institutional Tariff</b></i>	\$73,652	\$11,904	\$109,835	\$38,990	\$234,381
<i><b>Common Portfolio Costs</b></i>					\$0
<i><b>Total Portfolio</b></i>	\$9,859,079	\$1,295,078	\$11,980,107	\$975,275	\$24,109,539
<i><b>SWE Costs</b></i>	\$0	\$0	\$0	\$0	\$522,000
<i><b>Total</b></i>	\$9,859,079	\$1,295,078	\$11,980,107	\$975,275	\$24,631,539

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

<b>Program</b>	<b>Incentives to Participants and Trade Allies</b>	<b>EDC Materials, Labor, and Administration</b>	<b>ICSP Materials, Labor, and Administration</b>	<b>EM&amp;V</b>	<b>Total EDC Cost</b>
<b><i>Appliance Turn-in</i></b>	\$116,775	\$18,756	\$334,259	\$9,413	\$479,203
<b><i>Energy Efficient Homes</i></b>	\$1,286,953	\$126,577	\$1,033,133	\$69,670	\$2,516,334
<b><i>Energy Efficient Products</i></b>	\$605,754	(\$15,112)	\$243,424	\$32,159	\$866,225
<b><i>Low Income Energy Efficiency</i></b>	\$61,344	\$170,038	\$1,401,308	\$60,986	\$1,693,677
<b><i>C&amp;I Energy Solutions for Business - Small</i></b>	\$750,620	\$49,374	\$373,775	\$49,483	\$1,223,251
<b><i>C&amp;I Demand Response - Small</i></b>	\$0	\$9,287	\$20,760	\$2,884	\$32,931
<b><i>C&amp;I Energy Solutions for Business - Large</i></b>	\$180,771	\$33,241	\$143,429	\$38,613	\$396,054
<b><i>C&amp;I Demand Response - Large</i></b>	\$0	\$83,135	\$360,358	\$25,857	\$469,349
<b><i>Governmental &amp; Institutional Tariff</i></b>	\$86,241	\$1,407	\$58,214	\$8,750	\$154,612
<b><i>Common Portfolio Costs</i></b>					\$0
<b><i>Total Portfolio</i></b>	\$3,088,458	\$476,701	\$3,968,661	\$297,816	\$7,831,636
<b><i>SWE Costs</i></b>	\$0	\$0	\$0	\$0	\$162,000
<b><i>Total</i></b>	\$3,088,458	\$476,701	\$3,968,661	\$297,816	\$7,993,636

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

<b>Program</b>	<b>Incentives to Participants and Trade Allies</b>	<b>EDC Materials, Labor, and Administration</b>	<b>ICSP Materials, Labor, and Administration</b>	<b>EM&amp;V</b>	<b>Total EDC Cost</b>
<i>Appliance Turn-in</i>	\$446,750	\$80,900	\$1,097,649	\$38,087	\$1,663,385
<i>Energy Efficient Homes</i>	\$2,942,919	\$351,112	\$3,603,396	\$180,698	\$7,078,124
<i>Energy Efficient Products</i>	\$2,556,731	\$107,137	\$1,466,823	\$162,153	\$4,292,845
<i>Low Income Energy Efficiency</i>	\$117,256	\$420,175	\$4,535,572	\$183,781	\$5,256,785
<i>C&amp;I Energy Solutions for Business - Small</i>	\$1,558,026	\$212,719	\$1,230,452	\$204,825	\$3,206,022
<i>C&amp;I Demand Response - Small</i>	\$0	\$28,842	\$53,853	\$10,572	\$93,267
<i>C&amp;I Energy Solutions for Business - Large</i>	\$1,387,143	\$95,781	\$1,092,006	\$160,776	\$2,735,706
<i>C&amp;I Demand Response - Large</i>	\$0	\$259,142	\$1,230,188	\$95,115	\$1,584,446
<i>Governmental &amp; Institutional Tariff</i>	\$636,623	\$8,133	\$363,874	\$32,524	\$1,041,154
<b>Common Portfolio Costs</b>					\$0
<b>Total Portfolio</b>	\$9,645,448	\$1,563,941	\$14,673,814	\$1,068,531	\$26,951,735
<b>SWE Costs</b>	\$0	\$0	\$0	\$0	\$540,000
<b>Total</b>	\$9,645,448	\$1,563,941	\$14,673,814	\$1,068,531	\$27,491,735

Cost-effectiveness testing for Act 129 EE&C programs is performed using the TRC Test. Benefit cost modeling is conducted annually using verified gross and verified net savings once the results of the independent impact evaluation are completed. TRC test results for PY8 were presented in the final annual report to the PA PUC on November 15, 2017 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 Category<sup>16</sup>

#### 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	\$5,929	\$18,759
	Small C&I	Rate GS-Small, Rate GS-Medium, and Outdoor Lighting Service	\$1,027	\$2,614
	Large C&I	Rate GS-Large, Rate GP and Rate TP	\$1,372	\$4,472
	Street Lighting	Street Lighting Service, LED Street Lighting Service and Ornamental Street Lighting Service	\$26	\$51
	Government & Non-Profit Tariff	Rate GS - Volunteer Fire Company, and Non-Profit Ambulance Service, Rescue Squad and Senior Center Service Rate and Rate MS	\$29	\$63
<b>Portfolio Total</b>			<b>\$8,384</b>	<b>\$25,960</b>

<sup>16</sup> 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	\$5,465	\$18,364
	Small C&I	Rate GS-Small, Rate GS-Medium, and Outdoor Lighting Service	\$1,347	\$3,468
	Large C&I	Rate GS-Large, Rate GP, and Rate LP	\$992	\$2,559
	Street Lighting	Street Lighting Service, LED Street Lighting Service, and Ornamental Street Lighting Service	\$44	\$105
	Government & Non-Profit Tariff	Rate GS – Volunteer Fire Company, and Non-Profit Ambulance Service, Rescue Squad and Senior Center Service Rate and Rate H	\$51	\$136
<b>Portfolio Total</b>			<b>\$7,899</b>	<b>\$24,632</b>

**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	\$2,179	\$5,661
	Small C&I	Rate GS, GS Special Rider GSDS, Rate GM, Rate GS-Large and POL	\$448	\$1,280
	Large C&I	Rate GP, and Rate GT	\$442	\$896
	Street Lighting	Rate Schedules SV, SVD, SM and LED	\$18	\$128
	Government & Non-Profit Tariff	Rate GS – Volunteer Fire Company, and Non-Profit Ambulance Service, Rescue Squad and Senior Center Service Rate and Rate PNP	\$11	\$28
<b>Portfolio Total</b>			<b>\$3,099</b>	<b>\$7,994</b>

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

<b>Operating Company</b>	<b>Cost Recovery Sector</b>	<b>Rate Classes Included</b>	<b>PYTD \$ Spending (\$1,000)</b>	<b>P3TD \$ Spending (\$1,000)</b>
<b>West Penn Power</b>	<b>Residential (incl. Low Income)</b>	Rate 10	\$5,650	\$18,635
	<b>Small C&amp;I</b>	Rates GS 20, GS 30	\$1,490	\$3,386
	<b>Large C&amp;I</b>	Rates GS 35, 40, 44, 46, and Tariff No. 38	\$2,718	\$4,423
	<b>Street Lighting</b>	Rate Schedules 51 through 58, 71, 72	\$533	\$933
	<b>Government &amp; Non-Profit Tariff</b>	Rate GS 20 – Volunteer Fire Company, and Non-Profit Ambulance Service, Rescue Squad and Senior Center Service Rate	\$43	\$114
<b>Portfolio Total</b>			\$10,434	\$27,492

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