

PPL Electric Utilities Semi-Annual Report to the Pennsylvania Public Utility Commission

PHASE IV OF ACT 129 PY16 SEMI-ANNUAL REPORT
(JUNE 1, 2024 – NOVEMBER 30, 2024)
FOR PENNSYLVANIA ACT 129 OF 2008
ENERGY EFFICIENCY AND CONSERVATION PLAN



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Acronyms

C&I	Commercial and Industrial
EDC	Electric distribution company
EE&C	Energy efficiency and conservation
EM&V	Evaluation, measurement, and verification
GNE	Government, nonprofit, educational
ICSP	Implementation Conservation Service Provider
M&V	Measurement and verification
MW	Megawatt
MWh	Megawatt-hour
NTG	Net-to-Gross
P4TD	Phase IV to date
PA PUC	Pennsylvania Public Utility Commission
PSA	Phase IV to date preliminary savings achieved; equal to VTD + PYRTD + PY15 unverified
PSA+CO	PSA savings plus carryover from Phase III
PY	Program Year: for example, PY16, from June 1, 2024, to May 31, 2025
PYRTD	Program year reported to date
PYVTD	Program year verified to date
PYTD	Program year to date
RTD	Phase IV to date reported gross savings
SWE	Statewide evaluator
TRC	Total resource cost
TRM	Technical reference manual
VTD	Phase IV to Date Verified

Types of Savings

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

Net Savings: The total change in energy consumption and/or peak demand that is attributable to an EE&C program. Depending on the program delivery model and evaluation methodology, the net savings 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 electric distribution company (EDC) or its program Implementation Conservation Service Providers (ICSP) and stored in the program tracking system.

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

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

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

Lifetime Savings: Energy and demand savings expressed in terms of the total expected savings over the useful life of the measure. Typically calculated by multiplying the annual savings of a measure by its effective useful life. The 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 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 IV to Date (P4TD): The energy and peak demand savings achieved by an EE&C program or portfolio within Phase IV of Act 129. Reported in several permutations described below.

Phase IV to Date Reported (RTD): The sum of the reported gross savings recorded to date in Phase IV of Act 129 for an EE&C program or portfolio.

Phase IV to Date Verified (VTD): The sum of the verified gross savings recorded to date in Phase IV of Act 129 for an EE&C program or portfolio, as determined by the impact evaluation finding of the independent evaluation contractor.

Phase IV to Date Preliminary Savings Achieved (PSA): The sum of the verified gross savings (VTD) from previous program years in Phase IV where the impact evaluation is complete plus the reported gross savings from the current program year (PYTD) plus the unverified savings from previous years.

Phase IV to Date Preliminary Savings Achieved + Carryover (PSA+CO): The sum of the verified gross savings from previous program years in Phase IV plus the reported gross savings from the current program year plus the unverified savings from previous years plus any verified gross carryover savings from Phase III of Act 129. This is the best estimate of an EDC's progress toward the Phase IV compliance targets.

1. Introduction

Pennsylvania Act 129 of 2008, signed on October 15, 2008, mandated energy savings and demand reduction goals for the largest EDCs in Pennsylvania for Phases I (2008 through 2013), II (2013 through 2016), and III (2016 through 2021). In late 2020, each EDC filed a new EE&C plan with the Pennsylvania Public Utility Commission (PA PUC) detailing the proposed design of its portfolio for Phase IV. These plans were updated based on stakeholder input and subsequently approved by the PA PUC in 2021.

Implementation of Phase IV of the Act 129 programs began on June 1, 2021. This report documents the progress and effectiveness of the Phase IV EE&C accomplishments for PPL Electric Utilities in Program Year 16 (PY16), as well as the cumulative accomplishments of the Phase IV programs since inception. This report additionally documents the energy savings carried over from Phase III. The Phase III carryover savings count toward EDC savings compliance targets for Phase IV.

This report details the participation, spending, and reported gross impacts of the energy efficiency programs during the first six months of PY16. Compliance with Act 129 savings goals are ultimately based on verified gross savings. PPL Electric Utilities has retained Cadmus as an independent evaluation contractor for Phase IV of Act 129. Cadmus is responsible for the measurement and verification of the savings and calculation of verified gross savings. The verified gross savings for PY16 energy efficiency programs will be reported in the final annual report, to be filed on September 30, 2025.

Phase IV of Act 129 includes a peak demand reduction goal for PPL Electric Utilities. Unlike previous phases of Act 129, Phase IV peak demand reduction targets must be met through coincident demand reductions from energy efficiency measures. The Act 129 peak demand reduction definition is non-holiday weekdays from 2:00 p.m. to 6:00 p.m. in June, July, and August. As in prior phases, compliance with Act 129 peak compliance goals is assessed at the system-level so all verified coincident peak demand impacts are adjusted for line losses.

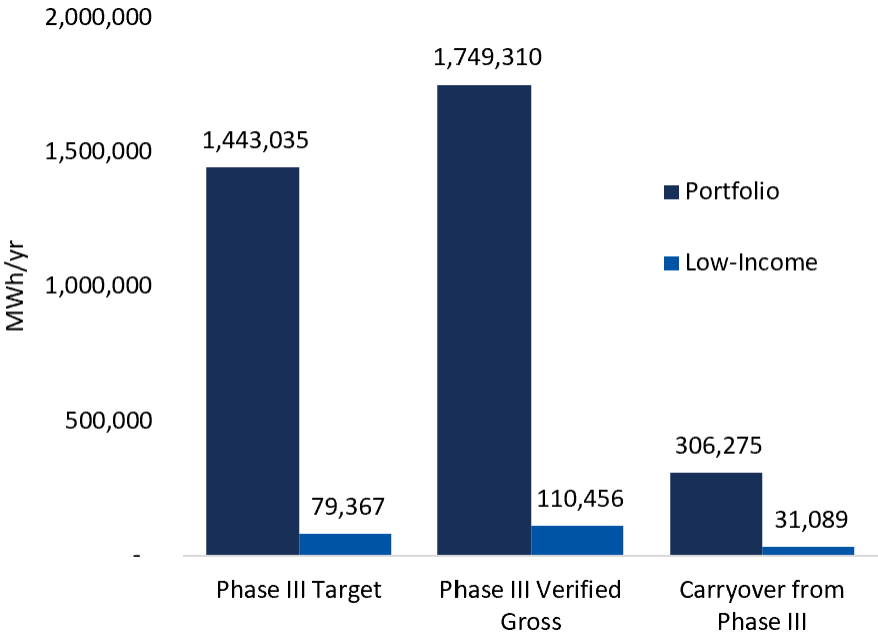
2. Summary of Achievements

2.1. Carryover Savings from Phase III of Act 129

The Commission’s Phase IV Implementation Order allowed EDCs to carry over verified savings above the Phase III portfolio and low-income savings goal and apply those savings toward Phase IV compliance targets.¹ PPL Electric Utilities has a total of 306,275 MWh/year of portfolio carryover savings and 31,089 MWh/year of low-income carryover savings from Phase III toward its Phase IV energy reduction targets.

Figure 1 compares PPL Electric Utilities’ Phase III verified gross savings total to the Phase III compliance target to illustrate the carryover calculation.

Figure 1. Carryover Savings from Phase III of Act 129



Phase III did not include a peak demand reduction target from energy efficiency, so there are no carryover savings toward the Phase IV peak demand reduction target.

¹ Pennsylvania Public Utility Commission, *Energy Efficiency and Conservation Program Implementation Order*, at Docket No. M-2020-3015228, (*Phase IV Implementation Order*), entered June 18, 2020.

2.2. Phase IV Energy Efficiency Achievements to Date

Since the beginning of PY16 on June 1, 2024, PPL Electric Utilities has claimed the following savings:

- 100,761 MWh/year of reported gross electric energy savings (PYRTD)
- 21.13 MW/year of reported gross peak demand savings (system-level PYRTD)

Since the beginning of Phase IV of Act 129 on June 1, 2021, PPL Electric Utilities has achieved the following savings:

- 783,235 MWh/yr of reported gross electric savings (RTD)
- 139.72 MW/yr of reported gross peak demand savings (system-level RTD) from energy efficiency programs
- 638,493 MWh/year of verified gross electric energy savings (VTD)²
- 103.17 MW/year of verified gross system-level peak demand savings (VTD) from energy efficiency programs³
- 52,842 MWh/year of unverified PY15 gross electric savings
- 10.96 MW/year of unverified PY15 gross system-level peak demand savings from energy efficiency programs
- 792,095 MWh/year of gross electric energy savings (PSA). This total includes verified gross savings from previous Phase IV program years, unverified gross savings from PY15, and the PYTD reported gross savings from PY16.
- 135.26 MW/year of gross system-level peak demand savings (PSA) from energy efficiency programs

Note: All gross peak demand savings are reported at the system level, so they reflect adjustments for transmission and distribution losses.

Including carryover savings from Phase III, PPL Electric Utilities has achieved the following savings:

- 1,098,370 MWh/year of PSA+CO energy savings recorded to date in Phase IV. This represents 88% of the May 31, 2026, energy savings compliance target of 1,250,157 MWh/year.⁴

Figure 2 and Figure 3 show PPL Electric Utilities' EE&C plan progress toward Phase IV energy conservation and peak demand reduction compliance targets.

² VTD savings in the PY15 Annual Report were increased by 3,251 MWh/year following a review by the SWE.

³ VTD savings in the PY15 Annual Report were reduced by 0.17 MW/year following a review by the SWE.

⁴ From PPL Electric Utilities Corporation. *Energy Efficiency and Conservation Plan Act 129 Phase IV*. Docket No. M-2020-3020824. Revised February 2024.

Figure 2. Performance Toward Phase IV Portfolio Energy Target

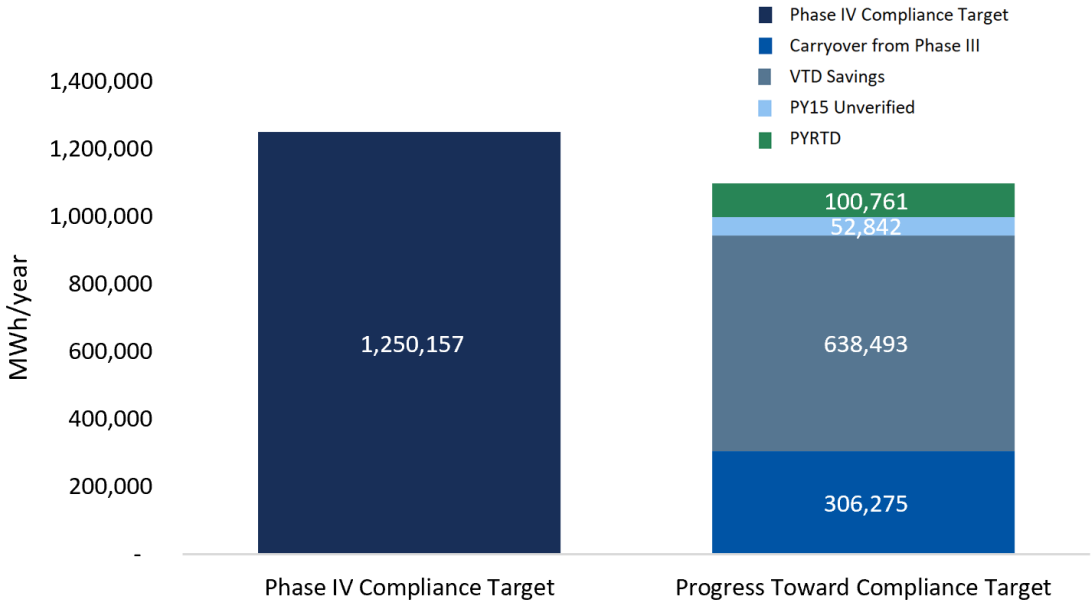
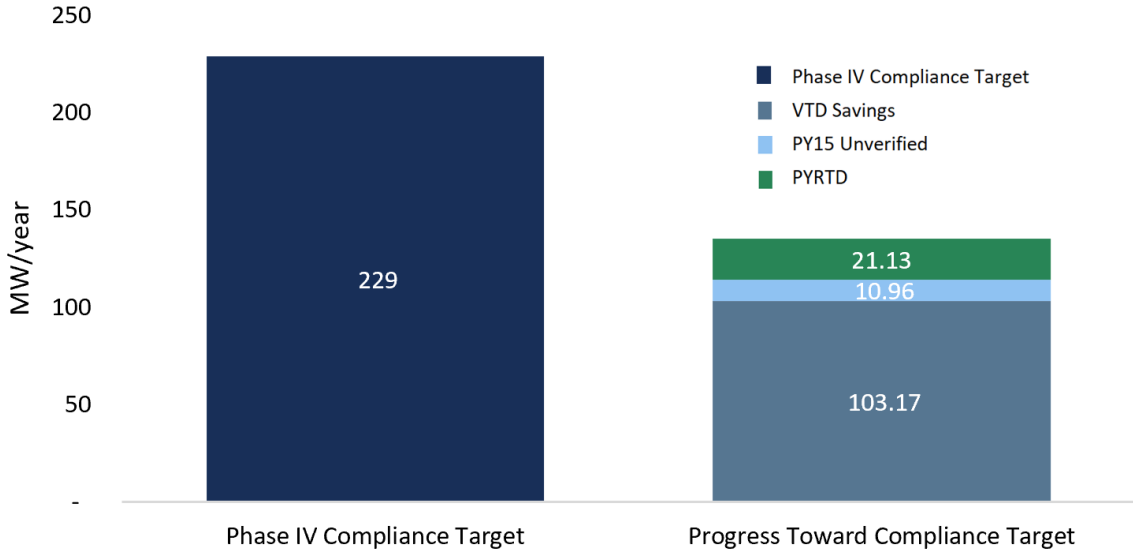


Figure 3. Performance Toward Phase IV Portfolio Peak Demand Target



Note: All gross peak demand savings are reported at the system level, so they reflect adjustments for transmission and distribution losses.

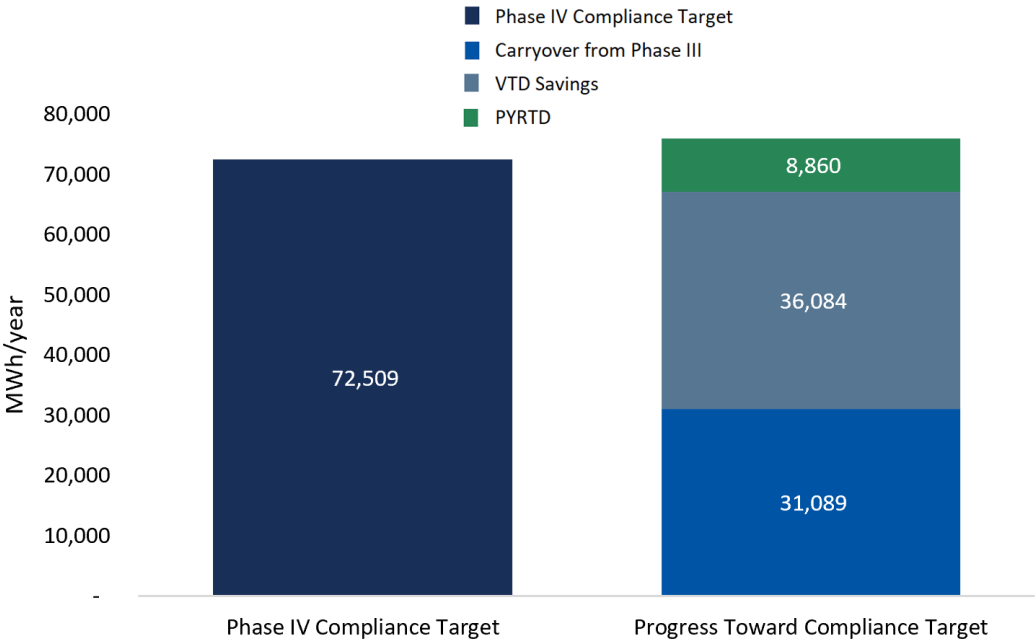
The Phase IV Implementation Order directed EDCs to offer conservation measures to the low-income customer segment based on the proportion of electric sales attributable to low-income households. The proportionate number of measures for PPL Electric Utilities to target is 9.95%.⁵ PPL Electric Utilities offers a total of 69 EE&C measures to its residential and nonresidential customer classes. In Q1 and Q2

⁵ Pennsylvania Public Utility Commission, *Energy Efficiency and Conservation Program Implementation Order*, at Docket No. M-2020-3015228, (*Phase IV Implementation Order*), entered June 18, 2020.

of PY16, there are 18 measures available to the low-income customer segment at no cost to the customer. This represents 26% of the total measures offered in the EE&C plan and exceeds the proportionate number of measures target.

The PA PUC also established a low-income energy savings target of 5.8% of the portfolio savings goal. The low-income savings target for PPL Electric Utilities is 72,509 MWh/year,⁶ based on verified gross savings. Figure 4 compares the PSA+CO performance to date for the low-income customer segment to the Phase IV savings target. Based on the latest available information, PPL Electric Utilities has achieved 105% of the Phase IV low-income energy savings target.

Figure 4. EE&C Plan Performance Toward Phase IV Low-Income Compliance Target



⁶ From PPL Electric Utilities Corporation. *Energy Efficiency and Conservation Plan Act 129 Phase IV*. Docket No. M-2020-3020824. Revised February 2024.

2.3. Phase IV Performance by Customer Segment

Table 1 shows the participation, savings, and spending by customer sector for PY16, and Table 2 shows these same statistics for Phase IV. The residential, small commercial and industrial (C&I), and large C&I sectors are defined by the EDC tariff, and the residential low-income and government, nonprofit, educational (GNE) sector are defined by statute (66 Pa. C.S. § 2806.1). The residential low-income segment is a subset of the residential customer class, and the GNE segment may include customers who are part of the residential, small C&I, or large C&I rate classes. The savings, spending, and participation values for the low-income and GNE segments were removed from the parent sectors, as shown in Table 1 and Table 2.

Table 1. PY16 Summary Statistics by Customer Segment

Parameter	Residential (Non-Low-Income)	Residential Low-Income	Small C&I (Non-GNE)	Large C&I (Non-GNE)	GNE	Total ⁽¹⁾
# Participants	52,530	17,203	1,447	297	665	72,142
PYRTD MWh/yr	23,773	8,475	35,466	16,788	16,259	100,761
PYRTD MW/yr (system level)	3.98	0.94	9.32	3.99	2.91	21.13
Incentives (\$1,000) ⁽²⁾	\$4,034	\$3,454	\$4,756	\$2,386	\$927	\$15,556

⁽¹⁾ Total may not sum due to rounding.

⁽²⁾ PPL Electric Utilities reports number of participants and PYRTD using their participant tracking database but uses the incentive amounts from a separate accounting system since they are reported along with the other expenditures.

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

Table 2. Phase IV Summary Statistics by Customer Segment

Parameter	Residential (Non-Low-Income)	Residential Low-Income	Small C&I (Non-GNE)	Large C&I (Non-GNE)	GNE	Total ⁽¹⁾
# Participants	1,754,284	83,741	129,437	2,809	5,538	1,975,809
PSA MWh/yr ⁽²⁾	163,049	44,043	307,090	194,836	83,077	792,095
PSA MW/yr (system level) ⁽³⁾	22.31	4.97	58.88	33.88	15.22	135.26
Incentives (\$1,000) ⁽⁴⁾	\$23,393	\$12,982	\$33,731	\$13,688	\$8,871	\$92,665

⁽¹⁾ Total may not sum due to rounding.

⁽²⁾ VTD savings in the PY15 Annual Report were increased by 3,251 MWh/year following a review by the SWE; 3,251 MWh/year in the Residential segment and 0.18 MWh/year in the Small C&I segment.

⁽³⁾ VTD peak demand in the PY15 Annual Report were reduced by 0.17 MW/year following a review by the SWE; 0.17 MW/year in the Residential segment and 0.00001 MW/year in the Small C&I segment.

⁽⁴⁾ PPL Electric Utilities reports number of participants and PYRTD using their participant tracking database but uses the incentive amounts from a separate accounting system since they are reported along with the other expenditures.

3. Updates and Findings

3.1. Implementation Updates and Findings

This section contains implementation updates.

3.1.1. Low-Income Program

The Low-Income Program continues to offer a wide variety of no-cost energy-saving improvements and education to qualifying low-income customers residing in single-family homes, individually and mastered-metered multifamily units, and manufactured homes. Program participants continue to prefer in-home assessments, though PPL Electric Utilities will offer virtual appointments throughout the phase. PPL Electric Utilities will also continue to expand multifamily unit assessments and comprehensive measures, when possible, for the remainder of Phase IV. Additionally, PPL Electric Utilities is dispersing water kits to customers who are eligible for the assessment to encourage their enrollment and increase electric savings related to water-saving measures. The program also continues to coordinate assessments with natural gas utilities when feasible. PPL Electric Utilities continues to offer appointments during weekend hours to allow for more flexible scheduling for low-income customers and may offer the option for customers to self-schedule their assessments in certain cases. Finally, PPL Electric Utilities expanded on community partnerships with local food banks and other assistance providers.

3.1.2. Residential Program

This section outlines the program components offered in the Residential Program.

Appliance Recycling: This component continues to offer both contactless and in-home pickups, with over half of the participants preferring the contactless option. PPL Electric Utilities held two small appliance pick-up events in PY16, and these events will continue throughout the remainder of the phase. PPL Electric Utilities also implemented a stand-alone pickup option for small appliances without the need for a larger unit and plans to continue this option throughout the remainder of Phase IV as well. PPL Electric Utilities plans to allow school districts to host Appliance Recycling events.

Energy Efficient Homes: To help customers begin their energy efficiency journey, PPL Electric Utilities will continue to offer virtual assessments and in-home audits. PPL Electric Utilities continues to engage with distributors to offer discounts at point-of-purchase through the midstream delivery channel, with a focus on transforming the market for heat pump water heaters. The New Homes subcomponent continues to experience strong performance in efficient new home construction, and has introduced a limited-time offer that provides additional incentives for cold climate heat pumps and heat pump water heaters.

The High Performance Homes pilot will continue with two additional homes in PY16. All pilot homes satisfy the Department of Energy's Zero Energy Ready Home certification and will provide financial and technical support to builders to upgrade ENERGY STAR® homes to the Zero Energy Ready Home certification.

PPL Electric Utilities' Deep Energy Retrofit pilot offered comprehensive whole-home solutions, testing delivery approaches using a single lead contractor as a point of contact and helping customers take advantage of additional rebates. PPL Electric Utilities changed the structure to make it easier for trade allies to participate and will continue until the end of Phase IV. PPL Electric Utilities will continue monthly webinars to help customers understand and take advantage of savings opportunities.

Home Energy Efficiency Report (HEER): PPL Electric Utilities launched a behavioral program component in December 2024. This component will provide paper and digital reports for treatment participants as well as a customer portal with additional energy usage insights. It also provides recommendations that will motivate customers to become more efficient than their peers. PPL Electric Utilities will also provide an Energy Analyzer for all residential and small/medium-size business customers offering the same energy insights and recommendations.

Student Energy Efficient Education (SEEE): The Student Energy Efficient Education component is actively engaging students and teachers through interactive presentations. The presentation content has been updated to reflect student and teacher feedback, which includes reducing the use of videos and adding more hands-on activities with the students. All three student cohorts are fully subscribed.

3.1.3. Non-Residential Program

This section outlines the program components offered in the Non-Residential Program.

Efficient Equipment: This component continues to offer incentives through downstream and midstream delivery channels. Certain direct discount and midstream incentives were increased in July 2024 to drive additional projects focusing on stronger demand savings. PPL Electric Utilities began utilizing the HVAC Tune-up Interim Measure Protocol (IMP) as a contractor-driven offering.

Custom: Through the Custom component, customers can receive incentives to support the completion of complex and comprehensive projects that involve measures not covered by the Efficient Equipment component. Custom incentives were increased at the start of PY16 to energize the market and build the pipeline needed to meet PPL Electric Utilities' targets. In September, PPL Electric Utilities partnered with Pennsylvania College of Technology to introduce a Building Operator Certification (BOC) program. Updates have been made to solar project measurement and verification with the release of the solar IMP.

3.2. Evaluation Updates and Findings

Table 3 summarizes evaluation activities that have occurred to date in PY16.

Table 3. PY16 Evaluation Activities

Portfolio
<ul style="list-style-type: none"> Prepared and submitted PY16 EM&V plans to PPL Electric Utilities and the statewide evaluator (SWE); received feedback, adjusted plans, and received approval on revised plans Received Q1 and Q2 participation data for program components and confirmed that the files contained the necessary data for evaluation activities Provided Q1 and Q2 data for the SWE’s quarterly data request
Low-Income Assessment
<ul style="list-style-type: none"> Reviewed Q1 project documentation Reviewed Q1 and Q2 project data and compared to other PIV data
Residential Program
Appliance Recycling
<ul style="list-style-type: none"> Began drafting stakeholder interview guide
Efficient Lighting – Specialty Bulbs
<ul style="list-style-type: none"> None; program component has sunset
Energy Efficient Homes
<ul style="list-style-type: none"> Reviewed Q1 project documentation Began drafting stakeholder interview guide
Home Energy Efficient Report (HEER)
<ul style="list-style-type: none"> Reviewed and confirmed the equivalence test for program randomization Submitted requests for participation tracking data and billing data to support the evaluation analysis
Student Energy Efficient Education (SEEE)
<ul style="list-style-type: none"> Began drafting stakeholder interview guide
Non-Residential Program
Efficient Equipment Lighting
<ul style="list-style-type: none"> Reviewed Q1 project documentation and began desk reviews
Efficient Equipment Non-Lighting
<ul style="list-style-type: none"> Reviewed Q1 project documentation and began desk reviews
Custom
<ul style="list-style-type: none"> Drafted site-specific M&V plans as needed Completed 14 site visits for large stratum projects, including one visit with the SWE Submitted analysis and final reports to PPL Electric Utilities and the ICSP for nine large stratum projects (seven solar and two refrigeration)

4. Summary of Participation by Program

Participation is defined differently for each program component depending on the program delivery channel and data-tracking practices. The nuances of the participant definition vary by program component and are summarized by program and component in Table 4. The table provides the current participation totals for PY16 and Phase IV.

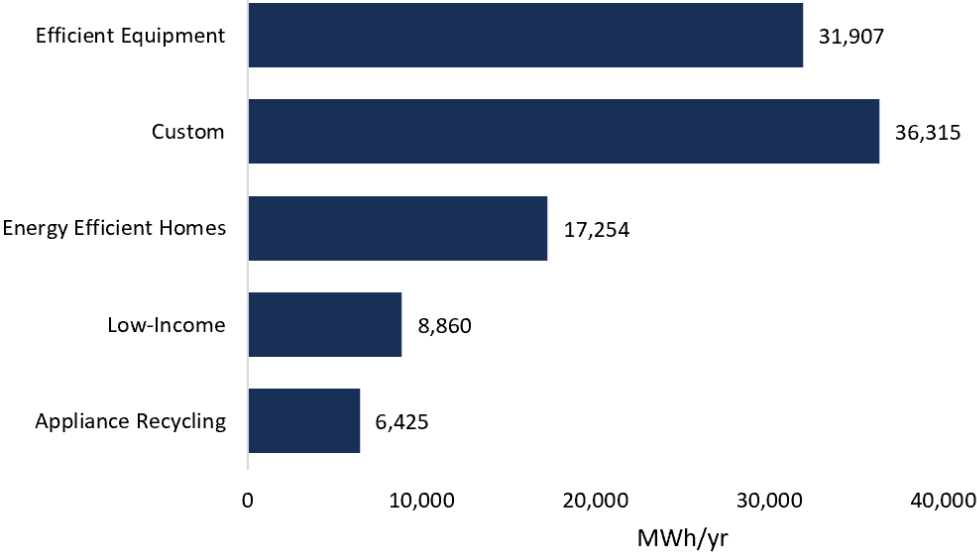
Table 4. EE&C Plan Participation by Program

Program/Component	Participant Definition	PYTD Participation	P4TD Participation
Non-Residential Program			
Custom	Unique job number; commercially operable job that received an incentive payment during the reporting period	96	489
Efficient Equipment (downstream)	Unique job number; corresponds to each unique job that received a rebate	341	2,318
Efficient Equipment (midstream)	Unique job number; corresponds to each purchase of discounted products	1,673	16,270
Low-Income Program			
Low-Income Assessment	Unique bill account number; corresponds to an income-eligible household that receives an audit and program services or receives a welcome kit	17,212	83,793
Residential Program			
Appliance Recycling	Unique job number; corresponds with each unique appliance decommissioned through the program component during the program year	10,039	47,144
Efficient Lighting	Number of discounted bulbs sold	0	1,588,224
Energy Efficient Homes New Homes	Unique job number; corresponds to a rebated project	1,000	5,371
Energy Efficient Homes Audit and Weatherization	Unique job number; corresponds to a rebated project: Households could have more than one rebated project	799	4,671
Energy Efficient Homes Online Marketplace	Unique job number; corresponds to a rebated project	2,170	17,590
Energy Efficient Homes Equipment (downstream)	Unique job number; corresponds to a rebated project; households could have more than one rebated project	6,011	33,723
Energy Efficient Homes Equipment (midstream)	Unique job number; corresponds to each purchase of discounted products	24	35
Energy Efficient Homes Instant Discount	Unique job number; corresponds to each discounted item purchased	32,777	115,803
Home Energy Efficient Report	Unique household that received at least one report	0	0
Student Energy Efficient Education	Number of participants is counted as the number of energy conservation kits delivered	0	60,378
Portfolio Total		72,142	1,975,809

5. Summary of Energy Impacts by Program Component

Figure 5 summarizes the PYTD reported gross energy savings by program component for PY16. The energy impacts in this section are presented at the meter level and do not reflect adjustments for transmission and distribution losses.

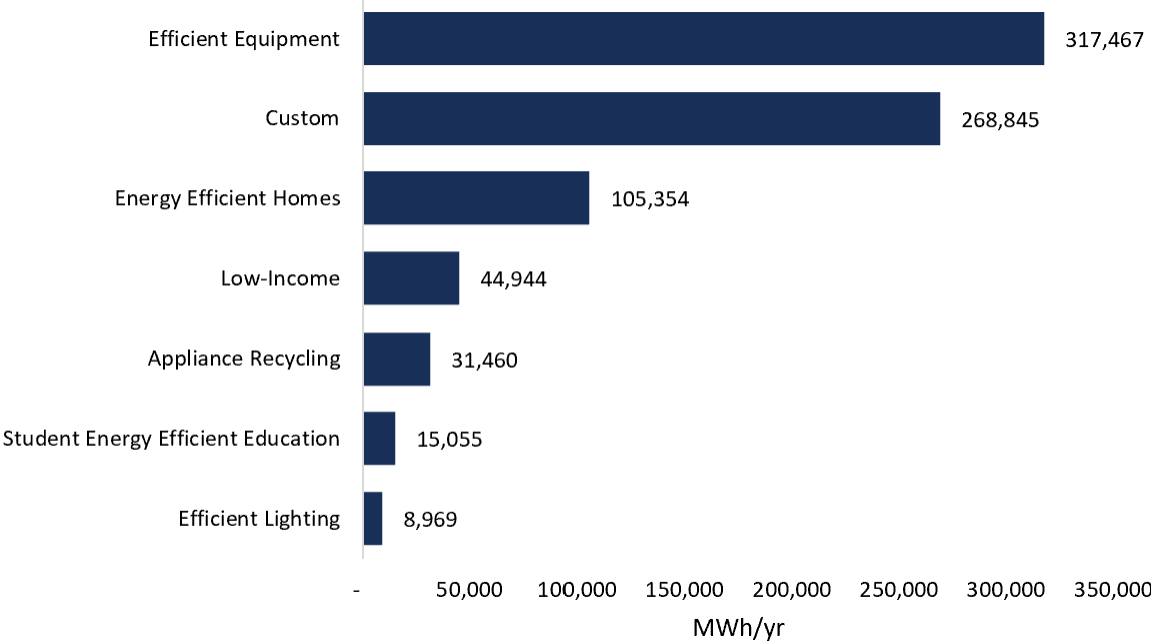
Figure 5. PY16 Reported Gross Energy Savings by Program Component



Note: Total of individual program component savings may not sum to total due to rounding.

Figure 6 summarizes the PSA gross energy savings by program component for Phase IV of Act 129. PSA savings include verified gross savings from previous program years, unverified savings from PY15, and the PYTD savings from the current program year.

Figure 6. Phase IV PSA Gross Energy Savings by Program Component



Note: VTD savings were increased by 3,481 MWh/year for Energy Efficient Homes and reduced by 230 MWh/year for Student Energy Efficient Education. Total of individual program component savings may not sum to total due to rounding.

Table 5 summarizes the energy impacts by program and component through the current reporting period.

Table 5. Energy Savings by Program Component (MWh/Year)

Program	PYRTD	RTD	VTD	PY15 Unverified	PSA ⁽¹⁾
Low-Income					
Low-Income	8,860	44,299	36,084	-	44,944
Residential					
Appliance Recycling	6,425	32,154	25,035	-	31,460
Efficient Lighting	-	8,763	8,969	-	8,969
Energy Efficient Homes	17,254	105,622	76,871 ⁽²⁾	11,229	105,354
Home Energy Efficient Report	-	-	-	-	-
Student Energy Efficient Education	-	16,788	15,055 ⁽³⁾	-	15,055
Residential Sub-Total ⁽¹⁾	23,678	163,327	125,930 ⁽⁴⁾	11,229	160,838
Non-Residential					
Custom	36,315	267,926	190,918	41,612	268,845
Efficient Equipment	31,907	307,682	285,561	-	317,467
Non-Residential Sub-Total ⁽¹⁾	68,222	575,609	476,478	41,612	586,313
Portfolio Total ⁽¹⁾	100,761	783,235	638,493 ⁽⁴⁾	52,842	792,095
Carry-Over Savings from Phase III	-	-	306,275	-	306,275
Adjusted Portfolio Total ⁽¹⁾	100,761	783,235	944,768 ⁽⁴⁾	52,842	1,098,370

⁽¹⁾Totals may not sum due to rounding.

⁽²⁾VTD savings for Energy Efficient Homes in the PY15 Annual Report were increased by 3,481 MWh/year following a review by the SWE.

⁽³⁾VTD savings for Student Energy Efficient Education in the PY15 Annual Report were reduced by 230 MWh/year following a review by the SWE.

⁽⁴⁾VTD savings were increased by 3,251 MWh/year in the PY15 Annual Report following a review by the SWE.

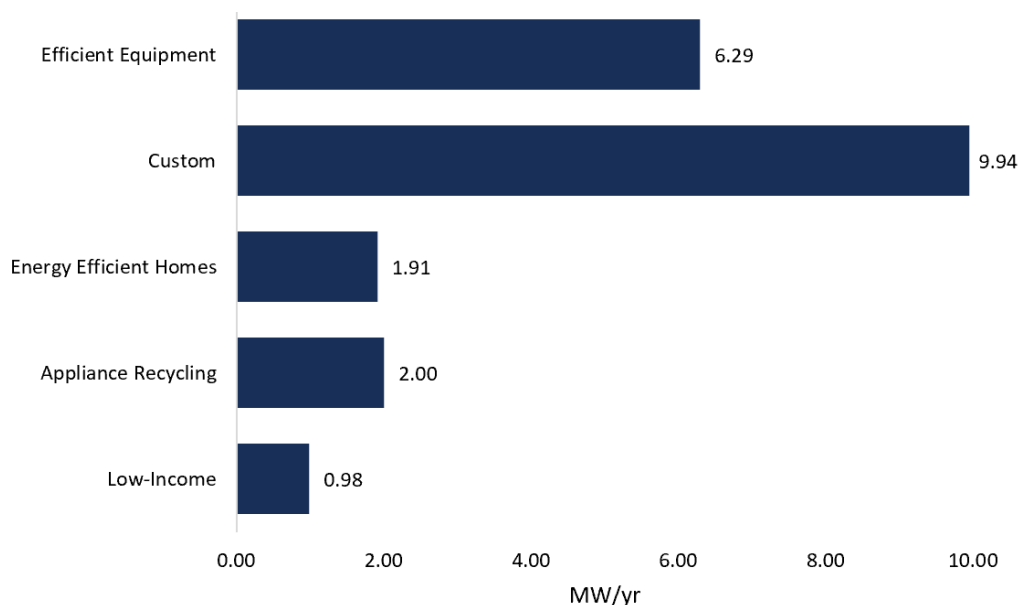
6. Summary of Peak Demand Impacts by Program Component

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. (Eastern Daylight Time) on non-holiday weekdays from June to August. The peak demand impacts from energy efficiency in this report are presented at the system level, meaning they reflect adjustments for transmission and distribution losses. PPL Electric Utilities uses the following line loss percentages/multipliers by sector:^{7, 8}

- Residential = 1.0875
- Small C&I = 1.0875
- Large C&I = 1.0420
- GNE = 1.0772

Figure 7 summarizes the PYRTD reported gross peak demand savings by energy efficiency program component for PY16.

Figure 7. PY16 RTD Gross Peak Demand Savings by Program Component (System Level)



Note: Total of individual program component savings may not sum to total due to rounding.

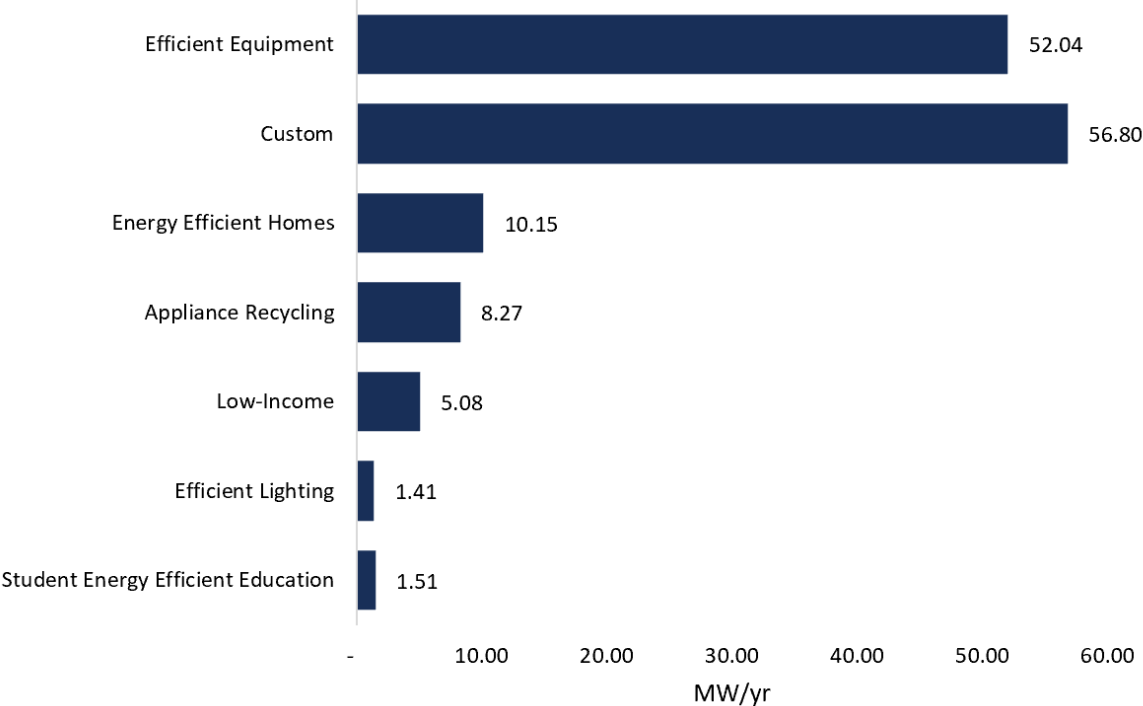
Figure 8 summarizes the PSA gross peak demand savings by energy efficiency program component for Phase IV of Act 129. PSA savings include verified gross peak demand savings from previous program

⁷ Pennsylvania Public Utility Commission. February 2021. *Technical Reference Manual*. Act 129 Energy Efficiency and Conservation Program & Act 213 Alternative Energy Portfolio Standards.

⁸ For GNE records in PY16, the line loss multiplier was calculated as a blended rate of 1.0772 using the proportion of reported demand reductions of the residential, low-income, and small C&I sectors compared to the large C&I sector (77% and 23%, respectively). Cadmus applied a blended rate of 1.0788 to GNE records in PY13, a blended rate of 1.0719 in PY14, and blended rate of 1.0726 in PY15.

years, unverified peak demand savings from PY15, and the PYTD peak demand savings from the current program year.

Figure 8. Phase IV PSA Gross Peak Demand Savings by Program Component (System Level)



Note: VTD savings were reduced by 0.14 MW/year for Energy Efficient Homes and 0.03 MW/year for Student Energy Efficient Education. Total of individual program component savings may not sum to total due to rounding.

Table 6 summarizes the system-level peak demand impacts by program and component through the current reporting period.

Table 6. System-Level Peak Demand Savings by Program Component (MW/Year)

Program Component	PYRTD	RTD	VTD	PY15 Unverified	PSA ⁽¹⁾
Low-Income					
Low-Income	0.98	5.19	4.09	-	5.08
Residential					
Appliance Recycling	2.00	8.39	6.27	-	8.27
Efficient Lighting	-	1.38	1.41	-	1.41
Energy Efficient Homes	1.91	11.63	8.15 ⁽²⁾	0.09	10.15
Home Energy Efficient Report	-	-	-	-	-
Student Energy Efficient Education	-	1.74	1.51 ⁽³⁾	-	1.51
Residential Sub-Total⁽¹⁾	3.91	23.14	17.35 ⁽⁴⁾	0.09	21.35
Non-Residential					
Custom	9.94	56.32	35.98	10.88	56.80
Efficient Equipment	6.29	55.06	45.75	-	52.04
Non-Residential Sub-Total ⁽¹⁾	16.23	111.38	81.73	10.88	108.84
Portfolio Total ⁽¹⁾	21.13	139.72	103.17 ⁽⁴⁾	10.96	135.26
Carry-Over Savings from Phase III	-	-	-	-	-
Adjusted Portfolio Total ⁽¹⁾	21.13	139.72	103.17 ⁽⁴⁾	10.96	135.26

⁽¹⁾ Totals may not sum due to rounding.

⁽²⁾ VTD savings for Energy Efficient Homes in the PY15 Annual Report were reduced by 0.14 MW/year following a review by the SWE.

⁽³⁾ VTD savings for Student Energy Efficient Education in the PY15 Annual Report were reduced by 0.03 MW/year following a review by the SWE.

⁽⁴⁾ VTD savings in the PY15 Annual Report were reduced by 0.17 MW/year following a review by the SWE.

7. Summary of Finances

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

7.1. Program and Portfolio Financials

Table 7 summarizes program-specific and portfolio total finances through the end of Q2 for PY16. The columns in Table 7 are adapted from the list of Program Cost Elements in the PA PUC's EE&C plan template for Phase IV.⁹

Thus far in PY16, 53% of all EE&C plan expenditures were incentives paid to participants and trade allies. The dollar amounts are based on EDC tracking of expenditures, with no adjustments to account for inflation.¹⁰ PPL Electric Utilities uses a separate accounting system for financial reporting, so totals in these tables may not match those reported in PPL Electric Utilities' participant tracking database.

Additional notes for table values include the following:

- The incentives column includes rebates, point-of-sale buydowns, kits, and direct install materials and labor.
- The EDC materials, labor, and administration column includes costs associated with an EDC's own employees.
- ICSP materials, labor, and administration column includes the costs of program implementation contractor and any other outside vendors an EDC employs to support program delivery and evaluation.

⁹ Pennsylvania Public Utility Commission. September 9, 2020. *Implementation of Act 129 of 2008—Phase IV Energy Efficiency and Conservation Plan Template, Docket No. M-2020-3015228.*
<https://www.puc.pa.gov/pcdocs/1676672.docx>

¹⁰ The cost-recovery of program expenses through riders generally happens promptly so that costs are being recovered from ratepayers in the same dollars that they are incurred.

Table 7. Program Year to Date Financials (\$1,000)

Program	Incentives	EDC Materials, Labor, and Administration	ICSP Materials, Labor, and Administration	Total Cost ⁽¹⁾
Non-Residential	\$7,919	\$73	\$4,518	\$12,510
Low-Income	\$3,690	\$97	\$1,848	\$5,635
Residential	\$3,947	\$75	\$3,114	\$7,136
Common Portfolio Costs ⁽²⁾	\$0	-\$395 ⁽³⁾	\$3,976	\$3,581
Portfolio Total ⁽¹⁾	\$15,556	-\$150⁽³⁾	\$13,456	\$28,862
SWE Costs ⁽⁴⁾	\$0	\$0	\$0	\$264
Total ⁽¹⁾	\$15,556	-\$150⁽³⁾	\$13,456	\$29,126

⁽¹⁾ Total may not sum due to rounding.

⁽²⁾ Common portfolio costs are costs applicable to more than one customer class or more than one program or that provide portfolio-wide benefits. These costs include PPL Electric Utilities labor and materials, legal review, PPL Electric Utilities' tracking system, EE&C plan development, etc.

⁽³⁾ This value includes a PPL Electric Utilities accounting adjustment.

⁽⁴⁾ SWE costs are outside of the 2% spending cap.

Table 8 summarizes program-specific and portfolio total finances since the inception of Phase IV. Thus far in Phase IV, 55% of all expenditures were incentives paid to participants and trade allies.

Table 8. Phase IV to Date Financials (\$1,000)

Program	Incentives	EDC Materials, Labor, and Administration	ICSP Materials, Labor, and Administration	Total Cost ⁽¹⁾
Non-Residential	\$56,726	\$588	\$24,982	\$82,296
Low-Income	\$13,544	\$684	\$10,906	\$25,134
Residential	\$22,395	\$577	\$16,681	\$39,653
Common Portfolio Costs ⁽²⁾	\$0	\$8,702	\$11,709	\$20,411
Portfolio Total ⁽¹⁾	\$92,665	\$10,551	\$64,278	\$167,495
SWE Costs ⁽³⁾	\$0	\$0	\$0	\$1,584
Total ⁽¹⁾	\$92,665	\$10,551	\$64,278	\$169,079

⁽¹⁾ Total may not sum due to rounding.

⁽²⁾ Common portfolio costs are costs applicable to more than one customer class or more than one program or that provide portfolio-wide benefits. These costs include PPL Electric Utilities' labor and materials, legal review, tracking system, EE&C plan development, etc.

⁽³⁾ SWE costs are outside of the 2% spending cap.

Cost-effectiveness testing for Act 129 EE&C programs is performed using the total resource cost (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 PY16 will be presented in the final annual report to the PA PUC on September 30, 2025, along with a more granular breakdown of portfolio costs.

7.2. Cost Recovery

Act 129 allows Pennsylvania EDCs to recover EE&C plan costs through a cost-recovery mechanism.

PPL Electric Utilities' cost-recovery charges are organized separately by customer sectors to ensure that

the electric rate classes that finance the programs are the rate classes that receive the direct energy and conservation benefits. Cost recovery is necessarily tied to the way customers are metered and charged for electric service. Readers should be mindful of the differences between Table 9 and Section 2.3. For example, the low-income customer segment is a subset of PPL Electric Utilities’ residential tariff(s) and therefore not listed in Table 9.

Table 9. EE&C Plan Expenditures by Cost-Recovery Category¹¹

Cost-Recovery Sector	Rate Classes Included	PYTD Spending (\$1000)	P4TD Spending (\$1000)
Residential and Low-Income	Residential (primarily RS)	\$12,908	\$67,454
Small C&I	Small C&I (primarily GS1 & GS3)	\$7,250	\$47,461
Large C&I	Large C&I (primarily LP4 & LP5)	\$3,852	\$21,967
GNE	Residential, Small C&I, and Large C&I	\$2,126	15,425
Common costs ⁽¹⁾	-	\$2,990	16,771
Portfolio Total ⁽²⁾	-	\$29,126	\$169,079

⁽¹⁾ Includes costs not collected at the sector level. These costs are allocated to the sectors at the end of the phase.

⁽²⁾ Totals may not sum due to rounding.

¹¹ Includes SWE costs.