



PPL Stakeholder Meeting – Energy Efficiency & Conservation

October 29, 2024

Agenda

- **Safety Message**
- **Important Updates**
- **Portfolio Overview**
- **Program and Components**
 - Residential Update
 - Low Income Update
 - Non-Residential Update
 - PJM Forward Capacity Market Update
- **Q&A, Discussion**
 - You will be muted during the meeting, please use chat
- **Wrap Up**



Commitment to Safety

Ladder Safety

It is important to be safe as we put up holiday decorations, clean gutters and other Fall tasks:

- If you feel tired or dizzy stay off the ladder and don't use ladders in high winds or storms.
- Inspect ladder to confirm it is in working condition, the right size and wear clean slip-resistant shoes.
- The ladder must be placed on firm level ground and without any type of slippery condition present
- One person on a ladder unless the ladder is specifically designed for more than one climber
- Ladders must not be placed in front of closed doors that can open toward the ladder.



Important Updates

Minor EE&C Plan Change

- Submitted to document EV Pilot, no other changes offered

Home Energy Reports (HERs)

- PPL is launching HERs in October 2024

Energy Analyzer

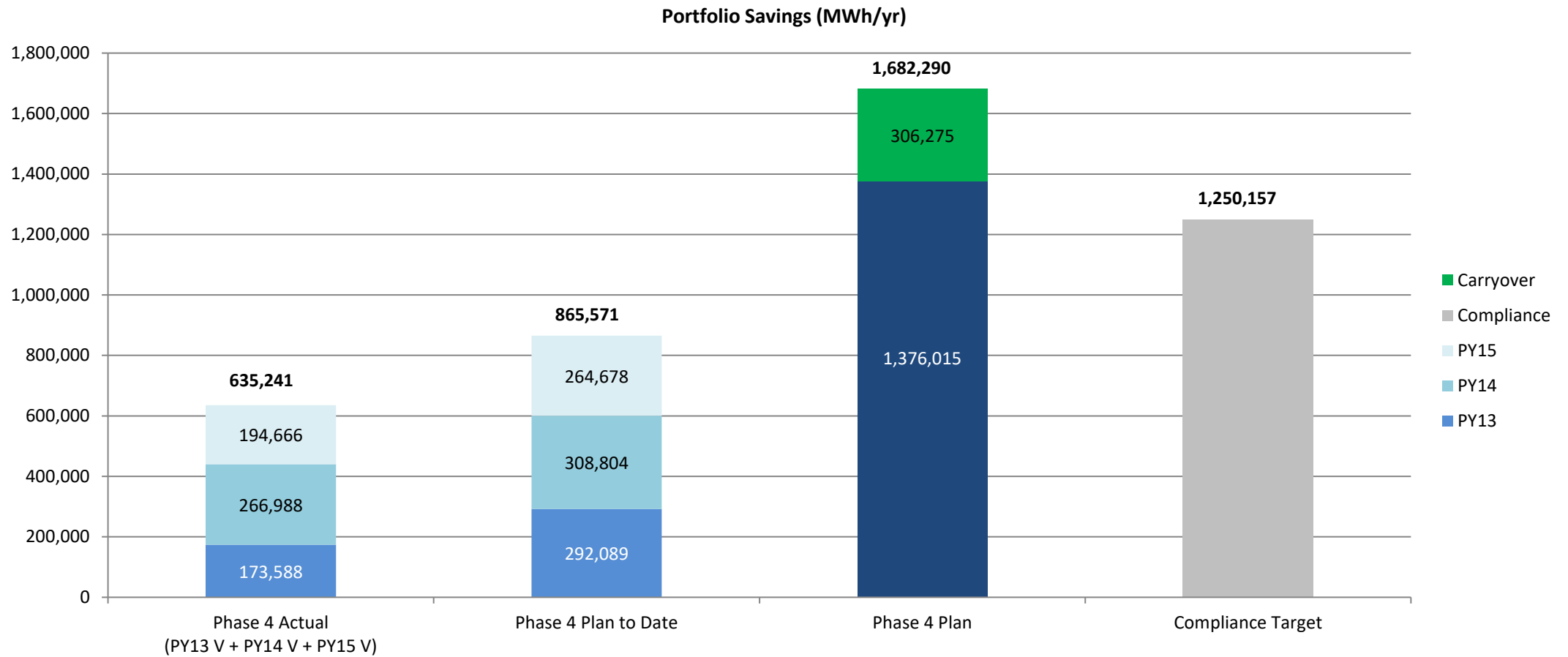
- PPL is planning to launch a new Energy Analyzer accessible by all residential and small/medium-sized business customers in Q4 of 2024
 - Important education and program marketing tool

Phase V Preparation

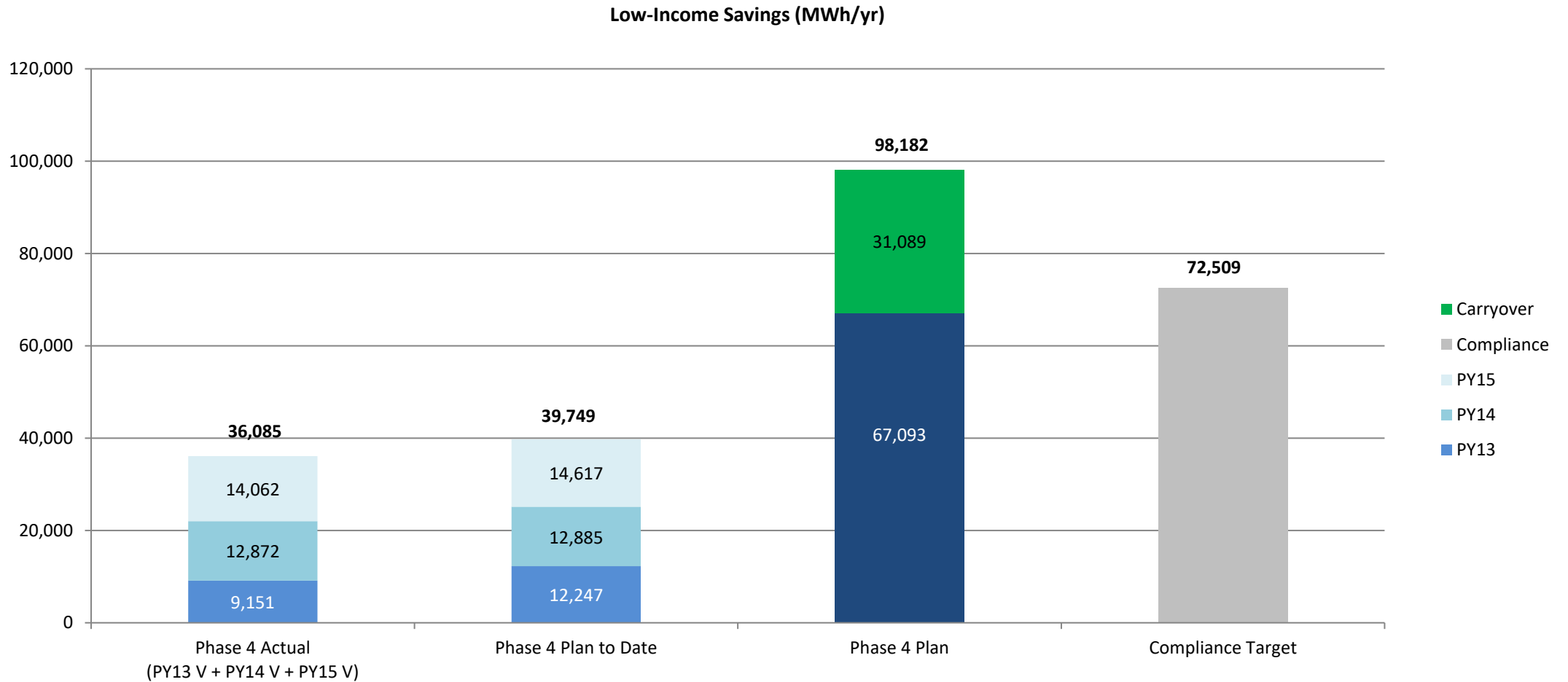
- Continued internal research and analysis of PUC documentation as it is made available

Portfolio Overview

Overview: Portfolio Savings (MWh)

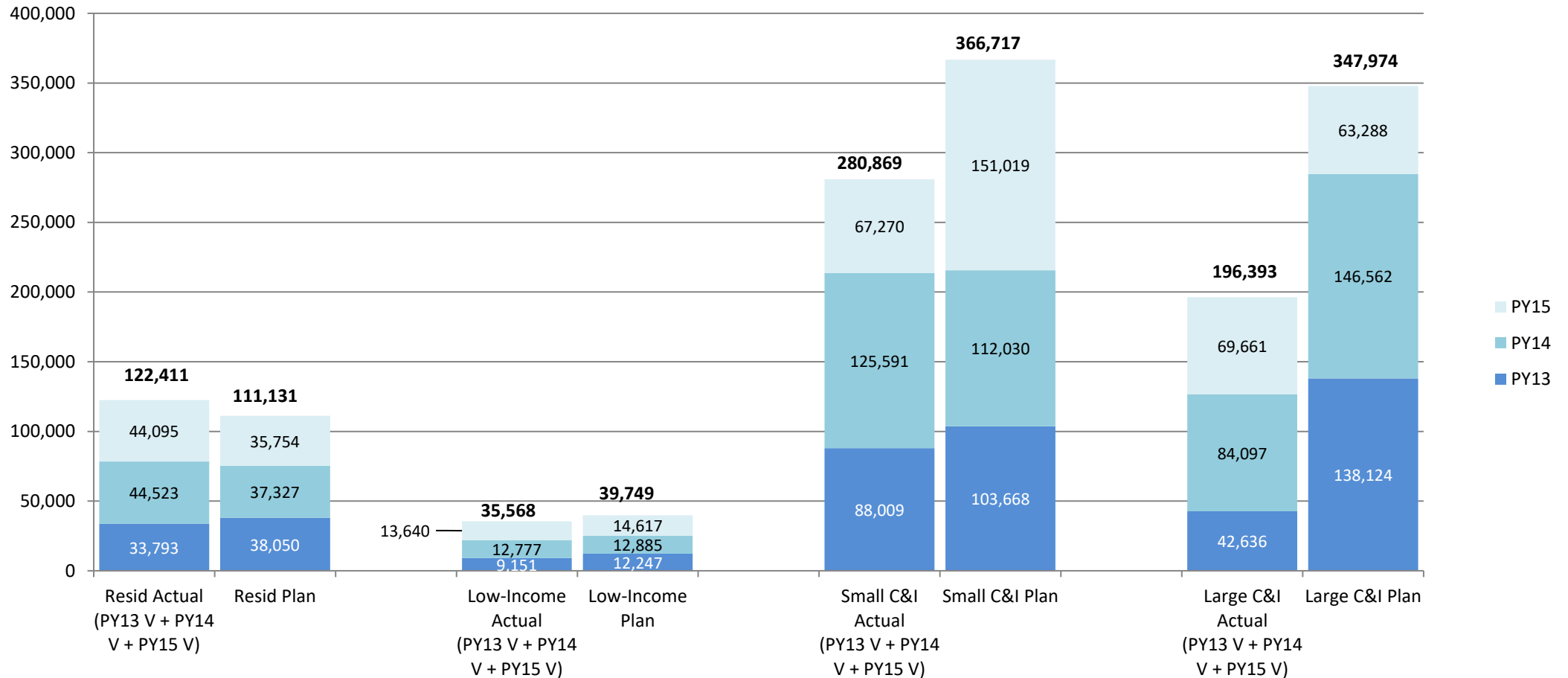


Overview: Low-Income Savings (MWh)

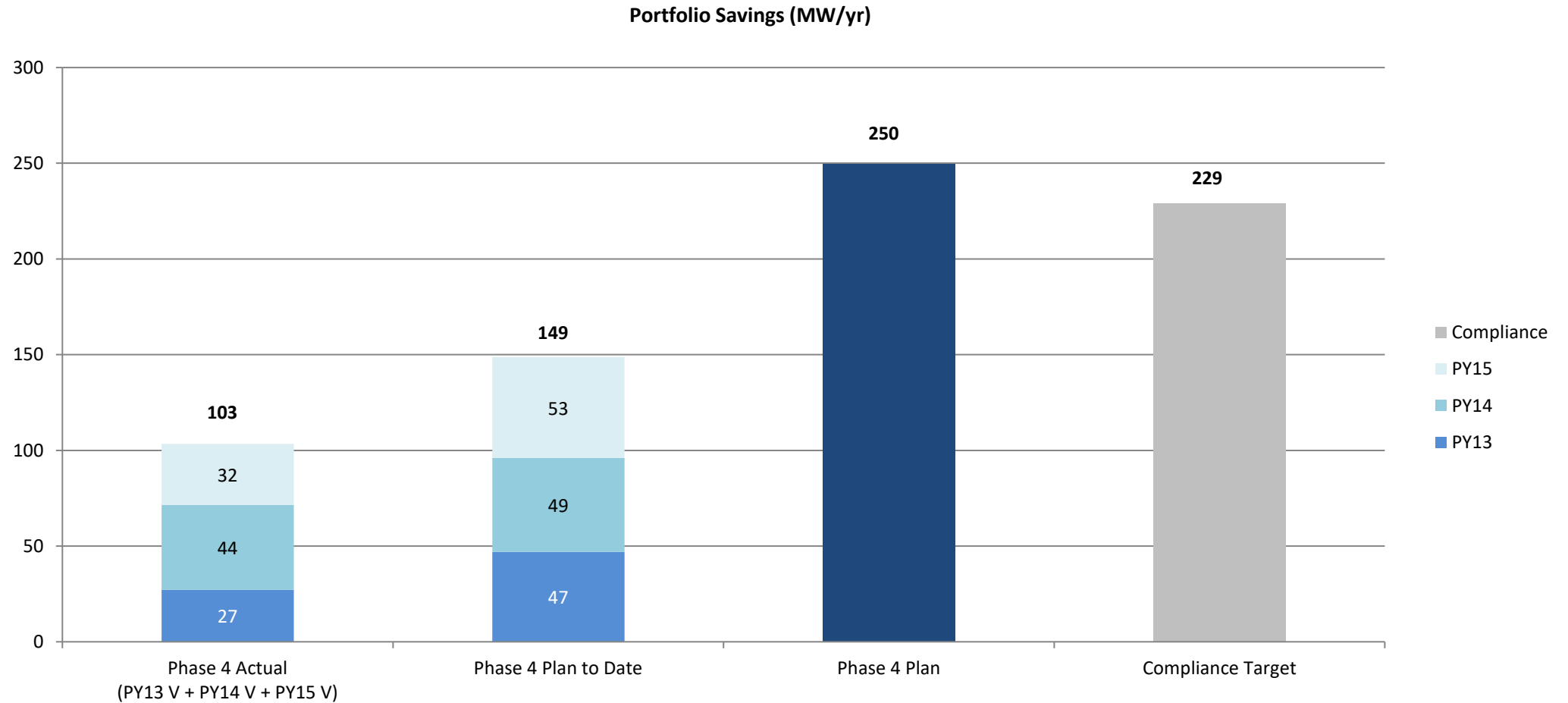


Overview: Sector Savings (MWh)

Phase-to-Date Customer Sector Savings (MWh/yr)

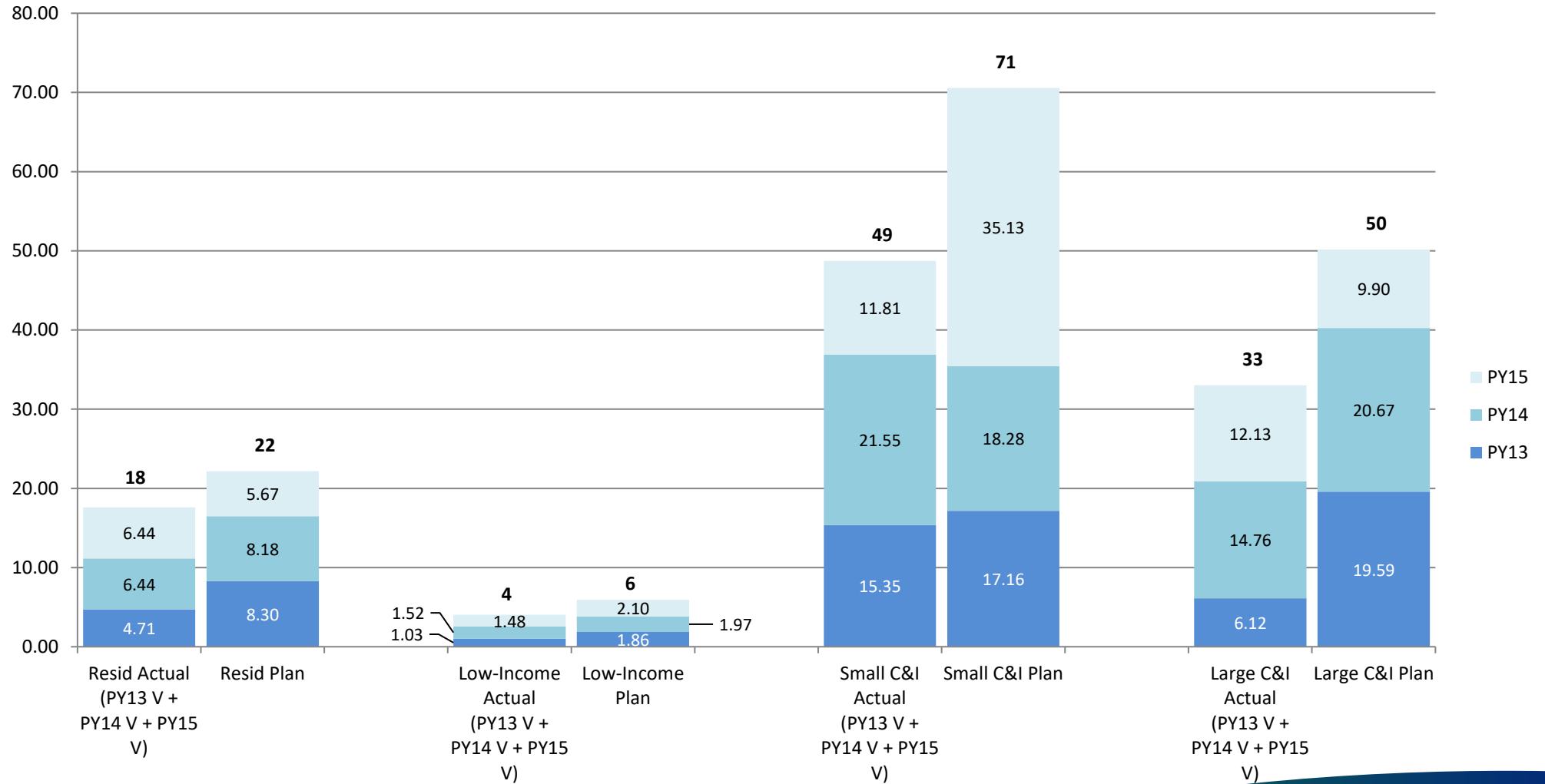


Overview: Portfolio Savings (MW)

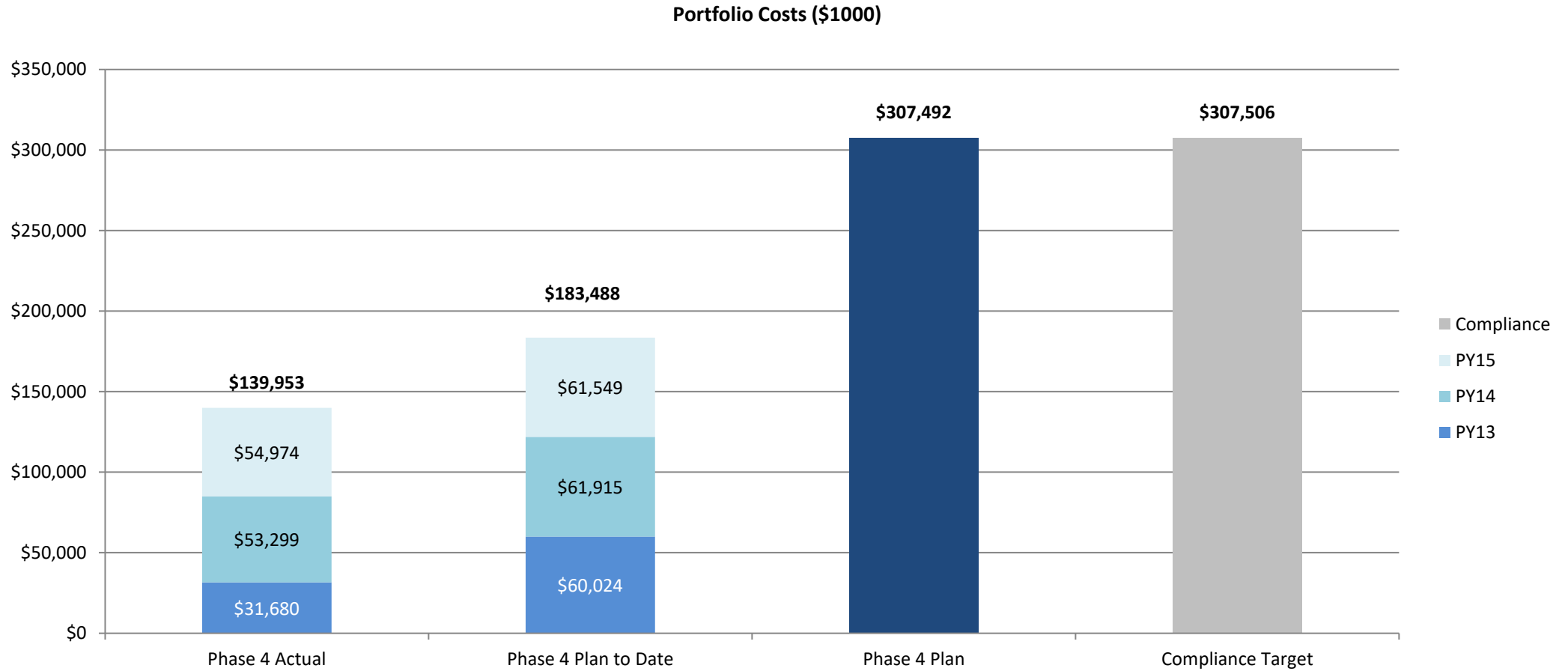


Overview: Sector Savings (MW)

Phase-to-Date Customer Sector Savings (MW/yr)

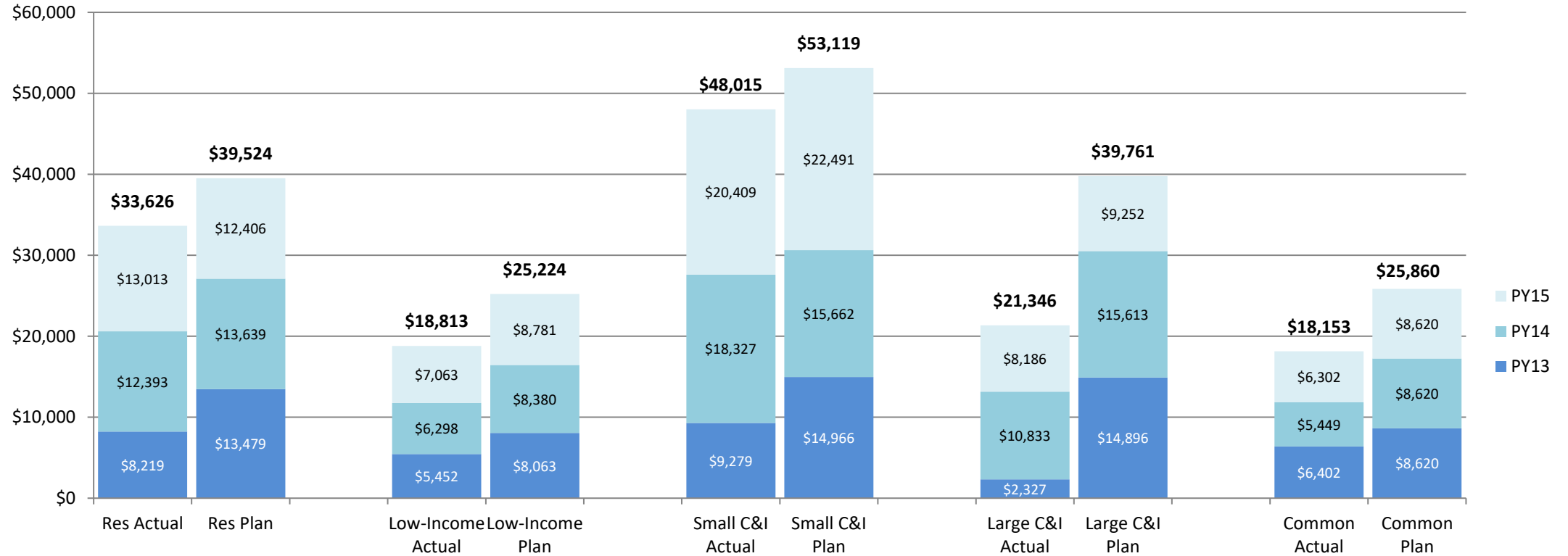


Overview: Portfolio Costs



Overview: Sector Costs

Phase-to-Date Customer Sector Costs (\$1,000)



Programs and Components: Residential Update

Residential Program Components

Efficient Homes



Energy Savings

PY13-14: 43,319
PY15: 30,070*

PTD:

73,390 MWh*

Peak Demand

PY13-14: 4.7
PY15: 3.6*

PTD:

8.29 MW*

Appliance Recycling



Energy Savings

PY13-14: 16,470
PY15: 8,565

PTD:

25,035 MWh

Peak Demand

PY13-14: 4.00
PY15: 2.28

PTD:

6.27 MW

EE Lighting



Energy Savings

PY13-14: 8,575
PY15: 394

PTD:

8,969 MWh

Peak Demand

PY13-14: 1.35
PY15: 0.06

PTD:

1.41 MW

Student Energy Ed



Energy Savings

PY13-14: 9,949
PY15: 5,337

PTD:

15,286 MWh

Peak Demand

PY13-14: 0.97
PY15: 0.57

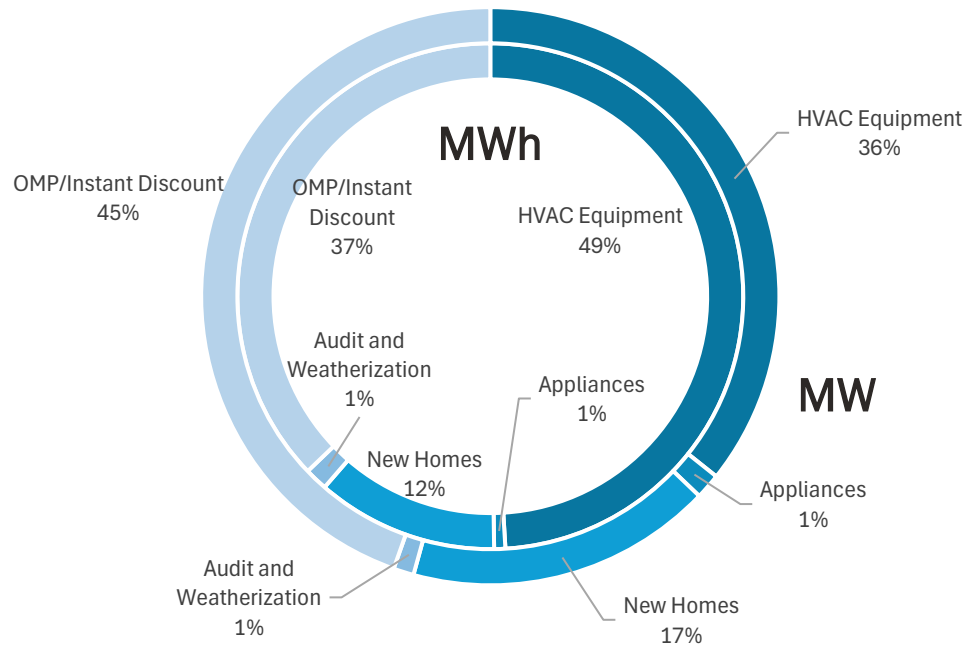
PTD:

1.55 MW

*PY15 unverified savings not included

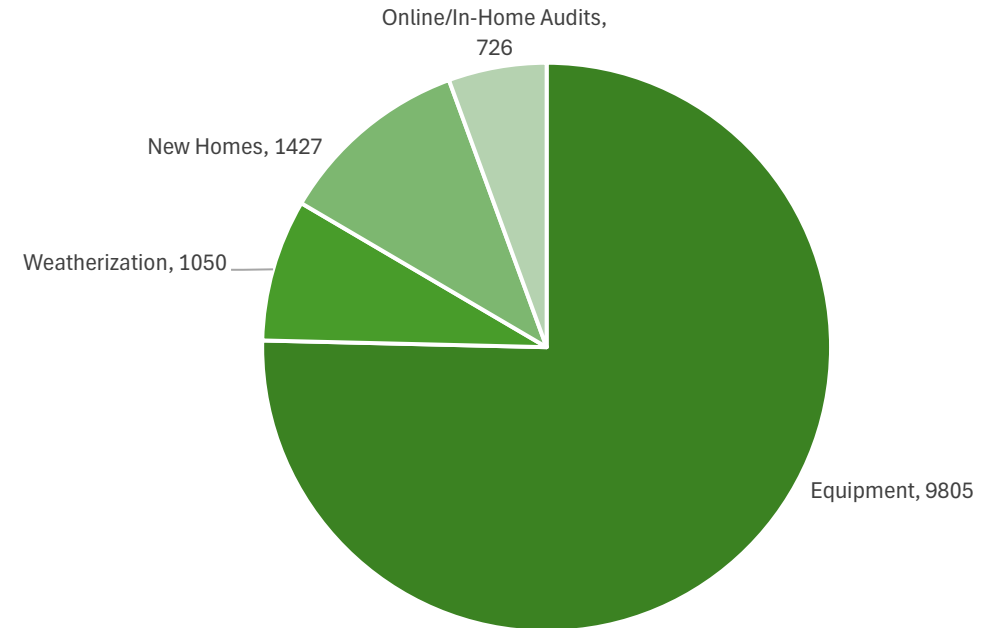
Residential Program: Energy Efficient Homes

PY15 Savings by Category



| Category | MWh | MW |
|--------------------------|---------------|------------|
| HVAC Equipment | 14,624 | 1.25 |
| Appliances | 212 | 0.05 |
| New Homes | 3,464 | 0.6 |
| Audit and Weatherization | 437 | 0.04 |
| OMP/Instant Discount | 11,078 | 1.56 |
| Total | 29,815 | 3.5 |

PY15 Participation By Category



| Category | n | % |
|-----------------------|---------------|-----|
| Equipment | 9,805 | 75% |
| Weatherization | 1,050 | 8% |
| New Homes | 1,427 | 11% |
| Online/In-Home Audits | 726 | 6% |
| Total | 13,008 | |

Participation does not include 86,004 products purchased through Instant Discounts/OMP

Residential Program: EE Homes – New Homes Subcomponent



Energy Savings

PY13-14: 6,989

PY15: 3,464

PTD:

10,453 MWh

Peak Demand

PY13-14: 1.82

PY15: 0.60

PTD:

2.42 MW

Homes Built PY15

- 1,427 homes built
- Over \$1.1 million in incentives

There are currently 88 builders participating in the program.

Residential Program: EE Homes – New Homes Subcomponent

Feature Build



Spotlight Home – Whitemarsh Drive, Lancaster.
Constructed by Horst & Son, Inc.

- Ground source heat pump/4.09 EF heat pump water heater
- Projected to save 37,929 kWh per year, with kW savings of 0.916
- This home is 123% more efficient than a home built to minimum code requirements and achieved a HERS score of -19 due to incorporated renewables.
- \$4,500 in incentives

Residential Program: Energy Efficient Homes

Pilots

Deep Energy Retrofits

- Identifying barriers to participation and testing approaches to offering comprehensive measure packages and whole home solutions
- Single lead contractor as point of contact
- Continuing to offer monthly webinars
 - In-Home Audit
 - Combining with IRA

Deep Energy Retrofit Bonus



Updates

- Updating program design to complement existing comprehensive retrofit bonus
- \$500 incentive bonus for the customer
 - In Home Audit
 - Install a combination of three shell measures and a mechanical treatment
- Contractor will receive a \$500 bonus for each completed project

Residential Program: Energy Efficient Homes

Pilots

Net Zero Energy Ready Homes

- Demonstrating implementation of residential new construction standards
- Homes satisfy the DOE Zero Energy Ready Home certification and providing financial and technical support to 5 new construction homes
- Conducting virtual and in-person tours on each home and webinars on “behind the wall” upgrades and educational video

Updates

- 5 pilot model homes
 - Alden Homes – Mt. Joy
 - **R. W. Buff – Buck Hill Falls**
 - McNaughton Homes – Enola
 - McNaughton Homes – Mechanicsburg - All Electric
 - Susquehanna Valley Builders – Mechanicsburg - almost completed; Tour in March
- Tours available for each home with customer provided features, price, etc.
- Two additional homes being built in PY16.

Residential Program: Energy Efficient Homes

Pilot Home #2 – RW Buff

Model home



Rater, builder, and owners



Model home tour



Residential Program: Appliance Recycling



Energy Savings

PY13-14: 16,470
 PY15: 8,565

PTD:

25,035 MWh

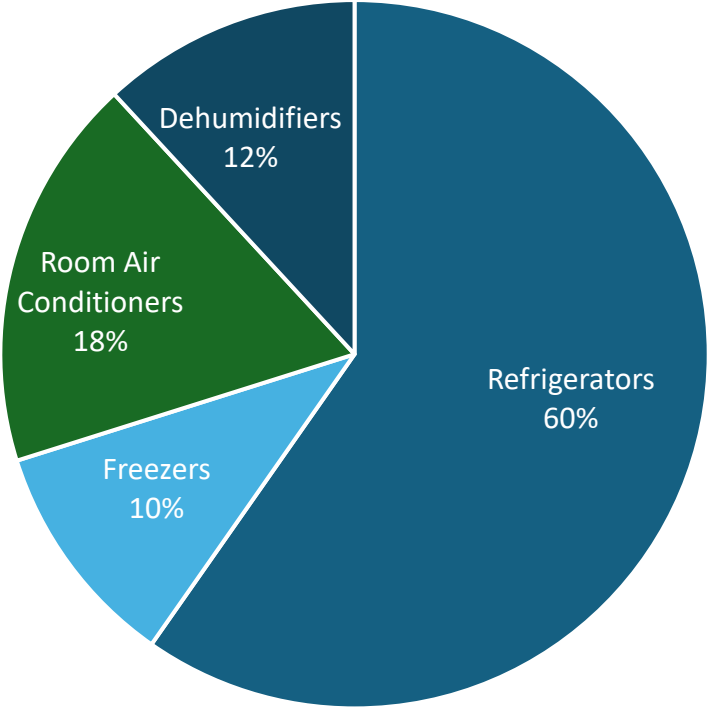
Peak Demand

PY13-14: 4.00
 PY15: 2.28

PTD:

6.27 MW

Units Collected PY15



Pick up and recycling of both large and small appliances

| Unit Type | Total |
|-----------------------|---------------|
| Refrigerators | 8,114 |
| Freezers | 1,416 |
| Room Air Conditioners | 2,444 |
| Dehumidifiers | 1,613 |
| Total | 13,587 |

Residential Program: Appliance Recycling

PY15 Small Appliance Events

- Frackville, Bloomsburg, and Harrisburg

PY16 Small Appliance Events

- Scranton and Allentown

PY15/PY16
Appliance
Recycling
Events

| Unit Type | Total |
|-----------------------|---------|
| Customers | 388 |
| Room Air Conditioners | 369 |
| Dehumidifiers | 345 |
| kWh Saved | 325,965 |
| kW Saved | 168 |

| Unit Type | Total |
|-----------------------|---------|
| Customers | 402 |
| Room Air Conditioners | 316 |
| Dehumidifiers | 285 |
| kWh Saved | 258,327 |
| kW Saved | 132 |

Residential Program: EE Lighting



Energy Savings

PY13-14: 8,575

PY15: 394

PTD:

8,969 MWh

Peak Demand

PY13-14: 1.35

PY15: 0.06

PTD:

1.41 MW

- 1,588,224 LEDs Phase-to-Date
- Ensured LEDs were available to customers throughout PPL territory at a variety of retailers
- **Program sunset and no longer available**
 - Other instant discount products available including room ACs, dehumidifiers, smart power strips, etc.

Residential Program: Student Energy Education



Energy Savings

PY13-14: 9,949

PY15: 5,337

PTD:

15,286 MWh

Peak Demand

PY13-14: 0.97

PY15: 0.57

PTD:

1.55 MW

| Program | Grade Level |
|---------|-------------|
|---------|-------------|

| | |
|--------------------|-----------|
| Bright Kids | 2nd - 3rd |
|--------------------|-----------|

| | |
|--------------------|-----------|
| Take Action | 5th - 7th |
|--------------------|-----------|

| | |
|-------------------|------------|
| Innovation | 9th - 12th |
|-------------------|------------|

- Fully subscribed in PY15
- Over 20,000 kits
- Focus on low-income schools
- Poster contest (K-8th)
- Innovation Challenge



Programs and Components: Low-Income Update

Low-Income Program



Energy Savings

PY13-14: 22,022

PY15: 14,062

PTD:

36,084 MWh

Peak Demand

PY13-14: 2.56

PY15: 1.53

PTD:

4.09 MW

3 Channels – 26,735 Assessments and 47,174 Kits

Single Family – 14,927 Assessments

- Remote Energy Assessment (REA) – 9,907 Assessments
- In-Home Assessment – 5,020 Assessments
 - In-Home Assessments are now approximately 80% of assessments

Multifamily – 11,808 Assessments

- Virtual Energy Assessment – 5,168
- In-Home Assessment – 6,640

Welcome Kits – 47,174



Low-Income Program: Multifamily

Multifamily Engagement

- Continued engagement of multifamily property owners and building operators to provide needed services to low-income tenants
- Dedicated outreach coordinator for MF
- Applying holistic approach in Phase IV
 - Completed: 38
 - 24 Individually Metered Buildings
 - 14 Master Metered Buildings
- Increase in Master Metered Projects

Master Metered Multifamily Focus

- Completed 14 locations with 42 buildings
 - 1,724 customer units
- Queue: 12 additional locations
- Utilizing updated marketing materials

Low-Income Program: Carveouts & Pilots

Comprehensive Measures

- Strong pace of comprehensive projects
- Budget forecasted to expire in PY17
- >\$2.3M spent

Health and Safety Pilot

- Health and Safety Pilot dollars spent as bridge to comprehensive measures
- Approximately \$278K spent
 - Plumbing repairs, stair repairs, expansion tanks, etc.
 - Expect to exhaust funds in Phase IV

Coordination Efforts

- Natural Gas Distribution Companies (NGDC) – 41 appointments complete in Phase
- Continue to coordinate with PPL OnTrack, LIHEAP, other CAP program participants
 - Targeted marketing for OnTrack customers

Programs and Components: Non-Residential Update

Non-Residential Program Components

Efficient Equipment Downstream



Energy Savings

PY13-14: 93,798
PY15: 44,287

PTD:

138,085 MWh

Peak Demand

PY13-14: 14.80
PY15: 7.14

PTD:

21.94 MW

Efficient Equipment Midstream



Energy Savings

PY13-14: 56,791
PY15: 18,478

PTD:

75,270 MWh

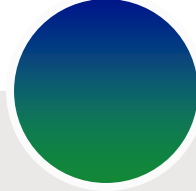
Peak Demand

PY13-14: 10.95
PY15: 3.26

PTD:

14.20 MW

Efficient Equipment Direct Discount



Energy Savings

PY13-14: 53,786
PY15: 18,366

PTD:

72,152 MWh

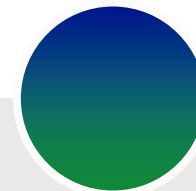
Peak Demand

PY13-14: 7.31
PY15: 2.38

PTD:

9.59 MW

Custom



Energy Savings

PY13-14: 135,810
PY15: 55,108

PTD:

190,918 MWh

Peak Demand

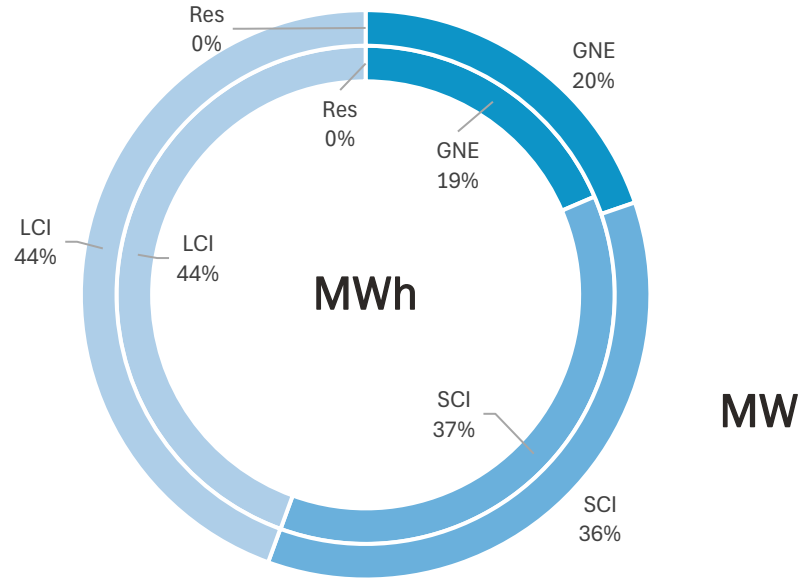
PY13-14: 24.85
PY15: 11.13

PTD:

35.98 MW

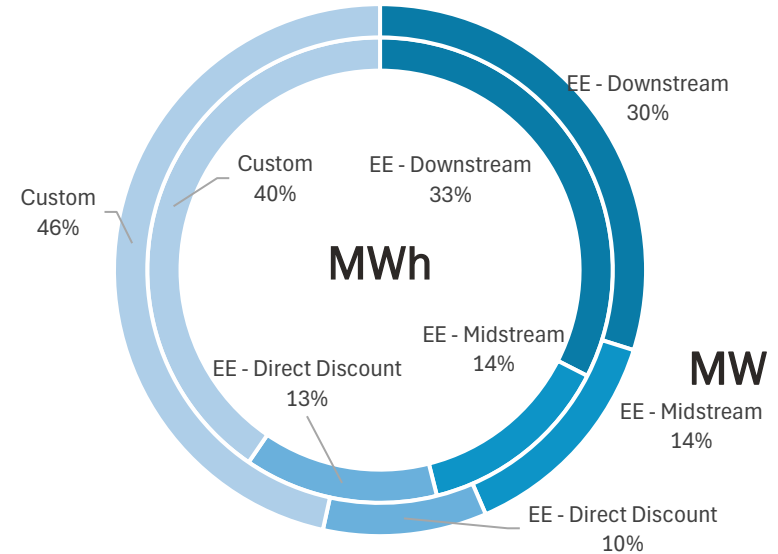
**PY15 unverified savings not included

Non-Residential Program: PY15 Summary



| Segment | MWh | MW |
|--------------|----------------|--------------|
| Res | - | - |
| GNE | 25,274 | 4.7 |
| SCI | 50,403 | 8.53 |
| LCI | 60,562 | 10.58 |
| Total | 136,239 | 23.81 |

PY15 Energy Savings by Sector



| Component | MWh | MW |
|---------------------------------------|----------------|--------------|
| Efficient Equipment – Downstream | 44,287 | 7.14 |
| Efficient Equipment - Midstream | 18,478 | 3.26 |
| Efficient Equipment - Direct Discount | 18,366 | 2.38 |
| Custom | 55,108 | 11.13 |
| Total | 136,239 | 23.81 |

PY15 Energy Savings by Component

Non-Residential Program: Efficient Equipment Downstream



Energy Savings

PY13-14: 93,798

PY15: 44,287

PTD:

138,085 MWh

Peak Demand

PY13-14: 14.80

PY15: 7.14

PTD:

21.94 MW

PY15 verified energy savings by project type:

Lighting

- 42,304 MWh/yr.
- 6.79 MW/yr.

Equipment

- 1,983 MWh/yr.
- 0.35 MW/yr.

\$4,368,176 – incentives provided to customers

Non-Residential Program: Efficient Equipment Midstream



Energy Savings

PY13-14: 56,791

PY15: 18,478

PTD:

75,270 MWh

Peak Demand

PY13-14: 10.95

PY15: 3.26

PTD:

14.20 MW

- 23 distributors in PY15
- Lighting verified PY15 savings of 17,890 MWh/yr.
- Ag verified PY15 savings of 529 MWh/yr.
- Food Service PY15 verified savings of 60 MWh/yr.

\$1,005,714 – incentives provided to customers

Non-Residential Program: Efficient Equipment Direct Discount



Energy Savings

PY13-14: 53,786

PY15: 18,366

PTD:

72,152 MWh

Peak Demand

PY13-14: 7.31

PY15: 2.38

PTD:

9.59 MW

- Lighting PY15 verified savings of 18,174 MWh/yr.
- Equipment PY15 verified savings of 191 MWh/yr.

\$3,413,164 – incentives provided to customers

Non-Residential Program: Custom



Energy Savings

PY13-14: 135,810

PY15: 55,108

PTD:

190,918 MWh

Peak Demand

PY13-14: 24.85

PY15: 11.13

PTD:

35.98 MW

- Agricultural projects PY15 verified savings of 27,175 MWh/yr.
- Solar projects PY15 verified savings of 12,626 MWh/yr.

**PY15 unverified savings 41,612 MWh/yr. and 10.08 MW/yr.

\$13,197,607 – incentives provided to customers

Building Operator Certification (BOC)

- Launched BOC level 1 program in partnership with Pennsylvania College of Technology
- PPL Cohort began 9/10/24 – 11/26/24
- 19 customers and trade allies enrolled in the 12-week course
- PPL is covering the full cost of the certification
- Workforce development initiative
- Additional applications at customer facilities are underway



**EMPOWER YOUR WORKFORCE:
BUILDING OPERATOR
CERTIFICATION®**

The Building Operator Certification (BOC) is the Nation's leading competency-based training and credentialing program for building engineers and maintenance personnel. Graduates make their buildings more comfortable, efficient and environmentally friendly, thanks to skills they master in our classes.

BOC teaches building operators to find practical, low-cost and no-cost efficiency solutions by working with existing systems. Independent research shows that BOC operators consistently save money and energy in their facilities — up to \$20,000 a year — thanks to energy conservation projects, air quality improvements and other initiatives. Plus, the savings are instant and continuous.

Programs and Components: PJM Forward Capacity Market Update

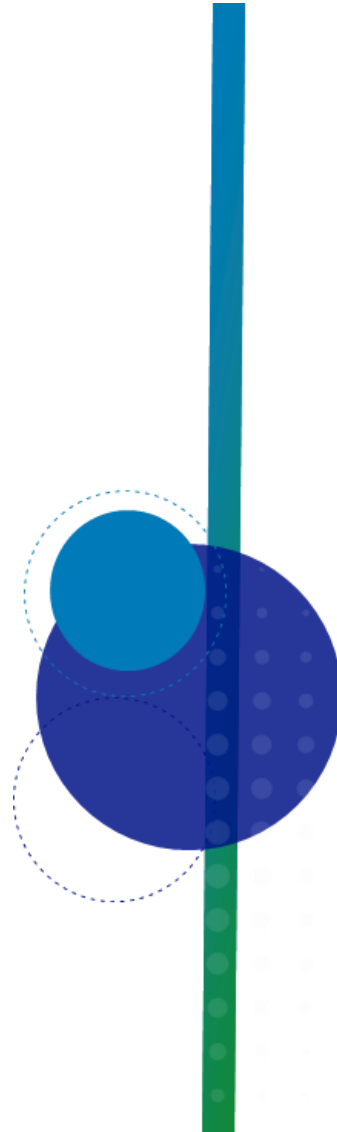
PJM Forward Capacity Market Service

Updates

- Submitted 3rd bid to CSP in mid-April 2024 for measurement & verification to qualify into PJM for delivery year (DY) 24/25
 - PPL Electric and CSP nominated 1.9 MWs of demand reduction for new projects
 - Total nomination for DY 24/25 from new and previously qualified projects was 4.8 MWs
- Will make 4th bid to CSP this spring for DY 25/26
 - Future participation if PJM continues to offer the program beyond DY 25/26
- Collected revenue returned to appropriate customer class

Questions & Answers

Thank You!



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