Evaluation of 2025 Energy Efficiency and Beneficial Electrification Portfolio – Volume II Program Guidance Document

Prepared for PSEG Long Island

By Demand Side Analytics
May 2026

TABLE OF CONTENTS

Figures

Tables

1 PREFACE

GLOSSARY OF TERMS

Key Term	Definition
MWh Beneficial Electrification (MWh_{be})	The increase in weather-normalized annual electric energy consumption attributable to beneficial electrification measures.
MWh Energy Efficiency (MWh_{ee})	The reduction in weather-normalized annual electric energy consumption attributable to energy efficiency programs or measures.
Delta MWh	The total change in annual electric energy consumption. Equal to MWh_{ee} – MWh_{be}. Energy Efficiency measures, MWh_{ee}, typically result in a reduction in a customer's annual electric consumption and are reported as positive impacts. Beneficial Electrification measures, MWh_{be}, result in an increase in the customer's annual electric consumption. A negative value of Delta MWh indicates the measure or program increases electric consumption on the PSEG Long Island system. A positive value of Delta MWh indicates the measure or program reduces electric consumption on the PSEG Long Island system.
Discount Rate	The time value of money used to calculate the present value of future benefits and costs. PSEG Long Island uses a weighted average cost of capital supplied by LIPA that represents the cost of borrowing to build additional capacity to meet the service territory's future supply needs. Based on these factors, we used a nominal discount rate of 5.66% in the 2025 evaluation.
Ex-Ante Gross Savings	The energy and demand savings recorded by the implementation contractor in the program tracking database. Ex-ante gross savings are sometimes referred to as claimed savings. These savings are calculated using planning assumptions and algorithms.
Ex-Post Gross Savings	The energy and demand savings estimated by the evaluation team, using the best methods and data available at the time of the evaluation.
Ex-Post Net Savings	The savings realized by the program after independent evaluation determines ex-post gross savings and applies NTGRs and line losses. The evaluation team uses the ex-post net impacts in the cost-effectiveness calculation to reflect the current best industry practices.

Key Term	Definition
Gross Impacts	The change in energy consumption or demand directly due to the participants' program-related actions, regardless of why they participated. These impacts include coincidence factors (CFs) for demand, waste-heat factors, and installation rates. Gross impacts presented in this report do not include line losses and, therefore, represent the energy and demand savings as would be measured at the customers' meters.
kW Impacts (Demand or Capacity)	The reduction in demand coincident with system peaking conditions due to energy efficiency measures. For Long Island, system peaking conditions typically occur on non-holiday summer weekdays. This report's peak demand savings values are based on system coincident demand impacts between 4 pm and 5 pm on non-holiday weekdays from June to August.
Levelized Cost of Capacity	To operate the electric grid, the system operator needs installed, operable capacity to meet peak demand conditions. The levelized cost of capacity is a metric that allows planners to compare the costs of different resources to meet (or lower) peak demand. The metric is typically expressed in terms of $kW/year.
Levelized Cost of Energy	The equivalent cost of energy (kWh) over the life of the equipment that yields the same present value of costs, using a nominal discount rate of 5.66%. The levelized cost of energy is a measure of the program administrator's program costs in a form that planners can compare to the cost of supply additions.
Line Loss Factor	The evaluation team applies line losses of 5.67% on energy consumption (resulting in a multiplier of 1.0601 = [1 ÷ (1 – 0.0567)]) and of 7.19% on peak demand (resulting in a multiplier of 1.0775 = [1 ÷ (1 – 0.0719)]) to estimate energy and demand savings at the power plant.
MMBtu Beneficial Electrification ($MMBtu_{be}$)	For fuel-switching measures, the reduction in site-level fossil fuel consumption minus the site level increase in the electric consumption (MWh_{be}) converted to MMBtu at 3.412 MMBtu per MWh.
MMBtu Energy Efficiency ($MMBtu_{ee}$)	The reduction in site-level energy consumption due to energy efficiency expressed on a common MMBtu basis. $MMBtu_{ee}$ impacts are calculated by multiplying the MWh_{ee} impacts by a static 3.412 MMBtu per MWh conversion factor and adding any fossil fuel conservation attributable to the measure. Secondary fossil fuel impacts, such as the waste heat penalty associated with LED lighting, are also deducted from the $MMBtu_{ee}$ estimates.
Net Impacts	The change in energy consumption or demand that results directly from program-related actions taken by customers (both program participants and non-participants) that would not have occurred absent the program. The difference between the gross and net impacts is the application of the net-to-gross ratio (NTGR) and line losses. Net impacts presented in this report also include line losses and, therefore, represent the energy and demand savings as would be measured at the generator. Net impacts are used for cost-effectiveness analysis.

Key Term	Definition
Net-to-Gross Ratio (Free-Ridership and Spillover)	The factor that, when multiplied by the gross impacts, provides the net impacts for a program before any adjustments for line losses. The NTGR is defined as the savings attributable to programmatic activity after accounting for free-ridership (FR) and spillover (SO). Free-ridership reduces the ratio to account for those customers who would have installed an energy-efficient measure without a program. The free-ridership component of the NTGR can be viewed as a measure of naturally occurring energy efficiency. Spillover increases the NTGR to account for non-participants who install energy-efficient measures or reduce energy use due to the actions of the program. The NTGR is generally expressed as a decimal and quantified through the following equation: $NTGR = 1 - FR + SO$
Realization Rate	The ratio of ex-post gross to ex-ante gross impacts. This metric expresses the evaluation savings as a percentage of ex-ante savings claimed by PSEG Long Island or the implementation contractor. The Home Energy Management program is implemented by Uplight on behalf of PSEG Long Island. TRC and its subcontractors implement the remainder of the portfolio.
Ratepayer Impact Test (RIM)	A test that estimates the impact of conservation programs on rates due to changes in utility revenue as result of program activities. The RIM considers the cost-effectiveness from the perspective of a non-participating ratepayer. Energy efficiency programs will typically not pass the RIM test because measures lead to a reduction in utility revenue. Conversely, BE programs often pass the RIM test because the increased consumption allows the utility to spread its fixed costs across more units of energy.
Societal Cost Test (SCT)	A test that measures a program's net costs as a resource option based on benefits and costs to New York. Rebate costs are not included in this test because they are assumed to be a societal transfer. To maintain consistency with the most current version of the New York Benefit-Cost Analysis Handbook, we applied the SCT as a primary method of determining cost-effectiveness using the same assumptions as those used by PSEG Long Island's resource planning team.
Technical Reference Manual (TRM)	A collection of algorithms and assumptions used to calculate resource impacts of PSEG Long Island's Energy Efficiency Portfolio. The PSEG Long Island TRM aligns with the New York State TRM in many respects but includes Long Island specific parameters and assumptions where available from saturation studies or prior evaluation research.
Total MMBtu Impact	The primary performance metric since program year 2020. Equal to the sum of $MMBtu_{be}$ and $MMBtu_{ee}$. This metric represents the change in site-level fuel consumption attributable to the measure or program. This metric does not consider the amount of MMBtu required to generate a kWh of electricity – only the embedded energy in the delivered electricity.

Key Term	Definition
Utility Cost Test (UCT)	A test that measures the net costs of a program as a resource option, based on the costs that the program administrator incurs (including incentive costs) and excluding any costs incurred by the participant beyond what is subsidized by the program. To allow for direct comparison with PSEG Long Island's assessment of all supply-side options and consistent with previous evaluation reports, we continue to show UCT results as a secondary method of determining cost-effectiveness.
Verified Ex-Ante Gross Savings	A key question is if the ex-ante gross energy impacts claimed by the implementation contractors were calculated consistently using the calculations and assumptions approved by PSEG Long Island and LIPA and used to develop annual savings goals. To verify claimed savings, the evaluation team independently calculates the saving using the calculations and assumptions pre-approved by PSEG Long Island. These savings estimates are used to determine if PSEG Long Island achieves its annual scorecard goals.

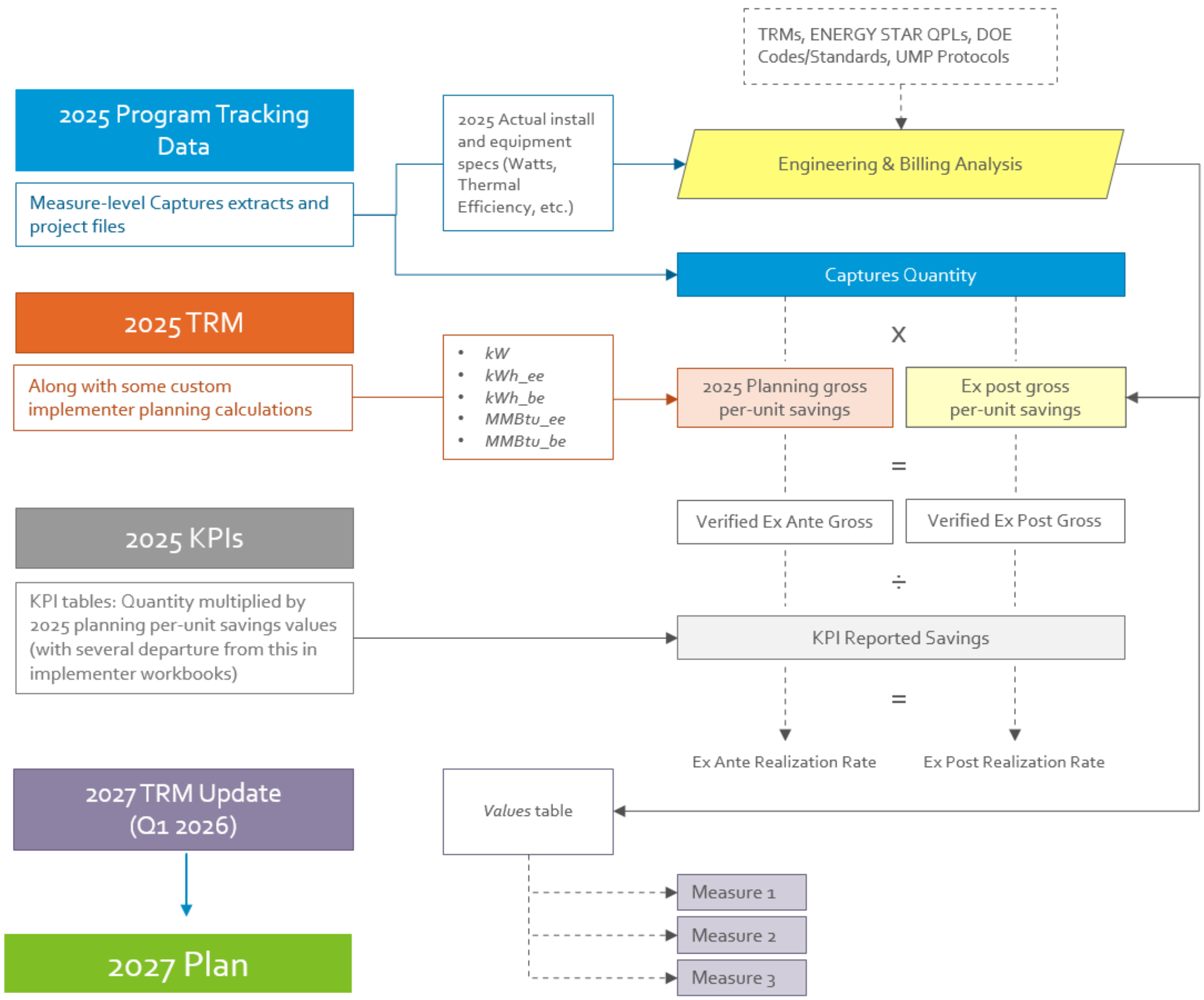
Many of the tables in this report include "total" rows or columns that summarize the more granular results at the program or portfolio level. The totals are calculated using the full decimal precision of the underlying values. The values presented in report tables are rounded for readability. In some cases the sum of the rounded values may be slightly different (1 MMBtu or 0.1%) from the value displayed in the total row or column.

ANNUAL EVALUATION TASKS AND CYCLE TIMELINE

Figure 1 outlines the annual energy efficiency and beneficial electrification programming timeline for planning, verified ex-ante, and verified ex-post and the resources that inform assumptions for each deliverable. The verified ex-ante audit asks if the ex-ante gross energy impacts claimed by the implementation contractors were computed consistently with the calculations and assumptions approved by PSEG Long Island. To verify claimed savings, the evaluation team independently calculates the savings using the calculations and assumptions pre-approved by PSEG Long Island. These savings estimates are used to determine if PSEG Long Island achieves its annual scorecard goals, and results are submitted in the Verified Ex-Ante Memo, Appendix D. The Verified Ex-Ante Memo was submitted to PSEG Long Island and LIPA on January 30, 2026, according to the standard evaluation timeline. We received an updated KPI Scorecard in March 2026 with an additional 42,419 MMBtu of ex-ante savings, largely from measures installed in 2025 that are no longer considered strategic in New York. Normally, projects installed in one year and closed early the following year would be claimed in the year the project closed. However, with the introduction of the Strategic Framework, PSEG Long Island elected to claim these projects as 2025 savings. As a result, our ex-post evaluation includes additional ex-ante savings that were not part of the Verified Ex-Ante memo in January 2026.

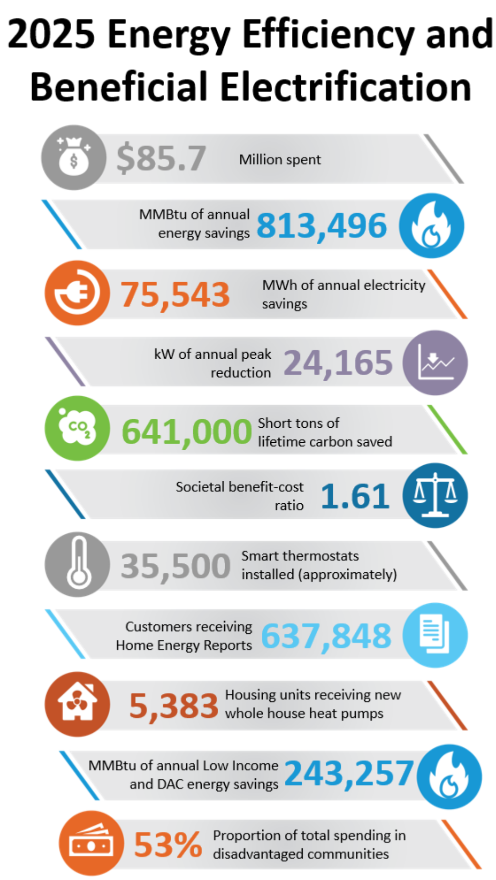
Volumes I and II of this report outline the results from the ex-post evaluation. The ex-post evaluation estimates energy and summer peak demand savings for the portfolio using the most current methods and data available at the time of the evaluation. Assumptions and algorithms from the most up-to-date TRMs, Federal Codes and Standards, and actual equipment specifications are utilized in this portion of the evaluation. The output informs recommendations for future planning cycles. It is important to note that the feedback loop is a two-year cycle. PSEG Long Island has already established 2026 goals and planning assumptions, therefore findings and recommendations from the 2025 ex-post evaluation will not be reflected in the 2026 program claimed savings methodology. The findings and recommendations of this 2025 impact evaluation will be reflected in 2027 planning assumptions, goal setting, and ex-ante savings values. Additionally, any major drivers in differences between ex-post and claimed ex-ante savings discovered in the 2024 evaluation were expected to persist in the 2025 evaluation results.

Figure 1: Annual Evaluation Data Flow



2 INTRODUCTION

PSEG Long Island's Energy Efficiency and Beneficial Electrification programs offer an array of incentive and rebate opportunities to PSEG Long Island residential and commercial customers. These opportunities assist customers in either reducing their energy usage through energy efficiency, thereby lowering their energy bills, or in electrifying their homes and avoiding fossil fuel-based costs through beneficial electrification. The Energy Efficiency and Beneficial Electrification Portfolio is administered by PSEG Long Island and its subcontractor, TRC, on behalf of the Long Island Power Authority (LIPA). The sole exception is the residential behavioral program, Home Energy Management (HEM), which was administered by Bidgely for the 2025 Program Year. This report presents the 2025 Energy Efficiency and Beneficial Electrification Portfolio program evaluation ex-post gross results and covers the period from January 1, 2025, to December 31, 2025.[1]



The Demand Side Analytics evaluation team produced two volumes that together compose the entire Annual Evaluation Report. This document, the 2025 Program Guidance Document (Volume II) provides detailed program-by-program impact analysis results. The 2025 Annual Evaluation Report (Volume I) provides an overview of the portfolio-level evaluation findings.

In 2025, PSEG Long Island spent $85.7 million implementing the Energy Efficiency and Beneficial Electrification Portfolio. The investment led to 813,496 MMBtu of total savings and avoided two thirds of a million short tons of CO2 emissions – the equivalent of removing approximately 135,000 combustion engine cars for one year.[2] PSEG Long Island's efforts led to over $74.1 million in net societal benefits, with a societal benefit-cost ratio of 1.61.

New York has established many statewide energy efficiency and emission reduction targets. The Climate Leadership and Community Protection Act (CLCPA) set the overall goal of reducing GHG emissions by 40% by 2030 and 85% by 2050. In 2018, New Efficiency: New York set a statewide energy efficiency target of 185 TBtu in energy savings by the end of 2025. By laying out these targets, New York established fuel-neutral metrics to incorporate beneficial electrification in the building and

---

[1] The evaluation includes additional 2025 savings and spending reported in the March 2026 KPI Scorecard update from measures installed in 2025 that do not align New York's strategic framework for 2026 and beyond.
[2] The EPA estimates 4.29 metric tons of carbon per vehicle-year, the equivalent of 4.73 short tons per vehicle-year. Weblink

transportation sectors, which is necessary to achieve the State's carbon reduction goals. In response, PSEG Long Island:

- **Changed its primary performance metric from electric energy (kWh) and peak demand (kW) to MMBtu.** The switch, which took place prior to the 2020 program year, allows PSEG Long Island to pursue beneficial electrification measures like heat pumps that increase electric consumption but lower overall energy consumption and emissions. The MMBtu performance metric is "MMBtu at the site" meaning saved or increased kWh is converted to MMBtu using a static factor of 3.412 MMBtu per MWh. The thermal efficiency of the electric power generation fleet does not affect the calculations.
- **Incorporated and continues to expand beneficial electrification measures in its offerings.** PSEG Long Island has continued to pioneer efforts to expand their energy efficiency programs to include rebates and incentives for customers to install measures that supply beneficial electrification to the grid, such as heat pumps, and allow customers to save on their fossil fuel-based costs. Adopting fuel-neutral savings targets allows PSEG Long Island to aggregate efficiency achievements across electricity, natural gas, and delivered fuels such as oil and propane, which in turn reduces greenhouse gas emissions.
- **Adopted a 7.85 TBtu by 2025 target, their portion of the overarching 185 TBtu goal.** PSEG Long Island is responsible for reporting their progress towards 7.85 TBtu of energy savings by the end of 2025. For consistency with New York investor-owned utilities (IOUs), the impacts counted towards this target are calculated excluding fossil fuel heating penalties. PSEG Long Island includes fossil fuel penalties in their ex-post evaluation of MMBtu impacts. Through the end of 2025, PSEG Long Island achieved 7.6 TBtu of its 7.85 TBtu target (97%). Excluding PSEG Long Island's 7.85 TBtu share, the rest of the state achieved roughly 107 TBtu against the remaining 177 TBtu target, or about 60%, according to NYSERDA's Clean Energy Dashboard.[3] PSEG Long Island exceeded 7.85 TBtu by March 31, 2026.

Energy efficiency and beneficial electrification programs undergo a yearly cycle including planning, implementation, audit and verifications, evaluation, and cost-effectiveness. At each stage, the term "energy savings" is used, leading to the need to be precise about the type of savings. Because energy efficiency has a unique lexicon, we include a comprehensive Glossary of Terms with definitions and encourage readers who are less familiar with the key terms to review them.

Figure 2 below shows the energy efficiency program cycle, the main objectives at each step, and the key terms. The feedback loop is nearly a two-year cycle. The planning activities for 2025 were conducted in 2024 and set the goals, rules, and algorithms for calculating energy savings. The 2024 energy efficiency and beneficial electrification measures were not evaluated until the spring of 2025, meaning 2025 programs were already being implemented before performance metrics were available

[3] NYSERDA's Clean Energy Dashboard. Weblink

from the 2024 evaluation. Considering this lag, we expected any major drivers of differences between claimed savings and ex-post impacts that were discussed in the 2024 evaluation to persist in 2025.

Figure 2: Energy Efficiency Cycle, Objectives, and Key Terms

	Planning	Implementation	Audit & Verification	Evaluation	Cost-Effectiveness
Objective	Set goals for future years and set rules for how savings will be calculated for settlement with implementer	Recruit participants, maximize energy savings, and track activities	Determine if the Implementer used the assumptions and calculations pre-approved by PSEG Long Island	Produce the best after-the-fact estimate of savings delivered using the best methods and data available	Assess if the portfolio of energy efficiency activities was cost-effective from a (New York) societal perspective using Ex-Post Net savings
Timeline	• **Spring 2024**: Planning for 2025 using draft 2025 TRM assumptions	• **2025**: Portfolio Programs implemented	• **January 2026**: Verified Ex-Ante Savings Calculated using planning assumptions from 2024	• **Spring 2026**: Ex-Post evaluation of 2025 portfolio using most up-to-date methods (PSEG-LI and NYS TRMs)	• **Spring 2026**: Using Ex-Post Net evaluation values
Key terms	• Planned Savings • Technical Resource Manual (TRM)	• Gross Ex-ante Savings (Claimed Savings)	• Verified Ex-Ante Savings	• Ex-post Gross Savings • Ex-Post Net Savings • Realization Rate • Net-to-Gross Ratio (NTGR)	• Societal Cost Test (SCT) • Utility Cost Test (UCT) • Levelized Cost of Energy • Levelized Cost of Capacity

PSEG Long Island exceeded its planning goals for 2025 on both a verified ex-ante and ex-post basis thanks to strong performance from residential programs and final campaign to retrofit inefficient lighting in the commercial sector to LED before lighting measures were removed from portfolio in Q4-2025. The behavioral Home Energy Management program also delivered a strong final year, acquiring almost 20% of portfolio MMBtu savings. In 2025, PSEG Long Island administered seven programs, which are described in Table 1.

Table 1: Energy Efficiency and Beneficial Electrification Program Descriptions

Program	Description
Commercial Efficiency Program	The program assists non-residential customers in saving energy by offering rebates and incentives to install energy conservation measures as well as beneficial electrification measures. Technical Assistance rebates are available under CEP to offset the cost of engineering and design services for qualifying projects. PSEG Long Island discontinued incentives for commercial and horticultural lighting measures in late 2025 to align with the state's new strategic framework. Heat pump measures such as Variable Refrigerant Flow (VRF) equipment were a growing part of the CEP mix in 2025.

Program	Description
Multi-Family	The Multi-Family program was launched in October 2020. At launch, the Multi-Family program targeted New Construction Multi-Family developments. In 2021, the Multi-Family Program expanded to include Existing Building Multi-Family properties. The Multi-Family program offers rebates for common area lighting (indoor and outdoor), efficient heat pump systems for cooling and heating, and in-unit appliances.
Energy Efficiency Products	The program's objective is to increase the purchase and use of energy-efficient appliances among PSEG Long Island residential customers. Through upstream and downstream promotions, the program provides rebates or incentives for many efficient technologies including smart thermostats, dehumidifiers, air purifiers, and appliances. This program also supports beneficial electrification measures such as heat pump pool heaters and heat pump water heaters. The program supports the stocking, sale, and promotion of efficient residential products at retail locations.
Home Energy Management	Home energy reports are behavioral interventions designed to encourage energy conservation by leveraging behavioral psychology and social norms. These paper or electronic reports compare a customer's energy consumption to similar neighboring households and provide targeted tips on reducing energy use.
Home Comfort	The Residential Home Comfort program offers rebates to residential customers for purchasing and installing energy-efficient air-source heat pumps (ASHP), ductless mini-split heat pumps, and ground-source heat pumps (GSHP). These heat pumps are typically two to three times more efficient than traditional fossil fuel heating. The program seeks to promote whole house solutions to both market and income-eligible customers.
Home Performance	The Home Performance program serves residential customers and has two components: Home Energy Assessments (HEAs) and Home Performance with ENERGY STAR (HPwES). The primary objective of the Home Performance program is to make high efficiency choices part of the decision-making process for PSEG Long Island customers when upgrading their homes. The overall goal of the Home Performance program is to reduce the carbon footprint of both market and income-eligible customers who utilize electricity, oil, or propane as a primary heating source.
Residential Energy Affordability Partnership	The program is designed for income-eligible customers and aims to save energy, provide education, help participants reduce electric bills, and make their homes healthier and safer. This program encourages whole-house improvements to existing homes by promoting home energy surveys and comprehensive home assessment services, identifying potential efficiency improvements at no cost to the customer.

2.1 PORTFOLIO ENERGY SAVINGS AND PERFORMANCE

Table 2 comes directly from our January 2026 "Verified Ex-Ante" deliverable and compares planned, claimed, and verified ex-ante savings under the primary performance metric, MMBtu. At the portfolio level, the claimed and verified ex-ante exceeded planning targets. For the verified ex-ante metric, the evaluation team independently verified that the main contractor, TRC, calculated the savings consistently with the algorithms and assumptions used for planning. The verified ex-ante savings were nearly identical (0.01% lower) to the claimed ex-ante gross savings. The evaluation team's independent measure counts were almost perfectly aligned with the claimed measure counts and per-unit MMBtu savings calculations and assumptions matched the approved values for nearly all measures. Results of the Verified Ex-Ante Memo can be reviewed in Appendix D.

Table 2: Summary of 2025 Verified Ex-Ante MMBtu Savings and Goals

Program		2025 Gross Savings Goals	Ex-Ante Gross Savings	Verified Ex-Ante Gross Savings
		MMBtu	MMBtu	MMBtu
Commercial	Commercial Efficiency Program (CEP)	185,171	199,798	199,811
	Multi-Family Homes	64,882	54,752	54,752
Residential	Energy Efficient Products (EEP)	155,564	243,843	243,815
	Home Comfort	182,387	185,475	185,358
	Home Performance	39,595	43,108	43,127
	Home Energy Management (HEM)	110,225	88,883	88,883
	Residential Energy Affordability Partnership (REAP)	13,588	14,083	14,138
Total Commercial		**250,053**	**254,550**	**254,563**
Total Residential		**501,359**	**575,392**	**575,321**
Total EE and BE Portfolio		**751,412**	**829,943**	**829,884**

Table 3 shows the planned, claimed, and evaluated (ex-post) MMBtu savings. It is important to note that the ex-ante savings are higher in Table 3 than in Table 2 for CEP, Multi-Family, and EEP. This change is related to the introduction of the new Strategic Framework in New York in 2026. The Strategic Framework was established by the Department of Public Service to align utility EE and BE programs with the state's policy objectives. Measure categories like commercial lighting, behavioral home energy reports, and appliances are classified as "non-strategic" so PSEG Long Island removed them from the portfolio beginning in 2026. The difference in ex-ante savings stems from administrative lag associated with non-strategic measures that were installed in 2025, but the project did not close until early 2026. Project close out in this context means the post-inspection is complete, all savings estimates are finalized, and the incentive payment has been made. In a typical year, these measures would have been recorded in the following year. With the introduction of the Strategic Framework, PSEG Long Island felt it was most appropriate to report these savings in 2025 (the year of installation) to avoid the perception of non-strategic measures being installed in 2026. The evaluation team used the 2025 tracking data and savings claims that were available in early January for the verified ex-ante review. On March 16, 2026, we received an updated KPI Scorecard and Tier 1 report with revised 2025 savings and spending totals reflecting the final installed measures and quantities verified in the Project closeouts finalized in the first 10 weeks of 2026. This March 2026 dataset, which included additional savings from non-strategic measures, was the basis of the ex-post evaluation.

Table 3: Summary of 2025 Energy Program Performance

Program		Planned Savings (Goals)	Ex-Ante Gross Savings (Claimed)	Ex-Post Gross Savings (Evaluated)
		MMBtu	MMBtu	MMBtu
Commercial	Commercial Efficiency Program (CEP)	185,171	240,984	204,573
	Multi-Family	64,882	55,095	54,378
Residential	Energy Efficiency Products (EEP)	155,564	244,734	137,421
	Home Comfort (HC)	182,387	185,475	209,266
	Home Performance	39,595	43,108	45,723
	Home Energy Management (HEM)	110,225	88,883	154,384
	Residential Energy Affordability Program (REAP)	13,588	14,083	7,751
Subtotal Commercial		**250,053**	**296,078**	**258,951**
Subtotal Residential		**501,359**	**576,283**	**554,545**
Total Portfolio		**751,412**	**872,362**	**813,496**

Figure 3 and Figure 4 visualize the program performance. Because the goals are based on MMBtu gross savings, the appropriate comparisons are between MMBtu planned, claimed, and ex-post gross savings. We caution that measures that reduce fossil fuel use, such as heat pumps and heat pump water heaters, can increase overall electricity consumption and peak demand metrics.

Figure 3: Portfolio MMBtu Savings

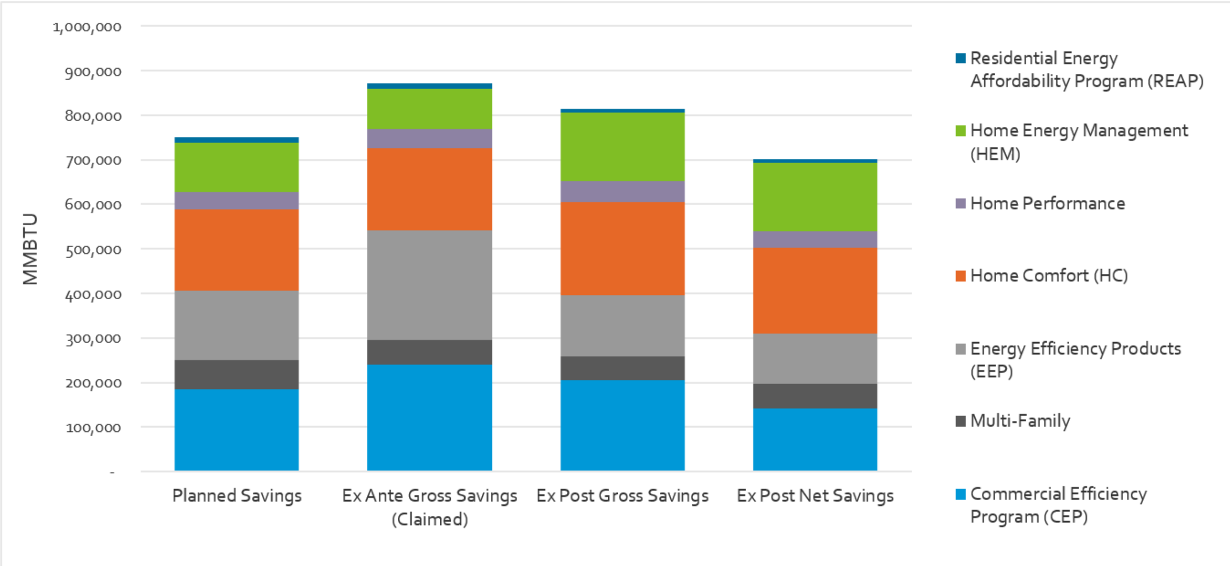
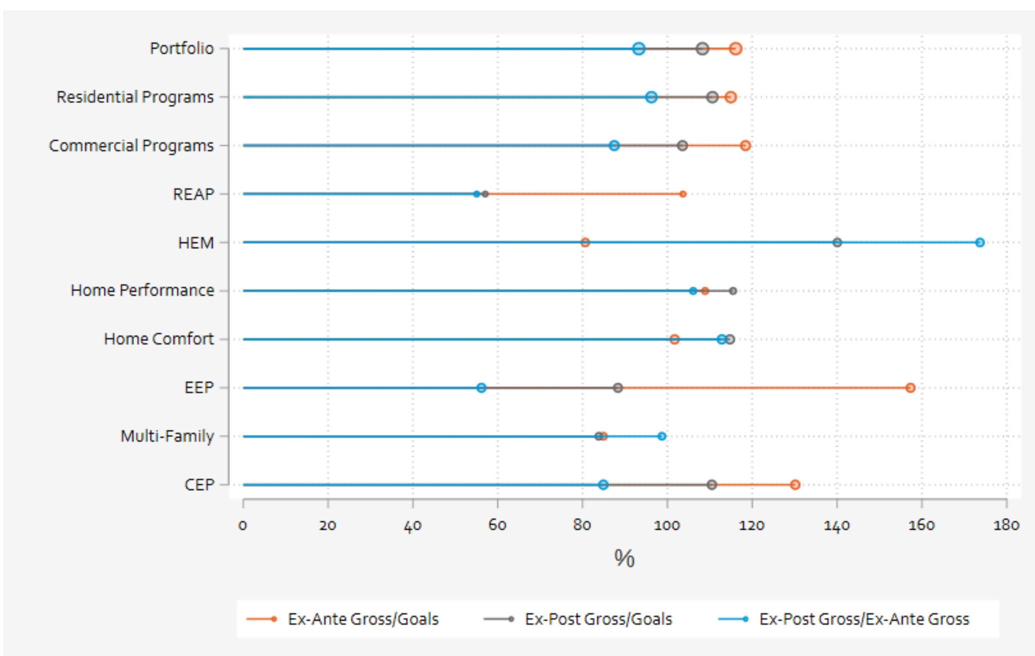


Figure 4 visualizes the key ratios (or realization rates) for the 2025 evaluation. The orange bars compare the ex-ante claimed savings to planning goals, and the grey bars compare ex-post gross savings to goals. The blue bars compare ex-post gross savings to the ex-ante savings claimed by PSEG Long Island and its implementation contractors. The size of each circle is scaled based on the goals for the program. At the portfolio level, the ex-post gross savings were 108% of planned savings. For residential programs, the ex-post gross savings were 111% of planned savings while the ex-post gross savings for commercial programs were 104% of planned savings.

Figure 4: Portfolio Performance Metrics



As Figure 4 shows, several programs had realization rates very close to 100% when comparing claimed and ex-post gross savings. Table 4 summarizes the primary reasons why portfolio ex-post gross (evaluated) savings departed from the planned and claimed savings. The overall portfolio realization rate is 93.3% with a total difference of 58,864 MMBtu between claimed ex-ante and verified ex-post impacts. This indicates that in aggregate, the verified savings are well-aligned with claimed savings for the 2025 program year. However, there is more variation between the claimed ex-ante and verified ex-post MMBtu impacts by program and/or certain measure groups.

Table 4: Summary of Differences between Ex-Post and Ex-Ante

Portfolio Component	Difference Between Ex-Ante Gross and Ex-Post MMBtu Savings	Summary of Savings Difference
Home Energy Management (HEM)	▪ Difference of 65,501 MMBtu savings for an overall realization rate of 174%.	▪ The consumption analysis found similar savings per household as prior years, but the claimed ex-ante savings were lower in 2025 due to no reports being issued in Q4. The persistent savings we measured in Q4 are typical for behavioral programs and we recommend PSEG Long Island continue to measure HEM savings in 2026 once no reports are issued to better understand the rate at which behavioral savings decay.
Home Performance Consumption Analysis	▪ The consumption analysis showed slightly higher electric savings than the ex-ante savings claimed by the program, resulting in a program realization rate of 106%.	▪ The consumption analysis relies on modeling techniques that compare electric consumption changes amongst HPwES participants to a comparison group of homes that received only a Home Energy Assessment. ▪ Since PSEG Long Island is an electric utility, the consumption analysis is limited to kWh savings, which are predominantly assumed to occur during the summer cooling season. The observed performance of the insulation, air sealing, and duct repair measures during the cooling season is applied to the claimed fossil fuel savings in the heating season.

Portfolio Component	Difference Between Ex-Ante Gross and Ex-Post MMBtu Savings	Summary of Savings Difference
EEP	▪ Difference of -107,313 MMBtu for an overall program realization rate of 56%.	▪ The Linear LED lighting measure category had a 12% realization rate due to the smaller average fixture sizes in 2025 relative to historic product sizes used for planning. ▪ Smart thermostats were by far the largest measure in EEP, and evaluation results drove the program realization down (-100,546 MMBtu). The NYS TRM introduced a methodological mapping approach where certain program delivery models could rely on the legacy algorithmic approach, but other program designs which don't collect site-specific HVAC attributes must use conservative deemed savings values. Application of deemed savings values led to a 48% MMBtu realization rate for the smart thermostat measure category in 2025.
Home Comfort Heat Pumps	▪ Difference of 23,815 MMBtu came largely from updated operating assumptions for cold-climate heat pumps and inclusion of BE impacts for Equipment Only installations replacing fossil fuel. The overall program MMBtu realization rate was 113%.	▪ The New York State Joint Utilities has updated the BEFLH values for heating and cooling in v13 of the NYS TRM, which were utilized in the evaluation. The ex-ante savings for all projects initiated prior to Q3 of 2025 were based on prior TRM versions with different assumptions. ▪ We included beneficial electrification impacts for non-cold climate ASHP installations that replaced fossil fuel heating systems. In contrast, the ex-ante gross savings claims for these units were based on a code-minimum electric ASHP baseline based on the 2025 PSEG Long Island TRM assumptions.
REAP	▪ Difference of -6,332 MMBtu for an overall program realization rate of 55%.	▪ Ex-ante savings for smart thermostats were claimed using planning assumptions for "unknown" heating and cooling system types and sizes. The ex-post analysis leveraged auditor data about the heating fuel, size of the home, and cooling system type. ▪ Lighting realization rates varied by product type, but were generally less than 100% due to lower-than-assumed baseline wattages recorded by the auditor and a more conservative hours of use assumption for interior lighting based on the 2026 and 2027 PSEG Long Island TRM.

Portfolio Component	Difference Between Ex-Ante Gross and Ex-Post MMBtu Savings	Summary of Savings Difference
CEP Comprehensive and Fast Track Lighting	▪ Difference of -22,568 MMBtu for comprehensive lighting (realization rate = 82%) ▪ Difference of -3,992 MMBtu for fast track lighting (realization rate = 79%)	▪ Most of the discrepancies can be attributed to the exclusion of fossil fuel interactive heating penalties in the ex-ante calculations. PSEG Long Island chose to claim ex-ante savings consistently with the IOUs and omit these effects. In contrast, the evaluation team incorporated waste heat factors in the ex-post analysis to reflect fossil fuel heating penalties. ▪ In one of the sampled projects, the assumed operating hours differed from the values specified in the PSEG-LI TRM. In this example, the savings calculations used the operating hours value for the parent project building type rather than building type of the participating site.
CEP Custom	▪ Difference of -8,800 MMBtu for a realization rate of 85% for the Custom program component	▪ We evaluated all custom horticultural lighting sites. For three of the eight sites, the baseline Photosynthetic Photon Efficacy (PPE) values used in the ex-ante calculations were appropriate. However, for the remaining five sites, the assumed baseline PPEs were lower than the minimum PPE values required by New York State for legal cultivation of recreational marijuana. Correcting this baseline discrepancy led to a reduction in ex-post kW, kWh, and MMBtu savings. ▪ Four of the 12 sampled fully custom projects had downward adjustments to correct overstated savings assumptions which could have been avoided by aligning inputs with TRM measure characterizations. To further support consistency and transparency, the Technical Assumptions Documents (TADs) will be updated in mid-2026 to include a dedicated "References and Resources" section so that key methodologies are clearly documented and reviewers can confirm that the latest guidance is being applied.

2.1.1 Overview of Impacts by Disadvantaged Community and Low-Income Identifiers

In addition to energy conservation goals, PSEG Long Island and LIPA set goals related to the uptake of specific technologies and program activity among historically underserved groups. For the 2025 program year, a goal was specifically set for the total number of unique housing units served by whole home heat pumps. This metric includes the installation of Whole House heat pumps through the Home Comfort, Multi-Family and Home Performance Programs. PSEG Long Island also set a goal to comply with the Climate Leadership and Protection Act (CLCPA) requirement that 35% of all rebates and incentives go to program participants in Disadvantaged Communities (DACs). Additional information on New York state's official definition of DACs and their geographic locations can be found below[4]. In addition to the geographic definition, rebates and incentives to Low-Income (LI) households (less than or equal to 60% of state median income) also count towards DAC goals. This goal includes the EE and BE portfolio as well as PSEG Long Island's transportation electrification efforts.

Table 5 compares the verified values for these metrics with the goals and claimed values. Verified values mirror the claimed values and the goals were exceeded for each metric. Additional details regarding the rebate and incentive spending in DACs are shown in Table 6. Further detail on what drives the differences between the claimed and verified counts and enrollments can be found in Appendix D. Additionally, Appendix D contains more information on DAC boundaries.

Table 5: Summary of Verified Ex-Ante Non-Energy Metrics

Metric Description	Goal	Claimed	Verified
Housing Units Served by Whole House Heat Pumps	5,330	5,381	5,383
*Total Rebate and Incentive Spending in DACs	35.0%	52.2%	52.2%
** Includes rebate and incentive spending by transportation electrification programs*			

Table 6 shows a more granular breakout of the DAC spending metrics and lists the claimed and verified rebate and incentive totals by program. Claimed and verified values show strong alignment. In most cases, differences between the claimed and verified values are due to disagreements between our DAC mapping and DAC status recorded in the Captures tracking system. Additional details regarding discrepancies for individual programs are provided and details regarding our validation of DAC status are in Appendix D.

[4] Disadvantaged Community Criteria. Weblink

Table 6: Summary of 2025 Rebate and Incentive Spending by Program and DAC Status

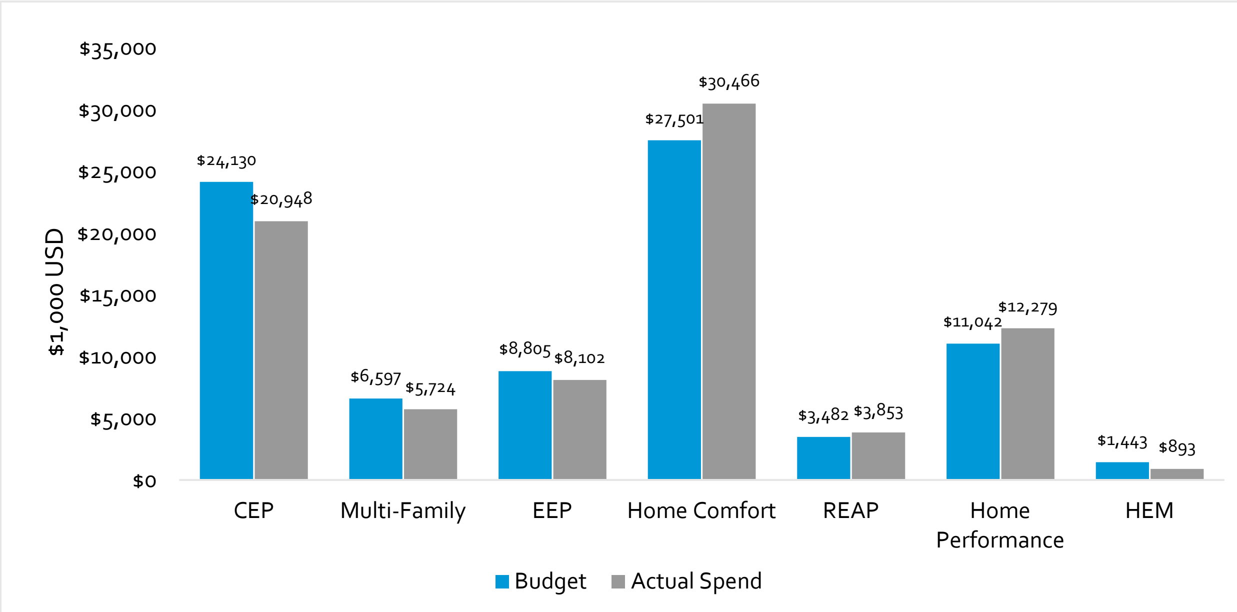
Program	Claimed Rebates and Incentives			Verified Rebates and Incentives		
	Total ($1,000)	DAC & LMI ($1,000)	% DAC	Total ($1,000)	DAC & LMI ($1,000)	% DAC
Energy Efficient Products (EEP)	$4,871	$850	17.4%	$4,871	$858	17.6%
Home Comfort	$20,671	$13,792	66.7%	$20,671	$13,797	66.7%
Home Performance	$8,566	$8,128	94.9%	$8,567	$8,137	95.0%
Commercial Efficiency Program (CEP)	$15,596	$5,243	33.6%	$15,596	$5,243	33.6%
Multi-Family Homes	$2,966	$744	24.8%	$2,966	$744	25.1%
REAP	$3,493	$2,286	65.4%	$3,493	$2,286	65.4%
Electric Vehicle Charging	$11,319	$4,183	37.0%	$11,559	$4,312	37.3%
Total Portfolio	**$67,482**	**$35,224**	**52.2%**	**$67,722**	**$35,377**	**52.2%**

Table 7 compares budgets and actual spending by program and Figure 5 visualizes the comparison. The $3.4 million of advertising and EM&V spending are included in the portfolio total but omitted from the program and sector comparisons. Actual spending for commercial programs was about 87% of the planned budget, while actual residential sector spending exceeded planned spending. Actual spending for HEM was approximately 40% lower than planned, yet the program achieved 140% of its planned MMBtu savings target.

Table 7: Summary of 2025 Budget versus Actual Spending by Program

Program		Budget	Actual Spend	Spending Ratio
		$1,000	$1,000	%
Commercial	CEP	$24,130	$20,948	86.8%
	Multi-Family	$6,597	$5,724	86.8%
Residential	EEP	$8,805	$8,102	92.0%
	Home Comfort	$27,501	$30,466	110.8%
	REAP	$3,482	$3,853	110.7%
	Home Performance	$11,042	$12,279	111.2%
	HEM	$1,443	$893	61.9%
Total Commercial		**$30,727**	**$26,672**	**86.8%**
Total Residential		**$52,273**	**$55,593**	**106.4%**
Advertising and EM&V		N/A	$3,441	N/A
Total EE and BE Portfolio		**$82,999**	**$85,706**	**103.3%**

Figure 5: Summary of 2025 Budget versus Actual Spending by Program



2.2 COST-EFFECTIVENESS RESULTS

In New York, the primary metric for screening portfolios for cost-effectiveness is the Societal Cost Test (SCT), which includes benefits accrued to New York as a whole. The SCT perspective enables New York to factor in the avoided costs of all types of energy as well as greenhouse gas impacts. The SCT perspective enables the inclusion of beneficial electrification technologies that increase electricity use but lead to lower energy consumption overall and reduce emissions by shifting energy use from fossil fuels (fuel oil, propane, and natural gas) to electricity. Finally, the SCT considers the full incremental measure costs.[5]

Consistent with PSEG Long Island's Benefit-Cost Analysis (BCA) Handbook, we applied the SCT test as the primary method of determining cost-effectiveness. We also ensured that key assumptions including avoided costs, discount rates, and line losses match those used for PSEG Long Island's 2025 Utility 2.0 filing. All calculated benefits and cost benefit ratios reflect net impacts. Net impacts are the change in energy consumption or demand that results directly from program-related actions taken by customers (both program participants and non-participants) that would not have occurred absent from the program. The difference between the gross and net impacts is the application of the net-to-gross ratio (NTGR). Net impacts presented in this report also include line losses and, therefore, represent the energy and demand savings as would be measured at the generator.

[5] Incremental costs are defined as the efficient measure cost (including labor) minus the equipment and labor costs of any baseline measure(s) that would otherwise have been installed. In the few cases where incentives surpass incremental costs, the incentive cost is included in the Societal Cost Test rather than the incremental measure cost.

Table 8 presents the benefit-cost results for the portfolio and for each program using the primary Societal Cost Test perspective. The portfolio-level SCT values are 1.67 and 1.64 for Commercial and Residential Energy Efficiency and Beneficial Electrification programs, respectively. The full energy efficiency and beneficial electrification portfolio SCT value is 1.61. A benefit/cost ratio greater than 1.0 indicates that portfolio benefits outweigh costs, and from a societal perspective the Energy Efficiency and Beneficial Electrification Portfolio is cost-effective.

Table 8: Societal Cost Test Results for Energy Efficiency and Beneficial Electrification Portfolio

Sector	Program	NPV Benefits ($1,000)	Costs ($1,000)	B/C Ratio
Commercial	Commercial Efficiency Program	$49,179	$28,253	1.74
	Multi-Family	$13,396	$9,241	1.45
Total Commercial Portfolio		**$62,575**	**$37,494**	**1.67**
Residential	Energy Efficiency Products	$30,208	$13,702	2.20
	Home Comfort	$75,411	$51,305	1.47
	Home Performance	$18,871	$11,132	1.70
	Home Energy Management	$5,703	$1,126	5.06
	Residential Energy Affordability Partnership	$2,023	$3,141	0.64
Total Residential Portfolio		**$132,215**	**$80,407**	**1.64**
Total Portfolio [1]		**$194,791**	**$120,646**	**1.61**

[1] Portfolio costs include $2.7M of advertising that were not allocated to individual programs

The 2025 portfolio was cost effective with an SCT ratio of 1.61. The SCT ratio varies by program, falling below 1.0 for the REAP program while all other programs had SCT ratios above 1.0. The reasons for the change in SCT ratios relative to prior years vary by program. Some key observations are:

- **CEP:** The SCT ratio for CEP is 1.74 in 2025 compared to 1.55 in 2024. SCT results for the CEP are driven substantially by incremental costs which are largely a function of project costs. The trend away from lighting and toward beneficial electrification implementation measures from 2024 continued in 2025. Cost effectiveness improved across both classes of measures despite realization rates remaining relatively flat, reflecting a decrease in acquisition cost. As the CEP measure mix evolves beyond lighting, it will be important to watch the influence of new and expanded program components on the SCT ratio.

- **Multi-Family:** The SCT ratio for Multi-Family is 1.45 in 2025 compared to 1.39 in 2024. Like CEP, the Multi-Family program saw a continued increase in beneficial electrification measures in 2025 compared to 2024. In addition, acquisition cost for beneficial electrification improved. For beneficial electrification measures, it is useful to also consider the results of the RIM tests discussed in detail in Volume I.

- **EEP:** EEP continues to be one of the most cost-effective programs in the portfolio with a SCT ratio of 2.20 in 2025 compared to 2.73 in 2024. Despite the continued drop in relative administrative costs from prior years, the cost effectiveness decreased somewhat due to a decrease in realization rates for smart thermostat energy savings. Almost 80% of the MMBtu savings for the EEP program in 2025 came from smart thermostats, which save both electricity and fossil fuel. The smart thermostat measure remains highly cost effective despite the drop in realization rates.

- **Home Comfort:** The SCT ratio for Home Comfort is 1.47 in 2025 compared to 1.17 in 2024. This increase in cost effectiveness is largely driven by overall higher realization rates for heat pumps, especially for LMI ductless heat pumps. LMI heat pumps are the largest measure and their volume roughly doubled relative to 2024.

- **Home Performance:** The SCT for Home Performance is 1.70 in 2025 compared to 0.78 in 2024. The types of measures implemented in Home Performance are long-term, capital-intensive investments in the home, so an SCT ratio around 1 is expected and has been the norm since 2020. The realization rate for weatherization measures, such as insulation upgrades and infiltration reduction, was substantially higher in 2025, reversing the trend from the prior two years. This increases the resource savings and SCT benefits, driving cost effectiveness up. For beneficial electrification measures, it is useful to also consider the results of the RIM test. For energy efficiency it is useful to consider the results of the UCT tests. Both are discussed further in Volume I.

- **HEM:** The SCT ratio is 5.06 in 2025, a substantial increase compared to 2.37 in 2024. Cost effectiveness increased relative to 2024 due to a relative decrease in administrative costs, which in turn decreased acquisition costs by roughly two thirds.

- **REAP:** The SCT ratio for REAP is 0.64 in 2025 compared to 0.87 in 2024. Cost-ineffectiveness is not unusual for income-qualified programs, which typically are not required to be cost-effective. In Volume I, we discuss additional non-energy impacts that can potentially be incorporated into cost effectiveness analysis as low-income benefits. Acquisition costs for first-year savings increased meaningfully from $258/MMBtu in 2024 to $405/MMBtu in 2025 which contributed to the reduction in the SCT. This may be related to the introduction of weatherization measures in 2025, e.g. insulation, air sealing, door sweeps.

Figure 6 shows SCT ratios for each program. Note that the size of markers is proportional to the ex-post MMBtu savings for each program.

Figure 6: Societal Cost Test Ratios by Program

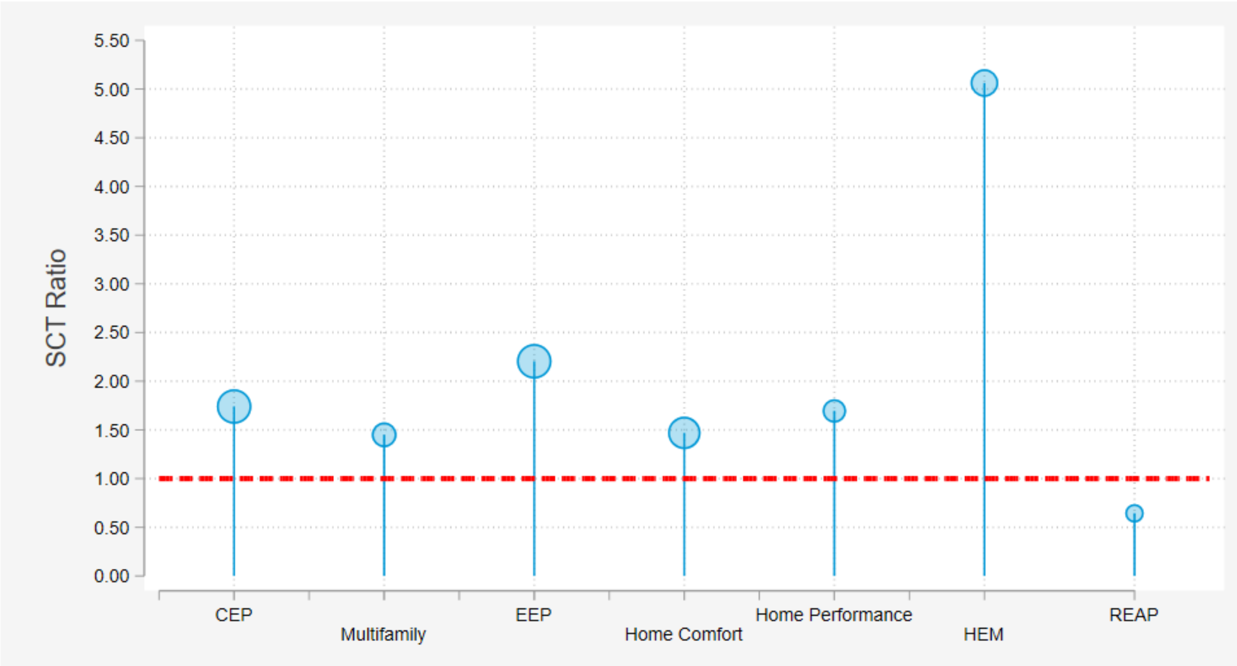
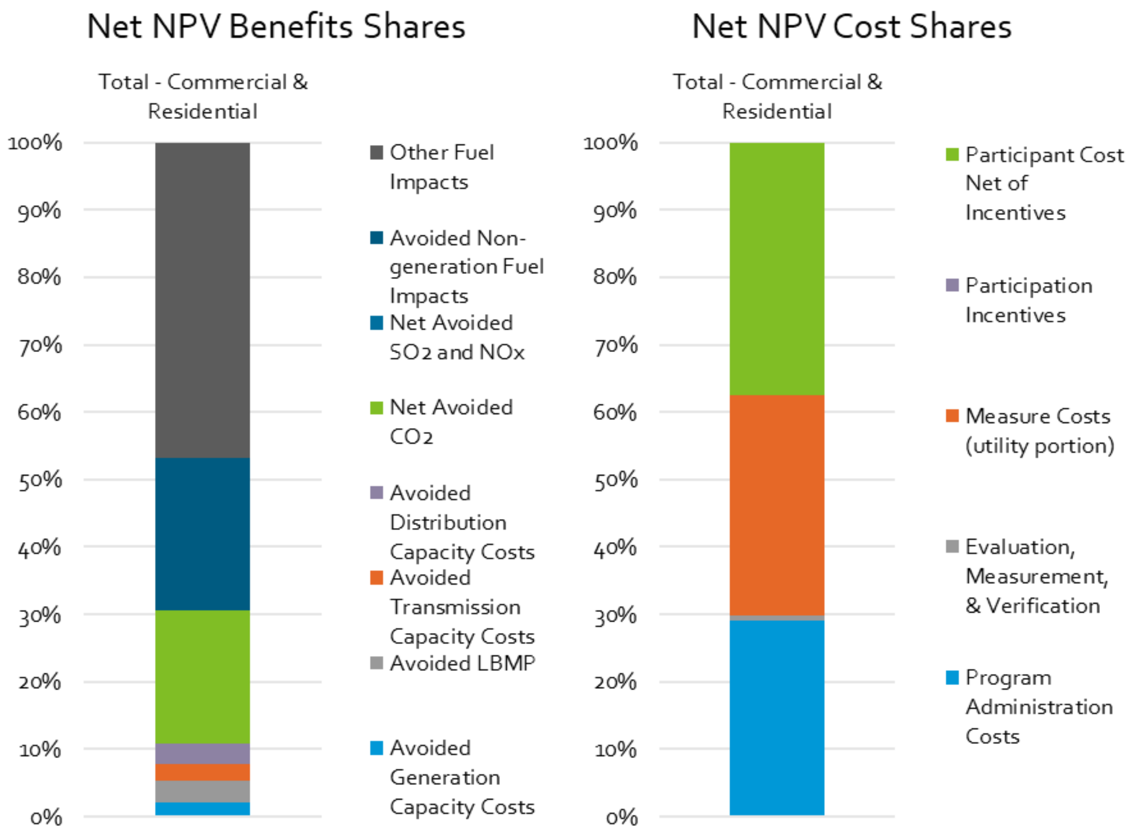


Figure 7 summarizes the benefit and cost categories analyzed and the share each contributed to the SCT. The primary two benefits for the SCT are avoided CO2 emissions at 20% of benefits and other fuel impacts at 47%. In 2024 other fuel impacts represented 35% of portfolio benefits. This shift is indicative of the relative growth in beneficial electrification's share of the portfolio. The combined benefits for capacity (generation, transmission, distribution) together comprise about 8% of societal benefits. From a societal perspective, the largest two cost categories are the measure costs borne by participants and the measure costs borne by the utility in the form of customer rebates and contractor incentives. Incremental measure costs paid by participants net of incentives account for 37% of the Net NPV Cost and the portion paid by the utility accounts for 36%. Together these two categories comprise the full incremental cost of program measures over baseline measures. Program administration costs, including utility labor, advertising, and implementation vendor fees, comprise about 26% of societal costs and EM&V accounts for the remaining 1%.

Figure 7: Portfolio Net Present Value Benefit and Cost Shares by Category



3 COMMERCIAL EFFICIENCY PROGRAM

3.1 COMMERCIAL EFFICIENCY PROGRAM DESCRIPTION

PSEG Long Island's Commercial Efficiency Program (CEP) supports non-residential customers in reducing energy consumption by providing rebates and incentives for energy-saving installations. In addition to these rebates, CEP offers Technical Assistance incentives to help cover the costs of engineering and design services for eligible projects. The program promotes a wide range of energy conservation measures across various business sectors, as outlined in Table 9. Additionally, CEP equips participating partners with training, educational resources, and other tools to enhance the overall customer experience. While Multi-Family is administered as a separate program, it is presented within this chapter to consolidate all non-residential program offerings.

Table 9: Summary of CEP 2025 Measure Catalog

Category and Measure		Description
Lighting	Comprehensive Lighting	CEP continued to offer this performance-based interior lighting program that incentivizes customers and contractors to install the most energy efficient equipment available. Rebates are paid to customers on a $/kWh basis.
	Fast-Track Lighting	The prescriptive alternative to Comprehensive Lighting allows business customers and their Prime Efficiency Partners (PEPs) to submit streamlined applications for lighting upgrades associated with fixed rebates.
Multi-Family		The Multi-Family program was launched in October 2020. At launch, the Multi-Family program targeted New Construction multi-family developments. In 2021, the Multi-Family Program expanded to include existing building multi-family properties. The Multi-Family program offers rebates for Common Area Lighting (Indoor and Outdoor), Common Area Heating and Cooling, Common Area Pool Equipment, Common Area VFDs, In-Unit Heating and Cooling, and In-Unit Appliances. In 2025, the program saw a growing emphasis on custom heat pumps (ASHP, VRF) for both common-area and in-unit heating and cooling. This year also saw the inclusion of ground-source heat pumps. This shift reflects broader market trends in multi-family electrification and supports program goals.
HVAC		CEP's HVAC offerings have expanded over time and now include high-efficiency unitary and split-system air conditioners and cold-climate air-source heat pumps, and geothermal heat pumps.
Custom		The Custom program sponsors projects that are not conducive to the prescriptive path, providing business customers with support for complex, interactive, or unique efficiency measures. Variable refrigerant flow (VRF) heat pumps and horticultural lighting were major components of the Custom portfolio in 2025. Heat pumps are expected to remain a key measure moving forward, while horticultural lighting is being phased out as a non-strategic measure and will not continue under the 2026 program definition.

Category and Measure	Description
Standard Measures	The Standard category includes commercial measures that do not fall into the above categories. It includes refrigeration, compressed air, variable frequency drives (VFDs), and other commercial equipment.

3.1.1 Program Design and Implementation

CEP participation is driven by partnerships with installation contractors, known as Lead Partners. Customers can apply through these Lead Partners or directly to the program if they have not yet selected a contractor.. Engaging these contractors to implement the program has enhanced both performance and market impact, making Lead Partner relationship management a key program component. Open communication between contractors and the program is actively encouraged and supported by the program.

Since its launch in 2017, the Prime Efficiency Partner (PEP) network has expanded the program's reach, particularly among small businesses, resulting in increased project submissions. To qualify for the Fast Track program and earn the "Prime" designation, contractors must meet specific business criteria, complete required training, and adhere to stringent program standards. The PEP program has also been instrumental in maintaining high customer satisfaction. In 2024, it was expanded to include all CEP program partners, encompassing HVAC, refrigeration, and compressed air technologies. Beginning in Q4 2025, applications for lighting and other non-strategic measures were no longer accepted.

3.1.2 Program Participation and Performance

PSEG Long Island's Commercial programs (CEP and Multi-Family) achieved 118% of the 2025 program MMBtu goals, saving 296,078 MMBtu on an ex-ante basis. The ex-ante total of 296,078 MMBtu shown in Table 10 is 41,515 MMBtu higher than the value reported in the 2025 Verified Ex-Ante Saving Memo (Appendix D), issued in January 2025. This increase reflects the inclusion of savings from projects containing non-strategic measures that were initiated and installed in 2025 but closed in early 2026. Normally, these projects would have been recorded as 2026 savings, but with the issuance of the new Strategic Framework in New York, PSEG Long Island and TRC elected to assign the savings to 2025 to avoid the perception of incentivizing non-strategic measures in 2026. Actual spending in 2025 was 87% of the planned spending for both CEP and Multi-Family spending in 2025.

Table 10: 2025 CEP and Multi-Family Verified Ex-Ante Gross Program Performance vs. Goals

Metric	MMBtu
Goal	250,053
Ex-Ante (January 2026)	254,550
Verified Ex-Ante Gross Savings (Jan 2026)	254,563
Ex-Ante (March 2026)	296,078
% of Goal	118%

Comprehensive Lighting projects accounted for the largest share of CEP ex-ante gross energy savings in 2025. As shown in Table 11, Comprehensive Lighting projects accounted for 43% of ex-ante gross MMBtu savings, outpacing Fast Track (6%) and Refrigerated Case Lighting (1%) measure groups within the lighting category. Multi-Family projects accounted for 19% of non-residential ex-ante MMBTU savings, and Refrigeration, Motors & VFDs, Compressed Air, and Other Commercial Equipment, collectively accounted for 9% of ex-ante gross MMBtu savings. Custom Measures, which included Horticultural Lighting, heat pump measures claimed using the NYS Clean Heat Tool, and other custom measures, represented 20% of CEP ex-ante MMBTU savings. Finally, non-custom HVAC measures represented 2% of CEP ex-ante gross MMBtu savings.

Table 11: 2025 CEP Percent of Total Ex-Ante Gross Savings by Program Component

Category	Program Component	Ex-Ante Gross Savings		
		% MMBtu	% MWh	% kW
Lighting	Comprehensive Lighting	42.7%	69.8%	69.3%
	Fast Track Lighting	6.4%	10.4%	13.1%
	Refrigerated Case Lighting	1.0%	1.7%	1.9%
	Lighting Subtotal	**50.1%**	**81.9%**	**84.3%**
Multi-Family	Multi-Family	18.6%	-7.3%	-2.0%
Standard	Refrigeration	5.2%	8.4%	4.1%
	Motors & VFDs	1.2%	2.0%	0.7%
	Compressed Air	1.7%	2.8%	2.2%
	Other Comm. Equipment	1.3%	-0.8%	0.0%
	Standard Subtotal	**9.3%**	**12.4%**	**6.9%**
Custom	Horticultural Lighting	5.6%	9.2%	7.3%
	NYS Clean Heat	6.4%	-4.2%	0.0%
	Custom - Custom	7.8%	8.4%	3.0%
	Custom Subtotal	**19.9%**	**13.4%**	**10.3%**
HVAC	HVAC	2.1%	-0.3%	0.5%
Project Adjustments	Adjustments	0.0%	0.0%	0.0%
Total		**100.0%**	**100.0%**	**100.0%**

3.2 COMMERCIAL EFFICIENCY PROGRAM IMPACTS

3.2.1 OVERVIEW OF IMPACTS BY RESOURCE TYPE

Table 12, Table 13, and Table 14 compare ex-post gross savings to ex-ante gross savings and show the associated realization rates by program component for MMBtu, MWh, and kW, respectively. Realization rates were calculated by dividing ex-post gross savings values by ex-ante gross claimed savings values. Overall, CEP realized 87% of its ex-ante gross MMBtu energy savings claims, 94% of MWh savings claims, and 97% of kW savings claims.

Table 12: 2025 CEP Ex-Post Gross MMBtu Impacts by Program Component

Category	Program Component	N	Ex-Ante Gross Savings (Claimed)	Ex-Post Gross Savings (Verified)	Realization Rate
			MMBtu	MMBtu	%
Lighting	Comprehensive Lighting	891	126,406	103,839	82%
	Fast Track Lighting	590	18,836	14,844	79%
	Refrigerated Case Lighting	16	2,988	3,135	105%
	Lighting Subtotal	**1,497**	**148,230**	**121,817**	**82%**
Multi-Family	Multi-Family	53	55,095	54,378	99%
Standard	Refrigeration	528	15,261	15,292	100%
	Motors & VFDs	66	3,571	2,314	65%
	Compressed Air	21	5,001	5,012	100%
	Other Comm. Equipment	14	3,707	3,707	100%
	Standard Subtotal	**629**	**27,540**	**26,326**	**96%**
Custom	Horticultural Lighting	8	16,592	10,514	63%
	NYS Clean Heat	58	19,060	18,424	97%
	Custom - Custom	73	23,214	21,127	91%
	Custom Subtotal	**139**	**58,865**	**50,065**	**85%**
HVAC	HVAC	132	6,349	6,365	100%
Project Adjustments	Adjustments		0	0	-
Total		**2,450**	**296,078**	**258,951**	**87%**

Table 13: 2025 CEP Ex-Post Gross MWh Impacts by Program Component

Category	Program Component	N	Ex-Ante Gross Savings (Claimed)[6]	Ex-Post Gross Savings (Verified)	Realization Rate
			MWh	MWh	%
Lighting	Comprehensive Lighting	891	37,048	37,048	100%
	Fast Track Lighting	590	5,520	5,521	100%
	Refrigerated Case Lighting	16	876	919	105%
	Lighting Subtotal	**1,497**	**43,444**	**43,487**	**100%**
Multi-Family	Multi-Family	53	-3,862	-4,406	114%
Standard	Refrigeration	528	4,473	4,473	100%
	Motors & VFDs	66	1,047	458	44%
	Compressed Air	21	1,466	1,466	100%
	Other Comm. Equipment	14	-425	-425	100%
	Standard Subtotal	**629**	**6,560**	**5,972**	**91%**
Custom	Horticultural Lighting	8	4,863	3,082	63%
	NYS Clean Heat	58	-2,230	-2,176	98%
	Custom - Custom	73	4,456	4,279	96%
	Custom Subtotal	**139**	**7,089**	**5,184**	**73%**
HVAC	HVAC	132	-165	-176	107%
Project Adjustments	Adjustments		0	0	-
Total		**2,450**	**53,065**	**50,061**	**94%**

[6] MWh Ex-Ante Gross Savings (Claimed) may not match KPI scorecard values. Table values include all Energy Efficiency Savings as well as Beneficial Electrification, while KPI scorecard reports Energy Efficiency Savings only

Table 14: 2025 CEP Ex-Post Gross kW Impacts by Program Component

Category	Program Component	N	Ex-Ante Gross Savings (Claimed)	Ex-Post Gross Savings (Verified)	Realization Rate
			MW	MW	%
Lighting	Comprehensive Lighting	891	7.43	7.15	96%
	Fast Track Lighting	590	1.41	1.50	107%
	Refrigerated Case Lighting	16	0.20	0.21	105%
	Lighting Subtotal	**1,497**	**9.04**	**8.87**	**98%**
Multi-Family	Multi-Family	53	-0.22	-0.28	128%
Standard	Refrigeration	528	0.44	0.44	100%
	Motors & VFDs	66	0.07	0.21	284%
	Compressed Air	21	0.23	0.23	100%
	Other Comm. Equipment	14	0.00	0.00	145%
	Standard Subtotal	**629**	**0.74**	**0.88**	**118%**
Custom	Horticultural Lighting	8	0.78	0.50	64%
	NYS Clean Heat	58	0.00	0.00	124%
	Custom - Custom	73	0.33	0.35	106%
	Custom Subtotal	**139**	**1.11**	**0.85**	**77%**
HVAC	HVAC	132	0.06	0.08	139%
Project Adjustments	Adjustments		0	0	-
Total		**2,450**	**10.73**	**10.39**	**97%**

Table 15 shows the breakdown of Energy Efficiency (EE) and Beneficial Electrification (BE) components of MMBtu and kWh savings for measures where BE components exist.

Table 15: Breakdown of Ex-Post Gross Impacts by EE and BE Components

Category	Measure	MWh_{ee}	MWh_{be}	MWh Total (EE - BE)	$MMBtu_{ee}$	$MMBtu_{be}$	MMBtu Total (EE + BE)
Lighting	Comprehensive Lighting	37,048	0	37,048	103,839	0	103,839
	Fast Track Lighting	5,521	0	5,521	14,844	0	14,844
	Refrigerated Case Lighting	919	0	919	3,135	0	3,135
	Lighting Subtotal	**43,487**	**0**	**43,487**	**121,817**	**0**	**121,817**
Multi-Family	Multi-Family	1,722	6,128	(4,406)	5,732	48,646	54,378
Standard	Refrigeration	4,473	0	4,473	15,292	0	15,292
	Motors & VFDs	458	0	458	2,314	0	2,314
	Compressed Air	1,466	0	1,466	5,012	0	5,012
	Other Comm. Equipment	1	426	(425)	5	3,703	3,707
	Standard Subtotal	**6,398**	**426**	**5,972**	**22,624**	**3,703**	**26,326**
Custom	Horticultural Lighting	3,082	0	3,082	10,514	0	10,514
	NYS Clean Heat	237	2,413	(2,176)	793	17,631	18,424
	Custom - Custom	4,279	0	4,279	17,488	3,639	21,127
	Custom Subtotal	**7,597**	**2,413**	**5,184**	**28,796**	**21,269**	**50,065**
HVAC	HVAC	321	497	(176)	1,176	5,189	6,365
Project Adjustments	Adjustments	0	0	0	0	0	0
Total		**59,525**	**9,464**	**50,061**	**180,145**	**78,807**	**258,951**

We estimate that Other Commercial Equipment and heat pumps in the HVAC, Custom, and Multi-Family categories lead to 9,464 MWh/year of additional electrical sales by displacing preexisting fossil fuel fired systems (Beneficial Electrification impacts). The program encouraged customers and contractors to install high-efficiency lighting and other equipment that, when compared with code-compliant or pre-existing electric equipment, led to 59,525 MWh/year of energy savings (Energy Efficiency Impacts). The overall electric consumption therefore decreased by 50,061 MWh. However, accounting for the consumption of displaced fossil fuels in the $MMBtu_{be}$ column, led to 258,951 MMBtu of annual energy savings.

3.2.2 Key Drivers for Differences in Impacts

Table 16 summarizes the major differences that contributed to the ex-post realization rates, along with the evaluation team's recommendations to improve savings claims moving forward.

Table 16: Key Contributors to CEP Realization Rates and Proposed Solutions

Component	Summary of Savings Difference	Recommendation
Comprehensive and Fast Track Lighting	▪ Most of the discrepancies for MMBtu impacts are due to the exclusion of fossil fuel interactive heating penalties in the ex-ante calculations. The ex-ante approach deliberately excluded fossil fuel interactive effects to maintain alignment with the methodologies used by the investor-owned utilities (IOUs) in New York. Since lighting programs are classified as electric efficiency programs, IOUs report only kWh and kW savings. In contrast, the DSA team incorporated waste heat factors in the ex-post analysis to reflect fossil fuel heating penalties. LED fixtures produce less waste heat compared to inefficient lighting, which increases the heating load during winter months. As a result, heating systems must work harder, leading to increased energy consumption following the measure's installation. ▪ Discrepancies in kW impacts were primarily driven by using a coincidence factor of 0.75 in the ex-ante savings, whereas the PSEG Long Island TRM specifies building type specific coincidence factors.	CEP lighting will not be offered for the 2026 program year and beyond. If lighting measures are reintroduced, we recommend adopting the following: ▪ If the program intends to continue aligning its lighting savings calculation methodology with that of other New York IOUs—particularly regarding the exclusion of fossil fuel heating penalties—we recommend incorporating an adjustment factor of approximately 20% in cost-effectiveness calculations during the planning phase for indoor lighting applications. This adjustment will help account for the anticipated reduction in ex-post MMBtu impacts observed during evaluation. ▪ Align the coincidence factor used in ex-ante savings calculations with the building specific values prescribed in the PSEG LI TRM.

Component	Summary of Savings Difference	Recommendation
Multi-Family Appliances	▪ TRC underreported electric savings (MWh and MW) for 2 multi-family projects which included a total of 300 ENERGY STAR Clothes Washers, and 120 ENERGY STAR Dishwashers. MMBtu savings were claimed appropriately from these measures.	▪ If appliance measures are reintroduced, ensure workbook-calculated savings are accurately claimed within the Captures database for all measures.
Multi-Family Lighting	▪ Most of the lighting discrepancies were driven by differences in unit watt savings assumptions for downlights. TRC relied on 2022 planning tool wattages for both baseline and installed conditions, which are outdated. With the U.S. Department of Energy's (DOE) 45 lumens per watt minimum efficiency standard for general service lamps (GSLs), most traditional incandescent and halogen bulbs have been phased out. This "backstop" rule, finalized in 2022, mandates that lightbulbs produce more light with less energy, favoring LED and CFL technologies. ▪ In addition, the fossil fuel heating interactive effects were omitted deliberately as explained earlier by TRC to align with NY IOUs method for claiming savings. These heating penalties were accounted for in the ex-post evaluation.	▪ If lighting measures are reintroduced to the Multi-family program, apply the 45 lumens per watt minimum efficiency standard as the baseline and use installed wattage values as the efficient case. ▪ Incorporate an adjustment factor of approximately 20% in cost-effectiveness calculations during the planning phase for indoor lighting applications. This adjustment will help account for the anticipated reduction in ex-post MMBtu impacts observed during evaluation.
Custom Horticultural Lighting	▪ We evaluated all custom horticultural lighting sites. For three of the eight sites, the baseline Photosynthetic Photon Efficacy (PPE) values used in the ex-ante calculations were appropriate. However, for the remaining five sites, the assumed baseline PPEs were lower than the minimum PPE values required by New York State for legal cultivation of recreational marijuana. Correcting this baseline discrepancy led to a reduction in ex-post kW, kWh, and MMBtu savings.	▪ If the program continues to offer custom horticultural lighting measures, align baseline PPEs in ex-ante calculations to the 2026 PSEG Long Island TRM and the New York State TRM v12 based on appropriate facility types and cultivation tiers.

Component	Summary of Savings Difference	Recommendation
Custom NYS Clean Heat	▪ We evaluated a sample of 14 NYS Clean Heat Tool custom projects. Three of the 14 sampled contained errors, all attributable to different types of user input mistakes. In order from greatest to least impact on ex-post savings, the issues included: incorrectly entering AHRI certificate information for NEEP-listed devices using an outdated version (v3.4) of the tool, using incorrect model numbers when retrieving AHRI certificates, and misclassifying a project as a renovation rather than new construction.	▪ We recommend ensuring that the most up-to-date version of the Clean Heat Tool is used when uploading projects to the Captures database, emphasizing careful review of the Construction Type field on the Inputs tab, and providing guidance on selecting the correct AHRI certificate based on both system and module model numbers.
Custom-Custom	▪ We evaluated a sample of 12 Custom-Custom projects. Four of the 12 sampled contained discrepancies affecting the MMBtu realization rate. A fifth project had a discrepancy related only to incorrectly reporting zero summer demand savings. As a highly custom category, the causes of these discrepancies varied widely. In order from greatest to least impact on realization rates, the issues included: a high-efficiency transformer measure that improperly included HVAC interactive effects, incorrect baseline motor calculations, overstated advanced power strip savings, and overestimation of hot water load for a heat reclaim project.	▪ While the discrepancies stemmed from varying causes, all could have been avoided through more consistent application of industry-standard methodologies, inputs, and assumptions. To improve consistency and transparency, the TADs will be updated in mid-2026 to include a "References and Resources" section that clearly documents key methodologies and supports use of the latest guidance. ▪ We recommend relying on TRMs, including the 2027 PSEG-LI TRM, New York State, and other state TRMs, for key inputs, assumptions, and calculation approaches within custom measures, when a fully prescriptive pathway is not available.
Motor &VFD	▪ Most of the discrepancies were attributable to differences in the per-unit savings methodology. Ex-ante savings were based on the prior PSEG-LI TRM deemed kWh/horsepower approach, while ex-post used the updated algorithm in the 2027 PSEG-LI TRM savings based on baseline and efficient-case motor energy use using inputs such as horsepower, load factor, motor efficiency, operating hours, part-load ratio and savings factors.	▪ Align ex-ante savings calculations with the latest PSEG-LI TRM method, replacing the prior deemed kWh/hp approach with updated baseline versus efficient motor and using project specific inputs where available.

3.2.3 Overview of Impacts by Disadvantaged Community and Low-Income Identifiers

Table 17 shows the commercial program (CEP and Multi-Family Combined) ex-post impacts subdivided into four categories: 1) Non-Disadvantaged Community (DAC) & Non-Low Income, 2) DAC Only, 3) Low Income Only, and 4) DAC and Low Income. For the Multi-Family program, we adopted a conservative interpretation of New York DPS CE-12 guidance regarding Disadvantaged Community Investment and Benefit Reporting.[7] The CE-12 guidance states that "*For programs focused on affordable housing, occurring outside of designated census tracks, where the percentage of low-income recipients is unknown, a factor of 40% should be applied to attribute expenditures and benefits to low-income.*" Since the PSEG Long Island Multi-Family program is not specifically designed to target affordable housing complexes, we elected not to apply this 40% factor. Presumably, some fraction of the occupants has incomes at or below 60% of the state-median income so the true share of low-income MMBtu savings within CEP is non-zero. A more detailed definition of each category can be found in the Introduction, Section 2.1.1. Overall, 28% of MMBtu impacts from the CEP and Multi-Family programs count towards the DAC and Low-Income standards. Given the emphasis on LMI programming in New York, we recommend PSEG Long Island work with LIPA and DPS to define "affordable housing" and have TRC add an affordable housing indicator variable to the Captures system for Multi-Family projects.

Table 17: Ex-Post Impacts with DAC and Low Income Breakouts

Category	Ex-Post Gross Savings (MMBtu)	% of Ex-Post MMBtu
Non-DAC & Non-Low Income	185,668	72%
DAC Only	73,283	28%
Low Income Only	0	0%
DAC & Low Income	0	0%
Total	**258,951**	**100%**

3.3 CONCLUSIONS AND RECOMMENDATIONS

Table 18 presents our key findings and recommendations for the commercial programs based on the results of this evaluation. In most cases, our recommendations apply to the 2027 program year. Planning for 2026 was finalized a year ago, and program delivery is almost half complete. These types of changes are often the most efficient to implement at the beginning of a new program year. Most of our recommendations are also reflected in the recently completed 2027 PSEG Long Island TRM.

[7] CLCPA-Disadvantaged Communities Investment and Benefits Reporting Guidance. CE-12. Weblink

Table 18: Commercial Efficiency Findings and Recommendations

Finding	Recommendation
▪ Coincidence factors and demand savings assumptions were inconsistently applied or not aligned with TRM guidance.	▪ Ensure consistent use of building and measure specific coincidence factors from the TRM and strengthen documentation and review of demand (kW) savings calculations.
▪ Outdated baseline assumptions and planning tool inputs (e.g., efficiency values, motor algorithms, and other measure specific parameters) contributed to overstated savings. Some of these were related to lighting measures, which will no longer be offered, but the effect can be relevant for other measure categories.	▪ Require use of current codes, standards, and TRM values for baseline assumptions across all measures, ensuring that inputs reflect the latest applicable performance requirements and measure-specific metrics.
▪ Data entry errors and inconsistent use of tools (e.g., Clean Heat Tool, Captures) led to avoidable discrepancies in reported savings.	▪ Improve quality control through standardized input checks, required use of current tool versions, and clearer guidance on correct data entry (e.g., AHRI certificates, construction type).
▪ Inconsistent tracking and reporting of calculated savings between analysis workbooks and program databases resulted in under- or over-reporting of impacts.	▪ Implement QA/QC procedures to ensure alignment between calculated savings and reported values in program tracking systems.
▪ The level of rigor used to calculate ex-ante savings in the Custom category varied widely and appeared unrelated to incentive size or savings amount. Limited access to historical gas billing data and insufficient detail around installation timelines (e.g., in-service dates and phased installations) contributed to uncertainty in key inputs, baseline assumptions, and savings estimates.	▪ Establish data collection and analysis standards for Custom-Custom projects that scale with incentive size or projected savings and require consistent documentation of key assumptions, including clear and verified installation timelines. ▪ Where applicable, require or strongly encourage the use of historical gas billing data to support baseline development and savings estimates. ▪ The evaluation team should be consulted on the M&V plan or Technical Approach Documents for projects exceeding 2,500 MMBtu in projected savings or $200,000 in incentives.

Finding	Recommendation
▪ Utilizing the PSEG-LI or NYS TRM inputs, assumptions, and calculation methodologies would have resolved most discrepancies observed in the Custom-Custom category. While desk review is often necessary for this category, aligning custom projects with relevant TRM methodologies would improve the accuracy of initial savings calculations and streamline the review process.	▪ We recommend consistently leveraging TRM-based inputs, assumptions, and calculation approaches when developing custom project savings methodologies, as these have been vetted and provide a reliable foundation. Care should be taken to ensure that selected TRM assumptions are appropriate for the specific application and operating conditions of the project, particularly where equipment usage patterns, schedules, or system interactions differ from standard or typical assumptions reflected in the TRM.
▪ Demand (kW) savings calculations received less emphasis than energy (kWh) savings, particularly for smaller projects. In several cases, coincidence factors were either not clearly documented, inconsistently applied, or based on assumptions misaligned with project operating characteristics or TRM recommended.	▪ Given the increased tightness of energy supply on Long Island, place greater emphasis on peak demand savings calculations across all project sizes, including consistent and well-documented application of appropriate coincidence factors. Ensure that coincidence factors are selected based on applicable TRMs and reflect the specific building type, operating schedule, and system characteristics. For example, TRMs define building-type-specific coincidence factor ranges (e.g., 0.5 to 0.95), whereas most lighting applications currently apply a uniform 0.75 value across all projects, regardless of project-specific characteristics

4 ENERGY EFFICIENCY PRODUCTS PROGRAM

4.1 ENERGY EFFICIENCY PRODUCTS PROGRAM DESCRIPTION

The following sections detail the program design, implementation strategies, participation, and performance for the Energy Efficiency Products (EEP) program in 2025.

4.1.1 PROGRAM DESIGN AND IMPLEMENTATION

The objective of EEP is to increase the purchase and use of energy efficient appliances and lighting among PSEG Long Island residential customers. The program provides rebates or incentives for smart thermostats and other products that meet the energy efficiency standards set by the Environmental Protection Agency (EPA) and the Department of Energy (DOE). The highest impact measures in the EEP program for 2025 were Wi-Fi connected smart thermostats and heat pump pool heaters. Smaller measures include linear LED fixtures, and ENERGY STAR appliances such as dehumidifiers, air purifiers, and heat pump water heaters (HPWH). Between PY2024 and PY2025, tankless water heaters, pool covers, and recycling incentives were discontinued from the EEP program and Induction Cooktops were added. TRC is responsible for the overall delivery of EEP and manages the rebated components of the program. Subcontractor EFI manages the retail and online marketplace components of EEP.

4.1.2 PROGRAM PARTICIPATION AND PERFORMANCE

The EEP program achieved 157% of 2025 program MMBtu goals, saving 244,734 MMBtu on an ex-ante basis. Ninety-three percent of EEP verified ex-ante savings are attributable to two measure categories: smart thermostats (72%), and heat pump pool heaters (21%). Table 19 shows 2025 EEP program performance compared to goals.

Table 19: EEP Verified Ex-Ante Gross Program Performance vs. Goals

Metric	MMBtu
Goal	155,564
Ex-Ante (January 2026)	243,843
Verified Ex-Ante Gross Savings	243,815
Ex-Ante (March 2026)	244,734
% of Goal	157%

In 2025, the EEP program incentivized just over 106,000 energy efficient products to PSEG Long Island residential customers. PSEG Long Island incentivized 55,541 linear LED fixtures, 33,406 smart thermostats, 1,056 heat pump pool heaters, and 10,969 other appliances in 2025. Table 20 summarizes participation for each program measure compared to the planning goal.

Table 20: 2025 EEP Program Participation vs. Goals, by Measure

Measure	Number of Units (Actual)	Planned Units (Goal)	Percentage of Goal Achieved
EEP Advanced Power Strip Tier 1	5,247	1,600	328%
EEP ES Dehumidifier	6,260	5,000	125%
EEP ES Room Air Purifiers (<150)	1,671	2,000	84%
EEP ES Room Air Purifiers (>150)	1,489	1,800	83%
EEP Connected Thermostats	26,499	10,000	265%
EEP Learning Thermostats	6,907	6,000	115%
ES Linear Fixture	55,541	25,000	222%
EEP Clothes Dryer - Electric Resistance	729	1,200	61%
EEP Clothes Dryer - Most Efficient	12	-	-
EEP ME Clothes Washer	396	2,000	20%
Heat Pump Pool Heater	1,056	1,400	75%
EEP Heat Pump Water Heater - Small	125	500	25%
EEP Heat Pump Water Heater - Large	117	100	117%
EEP ES Induction Cooktop	170	150	113%
Total	**106,219**	**56,750**	**187%**

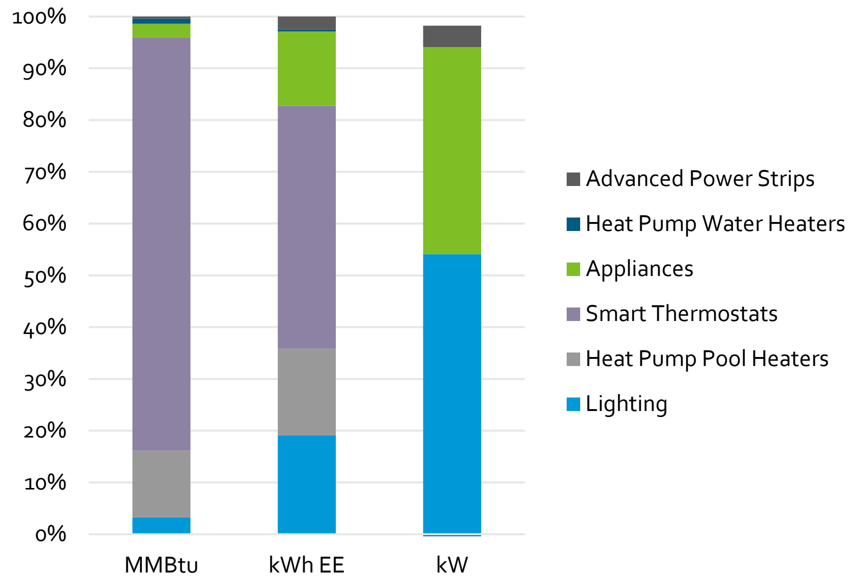
Table 21 compares quantities for 2024-2025 by measure category. The quantity of thermostat rebates grew by 54% relative to 2024. The quantity of lighting rebates fell by 27%, and Linear LED fixtures remained the only remaining lighting type eligible for EEP rebates. Heat pump pool heaters fell by 23%, water heaters fell by 3%, and appliances fell by 51%.

Table 21: 2024-2025 Quantity Comparison, by Measure Category

Measure Category	2024 Units	2025 Units	Percentage Change
Lighting	76,224	55,541	-27%
Heat Pump Pool Heaters	1,406	1,086	-23%
Pool Covers	2	-	-100%
Smart Thermostats	21,643	33,406	54%
Appliances	21,969	10,727	-51%
Recycling	3	-	-100%
Water Heaters	251	244	-3%
Advanced Power Strips	1,204	5,247	336%
Total	**122,702**	**106,252**	**-13%**

Figure 8 shows the distribution of ex-ante gross energy and demand savings across the EEP program. While thermostats are the largest contributors of MMBtu and kWh savings, PSEG Long Island does not assume any summer peak demand savings from thermostats. These devices may enroll in the Smart Savers demand response program and deliver dispatchable peak load reductions via direct load control.

Figure 8: 2025 EEP Program Ex-Ante Gross Savings by Resource and Measure Category



4.2 ENERGY EFFICIENCY PRODUCTS PROGRAM IMPACTS

The following sections provide the results of the impact analysis for the EEP program.

4.2.1 Overview of Impacts by Resource Type

Table 22 shows ex-ante and ex-post gross MMBtu impacts and realization rates by measure category. Table 23 and Table 24 show the equivalent impacts for MWh and kW.

Table 22: 2025 EEP MMBtu Impacts by Measure Category

Measure Category	Ex-Ante Gross Savings (Claimed)	Ex-Post Gross Savings	Realization Rate
	MMBtu	MMBtu	%
Smart Thermostats	194,705	94,159	48.4%
Heat Pump Pool Heaters	32,192	32,940	102.3%
Heat Pump Water Heaters	2,386	2,727	114.3%
Lighting	8,005	960	12.0%
Appliances	6,417	5,606	87.4%
Advanced Power Strips	1,029	1,029	100.0%
Total	**244,734**	**137,421**	**56.2%**

Table 23: 2025 EEP MWh Impacts by Measure Category

Measure Category	Ex-Ante Gross Savings (Claimed[1])	Ex-Post Gross Savings	Realization Rate
	MWh	MWh	%
Smart Thermostats	5,767	5,078	88.0%
Heat Pump Pool Heaters	949	(1,078)	-113.5%
Heat Pump Water Heaters	(124)	(121)	97.5%
Lighting	2,346	490	20.9%
Appliances	1,602	1,370	85.5%
Advanced Power Strips	302	302	100.0%
Total	**10,843**	**6,041**	**55.7%**

[1] MWh Ex-Ante Gross Savings (Claimed) in table might not match KPI scorecard values. Table values include all Energy Efficiency Savings as well as Beneficial Electrification, while KPI scorecard reports Energy Efficiency Savings only.

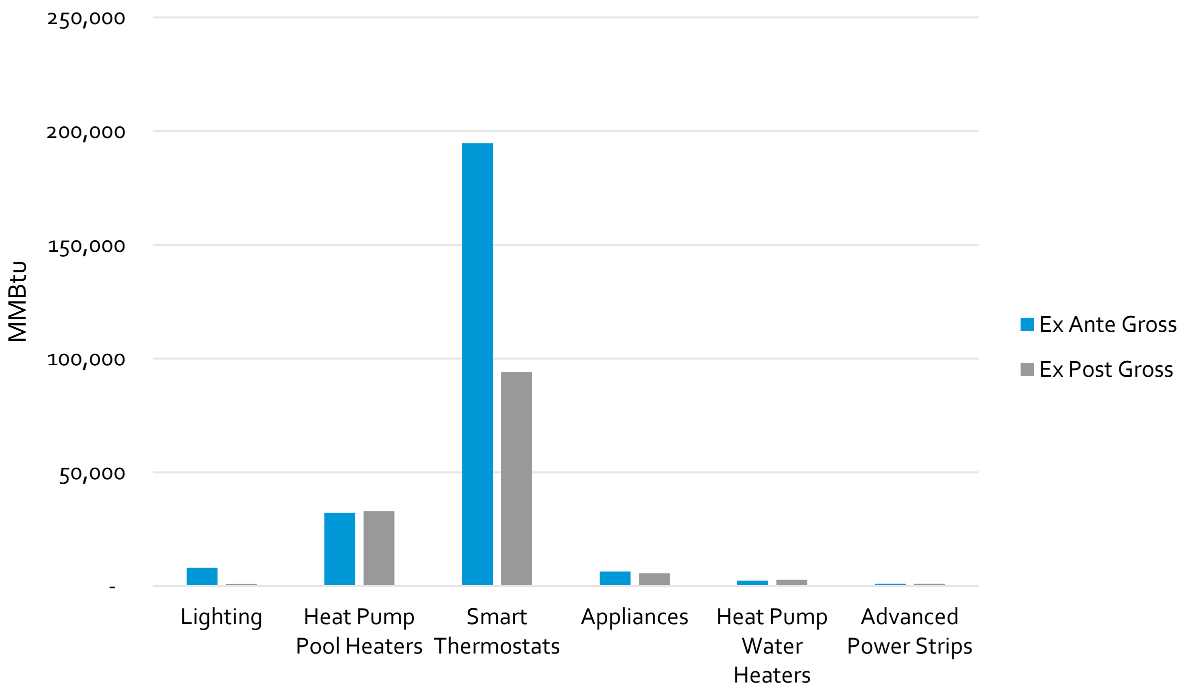
Table 24: 2025 EEP kW Impacts by Measure Category

Measure Category	Ex-Ante Gross Savings (Claimed)	Ex-Post Gross Savings	Realization Rate
	kW	kW	%
Smart Thermostats	-	-	
Heat Pump Pool Heaters	-	-	
Heat Pump Water Heaters	(14)	(14)	98%
Lighting	428	88	21%
Appliances	317	220	69%
Advanced Power Strips	33	33	100%
Total	**764**	**327**	**43%**

4.2.1.1 Ex-Post Findings

The overall EEP program MMBtu realization rate, calculated as the ratio of ex-post gross savings to ex-ante gross savings, is 56.2%. The overall program level variance between the claimed and ex-post gross MMBtu (the MMBtu variance) nets out to 107,313 fewer MMBtu than reported. Nearly all the shortfall (93%) is due to a revised approach to calculating Smart Thermostat savings. The following section provides additional detail on the cause of variance for each measure. Figure 9 compares ex-ante gross and ex-post gross MMBtu savings by measure category.

Figure 9: EEP Ex-Ante Gross and Ex-Post Gross MMBtu Savings by Measure Category

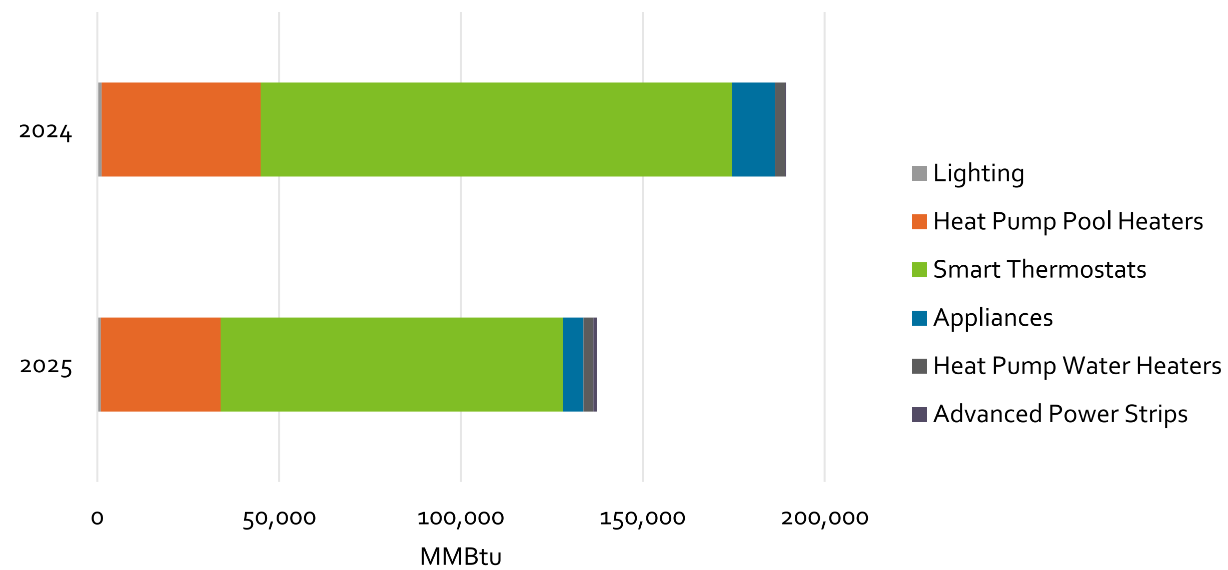


Overall in 2025, seven out of 14 EEP measures have MMBtu realization rates of greater than or equal to 100%, and seven measures have realization rates of less than 100%. The highest measure-level realization rate in EEP is for Electric Resistance Clothes Dryers (128%), and the lowest is for Linear LED Fixtures (12%). The biggest negative ex-post gross MMBtu variance is for Connected Thermostats, which is 100,546 MMBtu less than ex-ante. Ex-post MMBtu savings for Linear LED fixtures fell short of ex-ante by 7,045 MMBtu. The largest positive variance was for Heat Pump Pool Heaters, where ex-post savings exceeded ex-ante by 748 MMBtu.

4.2.1.2 Comparison to 2024

EEP ex-post MMBtu savings decreased by 27% from 2024 to 2025, following a 55% decrease from 2023-2024. All measure categories other than Advanced Power Strips had lower savings in 2025 than in 2024. Figure 10 shows how ex-post gross EEP MMBtu savings changed over the two-year period.

Figure 10: EEP MMBtu Impacts by Measure Category, 2024 and 2025 (ex-post gross)



4.2.1.3 Beneficial Electrification Impacts

Table 25 shows the breakdown of Energy Efficiency (EE) and Beneficial Electrification (BE) MMBtu and kWh for measures where a BE component exists. The clothes dryer, water heater, heat pump pool heater, and induction cooktop measures include a mixture of electric efficiency and beneficial electrification impacts.

Table 25: Breakdown of Ex-Post Gross MMBtu Per-Unit Impacts by EE and BE Components

Measure	$MMBtu_{ee}$	$MMBtu_{be}$	$MMBtu_{total}$	kWh_{ee}	kWh_{be}	ΔkWh
EEP-300 EEP Clothes Dryer - Electric Resistance	0.09	0.15	0.24	27.18	197.26	(170.08)
EEP-310 EEP Clothes Dryer - Most Efficient	0.09	0.15	0.24	27.18	197.26	(170.08)
EEP-600 EEP Heat Pump Water Heater - Small	1.20	11.95	13.15	352.81	734.91	(382.10)
EEP-610 EEP Heat Pump Water Heater - Large	0.32	8.94	9.26	94.59	717.87	(623.28)
EEP-720 EEP Heat Pump Pool Heater	1.25	29.95	31.19	365.64	1,386.21	(1,020.56)
EEP-800 Induction Cooktop	0.04	0.75	0.79	12.24	104.33	(92.08)

4.2.2 Overview of Impacts by Disadvantaged Community and Low- Income Identifiers

Table 26 shows the EEP program ex-post impacts subdivided into four categories: 1) Non-Disadvantaged Community (DAC) & Non-Low Income, 2) DAC Only, 3) Low-Income Only, and 4) DAC &

Low-Income. A more detailed definition of each category can be found in Section 2.1.1. Overall, 3.3% of EEP MMBtu impacts count towards the DAC and Low-Income target, mostly from thermostat rebates.

Table 26: Ex-Post Impacts with DAC and Low Income Breakouts

Category	Ex-Post Gross Savings (MMBtu)	% of Ex-Post MMBtu
Non-DAC & Non-Low Income	132,867	96.7%
DAC Only	4,226	3.1%
Low Income Only	276	0.2%
DAC & Low Income	53	0.0%
Total	**137,421**	**100%**

4.2.3 Key Drivers for Differences in Impacts

This section describes key drivers of the overall gross realization rates, with an emphasis on MMBtu savings. Most variance between ex-ante gross and ex-post gross savings is due to one or more of the following evaluation activities:

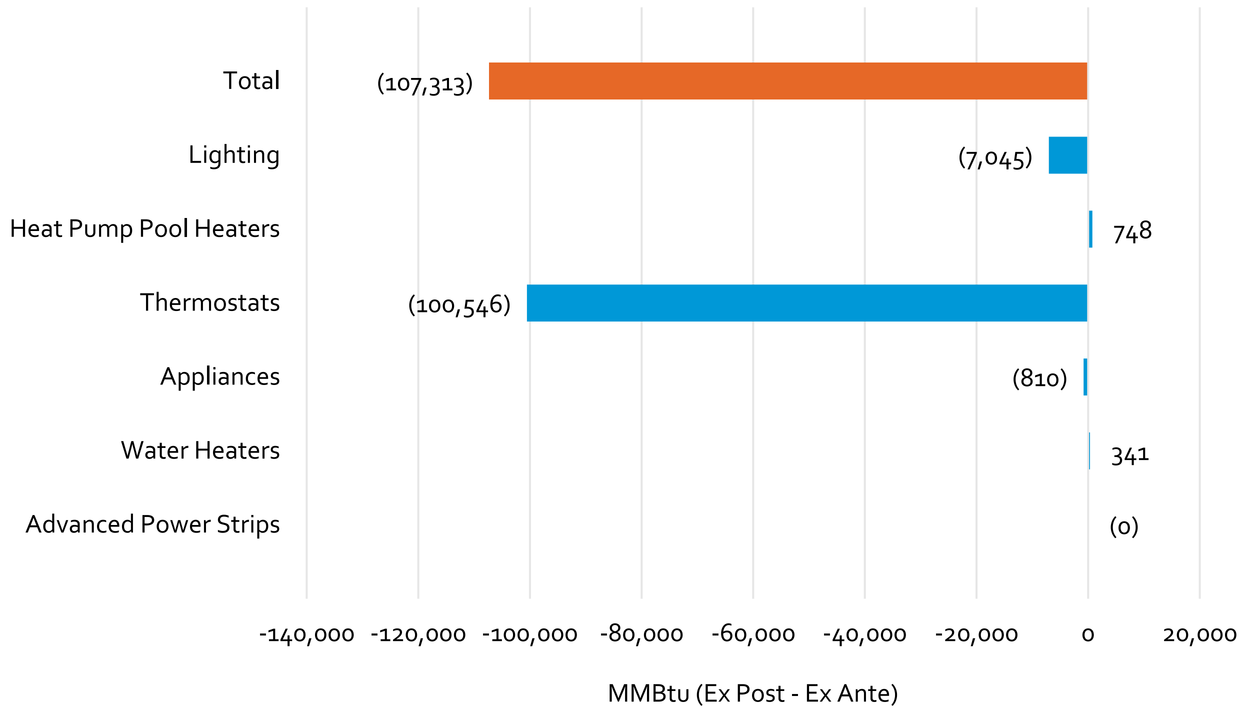
- **Refinement to savings algorithm inputs based on an improved source or revised assumption.** The single largest driver of differences in impacts for EEP is the revision to connected and learning thermostat savings protocols in the New York State TRM, which now incorporates lower per-unit savings assumptions from a 2023 National Grid evaluation report.[8] The Thermostat section to follow contains more detail.
- **Use of equipment characteristics from units installed during 2025 to inform and refine per-unit savings assumptions.** For example, by mapping fixture model numbers from the actual Linear LED Fixtures rebated in PY2025 to product wattages, and using the lumen output of those fixtures to estimate baseline wattage, we discovered that the average linear fixture incentivized during 2025 was considerably smaller than the assumption used to create the planning value, resulting in an 80% difference in the actual and planned delta Wattage. The Lighting section below includes more detail. This trend was also observed in 2024. As expected, variance from planned values due to slightly different specs of actual equipment installations was also observed for heat pump pool heaters and most other appliance measures.
- **Carryover planning assumptions from prior years.** Carryover between program years is unavoidable as projects started in one year close in the next year, and these projects are granted the legacy planning values for purposes of verified ex-ante savings. For ex-post savings, carryover results in realization rate variance if planning values have changed between years. While 11 of the 16 measures included carryover savings assumptions, carryover quantities are small enough that the impact is marginal for 2025 verified savings.

---

[8] Online Marketplace and Electric Residential Consumer Products Impact and Process Evaluation, submitted to National Grid. DNV and NMR Group, June 9, 2023.

The sub-sections below summarize the key drivers in order of measure contribution to the overall EEP MMBtu realization rates. As Figure 11 shows, the measure categories detailed in this section—Smart Thermostats and Linear LED Lighting— account for nearly all of the overall EEP MMBtu variance.

Figure 11: MMBtu Variance by Measure Category (Ex-Post Gross Minus Ex-Ante Gross)



4.2.3.1 Smart Thermostats

Table 27: EEP Smart Thermostat Category MMBtu Savings Summary

Measure Code	Measure	Qty	Ex-Ante MMBtu	Ex-Post MMBtu	MMBtu RR	% of EEP Ex-Post MMBtu
EEP-1415	Connected Thermostat	26,499	150,588	74,691	50%	54%
EEP-1420	Learning Thermostat	6,907	44,073	19,468	44%	14%
Thermostats Total		**33,406**	**194,661**	**94,159**	**48%**	**69%**

Smart Thermostats accounted for 69% of EEP ex-post gross MMBtu savings in 2025. Realization rates are 48% for MMBtu and 88% for kWh. Zero kW are claimed. Table 28 shows key contributors to Thermostat variance.

Table 28: Key Contributors to RR Variance and Recommendations: Thermostats

Component	Summary of Contributing Factors	Recommendations
Smart Thermostats	▪ **Deemed per-unit savings values:** These values were updated in the New York State TRM to reflect, among other findings, a lower thermostat in-service-rate than previously assumed. The result is a decrease of 50% (Connected) and 56% (Learning) for MMBtu savings relative to the planning values for thermostats. ▪ The conservative deemed per-unit values are required for program delivery models where the HVAC system details that support an algorithmic calculation method are not collected.	▪ Continue to use the most recent PSEG-LI TRM savings assumptions for thermostat planning values. ▪ For smart thermostats incentivized via downstream application or the PSEG Long Island Marketplace, consider collecting HVAC system details such as capacity and heating fuel so that an algorithmic approach to savings is possible.

Figure 12 shows the deemed smart thermostat updates in the NYS TRM. The separate connected and learning versions of the measure were combined into a single protocol, with deemed savings updates for thermostats purchased through channels where HVAC system details are unknown. The deemed values of 152 kWh and 2.3 $MMBtu_{ee}$ per unit were applied in 2025 ex post, recording a notable drop from the results of the previous algorithmic approach, which estimated per-thermostat savings between 195-216 kWh and 5.7-6.4 $MMBtu_{ee}$.

Figure 12: Excerpt from NYS TRM v13, Thermostat- Advanced

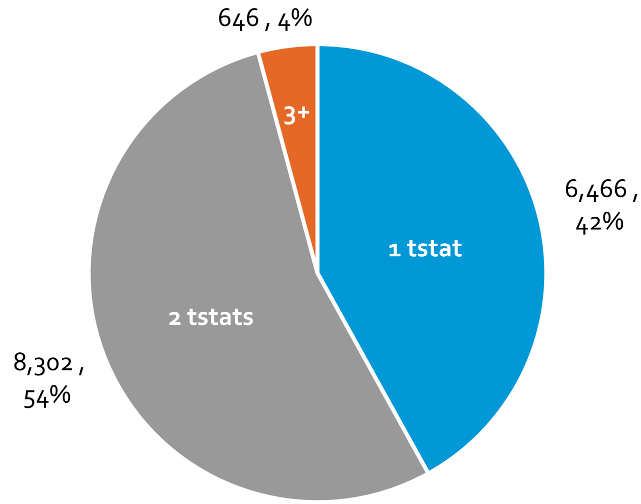
Summary of Variables & Data Sources

Variable	Value	Notes
ΔkWh/unit		Use 152 kWh for thermostats purchased through an electric marketplace program and 32 kWh for thermostats purchased through a gas marketplace program where electric service territory can be verified.[336] If electric/gas service cannot be verified (e.g., for midstream applications), a value of 81 kWh shall be used.[337] All values presented above are established per household.
ΔMMBtu/unit		Use 2.3 MMBtu for thermostats purchased through a gas marketplace program and 0 MMBtu otherwise.[338] If electric/gas service cannot be verified (e.g., for midstream applications), a value of 1.4 MMBtu shall be used.[339]

4.2.3.1.1 EEP THERMOSTAT TRENDS

Purchase Quantity: Between 2023 and 2025, 58% of PSEG LI participants in online and marketplace channels purchased more than one thermostat. Figure 13 shows the precise breakdown.

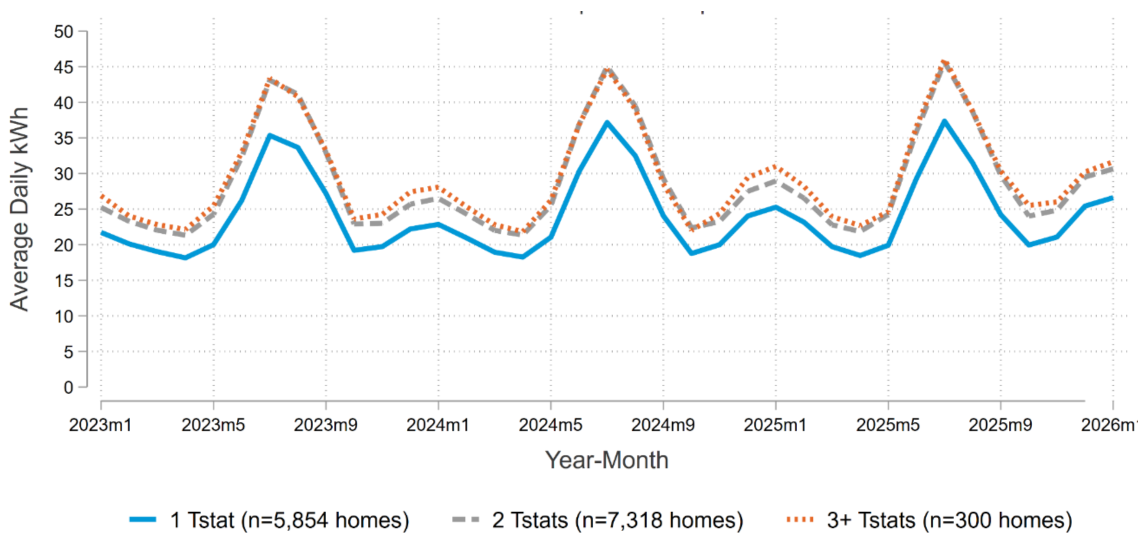
Figure 13: Online & Marketplace Participant Count by Thermostat Purchase Quantity, 2023-2025[9]



While neither the NYS TRM nor the PSEG-LI TRM factors in purchase quantity, the National Grid evaluation report used to update the TRM per-unit values reduces savings for every thermostat beyond the first by about 25% for MMBtu and 50% for kWh. The report also recommends limiting the thermostat purchase quantity to one per customer. A high-level billing analysis of 13,372 online and marketplace participants between 2023 and 2025 conducted by DSA suggests that purchasers of multiple thermostats are higher energy users, but not 2 or 3 times as high, as shown in Figure 14. These findings are limited to a subset of participants and do not impact 2025 savings at all but may suggest that further downward adjustments to deemed thermostat savings related to purchase quantity may eventually come into effect in the NYS TRM.

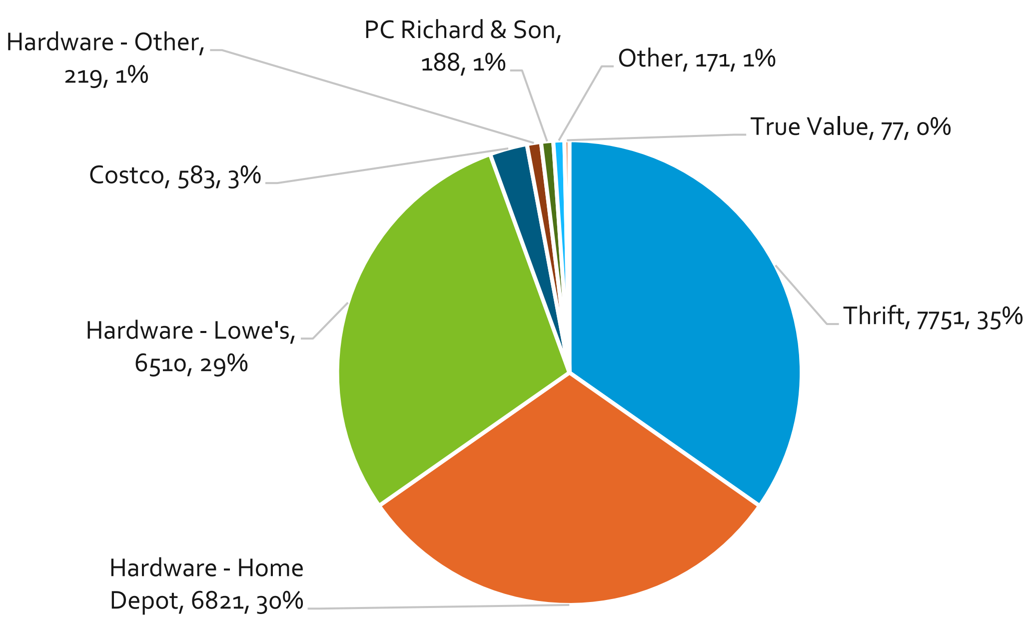
[9] Limited to purchases with account numbers recorded in CAPTURES.

Figure 14: Average Daily kWh by Month, EEP Online and Marketplace Participants 2023-2025[10]



Point-of-Sale Rebates by Store Type: Thrift stores, Home Depot, and Lowe's were responsible for 95% of point-of-sale thermostat rebates in 2025, as shown in Figure 15.

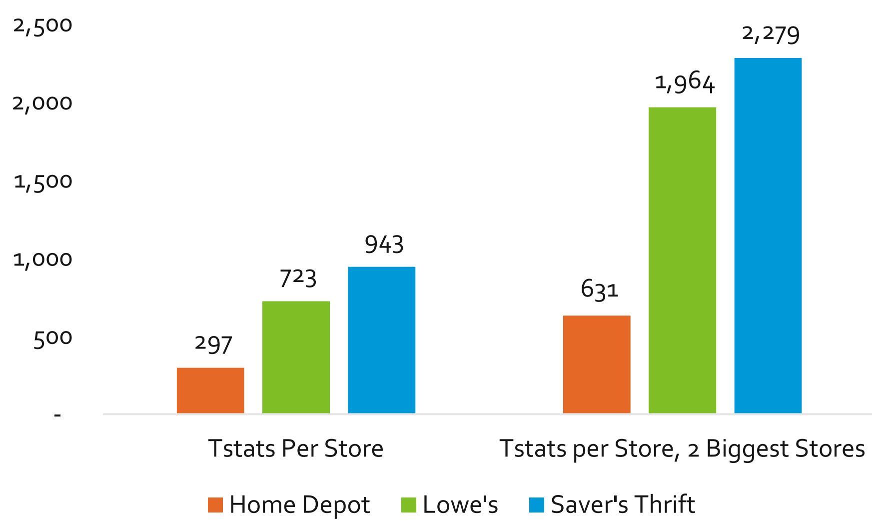
Figure 15: Point-of-Sale Thermostat Rebates by Store Category, 2025



[10] Limited to incentives where the account number was recorded and billing data was available.

The single largest contributor to point-of-sale thermostat rebates was Saver's Thrift (35% of all point-of-sale rebates in 2025), where the two largest stores rebated an average of 2,279 thermostats each in 2025.

Figure 16: Point-of-Sale Thermostats per Store, Largest Stores in 2025



4.2.3.2 Lighting

Table 29: EEP Lighting Category MMBtu Savings Summary

Measure Code	Measure	Qty	Ex-Ante MMBtu	Ex-Post MMBtu	MMBtu RR	% of EEP Ex-Post MMBtu
EEP-2200	ES Linear Fixture	55,541	8,005	960	12%	1%

Linear LED fixtures accounted for only 1% of EEP ex-post savings in 2025. The gross realization rate is 12% for MMBtu savings, 21% for kWh savings, and 21% for kW. Table 30 lists the key drivers of differences between ex-ante gross and ex-post gross impacts for EEP lighting. The 2026 PSEG-LI TRM introduced two size tiers for planning, aimed at reducing the realization rate variability for Linear LEDs. The tiers use a 2,000 Lumen threshold to distinguish between small and large fixtures.

Table 30: Key Contributors to Lighting RR Variance and Recommendations

Component	Summary of Contributing Factors	Recommendations
ES Linear Fixture	▪ **Wattage:** Due to the smaller average fixture size in 2025 relative to the previously installed actuals used for planning, delta wattage between baseline and efficient fixtures (8 W) was only 20% of the planning assumption (43.5 W).	▪ Market rate lighting has been deemed non-strategic so will not be part of the EEP portfolio going forward.

4.2.3.3 Heat Pump Pool Heaters

Table 31: EEP Heat Pump Pool Heater Category MMBtu Savings Summary

Measure Code	Measure	Qty	Ex-Ante MMBtu	Ex-Post MMBtu	MMBtu RR	% of EEP Ex-Post MMBtu
EEP-720	Heat Pump Pool Heater	1,056	31,331	32,940	105%	21%

Heat Pump Pool Heaters accounted for 21% of EEP ex-post gross MMBtu savings in 2025. HPPH realization rates are 102% for MMBtu and -114% for MWh. Demand (kW) savings are assumed to be zero because we assume limited pool heating is required on the system peak day.

Table 32 Key Contributors to RR Variance and Recommendations: Heat Pump Pool Heaters

Component	Summary of Contributing Factors	Recommendations
Heat Pump Pool Heaters	▪ **Coefficient of Performance (COP) actual:** Actual efficient COP (6.01) is 2% more efficient than the assumed planning value.	▪ Heat Pump Pool Heaters have been deemed non-strategic so will no longer be included in the EEP portfolio. ▪ Given the NY emphasis on heat pumps and our conclusion that absent program support these will end up being gas-powered (based on research with HPPH vendors in 2025 as part of the 2024 evaluation), PSEG-LI may wish to make a case that HPPH should be strategic.

4.2.3.4 Appliances

Combined Appliance category realization rates are 87% for MMBtu, 96% for kWh and 69% for kW.

Table 33: EEP Appliance Category MMBtu Savings Summary

Measure Code	Measure	Qty	Ex-Ante MMBtu	Ex-Post MMBtu	MMBtu RR	% of EEP Ex-Post MMBtu
EEP-500	EEP ES Dehumidifier	6,260	2,329	2,541	109%	2%
EEP-120	EEP ES Room Air Purifiers (<150)	1,671	975	960	98%	1%
EEP-125	EEP ES Room Air Purifiers (>150)	1,489	2,490	1,488	60%	1%
EEP-300	EEP Clothes Dryer - Electric Resist.	729	138	176	128%	0%
EEP-310	EEP Clothes Dryer - Most Efficient	12	6.4	2.9	45%	0%
EEP-400	EEP ME Clothes Washer	396	346	305	88%	0%
EEP-800	EEP ES Induction Cooktop	170	134	134	100%	0%
Appliances Total		**10,727**	**6,418**	**5,606**	**87%**	**4%**

In 2025, as in 2024, Dehumidifiers were the largest contributor to Appliance savings. Dehumidifiers accounted for 44% of verified Appliance MMBtu and 2% of overall EEP MMBtu. The Dehumidifier MMBtu realization rate is 109%. The average dehumidifier capacity in 2025 was larger (pints/day) than the units used to develop planning assumptions, and about 5% larger than the average unit in 2024.

Table 34 Key Contributors to RR Variance and Recommendations: Appliances

Component	Summary of Contributing Factors	Recommendations
Air Purifier	Efficiency ratings of the large tier is slightly more efficient than planning assumptions (104%); the small tier is less efficient (79%). Actual CADRs are 95% and 72% of planning assumptions, which brings down both base case and efficient case kWh, and therefore delta kWh. This more than offsets the upward impact of the better-than-planned efficiency ratings in the large tier.	▪ These appliance measures have been deemed non-strategic so will no longer be included in the EEP portfolio.
Clothes Dryer	Actual unit CEF ratings are about 4% more efficient than planned values. Several of the units classified as Heat Pump Dryers (EEP-310) are not.	
Clothes Washer	Planning values were based on NYS TRM v11 and PY22 tracking data.	

Component	Summary of Contributing Factors	Recommendations
Dehumidifier	The average dehumidifier in 2025 is larger than the units used for planning. For kW, the CF dropped from 0.56 to 0.37 in NYS TRM v12. There are 17 carryover units from 2024.	

4.2.3.5 Water Heaters

Table 35: EEP Water Heater Category MMBtu Savings Summary

Measure Code	Measure	Qty	Ex-Ante MMBtu	Ex-Post MMBtu	MMBtu RR	% of EEP Ex-Post MMBtu
EEP-600	EEP Heat Pump Water Heater – Sm.	125	1,509	1,644	109%	1%
EEP-610	EEP Heat Pump Water Heater – Lg.	117	861	1,083	126%	1%
Water Heaters Total		**242**	**2,370**	**2,727**	**115%**	**2%**

Heat Pump Water Heater realization rates are 147% for MMBtu, -113% for kWh, and 98% for kW. Water heaters accounted for 2% of EEP savings in 2025. Model numbers from Captures were cross-referenced with the ENERGY STAR qualified product list to use the rated uniform energy factor (UEF) and draw pattern for each efficient unit. For heat pump water heaters, baseline UEFs are based on federal standards for storage water heaters that use baseline fuel type, first hour rating, and draw pattern to ultimately calculate UEF based on an intercept value and a slope coefficient on tank volume. This is an incremental improvement over prior year savings estimates that relied on average tank volume and draw pattern assumptions. Figure 17 shows the Baseline UEF algorithms and coefficients for electric storage water heaters from code of federal regulations as documented in the NYS TRM version 13. A similar table exists for gas-fired storage water heaters and was used for the assumed fraction of HPWH assumed to replace fossil fuel systems.

Figure 17: Baseline Efficiencies from which Electric Savings are Calculated

Product Class	Rated Storage Volume and Input Rating	Draw Pattern	$UEF_{baseline}$
Electric Storage Water Heater	≥ 20 gal and ≤ 55 gal	Very Small	0.8808 - (0.0008 x v_t)
		Low	0.9254 - (0.0003 x v_t)
		Medium	0.9307 - (0.0002 x v_t)
		High	0.9349 - (0.0001 x v_t)
	> 55 gal and ≤ 120 gal	Very Small	1.9236 - (0.0011 x v_t)
		Low	2.0440 - (0.0011 x v_t)
		Medium	2.1171 - (0.0011 x v_t)
		High	2.2418 - (0.0011 x v_t)

Table 36: Key Contributors to RR Variance and Recommendations: Water Heaters

Component	Summary of Contributing Factors	Recommendations
Water Heaters	▪ Planning values are based on the average of the 2024 ENERGY STAR Qualified Product List, while actual installations are slightly more efficient.	▪ Collect the baseline heating fuel as part of the project application and record it in captures. This would replace the current evaluation assumption of an 85/15 split in FF/Electric water heating based on the 2018 Potential Study.

4.2.3.6 Advanced Power Strips

Advanced Power Strips (quantity 5,247) contributed 1% of verified ex-post MMBtu savings for EEP in 2025. Realization rates for Advanced Power Strips are 100% for MMBtu, kWh, and kW.

Table 37: Other EEP Measures MMBtu Savings Summary

Measure Code	Measure	Qty	Ex-Ante MMBtu	Ex-Post MMBtu	MMBtu RR	% of EEP Ex-Post MMBtu
EEP-200	EEP Advanced Power Strip Tier 1	5,247	1,029	1,029	100%	1%

5 HOME COMFORT PROGRAM

PSEG Long Island's Home Comfort Residential Heating and Cooling Program offers rebates to residential customers for purchasing and installing energy-efficient heat pumps. These heat pumps are typically two to three times more efficient than traditional fossil fuel heating. The Home Comfort program aligns with New York State's Climate Leadership and Community Protection Act (CLCPA) and the Governor's goal to electrify 2 million homes by 2030. Each year, the Home Comfort Program has evolved to support the state's aggressive greenhouse gas (GHG) reduction targets, including an 85% emissions reduction by 2050. Administered by PSEG Long Island, the program promotes ENERGY STAR-certified ducted split cold climate air-source heat pumps (ccASHP), ductless mini-split and multi-split heat pumps (DMHP), and ground-source heat pumps (GSHP). By displacing fossil fuels and decarbonizing residences, the program plays a key role in advancing clean energy adoption. In 2025, the Home Comfort Program facilitated the installation of 6,772 heat pumps, including 6,524 ducted and ductless air-source heat pumps (ASHP), 163 geothermal heat pumps (GSHP) and 85 heat pump water heaters (HPWH).

5.1 HOME COMFORT PROGRAM DESIGN AND PARTICIPATION

The following sections detail the program design, implementation strategies, and PY2025's participation and performance for the Home Comfort program.

5.1.1 PROGRAM DESIGN AND IMPLEMENTATION

The Home Comfort program provides rebates to both market-rate and income-eligible customers, along with contractor incentives for heating and cooling system upgrades. All measures offered under Home Comfort are determined by the NYS DPS to be Strategic measures and hence are a key part of the future residential portfolio under PSEG Long Island. Enhanced low-income rebates are available to all income-qualified participants. While weatherization measures are encouraged alongside heat pump installations, they are processed through the Home Performance program to ensure a comprehensive whole-home approach.

Program participation is largely driven by partnerships with installation contractors, known as Home Comfort Participating Contractors. Engaging these contractors has enhanced program performance and market impact by ensuring Quality Installation Verification (QIV) of HVAC systems. This includes proper equipment sizing, refrigerant charge correction, and airflow testing. Home Comfort partners play a key role in promoting program benefits and have strengthened the ASHP market by adhering to PSEG Long Island's QIV standards. All whole-house heat pumps[11] in 2025 required QIV installation.

[11] A whole-house heat pump system is sized and installed to provide between 90% and 120% of the design heating load per Manual J calculations.

5.1.2 Notable Changes in 2025

In 2025, incremental rebates were discontinued for Integrated Controls (IC) where existing fossil fuel systems remain as a secondary heating source, though IC installation remains required in these instances.

Rebates for the "Equipment Only" ducted/ductless cold climate heat pump offering were also discontinued in April 2025. Additionally, a paperless online application for up to four whole-house heat pump units was launched on the PSEG Long Island Partner Portal, allowing contractors to either submit photos and installation specifications post-installation or reserve a rebate for 90 days by submitting pre-installation equipment data.

5.1.3 Program Participation and Performance

Based on verified ex-ante estimates, the Home Comfort program reached 102% of its energy savings goal in 2025. Table 38 presents 2025 Home Comfort programs verified ex-ante gross MMBtu savings compared to goal. Home Comfort program savings were not affected by the March 2026 KPI Scorecard update.

Table 38: Home Comfort Program Verified Ex-Ante Gross MMBtu Savings versus Goals

Metric	MMBtu
Goal	182,387
Verified Ex-Ante Gross Savings	185,358
% of Goal	102%

Table 39 presents Home Comfort measure installations from 2022 through 2025. The installation of ductless and ducted ASHPs through the Home Comfort program continued to be a high contributor to the overall Home Comfort portfolio in 2025, consistent with PSEG Long Island MMBtu-based savings goals and New York State Clean Heat initiatives.

Table 39: Comparison of Home Comfort Program Measures Installed – 2022 to 2025

Measure	2022	2023	2024	2025	Percent Difference 2024 to 2025
Ducted ASHPs	1,192	2,171	2,071	1,919	-7%
Ductless ASHPs	2,564	3,853	4,543	4,605	+1%
GSHP	201	152	155	163	+5%
HPWH	65	121	77	85	+10%
Total	**4,022**	**6,297**	**6,846**	**6,772**	**-1%**

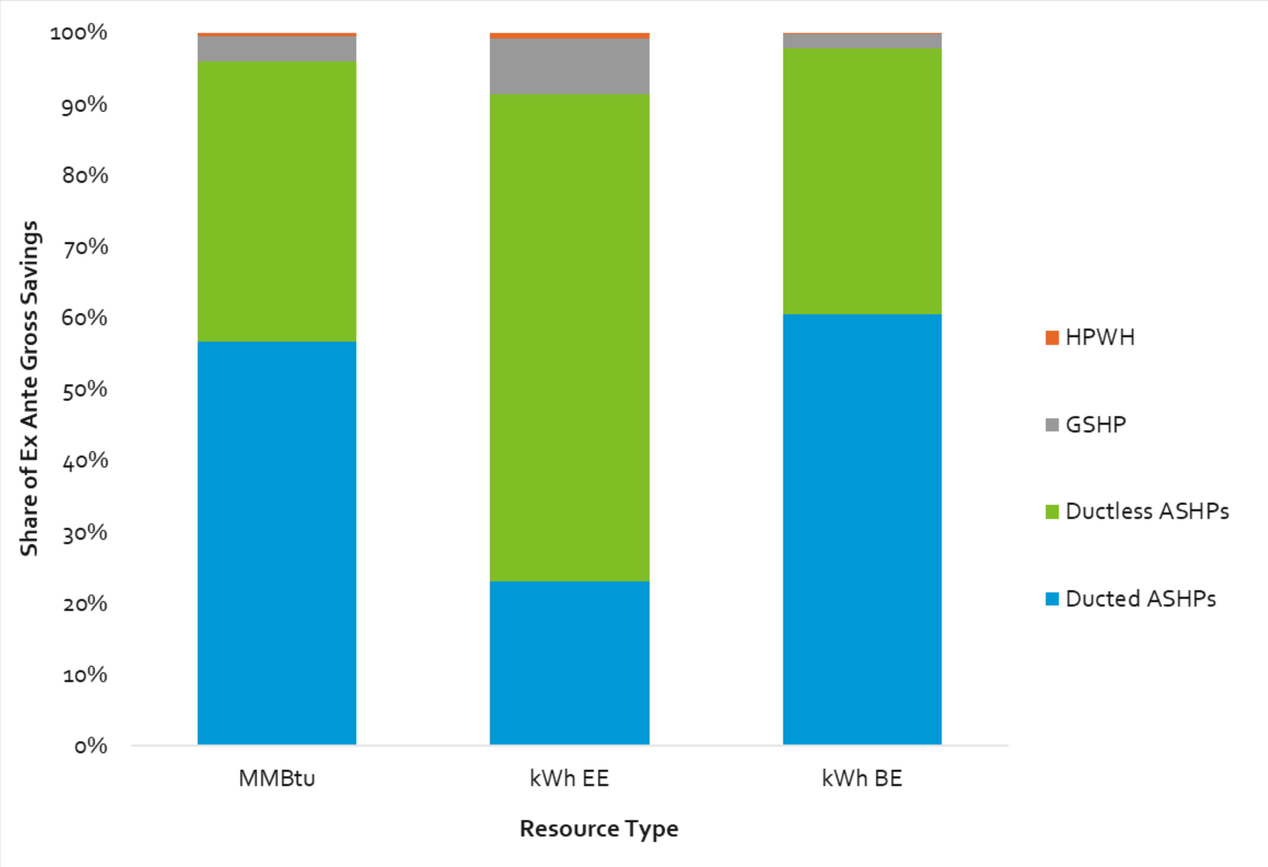
Figure 18 shows the distribution of ex-ante gross energy savings across the Home Comfort program. Ducted and ductless heat pumps accounted for a combined 96% of the ex-ante gross MMBtu savings in 2025. These installations also resulted in beneficial electrification impacts for which a baseline heating load supplied by a fossil fuel source was displaced by the incented cold-climate heat pump. When planning for the 2025 program year, TRC identified the cooling and heating baseline scenarios for heat pump installations shown in Table 40. The evaluation team reviewed and agreed with these baseline assumptions during the program planning phase and have therefore incorporated them in the calculation of ex-post impacts.

Table 40: Cooling and Heating Baseline Scenarios for Heat Pump Installations

#	Scenario	% of Installs in 2025	Preexisting Cooling Equipment	Preexisting Heating Equipment	Cooling Baseline	Heating Baseline
1	New Construction	6%	N/A	N/A	Code Compliant HP	Code compliant fossil fuel furnace
2	New installations and End-of-life replacements	42%	AC or Heat Pump	Fossil fuel or Electric Resistance or Heat Pump	Code Compliant HP	Code compliant fossil fuel furnace
3	Retrofit	51%	AC or Heat Pump	Fossil Fuel	Preexisting AC or HP	Preexisting fossil fuel furnace/boiler
4	Retrofit	1%	AC or Heat Pump	Electric Resistance or Heat Pump	Preexisting AC or HP	Preexisting electric heating system

Beneficial electrification measures increase electricity consumption, resulting in negative kWh impacts, but reduce total energy consumption (MMBtu) and emissions from the displacement of fossil fuels. Scenarios 1, 2 and 3 result in beneficial electrification impacts, shown as kWh BE in Figure 18. The electric savings resulting from the installation of more efficient electric heating and cooling equipment are shown as kWh EE.

Figure 18: Home Comfort Program Ex-ante Gross Impacts by Resource and Measure Category



5.2 HOME COMFORT IMPACTS

The following sections provide the results of the impact analysis for the Home Comfort program.

5.2.1 Overview of Impacts by Resource Type

Table 41 shows ex-post gross MMBtu impacts by measure category. Table 42 and Table 43 show the ex-post MWh and kW impacts, respectively. Realization rates are calculated by dividing ex-post gross savings values by ex-ante gross savings values. Overall, the Home Comfort program realized 113% of its ex-ante gross MMBtu energy savings claims, 147% of MWh impacts claims, and 130% of kW savings claims. Note that the overall gross MWh impacts are negative for the Home Comfort program due to significant increase in site-level electric consumption from beneficial electrification measures (e.g., heat pumps). We expand on the impacts of beneficial electrification for Home Comfort measures in Section 5.2.1.1.

Table 41: 2025 Home Comfort Program Ex-Post Gross MMBtu Impacts

Measure	N	Ex-Ante Gross Savings [1] (Claimed)	Ex-Post Gross Savings	Realization Rate
		MMBtu	MMBtu	%
Ducted and Ductless ccASHP	6,260	175,350	195,579	112%
GSHP	163	6,447	7,915	123%
Non-cold climate Ducted and Ductless Heat Pumps	264	595	2,713	456%
Heat Pump Water Heaters	85	884	884	100%
Project Adjustments	7	2,175	2,175	100%
Totals	**6,779**	**185,451**	**209,266**	**113%**

Note: Totals may not sum due to rounding.
[1] The Home Comfort claims for program year 2025 included a duct sealing and a smart thermostat measure that should have been processed under the HPwES program. These claims total 24 MMBtu and are excluded from this table.

Table 42: 2025 Home Comfort Program Ex-Post Gross MWh Impacts

Measure	N	Ex-Ante Gross Savings[1],[2] (MWh)	Ex-Post Gross Savings[1] (MWh)	Realization Rate (MWh)
Ducted and Ductless ccASHP	6,260	-18,601	-27,372	147%
GSHP	163	-213	-179	84%
Non-cold climate Ducted and Ductless Heat Pumps	264	174	70	40%
Heat Pump Water Heaters	85	-39	-39	100%
Project Adjustments	7	-22	-22	100%
Totals[1]	**6,779**	**-18,700**	**-27,541**	**147%**

Note: Totals may not sum due to rounding

[1] MWh impacts include both energy efficiency (EE) and beneficial electrification (BE) components. MWh impacts are negative for heat pump and water heater measures due to the displacement of preexisting fossil fuel heating with electricity. The forthcoming section separates the EE and BE components for all measure groups and further explains the reasons for negative impacts.
[2] The Home Comfort claims for program year 2025 included a duct sealing and a smart thermostat measure that should have been processed under the HPwES program. These claims total 1,708 kWh and are excluded from this table.

Table 43: 2025 Home Comfort Program Ex-Post Gross kW Impacts

Measure	N	Ex-Ante Gross Savings [1] (kW)	Ex-Post Gross Savings (kW)	Realization Rate (kW)
Ducted and Ductless ccASHP	6,260	1,140	1,460	128%
GSHP	163	151	187	124%
Non-cold climate Ducted and Ductless Heat Pumps	264	-19	0	-2%
Heat Pump Water Heaters	85	-4	-4	100%
Project Adjustments	7	0	0	100%
Totals	**6,779**	**1,267**	**1,643**	**130%**

Note: Totals may not sum due to rounding.
[1] The Home Comfort claims for program year 2025 included a duct sealing measure that should have been processed under the HPwES program. This claim was 0.6 kW and is excluded from this table.

5.2.1.1 Beneficial Electrification Impacts

Table 44 shows the breakdown of Energy Efficiency (EE) and Beneficial Electrification (BE) components of MMBtu and kWh savings for measures where a BE component exists. The ductless mini splits and ducted ASHPs, GSHP, and HPWH measures include a mixture of electric energy efficiency and beneficial electrification impacts.

Table 44: Breakdown of Ex-Post Gross Impacts by EE and BE Components

Measure	MWh_{ee}	MWh_{be}	MWh Total (EE - BE)	$MMBtu_{ee}$	$MMBtu_{be}$	MMBtu Total (EE + BE)
Ducted and Ductless ccASHP	1,461	28,833	-27,372	4,924	190,654	195,579
GSHP	322	501	-179	1,036	6,879	7,915
EO Ducted and Ductless Heat Pumps	263	194	70	898	1,815	2,713
Heat Pump Water Heaters	19	58	-39	64	820	884
Total[1]	**2,065**	**29,585**	**-27,520**	**6,923**	**200,169**	**207,091**

[1] This table excludes the project adjustments listed in tables above.

We estimate that 2025 program-supported heat pump and water heater measures added 29,585 MWh/year of additional electrical sales by displacing preexisting fossil fuel-fired systems. The program incented customers and contractors to install high-efficiency heat pumps and water heaters that, when compared with code-compliant or pre-existing electric equipment, led to 2,065 MWh/year of energy savings. The overall electric consumption therefore increased by 27,520 MWh. However, accounting for the consumption of displaced fossil fuels in the $MMBtu_{be}$ column, Home Comfort heat pumps led to 207,091 MMBtu of annual energy savings.

5.2.2 Overview of Impacts by Disadvantaged Community and Low-Income Identifiers

Table 45 shows the Home Comfort program ex-post impacts subdivided into four categories: 1) Non-Disadvantaged Community (DAC) & Non-Low Income, 2) DAC Only, 3) Low Income Only, and 4) DAC & Low-Income. A more detailed definition of each category can be found in the Introduction, Section 2.1.1. Overall, 49% of Home Comfort MMBtu impacts count towards the DAC and Low-Income standards. For Home Comfort, the Low-Income impacts were identified by the 'LMI-ASHP' tag added to the program field in the data. DAC impacts were identified utilizing project locations and the DAC census tract list provided by NYSERDA.

Table 45: Ex-Post Impacts with DAC and Low-Income Breakouts

Category	Ex-Post Gross Savings (MMBtu)	% of Ex-Post MMBtu
Non-DAC & Non-Low Income	107,102	51%
DAC Only	8,977	4%
Low Income Only	80,295	38%
DAC & Low Income	12,892	6%
Total	**209,266**	**100%**

5.2.3 Key Drivers for Differences in Impacts

We conducted a measure-level savings analysis to estimate the total PY2025 ex-post gross impacts for ductless ASHPs, ducted ASHPs, and GSHPs. We assigned a 100% realization rate for gross impacts for HPWHs due to their negligible contribution to overall Home Comfort population impacts. Most measure-level discrepancies between ex-ante and ex-post gross savings are attributable to differences in program and evaluation methodologies, including variations in baseline efficiencies and equipment full load operating hours.

Consistent with prior years, there was an increased emphasis on electrification of fossil fuel-based systems in 2025 to support decarbonization goals. This shift resulted in an overall increase in electric load on the grid due to the replacement of fossil fuel heating systems with heat pumps.

The U.S. Department of Energy (DOE) implemented new energy efficiency standards for residential and commercial air conditioners and heat pumps effective January 1, 2023. These federal standards supersede state and local codes and establish uniform compliance requirements nationwide. As part of these updates, new efficiency metrics—EER2, SEER2, and HSPF2—and associated testing procedures were introduced for all applicable equipment manufactured after this date. For the PY2025 Home Comfort evaluation, we assessed both baseline and installed efficiencies using these updated metrics.

PSEG Long Island updated the Whole House Cold Climate Air Source Heat Pump worksheet in the 2025 Home Comfort application to include fields capturing the condition of existing heating and cooling equipment. These updates allow installations to be classified as end-of-life replacements, early retirements, or new additions. While most ASHP ex-ante gross impacts were calculated using the 2025 worksheet, a subset of carryover applications relied on the 2024 version. Because the earlier worksheet did not include fields to classify application type, we conservatively treated those installations as new for the purposes of this evaluation.

The increase in evaluated MMBtu and MWh impacts relative to ex-ante estimates is primarily driven by updates to building equivalent full load hours (BEFLH) for both heating and cooling in Version 13 of the New York State TRM (effective January 1, 2026). We used these updated BEFLH assumptions to estimate ex-post kWh and MMBtu impacts, whereas the ex-ante savings for projects initiated prior to Q3 2025 were based on prior TRM versions with different assumptions. Additionally, the New York State Joint Utilities updated key impact factor coefficients (a and b for COP adjustments, and c and d for SEER adjustments) in Q1 2025 to align with the new DOE efficiency metrics, which we incorporated into this evaluation.

Furthermore, we incorporated beneficial electrification impacts for all non-cold climate ASHP installations that replaced fossil fuel heating systems. In contrast, the ex-ante analysis applied a more conservative approach by excluding these impacts and assuming a code-minimum heat pump as the baseline heating system. To estimate beneficial electrification impacts, we utilized data from Captures, including existing heating system fuel type, equipment type, and Annual Fuel Utilization Efficiency (AFUE).

Overall, we calculated higher summer peak demand impacts for ASHPs and GSHPs compared to ex-ante estimates. This is partly due to overstated baseline EER2 standards in the 2025 NYS TRM and the 2025 PSEG Long Island TRM, which relied on outdated DOE conversion equations from the Building America House Simulation Protocols (October 2010). For this evaluation, we aligned baseline efficiencies and adjustment coefficients with Version 13 of the NYS TRM (effective January 1, 2026). Below we describe the reasons for differences between gross ex-ante savings and ex-post savings for each measure.

Table 46: Key Contributors to Home Comfort Realization Rates and Recommended Adjustments

Component	Summary of Contributing Factors	Recommendation
Cold-climate Ducted and Ductless ASHPs and GSHPs	▪ The New York State Joint Utilities has updated the BEFLH values for heating and cooling in v13 of the NYS TRM, which were utilized in the evaluation. The ex-ante savings were based on prior TRM versions with different assumptions.	▪ **No update needed. The Home Comfort workbooks has already aligned the BEFLHs for ccASHPs and GSHPs with the 2026 NYS TRM.**. ▪ We also **recommend PSEG Long Island perform additional research to identify appropriate cooling baselines for heat pump installations on Long Island** to accurately assign the peak demand and energy impacts.

Component	Summary of Contributing Factors	Recommendation
Non-cold climate ASHP installations (non-QIV)	▪ We included beneficial electrification impacts for all non-cold climate ASHP installations that replaced fossil fuel heating systems. In contrast, the ex-ante gross impact analysis did not account for these beneficial electrification effects where applicable.	▪ This measure has been discontinued under the Home Comfort program. However, if it is reintroduced, **we recommend claiming beneficial electrification impacts for all applicable heat pump installation scenarios**. Based on site-collected data, we recommend calculating and tracking beneficial electrification impacts for equipment-only ducted and ductless ASHP installations where fossil fuel heating loads are displaced.

6 HOME PERFORMANCE PROGRAM

PSEG Long Island's Home Performance program has two components: Home Energy Assessments (HEAs) and Home Performance with ENERGY STAR (HPwES). The primary objective of the Home Performance program is to make high efficiency choices part of the decision-making process for PSEG Long Island customers when upgrading their home. The overall goal of the Home Performance with ENERGY STAR programs is to reduce the carbon footprint of customers who utilize electricity, oil, or propane as a primary heating source. To achieve this goal, the HPwES component encourages customers to consider high efficiency options when updating their home's envelope or heating systems. Home Energy Assessments (HEAs) are free energy audits offered to all single-family homeowners. Participants in the HEA component are encouraged to pursue rebates through the HPwES component.

6.1 HOME PERFORMANCE PROGRAM DESIGN AND PARTICIPATION

6.1.1 Program Design and Implementation

The Home Performance portfolio offers customer rebates and contractor incentives for heating and cooling system upgrades, weatherization, and building shell upgrades like insulation, air sealing, and duct sealing. Certain minimum efficiency requirements must be met to receive Home Performance incentives, and all projects must be pre-approved by the program team contractor. Home Performance offerings are available to all single-family homes in PSEG Long Island, including both market-rate and Low Income demographics.

As part of the HPwES Program, Home Energy Assessments (HEA) are free energy audits available to any single-family homeowner in PSEG Long Island service territory. The program is administered by TRC and involves a qualified contractor conducting a Home Energy Assessment to make the homeowner aware of energy savings opportunities. In addition to the assessment, TRC mails a $20 voucher as a thank you to each HEA participant.

6.1.2 Program Participation and Performance

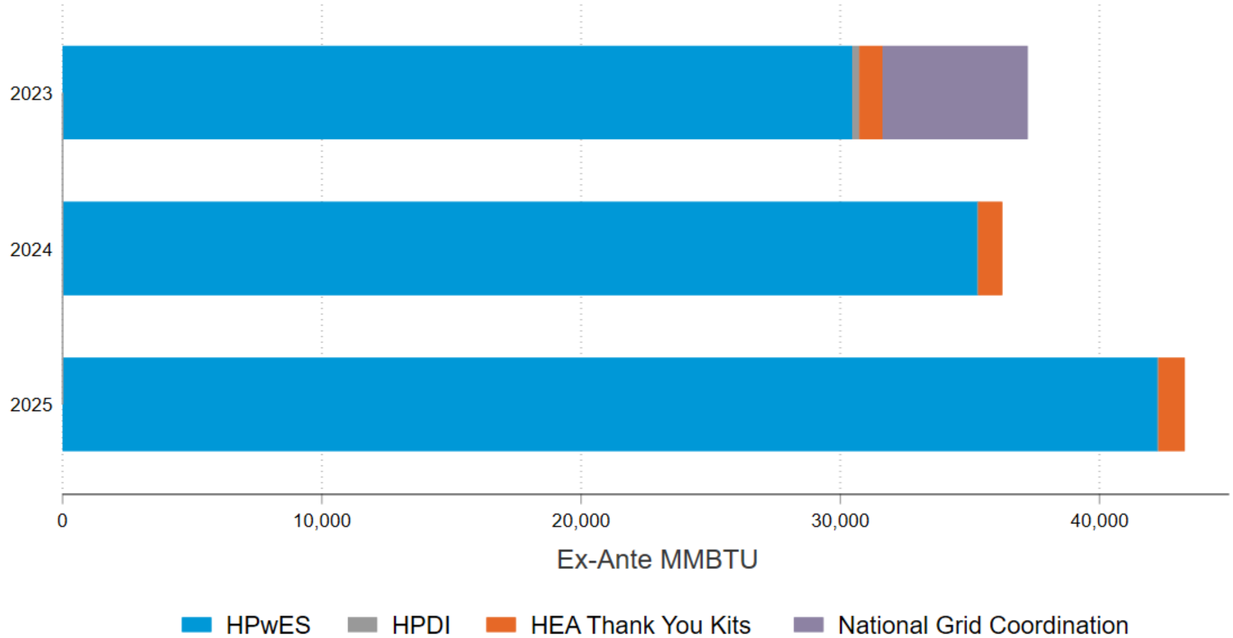
Based on verified ex-ante estimates, the Home Performance program reached 108.9% of its energy savings goal in 2025. Table 47 presents 2025 Home Performance programs verified ex-ante gross MMBtu savings compared to goal.

Table 47: Home Performance Programs Verified Ex-Ante Gross MMBtu Savings versus Goals

Metric	MMBtu
Goal	39,595
Verified Ex-Ante Savings	43,127
% of Goal	108.9%

Figure 19 shows the claimed MMBtu savings by Home Performance program component for the last three years. The program included fewer components for 2025 as the HPDI component was closed and there was no active coordination with National Grid in 2024 or 2025.

Figure 19: Ex-Ante MMBtu Savings by Program Component and Year



In 2025 the HPwES program treated 987 customers. The HEA program conducted 5,734 audits. In early 2025, audit recipients received a thank you kit containing a power strip. During most of 2025, audit recipients received a $20 voucher for the PSEG Long Island Marketplace. Of the HEA recipients, 885 customers also participated in the HPwES program. Overall, 5,940 unique customers were treated by the Home Performance programs in 2025. These counts include the 479 HPwES customers who installed beneficial electrification measures. Relative to 2024, the Home Performance program had increased HPwES participation, with 987 participants in 2025 compared to 977 in 2024. The program also claimed higher MMBtu savings per customer in 2025, with the average HPwES participant installing 4.4 measures in 2025 compared to an average of 3.7 measures per home in 2024.

6.2 HOME PERFORMANCE PROGRAMS IMPACTS

The following sections provide the results of the impact analysis for the Home Performance program.

6.2.1 Overview of Impacts by Resource Type

For the ex-post evaluation, we used both engineering and consumption analysis to estimate savings for the Home Performance programs in 2025. To calculate ex-post gross MWh savings due to energy efficiency (EE MWh savings), we applied the consumption analysis realization rate (105%) to the ex-ante gross EE savings. To calculate the ex-post gross MWh impacts due to beneficial electrification measures, we utilized results from engineering analysis. To calculate ex-post gross demand and MMBtu savings for EE measures, we used a kW/MWh and MMBtu/MWh ratio respectively developed from the engineering analysis and applied to the ex-post gross energy savings.

The combined consumption and engineering analyses found that the programs generated approximately 45,723 MMBtu in ex-post gross energy savings for 2025, or approximately 106% of the ex-ante gross MMBtu savings. Table 48 shows ex-ante gross impacts, ex-post gross impacts, and the realization rate by resource (MMBtu, MWh, and kW) category.

Table 48: 2025 Home Performance Program Ex-Post Impacts

Resource	Ex-Ante Gross Savings	Ex-Post Gross Savings	Realization Rate
MMBtu	43,108	45,723	106%
MWh	(7)	510	-7,396%
kW	572	618	108%

6.2.2 Analysis Approach and Detailed Results

Our ex-post gross savings estimates are anchored in the analysis of daily kWh from the meter and supplemented by engineering calculations to estimate total MMBtu conservation and peak demand savings. We use engineering analysis to calculate MMBtu to kWh and kW to kWh ratios at the measure level and utilize these ratios to estimate ex-post gross MMBtu and kW impacts. In addition, because engineering analysis provides savings at the measure level, we gain insights into the relative savings contributions of the measures offered by the programs. Finally, these measure-level savings allow us to make recommendations to the implementation team for adjusting ex-ante planning assumptions going forward.

6.2.2.1 Consumption Analysis – Approach

The Home Performance program has historically relied on a consumption analysis approach that is the industry standard for measuring electric savings from weatherization improvements. However, the program's current shift in strategic focus and measurement metrics poses new challenges that question the suitability of the consumption analysis.

- **Shift in performance metrics.** The program's emphasis has shifted towards beneficial electrification (BE) and significant fossil fuel savings, which are not detectable through electric meter readings alone. This transition means that a substantial portion of the program's energy savings, particularly those from fossil fuels, which constitute nearly three-quarters of the total claimed savings, are not being captured in the analysis.
- **Increased adoption of heat pumps.** The increased promotion and adoption of heat pumps, which save electricity for summer months but use more electricity for winter heating, complicates consumption analysis due to the need for assumptions about fossil fuel

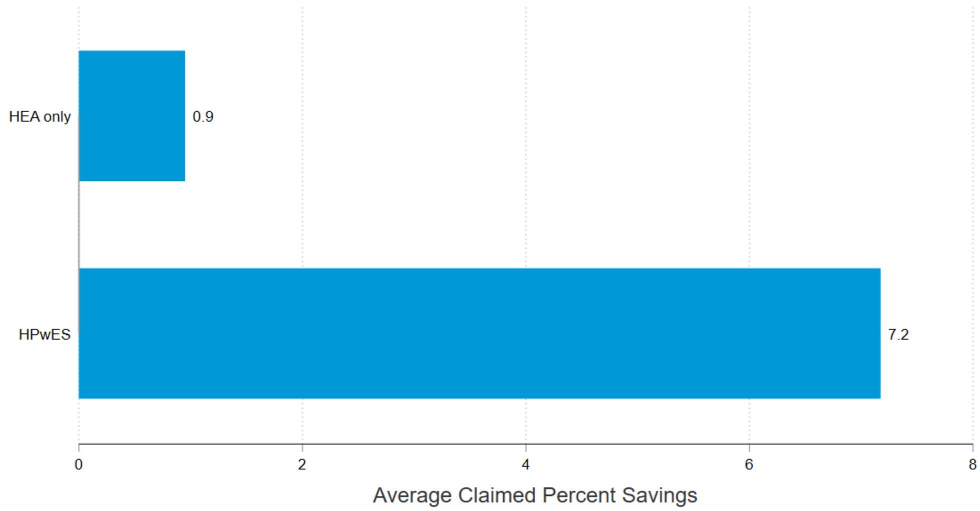
displacement. This introduces uncertainties that can significantly skew the accuracy of evaluations.

- **The average signal size is small program wide.** Although there are many homes to analyze, with nearly 6,000 total households participating, most participants fall into the HEA component. The HEA-only group either received a $20 "thank you" voucher for participating, or an Advanced Power Strip that is expected to save approximately 60 kWh/year. To address this challenge in the 2025 evaluation, we used the HEA participants as a control group to measure HPwES savings against and estimated HEA savings via engineering analysis.
- **Changing population and smaller sample size.** The decision to perform consumption analysis only on HPwES participants increases the average effect size we are trying to measure, but it lowers the sample size. The growing inclusion of BE measures further reduces the eligible sample size since it is impossible to disaggregate electric savings from insulation, air sealing, and duct sealing from increased electric consumption due to heat pump installation. Small sample sizes lead to broad confidence intervals and challenge the reliability of the consumption analysis.

Still the consumption analysis approach does present certain advantages:

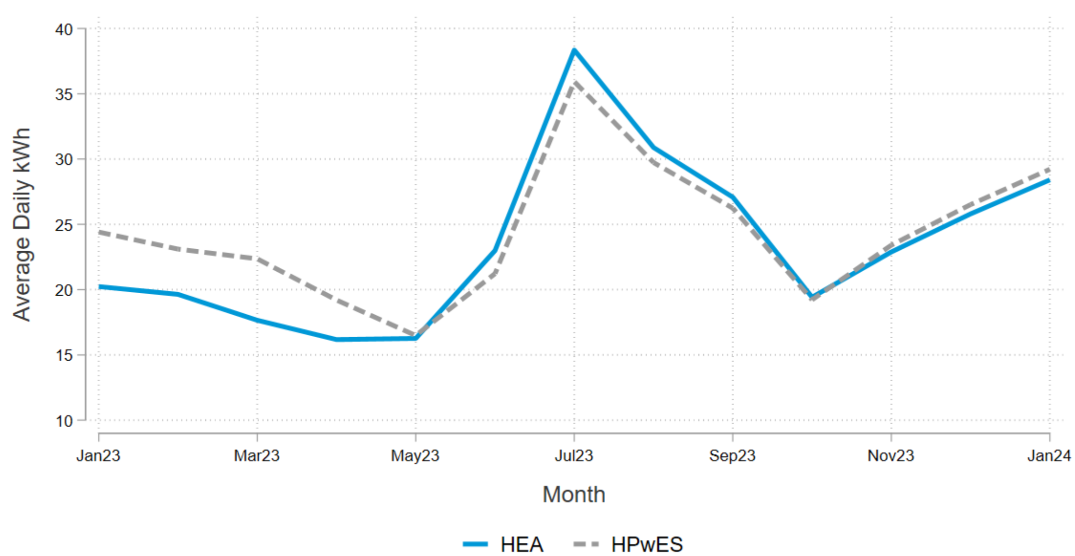
- **The measures are retrofit rather than replace-on-burnout.** Because HPwES measures are installed proactively, the actual pre-installation condition serves as the baseline.
- **Participating households tend to adopt multiple measures.** Measures like insulation, air sealing, and duct sealing tend to interact with one another as well as the efficiency of the home's HVAC system. This can lead to unreliable engineering estimates. Consumption analysis addresses this issue by analyzing the actual change in electric consumption at participating homes.
- **A like-minded control group controls for selection effects**. Using HEA-only homes as the matching pool ensures that the control group also has some program engagement, helping control for participant motivation and reducing potential selection bias compared to a completely non-participating control group.
- **HPwES savings are reasonably large on a percentage basis.** As shown in Figure 20, ex-ante kWh savings as a percentage of weather-normalized pre-retrofit electric consumption varies by program component. The 2025 HPwES participants that were included in the consumption analysis show significantly higher claimed percentage reductions in electric consumption than the HEA-only group.

Figure 20: Average Ex-Ante kWh as a Percentage of Annual Household Consumption



Because the consumption analysis requires post-installation electricity usage data for approximately one year after treatment, we utilized 2024 participants in the analysis since they each have at least one year of post-installation data. Just like in previous year's evaluation, we use HEA participants as control. We further refine the comparison groups using propensity score matching. Figure 21 compares the average daily consumption of the 'treatment group' and matched control group during 2023, which is the year prior to the first installation dates in our dataset. We employ a difference-in-differences regression model that nets out pre-period differences from the impact estimates.

Figure 21: Comparison of Pre-Treatment Consumption for Home Performance Consumption Analysis



The consumption analysis model employs daily electric consumption data to quantify changes in energy use following program participation. Matched controls (HEA-only participants) are assigned a pseudo pre-post transition date based on their corresponding HPwES participant match. The transition from the pre- to the post-period is anchored on the project completion date, meaning that over the course of 2024 the overall composition of the participant group gradually shifts. To ensure sufficient and high-quality data in both periods, we restricted our sample to participants whose projects were completed no later than December 2024, thereby guaranteeing at least 365 days of post-installation data.

The analysis utilizes a weather-normalized linear fixed effects panel regression model, which controls for time-invariant household characteristics by including a unique intercept for each account in both the treatment and comparison groups. Additional details on the model specification and parameter definitions are provided in Appendix A. Multiple model specifications were tested to evaluate robustness, and the results were consistent across these variations.

The consumption analysis returns an estimate specific to HPwES measures since both groups had savings from participating in the HEA channel. In 2024, the HPwES program included a mix of electric conservation measures and beneficial electrification measures. To create a homogeneous sample for the consumption analysis, we implemented a two-step filtering process to exclude homes that installed beneficial electrification measures. First, households with non-zero beneficial electrification savings were flagged using the "Current Savings BE MMBtu" field in the measure-level HPwES Captures data. Second, we cross-referenced Home Performance participant data with Home Comfort participation records to identify any additional households with non-zero beneficial electrification savings.

Although the consumption analysis method itself does not differentiate between the directions of savings, including homes with both positive and negative electric savings can pull the average toward zero, making it more challenging to precisely estimate impacts. Because the 2024 beneficial electrification measures were primarily heat pumps, we opted to perform the consumption analysis exclusively on homes without beneficial electrification measures and evaluate beneficial electrification measures separately using the engineering analysis methods applied in the Home Comfort program.

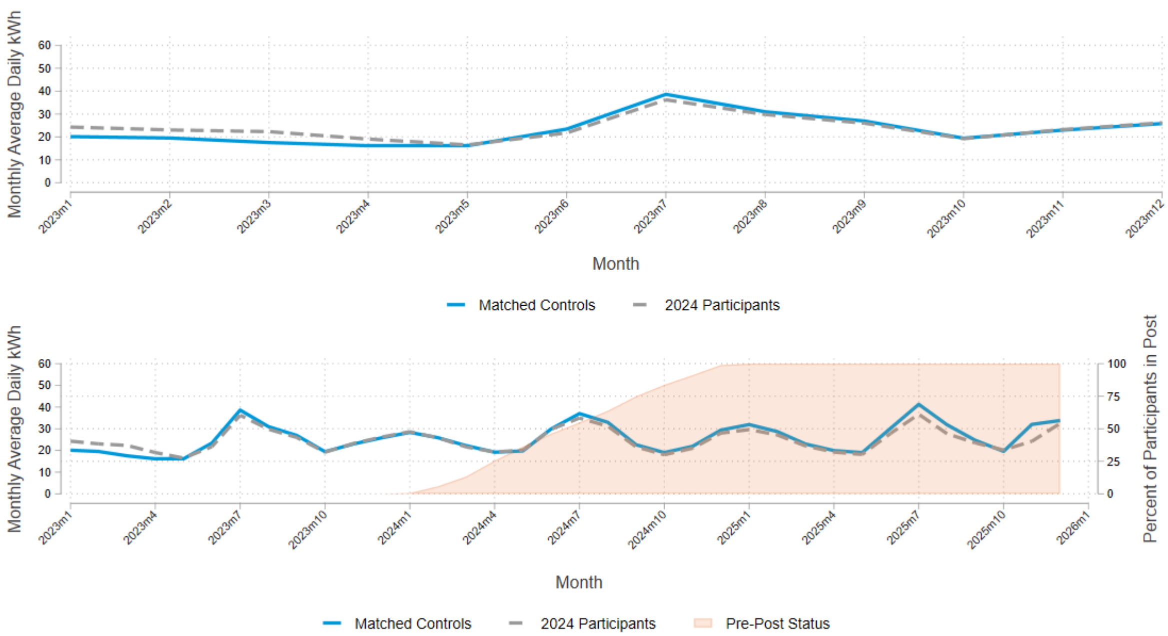
6.2.2.2 Consumption Analysis – Results

In Table 49 we use the results of the HPwES model to estimate average savings for 2023 participants and compare the estimated impact to the ex-ante gross kWh savings claimed by the implementer. Across the 261 Long Island homes that were included in the regression model, the average annualized savings was 504.16 kWh. This equals 105.22% of the average ex-ante gross kWh savings claimed for the same homes. We applied the 105.22% realization rate to the ex-ante gross kWh savings claim of 2025 participants to estimate ex-post gross kWh savings for efficiency measures. Figure 22 visualizes the consumption analysis results. The graph highlights the minimal effect the treatment had on electric consumption, as the two groups show some, but limited separation in the post-installation period. The limited sample size and small average savings lead to wide confidence intervals for the savings.

Table 49: Home Performance Consumption Analysis Results (n=493)

Parameter	Estimate	Lower Bound of 95% CI	Upper Bound of 95% CI
Daily Treatment Effect (kWh Saved)	1.38	0.43	2.33
Daily Treatment Effect (% Savings)	5.42%	1.69%	9.16%
Annual Savings	504.16	156.94	851.39
Ex-Ante Gross kWh		479.15	
Realization Rate	105.22%	32.75%	177.69%

Figure 22: Home Performance Consumption Analysis Results Visualized



PSEG Long Island does not sell natural gas or deliver fuel, so fossil fuels consumption records are not available for analysis. To estimate MMBtu and peak demand savings for the Home Performance programs, we first calculated MMBtu-to-kWh and kW-to-kWh ratios between the engineering-based estimates for each measure. Next, we applied this ratio to the energy savings estimates derived from the consumption analysis to generate ex-post demand savings.

6.2.2.3 Engineering Analysis: HPwES

The evaluation team used program tracking data and engineering analysis to estimate gross MMBtu, kWh, and kW demand savings achieved by each HPwES measure. Results of the engineering impact analysis provides us with the demand-to-energy ratio needed to quantify demand savings from the energy consumption analysis, as well as an understanding of individual measure savings variations between consumption analysis results and planning assumptions. All the heat pump thermostats installed through the program in 2025 were tied to Combo projects and received zero savings for both ex-ante and ex-post results. Table 50, Table 51, and Table 52 compare gross engineering analysis savings to ex-ante gross savings by HPwES measure category for MMBtu, kWh, and kW savings, respectively.

Table 50: 2025 HPwES Engineering Analysis Gross MMBtu Impacts

Category	N	Ex-Ante Gross Savings[1] (MMBtu)	Engineering Analysis Ex-Post Gross Savings (MMBtu)	Engineering Analysis Realization Rate (MMBtu)
Duct Sealing	529	3,341	2,454	73%
Air Sealing	958	5,333	4,187	79%
Envelope	1,961	10,296	7,029	68%
Ducted and Ductless Heat Pumps	579	22,294	23,004	103%
Thermostats	129	0	0	100%
Heat Pump Water Heater	178	1,788	2,113	118%
Measure-Level Total	**4,334**	**43,052**	**38,787**	**90%**

[1] Measure-level savings are obtained through contractor reports and are used in evaluating measure category ex-ante savings to elucidate measure performance. These measure-level savings do not account for interactivity and are therefore not the official project-level savings claimed by the program administrators

Table 51: 2025 HPwES Engineering Analysis Gross MWh Impacts

Category	N	Ex-Ante Gross Savings[1] (MWh)	Engineering Analysis Ex-Post Gross Savings (MWh)[2]	Engineering Analysis Realization Rate (%)[3]
Duct Sealing	529	459	327	71%
Air Sealing	958	603	471	78%
Envelope	1,961	757	496	66%
Ducted and Ductless Heat Pumps	579	(1,742)	(1,386)	80%
Thermostats	129	0	0	100%
Heat Pump Water Heater	178	(100)	(34)	34%
Measure-Level Total	**4,334**	**-23**	**-126**	**540%**

[1] Reported ex-ante gross savings include measure-level electricity savings and interactive electricity impacts from incentivized measures but exclude impacts from beneficial electrification measures.
[2] Negative savings are due to beneficial electrification from displacement of fossil fuel heating systems.
[3] Some realization rates differ due to rounding differences not reflected in the table

Table 52: 2025 HPwES Engineering Analysis Gross kW Impacts

Category	N	Ex-Ante Gross Savings (kW)	Engineering Analysis Ex-Post Gross Savings (kW)	Engineering Analysis Realization Rate (%)[1]
Duct Sealing	529	267	200	75%
Air Sealing	958	98	75	76%
Envelope	1,961	117	84	72%
Ducted and Ductless Heat Pumps	579	100	92	93%
Thermostats	129	0	0	100%
Heat Pump Water Heater	178	(11)	(8)	67%
Measure-Level Total	**4,334**	**571**	**444**	**78%**

[1] Some realization rates differ due to rounding differences not reflected in the table

6.2.2.4 Reasons for Differences in Engineering Impacts: HPwES

Table 53 identifies the key contributors to the overall engineering analysis gross MMBtu realization rate of 78%. In most cases, our recommendations apply to the 2027 program year as opposed to PY2026. Planning for the 2026 programs was finalized a year ago, and program delivery is almost half complete. These types of changes are often most efficient to implement at the beginning of a new program year. Most of our recommendations are also reflected in the recently completed 2027 PSEG Long Island TRM.

Table 53: Key Contributors to HPwES Engineering Analysis and Proposed Rectification Steps

Component	Summary of Savings Difference	Proposed Solution
Ducted and Ductless Heat Pumps	▪ Several inconsistencies were identified during the evaluation that influence realization rates for heat pumps. Supplemental systems were reported as whole home use of equipment max heating capacity in place of site calculated Manual J outputs, and the application of existing system efficiencies in place of code minimums.	▪ Create data collection standards to ensure that secondary system data points and home information are tracked properly in the project worksheet and analysis. Follow TRM requirements for system efficiencies and make use of site calculated Manual J outputs.
Envelope (insulation), lower cooling usage	▪ Lower ex-post evaluated peak demand savings from the 2027 PSEG-LI TRM methodology are partially tied to higher cooling full load cooling hours on residential equipment.	▪ Both the ex-ante and ex-post savings are accurate to the TRM methodologies they applied. However recent updates to the PSEG-LI TRM increased residential cooling usage across all measures leading to realization rates above 100%. Align analysis tools with PSEG-LI defined savings methodologies

Component	Summary of Savings Difference	Proposed Solution
Air Sealing, ΔCFM_{50} approximation	▪ Ex-ante savings for half of the projects were calculated using the blower door methodology with default pre- and post-improvement air leakage measurements. This is an improvement over recent years where the ΔCFM_{50} assumption equal to half the improved area was commonly applied.	▪ Encourage pre- and post-retrofit blower door tests to measure air sealing benefits and the associated energy savings for the participants.

6.2.2.5 Engineering Analysis: HEA Thank You Kits

For the 2025 program year the HEA program discontinued the use of Thank You Kits for audit participants. There were a small number of HEA participants who started their project in 2024, and a Thank You Kit containing a single advanced tier 1 power strip was provided to these 287 participants. The remaining HEA participants received a $20 voucher that can be used to purchase energy efficient equipment on the PSEG Long Island Marketplace. Table 54, Table 55, and Table 56 compare ex-post savings (via engineering analysis) with ex-ante gross MMBtu, MWh, and kW savings, respectively, for the Thank You Kits.

Table 54: 2025 HEA Thank You Kits Gross MMBtu Impacts

Category	N	Ex-Ante Gross Savings (MMBtu)	Engineering Analysis Gross Savings (MMBtu)	Engineering Analysis Realization Rate (MMBtu)
Thank You Kits	287	56	56	100%

Table 55: 2025 HEA Thank You Kits Gross MWh Impacts

Category	N	Ex-Ante Gross Savings (MWh)	Engineering Analysis Gross Savings (MWh)	Engineering Analysis Realization Rate (%)
Thank You Kits	287	17	17	100%

Table 56: 2025 HEA Thank You Kits Gross kW Impacts

Category	N	Ex-Ante Gross Savings (kW)	Engineering Analysis Gross Savings (kW)	Engineering Analysis Realization Rate (kW)
Thank You Kits	287	2	2	100%

To estimate ex-ante gross savings, the TRC applied the planning assumptions for EEP tier 1 advanced power strips. Evaluated MMBtu, MWh, and kW savings aligned with the ex-ante assumptions resulting in 100% realization rates for all metrics.

6.2.2.6 Engineering to Billing Calibration Calculations

The consumption analysis resulted in very similar ex-post gross kWh savings compared to ex-ante gross kWh savings, as shown by the 105.22% realization rate. The results were stable across multiple model specifications but have a relatively wide margin of error. The 95% confidence interval of the realization rate ranges from 37.75% to 177.69%. A wide margin of error is expected given the limited sample size. As shown in Figure 20, savings from homes that only receive a Home Energy Assessment are modest compared to HPwES, which is why they can act as a serviceable control group. However, due to the very limited sample size of the participants, isolating the effect of interest is still difficult.

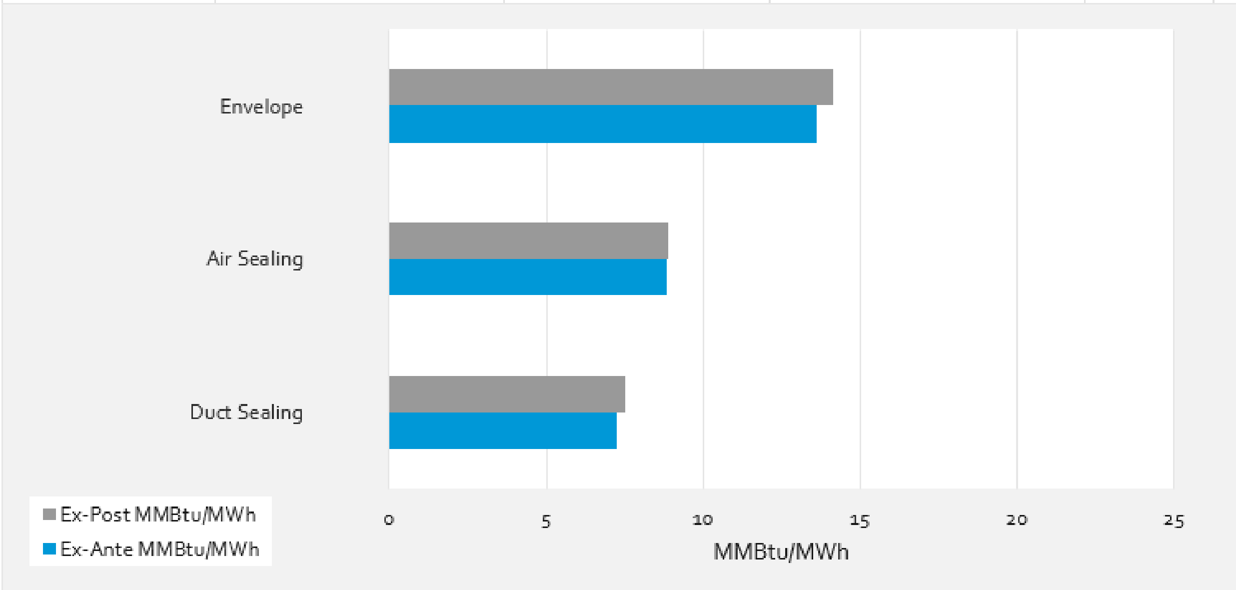
The MMBtu and peak demand savings for Home Performance are estimated via a calibration of the electric consumption analysis and engineering calculations. For both MMBtu and kW, the ex-post gross savings were much lower than the ex-ante gross savings. This result is a function of the MMBtu/kWh and kW/kWh ratios in the engineering analysis.

A direct conversion from MWh to MMBtu is 3.412 MMBtu/MWh.

- Measures that save only electricity will therefore have a ratio of MMBtu savings to MWh savings of 3.412. In that case, we would expect measures with relatively equal kWh and MMBtu impact estimates (or similar realization rates) to have a ratio close to 3.412.
- Measures that save fossil fuel as well as electricity will have a ratio greater than 3.412 MMBtu/MWh.

PSEG Long Island has a cold weather climate, and many of the HPwES measures primarily reduce energy consumption through a reduction in space heating. The heating fuel mix in Long Island is primarily fossil fuel, so insulating measures tend to offer more fossil fuel savings than electric savings. Figure 23 shows that home envelope measures like attic, garage, wall, and basement insulation have a much larger fossil fuel impact versus electric as evidenced by the ratio greater than 3.412.

Figure 23: Ex-Ante Gross and Ex-Post Gross MMBtu/MWh Ratios



The billing analysis realization rate for the Home Performance program is 105.22%. Because of the variability in MMBtu per MWh across measure categories and between our engineering calculations and ex-ante assumptions, the Evaluation Team chose to calibrate MMBtu and kW savings to the billing analysis using the aggregate ratios across all measures in the engineering calculations. Table 57 shows the steps for MMBtu savings. The aggregate ratio of kW to MWh from our engineering calculations was 0.28. It is important to note that the calibration calculations below only apply to the weatherization measures evaluated using billing analysis.

Table 57: Home Performance MMBtu Billing to Engineering Calibration Calculation

Calibration Component	Calculation	Value
Billing Analysis MWh Ex-Post Impacts	MWh Ex-Ante Gross * Billing Realization Rate	1,913 MWh
MMBtu/MWh Ratio	Engineering MMBtu Ex-Post / Engineering MWh Ex-Post	10.74 MMBtu/MWh
Calibrated MMBtu Impacts	Billing Analysis MWh Ex-Post Impacts * MMBtu/MWh Ratio	20,550 MMBtu
Add Beneficial Electrification and HEA Kit Impacts	Engineering Analysis of Heat Pumps and HEA Kits	23,060 MMBtu
Home Performance Program Total	Calibrated MMBtu Impacts + Heat Pumps and HEA Kits	43,609 MMBtu

6.2.2.7 Beneficial Electrification Impacts

In 2025, the HPwES program completed 479 beneficial electrification (BE) projects that resulted in an increase in electric consumption. These measures involved displacement of fossil fuel-fired HVAC or DHW systems with high-efficiency electric systems – for example, from an oil furnace to an air-source heat pump. While BE projects increase overall electric consumption, they generate non-electric energy savings through avoided fossil fuel consumption.

To ensure that evaluated impacts accurately inform the program cost-effectiveness assessment, the evaluation team quantified both BE and energy efficiency (EE) impacts separately through engineering analysis, as shown in Table 58. The energy savings of the displaced fuel after electrification, and positive and negative impacts associated with energy efficiency measures, are expressed in MMBtu.

Table 58: Separation of EE and BE Impacts for HP Beneficial Electrification Measures

Category	Ex-Post Gross kWh_{ee}	Ex-Post Gross kWh_{be}	Ex-Post Gross ΔkWh (EE - BE)	Ex-Post Gross $MMBtu_{ee}$	Ex-Post Gross $MMBtu_{be}$	Ex-Post Gross MMBtu Total (EE + BE)
Ducted ASHP	632,146	844,849	-212,703	2,767	6,686	9,453
Ductless ASHP	91,018	1,264,579	-1,173,561	306	13,244	13,551
DHW	106,603	140,294	-33,691	364	1,749	2,113
Total	**829,767**	**2,249,722**	**-1,419,955**	**3,438**	**21,679**	**25,117**

6.2.3 Overview of Impacts by Disadvantaged Community and Low-Income Identifiers

Table 59 shows the Home Performance program ex-post Engineering impacts subdivided into four categories: 1) Non-Disadvantaged Community (DAC) & Non-Low Income, 2) DAC Only, 3) Low Income Only, and 4) DAC & Low-Income. A more detailed definition of each category can be found in the Introduction, Section 2.1.1. Overall, 81% of Home Performance MMBtu impacts count towards the DAC and Low-Income standards. Low Income impacts were identified using the 'LMI' tags added to Low Income project fields in the tracking data.

Table 59: Ex-Post Impacts with DAC and Low Income Breakouts

Category	Ex-Post Gross Savings (MMBtu)	% of Ex-Post MMBtu
Non-DAC & Non-Low Income	8,847	19%
DAC Only	1,329	3%
Low Income Only	27,181	59%
DAC & Low Income	8,366	18%
Total	**45,723**	**100%**

6.3 CONCLUSIONS AND RECOMMENDATIONS

Our key findings and recommendations based on this evaluation are shown in Table 60. Starting in 2026 the NY TRM revised savings methodologies for air source heat pumps to apply the SEER2 and HSPF2 efficiency metrics. As part of this change the seasonal heating and cooling coefficients and factors will be updated. Heat pump savings results for PY2025 reflect both the updated efficiency metrics and NY TRM heat pump coefficients that are expected in 2027.

Table 60: Home Performance Findings and Recommendations

Finding	Recommendation
▪ Many of the Home Performance savings methodologies differ from the recommended algorithms, inputs, and assumptions developed in the PSEG-LI TRM and Planning Documents. Realization rate inconsistencies in the engineering analysis can be minimized if the program savings are based on the same tools developed by the utility and aligned with site details documented in the analysis workbooks.	▪ Review the Home Performance analysis workbooks and align the savings methodologies with data provided in the PSEG-LI TRM and planning documents. Consider applying savings adjustments to account for differences between workbooks developed for the current evaluation year and older workbooks.
▪ In an improvement over past years, half of the sample's ex-ante air sealing savings applied site specific pre- and post-retrofit blower door results to estimate measure savings. Remaining projects applied the ΔCFM_{50} assumption of square footage divided by two, as provided by the NYS TRM.	▪ Continue to emphasize the importance of pre- and post-improvement blower door tests to develop site specific air sealing results for these projects. Moving away from the air sealing assumptions will help reduce the variance across sites and for the measure overall.
▪ The Home Performance program focuses on fossil fuel savings; however, PSEG Long Island does not sell gas or oil. This leads to limitations in the billing analysis since it currently relies on electric billing data. As a result, the consumption analysis only evaluates the impact of EE measures through customer billing data.	▪ Incorporating billing data from National Grid for homes that have natural gas heating would allow the billing analysis to evaluate fossil fuel savings through the Home Performance program. ▪ Explore the possibility of sourcing billing data from National Grid for homes that use natural gas for heating.
▪ The Home Energy Audit conducted for HPwES participants provides documentation on domestic hot water (DHW) fuel. Pre-2025 workbook savings estimates for this measure apply a blended baseline of natural gas and electric fuels defined in the PSEG-LI TRM	▪ Continue to use the site specific DHW fuel provided by the Home Energy Audit to estimate fuel savings for heat pump water heater participants. This change was implemented in the 2025 Home Performance workbook.

7 RESIDENTIAL ENERGY AFFORDABILITY PARTNERSHIP PROGRAM

7.1 PROGRAM DESCRIPTION

The Residential Energy Affordability Partnership (REAP) program assists low-income households with energy efficiency improvements. The program helps low-income customers save energy, improves overall residential energy efficiency on Long Island, and lowers PSEG Long Island's financial risk associated with bill collection by lowering utility bills. To be eligible to participate in the REAP program, household income must correspond with the United States Department of Housing and Urban Development low-income guidelines and have an income less than or equal to 80% of the state median income.

7.1.1 PROGRAM DESIGN AND IMPLEMENTATION

The REAP program includes a free home energy audit and free installation of energy-saving measures. In 2025, program measures included LED light bulbs (general service, globes, reflectors, candelabras, and night lights), Wi-Fi connected smart thermostats, refrigerators, smart power strips, aerators, dehumidifiers, room air conditioners (RACs), domestic hot water (DHW) measures, room air purifiers, temperature turndown, thermostatic valves, low flow showerheads, attic hatch insulation, water heater blankets, insulation, air sealing, and door sweeps. Audit recipients also receive a $30 voucher to the PSEG Long Island Marketplace.

In addition to providing program participants with energy-saving measures, the program includes an educational component. Auditors work with participating customers to determine additional energy-saving actions and behavior changes that customers will commit to. These additional steps help the customers generate savings beyond those realized by the measures installed during the home audit. By educating the customers on the use and value of installed efficiency measures and helping them identify additional opportunities to save, the program can achieve its goal of helping customers who have the greatest energy burden on Long Island. REAP auditors also inspect the customers' heating and hot water systems for safety.

7.1.2 PROGRAM PARTICIPATION AND PERFORMANCE

Based on verified ex-ante estimates, the REAP program reached 104.0% of its energy savings goal in 2025. Table 61 presents verified ex-ante gross MMBtu savings compared to goals for the 2025 REAP program.

Table 61: 2025 REAP Program Verified Ex-ante Gross Program Performance against Goals

Metric	MMBtu
Goal	13,588
Verified Ex-ante Gross Savings	14,138
% of Goal	104.0%

Table 62 shows the distribution of savings by program component. Smart thermostats account for the largest share of gross MMBtu savings in 2025 (46.1%), and lighting upgrades account for nearly a quarter of gross MMBtu savings. Lighting also continues to account for the largest share of gross electric savings, accounting for 52.9% of ex-ante gross MWh savings and 54.5% of ex-ante gross kW savings in 2025.

Table 62: 2025 REAP Program Component Percent of Total Ex-Ante Gross Savings

Program Component	Ex-Ante Utility Gross Savings		
	MMBtu (%)	MWh (%)	kW (%)
REAP Lighting	24.6%	52.9%	54.5%
ENERGY STAR Refrigerators	1.6%	6.3%	5.1%
Power Strips	0.7%	1.5%	1.0%
Aerators	1.9%	1.4%	-
DHW Pipe Insulation	3.7%	1.3%	1.0%
DHW Temperature Turndown	0.1%	0.1%	0.1%
ENERGY STAR Dehumidifier	1.0%	2.2%	4.8%
Low Flow Showerhead	4.6%	3.4%	-
Room Air Conditioners	1.4%	3.0%	17.5%
Thermostatic Valve	0.5%	0.4%	-
Room Air Purifier	7.0%	14.9%	11.3%
Smart Thermostat	46.1%	10.4%	-
Attic Hatch Cover	0.6%	0.1%	0.0%
Water Heater Blanket Insulation	0.5%	1.0%	0.7%
Attic Insulation	1.4%	0.2%	0.7%
Door Sweeps	2.4%	0.7%	2.1%
Air Sealing	1.9%	0.2%	1.4%
Total	**100%**	**100%**	**100%**

There were 3,003 REAP participants in 2025 compared to 1,906 participants in 2024. Table 63 shows the percentage of participants that received each upgrade. Nearly all REAP participants received LED lighting. Other commonly received measures included air purifiers, which were received by approximately one-third of participants, and smart thermostats and room AC units, which were each received by one quarter of participants. Few participants received water heater blanket insulation, power strips, domestic hot water temp turndown, air sealing, or attic insulation.

Table 63: Percent of REAP Program Participants Receiving each Measure Category

Category	Percent Receiving
Lighting	97.8%
Air Purifiers	32.1%
Smart Thermostats	24.0%
Room AC	23.9%
DHW - Aerators	21.3%
DHW - Pipe Insulation	17.9%
Door Sweeps	15.3%
DHW - Low Flow Showerheads	13.8%
Dehumidifiers	12.9%
Attic hatch	12.3%
Refrigerators	6.0%
DHW - Thermostatic Shower Valve	4.8%
WH Blanket Insult	3.2%
Power Strips	3.1%
DHW - Temp Turndown	1.8%
Air Sealing	1.5%
Attic Insulation	1.1%

7.2 REAP PROGRAM IMPACTS

7.2.1 OVERVIEW OF IMPACTS BY RESOURCE

In prior years, our REAP evaluation relied on both an engineering analysis and a consumption analysis. Beginning in 2024, we removed the consumption analysis from the evaluation since most of the savings are from fossil fuel heating (via smart thermostats). These savings would not be captured in an electric consumption analysis. Table 64 shows program impacts by resource type. The program achieved ex-post gross MMBtu savings of 7,751 MMBtu, ex-post gross MWh savings of 1,226 MWh, and ex-post gross kW savings of 281 kW. The engineering calculations resulted in a MMBtu realization rate of 55.0%.

Table 64: 2025 REAP Program Impacts

Resource	Ex-Ante Gross Savings	Ex-Post Gross Savings	Realization Rate
MMBtu	14,083	7,751	55.0%
MWh	1,925	1,226	63.7%
kW	293	281	96%

Table 65, Table 66, and Table 67 show the ex-post gross MMBtu, MWh, and kW savings for each REAP measure category. Smart thermostats account for the largest share of ex-post gross MMBtu savings (35.3%), while LED lighting measures account for the largest share of ex-post gross MWh and kW savings (35% and 52% respectively).

Table 65: 2025 REAP Program Measure-Specific MMBtu Gross Impacts

Category	N	Ex-Ante Gross Savings (Claimed)	Ex-Post Gross Savings	Realization Rate
		MMBtu	MMBtu	%
REAP Lighting	8727	3,451	924	26.8%
ENERGY STAR Refrigerators	179	226	131	57.9%
Power Strips	94	98	98	100.0%
Aerators	849	270	298	110.6%
DHW Pipe Insulation	538	533	634	118.9%
DHW Temperature Turndown	54.0	13.4	16.7	125.0%
ENERGY STAR Dehumidifier	388	143	135	94.2%
Low Flow Showerhead	460	652	548	84.0%
Room Air Conditioners	1,158	195	227	116.6%
Thermostatic Valve	146	73	73	100.1%
Room Air Purifier	967	994	923	92.8%
Smart Thermostat	1,139	6,501	2,743	42.2%
Attic Hatch Cover	372	90	96	105.7%
Water Heater Blanket Insulation	96	64	57	89.0%
Attic Insulation	32	188	199	106.0%
Door Sweeps	459	323	513	159.0%
Air Sealing	44	271	138	50.9%
Project Adjustment	1	(2)	(2)	100.0%
Total	**15,703**	**14,083**	**7,751**	**55.0%**

Table 66: 2025 REAP Program Measure-Specific MWh Gross Impacts

Category	N	Ex-Ante Gross Savings (Claimed)	Ex-Post Gross Savings	Realization Rate
		MWh	MWh	%
REAP Lighting	8727	1,013	433	42.7%
ENERGY STAR Refrigerators	179	121	95	78.1%
Power Strips	94	29	29	100.0%
Aerators	849	28	30	108.2%
DHW Pipe Insulation	538	25	25	100.0%
DHW Temperature Turndown	54.0	2.2	3	124.0%
ENERGY STAR Dehumidifier	388	42	39.4	94.2%
Low Flow Showerhead	460	67	56	84.1%
Room Air Conditioners	1,158	57	67	116.6%
Thermostatic Valve	146	7	7	100.3%
Room Air Purifier	967	291	270	92.8%
Smart Thermostat	1,139	201	129	64%
Attic Hatch Cover	372	1.7	2	109.6%
Water Heater Blanket Insulation	96	19	16.8	89.1%
Attic Insulation	32	3	3	100.0%
Door Sweeps	459	14	18	130.0%
Air Sealing	44	5	3	64.1%
Project Adjustment	1	(1)	(1)	100.0%
Total	**15,703**	**1,924**	**1,225**	**63.7%**

Table 67: 2025 REAP Program Measure-Specific kW Gross Impacts

Category	N	Ex-Ante Gross Savings (Claimed)	Ex-Post Gross Savings	Realization Rate
		kW	kW	%
REAP Lighting	8727	159	146	91.6%
ENERGY STAR Refrigerators	179	15	12	78.5%
Power Strips	94	3	3	100.0%
Aerators	849	0.0	0.0	-
DHW Pipe Insulation	538	2.8	2.8	100.0%
DHW Temperature Turndown	54.0	0.20	0.32	155.0%
ENERGY STAR Dehumidifier	388	14.0	9.0	64.4%
Low Flow Showerhead	460	0.0	0	-
Room Air Conditioners	1,158	51	60	118.6%
Thermostatic Valve	146	0	0	-
Room Air Purifier	967	33.4	31.0	92.8%
Smart Thermostat	1,139	0	0	-
Attic Hatch Cover	372	0.036	0.040	112.5%
Water Heater Blanket Insulation	96	2.149	1.903	88.6%

Category	N	Ex-Ante Gross Savings (Claimed)	Ex-Post Gross Savings	Realization Rate
		kW	kW	%
Attic Insulation	32	1.986	1.986	100.0%
Door Sweeps	459	6.301	10.464	166.1%
Air Sealing	44	4.225	2.255	53.4%
Project Adjustment	1	0	0	-
Total	**15,703**	**293**	**281**	**96%**

7.2.2 Overview of Impacts by Disadvantaged Community and Low-Income Identifiers

Table 68 shows the REAP program ex-post impacts subdivided into four categories: 1) Non-Disadvantaged Community (DAC) & Non-Low Income, 2) DAC Only, 3) Low Income Only, and 4) DAC & Low-Income. While REAP is an income-qualified program, its income threshold (80% of the state median income) is higher than the broader portfolio low-income definition of 60% of state median income. As result, not all REAP savings fall into the broader low-income definition used for DAC and LMI reporting. Overall, 65% of REAP MMBtu impacts count towards the DAC and Low Income standards. Low Income Impacts were identified using the 'Income Eligibility Threshold' field tracked in the Captures database.

Table 68: Ex-Post Impacts with DAC and Low Income Breakouts

Category	Ex-Post Gross Savings (MMBtu)	% of Ex-Post MMBtu
Non-DAC & Non-Low Income	2,668	34%
DAC Only	947	12%
Low Income Only	3,149	41%
DAC & Low Income	986	13%
Total	**7,751**	**100%**

7.2.3 Key Drivers for Differences in Impacts

Measure-level savings ex-post estimates were lower than the ex-ante gross savings for MMBtu, MWh and kW, resulting in realization rates of 55.0%, 63.7% and 96% respectively. (see Table 65, Table 66, and Table 67). The smart thermostat measure was the largest contributor to the REAP Program's gross savings comprising 34.7% of ex-post MMBtu savings. Realization rates for this measure were 42.2% for MMBtu and 64% for MWh. Ex-post per-unit savings were developed using a heuristic algorithm tied to the actual heating and cooling configuration of each participant home, while ex-ante savings were based on the deemed values in the 2026 PSEG LI TRM (see Table 69). Under the ex-post approach, savings vary by the heating fuel and cooling type, resulting in more granular estimates than the uniform TRM assumptions.

The lighting measure category was the second largest contributor to gross savings, comprising 35% of ex-post MWh savings. REAP lighting MMBtu and MWh realization rates were 26.8% and 42.7% respectively as shown in Table.70. MMBtu realization rates are less than 100% for many of the interior lighting measures. This is because the waste heat penalty was used for ex-post savings but was excluded from ex-ante savings. MWh and kW realization rates are primarily driven by differences in baseline wattage assumptions between the ex-post and ex-ante. The lighting MWh realization rate is also affected by the assumed HOU. The ex-post evaluation assumed 1.25 hours per day compared with 2.7 assumed in the ex-ante analysis . For ex-post, baseline wattages were assigned using measure-specific baseline wattages tracked in Captures, while the ex-ante savings values used baseline wattages from the PSEG Long Island TRM. This resulted in the variation in MWh and kW realization rates among lamp types shown in Table 70.

Table 69: 2025 REAP Smart Thermostat Ex-Post, and Ex-Ante per Unit Savings Comparison

Heating Type	Cooling Type	Ex-Post MMBtu/Unit	Ex-Post kWh/Unit	Ex-Post kW/Unit	Ex-Ante MMBtu/Unit	Ex-Ante kWh/Unit	Ex-Ante kW/Unit
Electric	Central AC	1.7	512.6	0.0	5.7	176	0.0
Fossil Fuel	Central AC	3.3	164.6	0.0	5.7	176	0.0
Electric	Non Central AC	1.2	354.0	0.0	5.7	176	0.0
Fossil Fuel	Non Central AC	2.4	0.0	0.0	5.7	176	0.0

Table 70: 2025 REAP Lighting Ex-Post Realization Rates

Lighting Measure	N	Ex-Post MMBTU RR	Ex-Post kWh RR	Ex-Post kW RR
		%	%	%
REAP .3 Watt Nightlight	2,939	5%	11%	110%
REAP 10 Watt "A"Bulb	3,369	23%	41%	88%
REAP 14 Watt "A" Bulb (3-way)	403	17%	30%	64%
REAP 4.7 Watt Candelabra B10	660	27%	48%	104%
REAP 5 watt Globe	314	29%	51%	111%
REAP 6.5 Watt Candelabra BA13	150	30%	54%	116%
REAP 9 Watt Reflector R-30	262	25%	44%	95%
REAP 9 Watt Reflector R-40	226	26%	45%	98%
REAP Exterior 10 Watt "A"Bulb	211	54%	54%	-
REAP Exterior 9 Watt Reflector R-30	30	79%	79%	-
REAP Exterior 9 Watt Reflector R-40	163	79%	79%	-
Lighting Total	**8,727**	**27%**	**43%**	**92%**

Table 71: 2025 REAP Lighting Ex-Post and Ex-Ante Baseline Wattage Comparison

Lighting Measure	Ex-Post Baseline Watts	Ex-Ante Baseline Watts	Ex-Post Percentage of Ex-Ante Baseline Watts	Ex-Ante Lamp Category
REAP 0.3 Watt Night Light	5.1	5	103%	Nightlight
REAP 10 Watt "A"Bulb	49.8	60	83%	Standard
REAP 14 Watt "A" Bulb (3-way)	73.3	109.6	67%	Specialty
REAP 4.7 Watt Candelabra B10	41.8	41.8	100%	Specialty
REAP 5 Watt Globe	49.5	47.2	105%	Standard
REAP 6.5 Watt Candelabra BA13	57.5	52.8	109%	Specialty
REAP 9 Watt Reflector R-30	59.3	62.4	95%	Specialty
REAP 9 Watt Reflector R-40	61.4	62.8	98%	Specialty
REAP Exterior 10 Watt "A" Bulb	43.0	59.8	72%	Standard
REAP Exterior 9 Watt Reflector R-30	62.7	63.3	99%	Specialty
REAP Exterior 9 Watt Reflector R-40	62.3	63.1	99%	Specialty

Table 72: Realization Rate Drivers

Component	Summary of Contributing Factors	Recommendations
Smart Thermostats	▪ Ex-ante savings were calculated using planning assumptions that applied on "Unknown" heating and cooling type for thermostat installed. In contrast, the ex-post analysis incorporated a heuristic algorithm that accounts for heating/cooling type based on building square footage.	▪ Rely on auditor of heating/cooling type rather than defaulting to unknown system.
Lighting	▪ MWh realization rates ranged from 11% to 79%. This variation is the result of differences in ex-post and ex-ante baseline wattage assumptions, as well as a lower hours-of-use assumption in the ex-post analysis relative to ex-ante estimates.	▪ When baseline wattages are collected as part of program participation, they should be incorporated into ex-ante savings estimates to better align claimed savings with ex-post engineering calculations.

8 HOME ENERGY MANAGEMENT (HEM) PROGRAM

PSEG Long Island's residential behavioral Home Energy Management (HEM) program delivered paper and electronic home energy reports (HERs) to about 640,000 residential customers in PY2025. Table 73 provides details regarding each of the six HEM cohorts. Residential behavioral programs like HEM leverage behavioral psychology and social norms to lower residential energy usage by comparing a customer's energy consumption to similar neighboring households. In addition to receiving HERs, treatment customers can participate in "opt-in" interventions, such as High Usage Alerts, Home Energy Assessment Tools, Online Marketplace, and HEM Controls Pilot. While HEM delivers cost-effective energy savings, the New York Department of Public Service has suggested utilities no longer fund behavioral programs through energy efficiency funds starting in 2026.

Table 73: HEM Program Participation Summary (PY2025)

Cohort	Launch	Treatment Customers	Control Customers	Total Customers
Cohort 1	September 2017	237,871	28,987	266,858
Cohort 2	August 2018	113,361	24,389	137,750
Cohort 3	May 2021	45,569	17,837	63,406
Cohort 4	February 2023	71,042	22,288	93,330
Cohort 5	February 2023	40,280	20,174	60,454
Cohort 6	May 2024	129,725	20,868	150,593
Total	**Total**	**637,848**	**134,543**	**772,391**

This chapter summarizes our evaluation of PY2025 HEM program performance. Although behavioral programs typically deliver small percentage changes in energy use, they can yield considerable aggregate savings because they reach a large volume of customers and do not require rebates or installations. The primary challenge is the need to accurately detect small changes in energy consumption while systematically eliminating plausible alternative explanations for those changes, including random chance. Thus, accurate measurement relies on large scale randomized control trials, the use of pre-intervention and post-intervention data, and is analyzed using difference-in-differences.

The 2025 evaluation had five main research questions:

- Were the participant and control groups similar in terms of energy use prior to the introduction of the HERs?
- What is the magnitude of annual electricity savings?
- Is there an overlap with other energy efficiency programs (to avoid double-counting)?
- Do HERs lead to different heat pump adoption rates?
- What steps can be undertaken to improve delivery and performance?

8.1 PROGRAM OVERVIEW

The Home Energy Management program offers a set of intervention strategies to influence customers' energy use behaviors. The primary strategy is a HER engagement campaign leveraging a randomized control trial (RCT) design. In addition to receiving HERs, treatment customers can participate in "opt-in" interventions, such as High Usage Alerts, Home Energy Assessment Tools, Online Marketplace, and HEM Controls Pilot. The specific objectives of the program are to:

- Reduce energy usage,
- Increase peak hour energy savings,
- Increase awareness of and participation in energy efficiency programs,
- Consider renewable energy/energy storage and demand response programs, and
- Increase customer satisfaction with PSEG Long Island.

The paper or electronic reports compare a customer's energy consumption to similar neighboring households, thus leveraging behavioral psychology and social norms to lower residential energy usage. They are sent to customers in the treatment group by mail and email and contain the following information:

- Customer electric energy usage for the previous month,
- A comparison of the customer's energy usage to the energy usage of nearby homes with similar characteristics from the previous month,
- Information showing which energy use categories contribute the most to the customer's overall energy consumption,
- A chart depicting the customer's energy use over the past year,
- Promotion of applicable PSEG Long Island programs and rebates, and
- Tips for reducing energy consumption.

On average, each treatment group household received two paper reports and four electronic reports in PY2025. Table 74 shows the number of paper and electronic reports sent each month during PY2025.

Table 74: HERs Sent by Month in PY2025

Month	Verified Paper Report Count	Verified Electronic Report Count
January	0	300,718
February	0	201,593
March	147,305	283,363
April	317,984	343,826
May	200,053	307,571
June	182,877	292,973
July	205,911	235,957
August	45,448	148,586
September	109,998	127,428

Month	Verified Paper Report Count	Verified Electronic Report Count
October	0	0
November	0	0
December	0	0
Total	**1,209,576**	**2,242,015**

8.2 METHODS

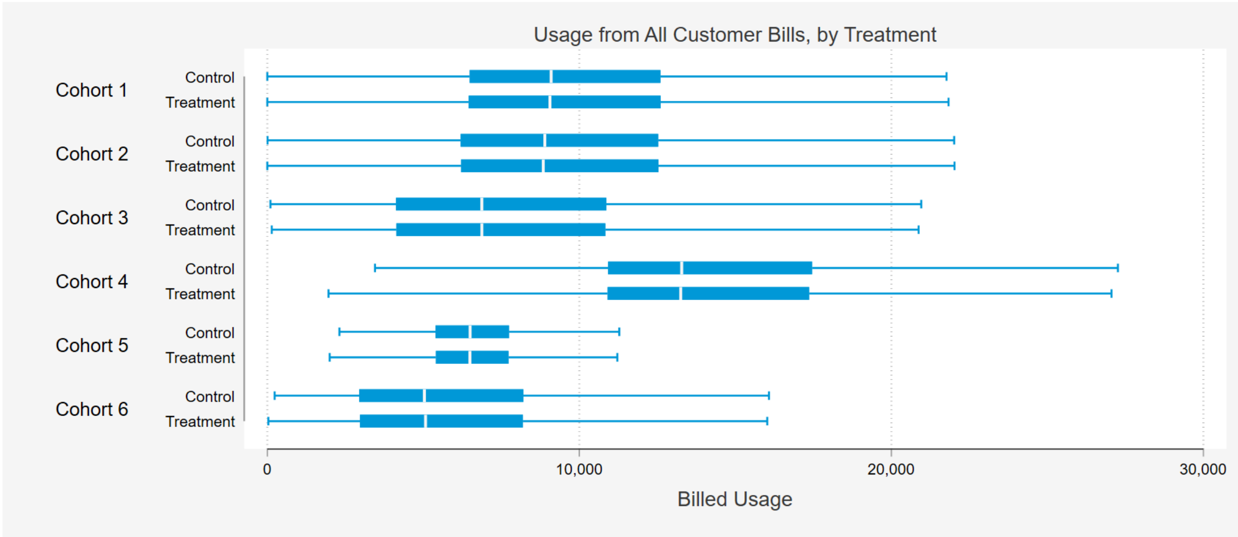
See Appendix D for a detailed discussion of our HEM evaluation approach. In short, we use multiple years of monthly billing data for the treatment and control group homes to estimate the HER treatment effect. In our primary approach, we use a lagged dependent variable (LDV) regression model to estimate the treatment effect (kWh saved per day) for each month in PY2025. We then scale the treatment effect by the number of treatment group homes and days in the month. We also run panel and manual difference-in-difference models to assess the robustness of the results from our LDV model.

8.3 EQUIVALENCY RESULTS

A good control group should behave and use energy in a similar manner to the participants before the participant group begins receiving HERs. This section compares pre-intervention usage across the HEM treatment and control groups. The goal is to ensure that there are no systematic differences in pre-intervention usage between the two groups. For each HEM cohort, pre-treatment energy consumption should be identical across the participant and control groups, on average.

Figure 24 shows the distribution of annual consumption by cohort for the treatment and control groups prior to each HER cohort launch. Typical customer size varies across cohorts, but treatment and control groups are comparable within each cohort, indicating the random assignment was properly implemented.

Figure 24: Pre-Treatment Annual Electric Consumption by Cohort



By cohort, Table 75 shows the average annual pre-participation usage for the treatment and control groups. No wave shows a statistically significant difference between the two groups. The minor pre-existing difference is netted out in the statistical analysis.

Table 75: HEM Program Pre-Participation Average Daily Consumption, Treatment vs. Control

Wave	Start Date	Number of Homes Analyzed [a]		Annual Use (kWh)		Difference in Annual Use		
		Control	Treated	Control	Treated	kWh	%	95% Conf. Interval
Cohort 1	10/1/2017	28,187	231,179	10,398	10,377	-21	-0.2%	(-99 ,57)
Cohort 2	8/27/2018	23,570	107,969	10,282	10,257	-25	-0.2%	(-124 ,74)
Cohort 3	5/15/2021	14,881	38,197	8,560	8,536	-24	-0.3%	(-150 ,103)
Cohort 4	2/1/2023	20,059	64,144	15,684	15,703	19	0.1%	(-111 ,148)
Cohort 5	2/1/2023	15,688	31,364	6,613	6,610	-3	-0.1%	(-31 ,24)
Cohort 6	5/7/2024	20,711	128,556	6,119	6,145	26	0.4%	(-35 ,87)

[a] The estimating sample is limited to participants and control with a full year of pre-intervention data.

8.4 ELECTRIC EX-POST SAVINGS SUMMARY

Table 76 depicts the ex-post savings results for HEM in MMBtu and MWh. A total of 637,848 customers received HERs in PY2025. Prior to accounting for any dual enrollment in other programs ("uplift"), we estimate the average HER recipient saved 73.9 kWh in PY2025 and aggregate annual savings were 45,792 MWh or 156,244 MMBtu. After accounting for uplift, the average participant saved 73.1 kWh annually and aggregate annual program savings were 45,247 MWh and 154,384 MMBtu. "Uplift" refers to increased participation in other PSEG LI efficiency programs by the treatment group relative to the control group as a result of the HER messaging. Since uplift impacts are already accounted for in the other programs, we net the uplift impacts out of the HEM impacts to avoid double-counting.

Table 76: 2025 HEM Program Ex-Post Gross Impacts

Metric	Participation	Energy Savings		
		kWh per participant	MMBtu	MWh
Goal	500,000	64.6	110,225	32,305
Claimed Ex-Ante	525,651	49.6	88,883	26,050
Verified Ex-Ante	525,651	49.6	88,883	26,050
Unadjusted Ex-Post	637,848	73.9	156,244	45,792
Uplift Adjustment	637,848	0.9	1,860	545
Adjusted Ex-Post After Accounting for Uplift	637,848	73.1	154,384	45,247
Realization Rate of Claimed Ex-Post to Ex-Ante	121.3%	147.5%	173.7%	173.7%
Ex-Post as Percent of Goal	127.6%	113.1%	140.1%	140.1%

The HEM realization rate is the ratio between claimed ex-post savings and claimed ex-ante savings. In 2025, the realization rate for electric savings was 173.78%. The ex-post savings were 140.1% of the HEM goal for 2025.

While no peak demand savings were claimed for HEM in PY2025, we assessed peak demand reductions for the program as a part of the ex-post analysis and included the demand savings as a part of the cost-effectiveness assessment. Table 77 summarizes the peak demand savings (MW) for PY2025. During the top twenty load days of summer 2025, HER recipients reduced demand between 4:00 and 5:00 PM by 10.9 MW, on average. Demand impacts were estimated using hourly interval data rather than monthly billing data. Appendix A, Subsection G provides additional details on the peak demand savings calculations. It should be noted that because there is so much noise in these estimates and the signal is so small, none of the hourly estimates are statistically significant.[12]

Table 77: HEM Peak Demand Reduction

Wave	MW Impact
Cohort 1	8.76
Cohort 2	1.96
Cohort 3	1.03
Cohort 4	0.65
Cohort 5	0.25
Cohort 6	-1.91
Total[1]	**10.90**
[1] The total estimated MW impact is based on a pooled model across six cohorts rather than the sum of the cohort-specific estimates listed above	

[12] A key limitation of the hourly peak demand analysis is hourly usage data is not available during the pre-treatment for the largest cohorts, which precludes the use of more statistically powerful techniques.

8.4.1 Overview of Impacts by Disadvantaged Community and Low Income Identifiers

Table 78 shows the HEM program ex-post impacts subdivided into four categories: 1) Non-Disadvantaged Community (DAC) & Non-Low Income, 2) DAC Only, 3) Low Income Only, and 4) DAC & Low-Income. Definitions for each category can be found in the Introduction. Overall, 14% of HEM MMBtu impacts meet the DAC and Low Income standards, although PSEG Long Island does not include HEM in its statewide DAC reporting. We report zero low-income impacts since income eligibility is not tracked for HEM participants.

Table 78: Ex-Post Impacts with DAC and Low Income Breakouts

Category	Ex-Post Gross Savings (MMBtu)	% of Ex-Post MMBtu
Non-DAC & Non-Low Income	133,086	86%
DAC Only	21,298	14%
Low Income Only	0	0%
DAC & Low Income	0	0%
Total	**154,384**	**100%**

8.5 ELECTRIC EX-POST SAVINGS DETAIL

Table 79 shows the unadjusted ex-post savings from the analysis, calculated using a Lagged Dependent Variable (LDV) model. Across all waves, participants saved approximately 73.9 kWh annually, or approximately 0.77% of their baseline annual consumption. On an aggregate basis, HEM reduced energy consumption by 156,244 MMBtu in PY2025. Cohort 6 was the only cohort that did not produce statistically significant savings.

Table 79: 2025 HEM Unadjusted Ex-Post Per-Household and Program Energy Savings

Cohort	Number of Customers Treated in 2025	Unadjusted Savings (% per household)	Unadjusted Energy Savings (kWh per household)	Upper Bound	Lower Bound	Unadjusted Program Savings (MMBtu)
Cohort 1	237,871	1.01%	98.0	114.8	77.5	77,304
Cohort 2	113,361	1.02%	99.9	121.6	75.0	37,495
Cohort 3	45,569	1.28%	105.2	136.8	81.0	15,767
Cohort 4	71,042	0.40%	60.9	94.0	30.0	14,451
Cohort 5	40,280	0.83%	60.2	81.5	38.4	7,973
Cohort 6	129,725	0.12%	7.8	20.4	-4.8	3,273
Total	**637,848**	**0.77%**	**73.9**	**82.8**	**64.3**	**156,244**

Table 80 shows the monthly percent savings for each cohort. The highest percent savings generally occur in the winter, with savings of about 1% in January and December on average across the pooled cohorts. This reflects both a higher baseline of energy usage in summer, and slightly higher kWh savings during the winter.

Table 80: 2025 HEM Unadjusted Ex-Post Percent Savings by Month, Monthly LDV Model

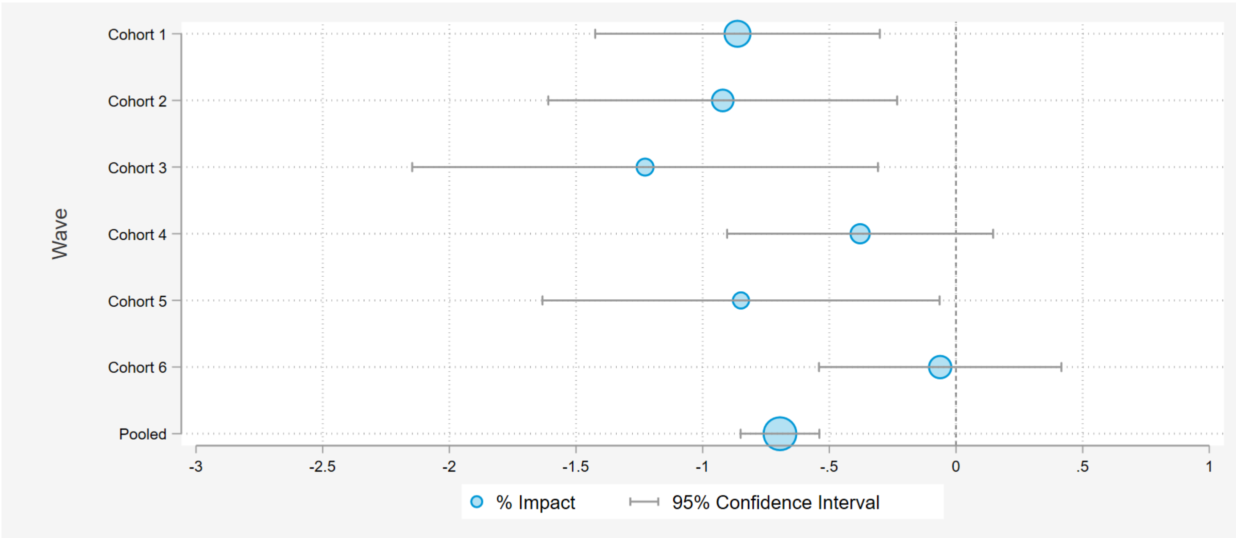
Month	Cohort 1 Unadjusted Savings (% per hh)	Cohort 2 Unadjusted Savings (% per hh)	Cohort 3 Unadjusted Savings (% per hh)	Cohort 4 Unadjusted Savings (% per hh)	Cohort 5 Unadjusted Savings (% per hh)	Cohort 6 Unadjusted Savings (% per hh)	Program Unadjusted Savings (% per hh)
January	1.61%	1.54%	0.95%	0.43%	1.53%	0.25%	1.15%
Feb	1.58%	1.47%	1.48%	0.34%	1.02%	0.36%	1.14%
March	1.15%	1.39%	1.64%	0.35%	1.11%	0.37%	0.97%
April	0.84%	0.99%	0.93%	0.55%	0.81%	0.11%	0.72%
May	0.86%	0.53%	0.64%	0.39%	0.38%	-0.23%	0.53%
June	0.79%	0.72%	1.16%	0.37%	0.78%	0.25%	0.65%
July	0.70%	0.61%	1.09%	0.51%	0.62%	0.24%	0.60%
August	0.87%	0.96%	1.46%	0.47%	0.46%	0.15%	0.73%
Sept	0.74%	0.75%	1.78%	0.26%	0.74%	-0.22%	0.58%
October	0.87%	0.99%	1.57%	0.50%	0.72%	-0.14%	0.72%
Nov	1.01%	1.29%	1.37%	0.35%	0.92%	0.03%	0.83%
Dec	1.10%	1.07%	0.88%	0.19%	0.99%	0.09%	0.77%
Annual	**1.01%**	**1.02%**	**1.28%**	**0.40%**	**0.83%**	**0.12%**	**0.77%**

8.5.1 Robustness Checks

The evaluation team tested the robustness of the impacts by implementing two other common methods for estimating behavioral impacts: a panel difference-in-difference model and a classic difference-in-difference calculation. The panel difference-in-difference model uses data from both the pre and post periods and analyzed impacts via a regression model with fixed effects and time effects. The classic difference-in-difference approach examines differences in raw averages using the same data. It compares the change observed among participants between the before and after period and nets out the change observed among controls in the before and after period.

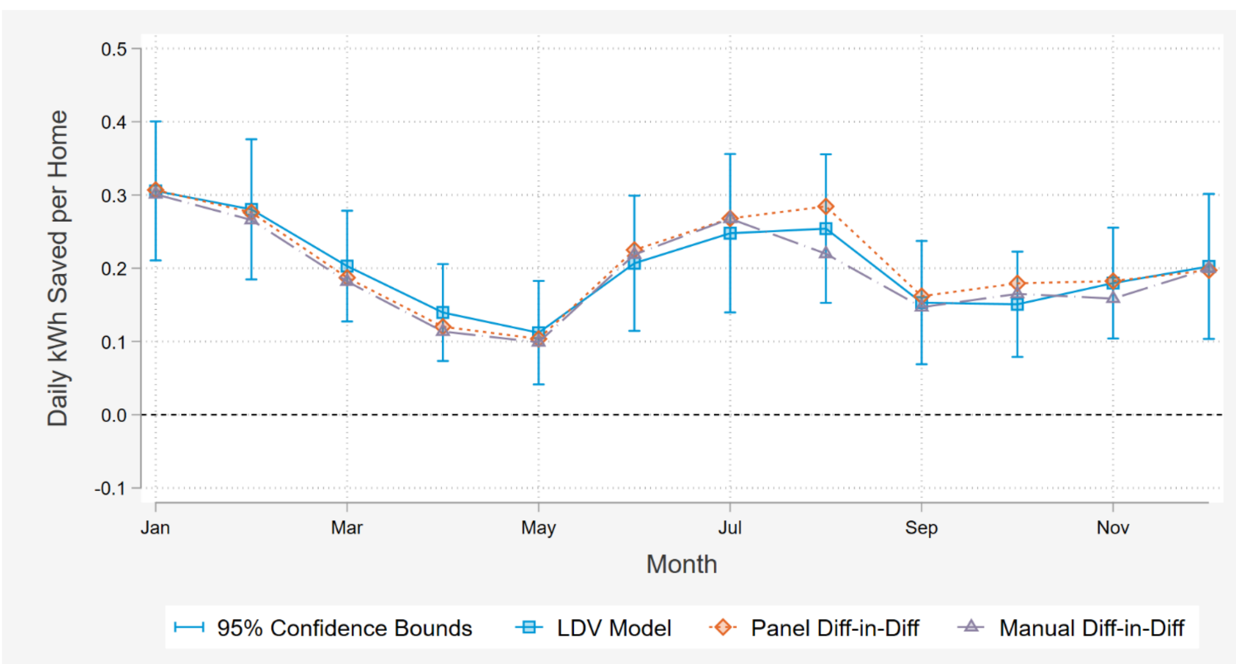
Figure 25 shows the percent savings by cohort and for all cohorts pooled using the classic difference-in-differences model. The size of the marker indicates the relative participant population size for each wave. The focus is on the pooled analysis, which combines the results across all the waves. The overall savings are 0.71% ± 0.15% with 95% confidence. Cohort 1, 2, and 3, the cohorts that have had time to mature, all show significant savings of about 1%.

Figure 25: Electric Percent Savings by Wave, Difference-in-Difference Method



The monthly savings point estimates were very similar across the three methods for the pooled population. Figure 26 provides a comparison of the average daily savings estimates each method yields. Figure 26 also displays 95% confidence bounds for savings estimates from the lagged dependent variable (LDV) model, which is the primary model. The point estimates of the alternative modeling approaches are within the margin of error of the LDV model estimate each month. The pooled savings are also statistically significant for each month.

Figure 26: Unadjusted Savings by Month by Model Specification



8.5.2 Uplift Analysis

As noted earlier, HERs can boost participation in energy efficiency programs (uplift), which can lead to double counting since programs also claim the savings. To avoid double counting, we conducted a dual participation analysis to see if there was significantly higher participation in other energy efficiency programs in the treatment group compared to the control group. Customers engage in energy efficiency through either rebate programs (downstream) or through in-store discounts (upstream). The uplift analysis also accounts for installation of beneficial electrification measures.

Figure 27 shows the results of the dual participation analysis. Note the kWh impacts in Figure 27 are inclusive of both energy efficiency EE measures, which lead to energy savings, and beneficial electrification (BE) measures, which lead to additional energy use. Figure 28 separates the EE and BE components and helps to explain the trends seen in Figure 27. Specifically, added load related to BE measures has cut into the EE uplift over time. Overall, the uplift analysis led to a downward adjustment from 73.95 kWh to 73.09 kWh in the annual savings per participant, a difference of 0.86 kWh.

Figure 27: Downstream Dual Participation Analysis Output

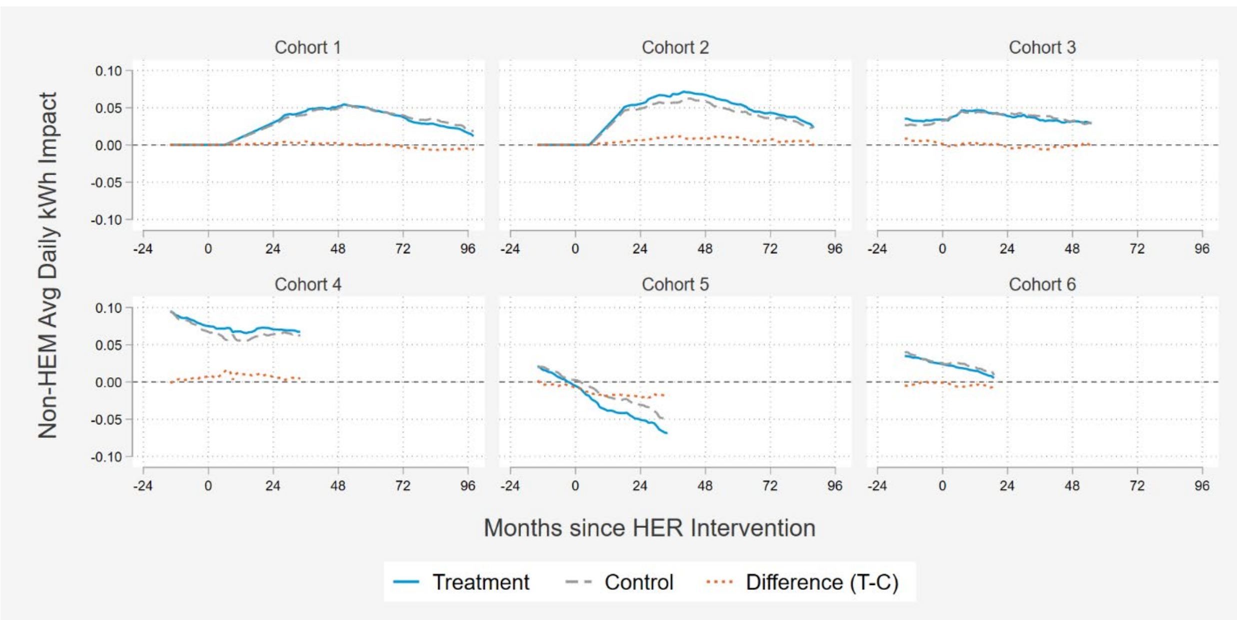
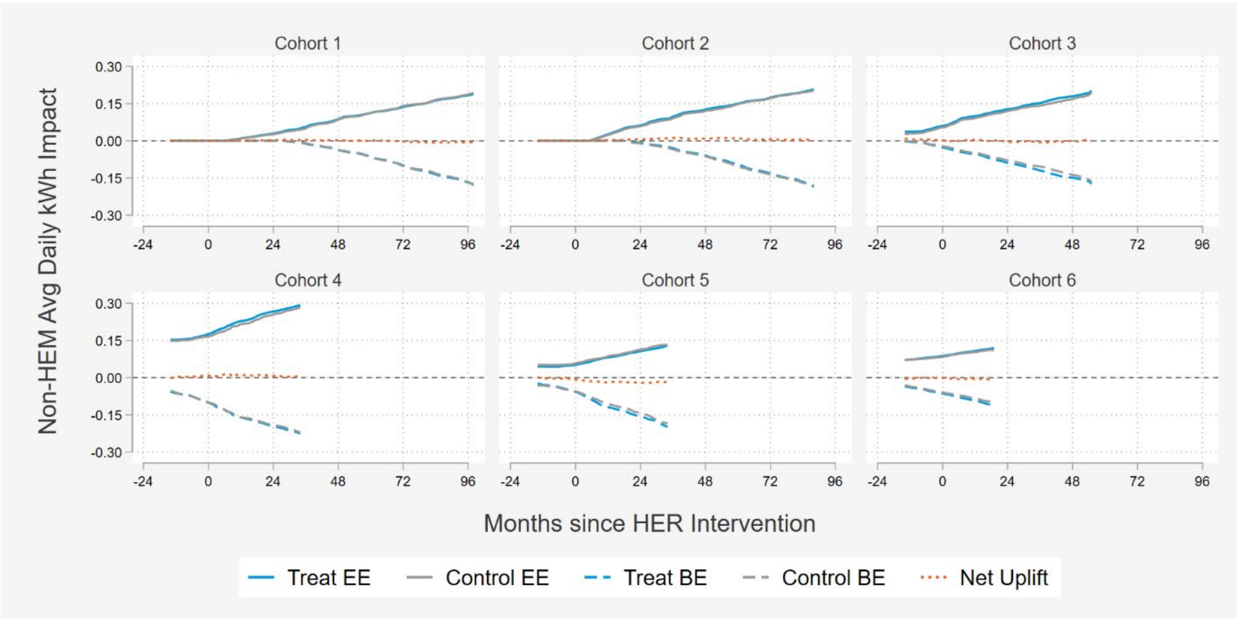
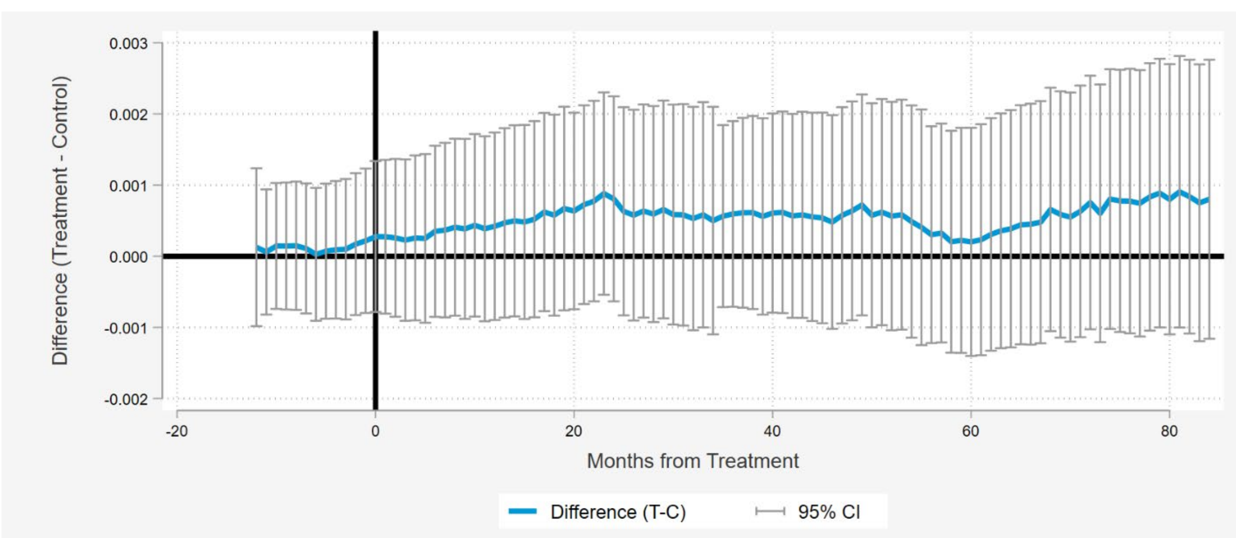


Figure 28: Downstream Dual Participation – EE and BE Separate



In addition to uplift, the evaluation team examined if there was any difference between the proportion of households that installed a heat pump between those who received the HEM treatment and those who did not. The proportions of households with installs were compared for each month and cohort, and test of proportions was conducted to measure the 95% confidence intervals. If HEM treatment was impacting installations, we would expect to see similar proportions in the months before treatment, and then a positive difference in proportions afterwards. Figure 29 shows that there was no observed difference in installs before versus after treatment, and therefore the evaluation team concluded that there is no detectable heat pump uplift.

Figure 29: Difference in Adoption Rate of Heat Pumps between Treatment and Control



8.6 COMPARISON TO PRIOR PROGRAM YEARS

Table 81 compares per-customer savings from the past four program years. For the two oldest cohorts, savings were similar between PY2024 and PY2025. For each of the four remaining cohorts, savings in PY2025 exceeded savings in PY2024. This aligns with the expectation that customers' savings will increase over time with HER exposure.

Table 81: Unadjusted Ex-Post Savings by Cohort and Evaluation Year

Cohort	2022 Energy Impact Per account		2023 Energy Impact Per account		2024 Energy Impact Per account		2025 Energy Impact Per account	
	kWh Impact	% Impact	kWh Impact	% Impact	kWh Impact	% Impact	kWh Impact	% Impact
Cohort 1	93.84	0.93%	112.08	1.20%	102.31	1.05%	97.98	1.01%
Cohort 2	83.88	0.83%	80.01	0.85%	101.57	1.04%	99.85	1.02%
Cohort 3	20.29	0.25%	39.39	0.51%	97.06	1.20%	105.22	1.28%
Cohort 4	n/a	n/a	39.59	0.32%	27.14	0.18%	60.88	0.40%
Cohort 5	n/a	n/a	-8.35	-0.15%	35.77	0.51%	60.21	0.83%
Cohort 6	n/a	n/a	n/a	n/a	-2.7	-0.07%	7.80	0.12%

8.7 CONCLUSIONS AND RECOMMENDATIONS

While home energy reports deliver small individual percentage changes in energy use, they typically yield large aggregate savings because they reach a considerable number of customers and do not require rebates or installations. In PY2025, the program yielded 45,247 MWh (or 154,384 MMBtu) of electric savings. The last set of reports was delivered in September 2025, and the program will not be active moving forward.

Table 82: HEM Findings and Recommendations

Finding	Recommendation
▪ In other jurisdictions, we have seen a "persistence of savings" among HER treatment groups after the HER program ends and/or delivery of the HERs concludes.	▪ Since we have a natural experiment with the cessation of HERs in September 2025, future evaluation reports should assess whether the HEM program produces any persistent savings. These persistent savings would likely not be eligible to claim due to the Strategic Framework designation, but the rate of decay would be useful to understand from a planning and load forecasting standpoint.

APPENDIX A DETAILED METHODOLOGY

A. CEP METHODOLOGY

<table>
<tr><th colspan="2">Evaluation Methodology: Commercial Efficiency Program</th></tr>
<tr><td>Key Considerations</td><td>

Availability of project-specific inputs in Capture queries vs. supporting workbooks for Comprehensive Lighting
Waste Heat Factors included in the results for Commercial Lighting. DNV estimated impacts with and without WHF.
Quality and completeness of TADs and supporting calculations
Savings for ASHP and VRF systems using the New York State Clean Heat Tool

</td></tr>
<tr><td>General Approach
(Ex-post gross)</td><td>

Engineering calculations rooted in PSEG-LI TRM algorithms and informed by install tracking (Captures) database
Independent, desk-based review of savings calculations, assumptions, and inputs against project documentation and installed equipment

</td></tr>
<tr><td>Sampling Method(s)</td><td>

Fastrack, Refrigerated Case and Multi-Family Lighting: A census of all measure installs for measures where Captures data includes all parameters
Comprehensive Lighting: A stratified random sample of 43 projects (±10% relative precision at the 90%confidence interval) where the parameters and calculations are housed in supporting workbooks. We also pulled an additional random sample of 10 projects from the newly added projects in the latest KPI scorecard.
Multi-Family Non-lighting Categories: A combination of EEP Ex-post Evaluation by DSA for appliances, where available, with the remaining measures evaluated using the PSEG LI TRM. For HVAC, a stratified random sample of 19 (out of the population of 52) projects (±10% relative precision at the 90%confidence interval) where the parameters and calculations are housed in supporting workbooks.
Custom Horticultural Lighting: A census of all measure installs.
Refrigeration, Motors & VFDs, Compressed Air, Refrigeration, HVAC, Nonroad Vehicle Electrification, Other Commercial Equipment and Building Operator Certification: A census of all measure installs for measures where Captures data includes all parameters.
Custom: (Clean Heat) A stratified sample of 14 projects that collectively represent 57% of ex-ante MMBtu savings.; (Custom-Custom) A stratified sample of 12 projects that collectively represent 58% of ex-ante MMBtu savings.

</td></tr>
</table>

Evaluation Methodology: Commercial Efficiency Program	
Primary Data	• Captures install tracking data for PY2025 CEP measures • Project specific pre- and post-inspection details • Clean Heat Tool for Multi-Family HVAC and custom measures
Secondary Sources	• New York State TRM and PSEG Long Island TRM • Lighting cut sheets and other manufacturer equipment specifications • PSEG-LI Planning documents and workbooks • New York Clean Heat Calculator Output (CEP Custom Measures, Variable Refrigerant Flow Heat Pumps)
Other Evaluation Techniques	• Engineering Calculations
Opportunities for Refinement	• **Improve availability and completeness of project- and measure-level data** for evaluation, including detailed installation timelines, operating schedules, and key assumptions used in savings calculations. Consider implementing standardized checklists to ensure consistent documentation across projects. • **Encourage consistent use of TRM-based inputs**, algorithms, and assumptions where applicable, while ensuring alignment with actual building types, operating conditions, and measure applications. • **Improve access to natural gas consumption data** to support baseline development, savings validation, and M&V efforts. • **Emphasize the importance of demand (kW) savings calculations**, including the appropriate application of coincidence factors, particularly for smaller projects where focus tends to be primarily on kWh savings. • **Scale data collection and M&V rigor** based on project size and savings, with evaluator involvement for large projects.

B. EEP METHODOLOGY

Evaluation Methodology: Energy Efficiency Products	
Key Considerations	• Prescriptive measures with thorough tracking data • Low-to-moderate measure complexity • Moderate uncertainty of key savings parameters • High program contribution to portfolio savings • Ex-post MMBtu savings are highly skewed to two measure categories: Thermostats (69%), and Heat Pump Pool Heaters (23%).

Evaluation Methodology: Energy Efficiency Products	
General Approach (Ex-post gross)	• Engineering calculations rooted in PSEG-LI TRM algorithms and informed by install tracking (Captures) database
Sampling Method(s)	• Census of all measure installs
Primary Data	• Captures install tracking data for PY2025 EEP measures
Secondary Sources	• PSEG-LI Technical Reference Manuals 2023-2027 • New York State TRM v13 • ENERGY STAR Qualified Product Lists • Department of Energy Codes and Standards • Other manufacturer equipment specifications • PSEG-LI Planning documents and workbooks
Net-to-Gross Approach	• Stipulated NTG ratios
Other Evaluation Techniques	• Regression analysis, deemed savings used for certain measures • Diverged from TRM algorithm when enough data is available • Assumed baseline is federal standard for end-of-life replacement measures
Opportunities for Refinement	• Capture ES IDs consistently and thoroughly

C. HOME COMFORT METHODOLOGY

Evaluation Methodology: Home Comfort	
Key Considerations	• Beneficial Electrification measures result in an increase in site-level electric consumption by displacing fossil fuel systems, which typically result in negative MWh savings for those measures.
General Approach (Ex-post gross)	• Engineering calculations are rooted in the PSEG-LI TRM algorithms and informed by install tracking (Captures) database.
Sampling Method(s)	• Census of all measure installs • Stratified random sample of ccASHP and GSHP measures
Primary Data	• Captures install tracking data for PY2025 Home Comfort measures

Evaluation Methodology: Home Comfort	
Secondary Sources	• New York State TRM and PSEG Long Island TRM • Department of Energy Codes and Standards • Other manufacturer equipment specifications • PSEG-LI Planning documents and workbooks • Northeast/Mid-Atlantic Air-Source Heat Pump Market Strategies Report 2016 Update • NYSERDA Heat Pump Study: "Analysis of Residential Heat Pump Potential and Economics" -May 2019
Other Evaluation Techniques	• Engineering Calculations
Opportunities for Refinement	• **Track preexisting boiler and furnace heating system data** to improve accuracy of ex-ante savings • **Adopt deemed savings values** that vary based on the HVAC equipment controlled by the thermostats

D. HOME PERFORMANCE METHODOLOGY

Evaluation Methodology: Home Performance	
Key Considerations	• Beneficial Electrification measures result in an increase in site-level electric consumption by displacing fossil fuel systems, typically resulting in negative kWh and kW savings for those measures • Impact Evaluation values are a combination of engineering calculations and consumption analysis
General Approach (Ex-post gross)	• Engineering calculations rooted in PSEG-LI TRM algorithms and informed by install tracking database (Captures). Consumption calculations were rooted in participant billing data and used to estimate kWh energy efficiency realization rates • Ex-post gross kWh energy efficiency savings were calculated by applying consumption analysis realization rate to EE savings. Ex-post gross kWh beneficial electrification impacts were calculated from engineering analysis • Ex-post gross kW and MMBtu savings were calculated using kW/kWh and MMBtu/kWh ratios from engineering calculations applied to ex-post gross kWh savings derived from the consumption analysis
Sampling Method(s)	• Engineering calculations applied a sample of 68 projects across all measure categories. Ex-post results are estimated from 2027 PSEG-LI TRM savings methodologies with project documentation review to verify savings inputs. Realization rates are calculated for each measure category

Evaluation Methodology: Home Performance	
	(duct sealing, air sealing, envelope, ducted air-source heat pumps, ductless mini-split heat pumps, thermostats, and domestic hot water systems) and applied to ex-ante MMBtu, MWh, and kW savings for category • The consumption analysis includes an attempted census of HPwES participants that did not install BE measures.
Primary Data	• Captures install tracking data for PY2025 Home Performance measures and related project documents • Hourly AMI data from 2024 Home Performance participants
Secondary Sources	• New York State and PSEG-LI Technical Reference Manuals • Department of Energy Codes and Standards • Other manufacturer equipment specifications • PSEG-LI Planning documents and workbooks
Net-to-Gross Approach	• Heat Pump NTG developed in the 2022 EEP and Home Comfort participant survey efforts • Stipulated NTG ratios for all other measures
Other Evaluation Techniques	• Engineering Analysis • Consumption Analysis using participant matching and fix effects panel linear regression model
Opportunities for Refinement	• Increase scrutiny on heat pump system details such as primary or supplemental designation, associated controls, and application of site calculated heating and cooling loads from Manual J in place of system capacities • Apply site-specific DHW fuels from home energy audit to estimate savings in lieu of the blended baseline provided in the PSEG-LI TRM. • Focused effort on tracking measure-level parameters in Captures: specifically, CFM values and conditioned square footage for air and duct sealing projects; HVAC system type; and fuel type.

E. REAP METHODOLOGY

Evaluation Methodology: Residential Energy Affordability Partnership Program	
Key Considerations	• MMBtu savings were dominated by smart thermostat measures, and MWh and MW savings were dominated by lighting measures.

Evaluation Methodology: Residential Energy Affordability Partnership Program	
General Approach (Ex-post gross)	• Engineering calculations rooted in PSEG-LI TRM algorithms and informed by audit and measure information stored in the Captures database. These calculations were used to calculate MMBtu to kWh and kW to kWh ratios.
Sampling Method(s)	• Census of all projects from the measure categories that comprised 95% of program savings
Primary Data	• Captures REAP participants
Secondary Sources	• PSEG-LI Technical Reference Manuals 2021-2027 • New York State and PSEG-LI Technical Reference Manuals • Department of Energy Codes and Standards • Other manufacturer equipment specifications • PSEG-LI Planning documents and workbooks
Net-to-Gross Approach	• Stipulated NTG ratio of 100% for REAP due to the income-qualified program design
Other Evaluation Techniques	• Engineering Analysis
Opportunities for Refinement	• Align baseline and installed wattage values with the assumptions in the PSEG-LI TRM • Leverage the Smart Thermostat type collected by auditors to calculate either electric or fossil fuel savings rather than an assumed blend of the two

F. HOME ENERGY MANAGEMENT METHODOLOGY

The primary challenge of an impact evaluation is the need to accurately detect changes in energy consumption while systematically eliminating plausible alternative explanations for those changes, including random chance. Did the introduction of HERs cause a decrease in customer energy consumption? Or can the differences be explained by other factors? To estimate energy savings, it is necessary to estimate what these patterns would have been in the absence of treatment—this is called the counterfactual. At a fundamental level, the ability to measure energy reductions accurately depends on four key components:

1. **The effect or signal size:** The effect size is most easily understood as the percentage change. It is easier to detect large changes than it is to detect small ones. For most HER programs, the expected impact is between 0.12% and 1.28%, a relatively small effect.
2. **Inherent data volatility or background noise:** The more volatile a customer's billing data is from month to month (or bimonthly billing period), the more difficult it is to detect small changes.
3. **The ability to filter out noise or control for volatility:** At a fundamental level, statistical models, baseline techniques, and control groups—no matter how simple or complex—are

tools to filter out noise (or explain variation) and allow the effect or impact to be more easily detected.

4. **Population size:** It is easier to estimate average impacts for a large population than a small one because individual customer behavior patterns smooth out and offset across large populations.

APPROACH OVERVIEW

Because the expected percent reduction from HERs is typically small (i.e., less than 5%), we ensure accurate results by following these principles:

1. **Verify that participant and control customers had similar usage before the introduction of HERs.** By design, randomized control trials ensure that the only systematic difference between the two groups is that one receives the HER and one does not. However, random assignment is sometimes not implemented correctly or maintained. Thus, we compare the treatment and control groups across a host of characteristics—electricity use, location, etc.—in order to ensure the implementer did indeed randomly assign customers to the treatment and control groups.
2. **Include at least one year of pre-treatment data and post-treatment data for both HER and control groups.** The pre-treatment data is useful for assessing if energy consumption changed and allows the evaluation team to use more powerful statistical techniques such as difference-in-differences and lagged dependent variable models. If HERs reduce consumption, we should observe a change in consumption for customers who received the HER treatment but no similar change for the control group. Thus, participant and control customers that lacked pre-intervention data were not included in the analysis.
3. **Ensure sample sizes large enough to detect meaningful differences.** If sample sizes are too small, it is not possible to distinguish meaningful differences from random noise. When evaluated on their own, each wave tends to have wider confidence bands (i.e., they lack statistical power). Thus, this study's focus is on the overall program savings rather than on the savings delivered by specific waves.
4. **Apply the same data management procedures to both the HER and control groups.** Because of random assignment, data management decisions should impact the treatment and control group similarly.
5. **Pre-specify the analysis method and segmentation in advance of the study.** This required documenting the hypothesis, specifying the intervention, randomly assigning customers to treatment and control conditions, establishing the sample size and the ability to detect meaningful effects, identifying the data that will be collected and analyzed, and identifying the outcomes that will be analyzed.
6. **Ensure impacts are robust.** Impacts can be estimated using both a difference-in-difference approach and by using a post-only model. A difference-in-difference approach compares energy usage before and after the intervention for both the participant group and the control group and net out any pre-existing differences. A post-only model leverages data from the pre-treatment period as an explanatory variable, but only includes observations from the post-treatment period in the regression. In the evaluation, we estimated impacts using both

approaches in order to ensure the different methods did not produce significantly different results.

Model Specification

DSA used the lagged dependent variable (LDV) model to estimate ex-post impacts. The LDV model is a "post-only" model because only observations from the post-treatment period are included in the regression. However, as its name suggests, the LDV model does leverage data from the pre-treatment period as an explanatory variable.

The formal model specification is shown in Equation 1 below with additional detail on the terms provided in Table 83.

Equation 1: LDV Model Equation to Estimate HEM Ex-Post Impacts

$$Daily\ Use_{im} = \beta_0 + \beta_{1m} * AvgPre_{im} + \beta_{2m} * CDD_m + \beta_{3m} * HDD_m + \tau_m * \mathrm{treatment}_{im} + \sum_{m=1}^{12} \beta_4 * m + \varepsilon_{im}$$

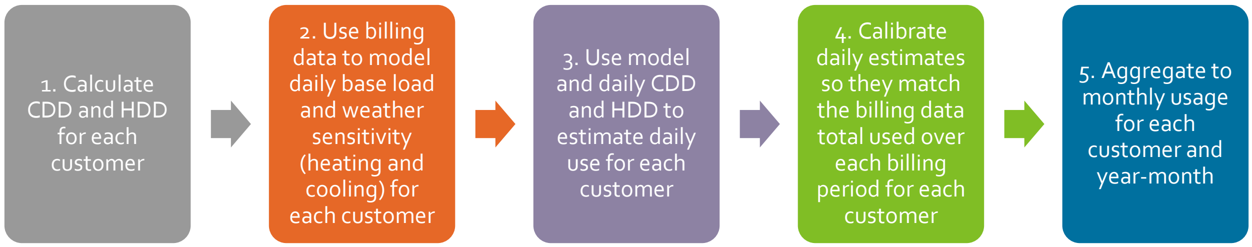
Table 83: Lagged Dependent Variable Model Definition of Terms

Variable	Definition
Daily Use_{im}	Customer i's average daily usage in bill month m.
β_0	Intercept of the regression equation.
$\beta_{1\mathrm{m}}$	Coefficient explaining any variation that occurs as a result of pre-treatment usage for month m.
$AvgPre_{im}$	Average daily usage for customer i in the pre-treatment period for month m.
$\beta_{2\mathrm{m}}$	Coefficient explaining any variation that occurs as a result of average monthly CDD for month m.
CDD_m	Difference between average temperature and 60 for month m.
$\beta_{3\mathrm{m}}$	Coefficient explaining any variation that occurs as a result of average monthly HDD for month m.
HDD_m	Difference between 60 and average temperature for month m.
$\mathrm{treatment}_{\mathrm{im}}$	The treatment indicator variable. Equal to one when the treatment is in effect for the treatment group. Zero otherwise. Always zero for the control group.
τ_m	The estimated treatment effect in kWh per day per customer; the main parameter of interest.
β_4	Coefficient for Year Month Variable.
m	Year month indicator.
$\varepsilon_{\mathrm{im}}$	The error term.

Calendarizing Billing Data

The time of the month when customer meters are read and the number of days between billing statements varies. Thus, we prorated billing data into a standard calendar month basis. The process of converting bills to usage is known as calendarization. Figure 30 summarizes the process employed to calendarize the data.

Figure 30: Calendarization of Billing Data



Opt Outs and Attrition

Over time, some homes assigned to the HER program will close their accounts with PSEG Long Island. The most common reason for this is that the occupant is moving, but other possibilities exist. This account churn happens at a predictable rate and can be forecasted with some degree of certainty. It is also completely external to the program, so there is no reason to suspect that it happens differently in the treatment and control when the groups were randomly assigned. The analysis includes all active accounts for a given month and all participation counts used to calculate aggregate savings. Once an account closes, there will no longer be consumption records in the billing data set, so the home is removed naturally from the analysis without requiring any special steps.

Treatment group homes are allowed to opt-out of receiving HER mailings if they choose. Typically, only a small proportion of the treatment group exercises this option. Those who opt out must not be removed from the analysis because doing so could compromise the randomization (control group homes do not opt-out).

Uplift Analysis

Exposure to behavioral program messaging often motivates participants to take advantage of other energy efficiency and beneficial electrification programs. This creates a situation where the treatment group participates in other programs at a higher rate than control group homes. To avoid double counting these impacts, our team calculated savings from program uplift and subtracted them from the aggregate savings.

For downstream programs where participation is tracked at the account level, dual participation was calculated using the following steps:

1) Match the energy efficiency and beneficial electrification program tracking data to the treatment and control homes.
2) Assign each transaction to a month based on the participation date field in the tracking data.
3) Exclude any installations that occurred before the home was assigned to the treatment or control group.

4) Calculate the daily kWh impact of each efficient or electrification measure. This is equal to the reported kWh impact of the measure divided by 365.
5) Sum the daily kWh impact, by account, for all measures installed prior to a given month.
6) Calculate the average kWh impact per day for the treatment and control groups by month. Multiply by the number of days in the month.
7) Calculate the incremental daily kWh from energy efficiency (treatment – control). The evaluation team subtracted this value from the treatment effect determined via regression analysis prior to calculating gross verified savings for behavioral programs.

Upstream programs present a unique challenge for dual participation analysis because participation is not tracked at the customer level and therefore cannot be tied back to treatment and control group homes for comparison. While incremental uptake of upstream measures by the treatment group has been observed in multiple studies, the size of the effects that are typically subtracted is disproportionate to the evaluation resources required to estimate it.

Table 84 provides default values that can be used to calculate a dual participation adjustment factor for upstream offerings. To account for the growing separation between the treatment and control groups over time, the reduction factor is based on the number of years since cohort inception.

Table 84: Default Upstream Adjustment Factors[13]

Years Since Cohort Inception	Default Upstream Reduction Factor
1	0.75%
2	1.5%
3	2.25%
4 and beyond	3.0%

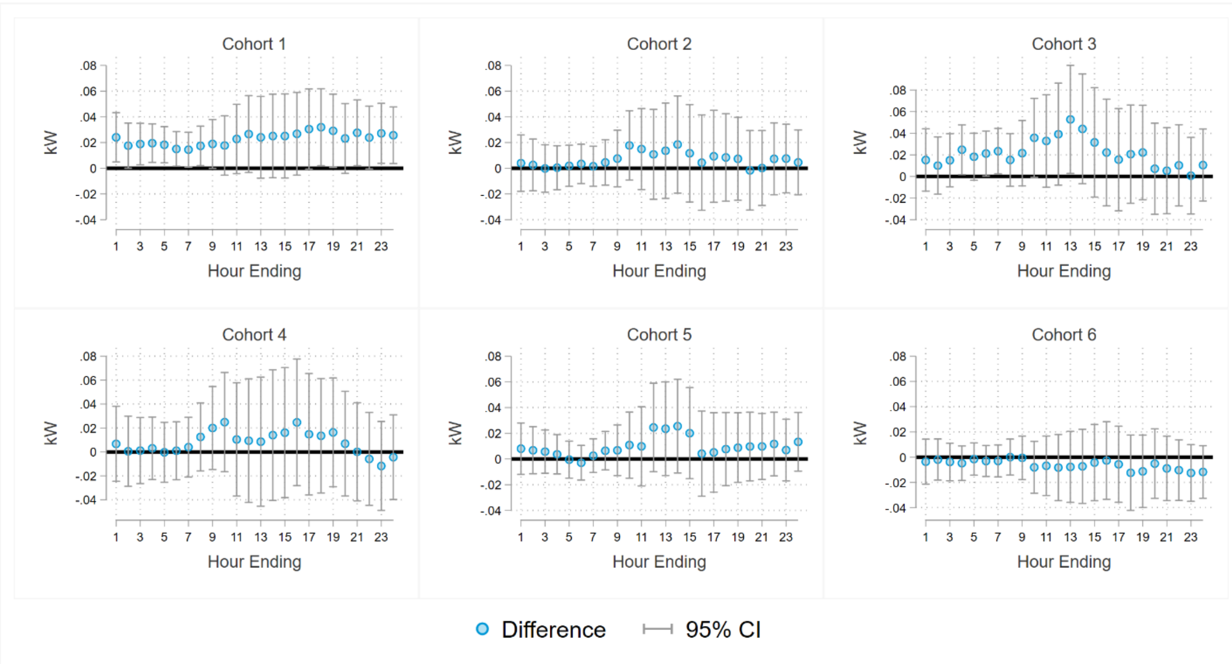
Peak Demand Reduction Analysis

While no kW demand savings were claimed for HEM during the program year, we assessed the kW demand reduction for the program as a part of the ex-post analysis. The demand reduction analysis utilized hourly metered household data (referred to here as advanced metering infrastructure or AMI data) to estimate demand reduction for HEM customers at the hourly level. As no pre-treatment AMI data was available, we utilized a simple difference in means comparison, which examined differences in raw averages between the treatment and control groups for each hour. For this analysis, we defined peak demand as hour-ending 4-5 PM and looked at customer demand reductions for the top 20 system

[13] Default values were developed via a review of two studies that used primary data collection with large sample sizes to estimate a dual participation adjustment for upstream lighting. A 2012 PG&E evaluation found values larger than those in this table.
http://www.calmac.org/publications/2012_PGE_OPOWER_Home_Energy_Reports__4-25-2013_CALMAC_ID_PGE0329.01.pdf A 2014 Puget Sound evaluation found values lower than those in this table.
https://conduitnw.org/_layouts/Conduit/FileHandler.ashx?RID=2963.

load days in 2025. Figure 31 depicts the average raw differences between the treatment and control group for each hour and each wave on the top 20 system load days from 2025. While there is a clear directionality in the difference between the treatment and control group, the differences overall are very small and not statistically significant. We can also see that the shape of the savings differs for each wave. Cohort 1 and 2 savings are flatter, with slightly higher savings in the morning and evening while both Cohort 3 and Cohort 5 savings are higher overall and concentrated in the middle of the day.

Figure 31: HEM Hourly Demand Reduction on Peak Summer Days



G. CONSUMPTION ANALYSIS METHODOLOGY FOR HOME PERFORMANCE

The consumption analysis compares energy usage before and after the implementation of energy efficiency upgrades. For the 2025 evaluation, we employed a matched control design to address potential selection bias. Specifically, households that received only Home Energy Assessment (HEA) kits served as the control group, while those participating in the Home Performance with ENERGY STAR program were classified as treated. This design assumes that HEA-only recipients provide an appropriate baseline for isolating the effects of the comprehensive HPwES upgrades, as focusing on HEA participants likely mitigates selection bias—these customers, by virtue of receiving the assessment, tend to be more similar in motivation and behavior to those who choose to install actual upgrades. Detailed steps regarding the preparation of billing data and the selection of the matched control group are presented in subsequent sections.

AMI Data Cleaning

We lean on Advanced Metering Infrastructure (AMI) data for comprehensive and accurate consumption analysis, as it provides more granular data than monthly bills and allows us to create regression models with more explanatory power. This approach was the exact same as in 2024 evaluation.

To ensure the accuracy and relevance of our data for analysis, we follow a series of steps to clean the AMI data.

1. **Adjust for Daylight Savings:** We check and adjust the data for daylight saving time changes to ensure that the time stamps accurately reflect actual usage periods and avoid misinterpreting consumption patterns.

2. **Collapse Data to Daily Intervals:** The data is initially in 15-minute intervals, then collapsed into daily intervals. This reduction in data granularity simplifies analysis while still capturing detailed consumption trends.

3. **Drop Missing kWh Readings:** Missing kWh readings are removed as they may indicate periods of non-usage or data errors, which could distort the analysis of energy efficiency impacts.

4. **Filter by Program Participation:** Only data from customers exclusively involved in HEA and HPwES programs are retained. This eliminates any confounding effects from participants engaged in multiple programs, such as Home Comfort, ensuring a clean and focused analysis of the targeted energy efficiency interventions.

MATCHING

In 2025, we elected to use propensity score matching process to create comparable treatment and control groups. Below is a summary of that process for our analysis:

Data Preparation
We started by cleaning and refining our dataset. This involved:

- **Data Quality Filtering**: Removed observations with insufficient pre- or post-intervention data and records missing key variables such as weather sensitivity coefficients, consumption metrics, and performance measures.

- **Integrating Additional Information**: Merged supplementary program details (e.g., participation indicators) to enrich the dataset.

- **Temporal and Contextual Filtering**: Generated a 'year' variable from billing dates and applied filters to include only observations up to 2023 for the control group, while excluding post-intervention data for the treated group.

- **Feature Creation**:

    - Identified holidays and flagged each day as either "Weekday" or "Weekend."

    - Extracted the month from the date and combined it with the day type to create a composite grouping variable, capturing both the day of the week and the month for more nuanced matching.

Defining Matching Models

We implemented propensity score matching to pair treated homes (HPwES participants) with control homes (HEA-only participants). This process included:

- **Feature Selection and Segmentation:** Homes were first "hard-matched" within the same three-digit ZIP code to control for regional climate and housing stock effects.
- **Estimated Propensity Scores:** Within each ZIP-3 segment, we ran logistic regressions predicting program participation using a range of household and weather-sensitivity characteristics. We tested multiple specifications—including raw and normalized annual consumption, binned consumption quantiles, cooling- and heating-degree-day coefficients, and model fit statistics (adjusted R^2)—to see which covariate set best balanced treated and control groups.
- **Evaluated and Selected the Best Model:** We compared match quality across all specifications using bias and fit metrics (MAE, MAPE, percent bias, etc.) and chose the model that yielded the lowest absolute bias and best overall balance before proceeding with outcome analysis.

Finalizing the Matched Sample

After matching, we retained only well-paired observations, yielding a final matched dataset. This approach allowed us to robustly compare treated and control groups, ensuring that differences in outcomes can be more confidently attributed to the program intervention rather than pre-existing differences between the homes.

Figure 32 displays the distribution of annual, weather-normalized consumption for two groups before any matching: households that only received a Home Energy Assessment (HEA) and those that participated in Home Performance with ENERGY STAR (HPwES). Although some differences exist, both histograms exhibit broadly similar shapes and central tendencies, indicating that the two groups had comparable overall usage ranges prior to matching.

Figure 33 shows the average monthly consumption (kWh) of the HPwES (treated) and HEA (control) during pre-period after applying the propensity score matching procedure. While the lines are not perfectly overlapping, they track closely enough throughout the pre-participation periods, illustrating strong alignment. Any residual discrepancies in pre-treatment usage are accounted for in the subsequent regression model, ensuring that the measured post-participation impacts can be attributed more confidently to the program itself.

Figure 32: Distribution of Annual Consumption Prior to Matching, Home Performance

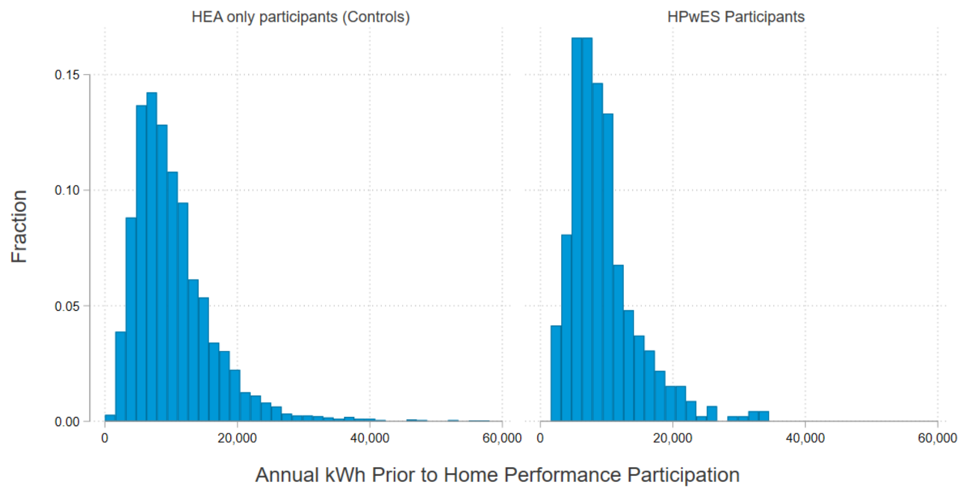
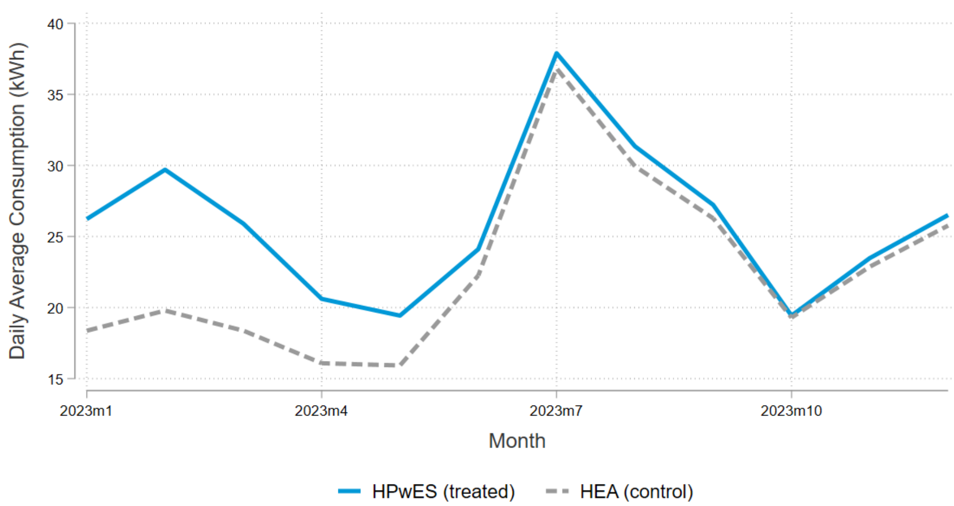


Figure 33: Average Monthly Usage of Treatment and Comparison Groups (kWh), Home Performance



Impact Analysis

We use a weather-normalized linear fixed effects panel regression to analyze energy consumption. In a fixed effects framework, each household's time-invariant characteristics are captured by assigning a unique intercept to every account in both the treatment and comparison groups. Equation 2 details the full model specification.

Treatment Effect

The treatment effect measures the change in daily energy consumption associated with program participation. To account for weather, the model includes interactions between the treatment-post indicator and both cooling degree days (CDD) and heating degree days (HDD). The CDD and HDD values are based on NOAA's 1991–2020 climate normals.

Annualizing Savings

After estimating the regression coefficients, the annual energy savings are calculated by summing three components:

1. The treatment-post coefficient multiplied by the number of days in a year.
2. The interaction coefficient between treatment-post and CDD multiplied by the total annual CDD.
3. The interaction coefficient between treatment-post and HDD multiplied by the total annual HDD.

Equation 2: Linear Fixed Effects Regression Model Specification

$$\mathrm{kWh}_{\mathrm{it}} = \beta_0 + \beta_1 * Post_{it} + \beta_2 * CDD_t + \beta_3 * TreatPost_{it} * CDD_t + \beta_4 * HDD_t + \beta_5 * TreatPost_{it} * HDD_t + \beta_6 * TreatPost_{it} + \beta_7 * DOW_{it} + \varepsilon_{\mathrm{it}}$$

Table 85 defines the terms and coefficients used in this equation. By incorporating both time-invariant household effects and weather-related variables, the model isolates the impact of program participation on daily energy use and provides a clear framework for calculating annualized energy savings.

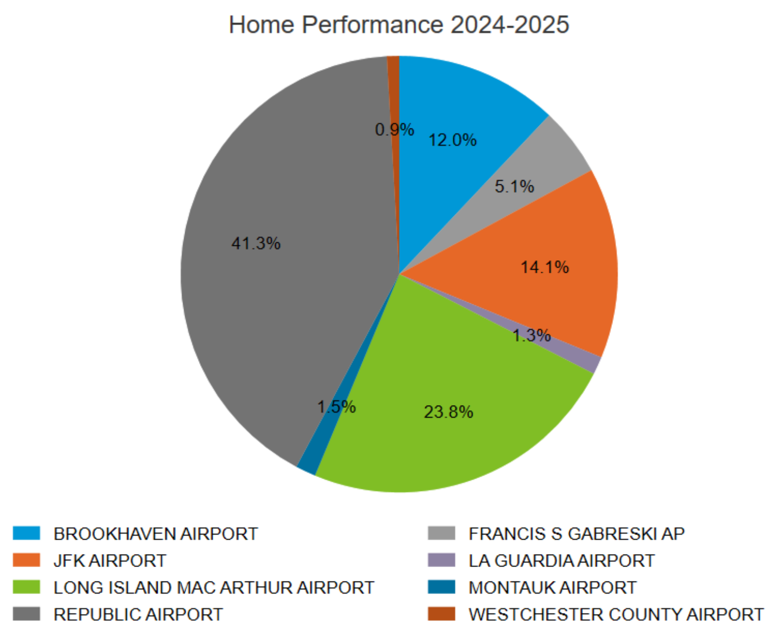
Table 85: Regression Model Parameter Definitions

Variable	Definition
$\mathrm{kWh}_{\mathrm{it}}$	Customer i's average daily electric usage in day t.
β_0	The intercept term for customer i, or the "fixed effect" term. Equal to the mean daily energy use for each customer.
$\mathrm{Post}_{\mathrm{it}}$	An indicator equal to one if customer i participated in the program prior to day t and zero otherwise. Coding of the post term for each member of the comparison group mirrors its matched participant.
β_1	The coefficient on the post indicator variable. This variable captures the change in consumption in the matched control group during the post-period due to exogenous factors such as the COVID-19 pandemic.
CDD_t	The average daily cooling degree days at base 60 degrees (F) for the nearest weather station in day t
β_2	The coefficient on the cooling degree day variable.
β_3	The coefficient on the interaction between cooling degreed day and the post indicator. This captures weather-related factors driving customer consumption behavior during the summer months.
HDD_t	The average daily heating degree days at base 60 degrees (F) for the nearest weather station in day t
β_4	The coefficient on the heating degree day variable.

Variable	Definition
β_5	The coefficient on the interaction between cooling degreed day and the post indicator. This captures weather-related factors driving customer consumption behavior during the winter months.
$\mathrm{TreatPost}_{it}$	The indicator variable for post-period of treatment customers. Equal to one for the participant group in the post period, zero for the participant group in the pre-period, and zero for the matched control group.
β_6	The estimated treatment effect in kWh per day; the main parameter of interest. The change in daily kWh consumption attributable to program participation.
DOW_{it}	A set of indicator variables for the day of the week.
β_7	The coefficient on the day of week indicator variables. This captures day-specific factors driving consumer consumption behavior.
ε_{it}	The error term.

The Evaluation Team used service zip code to map each participating household to one of eight weather stations. Figure 34 shows the distribution of participants across the weather stations.

Figure 34: Weather Station Mapping



Annual Savings Estimate for Home Performance

Our analysis indicates that Home Performance participants achieved an estimated annual energy savings of 504.16kWh, with a 95% confidence interval ranging from 156.94 kWh/year to 851.39 kWh/year. These results are visualized in Figure 35, via prediction for how the HPwES treated participants will behave when compared to the non-HPwES participants, while Figure 36 presents the detailed regression output for the Home Performance models.

Key Regression Terms

1. **TreatPost:** Represents the change in average daily consumption for the treatment group after participation.
2. **TreatPost × CDD:** Shows how the change in daily consumption is affected by summer weather (cooling degree days).
3. **TreatPost × HDD:** Shows how the change in daily consumption is affected by winter weather (heating degree days).

The inclusion of cooling and heating degree day coefficients ensures that the reported savings are appropriately weather-normalized.

Figure 35: Home Performance Consumption Analysis Results Visualized

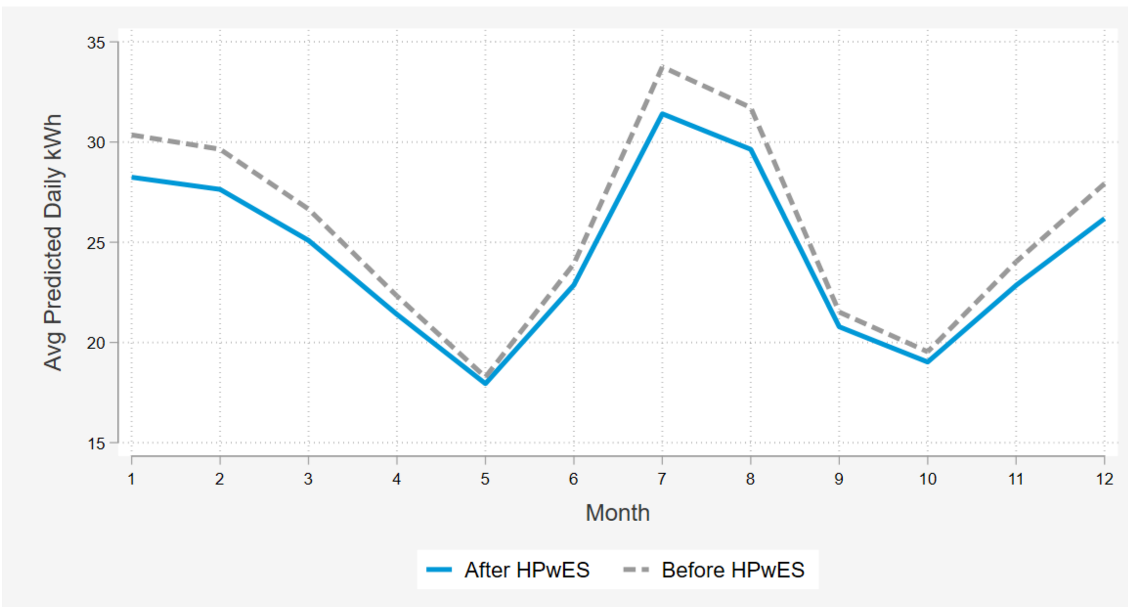


Figure 36: Regression Output – Home Performance

```
Linear regression, absorbing indicators            Number of obs     = 641,044
Absorbed variable: account                         No. of categories =     927
                                                   F(14, 985)        =  166.04
                                                   Prob > F          =  0.0000
                                                   R-squared         =  0.5405
                                                   Adj R-squared     =  0.5398
                                                   Root MSE          = 14.9870

                                  (Std. err. adjusted for 986 clusters in id)
------------------------------------------------------------------------------
                         |               Robust
               daily_kwh | Coefficient  std. err.      t    P>|t|     [95% conf. interval]
-------------------------+----------------------------------------------------------------
                    post |  -.5651213    .383169    -1.47   0.141    -1.317043    .1868001
             1.treatpost |   -.214412   .7003847    -0.31   0.760     -1.58883    1.160006
             daily_cdd65 |   1.603681   .0471119    34.04   0.000     1.511229    1.696132
                         |
treatpost#c.daily_cdd65  |
                       1 |  -.2168825   .0889531    -2.44   0.015    -.3914418   -.0423233
                         |
             daily_hdd60 |     .36331   .0246533    14.74   0.000      .314931     .411689
                         |
treatpost#c.daily_hdd60  |
                       1 |  -.0670602   .0521946    -1.28   0.199    -.1694857    .0353652
                         |
                     dow |
                       1 |  -1.029424   .0885468   -11.63   0.000    -1.203186   -.8556615
                       2 |   -1.03919   .1047288    -9.92   0.000    -1.244708    -.833673
                       3 |  -1.111793   .0987642   -11.26   0.000    -1.305606    -.917981
                       4 |  -1.286253   .0999708   -12.87   0.000    -1.482433   -1.090073
                       5 |  -1.282987   .0988011   -12.99   0.000    -1.476871   -1.089102
                       6 |  -.5120286   .0777527    -6.59   0.000    -.6646085   -.3594487
                         |
     post#c.daily_cdd65  |
                       1 |   .0476239   .0644237     0.74   0.460    -.0787996    .1740474
                         |
     post#c.daily_hdd60  |
                       1 |    .090909   .0322955     2.81   0.005     .0275331    .1542849
                         |
                   _cons |   18.98911   .2517644    75.42   0.000     18.49505    19.48317
------------------------------------------------------------------------------
```

APPENDIX B COST EFFECTIVENESS EX-POST NET TABLES

Table 86: CEP Ex-Post Net Data for Cost Effectiveness

Resource	Component	Measure	Ex-Post Gross Savings	Net-to-Gross Ratio	Line Loss Factor	Ex-Post Net
MMBtu	Lighting	Comprehensive Lighting	103,839	67%	1.00	69,281
		Fast Track Lighting	14,844	67%	1.00	9,904
		Refrigerated Case Lighting	3,135	67%	1.00	2,092
		Lighting Subtotal	**121,817**	**67%**	**1.00**	**81,277**
	Multi-Family	Multi-Family	54,378	100%	1.00	54,378
	Standard	Refrigeration	15,292	72%	1.00	10,942
		Motors & VFDs	2,314	72%	1.00	1,656
		Compressed Air	5,012	72%	1.00	3,586
		Other Comm. Equipment	3,707	72%	1.00	2,652
		Standard Subtotal	**26,326**	**91%**	**1.00**	**18,836**
	Custom	Horticultural Lighting	10,514	72%	1.00	7,557
		NYS Clean Heat	18,424	72%	1.00	13,182
		Custom - Custom	21,127	72%	1.00	15,116
		Custom Subtotal	**50,065**	**72%**	**1.00**	**35,855**
	HVAC	HVAC	6,365	100%	1.00	6,365
		MMBtu Total:	**258,951**	**76%**	**1.00**	**196,711**
MWh	Lighting	Comprehensive Lighting	37,048	67%	1.06	26,204
		Fast Track Lighting	5,521	67%	1.06	3,905
		Refrigerated Case Lighting	919	67%	1.06	650
		Lighting Subtotal	**43,487**	**67%**	**1.06**	**30,759**
	Multi-Family	Multi-Family	(4,406)	100%	1.06	(4,671)
	Standard	Refrigeration	4,473	72%	1.06	3,393
		Motors & VFDs	458	72%	1.06	347
		Compressed Air	1,466	72%	1.06	1,112
		Other Comm. Equipment	(425)	72%	1.06	(322)
		Standard Subtotal	**5,972**	**72%**	**1.06**	**4,530**
	Custom	Horticultural Lighting	3,082	72%	1.06	2,348
		NYS Clean Heat	(2,176)	72%	1.06	(1,651)
		Custom - Custom	4,279	72%	1.06	3,245
		Custom Subtotal	**5,184**	**72%**	**1.06**	**3,943**
	HVAC	HVAC	(176)	100%	1.06	(187)
		MWh Total:	**50,061**	**65%**	**1.06**	**34,373**
kW	Lighting	Comprehensive Lighting	7,152	67%	1.08	5,141
		Fast Track Lighting	1,505	67%	1.08	1,082
		Refrigerated Case Lighting	212	67%	1.08	152
		Lighting Subtotal	**8,868**	**67%**	**1.08**	**6,375**

Resource	Component	Measure	Ex-Post Gross Savings	Net-to-Gross Ratio	Line Loss Factor	Ex-Post Net
	Multi-Family	Multi-Family	(280)	100%	1.08	(302)
	Standard	Refrigeration	435	72%	1.08	337
		Motors & VFDs	208	72%	1.08	161
		Compressed Air	232	72%	1.08	180
		Other Comm. Equipment	0	72%	1.08	0
		Standard Subtotal	**875**	**72%**	**1.08**	**678**
	Custom	Horticultural Lighting	502	72%	1.08	389
		NYS Clean Heat	3	72%	1.08	2
		Custom - Custom	347	72%	1.08	268
		Custom Subtotal	**852**	**72%**	**1.08**	**659**
	HVAC	HVAC	77	100%	1.08	83
		kW Total:	**10,393**	**67%**	**1.08**	**7,494**

Table 87: EEP Ex-Post Net Data for Cost Effectiveness

Resource	Measure	Ex-Post Gross Savings	Net-to-Gross Ratio	Line Loss Factor	Ex-Post Net
MMBtu	Smart Thermostats	94,159	77%	1.00	72,502
	Heat Pump Pool Heaters	32,940	97%	1.00	31,879
	Heat Pump Water Heaters	2,727	100%	1.00	2,733
	Lighting	960	55%	1.00	528
	Appliances	5,606	90%	1.00	5,046
	Advanced Power Strips	1,029	100%	1.00	1,029
	MMBtu Total:	**137,421**	**83%**	**1.00**	**113,718**
MWh	Smart Thermostats	5,078	77%	1.06	4,145
	Heat Pump Pool Heaters	(1,078)	97%	1.06	(1,106)
	Heat Pump Water Heaters	(121)	100%	1.06	(128)
	Lighting	490	55%	1.06	286
	Appliances	1,370	90%	1.06	1,307
	Advanced Power Strips	302	100%	1.06	320
	MWh Total:	**6,041**	**75%**	**1.06**	**4,824**
kW	Smart Thermostats	0	77%	1.08	0
	Heat Pump Pool Heaters	0	97%	1.08	0
	Heat Pump Water Heaters	(14)	100%	1.08	(15)
	Lighting	88	55%	1.08	52
	Appliances	220	90%	1.08	213
	Advanced Power Strips	33	100%	1.08	35
	kW Total:	**327**	**81%**	**1.08**	**286**

Table 88: Home Comfort Ex-Post Net Data for Cost Effectiveness

Resource	Measure	Ex-Post Gross Savings	Net-to-Gross Ratio	Line Loss Factor	Ex-Post Net
MMBtu	Ducted and Ductless ccASHP	195,579	91%	1.00	178,250
	GSHP	7,915	91%	1.00	7,214
	EO Ducted and Ductless Heat Pumps	2,713	91%	1.00	2,473
	Heat Pump Water Heaters	884	100%	1.00	884
	Project Adjustments	2,175	100%	1.00	2,175
MMBtu Total:		**209,266**	**91%**	**1.00**	**190,996**
MWh	Ducted and Ductless ccASHP	(27,372)	91%	1.06	(26,446)
	GSHP	(179)	91%	1.06	(173)
	EO Ducted and Ductless Heat Pumps	70	91%	1.06	67
	Heat Pump Water Heaters	(39)	100%	1.06	(41)
	Project Adjustments	(22)	100%	1.06	(23)
MWh Total:		**(27,541)**	**91%**	**1.06**	**(26,616)**
kW	Ducted and Ductless ccASHP	1,460	91%	1.08	1,434
	GSHP	187	91%	1.08	183
	EO Ducted and Ductless Heat Pumps	0	91%	1.08	0
	Heat Pump Water Heaters	(4)	100%	1.08	(5)
	Project Adjustments	(0)	100%	1.08	(0)
kW Total:		**1,643**	**91%**	**1.08**	**1,613**

Table 89: Home Performance Ex-Post Net Data for Cost Effectiveness

Resource	Component	Measure	Ex-Post Gross Savings	Net-to-Gross Ratio	Line Loss Factor	Ex-Post Net
MMBtu	Home Performance with ENERGY STAR	Duct Sealing	3,625	75%	1.00	2,719
		Air Sealing	5,644	75%	1.00	4,233
		Envelope	11,281	75%	1.00	8,461
		Ducted and Ductless Heat Pumps	23,004	91%	1.00	20,965
		Thermostats	-	91%	1.00	-
		Heat Pump Water Heater	2,113	75%	1.00	1,585
		HPwES Subtotal	**45,666**	**83%**	**1.00**	**37,962**
	Home Energy Audits	Thank You Kits (HEA)	56	75%	1.00	42
		MMBtu Total:	**45,723**	**83%**	**1.00**	**38,005**
MWh	Home Performance with ENERGY STAR	Duct Sealing	483	75%	1.06	384
		Air Sealing	634	75%	1.06	504
		Envelope	796	75%	1.06	633
		Ducted and Ductless Heat Pumps	(1,386)	91%	1.06	(1,339)
		Thermostats	-	91%	1.06	-
		Heat Pump Water Heater	(34)	75%	1.06	(27)
		HPwES Subtotal	**493**	**30%**	**1.06**	**155**
	Home Energy Audits	Thank You Kits (HEA)	17	75%	1.06	13
		MWh Total:	**510**	**31%**	**1.06**	**168**
kW	Home Performance with ENERGY STAR	Duct Sealing	296	74%	1.08	236
		Air Sealing	100	74%	1.08	80
		Envelope	135	74%	1.08	108
		Ducted and Ductless Heat Pumps	92	91%	1.08	91
		Thermostats	-	91%	1.08	-
		Heat Pump Water Heater	(8)	74%	1.08	(6)
		HPwES Subtotal	**616**	**77%**	**1.08**	**508**
	Home Energy Audits	Thank You Kits (HEA)	2	74%	1.08	1
		kW Total:	**618**	**77%**	**1.08**	**510**

Table 90: REAP Ex-Post Net Data for Cost Effectiveness

Resource	Ex-Post Gross Savings	Net-to-Gross Ratio	Line Loss Factor	Ex-Post Net
MMBtu	7,751	100%	1.00	7,751
MWh	1,225	100%	1.06	1,299
kW	281	100%	1.08	302

Table 91: HEM Ex-Post Net Data for Cost Effectiveness

Resource	Ex-Post Gross Savings	Net-to-Gross Ratio	Line Loss Factor	Ex-Post Net
MMBtu	154,384	100%	1.00	154,384
MWh	45,247	100%	1.06	47,967
kW	10,904	100%	1.08	11,748

APPENDIX C EX-POST RESULTS WITHOUT LIGHTING WASTE HEAT FACTOR ADJUSTMENTS

The ex-post results for LED lighting measures presented in this report are adjusted downward to account for interactive effects on the fossil fuel heating systems in participating homes and businesses. This "waste heat factor" adjustment or "waste heat penalty" captures the increased heating consumption attributable to installation of efficient LED lighting in spaces heated by fossil fuel. LED lighting emits less waste heat than inefficient lighting. During the summer, a reduction in waste heat means less work for the air conditioner and additional cooling savings. During the winter, the heating system must work harder to make up for the reduction in waste heat from lighting. Figure 37 shows the HVAC interaction parameters in the commercial lighting savings algorithms in the New York TRM.

Figure 37: HVAC Interaction Factors in the NYS TRM

Method for Calculating Annual Energy and Summer Peak Coincident Demand Savings

Annual Electric Energy Savings

$$\Delta kWh = \left[\frac{(W \times units)_{baseline} - (W \times units)_{ee}}{1{,}000}\right] \times hrs \times (1 + HVAC_c)$$

Summer Peak Coincident Demand Savings

$$\Delta kW = \left[\frac{(W \times units)_{baseline} - (W \times units)_{ee}}{1{,}000}\right] \times (1 + HVAC_d) \times CF$$

Annual Fossil Fuel Energy Savings

$$\Delta MMBtu = \left[\frac{(W \times units)_{baseline} - (W \times units)_{ee}}{1{,}000}\right] \times hrs \times HVAC_{ff}$$

The $HVAC_c$ and $HVAC_d$ terms deal exclusively with interactive effects on the *electric* cooling and heating systems. These terms are included in the ex-ante and ex-post savings for all lighting measures. The $HVAC_{ff}$ term pertains exclusively to heating penalty in homes and businesses with fossil fuel heat. In 2024, the $HVAC_{ff}$ term was excluded from ex-ante and verified ex-ante savings to align with the reporting conventions of New York's investor-owned utilities (IOUs). The IOUs classify their energy efficiency programs as electric or natural gas and only report impacts from the target fuel. Lighting programs are electric efficiency programs, so the IOUs calculate and report kWh and kW savings. This means that heating penalties are ignored for sites with fossil fuel heat, which is most New York homes and businesses.

PSEG Long Island's fuel-agnostic "MMBtu at site" reporting metric handles this type of cross-fuel impact more robustly than the IOU fuel-specific reporting convention. The evaluation team maintains that defensible ex-post gross and ex-post net results should not ignore cross-fuel interactive effects.

However, since the IOUs report progress towards their share of the New York CLCPA goal of 185 trillion Btu (TBtu) by 2025 without waste heat penalties for lighting measures, PSEG Long Island's primary reporting metric is not apples-to-apples with the rest of the state. For consistency with the IOUs, PSEG Long Island reports progress towards its share of the CLCPA goal (7.85 TBtu) without waste heat penalty for lighting measures.

Table 92 shows the 2025 ex-post results at the portfolio level along with PSEG Long Island's cumulative progress towards is 7.85 TBtu by 2025 goal.

Table 92: Ex-Post MMBtu Results without Lighting Waste Heat Penalty

Parameter	Value	Notes
Total MMBtu 2019-2024	6,750,654	Without waste heat penalty
2025 Ex-Post Gross	813,498	With waste heat penalty
2025 MMBtu Penalty	28,378	Reduction in lighting ex-post savings
2025 Alternate Ex-Post Gross	841,876	Without waste heat penalty
Cumulative MMBtu 2019-2025	7,592,530	Progress toward CLCPA 7.85 TBtu goal. 1 TBtu = 1,000,000 MMBtu

APPENDIX D VERIFIED EX-ANTE MEMO

2025 VERIFIED EX-ANTE SAVINGS MEMO

Date: January 30, 2026

To: Brian Levite and Louisa Chan (LIPA)

CC: Dan Zaweski, Mike Voltz, Dimple Gandhi, Ronan Murphy, and Gabrielle Scibelli (PSEG Long Island)

From: 2025 Evaluation Team (Demand Side Analytics, DNV, Mondre Energy, and BrightLine Group)

Re: 2025 Verified Ex-Ante Savings for Energy Efficiency and Beneficial Electrification Programs

Background

PSEG Long Island asked the Demand Side Analytics evaluation team to verify ex-ante energy and peak demand savings as part of its evaluation of PSEG Long Island's 2025 energy efficiency and beneficial electrification programs. This memorandum defines "verified ex-ante" (VEA) savings and presents the 2025 verified ex-ante savings for each program.

Definition of Verified Ex-Ante

The verified ex-ante calculations seek to answer the question, "were the ex-ante gross energy impacts claimed by the implementation contractors calculated consistently with approved calculations and assumptions?" To answer this question, we independently calculated program impacts using the methods and assumptions approved by PSEG Long Island and compared the results to the ex-ante gross values submitted by the implementation contractors, TRC and Bidgely. The ratio of these two values is the verified ex-ante realization rate.

The details of the verified ex-ante calculations vary by program and measure. Some measures are assigned deemed per-unit impacts in the planning assumptions, so the verified ex-ante calculation only requires counting the number of units stored in the program tracking data and multiplying that total by the per-unit savings assumption used for planning. Other measures are more dynamic and require the use of algorithms and project-specific parameter values. PSEG Long Island generally uses a static set of algorithms and assumptions for a given calendar year. However, projects have varying lead times and processing lag, so it is not uncommon for a project to begin in one year and complete in the following calendar year. In practice, this means a subset of 2025 projects were completed using 2024 application workbooks with 2024 savings assumptions. For the purposes of VEA, we consider these "carryover" projects verified as long as 2024 algorithms and assumptions were correctly implemented. In the ex-post evaluation, we will use the latest available inputs and assumptions so carryover projects can be a source of realization rate volatility. Carryover projects remained common in 2025 and accounted for approximately 20% of the ex-ante MMBtu across the portfolio.

The verified ex-ante savings are the first milestone of the 2025 evaluation. They are a separate and distinct performance metric from the evaluated ex-post savings, which will be delivered later this spring. Both the claimed ex-ante and verified ex-ante savings are expressed on a gross basis – meaning they do not reflect adjustments for net-to-gross factors or line losses. The primary reporting metric for

2025 VEA is gross MMBtu savings, but we also report on several additional metrics of interest. The gross MMBtu at site metric is fuel agnostic, meaning that the energy savings can come from electricity or fossil fuel conservation.

MMBtu Results

Table 1 summarizes the 2025 verified ex-ante savings for MMBtu. The verified ex-ante savings were nearly identical (0.01% lower) to the claimed ex-ante gross savings. The evaluation team's independent measure counts were almost perfectly aligned with the claimed measure counts. Per-unit MMBtu savings calculations and assumptions matched the approved values for nearly all measures. Any calculations and assumptions that deviated from approved values are documented in Appendix A: Supplemental Detail.

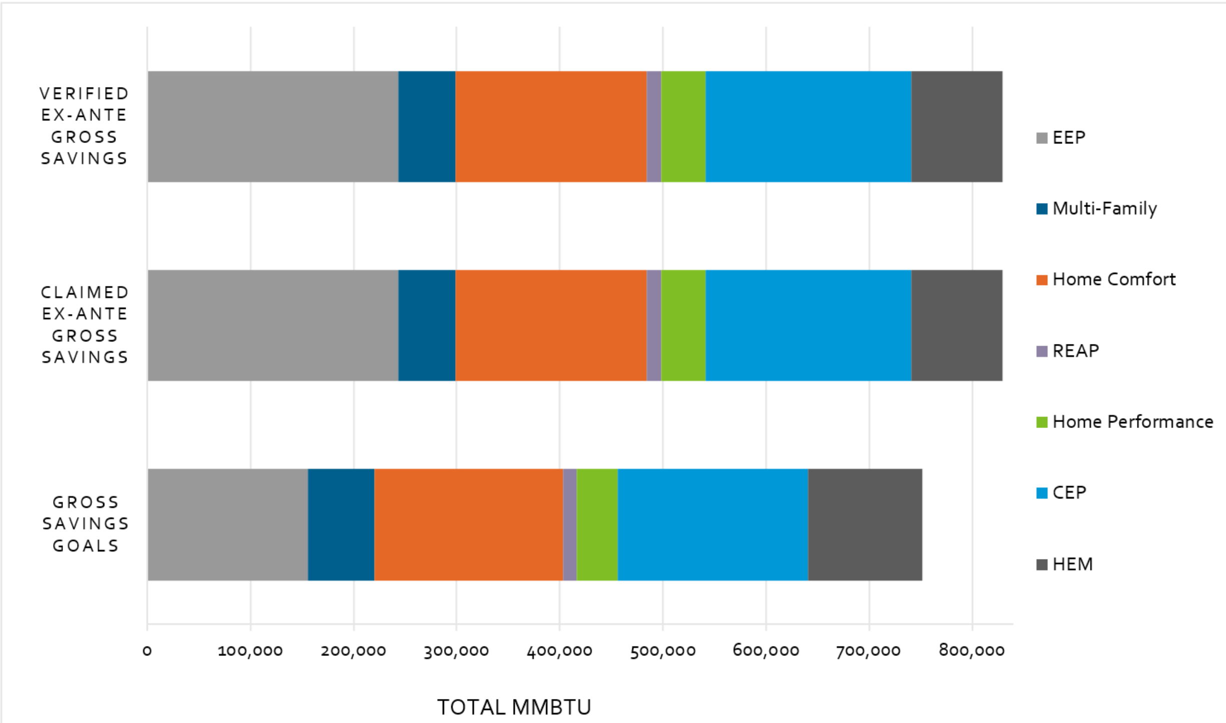
The claimed and verified ex-ante MMBtu savings in Table 1 do not incorporate fossil fuel heating penalties for lighting measures. This change was made to align PSEG Long Island with New York's other investor-owned utilities (IOUs) which operate fuel-specific energy efficiency programs where electric programs only report electric impacts and natural gas programs only report natural gas impacts. Excluding the fossil fuel waste heat penalties allows for a more balanced comparison between PSEG Long Island and the other IOUs in New York. It also allows for a simpler view of PSEG Long Island's contribution toward the state's New Efficiency: New York goal of 185 million MMBtu in energy savings by 2025.

Table 1: Summary of 2025 Verified Ex-Ante MMBtu Savings and Goals

Program		2025 Gross Savings Goals	Ex-Ante Gross Savings	Verified Ex-Ante Gross Savings	Verified Ex-Ante Realization Rate	Verified as % of Goals
		MMBtu	MMBtu	MMBtu	%	%
Commercial	Commercial Efficiency Program (CEP)	185,171	199,798	199,811	100.0%	107.9%
	Multi-Family Homes	64,882	54,752	54,752	100.0%	84.4%
Residential	Energy Efficient Products (EEP)	155,564	243,843	243,815	100.0%	156.7%
	Home Comfort	182,387	185,475	185,358	99.9%	101.6%
	Residential Energy Affordability Partnership (REAP)	13,588	14,083	14,138	100.4%	104.0%
	Home Performance (HPwES & HEA)	39,595	43,108	43,127	100.0%	108.9%
	Home Energy Management (HEM)	110,225	88,883	88,883	100.0%	80.6%
Total Commercial		**250,053**	**254,550**	**254,563**	**100.01%**	**101.8%**
Total Residential		**501,359**	**575,392**	**575,321**	**99.99%**	**114.8%**
Total EE and BE Portfolio		**751,412**	**829,943**	**829,884**	**99.99%**	**110.4%**

Figure 1 visualizes MMBtu contributions by program. The Energy Efficient Products, Commercial Efficiency Program, and Home Comfort programs were the top three contributing programs, together comprising 76% of verified ex-ante savings in 2025.

FIGURE 1: MMBTU CONTRIBUTIONS BY PROGRAM



In addition to comparing verified ex-ante savings with claimed ex-ante savings, we also compared verified ex-ante savings with the established annual savings goals. The portfolio verified ex-ante gross savings were 110.4% of the 2025 savings goals, exceeding PSEG Long Island's goal of 751,412 MMBtu by 78,472 MMBtu. Residential programs exceeded their 2025 goal by 73,962 MMBtu, while the Commercial programs exceeded their goal by 4,510 MMBtu. The Home Energy Management program discontinued activities in September and issued approximately 20% fewer paper conservation reports to customers than planned in 2025. This resulted in verified ex-ante savings about 21,000 MMBtu below goal for the year. This shortfall was offset by the strong performance from the EEP program, which exceeded its goal by almost 90,000 MMBtu.

MWh and MW Results

Table 2 shows the claimed ex-ante and verified ex-ante MWh savings. Both the claimed ex-ante and verified ex-ante savings are expressed on a gross basis, meaning they do not reflect adjustments for net-to-gross factors or line losses. In this context, gross MWh savings represent just the Energy Efficiency MWh (MWh_{ee}) value. Increased MWh consumption from Beneficial Electrification (MWh_{be}) is not considered in the ex-ante savings. This is different from the ex-post evaluation where we will report delta MWh impacts (representing the difference between MWh_{ee} and MWh_{be}).

All programs had realization rates around 100%. At the portfolio level, the MWh_{ee} realization rate was 100.2%. Unlike prior years, the HEM program did not claim MWh savings in 2025. If the per-report planning assumption had been applied to 2025 program activity, the ex-ante savings for HEM would have been approximately 26,000 MWh. Drivers for minor differences between claimed and verified ex-ante savings are discussed in Appendix A: Supplemental Detail.

TABLE 2: SUMMARY OF 2025 VERIFIED EX-ANTE MWH SAVINGS

Program		Claimed Ex-Ante Gross Savings	Verified Ex-Ante Gross Savings	Verified Ex-Ante Realization Rate
		MWh_{ee}	MWh_{ee}	%
Commercial	Commercial Efficiency Program (CEP)	48,285	48,353	100.1%
	Multi-Family Homes Rebate	2,129	2,204	103.5%
Residential	Energy Efficient Products (EEP)	12,302	12,301	100.0%
	Home Comfort	2,321	2,319	99.9%
	Residential Energy Affordability Partnership (REAP)	1,924	1,933	100.4%
	Home Performance (HPwES & HEA)	2,563	2,565	100.1%
	Home Energy Management (HEM)	0	0	n/a
Total Commercial		**50,415**	**50,557**	**100.3%**
Total Residential		**19,111**	**19,117**	**100.0%**
Total EE and BE Portfolio		**69,526**	**69,674**	**100.2%**

Table 3 shows claimed ex-ante and verified ex-ante summer peak demand (MW) values. Like with ex-ante MWh savings, ex-ante MW savings are not adjusted for net-to-gross factors or line losses. PSEG-LI does not claim MW savings for HEM, so we did not calculate verified ex-ante MW savings for this program. MW savings will be provided in the ex-post evaluation. Ex-ante peak demand savings are driven by CEP which accounts for approximately 75% of the claimed savings and verified ex-ante savings. A significant share of the Multi-Family program activity in 2025 was cold climate air source heat pumps. To heat efficiently at very cold temperatures, manufacturers of inverter-driven heat pumps sacrifice full load cooling efficiency. This can lead to negative summer peak demand savings because the program-supported heat pumps are less efficient than traditional air conditioners at peak summer temperatures. While the MW realization rate is less than 100%, this result increases the portfolio realization rate because the claimed savings were negative.

TABLE 3: SUMMARY OF 2025 VERIFIED EX-ANTE MW SAVINGS

Program		Claimed Ex-Ante Gross Savings	Verified Ex-Ante Gross Savings	Verified Ex-Ante Realization Rate
		MW	MW	%
Commercial	Commercial Efficiency Program (CEP)	8.15	8.13	99.8%
	Multi-Family Homes	-0.23	-0.22	96.9%
Residential	Energy Efficient Products (EEP)	0.76	0.76	100.0%
	Home Comfort	1.27	1.27	99.9%
	Residential Energy Affordability Partnership (REAP)	0.29	0.30	100.7%
	Home Performance (HPwES & HEA)	0.57	0.57	100.2%
	Home Energy Management (HEM)	0.00	0.00	n/a
Total Commercial		**7.91**	**7.90**	**99.9%**
Total Residential		**2.90**	**2.90**	**100.1%**
Total EE and BE Portfolio		**10.81**	**10.80**	**99.9%**

Non-Energy Metrics

In addition to energy conservation goals, PSEG Long Island and LIPA set goals related to the uptake of specific technologies and program activity among historically underserved groups. For the 2025 program year, a goal was specifically set for the total number of unique housing units served by whole home heat pumps. This metric includes the installation of Whole House heat pumps through the Home Comfort, Multi-Family and Home Performance Programs. PSEG Long Island also set a goal to comply with the Climate Leadership and Protection Act (CLCPA) requirement that 35% of all rebates and incentives go to program participants in Disadvantaged Communities (DACs). This weblink provides additional information on New York state's official definition of DACs and their geographic locations. In addition to the geographic definition, rebates and incentives to Low-to-Moderate Income (LMI) households (less than 60% of state median income) also count towards DAC goals. This goal includes the EE and BE portfolio as well as PSEG Long Island's transportation electrification efforts.

Table 4 compares the verified values for these metrics with the goals and claimed values. Verified values mirror the claimed values and the goals were exceeded for each metric. Additional details regarding the rebate and incentive spending in DACs are shown in Table 5. Further detail on what drives the differences between the claimed and verified counts and enrollments can be found in Appendix A: Supplemental Detail. Additionally, Appendix B: Validation of Geographic DAC Assignments contains more information on DAC boundaries.

TABLE 4: SUMMARY OF VERIFIED EX-ANTE NON-ENERGY METRICS

Metric Description	Goal	Claimed	Verified
Housing Units Served by Whole House Heat Pumps	5,330	5,381	5,383
*Total Rebate and Incentive Spending in DACs	35.0%	52.4%	52.9%
** Includes rebate and incentive spending by transportation electrification programs*			

Table 5 shows a more granular breakout of the DAC spending metrics and lists the claimed and verified rebate and incentive totals by program. Claimed and verified values show strong alignment. In most cases, differences between the claimed and verified values are due to disagreements between our DAC mapping and DAC status recorded in the Captures tracking system. Additional details regarding discrepancies for individual programs are provided in Appendix A: Supplemental Detail, and details regarding our validation of DAC status are in Appendix B: Validation of Geographic DAC Assignments.

TABLE 5: SUMMARY OF 2025 REBATE AND INCENTIVE SPENDING BY PROGRAM AND DAC STATUS

Program	Claimed Rebates and Incentives			Verified Rebates and Incentives		
	Total ($1,000)	DAC & LMI ($1,000)	% DAC	Total ($1,000)	DAC & LMI ($1,000)	% DAC
Energy Efficient Products (EEP)	$4,851	$844	17.4%	$4,851	$856	17.6%
Home Comfort	$20,671	$13,768	66.6%	$20,671	$13,807	66.8%
Home Performance	$8,566	$8,128	94.9%	$8,567	$8,137	95.0%
Commercial Efficiency Program (CEP)	$13,477	$4,522	33.6%	$13,477	$4,538	33.7%
Multi-Family Homes	$2,954	$477	16.1%	$2,954	$732	24.8%
REAP	$3,493	$2,286	65.4%	$3,493	$2,295	65.7%
Electric Vehicle Charging	$11,319	$4,183	37.0%	$11,559	$4,312	37.3%
Total Portfolio	**$65,331**	**$34,207**	**52.4%**	**$65,571**	**$34,677**	**52.9%**

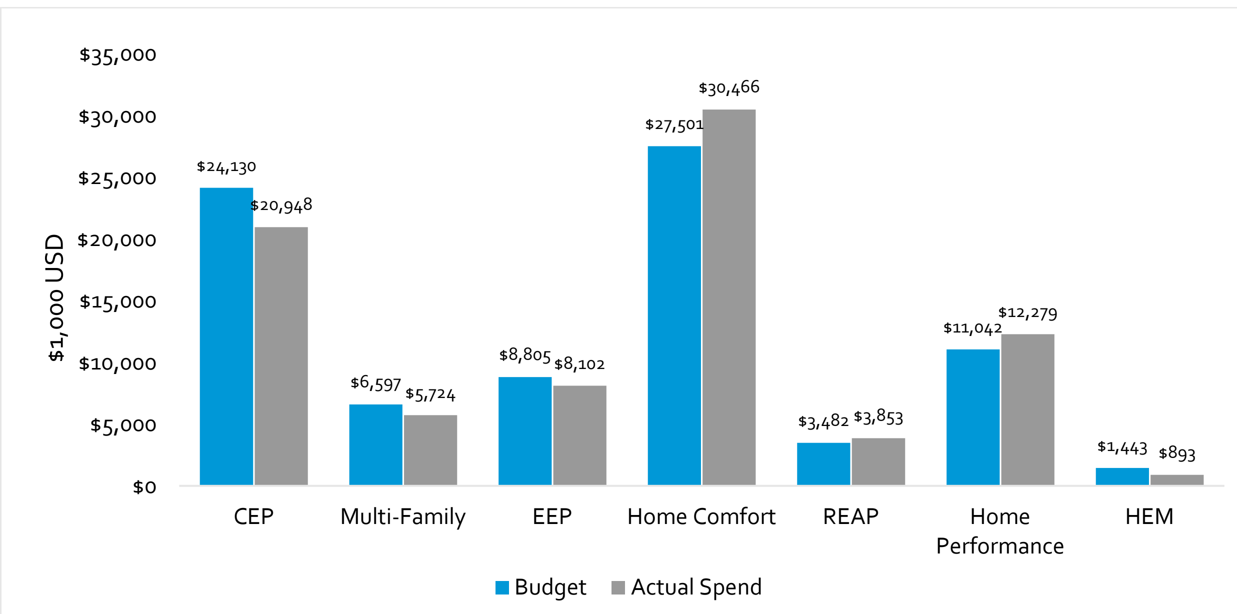
Table 6 compares budgets and actual spending by program and Figure 2 visualizes the comparison. Actual spending for commercial programs was about 80% of the planned budget but VEA MMBtu savings for the commercial programs still exceeded their combined MMBtu goal for the year. Actual spending for Home Comfort was approximately 30% higher than planned and VEA MMBtu savings for this program exceeded the goal by more than 50%.

TABLE 6: SUMMARY OF 2025 BUDGET VERSUS ACTUAL SPENDING BY PROGRAM

Program		Budget	Actual Spend	Spending Ratio
		$1,000	$1,000	%
Commercial	Commercial Efficiency Program (CEP)	$24,130	$20,948	86.8%
	Multi-Family Homes	$6,597	$5,724	86.8%
Residential	Energy Efficient Products (EEP)	$8,805	$8,102	92.0%
	Home Comfort	$27,501	$30,466	110.8%
	Residential Energy Affordability Partnership (REAP)	$3,482	$3,853	110.7%
	Home Performance (HPwES & HEA)	$11,042	$12,279	111.2%
	Home Energy Management (HEM)	$1,443	$893	61.9%
Total Commercial		**$30,727**	**$26,672**	**86.8%**
Total Residential		**$52,273**	**$55,593**	**106.4%**
***Total EE and BE Portfolio**		**$82,999**	**$82,265**	**99.1%**

** Portfolio totals exclude $2.75M of advertising and $695k of EM&V expense.*

FIGURE 2: SUMMARY OF 2025 BUDGET VERSUS ACTUAL SPENDING BY PROGRAM



Appendix A: Supplemental Detail

The evaluation team verified the calculations and inputs for hundreds of measures. The table below shows additional detail on nuances observed in the data from Captures as well as the calculations and assumptions used that drove the realization rate away from 100%. Captures is the project tracking database used by the program implementer TRC.

Program	Sub-Component	Description	Implications
CEP	**Refrigeration**	▪ Ex-Ante MMBtu, kWh, and peak kW were slightly under-reported for all 14 anti-sweat heater control projects	▪ The measure level VEA realization rates were 102% (MMBtu), 104% (kWh), and 103% (kW)
	Multi-Family Homes Rebate	▪ During the verification process, we identified that kWh and kW savings were underreported for three projects which included ENERGY STAR Clothes Washers and ENERGY STAR Dishwashers.	▪ A 103% kWh VEA realization rate and 97% kW realization rate for Multi-Family program ▪ The Multi-Family program achieved a 97% VEA realization rate for kW. Although both the claimed (-232 kW) and verified (-225 kW) impacts are negative, the verified value is 7 kW less negative, indicating an improvement despite the realization rate being below 100%
	Comprehensive Lighting	▪ 9 interior parking garage lighting projects utilized a coincidence factor of 1.0 instead of 0.75 for interior lighting per planning assumptions	▪ Over-reporting by 23 kW resulted in a less than 0.1% reduction in the overall VEA realization rate for peak demand

Program	Sub-Component	Description	Implications
	Custom Horticultural Lighting	▪ For two carryover projects (initiated prior to 2025), the baseline Photosynthetic Photon Efficacy (PPE) values used in the ex-ante calculations were below the minimum PPE requirements established by New York State for legal recreational marijuana cultivation at the applicable tier levels. In addition, we identified three separate applications at the same facility that were submitted as incremental projects, which enabled the use of a lower baseline PPE rather than the higher PPE baseline that would apply at the facility level based on total square footage.	▪ No impacts for VEA. However, this will result in a reduction in ex-post kW, kWh, and MMBtu savings.
	Custom	▪ Custom projects rely on site-specific assumptions and calculation methodologies rather than TRM measure characterizations or planning assumptions. ▪ The evaluation team conducted an initial review of the top 20 custom projects of 2025 to confirm that the projects involved eligible technologies or upgrades that were supported by technical documentation.	▪ The ex-post evaluation will include a more detailed review of custom projects, potentially supported by additional data collection or updated savings calculations.
EEP	All Measures	▪ We found only minor discrepancies resulting from reporting total quantity of incentivized products on the order of 1 or 2 units.	▪ EEP realization rates are 100% for kW, kWh EE, and MMBtu. No individual measure RR is less than 98%.
Home Comfort	Cold Climate Air Source Heat Pumps	▪ 13 projects utilized EFLHs that were in line with assumptions for Existing Buildings while the applications indicated they were New Construction.	▪ Ex-ante savings over-reported 117 MMBtu and 2,074 kWh resulting in a less than 0.1% reduction in MMBtu and kWh realization rates at the program level
HPwES	Duct Sealing	▪ 1 duct sealing measure was misclassified and reported under the Home Comfort Program	▪ Moving the associated MMBtu, kWh, and kW savings increased HPwES savings by ~0.1%

Program	Sub-Component	Description	Implications
REAP	**Smart Thermostat**	▪ The planning assumption of 5.01 MMBTU per unit savings was applied consistently for the 2024 carryover projects	▪ If 2025 planning assumptions were applied instead, the claimed savings would be higher
Home Energy Management	**MWh and MW savings**	▪ The VEA claim for HEM is based on an expected savings level per paper report delivered and the number of paper reports that were delivered in 2025. ▪ The planning assumption of 0.073483 MMBtu per paper report was applied correctly to the 1,209,576 reports delivered. ▪ The planning assumption of 21.537 kWh per paper report was not applied in 2025. If it had been applied, the associated electricity savings would have been 26,050 MWh.	▪ The ex-ante MWh savings claim was lower than it might have been if PSEG Long Island had applied planning assumptions to 2025 program activity. ▪ DSA will estimate MWh and MW savings as part of the 2025 ex-post evaluation

In addition to energy savings impacts, PSEG Long Island has goals related to the number of housing units served by whole house heat pumps and the percentage of rebate and incentive dollars that go towards participants living in DACs or low-to-moderate income participants regardless of location within the territory. The table below further defines each metric and describes drivers of any differences between the reported values and our verified values.

Count Metric	Metric Definition	Description of Differences
Housing Units Served by Whole House Heat Pumps	▪ This metric represents the number of housing units where whole house heat pumps were installed through the Home Comfort, Multi-Family, or Home Performance programs. ▪ Goal of 5,330 housing units in 2025	▪ Our count exceeded TRC's count by two units among Multi-Family installations. Housing unit counts are more complicated for the Multi-Family program as one project can cover dozens of housing units.
Rebate and Incentive Spending in DACs	▪ The metric represents the percentage of portfolio rebates and incentives that go towards customers living in DACs (or sold through stores located in DACs) ▪ Note the DAC definition includes geographic areas and any participants with incomes that fall at or below 60% of the state-median income ▪ Goal of 35% in 2025	▪ Using the NYSERDA shape files and the geocoordinates of 2025 program participants (stored in Captures), we verified the DAC status of all program participants. A small number of accounts were flagged as DAC in the Captures data but non-DAC in our mapping and vice versa. We treated the NYSERDA DAC shapefile as the ground truth. This was the primary cause of relatively small differences between reported and verified values. ▪ For EEP and Home Performance projects, the reported rebate and incentive total for DACs did not include participants with incomes that fall at or below 60% of the state-median income. ▪ For EV Make Ready, verified values are based on project end dates and reported values are based on project energized dates. This difference didn't materially affect the split between DAC and non-DAC, but the verified totals were slightly larger.

Appendix B: Validation of Geographic DAC Assignments

PSEG Long Island is committed to supporting New York state's goal of delivering at least 35% of Energy Efficiency and Clean Energy benefits to residential and business customers in DACs or in income-qualified households, and tracks and reports savings and spending accrued to households in DACs through a field in the Captures tracking system. The evaluation team reviewed project tracking data to verify whether the DAC projects were tracked accurately during 2025. Any participant with an income that falls at or below 60% of the state-median income counts towards the DAC spending goal regardless of location. This section focuses exclusively on the geographic DAC assignment.

The determinant of whether a project is in a geographic DAC is whether the project took place within a DAC-designated census tract. Each Captures record in the 2025 project list includes a "DAC (2010) (Parent Site) (Sites)" field that is either flagged Yes or No, and other fields contain latitude/longitude coordinates of the account associated with the project. A sample of the latitude/longitude coordinates were tested against the street address of the project and matched closely enough to give the evaluation team confidence in the coordinate fields. The evaluation team then spatially matched the coordinate points with the DAC shapefile polygons available from NYSERDA and confirmed that all but 56 (0.26%) of the 21,330 projects were correctly flagged and occurred within the DAC census tract boundaries. The projects with different assignments fall into one of two groups. Of these 56 projects, 27 were designated as DAC in Captures, but verified as outside the DAC boundaries by DSA. The remaining 38 were *not* designated as DAC in the Captures data but were verified to be within the DAC boundaries by DSA. Projects with different classifications are often very close to the border of a DAC census tract but don't exhibit any clear pattern. The impact of these potentially misclassified projects on overall DAC spending and savings is minimal relative to overall reported numbers. This is especially true given the fact that we observe mismatches in both directions. The evaluation team provided an excerpt of the potentially misclassified projects to PSEG Long Island for further investigation to determine if any refinement is possible in the current reporting process.

Table 7 presents a summary of project counts by DAC designation. Figure 3 shows a map excerpt of the 27 projects that were flagged as DAC in Captures but verified to be outside of DAC boundaries by DSA, which are designated by the blue polygon overlays. Figure 4 shows a subset of the 38 projects that were not flagged as DAC in Captures but determined to be inside of DAC boundaries by the evaluation team.

TABLE 7: LOCATION COUNTS

Location Designation	Count
Projects in 2025 Captures Project List	21,330
DAC-designated projects	3,410
DAC-designated projects verified as DAC	3,383
DAC-designated projects verified as non-DAC	27
Non-DAC designated projects verified as DAC	38

FIGURE 3: SAMPLE OF DAC-DESIGNATED PROJECTS VERIFIED AS OUTSIDE OF DAC BOUNDARIES (n=27)

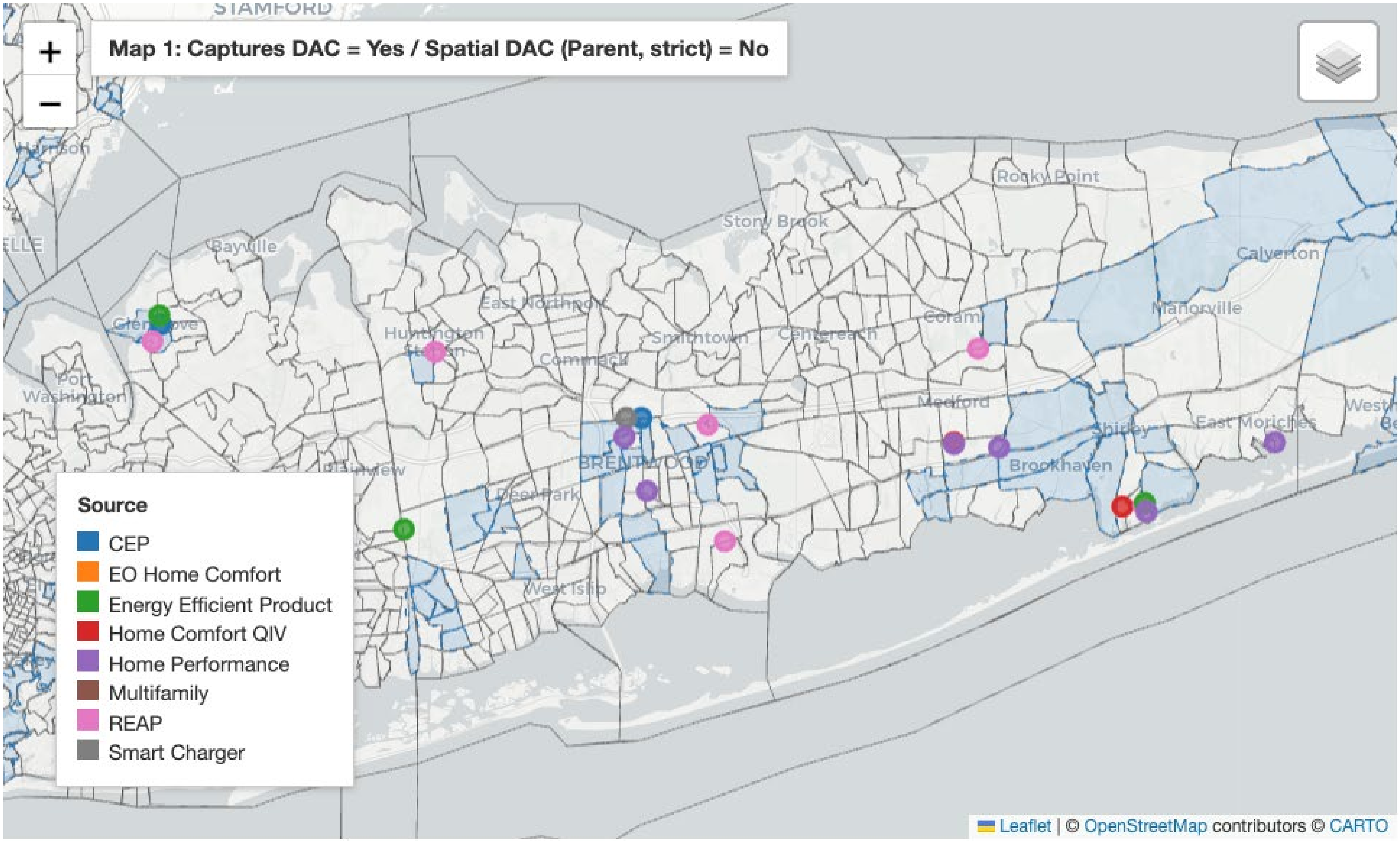


FIGURE 4: SAMPLE OF NON-DAC-DESIGNATED PROJECTS VERIFIED AS WITHIN DAC BOUNDARIES (n = 38)