2025 Annual Evaluation Report – Volume I Executive Summary

Prepared for PSEG Long Island

By Demand Side Analytics

May 2026

TABLE OF CONTENTS

Figures

Tables

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.

Key Term	Definition
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.
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.

Key Term	Definition
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.
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 the UCT 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.

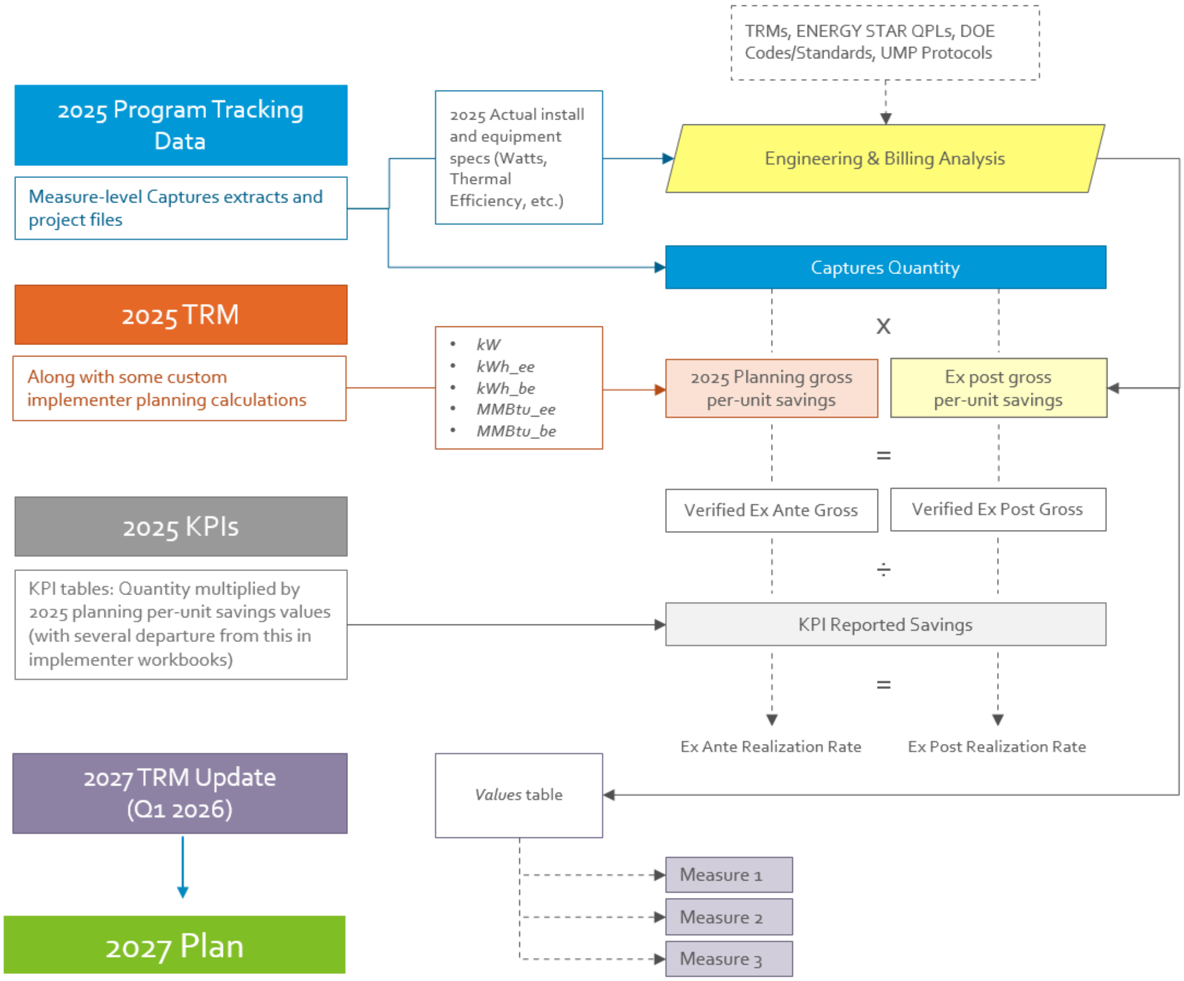
Many of the tables in this report include "total" rows or columns that summarize the more granular results at the program or portfolio level. The totals are calculated using the full decimal precision of the underlying values. The values presented in report tables are rounded for readability. In some 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.

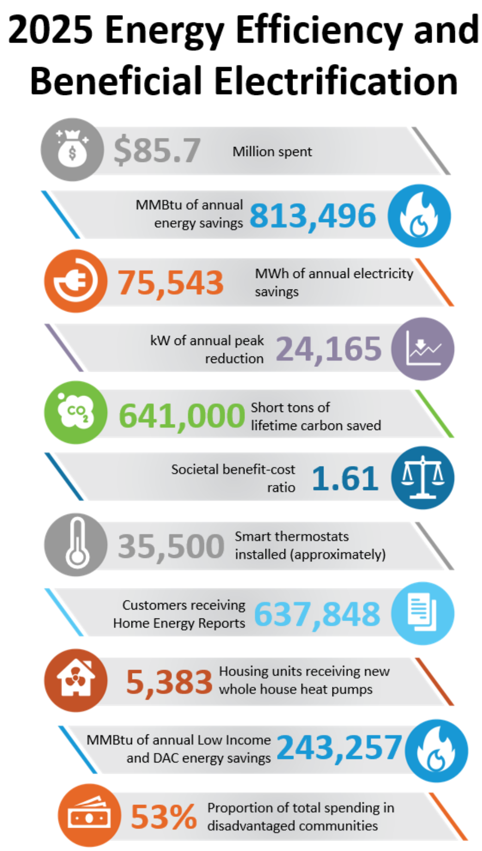
Volumes I and II of this report outline the results from the ex-post evaluation. The ex-post evaluation estimates energy and summer peak demand savings for the portfolio using the most current methods and data available at the time of the evaluation. Assumptions and algorithms from the most up-to-date 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 considered 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



1 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 another subcontractor, 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.



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

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.[1] PSEG Long Island's efforts led to over $76.5 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

[1] The EPA estimates 4.29 metric tons of carbon per vehicle-year, the equivalent of 4.73 short tons per vehicle-year. Weblink

beneficial electrification in the building and 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 shifts investment towards more non-lighting opportunities.
- **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.[2] 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

[2] NYSERDA's Clean Energy Dashboard. Weblink

from the 2024 evaluation. Considering this lag, we expected any major drivers in 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. Starting in 2024, horticultural lighting rebates and incentives were added to the CEP Custom measure mix, and free energy-waste training was made available through the CEP building operator certification (BOC) measure.

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.

The remainder of the portfolio report presents the results and key findings. Section 2 summarizes energy savings and performance. Section 2.2 presents the portfolio cost-effectiveness. Section 4 outlines economic impacts. Finally, Section 5 discusses trends and upcoming changes in beneficial electrification and energy efficiency planning considerations.

2 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 Table 2 in 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 incentivized 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. Appendix B presents the energy (MWh) and peak demand (kW) savings achievements for each of the seven programs. 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

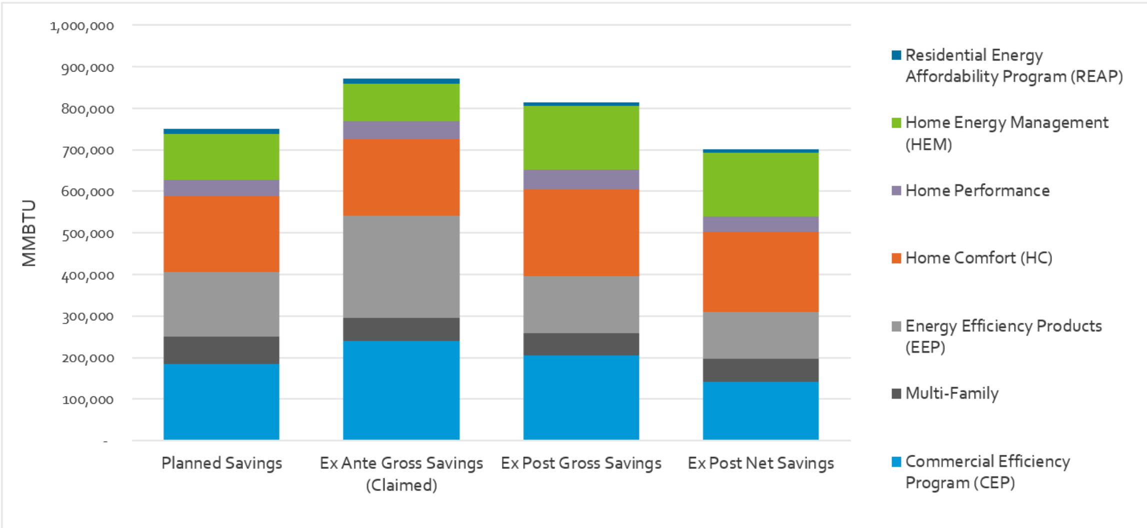
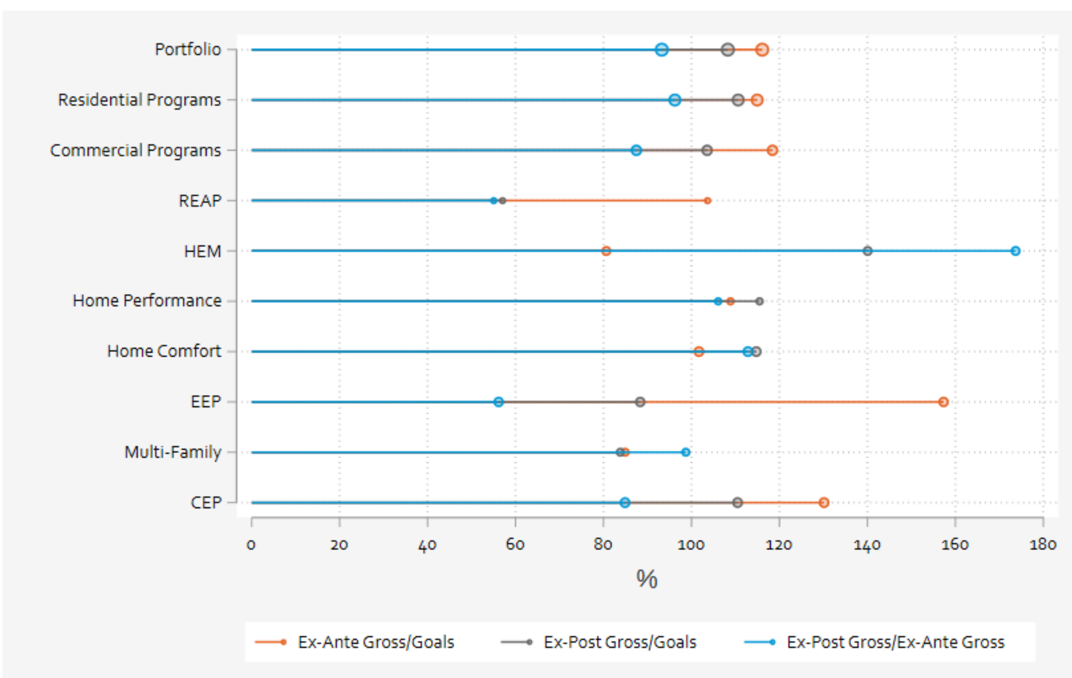


Figure 4 visualizes the key ratios (or realization rates) for the 2025 evaluation. The orange markers compare the ex-ante claimed savings to planning goals, and the grey markers compare ex-post gross savings to goals. The blue markers compare ex-post gross savings to the ex-ante savings claimed by PSEG 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, many 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 closely 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[3] 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.

[3] Note that the behavioral reports are considered non-strategic per the Strategic Framework outlined in the May 2025 PSC Orders.

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 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[4]. 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 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.
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.

[4] The Thermostat – Advanced measure protocol, combining former Connected and Learning Thermostat categories and introducing the deemed/algorithmic methodology split was first published in the NYS TRM for v12, applied to Ex Post savings starting with PY2025, and incorporated into the PSEG-LI TRM for 2027.

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 some of the analyzed building types, the assumed operating hours differed from the values specified in the PSEG-LI TRM.
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.

2.1 OVERVIEW OF IMPACTS BY DISADVANTAGED COMMUNITY AND LOW INCOME IDENTIFIERS

Table 5 shows the impacts per program split into four segments: 1) Non-Disadvantaged Community & Non-Low Income, 2) Disadvantaged Community (DAC) Only, 3) Low Income Only, and 4) DAC & Low Income. Under the CLCPA, New York Utilities are required to direct 35 to 40% of their portfolio benefits to Low Income or DAC identified customers. The effort to identify DAC and Low Income impacts aligns with PSEG Long Island's efforts to track progress towards these requirements. The method used to identify DAC and Low Income impacts aligns with the definitions of the two categories outlined by the Climate Justice Working Group (CJWG). DACs are identified geographically by census tract groups that meet criteria outlined by the CJWG. Any impacts counted towards DACs represent projects that are located within the list of DAC Census Tract Groups produced by NYSERDA and the CJWG. A Low Income identifier is assigned to any participant with an income that falls at or below 60% of the state-median income. MMBtu savings from projects completed by income-qualified participants count towards the carve-out goal. Additionally, 53% of all rebates and incentives were issued within DACs or to Low-Income households. This exceeds the goal of 35% set in 2024.

Table 5: Portfolio Impacts by DAC, Low Income, and Market Rate Customers

Energy Efficiency Program	Ex-Post Gross MMBtu				% DAC/ Low Income
	Non-DAC & Non-Low Income	DAC Only	Low Income Only	DAC & Low Income	
Commercial Efficiency Program (CEP)	147,356	57,217	0	0	28%
Multi-Family	38,312	16,066	0	0	30%
Energy Efficiency Products (EEP)	132,867	4,226	276	53	3%
Home Comfort (HC)	107,102	8,977	80,295	12,892	49%
Home Performance	8,847	1,329	27,181	8,366	81%
Home Energy Management (HEM)	133,086	21,298	0	0	14%
Residential Energy Affordability Program (REAP)	2,668	947	3,149	986	66%
Subtotal Commercial	**185,668**	**73,283**	**0**	**0**	**28%**
Subtotal Residential	**384,571**	**36,777**	**110,901**	**22,296**	**31%**
Total Portfolio	**570,239**	**110,060**	**110,901**	**22,296**	**30%**

2.2 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). Additional information on New York state's official definition of DACs and their geographic locations can be found below[5]. 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 6 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 7. The verified housing unit count was identical to claimed for single-family homes and two higher for multi-family. 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.

[5] Disadvantaged Community Criteria. Weblink

Table 6: 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 7 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.

Table 7: Summary of 2025 Rebate and Incentive Spending by Program and DAC Status

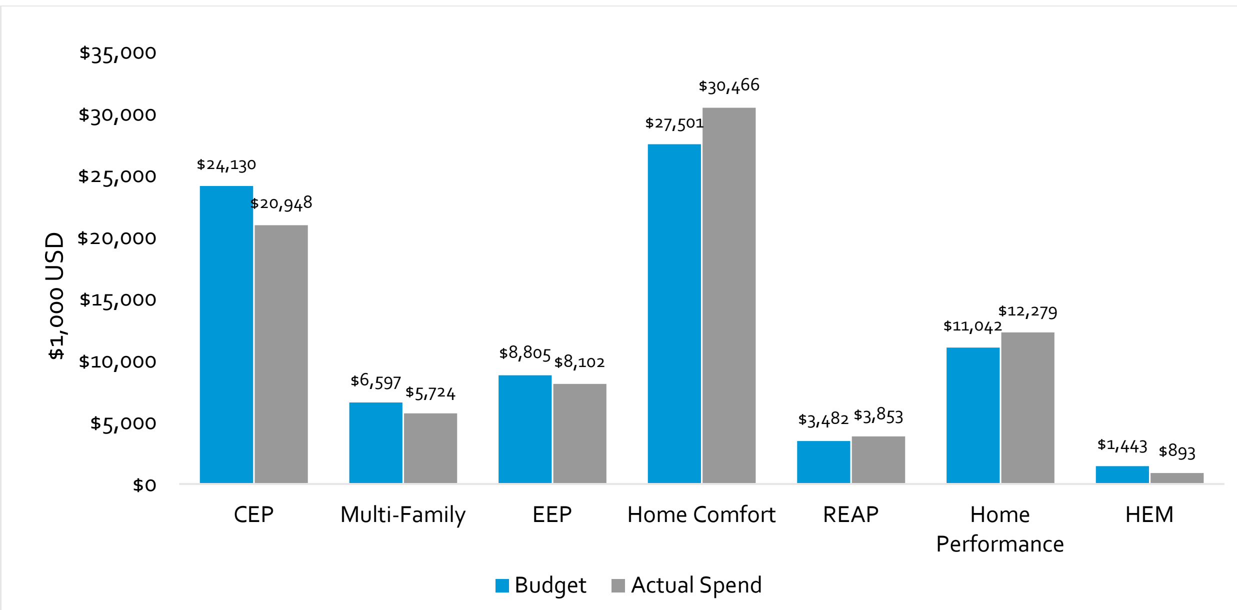
Program	Claimed Rebates and Incentives			Verified Rebates and Incentives		
	Total ($1,000)	DAC & LMI ($1,000)	% DAC	Total ($1,000)	DAC & LMI ($1,000)	% DAC
Energy Efficient Products (EEP)	$4,871	$850	17.4%	$4,871	$858	17.6%
Home Comfort	$20,671	$13,792	66.7%	$20,671	$13,797	66.7%
Home Performance	$8,566	$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	25.1%	$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 8 compares budgets and actual spending by program and Figure 5 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 8: Summary of 2025 Budget versus Actual Spending by Program

Program		Budget $1,000	Actual Spend $1,000	Spending Ratio %
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



3 COST-EFFECTIVENESS

Cost-effectiveness analysis is a widely applied tool designed to allow for direct comparison across resource options and to provide a basis for prioritizing investments. The goal is to facilitate a more efficient allocation of resources by using a common metric – net benefits or the benefit-cost ratio – to compare alternative options. Decision-makers often apply cost-effectiveness analysis on a forward-looking basis to investments with significant upfront costs but with benefits that accrue over multiple years. It also requires a pre-specified perspective (e.g., societal, utility, program participant, non-participating ratepayer), since different parties can view the same outcome differently.

In this report, cost-effectiveness is applied retrospectively to answer the following questions:

- Were 2025 energy efficiency and beneficial electrification activities and investments cost-effective in retrospect?
- How did cost-effectiveness vary by program?
- How sensitive are cost-effectiveness results to key inputs and assumptions?

Typically, cost-effectiveness analysis focuses on whether specific policies or programs lead to overall improvements in welfare for society – whether benefits outweigh costs. When benefits outweigh costs, all relevant stakeholders could be made better off through appropriate redistribution. However, policies and programs often produce winners and losers. What counts as a benefit and as a cost, often depends on the test perspective. For example, lower prices are typically favorable from a customer's perspective but can mean reduced profit margins from a producer's perspective. A widely accepted industry practice is to assess energy efficiency and demand response programs from multiple perspectives. Depending on the perspective, certain benefits do or do not accrue, and costs from one viewpoint can be viewed as transfers from another.

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 energy production and delivery as well as greenhouse gas impacts. It also enables the inclusion of beneficial electrification technologies that increase electricity use but lead to overall lower energy consumption or reduced carbon impacts by shifting energy use from fossil fuels (fuel oil, propane, and natural gas) to electricity. Finally, the SCT considers the full incremental measure costs.[6]

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,

[6] 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.

including avoided costs, discount rates, and line losses, match those used for PSEG Long Island's 2024 Utility 2.0 filing.

In addition, all calculated benefits and benefit-cost 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 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.

Table 9 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 9: 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

For the 2024 cost-effectiveness analysis, the marginal emissions rate (tons per MWh) was updated to align with the 2023 EPA eGRID Report. To date, a 2024 EPA eGRID report has not been published. Because the eGRID marginal emissions is specific to Long Island and has been relatively flat in recent years, the 2023 value was retained for the 2025 cost-effectiveness analysis. Holding all else constant, a higher marginal emissions rate improves cost effectiveness for energy efficiency and decreases cost effectiveness for beneficial electrification. The SCT ratio varies by program, falling below 1.0 for the REAP program while all other programs had SCT ratios above 1. The reasons for the change in SCT 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 section 5.3.2, 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

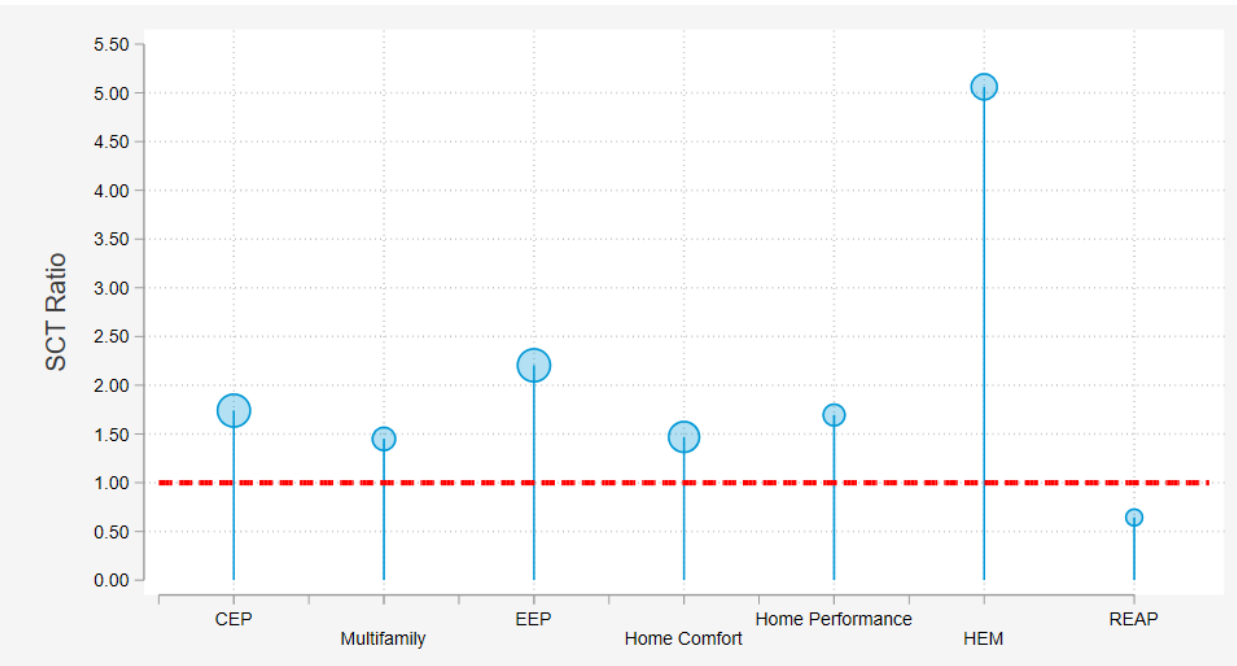


Figure 7 summarizes the benefit and cost categories analyzed and the share each contributed to the SCT. The primary two benefits for the SCT are avoided CO2 emissions at 20% of benefits and other fuel impacts at 47%. In 2024 other fuel impacts represented 35% of portfolio benefits. This shift is indicative 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

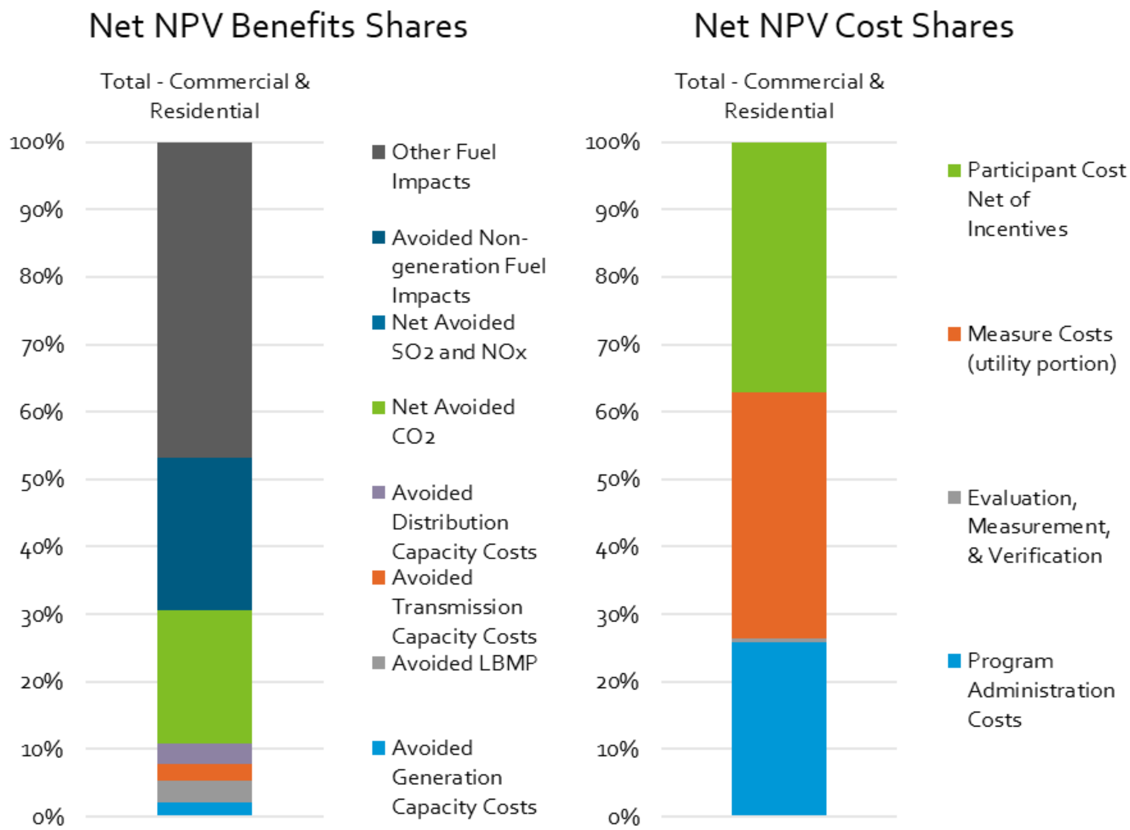


Table 10 shows the distribution of SCT benefits for beneficial electrification measures, Table 11 shows the distribution of SCT benefits for energy efficiency measures, and Table 12 shows the distribution of SCT benefits for the portfolio as a whole. The cells highlighted in orange are the top three benefit categories for each group. These tables show that most of the benefits fall into fuel categories such as avoided natural gas and delivered fuel impacts. As the portfolio shifts towards more beneficial electrification, we can expect to see this trend continue. While PSEG Long Island is an electric utility and the cost of its programs is funded through electric rates, most of the portfolio benefits come from fossil fuel savings and avoided greenhouse gas emissions.

Table 10: Beneficial Electrification Detailed Benefits Breakout

	Avoided LBMP	Avoided Capacity Costs (G+T+D)	Net Avoided CO2	Avoided Natural Gas Impacts	Delivered Fuel Impacts
Total - Commercial	($2,845)	($599)	$1,022	$10,815	$6,864
Total - Residential	($11,346)	$2,368	$8,428	$25,510	$75,531
Total - Portfolio	**($14,191)**	**$1,769**	**$9,450**	**$36,324**	**$82,395**

Table 11: Energy Efficiency Detailed Benefits Breakout

	Avoided LBMP	Avoided Capacity Costs (G+T+D)	Net Avoided CO2	Avoided Natural Gas Impacts	Delivered Fuel Impacts
Total - Commercial	$15,283	$10,434	$20,262	$1,382	($42)
Total - Residential	$5,005	$2,695	$8,914	$6,315	$8,793
Total - Portfolio	**$20,288**	**$13,129**	**$29,177**	**$7,697**	**$8,750**

Table 12: Total Portfolio (EE and BE) Detailed Benefits Breakout

	Avoided LBMP	Avoided Capacity Costs (G+T+D)	Net Avoided CO2	Avoided Natural Gas Impacts	Delivered Fuel Impacts
Total - Commercial	$12,438	$9,835	$21,284	$12,197	$6,821
Total - Residential	($6,340)	$5,063	$17,343	$31,824	$84,324
Total - Portfolio	**$6,097**	**$14,898**	**$38,627**	**$44,021**	**$91,146**

3.1 COST EFFECTIVENESS TESTS: RESOURCE OF INTEREST AND BEST TEST TO MEASURE COST EFFECTIVENESS

While the SCT is the primary cost test for the Energy Efficiency and Beneficial Electrification portfolio, it is worth exploring the information provided by both the Utility Cost Test (UCT) and Ratepayer Impact Test (RIM). The UCT is a good secondary test for Energy Efficiency measures, whereas the RIM is a useful secondary test for the Beneficial Electrification measures. The RIM Test views cost-effectiveness from the perspective of non-participating ratepayers and assesses whether the change in electric rates due to program activity outweighs the costs of operating the programs.

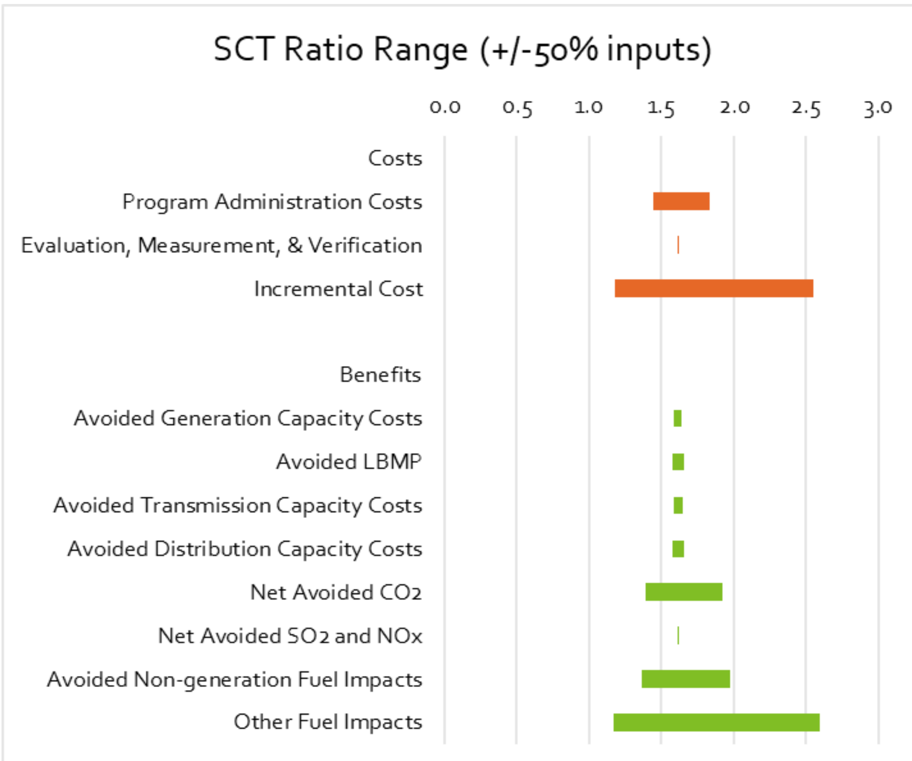
At the portfolio level, the UCT ratio is 0.24, however when evaluated only for Energy Efficiency impacts the UCT ratio increases to 0.85. Specifically, programs with higher concentration of energy efficiency measures, such as CEP, see higher cost effectiveness ratios under the UCT compared to programs consisting of mostly beneficial electrification measures. Alternatively, the RIM ratio is 0.54 at the portfolio level, but when evaluated for Beneficial Electrification measures, the RIM ratio increases to 1.79. Programs consisting of mostly beneficial electrification, such as Home Comfort, have highly cost-effective RIM results. This indicates that the beneficial electrification measures are cost effective from the non-participating ratepayer perspective.

Appendix C provides additional details on the UCT and RIM results.

3.2 SENSITIVITY ANALYSIS

When considering the prospective implications of a cost-effectiveness analysis, it is important to assess how sensitive results may be to assumptions about cost and benefit inputs. Figure 8 shows the range of portfolio SCT ratios when each cost and benefit category is independently varied up and down by 50%. For example, if incremental costs were 50% higher, the portfolio SCT would be about 1.18. If incremental costs are 50% lower, the portfolio SCT ratio would be about 2.55. Similarly, if the avoided cost of carbon was 50% lower, the portfolio SCT would be 1.39, but if avoided carbon costs were 50% higher, the portfolio SCT ratio would be 1.92. The sensitivity analysis demonstrates that the SCT cost-effectiveness results are primarily driven by incremental cost assumptions, followed by administrative costs, other fuel impacts, and avoided carbon costs. This finding is logical given that these components comprise the largest shares of costs and benefits, respectively.

Figure 8: Portfolio SCT Ratio Sensitivity to +/-50% Changes in Costs & Benefits



In addition to varying cost and benefit inputs up and down, we conducted a sensitivity analysis to explore the effects of declining carbon intensity of the power supply. As the electric generation mix decarbonizes, every MWh saved produces fewer avoided tons of CO_2. This means that it will be somewhat less cost-effective to save the same unit of electricity, holding all else constant. Conversely, every additional MWh consumed results in less CO_2 emitted than would have been the case at a higher emissions rate. This means that as the carbon intensity of the power supply decreases, it will be somewhat more cost-effective to deploy beneficial electrification measures which result in increased electricity consumption.

The marginal carbon emissions rate is constant over time in the base scenario analysis. To explore sensitivity to declining emissions, marginal emissions were decreased annually to reach the carbon emissions rate implied by reaching the 70% renewables by 2030 goal of the Climate Leadership and Community Protection Act.[7] Table 13 shows the program and portfolio SCT results for this sensitivity scenario. The SCT ratio dropped from 1.61 to 1.60. On a relative basis, this drop is smaller compared to last year. This is expected as beneficial electrification measures become more prevalent in the portfolio and the assumed marginal carbon emissions decrease. For example, programs relying primarily on energy savings show modestly lower SCT ratios. In contrast, the Home Comfort program, which relies primarily on beneficial electrification, shows a modest increase in the SCT.

Table 13: Societal Cost Test Results for Declining Emissions Sensitivity

Sector	Program	NPV Benefits ($1,000)	Costs ($1,000)	SCT Ratio (Sensitivity)	SCT Ratio (Base)
Commercial	CEP	$40,190	$28,253	1.42	1.74
	Multi-Family	$14,661	$9,241	1.59	1.45
Total Commercial Portfolio		**$54,850**	**$37,494**	**1.46**	**1.67**
Residential	Energy Efficient Products	$29,545	$13,702	2.16	2.20
	Home Comfort	$82,488	$51,305	1.61	1.47
	Home Performance	$18,807	$11,132	1.69	1.70
	Home Energy Management	$5,703	$1,126	5.06	5.06
	REAP	$1,868	$3,141	0.59	0.64
Total Residential Portfolio		**$138,411**	**$80,407**	**1.72**	**1.64**
Total Portfolio [1]		**$193,261**	**$120,646**	**1.60**	**1.61**

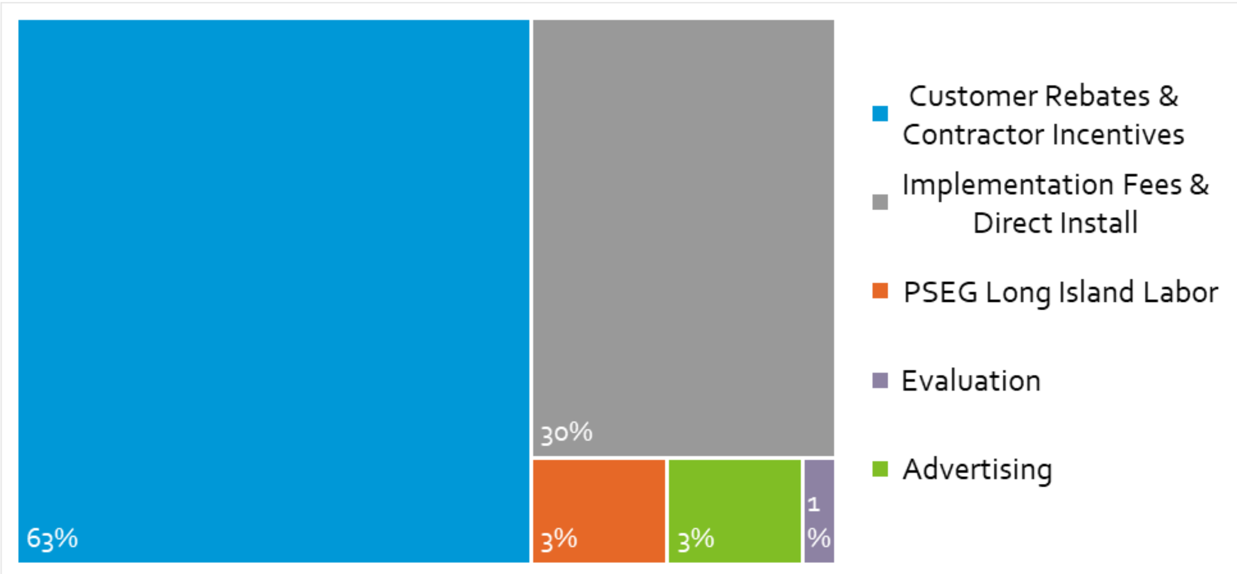
[1] Portfolio costs include $2.7M of advertising and EM&V that were not allocated to individual programs

3.3 2025 EXPENDITURE SUMMARY

PSEG Long Island spent $85.71 million on the Energy Efficiency and Beneficial Electrification Portfolio in 2025, compared to $82.94 million in 2024. Figure 9 summarizes spending related to implementation, management, and evaluation of programs in the 2025 Portfolio by type of expenditure. Customer "Rebates" consist of payments made to participating customers, and Contractor "Incentives" consist of payments made to participating contractors (e.g., heating, ventilation, and air conditioning (HVAC) installers) and also includes PSEG Long Island administrative labor.

[7] New York State Climate Action Council. 2022. "New York State Climate Action Council Scoping Plan." Weblink

Figure 9: 2025 PSEG Long Island Expenditures for the EE and BE Portfolio



4 ECONOMIC IMPACT MODELING

This section provides an analysis of the economic impact of the Energy Efficiency and Beneficial Electrification portfolio from 2020 to 2024. The economic impact modeling software (IMPLAN) previously used to assess local program impacts was sold to another entity, which increased the subscription cost by over 300%. Due to this substantial increase, a full IMPLAN-based economic impact update for 2025 was not conducted but will be provided every other year. This year's analysis includes an evaluation of the key metrics previously generated under IMPLAN.

The year 2020 represents the first year of the Demand Side Analytics (DSA) contract term and serves as the baseline for this analysis. This section examines how annual program investments contribute to overall economic output and employment within the region. It measures changes in total economic output, employment measured in full-time equivalent (FTE) jobs, and program investment levels. In addition, the analysis evaluates economic efficiency by calculating the output and employment generated per $1 million invested.

By comparing results across program years, this section highlights trends in economic performance, assesses significant changes over time,[8] and evaluates the relationship between investment levels and economic outcomes. Correlation and outlier analysis are also included to better understand the strength of relationships among key variables and to determine whether any year shows statistically unusual behavior. The following metrics are used to evaluate the economic impact of the program:

- **Total Economic Output:** The total value of regional economic production generated by program related activity.
- **Direct Effects:** Immediate economic activity resulting directly from program investments.
- **Indirect & Induced Effects:** Secondary economic activity generated through supply-chain impacts and participant spending of energy savings.
- **Employment (FTE):** The total full-time equivalent employment supported by program-related economic activity.
- **Direct FTE:** Employment supported directly by program spending and implementation, measured in full-time equivalent units.
- **Indirect FTE:** Employment supported through supply-chain activity and the reinvestment of energy savings in the local economy, measured in full-time equivalent units. Separate identification of Indirect FTE is reported beginning in 2023.

[8] Full-time equivalents represent the number of total hours worked divided by the number of compensable hours in a full-time schedule. This unit allows for comparison of workloads across various contexts. An FTE of 1.0 means that the workload is equivalent to a full-time employee for 1 year, but could be done, for example, by one person working full-time for a year, two people both working half-time for the year, or two people each working full-time for 6 months.

- **Total Economic Output per $1M Investment:** The amount of regional economic output generated for every $1 million invested.
- **Employment FTE per $1M Investment:** The number of full-time equivalent jobs supported for every $1 million invested.
- **Program Investment:** Total program spending used as the primary input for the economic impact model. Table 14 summarizes the results from IMPLAN from 2020 through 2024.

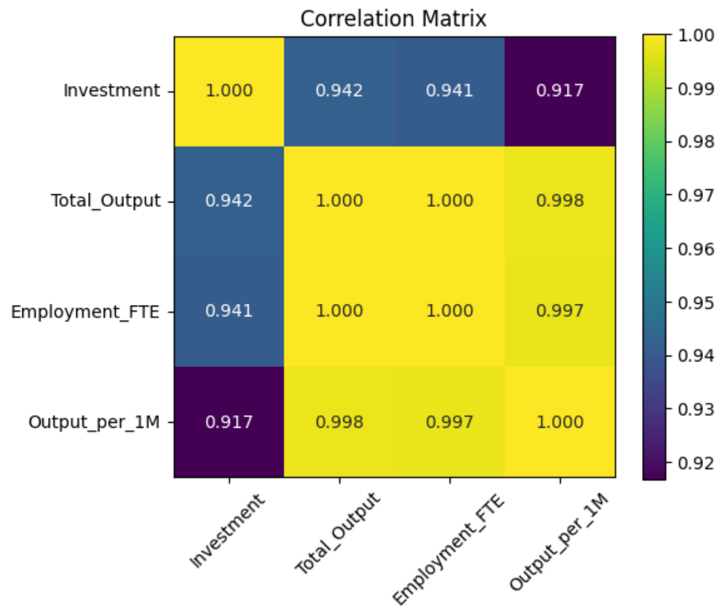
Table 14: Economic Impact of 2020-2024 Energy Efficiency and Beneficial Electrification Portfolio

EE & BE Portfolio Investments	2020	2021	2022	2023	2024
Economic Impact					
Total Economic Output (Millions)	$173.8	$172	$168.8	$304.6	$296
Direct Effects (Millions)	$148.6	$162.5	$159.2	$254.7	$248.8
Indirect & Induced Effects (Millions)	$25.2	$9.5	$9.5	$49.9	$47.1
Employment, Direct FTE	484	466	478	784	758
Employment, Indirect FTE	N/A	N/A	N/A	311	301
Total Employment, Direct & Indirect FTE	484	466	478	1095	1059
Program Input					
Program Investment (Millions)	$78.7	$75	$75.4	$85.6	$82.9
Impact per $1M Investment					
Total Economic Output in Dollars per $1M Investment	$2.21	$2.29	$2.24	$3.56	$3.57
Employment (Total FTE) per $1M Investment	6.2	6.2	6.3	12.8	12.8

4.1 CORRELATION ANALYSIS

Figure 10 shows the strength of the relationship (correlation) between program investment, total economic output, employment FTE, and output per $1 million invested. All correlations are positive, indicating that increases in one variable are generally associated with increases in the others.

Figure 10: Correlation Analysis of the EE & BE portfolio



Some key observations are the following.

- **Investment and Employment (0.94)**: The correlation indicates a very close association between program funding and job creation. Years with higher investment correspond to higher employment impacts, particularly during the 2023 expansion period.
- **Investment and Total Output (0.94)**: This relationship shows a tight alignment between funding levels and overall economic output. Increases in program investment are accompanied by proportional increases in total economic activity.
- **Total Output and Employment (~1.00)**: Total output and employment move almost proportionally across the five-year period, reflecting the same year-to-year pattern.
- **Total Output and Output per $1M (~1.00)**: Efficiency per dollar invested rises alongside total output. The close correlation reflects that improvements in overall economic performance are closely linked with higher returns per dollar invested.
- **Investment and Output per $1M (~0.92)**: Higher investment levels are associated with improved economic efficiency. However, efficiency gains appear to be influenced not only by funding levels.

The results indicate that investment, output, employment, and efficiency moved together over the analysis period. The significant gains in 2023 reflect simultaneous growth across all major indicators. The very high correlation values are influenced by the limited five-year sample and the structural increase observed in 2023. In addition, some efficiency metrics are derived from total output, which contributes to higher correlation values.

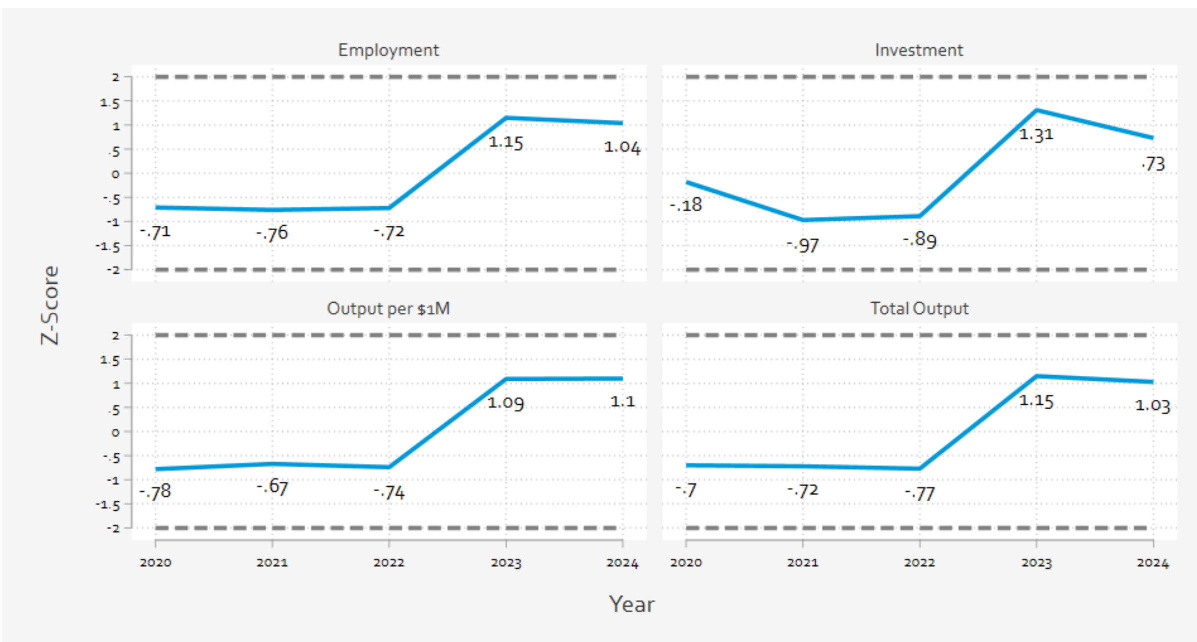
4.2 OUTLIER ANALYSIS

To determine whether any year represents unusually high or low performance, a Z-score analysis was conducted for total economic output, employment (FTE), program investment, and output per $1M investment. The Z-score measures how far a value is from the average (mean), expressed in standard deviations. A common rule is that any Z value greater than two or less than negative two is considered a potential outlier. Table 15 presents the Z-Score results while Figure 11 shows the Z-score charts and explain how each year compares to the five-year average.

Table 15: Z-Score Results

Metric	Highest Z-Score	Year
Total Economic Output	+1.15	2023
Total Employment, Direct & Indirect FTE	+1.15	2023
Program Investment	+1.31	2023
Total Economic Output per $1M Investment	+1.10	2024

Figure 11: Z-Score Comparison of Economic Impact Metrics (2020-2024)

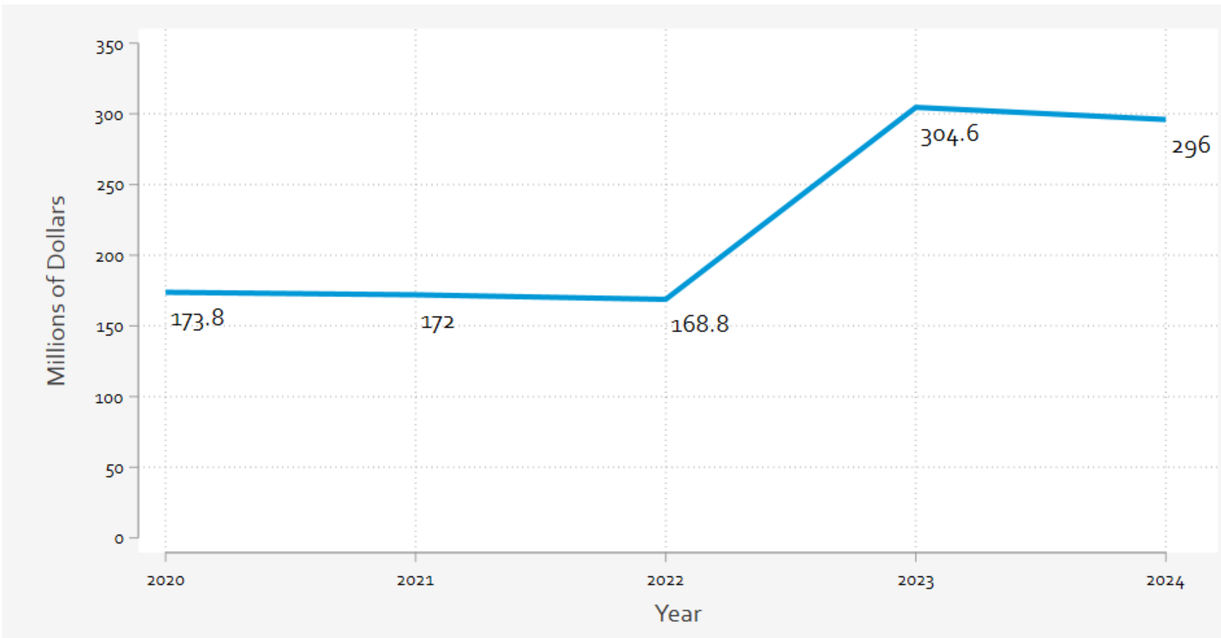


From 2020 to 2022, all metrics were below the overall average, indicating relatively stable and moderate performance during those years. In 2023, all four indicators increased above the average, with Z-scores ranging from approximately +1.09 to +1.31. This reflects a noticeable upward shift in measured economic impact, along with a reporting change beginning in 2023 that includes indirect FTE. In 2024, values remained above average but were slightly lower than 2023 for output, employment, and investment, while efficiency remained elevated. Overall, none of the values exceed 2 standard deviations from the mean. This means no year qualifies as a statistical outlier. Instead, 2023 represents a structural increase in performance rather than an abnormal spike.

4.3 ANNUAL ECONOMIC IMPACT TRENDS (2020 - 2024)

4.3.1 TOTAL ECONOMIC OUTPUT (MILLIONS)

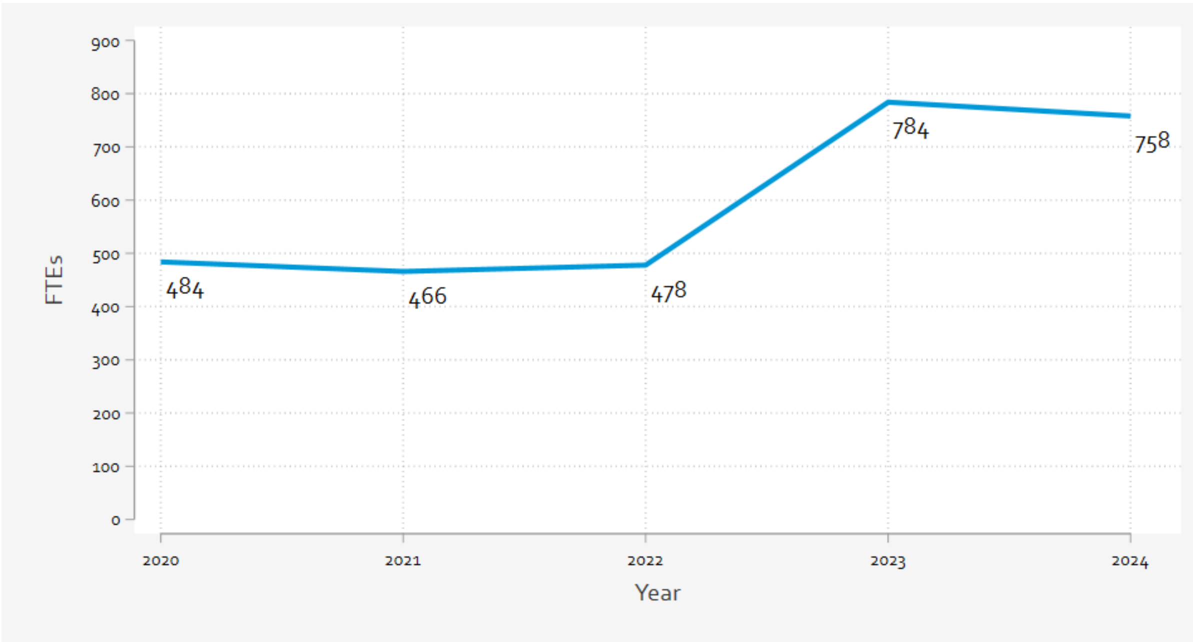
Figure 12: Total Economic Output by Program Year



Economic output remained relatively stable between 2020 and 2022, with slight decreases in 2021 and 2022. In 2021, output decreased slightly because overall program investment was reduced, which directly lowered the level of economic activity generated. In 2022, output declined from $172 million to $168.8 million as a result of a calculation adjustment that reduced the effective useful life of residential LED lighting from 20 years to 5 years. In 2023, output increased sharply to $304.6 million, representing the highest level during the analysis period. This significant increase was driven by real program expansion, particularly heat pump and electrification initiatives that generated greater economic activity. In 2024, output decreased slightly to $296.0 million due to reduced spending in certain areas, especially retail lighting, but remained substantially higher than previous levels.

4.3.2 EMPLOYMENT (FTE)

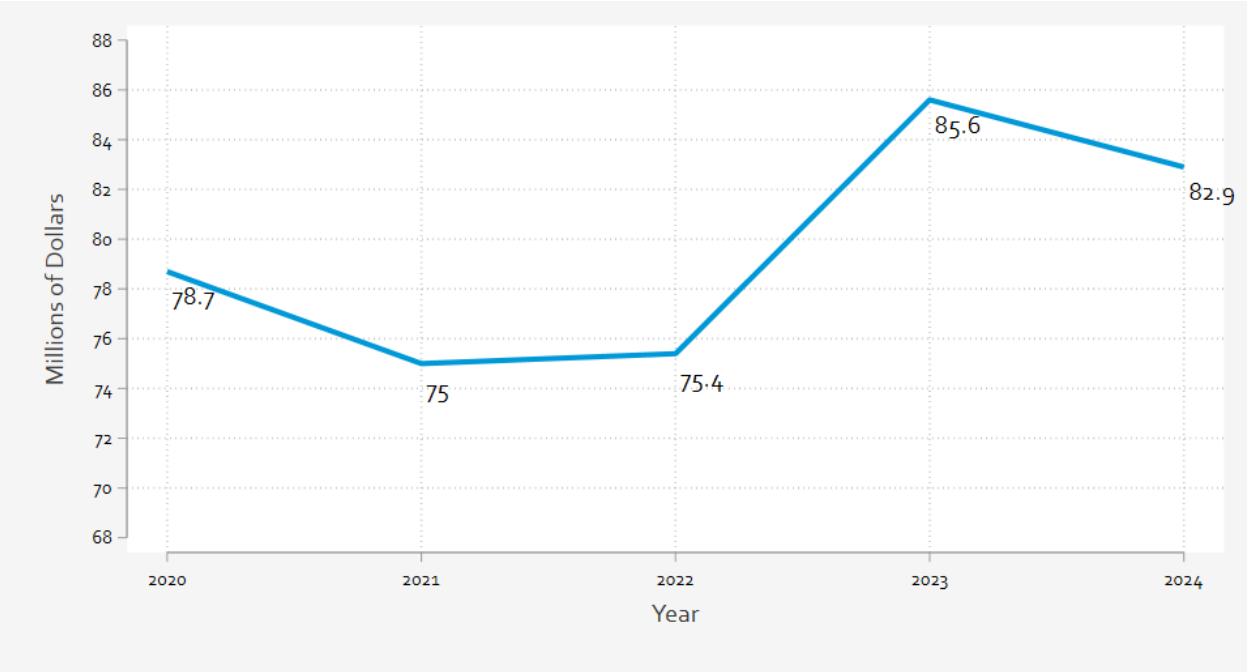
Figure 13: Direct Employment (FTE) by Program Year



Employment impacts decreased moderately from 484 direct FTEs in 2020 to 466 direct FTEs in 2021, primarily reflecting slightly lower program funding. Employment increased in 2022 to 478 direct FTEs, as overall program activity remained stable despite lighting assumption changes. In 2023, employment increased substantially to 784 direct FTEs, compared to 2022. This increase reflects expanded heat pump installations and other labor-intensive electrification measures. In 2024, employment declined slightly to 758 direct FTEs, consistent with the modest reduction in program investment, but remained significantly above earlier years. Employment trends closely follow the changes observed in total economic output.

4.3.3 PROGRAM INVESTMENT (MILLIONS)

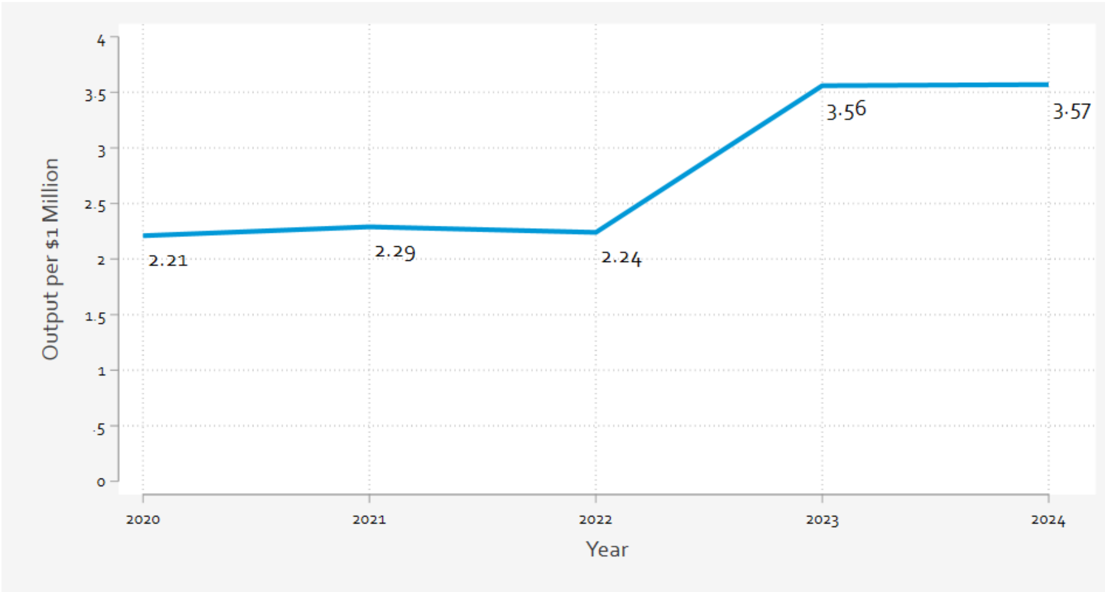
Figure 14: Program Investment by Program Year



Program investment represents the primary program input and is presented in nominal dollars. The investment remained relatively stable from 2020 through 2022, ranging between $75 million and $78.7 million. The slight decline in 2021 was influenced by operational pauses and economic uncertainty caused by the COVID-19 pandemic. In 2022, funding levels remained stable, increasing from $75 million to $75.4 million. In 2023, investment increased to $85.6 million (13.5%). This massive jump was driven by the expansion of beneficial electrification and whole-home heat pump initiatives, particularly for low-to-moderate income (LMI) households. In 2024, program investment dropped by $2.7 million, primarily due to lower funding allocated to the Energy Efficiency Products (EEP) program as the retail lighting market reached maturity and saturation.

4.3.4 Economic Output per $1 Million Investment

Figure 15: Economic Output per $1 Million by Program Year



Economic output per $1 million invested remained relatively stable from 2020 through 2022, indicating consistent economic efficiency during those years despite funding and policy adjustments. In 2023, output per $1 million increased significantly to 3.56, reflecting higher impacts from labor-intensive measures such as heat pumps. This increase also coincides with methodological changes beginning in 2023, including the reporting of indirect FTE. The ratio remained stable at 3.57 in 2024, suggesting that the structural efficiency gains achieved in 2023 were sustained even with slightly lower overall investment. Table 16 presents the year-over-year percentage changes in key economic impact metrics.

Table 16: Year-Over-Year Impact of Energy Efficiency and Beneficial Electrification Portfolio

EE & BE Portfolio Investments	2020-2021	2021-2022	2022-2023	2023-2024
Economic Impact				
Total Economic Output (Millions)	-1.04%	-1.86%	80.45%	-2.82%
Direct Effects (Millions)	9.35%	-2.03%	59.99%	-2.32%
Indirect & Induced Effects (Millions)	-62.30%	0.00%	425.26%	-5.61%
Employment, Direct FTE	-3.72%	2.58%	64.02%	-3.32%
Employment, Indirect FTE	N/A	N/A	N/A	-3.22%
Total Employment, Direct & Indirect FTE	-3.72%	2.58%	129.08%	-3.29%
Program Input				
Program Investment (Millions)	-4.70%	0.53%	13.53%	-3.15%
Impact per $1M Investment				
Total Economic Output in Dollars per $1M Investment	3.62%	-2.18%	58.93%	0.28%
Employment (Total FTE) per $1M Investment	0.00%	1.61%	103.17%	0.00%

- **2020-2021:** Between 2020 and 2021, program investment decreased by 4.8%, and employment declined from 484 to 466 FTEs due to COVID-19 operational pauses and economic uncertainty. Despite these reductions, economic output per $1 million increased to $2.29 as higher retail electricity prices increased the value of reported energy savings.
- **2021 - 2022:** From 2021 to 2022, investment remained stable at approximately $75.4 million. However, total economic output declined to $168.8 million, and efficiency fell to $2.24 per $1 million invested. This change resulted from reducing the effective useful life of residential LEDs from 20 years to 5 years to align with updated federal market standards.
- **2022 - 2023:** The 2022 to 2023 period experienced a significant increase in performance. Investment rose by 13.5 percent to $85.6 million. This surge was driven by expanded labor-intensive heat pump initiatives for low-income customers. The reported employment increased from 478 to 1,095 FTEs. This sudden increase was due to increase in investment and a reporting change that began including 311 indirect jobs in addition to 784 direct FTEs.
- **2023 - 2024:** Between 2023 and 2024, investment and output declined moderately to $82.9 million and $296.0 million, respectively. This decrease was primarily due to a $9.4 million reduction in retail lighting expenditure as market adoption matured. Despite this decline, economic efficiency reached a peak of $3.57 per $1 million invested.

Annual changes in economic impact were influenced by both funding levels and policy adjustments.

- In 2021, slightly lower funding led to modest declines in output and employment, although higher retail electricity prices increased the value of reported energy savings.
- In 2022, changes to residential LED useful life assumptions reduced reported output and efficiency, reflecting a calculation update rather than weaker program performance.
- In 2023, the portfolio experienced a clear structural expansion driven by increased investment and significant growth in labor-intensive heat pump initiatives.
- In 2024, investment and output moderated slightly due to reduced retail lighting expenditures as market adoption matured.

Overall, the Energy Efficiency & Beneficial Electrification portfolio's impact strengthened over time, with 2023 marking a clear transition to a higher level of performance. Despite modest adjustments in 2024, economic outcomes remained substantially above 2020-2022 levels.

4.4 PY2025 PROJECTION

The projected economic impacts for the 2025 program year were developed using a trend-based forecasting approach informed by observed relationships between program investment levels and economic output in prior program years. In previous evaluations, long-term economic impacts were estimated using the IMPLAN economic modeling platform. However, because an IMPLAN software license was not procured for the 2025 evaluation, the PY2025 projections were instead developed by applying historical relationships between portfolio investment, economic output, and employment observed in recent program years.

As discussed in the previous sections, the total economic output and employment metrics were strongly correlated with program investment in prior analyses. The portfolio achieved higher economic output per dollar invested beginning in 2023, reflecting increased energy savings, higher retail electricity prices, expanded program activity, and a shift toward more labor-intensive electrification measures. Based on these established trends, the PY2025 projections apply recent observed economic output and employment performance ratios to the 2025 portfolio investment levels to estimate both near-term and long-term economic impacts. Table 17 shows the resulting estimates.

Table 17: Projected Economic Impact of the 2025 Energy Efficiency & Beneficial Electrification Portfolio

2025 EE &BE Portfolio Investments	2025 Economic Impact	2025-2049 Economic Impact
Economic Impact		
Total Economic Output (Millions)	$293.21	$471.23
Direct Effects (Millions)	$245.82	$246.45
Indirect & Induced Effects (Millions)	$47.39	$224.78
Employment, Direct FTE	753	995
Employment, Indirect FTE	299	428
Total Employment, Direct & Indirect FTE	1,052	1,423
Program Input		
2025 Program Investment (Millions)	$82.26	$82.26
Impact per $1M Investment		
Total Economic Output in Dollars per $1M Investment	$3.56	$5.73
Employment (Total FTE) per $1M Investment	12.79	17.3

Based on trends from 2020-2024, we estimate strong economic efficiency for the 2025 Energy Efficiency and Beneficial Electrification portfolio. While 2020-2022 generated approximately $2.2 million in total economic output per $1 million invested, efficiency increased to about $3.6 million per $1 million in 2023 and 2024. Applying the output performance observed in recent years to the 2025 investment suggests output will remain near $3.6 million per $1 million invested, indicating sustained strong performance relative to the pre-2023 period.

The long-term economic impact reflects the net present value (NPV) of benefits associated with the 2025 program year. The present value of participant energy cost savings was estimated using the 2024 savings per $1 million of program investment and applying it to the 2025 program investment level. This approach is supported by the correlation analysis described in Section 4.1, which showed that key economic impact metrics such as output and employment have historically been strongly influenced by program investment levels. The projected NPV of economic output of $471.23 million equals the present value of participant energy cost savings over the 2025-2049 period ($178.02 million) plus the 2025 economic impact of $293.21 million from program investments. A nominal discount rate of 5.66% and an energy price inflation rate of 1.67% were used to calculate the NPV of participant energy cost savings.

5 TRENDS IN ENERGY EFFICIENCY AND BENEFICIAL ELECTRIFICATION

New York has several sweeping and ambitious statewide clean energy goals. In 2018, the New Efficiency: New York (NE:NY) white paper was published. In 2019, building on the initiatives set in NE:NY, the Climate Leadership and Community Protection Act (CLCPA) was signed into law. Through the CLCPA, New York is doubling down on its efforts to create a clean, resilient, and equitable energy grid. In 2022, Governor Hochul announced a plan for two million climate-friendly, electrified or electrification-ready homes by 2030. More recently, State policymakers have placed renewed emphasis on affordability, reliability, and demand management as electric system costs rise and large new loads create additional pressure on the grid. While great progress has been made, market forces and politics make reaching these goals uncertain.

The Climate Leadership and Community Protection Act aims to:
Reduce Greenhouse Gas emissions 40% by 2030 and 85% by 2050 below the 1990 emissions baseline
Have 70% of energy come from renewable energy by 2030
Achieve an energy efficiency target of 185 TBtu of cumulative site energy savings statewide
Achieve a minimum of 1 million electrified homes and up to 1 million electrification-ready homes by 2030
Deploy 6 GW of Energy Storage capacity and 10 GW of solar by 2030.
Provide 35-40% of benefits of spending on clean energy and energy efficiency programs to disadvantaged communities.

To meet the goals set forth in CLCPA, PSEG Long Island is focused on expanding renewable energy resources, further electrifying and decarbonizing their system, reducing greenhouse gas emissions, managing peak demand, and escalating programs in disadvantaged and low-income communities. As the low-hanging fruit of residential LED lighting is no longer available and more stringent codes and policy frameworks have shifted attention toward weatherization, electrification, and flexible demand, utilities in New York have begun to struggle to stay on track with the lofty CLCPA goals. Rising prices due to inflation and tariffs, growing concerns about energy affordability, near certain cuts in federal spending, and delays to new funding sources from Albany mean that, while PSEG Long Island continues to be a leader in expanding beneficial electrification measures in their service area, the State's pathway to meeting its energy and climate goals is unclear.

The following sections walk through the implications of these statewide clean energy goals, the renewed focus on demand management, and the changing political landscape on PSEG Long Island's Energy Efficiency and Beneficial Electrification Portfolio.

5.1 A RENEWED FOCUS ON DEMAND MANAGEMENT

In 2026, New York's energy policy discussion has taken on a renewed focus on affordability, reliability, and the timing of electric demand growth. Governor Hochul's 2026 State of the State[9] frames these concerns explicitly around rising utility bills, growing electric demand, and the need to avoid

[9] 2026 State of the State, Governor Kathy Houchel. Weblink

overbuilding costly infrastructure that would ultimately be paid for by ratepayers. The Governor's Ratepayer Protection Plan and related Excelsior Power initiative emphasize grid flexibility as a core system resource and specifically identify technologies such as smart thermostats and demand response as tools that can shift load away from stressed hours while maintaining customer comfort. In this framing, demand management is no longer a niche complement to traditional energy efficiency programs; it is increasingly being treated as an important strategy for controlling costs and preserving reliability on a changing grid.

This renewed emphasis reflects broader changes in the State's electric system. As New York pursues electrification, supports economic development, and plans for large new loads, policymakers are increasingly concerned about *when* electricity is consumed, not just how much is consumed over the course of a year. Governor Hochul's proposal explicitly links grid flexibility to the challenge of accommodating load growth while protecting residential customers from bearing the cost of infrastructure needed to serve very large new customers such as data centers. The state's message is that large new loads must either pay the costs they impose or supply their own energy, while utilities are expected to make better use of flexible demand to avoid unnecessary and costly system upgrades and backup generation.

For PSEG Long Island, this trend is highly relevant even though demand response and time-varying rates sit adjacent to, rather than inside, the core Energy Efficiency and Beneficial Electrification portfolio. The same market and policy conditions that are pushing New York toward weatherization and electrification are also increasing the value of flexible load. PSEG Long Island's 2025 Utility 2.0 filing describes 2026 as a transition year and notes that its revised portfolio is being aligned to the May 2025 PSC Orders governing 2026 through 2030. At the same time, the Brattle Group's statewide grid flexibility study for NYSERDA and DPS[10] found that New York's grid flexibility potential could exceed six times current capability by 2040 and could avoid nearly $3 billion per year in power system costs in a highly decarbonized system. Taken together, these developments suggest that the State is moving toward a framework where energy efficiency, electrification, and grid flexibility are increasingly expected to work in concert.

For PSEG Long Island, this presents both an opportunity and a challenge. On one hand, technologies already present in the portfolio (notably smart thermostats and other connected devices) are well positioned to support a more flexible grid. On the other hand, increased attention to demand management may intensify competition for limited program dollars and administrative focus, particularly as the portfolio is simultaneously being redesigned around the Strategic Framework and deeper weatherization objectives. The broader implication is that future conservation planning may place greater value on measures that can reduce costs and emissions while also shifting usage away from peak periods. As concerns about affordability and system reliability continue to grow, demand management is likely to play a larger role in how New York defines the purpose of utility customer programs in the second half of this decade.

[10] New York's Grid Flexibility Potential, Vol. 1 Summary Report, Brattle Group. Weblink

5.2 TIME OF DAY RATES IN 2025

Following investments in smart meter infrastructure over the past several years, PSEG-Long Island launched two new residential Time-of-Day (TOD) rates in November of 2023. TOD rate schedules for residential customers price consumption of electricity differently based on the time of day that the consumption occurs. This is important for environmental conservation and economic efficiency because of the unique nature of electricity markets. Until large grid scale batteries become widespread, electricity cannot be stored, so electricity production must meet demand at every moment of every day. When demand is highest during summer weekday afternoons, the grid must dispatch its most expensive, and often emissions-intensive, older peaker plants. Being able to meet supply during this peak makes the grid more expensive to run for everyone, so encouraging consumers to shift their demand away from the peaks reduces the use of these marginal generating units. Creating a more balanced daily demand profile will help the grid accommodate for more renewables like wind and solar that tend to be most productive during off-peak periods.

While PSEG Long Island's implementation of TOD rates is not part of their Energy Efficiency and Beneficial Electrification program, its goals of reducing the costs of electricity to consumers and lessening the environmental impact of the grid fit in well, so we present a short summary in this section. The two new rates rolled out in late 2023 were Time-of-Day Off-Peak (Rate 194) and Time-of-Day Super Off-Peak (Rate 195). Rate 194 became the standard residential rate in January of 2024, with a roughly two-to-one ratio of prices from peak (3 to 7 p.m.) to off-peak hours. Eligible residential customers were then migrated onto Rate 194 in ten cohorts, varying in size from 30,000 to 100,000, from June 2024 to December 2025. As of January 2026, approximately 895,000 of the 925,000 eligible residential customers are on one of the new TOD rates.

Figure 16 provides details on the two TOD rates from PSEG Long Island's 2026 rate brochure. Both rates feature increased pricing from 3 to 7 p.m. on non-holiday weekdays for both the delivery and the supply charges. Both also feature peak/off-peak differentials year-round, and while summer prices are slightly higher than non-summer, the peak-to-off-peak price ratios are relatively similar in both seasons. Rate 195, the Super Off-Peak rate, also includes a third pricing window with lower overnight prices from 10 p.m. to 6 a.m. Figure 17 shows an example of the variable supply charges used with the TOD rates. PSEG Long Island's standard TOD rate (194) is somewhat unique for a default rate in applying peak-to-off-peak price ratios to both the supply and delivery charges.

Figure 16: Residential Rate Brochure 2026 Delivery Rates – Rates 194 & 195

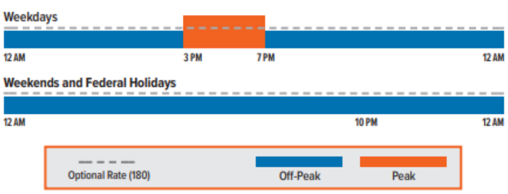
"Time-of-Day" Rates

Effective January 1, 2024, the standard residential rate is Rate 194. This rate and optional Rate 195 are Time-of-Day rates. Off-Peak prices offer a discount from Rate 180, 88% of the year. See page 5 for more information.

Rate 194/D194*: Residential, Time-of-Day, Off-Peak

Time Period	June - Sept.	Oct. - May
Daily Service Charge: (Per Day)	$0.5600	$0.5600
Off-Peak - All hours outside Peak hours		
Delivery Charge: per kWh	$0.1093	$0.0929
Power Supply Charge: 83% of monthly published rate		
Peak - 3 PM - 7 PM Weekdays (except federal holidays)		
Delivery Charge: per kWh	$0.2217	$0.1885
Power Supply Charge: 195.05% (summer)/213.40% (non-summer) of monthly published rate		

Power Supply Charge adjusts monthly based on energy market prices. Current price can be found online at **psegliny.com/rates**



Rate 195/D195*: Residential, Time-of-Day, Super Off-Peak

Time Period	June - Sept.	Oct. - May
Daily Service Charge: (Per Day)	$0.5600	$0.5600
Super Off-Peak - 10 PM - 6 AM every day		
Delivery Charge: per kWh	$0.0452	$0.0450
Power Supply Charge: 60% of monthly published rate		
Off-Peak - All hours outside Super Off-Peak and Peak hours		
Delivery Charge: per kWh	$0.1388	$0.0929
Power Supply Charge: equal to monthly published rate		
Peak - 3 PM - 7 PM Weekdays (except federal holidays)		
Delivery Charge: per kWh	$0.2979	$0.2440
Power Supply Charge: 174.19% (summer) / 196.88% (non-summer) of monthly published rate		

Power Supply Charge adjusts monthly based on energy market prices. Current price can be found online at **psegliny.com/rates**

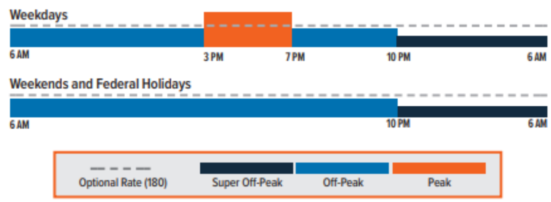


Figure 17: Example of Monthly Power Supply Rates (Seasonal % off flat rate power supply hold)

January 1, 2026

The January 2026 PSC rate is **$0.129777/kWh**. This is a $0.004251/kWh or 3.39% increase from the December 2025 PSC rate of $0.125526/kWh. The January Power Supply Rate includes the Local Supply Rate of $0.015382/kWh and the Market Supply Rate of $0.114395/kWh (see the table below).

12 Month Weighted Average Market Supply Rate:0.087753

Rate Code	Peak	Off-Peak	Super Off-Peak	Peak	Off-Peak	Super Off-Peak
Residential						
190	208.85%	100.00%	60.00%	0.271039	0.129777	0.077866
191	176.42%	100.00%	60.00%	0.228953	0.129777	0.077866
192	185.82%	100.00%	60.00%	0.241152	0.129777	0.077866
193	N/A	113.42%	60.00%	n/a	0.147193	0.077866
194 (S)	195.05%	83.00%	n/a	0.253130	0.107715	n/a
194 (W)	213.40%	83.00%	n/a	0.276944	0.107715	n/a
195 (S)	174.19%	100.00%	60.00%	0.226059	0.129777	0.077866
195 (W)	196.88%	100.00%	60.00%	0.255505	0.129777	0.077866

The transition of existing residential customer accounts occurred over an 18-month period from June 2024 through December 2025 and relied on a staggered rollout of ten distinct cohorts. The staggered rollout provided PSEG Long Island with a unique opportunity to randomly assign customers to either:

1. One of the first three cohorts migrated to the TOD rate (134,000 accounts)
2. Similarly sized control groups (with these accounts migrated later).

This allowed for estimation of the causal impacts of the migration to TOD rates using a Randomized Controlled Trial (RCT), generally the strongest method for causal inference

5.2.1 Rate 194 Migrations

Through the end of 2025, PSEG Long Island has enrolled almost 900,000 of its 1 million residential customers in one of the TOD rates. Most of the enrollments came via planned, phased migrations of existing accounts from the flat rate to Rate 194. This transition occurred over an 18-month period from June 2024 through December 2025 and relied on a staggered rollout of ten distinct cohorts. Table 18 shows the schedule and number of targeted accounts for each group, which were randomly selected from the migration-eligible population. Low-income Non-Benefiters and Neutral Non-Benefiters were ineligible for migration, as were homes with lifesaving equipment, homes on voluntary TOU Rates (190-193), and homes on the residential electric heating rate (580).

Table 18: Rate 194 Migration Groups

Group	1	2	3	4	5	6	7	8	9	10
Migration Month	June 2024	Jan 2025	Feb 2025	Mar 2025	Apr 2025	May 2025	Sep 2025	Oct 2025	Nov 2025	Dec 2025
Accounts	30,000	50,000	70,000	95,000	95,000	95,000	100,000	100,000	100,000	90,000

Customers in each cohort were selected randomly from targeted customer segments in the migration-eligible population approximately five months ahead of each group's target migration month. Since the migration schedule called for some customers to be withheld from migration until after Summer 2025, we were able to randomly select control groups alongside migration Groups 1, 2, and 3, with these control group customers later migrated in October through December 2025.

Group 1 customers have been on the TOD rate the longest (over 1.5 years), so their customers' rate changes provide the longest time series to evaluate movement to other rate codes (relative to their intended rate, 194). Approximately 29,000 customers were selected for migration in Group 1. Table 19 shows the current status for the roughly 27,000 accounts that remain active.

Table 19: Current Rate Codes for Group 1 (1.5 Years after Migration)

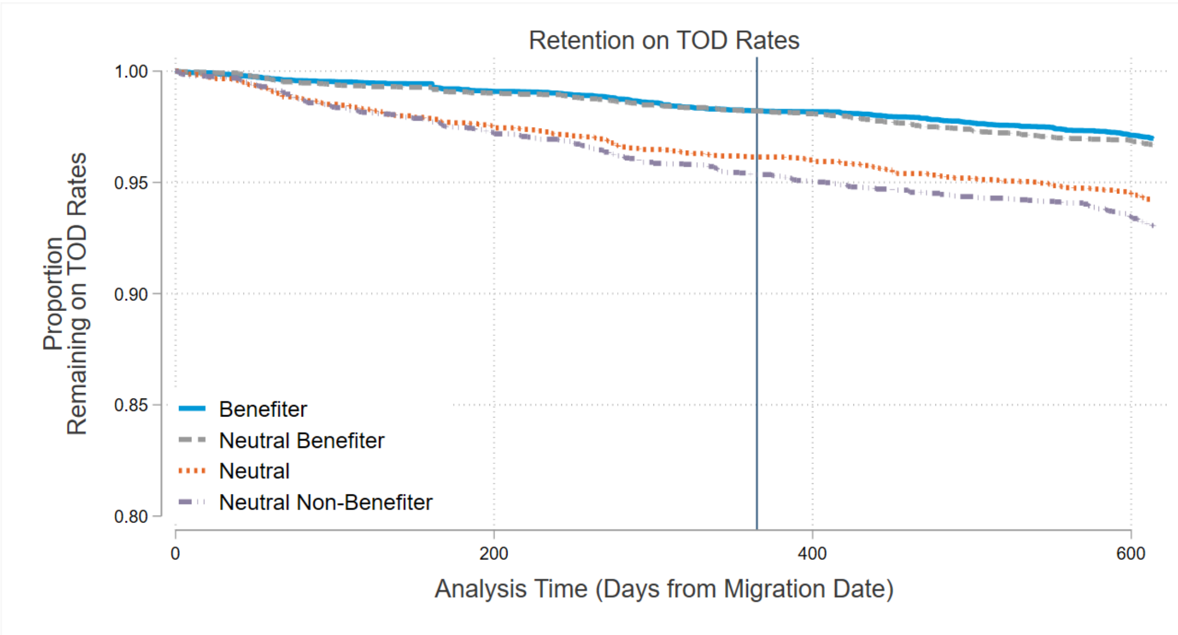
Current Rate	180 or 580 (Flat Rates)	194	195
Group 1	610	25,747	661

Figure 18 further illustrates the persistence of the TOD enrollments over time using survival curves. Opt-out rates here are weighted by customer groups to better represent the full TOD population. In the graph, the time = 0 indicates the beginning of the month in which the customers were migrated (June 1, 2024, for Group 1). The percentage on the TOD rates drops when a customer moves from the TOD rate back to the flat rate. Note that movement from Rate 194 to Rate 195 is not considered an opt-out, they are still included as TOD customers. Customers are analyzed by their bill impact group, which is defined by their expected bill savings or losses due to being on the TOD rate. Table 20 provides exact definitions for the bill impact categories.

Table 20: Bill Impact Categories

Bill Impact Categories (based on historical hourly usage)
1. **Benefiters:** Expected to gain > $60 on the TOD rate
2. **Neutral Benefiters:** Expected to gain $12 – $60
3. **Neutral**: Expected to gain/lose < $12
4. **Neutral Non-Benefiters:** Expected to lose $12 – $60
5. **Non-Benefiters:** Expected to lose > $60

Figure 18: Survival Curves for Group 1 Customers by Estimated Bill Impact Categories



The figure shows the Benefiter through Neutral Non-benefiters for Group 1, since there were no Non-Benefiters in Group 1 (which has the longest period of analysis). The figures show that Neutral Non-Benefiters convert back to the flat rate at a higher rate than Benefiters, with the other two groups falling in between. However, the number of opt outs are small across all categories. The blue vertical line marks one year on the rate. For the first year that customers are on a TOD rate, their bills are protected, meaning if they are charged more on the TOD rate than they would have been charged on a flat rate, the difference is refunded to them. It is notable that even when customers are not being reimbursed for any losses that may happen on the rate, they are not opting out at a significantly higher rate.

5.2.2 Initial TOD Impact Estimates

DSA estimated TOD impacts for Group 1 customers for Summer 2024 (July, August, and September), and Group 2 customers for Summer 2025 (Jun, July, August, and September). Since both the control groups and the TOD migration groups were selected randomly, the two groups should be the same on average, except for the addition of the TOD rate. To provide unbiased impact estimates, all customers selected for the first three groups were studied, even if they opted out of the TOD rates or opted into Rate 195.

Usage during peak hours (3 to 7 p.m.) decreased by 1.3% on the average summer weekday. Scaling this up to the population of Long Island homes on TOD rates (about 850,000 customers), the TOD migrations for this population would be expected to save 21.4 MW during an average peak hour. In total, ~85 MWh of usage would be moved out of the peak hours on an average summer weekday, with an insignificant amount of daily savings across other hours.

Several subgroups were targeted for analysis in the RCT and control group selections. Of these, larger impacts (2.4% peak reductions) were found for EV owners and "neutral non-benefiters" (2.2%) , customers that, based on past usage patterns, were not forecast to benefit (over $60 lost annually) on the new rate if no action was taken to shift energy from higher cost peak hours to lower cost discount off-peak or super off-peak hours. Customers who, based on past usage patterns, were forecast to save $60 or more annually on the new rates before taking additional load shifting options, had smaller reactions (0.8%). Although significant percent differences were not found between average summer weekdays and system peak load days, the larger reference loads on peak days led to larger hourly reductions (27 MW reductions projected for the 850,000 eligible customers).

Table 21 below shows the summer weekday impacts for migrated and opt in customers. On average, the migrated customers reduced their consumption by 1.3% (21.4 MW) during the peak hours from 3 to 7 pm. On the top 10 system load days for Long Island (NYISO Zone K), aggregate impacts reached an estimated 27 MW when scaled to the full migrated population (roughly 850,000 residential accounts). In percentage terms, the average summer day and the top ten system load days' impacts are similar, but the aggregate impacts are larger on top system load days due to the higher reference loads

Table 21: Impacts for TOD Customers: Summer Weekdays

Analysis Group	Day Type	% Impact 3–7 pm	Aggregate Impact 3–7 pm (MW)	Total Sample Size	Total Population Represented
Migrated Customers (including early movers, opt outs)	Average Summer Weekday	-1.3%	-21.4	134,050	849,731
	Top 10 System Load Days (NYISO Zone K)	-1.1%	-27.2	134,050	849,731
Opt-In 195 + VTOU (legacy TOU rates)	Average Summer Weekday	-3.9%	-2.0	1,660	26,981
	Top 10 System Load Days (NYISO Zone K)	-3.9%	-3.1	1,660	26,981

5.3 A DISCUSSION ON NE:NY, CLCPA, AND POLITICAL UNCERTAINTY

5.3.1 A New Strategic Framework in 2026

New York regulators and policymakers are pushing for fundamental changes in how the energy system operates. In April 2018, the New Efficiency: New York (NE:NY) white paper set a statewide target of 185 TBtu in energy efficiency savings from 2019-2025. For PSEG Long Island, this translates to 7.85 TBtu of total savings by 2025. The following year, the Climate Leadership and Community Protection Act (CLCPA) was signed into law and established an economy-wide target of reducing greenhouse gas emissions 40% by 2030 and no less than 85% by 2050 from 1990 levels, relative to 1990 levels. To achieve this, utilities and state agencies will be focusing on 1) increasing renewables and clean energy sources on the grid and 2) decoupling homes and commercial buildings from fossil fuel consumption.

Currently, PSEG Long Island's Energy Efficiency and Beneficial Electrification program can have the most impact on item 2, decoupling buildings from fossil fuels.

Initially, utilities focused on low-cost, high-yield measures such as LED lighting. That shift has already occurred. The 2026 portfolio in the market today is materially different from the 2025 portfolio evaluated in this report, and emissions savings are now expected to come increasingly from more expensive measures such as weatherization, building envelope upgrades, and conversion of fossil fuel systems to electric heat pumps. This new focus was codified in a July 2023 New York Public Service Commission Order[11] with directions for the Energy Efficiency and Building Electrification portfolios of NYS Utilities for 2026-2030 as they pertained to the New Efficiency: New York (NE:NY) and Clean Energy Fund Portfolios. The July 2023 NE:NY order proposed a Strategic Framework categorizing Energy Efficiency and Beneficial Electrification measures under three categories: 1) strategic, 2) neutral, and 3) non-strategic. At a high level, the Order encouraged utilities to expand measures that fall under the strategic category and phase out non-strategic measures. The guidelines established around this strategic framework require that 85% of the budget in 2026 is to be put towards strategic measures, none will be applied to non-strategic measures, and up to 15% towards neutral measures. Measures falling under the non-strategic category, and therefore not allowed after 2025, include:

- **Natural gas-fired equipment:** Equipment such as residential natural gas space heating, domestic hot water, natural gas fireplace, and other natural gas equipment.
- **Lighting Equipment:** Including fixtures and lamps for interior and exterior spaces. Streetlighting and horticultural lighting are specifically listed as non-strategic. Advanced lighting controls may be allowed in commercial buildings when installed with other strategic measures.
- **Appliances:** Electric plug-in appliances such as refrigerators, freezers, clothes washers, or any other residential or commercial equipment not permanently connected to the building. This includes heat pump pool heaters, heat pump clothes dryers, and induction cooktops despite their beneficial electrification potential. Appliance recycling programs are also categorized as non-strategic.
- **Home energy reports:** HERs cannot be supported with EE/BE budgets.
- **Marketplaces:** Program administrators who plan to operate an online marketplace post-2025 would need to provide justification for the continued support of the marketplace.

The IOUs filed draft 2026-2030 program plans in 2024, and the Commission issued final Non-LMI and LMI Orders on May 15, 2025,[12,13] which established the final strategic framework. The 2025 Utility 2.0

[11] Link to July 2023 Order: Weblink
[12] May 2025 Order Authorizing Non-LMI Portfolios 2026-2030. Weblink
[13] May 2025 Order Authorizing LMI Portfolios 2026-2030. Weblink

Long Range Plan[14] describes 2026 as a transition year in which its portfolio is being redesigned to align, where practical, with the new statewide framework outlined in the May 2025 Orders.

The Non-LMI Order reinforces the Strategic Framework proposed in July 2023 with few exceptions and emphasizes deep building improvements, strategic electrification, and better coordination between the IOUs and NYSERDA. The Commission makes clear that post-2025, EE-BE funding must transition away from legacy technologies like lighting and gas-fired appliances, and toward electrification and envelope-first retrofits. The May 2025 Non-LMI Order codifies that program administrators must now allocate at least 85% of their portfolios to "strategic" measures that directly support emissions reductions and energy system benefits. Funding is strictly prohibited for "non-strategic" measures beginning in 2026, including commercial lighting, plug-in appliances, and Home Energy Reports. Electrification projects must install heat pumps as the primary heating source to qualify for funding.

The Commission also mandated a comprehensive restructuring of weatherization efforts. Utility-led proposals were found insufficient, and instead, utilities are required to jointly develop "Regional Residential Weatherization Programs." Upstate and Downstate utility groupings must submit consolidated filings that standardize program design, leverage shared services, and coordinate with NYSERDA's initiatives. Gas utilities must allocate at least 50% of their program budgets to small residential weatherization, and electric utilities must allocate at least 25%. Because LIPA is outside the investor-owned utility rate structure, Long Island customers are not served through the new Downstate Regional Weatherization Program. DPS staff has clarified that the downstate programs apply to the IOUs serving New York City and Long Island gas territory, not LIPA. PSEG Long Island is therefore not part of the joint downstate filing, but its 2026 plan indicates that it is aligning with NYSERDA on the statewide LMI direct-install component and redesigning customer pathways to reduce market confusion.

Significant reforms have also been adopted for the NYS Clean Heat Program. In 2026, the program will focus exclusively on one- to four-family homes. As of March 2026, heat pump incentives are tiered based on whether a project meets minimum weatherization thresholds. By March 2028, achieving those weatherization standards will become mandatory for program eligibility. The Commission capped electric utility spending on electrification programs at 50%. Together, these weatherization and electrification policies signal a shift toward integrated retrofit strategies that prioritize weatherization of the state's housing stock to promote long-term affordability and emissions reductions. PSEG Long Island's 2026 Building Efficiency and Electrification plan reflects this direction through increased focus on residential weatherization and by narrowing its Residential Efficient Products offering primarily to smart thermostats.

The May 2025 LMI Order introduces significant administrative and programmatic changes to income-qualified programming in New York. The Order designates NYSERDA as the sole administrator for LMI one- to four-family programs across the state. Beginning in 2026, the IOUs no longer deliver direct services in this segment but will be responsible for identifying eligible customers, referring them to

[14] Utility 2.0 Long Range Plan and Building Efficiency & Electrification Plan. Weblink

NYSERDA, and supporting outreach and enrollment. While this change does not apply to LIPA, the Commission strongly encourages LIPA to work with NYSERDA to align their LMI programs.

Downstate utilities must jointly administer affordable multi-family programs with NYSERDA, while LIPA and NYSERDA must coordinate to align product offerings on Long Island. Utilities must also collaborate with NYSERDA on shared customer data systems, explore joint application processes, and ensure streamlined participation for building owners. Electrification-readiness and comprehensive retrofit strategies are prioritized, with utilities expected to shift incentives away from gas equipment and instead support envelope-first electrification, particularly in areas with grid constraints or high energy burdens.

The Strategic Framework adopted in the LMI Order mirrors the structure in the non-LMI portfolio, requiring that at least 85 percent of budgets support Strategic measures. However, the Commission allows exceptions for certain LMI-targeted interventions—such as lighting, refrigerators, and gas efficiency tune-ups—when they directly advance energy affordability. Notably, partial or hybrid electrification strategies may be considered Strategic if they displace more than 50 percent of a building's heating or water heating load, or if they prevent reinvestment in fossil fuel systems. Utilities are expected to develop program models that align with these classifications while reporting on both direct and indirect savings, tenant outcomes, and service levels in Disadvantaged Communities.

While LIPA is not subject to the May 2025 Orders, the Commission encourages LIPA to adopt the Strategic Framework and coordinate with NYSERDA and the Downstate Utilities for a consistent approach for the 2026-2030 period. That shift has already happened. PSEG Long Island's 2026 EE/BE portfolio is fully aligned with the May 2025 Orders and reflects the Strategic Framework, making it substantially different from the 2025 portfolio evaluated in this report . As a result, some of this report's findings and recommendations, especially those related to legacy lighting and appliance offerings, are best understood as retrospective or methodological observations rather than near-term program design guidance for the current market portfolio. By contrast, findings related to strategic measures such as heat pumps, weatherization, and customer-pathway design remain highly actionable because those areas will define the portfolio going forward. With the sunset of highly cost-effective legacy measures and increased emphasis on more expensive strategic measures like heat pumps and weatherization, it is already becoming more expensive to produce the same level of impacts achieved in prior program years. PSEG Long Island's 2026 Energy Efficiency and Beneficial Electrification portfolio reflects this alignment with the May 2025 Orders, including restructured program offerings, new customer pathways, and updated program names and measure taxonomies. PSEG Long Island's 2026 annual update also shows that other clean-energy priorities are being recalibrated at the same time; for example, the Utility's EV Make-Ready program was updated using a new LDV forecast with a lower total Level 2 port target and a higher DC fast-charging target.

The residential Energy Efficiency Products Program (EEP) has already changed significantly. EEP was the home of PSEG Long Island's retail lighting measures, which incentivized millions of LED lamps each year until changes to federal standards in 2023 removed screw-based lighting as an eligible measure. EEP has consistently been among the highest saving and most cost-effective programs in the portfolio, but that history is now largely backward-looking because the current 2026 market offering is much narrower than the portfolio evaluated in this report. Alternatively, weatherization and heat pump offerings historically promoted via the Home Performance and Home Comfort programs have become more central, with increased focus on LMI households. In the 2026 plan, the Residential Efficient Products offering is limited primarily to smart thermostats, appliance rebates are discontinued, and additional emphasis is shifted toward weatherization and heat pump offerings, especially for income-qualified households.

Non-residential programs will be similarly affected by the loss of LED lighting measures. As recently as 2025, portfolio discussions still reflected how central LED lighting had been to non-residential savings achievement; that anecdotal reality underscores how significant the current transition is. The strategic measures of interest for 2026 will require more program investment per MMBtu than lighting according to every planning study our team has reviewed. There are also workforce challenges associated with the transition. Long Island does not currently have enough workers and contractors trained in weatherization upgrades to support the State's goal of weatherizing one million homes by 2030. PSEG Long Island's 2026 filing also eliminates horticultural lighting rebates from the commercial efficient products offering and prioritizes strategic measures such as weatherization over non-strategic measures.

In addition to the portfolio changes above, Long Island's governance and implementation arrangements have also changed. In September 2025, LIPA and PSEG Long Island announced a five-year extension of their service agreement beginning January 1, 2026, while also committing to a competitive procurement process beginning in 2028. Implementation arrangements are nonetheless evolving: PSEG Long Island's 2026 BEE filing notes that a solicitation for the new BEE implementation contract was open at the time of filing. As of publication, 2026 is already proving to be a significant transition year for Long Island and the rest of New York with respect to energy conservation programming.

5.3.2 EMPHASIS ON DISADVANTAGED COMMUNITIES

New York's CLCPA established that utilities must ensure that at least 35% of the benefits of spending on clean energy and energy efficiency programs go to disadvantaged communities, with a goal of 40%. This DAC goal is proving to be a major factor in shaping future Portfolio planning efforts. PSEG Long Island has already significantly increased its collective LMI offerings under the Home Performance, REAP, and Home Comfort Programs. LMI budget allocation increased from about $5 million in 2022 to $19.6 million in 2023 to $22.5 million in 2024. The directional shift continued into 2025 with over half of all rebates and incentives paid to LMI households or customers in DACs. PSEG Long Island's 2026 annual update indicates that 41% of money-out-the-door spending is allocated to LMI customers. This underscores how far the portfolio has already shifted toward affordability and equity objectives. At the same time, after the CLCPA set the threshold at 60% of the state median income, just 25% of Long Island households either reside in a designated Disadvantaged Community (DAC) or qualify as low-income households. Long Island may be the only region in the state with less than 35% of households qualifying under these conditions. This creates an ongoing planning tension: if the eligible population remains smaller on Long Island than the CLCPA benefit-share threshold, concentrating an ever-larger share of spending in DAC/LMI segments may constrain total portfolio achievement on a per-capita basis.

Historically, PSEG Long Island's REAP program had an income less than or equal to 80% of the area median income, but in 2023 the standard was changed to 80% of the state median income, decreasing the pool of eligible REAP customers. Additionally, since the CLCPA uses a threshold at 60% of the state median income, this identified the REAP program as a low-to-moderate income program, so not all participants will be counted towards the CLCPA goals. A smaller target population presents challenges for meeting the standards established in the CLCPA.

Additional federal funding for energy conservation entered the picture in 2024 from the Inflation Reduction Act (IRA). On May 30th, 2024 the first phase of the Home Electrification and Appliance Rebates (HEAR) program was launched with $158 million in IRA funding, followed closely by the Home Efficiency Rebates program with $159 million in IRA funding (both programs would be rebranded as EmPower+).[15] This money was made available only to low and middle income households, and ultimately was intended to help New York meet the lofty equity goals set forth in CLCPA.

With these challenges also come opportunities to explore additional, non-energy system impacts and benefits that low-income programs bring to the community. Non-energy system impacts (NEIs) can cover categories such as health, safety, comfort, operations and maintenance costs, energy security, and others. NYSERDA explored non-utility system impacts of low-income programs in depth in a 2017 study.[16] The National Standard Practice Manual for Benefit-Cost Analysis (NSPM)[17] includes NEI consideration as part of their 5-step process. We would recommend that PSEG Long Island consider incorporating non- energy impacts into their benefit-cost analysis. However, there are certain challenges in both quantifying these benefits and assigning monetary values to these benefits. New Jersey has started to explore the possibility of adding NEIs to their cost tests as percentage adders in an extensive review of adders included in other States' cost tests published March 2023.[18] However, given the emphasis on LMI programming in New York, we recommend PSEG Long Island consider inclusion of additional LMI-specific benefit streams. This would help capture a more rounded picture of the benefits realized by low-income households and improve performance towards benefits-based LMI requirements.

Invariably when outside funding is available, questions will arise about the attribution of impacts to the different program administrators who co-fund projects. We recommend PSEG Long Island explore collecting data on braided funding through the application process for measure offerings that are likely

[15] Department of Energy, May 30 2024, archived: Weblink
[16] Quantification of Non-Energy Impacts for Residential Programs. Phase I: Final Report. March 2017. Weblink
[17] NSPM for Benefit-Cost Analysis of Distributed Energy Resources: Weblink
[18] Non-Energy Benefits/ Non-Energy Impacts (NEBs/NEIs): Analysis of Alternatives for Updates for the State of New Jersey: Weblink

to also receive state or federal incentives. This would allow for more accurate benefit-cost analysis of PSEG Long Island's portfolio and facilitate reporting metrics around leveraging of outside funding.

5.3.3 UNCERTAIN FEDERAL POLICIES

More than $300 million in IRA home-energy rebate funding was awarded to New York, and NYSERDA continues to offer IRA-enhanced incentives through EmPower+ alongside federal tax credits for qualifying home-efficiency improvements. Federal support remains an important complement to utility-run programs, but the policy environment has become less predictable, which creates uncertainty around the durability, administration, and coordination of outside funding streams that customers and contractors may be relying on. This uncertainty from other program administrators may result in more being asked of PSEG Long Island's Energy Efficiency and Beneficial Electrification portfolio to meet state goals.

In 2025, EPA reorganization plans created uncertainty around the future of ENERGY STAR. However, in March 2026 EPA and DOE signed an updated Memorandum of Agreement making DOE the lead federal agency for the ENERGY STAR program. For program administrators such as PSEG Long Island, the near-term risk has therefore shifted from outright elimination to transition risk: changes in federal administration, product specifications, and market communication can still create confusion around eligibility criteria and customer messaging.

Trade policy and inflation also remain a source of cost uncertainty for imported equipment and components. For PSEG Long Island, higher equipment costs either require higher incentives to preserve customer economics or would reduce participation if incentive levels do not keep pace. Increased equipment costs, combined with reduced outside incentives or tax credits, would materially worsen output per program dollar invested.

5.3.4 PROGRESS ON CLCPA GOALS AND FUTURE FUNDING SOURCES

In October 2024, New York announced that it had achieved its 6-GW distributed solar milestone a year early. The State subsequently expanded the NY-Sun target to 10.5 GW by 2030, and NYSERDA reported that 6,579 MW of distributed solar had been installed statewide by the end of 2024. At the same time, the 2025 State Energy Plan identifies data centers as a major driver of new industrial load, and the broader Pathways Analysis notes that large manufacturing and data-center projects entering service this decade could add roughly 16 TWh of load. These supply-side and load-growth dynamics matter for PSEG Long Island because they affect both affordability and the emissions intensity of incremental electricity consumption. The State's greenhouse gas trajectory also underscores the scale of the challenge. New York's most recent statewide emissions report indicates that total gross emissions in 2022 were 9.3% below the 1990 baseline—progress, but still well short of the reductions required by 2030. These supply-side considerations have implications for the effectiveness of beneficial electrification programming because the increased electricity consumption from heat pumps is more emissions-intensive when grid decarbonization lags expectations.

By early 2026, the State's near-term clean-energy posture had shifted toward affordability, cost allocation, and grid readiness. Governor Hochul's January 2026 Ratepayer Protection Plan and the related Energize NY Development initiative focus on ensuring that very large new customers pay their fair share for interconnection and system upgrades rather than shifting those costs to existing customers. In February 2026, the PSC opened a proceeding to review interconnection processes, tariff structures, and cost-allocation mechanisms for large loads; as of January 2026, the NYISO queue included 48 projects representing more than 11 GW of new large-load requests. For utility-run EE/BE portfolios, this means future funding and program design are likely to be shaped not only by decarbonization goals, but also by affordability and system planning concerns. At the same time, New York's grid-flexibility work suggests that demand flexibility could become a more prominent system resource, which may increase competition for customer-program funding and administrative attention in future years.

5.4 BUILDING ENERGY CODE CHANGES

New York adopted the 2024 International Energy Conservation Code (IECC 2024) for both residential and commercial buildings on July 25, 2025, with an effective date of December 31, 2025. This change increases the energy efficiency requirements of newly constructed homes and businesses or major renovations which require a building permit. While New York did adopt several state-specific amendments, the most sweeping amendment was ultimately dropped in December 2025, shortly before the effective date of the change. In 2023, lawmakers passed the All-Electric Buildings Act, which requires new buildings to have only electric appliances. This law would have effectively created a moratorium on new connections to the natural gas system and made air source heat pumps the baseline heating system for residential new construction.

In anticipation of the All-Electric Buildings Act and IECC 2024 requirements, we updated the PSEG Long Island TRM to assume a code-minimum electric air source heat pump as the baseline against which high efficiency cold-climate heat pump savings were assessed for new construction applications. This change lowered the MMBtu savings per dwelling by approximately 70% relative to a forced air fossil fuel baseline system. PSEG Long Island incorporated these more conservative assumptions into its 2026 planning. In November 2025, the state announced that it would not enforce the all-electric standard until at least fall 2026 when the appeal of the All-Electric Buildings Act is heard by the Second Circuit US Court of Appeals. While this change was widely criticized by environmental groups, it creates additional savings opportunity for PSEG Long Island to work with developers and builders to install heat pumps in new construction even though the law does not require them to do so. The Demand Side Analytics evaluation team updated the 2026 PSEG Long Island TRM to revert to a fossil fuel forced air baseline for residential new construction applications and the additional MMBtu savings allowed PSEG Long Island to maintain aggressive incentive levels for new construction applications.

5.5 EXPANDING HEAT PUMP DEPLOYMENT

Heat pumps are a critical technology for electrification efforts. This umbrella term includes heat pumps for space heating and cooling, heat pump pool heaters, and heat pump water heaters. Heat pumps use electricity to move heat in buildings and can replace technologies like furnaces or boilers that burn fossil fuel to produce heat. With advancements in heat pump technologies, homes in cold climate regions, like Long Island, can rely on the heating capabilities of heat pumps through freezing temperatures in the winter. New York has a statewide target of 1 million homes heated with electric heat pumps and an additional one million electrification-ready homes by 2030. PSEG Long Island converted 5,383 housing units to whole home heat pumps in 2025 across the Home Comfort, Home Performance through Combination projects, and Multi-Family programs. This is an increase from 4,240 housing units in 2024 and 3,739 in 2023.

As discussed in the previous section, the state's decision to pause the All-Electric Buildings Act requirements will slow down overall adoption of heat pumps in newly construction residences on Long Island but creates an opportunity for PSEG Long Island to incentivize builders to install heat pumps rather than fossil fuel heating and water heating systems. Increasing equipment cost is a key challenge facing PSEG Long Island and other heat pump program administrators. In addition to broader inflation and trade considerations, the phase of R-410A refrigerant is a contributing factor to rising HVAC equipment costs. One of the key drivers of the change is the high global warming potential of R-410A compared to alternatives such as R-454B and R-32. While this is a clear victory for climate goals, the change requires expensive updates to manufacturing processes and tooling, and those costs are ultimately borne by equipment buyers. Manufacturers were required to stop producing units with R-410A beginning January 1, 2025, but the market is allowed a "sell-through" period. Increased equipment cost creates a headwind for the Home Comfort program as it drives up the cost of home electrification at a time when affordability is at top of mind for many households.

Heat pump technology is developing rapidly, and once-nascent technologies are beginning to reach market viability. Window "saddle" heat pumps like the one shown in the image to the right are a promising option for existing multi-family buildings where full HVAC retrofits are often financially or logistically impossible. These cold-climate self-contained HVAC units sit in or straddle a standard window opening — like a traditional window air conditioner, but with the added ability to provide heating as well as cooling. Since they straddle the window, no mounting bracket is required and more of the window remains unblocked than with a traditional window AC. Several manufacturers now offer cold-climate models and the cost tends to be lower than ductless mini-split units, but higher than a traditional window AC. PSEG Long Island plans to assess the applicability and performance of these saddle heat pumps to determine if they are a scalable option for parts of the territory with significant multi-family housing stock that relies on central hydronic or forced air heat produced by oil or natural gas.

Air-to-water heat pumps (ATWHPs) extract heat from outdoor air and transfer it into a water-based distribution system rather than blowing conditioned air directly into the space. The heated water then circulates through the building to deliver comfort via various emitter types (baseboard radiators, fan coil units, or in-floor radiant). ATWHPs are an intriguing option for PSEG Long Island because they work with existing hydronic systems. Hydronic systems fed by a natural gas or oil-fired boiler are common among Long Island's older housing stock. ATWHPs can achieve high efficiency levels like air source heat pumps and water carries heat around the home more efficiently than air and requires less energy to distribute than fans. Unlike window saddles or mini-splits that condition one room at a time, a single ATWHP can serve an entire housing unit. Cooling can present a challenge with ATWHP depending on the emitter type in the home due to condensation, which may limit the uptake in homes looking to add or expand air conditioning capacity. Another challenge with ATWHP is cost. They are currently more expensive than air source options, but costs are expected to drop over the next decade. PSEG Long Island incentivized a limited number of ATWHP in 2025 and plans to continue providing incentives and supporting the contractor community with this emerging technology in 2026 and beyond.

While heat pump adoption is important, ultimately heat pump utilization is what will determine the emissions impact of New York's beneficial electrification efforts. While PSEG Long Island has transitioned to almost exclusively whole home heat pump installations, participants have been allowed to retain their legacy fossil fuel systems. In this type of installation, how customers operate the two heating systems together is critically important regarding fossil fuel displacement and emissions avoidance.

- ***Integrated controls*** attempt to limit use of the fossil fuel system to certain outdoor or indoor temperature conditions, so the heat pump(s) satisfy as much of the heating load as possible. We recommend PSEG Long Island conduct additional research on the effectiveness of integrated control strategies to assess the viability of the current options and determine if any programmatic requirements around integrated controls should be adopted.
- ***Decommissioning*** is the alternative. Other program administrators in New York and other states offer elevated rebate amounts when the fossil fuel system is totally removed or decommissioned. This approach may be a barrier to some participants but helps ensure that program-supported heat pumps will be used as the primary heating source in the home and deliver fossil fuel and emissions savings.

While there has been a high historical uptake of heat pump pool heaters through the programs, this measure has been deemed non-strategic by the state and removed from the portfolio in 2026. Uptake of heat pump water heaters doubled from 247 in 2024 to over 500 in 2025 but is still relatively modest given the number of homes on Long Island. As the second largest load in most residential homes, domestic hot water will be a key end use to target and expand program activity under the new Strategic Framework. Homes with domestic water hot water systems that are integrated with an oil boiler (indirect or tankless coil) that convert to cold-climate heat pumps are ideal candidates for heat pump water heaters because the replacement of their space heating system also displaces their legacy water heating system. It is highly inefficient to retain an integrated oil boiler to serve only the domestic hot water needs of the home even if the homeowner elects to keep their boiler in place for emergency backup heating. PSEG Long Island has increased incentive levels for heat pump water heaters and is expanding outreach activities with plumbing and hydronic contractors to bolster participation.

5.6 ECONOMICS OF ELECTRIFICATION AND DECARBONIZATION

The economics of electrification are complex, and it is important to track the impacts of decarbonizing the grid both at the source and at site. The prior section touched on the broad goals New York state has established for reducing the emissions intensity of its generation mix. In this section we examine the key inputs and assumptions that affect the cost-effectiveness of electrification for participants, program administrators, and society.

5.6.1 VALUE OF AVOIDED CO2 EMISSIONS

The other key element in the economics of electrification is the value of avoided CO2 emissions. The social cost of carbon is ultimately a policy decision. In 2025, avoided CO2 emissions was the second largest benefits category, representing 20% of all SCT benefits.

- The current social cost of carbon assumed in the PSEG Long Island Cost Effectiveness evaluation is $73.92 per metric ton, or $67.06 per short ton, and the portfolio SCT is 1.61.
- In neighboring Pennsylvania, the 2021 Act 129 Total Resource Cost Test Order[19] directs utilities to set the value at $0. If PSEG Long Island used an avoided cost of carbon of zero, the portfolio SCT would decrease to 1.29.
- In November 2023, the EPA Interagency Working Group published guidance[20] that established a central cost of carbon of $190/metric ton in 2020 dollars. If our avoided cost of carbon was updated to match this guidance, the portfolio benefit cost ratio would be 2.35.
- New York's proposed Cap-and-Invest system has studied a price ceiling between $14 and $23 per ton.

The social cost of carbon is not a technical metric, it's a policy decision. As an evaluator we cannot determine which value is correct, but we would recommend PSEG Long Island review this key assumption with LIPA. It's an important driver of cost-effectiveness results for both energy efficiency and beneficial electrification.

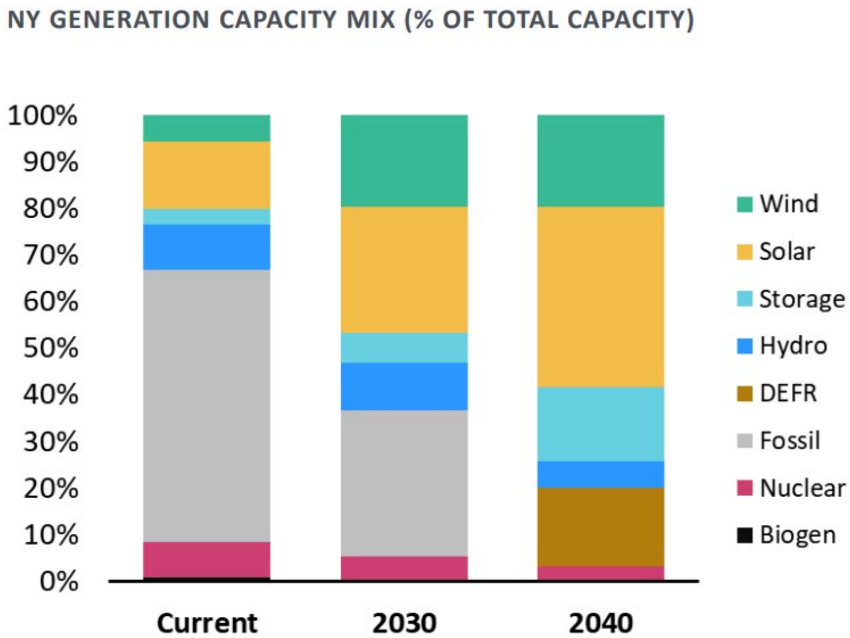
5.6.2 MARGINAL EMISSIONS RATE

As described in Section 2.2, current modeling practices in New York use a marginal emissions rate that is static over time. As New York completes aggressive energy transition projects, the overall emissions rate of the grid will drop sharply and the differences across the year will become more pronounced. Figure 19 comes from a 2025 Grid Flexibility Potential Study developed for NYSERDA and the New York Department of Public Service shows projections of New York's electric generation capacity mix

[19] 2026 TRC Test Final Order. Weblink
[20] US Environmental Protection Agency Weblink: Table ES.1

over time.[21] As large amounts of solar generation come online, the emissions rate of the grid should drop to zero in the middle of the day. As New York's aggressive decarbonization efforts start to materialize, PSEG Long Island may want to consider time-differentiating its marginal emissions rate assumptions to make sure energy efficiency and beneficial programming targets offerings that will maximize emissions reductions in a highly decarbonized electric grid.

Figure 19: Projected Power Supply for New York



Note: Current capacity mix is based on NYISO 2024 Summer Installed capacity.[38] Solar includes utility-scale and BTM resources. 2030 and 2040 forecasts are based on the NYSERDA Integration Analysis "Scenario 2: Strategic Use of Low-Carbon Fuels," which is a CLCPA policy compliant case.[39] DEFRs are dispatchable emissions-free resources that encompass a collection generation technologies such as long-duration storage, small modular nuclear reactors, and hydrogen-powered generations that will need to be developed to provide clean, reliable grid services.

5.6.3 COST OF NATURAL GAS

Currently, natural gas generation is the predominant marginal generation source in downstate New York. This means that when a natural gas furnace is replaced by an electric heat pump, the primary shift is from fossil fuel combustion in the home to fossil fuel combustion at a power plant. From an emissions standpoint, this is useful because heat pumps are quite efficient at converting electricity to heat. However, as the electric generation mix includes more renewable resources on the margin, the differential in CO_2 emissions will grow considerably. In today's electric power system, the marginal cost of electricity is highly correlated with the cost of natural gas because natural gas is the dominant fuel

[21] New York's Grid Flexibility Potential. January 2025. Weblink

source for power generation. As the electric generation mix decarbonizes, the marginal cost of electricity should become increasingly decoupled from the avoided cost of fossil fuel.

5.6.4 Consumption Analysis Implications for a Changing Portfolio

Regression analysis of electric meter data has been a key evaluation technique for several residential programs in PSEG Long Island's energy efficiency portfolio for many years. Evaluations of the Home Performance and Home Energy Management programs rely on modeling techniques that compare electric consumption changes amongst participating homes following program services to a comparison group of homes without intervention. On one hand, this is arguably the most robust evaluation technique across the portfolio because ex-post savings come from real measurements at the revenue meter. Consumption analysis is an IPMVP[22]-adherent measurement and verification technique (IPMVP Option C) and does not require numerous assumptions like a TRM-based engineering analysis. The rollout of AMI across Long Island has allowed us to analyze more granular electricity consumption data and transition monthly models to daily or even hourly models. However, the evolution of PSEG Long Island's portfolio also creates challenges which call into question the suitability of consumption analysis for evaluation for some programs. Key issues include:

- **PSEG Long Island can only provide electric meter data.** As an electric utility, PSEG Long Island has rich electricity consumption data but no access to natural gas or delivered fuel consumption data. When program interventions primarily target electricity savings, this is of little concern. However, with the transition to MMBtu as the primary performance metric and the prioritization of weatherization in New York, PSEG Long Island's programs increasingly target fossil fuel savings. Table 22 shows the split of electric versus fossil fuel savings on a MMBtu basis for the three primary weatherization measures within the Home Performance with ENERGY STAR program component. Over two-thirds of the claimed savings are fossil fuel heating savings that are invisible to the electric meter.

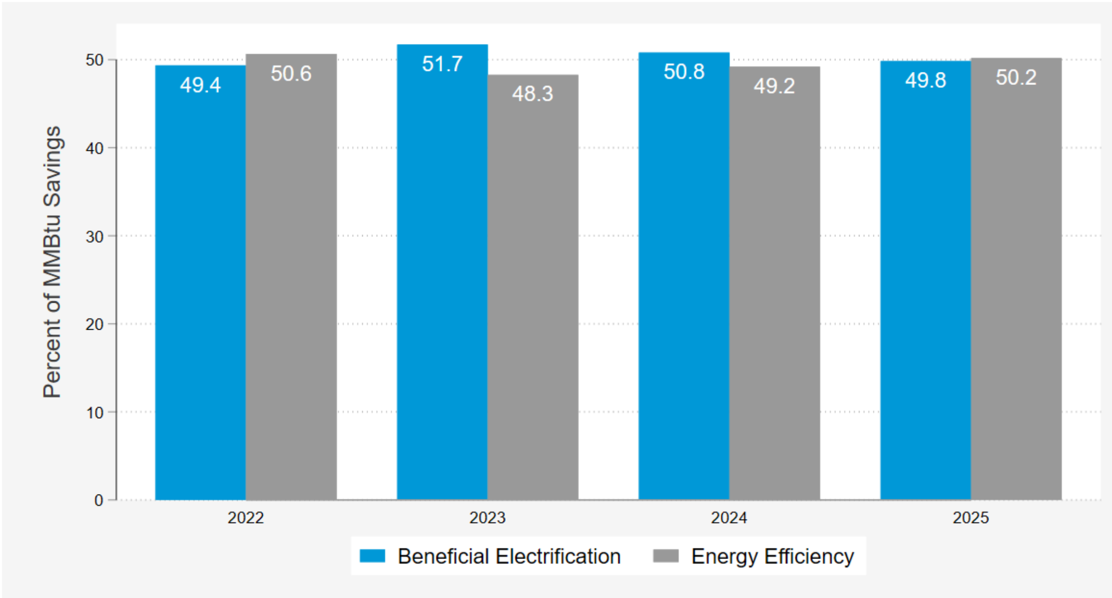
Table 22: 2025 HPwES Ex-Ante Weatherization Savings by Fuel

HPwES Measure Type	MMBtu Total	MMBtu Electric	MMBtu Fossil Fuel
Duct Sealing	3,414	1,575	1,839
Air Sealing	5,333	2,057	3,275
Envelope	10,223	2,572	7,651
Weatherization Total	**18,970**	**6,204 (32.7%)**	**12,765 (67.3%)**

- **Approximately half of Home Performance MMBtu savings come from beneficial electrification.** Figure 20 shows the share of MMBtu coming from EE and BE measures for the last four years. Since 2022, approximately half of the MMBtu savings have come from BE, which limits the sample size of the consumption analysis and leads to noisier results.

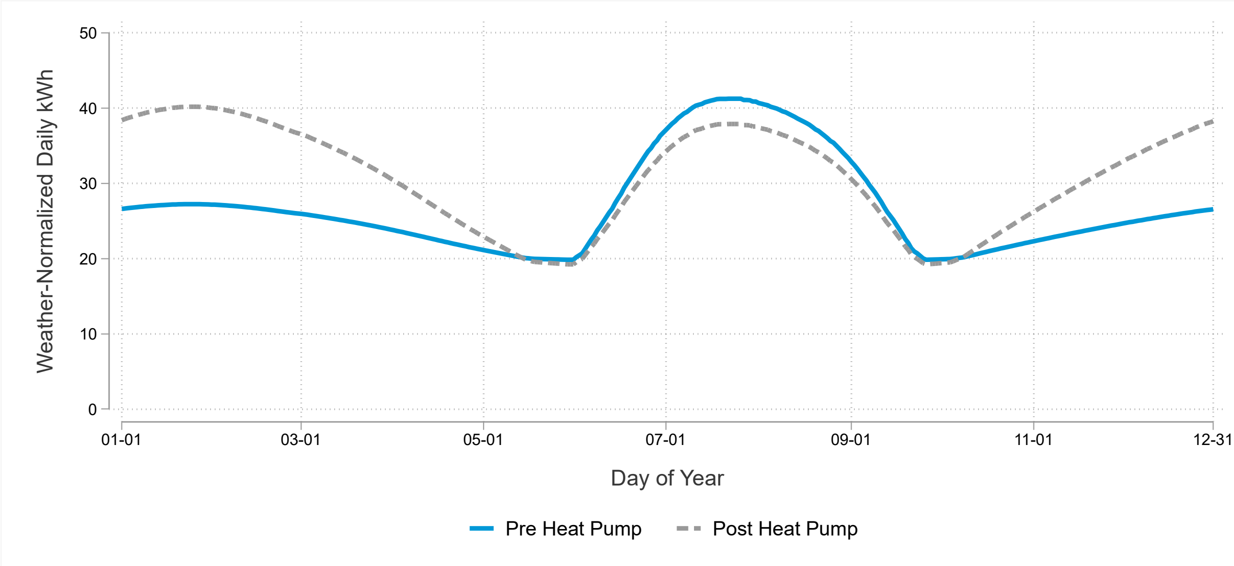
[22] International Performance Measurement and Verification Protocol. Weblink

Figure 20: Home Performance Ex-Ante MMBtu Savings by Year and Measure Type



- **Promotion of heat pumps leads to increases in electric consumption that make it hard to detect energy efficiency.** Beneficial electrification and the promotion of heat pump technologies are a top policy priority on Long Island and across New York. Figure 21 shows the typical impact of a heat pump at the electric meter. Heat pumps generally save electricity in summer because they air condition more efficiently than the units they replace. In the winter, they lead to a sharp increase in electric consumption relative to fossil fuel heat. This complicates consumption analyses due to the need for assumptions about fossil fuel displacement and introduces uncertainties that can skew the accuracy of evaluations. Our current evaluation approach is to omit homes with BE measures from the consumption analysis. Some jurisdictions use increased winter electric consumption measured via consumption analysis as a proxy for fossil fuel heating savings, but this analysis requires several assumptions and would create significant evaluation risk for PSEG Long Island relative to the current TRM-based method used for Home Comfort and Home Performance heat pump projects.

Figure 21: Residential Heat Pump Impact Time-Series



- **Consumption analysis results are inherently noisy and carry more evaluation risk.** The precision of each consumption analysis is a function of the effect size and the number of homes analyzed. The HEM program has a huge estimation sample with over 600,000 treated households and over 100,000 control group homes. However, the average impact per home is less than 1%, so the margin of error is ±9% or nearly 14,000 MMBtu. Home Performance is also afflicted by the effect size issue. Because most participants (~18,000) only completed a Home Energy Assessment and received kit measures, removing HEA participants from the consumption analysis (along with BE homes), the estimation pool for Home Performance shrinks to less than 1,000 homes.

- **The metric used to measure goal achievement matters.** If the ex-post results are used to assess as a metric for goal achievement, the consumption analysis challenges described above become magnified. The alternative to consumption analysis is engineering analysis – where evaluators combine assumptions about equipment efficiency and operating characteristics algebraically to calculate savings. These equations and inputs are generally documented during planning and rarely change during ex-post evaluation. Consider the hours of use assumptions within the CEP Lighting program. Once these assumptions are established in the PSEG Long Island TRM and followed correctly during implementation, there is minimal risk that ex-post evaluation results will depart from ex-ante claims in a material way. If the TRM assumes 3,463 operating hours for a retail business, evaluators will use 3,463 hours to compute both verified ex-ante and ex-post savings. Consumption analysis is analogous to an ex-post evaluation procedure where actual lighting hours of use are measured and used to claim ex-post savings. Such an approach would clearly be more rigorous, but it would also create significantly more risk for departures between ex-post and ex-ante. Currently, that risk is largely concentrated in the programs which rely on consumption analysis.

Taken together, the above considerations point to an important implication for whole-home program evaluations: no single method can fully capture total energy impacts across fuels in the PSEG LI context. The US Department of Energy's Uniform Methods Project Protocol #8 notes that consumption analysis is most appropriate when whole-building savings are sufficiently large, baselines are well defined, and comprehensive consumption data are available across relevant fuels. In this case, consumption analysis remains the most rigorous approach only for estimating electric savings, since it cannot independently quantify total MMBtu impacts due to absence of observable fossil fuel consumption. Alternative approaches, such as energy simulation models, can estimate savings across fuel types, but they require site-specific calibration and often do not align well with after-the-fact consumption analysis results. As a result, the best practice tends to be a hybrid evaluation framework that leverages consumption analysis to estimate and validate electric impacts, while using calibrated TRM-based engineering metrics to estimate fossil fuel savings. This approach ensures that total MMBtu impacts are fully represented while maintaining alignment with observable meter-based outcomes.

Putting it all together, and the fact that nearly half of the ex-ante MMBtu savings in 2025 came from connected thermostats controlling fossil fuel heating systems, DSA did not utilize consumption analysis in the REAP program evaluation in 2024 or 2025. The realization rate for REAP in 2025 was 55%, which is a significant drop from the 105% realization rate in the 2024 evaluation, and closer to the realization rate of 62% from 2023 evaluation. Although we chose not to use consumption analysis REAP in 2024 and the 2025 Home Performance consumption analysis returned a realization rate above 100%, the evaluation team included a derate factor of 25% for the REAP and Home Performance weatherization measures in the 2026 and 2027 PSEG Long Island TRMs. The derate factor is intended to reflect the historic underperformance of weatherization measures when analyzed via consumption analysis. Because we have access to 2025 program installations that were not included in the consumption analysis sample, we were able to examine forward looking ex ante savings for a subsequent cohort of participants. The average ex ante savings were estimated at approximately 950 kWh per home, nearly double of the estimates for 2024 and more in line with values calculated in 2023. This indicates that this year's results may have been influenced by a relatively low ex ante baseline. Table 23 presents historical realization rates alongside average ex-ante kWh savings claims for the analyzed homes in recent program years. The table reveals substantial year-to-year variability in realization rates, including wide confidence intervals. The average kWh savings claimed per home has also varied significantly over time, further complicating inferences about trends in evaluation results versus program composition.

Table 23: Historical Realization Rates for Weatherization Measures (2020-2025)

Year	Ex Ante Baseline (kWh)	Realization Rate (%)	Lower Bound (%)	Upper Bound (%)
2020	1,042	78.3%	54.7%	101.9%
2021	388	88.9%	66.0%	111.8%
2022	372	116.6%	76.5%	156.7%
2023	282	58.0%	-1.1%	117.1%
2024	1,021	19.4%	-7.1%	46.0%
2025	479	105.2%	32.8%	177.7%

As a result, the observed realization rate of 105% for Home Performance should be interpreted with caution, and we continue to recommend the use of the 25% derate factor for weatherization measures that was first added to the 2026 PSEG Long Island TRM.

This variability in performance is not specific to Long Island, as recent evaluations of residential weatherization programs administered by Con Edison and National Grid New York showed similar differences between ex-ante engineering estimates and ex-post savings measured via consumption analysis. The evaluation of Con Edison's Residential Weatherization program resulted in a 55% realization rate on electric savings and a 40% realization rate on gas savings.[23] The evaluation of National Grid New York's Total Home Comfort program resulted in a 28% realization rate on gas savings.[24] Putting all of this together further suggests that conservative claims are still prudent. Derating the algorithmic estimates used for planning and ex-ante savings claims should lead to better alignment when consumption analysis is used for evaluation and more defensible ex-post estimates when engineering calculations are used by evaluators.

[23] Residential Weatherization Impact Evaluation – Final Report. Weblink
[24] Downstate New York Weatherization Program Residential Sector Impact and Process Evaluation: Final Report. Weblink

APPENDIX A ABBREVIATIONS

ASHP	Air-source heat pump
BTU	British Thermal Unit
CEP	Commercial Efficiency Program
CF	Coincidence Factor
CLCPA	Climate Leadership and Community Protection Act
DAC	Disadvantaged Community
EEP	Energy Efficiency Products
EISA	Energy Independence and Security Act
EPA	U.S. Environmental Protection Agency
FR	Free-ridership
FTE	Full-Time Equivalent Employees
GSHP	Ground-source heat pump
HEM	Home Energy Management
HER	Home Energy Report
HPwES	Home Performance with ENERGY STAR
HVAC	Heating, Ventilation, and Air Conditioning
IOU	Investor-Owned Utility
IRA	Inflation Reduction Act
kW	Kilowatt
kWh_{ee}	Kilowatt Hour Energy Efficiency
kWh_{be}	Kilowatt Hour Beneficial Electrification
kWh	Kilowatt Hour
MMBtu	Million British thermal unit
$MMBtu_{ee}$	Million British thermal unit Energy Efficiency
$MMBtu_{be}$	Million British thermal unit Beneficial Electrification
LED	Light-Emitting Diode
LIPA	Long Island Power Authority
LMI	Low- to moderate-income
NEB	Non-Energy Benefit
NE:NY	New Efficiency: New York
NTGR	Net-to-Gross Ratio
NYSERDA	New York State Energy Research and Development Authority
RIM	Ratepayer Impact Test
REAP	Residential Energy Affordability Partnership
SCT	Societal Cost Test
SO	Spillover
TRM	Technical Reference Manual
TOD	Time of Day
UCT	Utility Cost Test
VEA	Verified Ex -Ante

APPENDIX B ELECTRICITY ENERGY (MWH) AND DEMAND SAVINGS (KW)

Although the primary reporting metric for 2025 evaluation results is site-level MMBtu savings for consistency with goals, we also report fuel-specific results for several reasons.

- PSEG Long Island is an electric utility, so the MWh and kW impacts of the Portfolio have discrete implications for a host of forecasting and system planning functions.
- Consistency with prior reports. We believe it is important for readers to have the ability to compare the results of the 2025 evaluation with PSEG Long Island evaluations completed prior to 2020 and evaluations conducted by New York IOUs, which report fuel-specific results (MWh, kW, therms).
- While site-level MMBtu is useful as a single metric for all conservation programming, the benefit-cost analysis requires us to keep track of resources separately. The avoided cost of one MMBtu of delivered electricity is much higher than the avoided cost of one MMBtu of fossil fuel. The emissions per MMBtu also vary by resource, because generators combust 2-3 MMBtu of fossil fuel to generate power[25] to deliver one MMBtu of electricity to a Long Island home.

While the evaluation team elected to report fuel-specific results, we highlight that, due to beneficial electrification, measures that reduce fossil fuel use also increase electricity consumption and demand. Thus, some program MWh and kW impact results show negative electricity savings.

[25] The marginal unit in downstate New York will typically be a combined-cycle natural gas plant or a natural gas combustion turbine. According to EIA data (Weblink) the average heat rate of these two generator types in 2024 were 7,548 Btu/kWh and 10,999 Btu/kWh respectively. This translates to an electrical efficiency of 45.2% and 31.0%.

Table 24: Energy Efficiency and Beneficial Electrification MWh Impacts by Program

Sector	Energy Efficiency Program	Ex-Ante Gross Savings (Claimed)[1]	Ex-Post Gross Savings (Evaluated)	Ex-Post Net Savings
		MWh	MWh	MWh
Commercial	Commercial Efficiency Program	56,928	54,467	34,515
	Multi-Family Program	-3,862	-4,406	-4,671
Residential	Energy Efficiency Products	10,843	6,041	4,824
	Home Comfort	-18,700	-27,541	-26,609
	Home Performance	-7	510	168
	Home Energy Management	26,050	45,247	47,967
	Residential Energy Affordability Program	1,924	1,225	1,299
Subtotal Commercial		**53,065**	**50,061**	**29,844**
Subtotal Residential		**20,110**	**25,482**	**27,649**
Total Portfolio		**73,176**	**75,543**	**57,492**

[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 negative MWh savings from Beneficial Electrification, while KPI scorecard reports Energy Efficiency Savings only. PSEG Long Island did not claim ex-ante MWh savings from the HEM program in 2025. The 26,050 MWh value shown represents the MWh equivalent of the ex-ante MMBtu savings claim.

Table 25: Energy Efficiency and Beneficial Electrification Summer kW Impacts by Program

Sector	Energy Efficiency Program	Ex-Ante Gross Savings (Claimed)	Ex-Post Gross Savings (Evaluated)	Ex-Post Net Savings
		kW	kW	kW
Commercial	Commercial Efficiency Program	10,951	10,673	7,796
	Multi-Family Program	-219	-280	-302
Residential	Energy Efficiency Products	764	327	286
	Home Comfort	1,267	1,643	1,613
	Home Performance	572	618	510
	Home Energy Management [1]	6,912	10,904	11,748
	Residential Energy Affordability Program	293	281	302
Subtotal Commercial		**10,732**	**10,393**	**7,494**
Subtotal Residential		**9,808**	**13,772**	**14,460**
Total Portfolio		**20,540**	**24,165**	**21,954**

[1] HEM kW savings are not claimed by PSEG-LI. The 6,912 kW value represents the evaluation team's recommended energy-to-demand factor applied to the ex-ante MMBtu savings converted to MWh.

APPENDIX C ADDITIONAL COST-EFFECTIVENESS PERSPECTIVES AND METRICS

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. This perspective enables New York to factor in the societal benefits of reduced emissions, as well as the avoided costs of energy production and delivery. It also enables the inclusion of beneficial electrification technologies that increase electricity use but lead to overall lower energy consumption or reduced carbon impacts by shifting energy use from fossil fuels (fuel oil, propane, and natural gas) to electricity.

UTILITY COST TEST RESULTS

The Utility Cost Test (UCT) and the SCT are similar in most respects but consider slightly different benefits and costs in determining a benefit/cost ratio.[26] The UCT measures the net costs of an energy efficiency program as a resource option based on the costs incurred by the program administrator, including all program delivery costs and any rebate and incentive costs, but excludes costs incurred by the participant. The UCT only includes benefits that accrue to the utility and, therefore, does not include the benefits of non-electric (i.e., natural gas and fuel oil) energy savings or increases, or greenhouse gas emissions. Because both costs and benefits are different than those considered from the societal perspective, the UCT benefit-cost ratio is also different.

As shown in Table 26 , the UCT ratio was 0.24 for the Energy Efficiency and Beneficial Electrification Portfolio. This indicates that the portfolio is not cost-effective from the utility perspective. Notably, the Home Comfort and Mult-Family UCT ratios are negative, indicative of the increase in electricity associated with electrification measures such as heat pumps. Essentially, these programs raise the cost of operating the electric system. While electrification produces societal benefits in the form of reduced carbon emissions and reduced non-electric fuel consumption (e.g., natural gas and fuel oil), it increases electricity consumption to serve the newly electrified end uses. From the perspective of an electric utility, such as PSEG Long Island, the increased electricity costs are not offset by fuel and carbon reductions, which only accrue from the societal perspective. Table 27 displays this point further by showing what the UCT ratio is when Beneficial Electrification Measures are removed from the UCT. Without Beneficial Electrification measures, the portfolio UCT ratio increases to 0.85. In contrast, the Home Comfort SCT ratio is 1.47, indicating that from the societal perspective, benefits do outweigh costs associated with this program comprised primarily of electrification measures.

[26] The Utility Cost Test is also commonly known as the Program Administrator test.

Table 26: Utility 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	$24,543	$21,195	1.16
	Multi-Family	($2,270)	$5,859	-0.39
Total Commercial Portfolio		**$22,273**	**$27,054**	**0.83**
Residential	Energy Efficient Products	$1,780	$8,907	0.20
	Home Comfort	($8,104)	$30,735	-0.26
	Home Performance	$614	$11,997	0.05
	Home Energy Management	$3,803	$1,126	3.38
	Residential Energy Affordability Partnership	$628	$3,141	0.20
Total Residential Portfolio		**($1,277)**	**$55,906**	**-0.02**
Total Portfolio[1]		**$20,995**	**$85,706**	**0.24**

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

Table 27: Utility Cost Test Results without Beneficial Electrification Measures

Sector	Program	NPV Benefits ($1,000)	Costs ($1,000)	B/C Ratio
Commercial	Commercial Efficiency Program	$25,184	$18,765	1.34
	Multi-Family	$533	$881	0.60
Total Commercial Portfolio		**$25,717**	**$19,646**	**1.31**
Residential	Energy Efficient Products	$2,267	$7,328	0.31
	Home Comfort	$0	$0	NA
	Home Performance	$1,002	$6,152	0.16
	Home Energy Management	$3,803	$1,126	3.38
	Residential Energy Affordability Partnership	$628	$3,141	0.20
Total Residential Portfolio		**$7,701**	**$17,747**	**0.43**
Total Portfolio[1]		**$33,418**	**$39,157**	**0.85**

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

RATEPAYER IMPACT TEST RESULTS

Another relevant metric in the context of electrification measures is the Ratepayer Impact test (RIM). This test considers the perspective of non-participating ratepayers and reflects the impact of programs on rates. The benefits and costs considered are like those considered from the utility perspective, in that participant costs and societal benefits are not considered. The key difference is that changes in utility revenue are considered, and increases in revenue are viewed as a benefit. This is the key component for assessing the impact on rates. Electricity rates are determined, in part, by allocating the fixed costs of maintaining and operating the electric grid across the units of energy sold. The primary metric for allocating costs across most ratepayers is consumption, as measured by kWh. Because consumption is the denominator for determining rates, volumetric rates increase as total consumption decreases, and volumetric rates decrease as total consumption increases. To the extent that energy efficiency results in reduced consumption, it places upward pressure on rates, while electrification places downward pressure on rates by increasing total consumption.

As shown in Table 28, the RIM ratio was 0.54 for the Energy Efficiency and Beneficial Electrification Portfolio. This indicates that the portfolio is not cost-effective from the ratepayer perspective. This is to be expected since most of the portfolio is comprised of energy efficiency measures, which decrease consumption. In contrast, Home Comfort (exclusively beneficial electrification) and Multi-Family (primarily beneficial electrification) were the only programs with a RIM ratio greater than 1.0, indicative of the increase in electricity associated with electrification measures such as heat pumps. Essentially, the net benefits for electrification from the ratepayer perspective are positive in this case, after factoring in program costs. Table 29 further reinforces this by showing the RIM ratio when energy efficiency is removed. The RIM ratio is comfortably cost-effective at 1.79 for Beneficial Electrification measures only. Home Comfort, EEP (which includes heat pump water and pool heaters), CEP (which includes custom heat pumps), and Multi-Family (which includes custom heat pumps and heat pump water heaters) are all cost-effective under this filter. Installation of heat pumps both saves kWh in the summer and adds kWh in the winter. There were also energy efficiency measures in the Custom category. When saved kWh and added kWh are roughly equal, as they were for CEP, neither the RIM nor the UCT ratios will look favorable.

Table 28: Ratepayer Impact 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	$33,132	$156,217	0.21
	Multi-Family	$20,343	$11,941	1.72
Total Commercial Portfolio		**$53,475**	**$168,158**	**0.32**
Residential	Energy Efficient Products	$6,118	$22,976	0.27
	Home Comfort	$77,718	$41,346	1.88
	Home Performance	$4,650	$15,933	0.29
	Home Energy Management	$3,803	$12,212	0.31
	Residential Energy Affordability Partnership	$628	$5,422	0.12
Total Residential Portfolio		**$92,917**	**$97,890**	**0.95**
Total Portfolio[1]		**$146,392**	**$268,793**	**0.54**

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

Table 29: Ratepayer Impact Test Results without Energy Efficiency Measures

Sector	Program	NPV Benefits ($1,000)	Costs ($1,000)	B/C Ratio
Commercial	Commercial Efficiency Program	$5,794	$3,074	1.76
	Multi-Family	$19,798	$7,796	2.57
Total Commercial Portfolio		**$25,592**	**$10,869**	**2.33**
Residential	Energy Efficient Products	$3,386	$2,066	1.64
	Home Comfort	$77,718	$41,346	1.88
	Home Performance	$3,648	$6,342	0.58
	Home Energy Management	$0	$0	NA
	Residential Energy Affordability Partnership	$0	$0	NA
Total Residential Portfolio		**$84,751**	**$49,754**	**1.70**
Total Portfolio[1]		**$110,343**	**$61,606**	**1.79**

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

FIRST-YEAR AND LEVELIZED COSTS

In addition to benefit-cost ratios, there are two metrics which can be of value for assessing the performance of a program or portfolio. These are the first-year, or acquisition cost, of energy and the levelized, or lifetime, cost of energy. In budget planning and goal setting, the planned budget is compared to planned gross energy impacts, (which do not include line losses or net-to-gross ratios). The actual first-year cost is comparable to this planning metric in that it compares actual spending to actual gross energy impacts. Importantly, gross impacts are considered to ensure comparability to planned budgets and energy targets. Table 30 shows the first-year cost for demand (kW), electricity (kWh), and the energy-agnostic MMBtu planning metric. Both the utility and societal perspective are shown. The difference between the two is that the societal perspective includes the full incremental measure costs. Program or portfolio acquisition costs can be compared with acquisition costs for other utility programs or portfolios. As with the UCT benefit cost ratio, the first-year cost per kWh for the Multi-Family, Home Comfort, and Home Performance programs are negative. This is the nature of electrification measures that increase, rather than reduce electricity consumption. Additionally, the first-year cost per kW for the Multi-Family program is also negative. Unlike the other program evaluations which use the PSEG Long Island TRM, the Multi-Family evaluation uses the NYSERDA Clean Heat tool which assumes an increase in summer peak demand.

Table 30: First-Year Costs for Energy Efficiency and Beneficial Electrification Portfolio

Sector	Program	2025 Ex-Post Gross UCT First-Year Acquisition Cost			2025 Ex-Post Gross SCT First-Year Acquisition Cost		
		$/MMBtu	$/kW-year	$/kWh	$/MMBtu	$/kW-year	$/kWh
Commercial	Commercial Efficiency Program	$104	$1,986	$0.39	$185	$3,539	$0.69
	Multi-Family Program	$108	($20,926)	($1.33)	$170	($33,004)	($2.10)
Subtotal Commercial Portfolio		**$104**	**$2,603**	**$0.54**	**$182**	**$4,524**	**$0.94**
Residential	Energy Efficient Products	$65	$27,214	$1.47	$121	$50,644	$2.74
	Home Comfort	$147	$18,709	($1.12)	$259	$32,999	($1.97)
	Home Performance	$201	$23,574	($138.79)	$206	$24,105	($141.92)
	Home Energy Management	$7	$103	$0.02	$7	$103	$0.02
	Residential Energy Affordability Partnership	$405	$11,194	$2.56	$405	$11,194	$2.56
Subtotal Residential Portfolio		**$98**	**$4,092**	**$2.25**	**$154**	**$6,391**	**$3.51**
Total Portfolio		**$111**	**$3,522**	**$1.08**	**$177**	**$5,633**	**$1.73**

Levelized cost is another useful metric, which essentially divides costs by the lifetime net energy impacts (which include line losses and net to gross ratios). Net impacts are used to compare the cost of energy efficiency programs more directly with energy or capacity costs from other sources. Because levelized costs are expressed as $/kW-year and $/kWh, planners can readily compare them to the cost of alternative supply options. Table 31 shows the levelized cost for demand (kW), electricity (kWh), and the energy-agnostic MMBtu planning metric. Both the utility and societal perspective are shown. The difference between the two is that the societal perspective includes the full incremental measure costs. Levelized costs can be compared with marginal costs for other resources. As with the UCT benefit cost ratio, the levelized cost per kWh for the Home Comfort program and Home Performance is negative. This is the nature of electrification measures that increase, rather than reduce electricity consumption. Additionally, the levelized cost per kW for the Multi-Family program is also negative. Unlike the other program evaluations which use the PSEG Long Island TRM, the Multi-Family evaluation uses the NYSERDA Clean Heat tool which assumes an increase in summer peak demand.

Table 31: Levelized Costs for Energy Efficiency and Beneficial Electrification Portfolio

Sector	Program	2025 Ex-Post Net UCT Levelized Costs			2025 Ex-Post Net SCT Levelized Costs		
		$/MMBtu	$/kW-year	$/kWh	$/MMBtu	$/kW-year	$/kWh
Commercial	Commercial Efficiency Program	$14.17	$272	$0.05	$18.88	$363	$0.07
	Multi-Family Program	$10.46	($1,763)	($0.12)	$16.50	($2,781)	($0.18)
Subtotal Commercial Portfolio		**$13.16**	**$363**	**$0.08**	**$18.23**	**$503**	**$0.11**
Residential	Energy Efficient Products	$8.52	$3,687	$0.23	$13.11	$5,671	$0.36
	Home Comfort	$31.70	$6,864	($0.22)	$52.91	$11,458	($0.37)
	Residential Energy Affordability Partnership	$29.51	$3,951	($1.30)	$27.38	$3,666	($1.20)
	Home Performance	$6.88	$96	$0.02	$6.88	$96	$0.02
	All Electric Homes	$49.88	$1,618	$0.35	$49.88	$1,618	$0.35
	Home Energy Management	$8.52	$3,687	$0.23	$13.11	$5,671	$0.36
Subtotal Residential Portfolio		**$21.11**	**$2,367**	**($1.04)**	**$30.36**	**$3,404**	**($1.50)**
Total Portfolio		**$20.68**	**$844**	**$0.26**	**$29.11**	**$1,188**	**$0.36**

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.

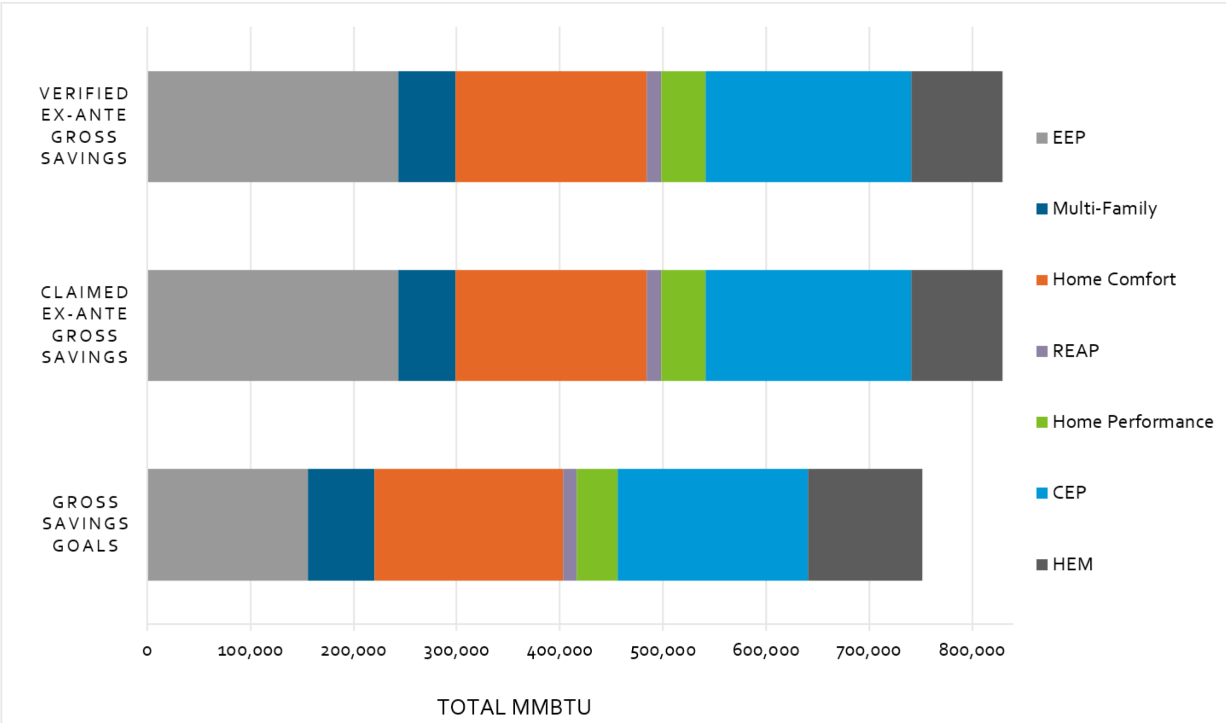
The claimed and verified ex-ante MMBtu savings in Table 1 do not incorporate fossil fuel heating penalties for lighting measures. This change was made to align PSEG Long Island with New York's other investor-owned utilities (IOUs) which operate fuel-specific energy efficiency programs where electric 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%**

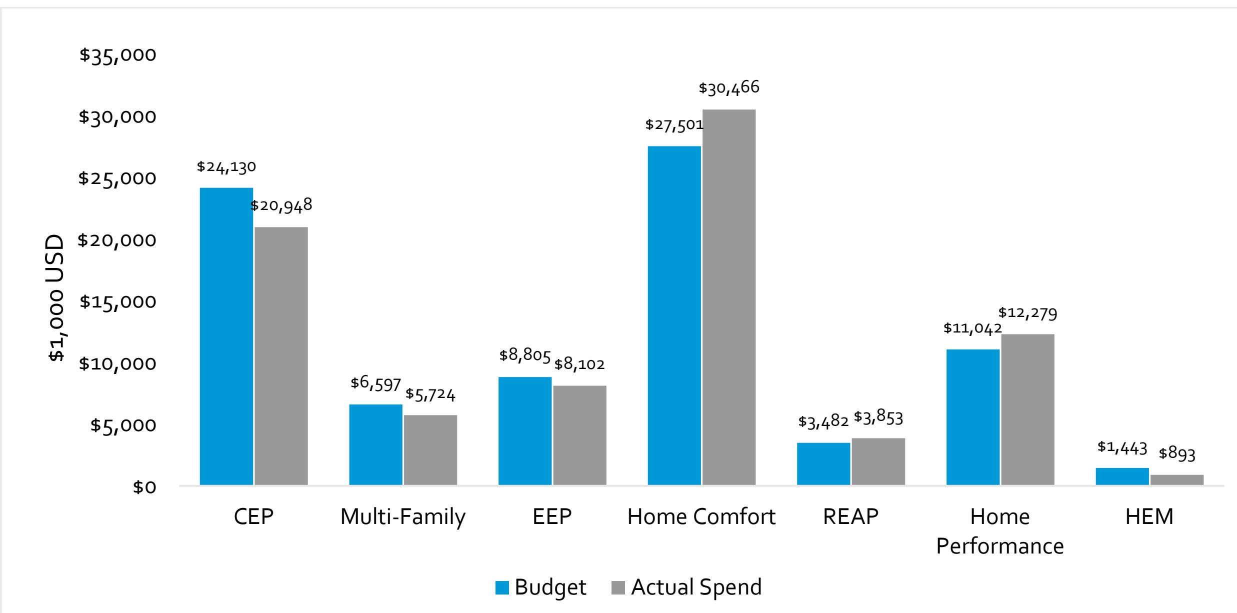
Table 6 compares budgets and actual spending by program and Figure 2 visualizes the comparison. Actual spending for commercial programs was about 80% of the planned budget but VEA MMBtu savings for the commercial programs still exceeded their combined MMBtu goal for the year. Actual spending for Home 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 <u>and</u> 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)

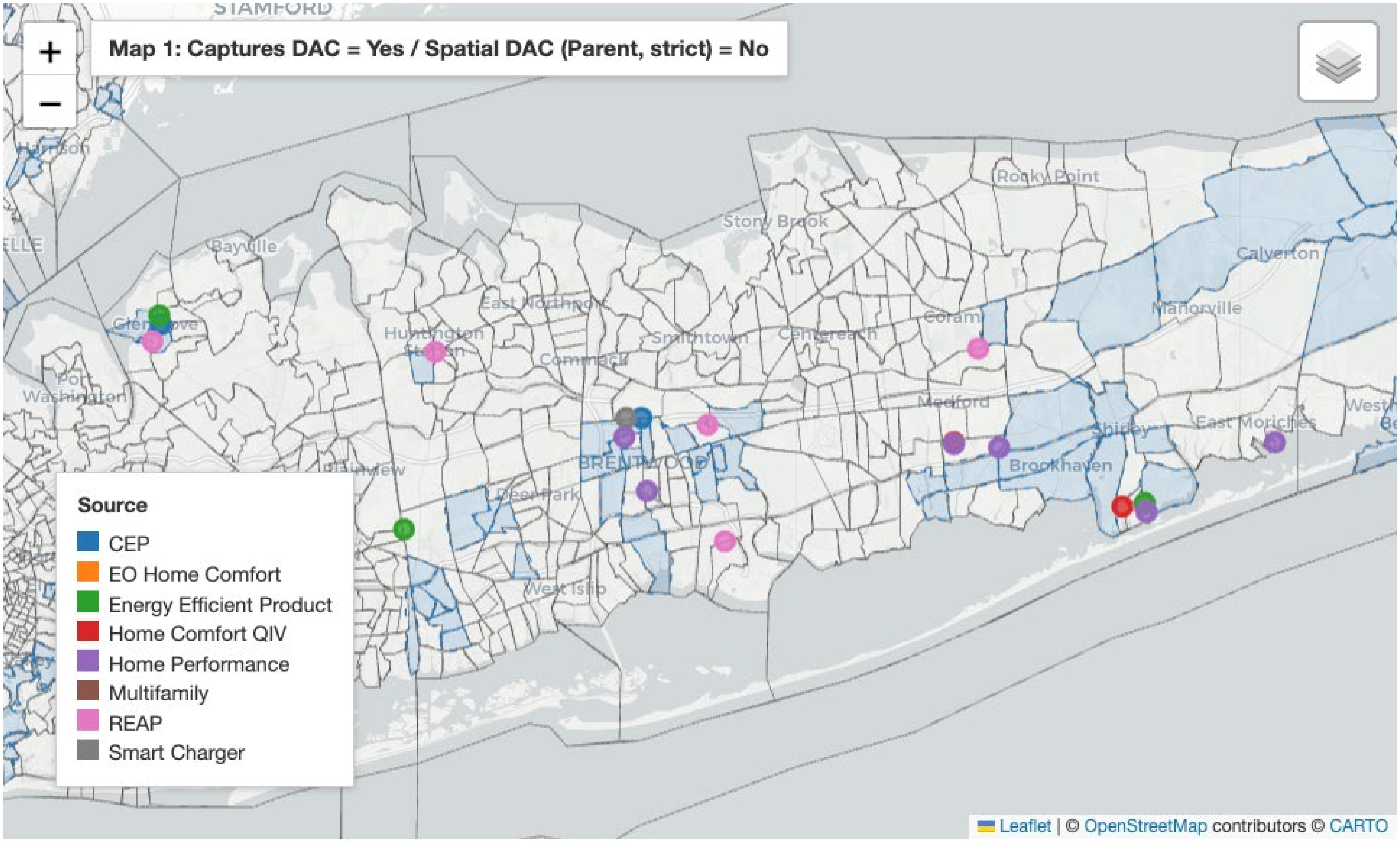


FIGURE 4: SAMPLE OF NON-DAC-DESIGNATED PROJECTS VERIFIED AS WITHIN DAC BOUNDARIES (n = 38)