

Evaluation, Measurement, and Verification of CPS Energy's FY 2025 DSM Portfolio

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FRONTIER energy

TETRA TECH

TEESI Engineering

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1. EXECUTIVE SUMMARY

CPS Energy's Sustainable Tomorrow Energy Plan (STEP) is an initiative aiming to reduce community demand by 410 MW, achieve 1 percent energy savings per year relative to energy sales, weatherize 16,000 single and 20,000 multifamily residences, and contribute to 1.85 million tons of avoided carbon over five years through equitable programs designed to help customers save energy and money. Through this initiative, CPS Energy incorporated community input to shape the future of energy efficiency and conservation program offerings and identified the program outcomes that mattered most to the community. In addition to energy demand reduction, community stakeholders emphasized the importance of lowering bills, supporting those most in need, and advancing a low-carbon future.

This report encompasses all STEP-funded Demand-Side Management (DSM) program activity accounted for by CPS Energy within Fiscal Year (FY) 2025, which ran from February 1, 2024 through January 31, 2025. This report describes the evaluation, measurement, and verification (EM&V) methodology, process, and findings for CPS Energy's FY 2025 DSM programs. The primary focus was on verifying achieved annual energy and demand savings. Additionally, the evaluation team reviewed program expenditures to determine cost effectiveness and made recommendations for enhancements to program design and implementation.

Energy Efficiency programs achieve savings through various program designs, including direct-install, rebates, and point-of-sale discounts. The High-Performance A/C Tune-up program delivered the highest energy and demand impacts for Residential Energy Efficiency, and Small Business Solutions was the leading contributor for Commercial Energy Efficiency. The Bring Your Own Thermostat (BYOT) and Commercial & Industrial (C&I) programs were the highest performers for the Demand Response (DR) sector. The BYOT DR program delivered the greatest energy impacts, while the C&I DR program led demand impacts.

Among solar programs, energy efficiency rebates are now targeted at small business, non-profit, and school installations, which delivered all energy and demand impacts in FY 2025. Residential solar installations have continued without rebates, and CPS Energy now focuses on providing solar education for residential customers through Build San Antonio Green, and on promoting solar among hard-to-reach customers via community solar programs.

2. EVALUATION METHODS

2.1 EVALUATION CONTRACTOR

The independent evaluation, measurement, and verification (EM&V) team is made up of Frontier Energy, Inc. (Frontier) and subcontractors Tetra Tech, Inc. (Tetra Tech) and Texas Energy Engineering Services, Inc. (TEESI). Frontier has proudly served as CPS Energy's independent third-party evaluator since 2015, partnering with the CPS Energy team in support of the STEP program. Tetra Tech and TEESI joined the evaluation team in 2022.

Since 1999, Frontier has been a leading partner with electric and gas utilities in the design, implementation, and evaluation of energy efficiency, demand response, and renewable energy programs. Frontier has served as a primary consultant for the Texas electric investor-owned utilities, operating collaboratively as the Electric Utility Marketing Managers of Texas (EUMMOT). Through this partnership, Frontier has assisted with projects spanning the full energy efficiency program lifecycle, including regulatory filings, deemed savings development, program design, implementation, reporting, and evaluation.

As the longstanding statewide EM&V consultant to the Texas Public Utility Commission, Tetra Tech has worked collaboratively with Frontier since 2013 to produce the Texas Technical Reference Manual (on which the CPS Energy Guidebook is based) and support the investor-owned utilities across a vast number of energy efficiency challenges and opportunities.

TEESI serves as the evaluation team's field verification and inspection lead. Since its inception in 1989, TEESI has served as one of the lead engineering firms by the State Energy Conservation Office (SECO) to conduct Preliminary Energy Audits (PEA) and third–party engineering reviews for the LoanSTAR program. TEESI's staff specializes in conducting energy assessments, design and analysis for utility cost reduction measures, and application of International Performance Measurement and Verification Protocol (IPMVP) for on-site field verification.

The overall evaluation team brings unparalleled experience in Texas energy efficiency, leveraging extensive resources and experience from across the country. Collectively, the team has been actively engaged with cross-cutting projects that align with the goals of the CPS Energy STEP evaluation.

2.2 ENERGY IMPACTS

The evaluation team's approach has been to leverage existing EM&V work previously conducted for CPS Energy and other electric utilities in Texas. For over two decades, investor-owned utilities and stakeholder groups have collaborated to develop accurate and comprehensive deemed savings for hundreds of residential and commercial energy efficiency measures, under the auspices of the Public Utility Commission of Texas (PUCT). This extended effort informs ongoing updates to the Texas Technical

Reference Manual (Texas TRM),[1] a compendium of algorithms, baseline efficiency data, efficiency standards, energy savings calculations, and data tables.

In 2016, the evaluation team adapted the Texas TRM to be applied within CPS Energy's service territory. This provides CPS Energy with energy and demand impact estimates that have been vetted numerous times by independent third parties and are consistent with impact estimates being used by all the investor-owned utilities in Texas. The adapted Texas TRM, along with other measures required for CPS Energy programs, can be found in the CPS Energy Guidebook. The CPS Energy Guidebook has been utilized for the STEP evaluation since FY 2017 and is updated annually to comply with the latest Texas TRM updates. The FY 2025 CPS Energy Guidebook was used for this analysis, except where noted.

2.3 DEFINITION OF NON-COINCIDENT, COINCIDENT, AND ERCOT 4CP PEAK DEMAND

2.3.1 Non-Coincident Peak (NCP)

For each measure and building type, annual kWh savings are allocated to each of the 8,760 hours in a year for the appropriate load shape. Non-coincident peak demand savings are the maximum difference between the pre- and post-retrofit demand, regardless of when that maximum value, or peak, occurs. Conceptually, demand is instantaneous; in practice, demand savings are frequently estimated by calculating the difference in energy use between pre-and post-retrofit conditions over the course of a one-hour interval.

For measures where CPS Energy Guidebook deemed savings estimates are prepared using load shapes and/or engineering algorithms, the maximum estimated reduction in demand over any given hour of the year is reported as the non-coincident peak. In some cases, when deemed savings are estimated using building simulation models, the 99.9th percentile hourly savings estimate is used in lieu of the absolute maximum value.[2]

2.3.2 Coincident Peak (CP)

The calculation of coincident peak demand savings relies upon a probabilistic analysis of a San Antonio typical meteorological year (TMY), which contains hourly values of solar radiation and meteorological elements for a one-year period. This analysis used a TMY3 data set, which contained data collected from

[1] Public Utility Commission of Texas (PUCT) Technical Reference Manual (TRM). Most recent version available for download at: https://texasefficiency.com/trm-docs/.

[2] This approach is taken with the residential envelope measures, developed with residential building simulation models, to account for some apparent time-displacement in when loads are met in the models. Given that single hour savings in some cases exceed the theoretical maximum hourly savings the measure could deliver according to engineering calculations, it appears that loads occasionally accumulate across hours giving hourly differences that may not realistically reflect the impacts of a measure.

the Kelly Field Air Force Base (Kelly AFB) weather station.[3] This approach relates the TMY3 data set's actual hourly weather, time-of-day, and day-of-week data to historical CPS Energy peak conditions. The calculation uses a probability-weighted estimate of the average kW savings during the twenty hours with the highest probability of occurring during CPS Energy's system peak.

The evaluation team used ERCOT data for this zone and added back in demand savings attributable to DR deployments to determine what the hours of highest demand would have been absent the programs. Impact estimates of various energy efficiency measures during the top twenty hours associated with high demand in the TMY data are identified, and the probability-weighted estimate of an energy efficiency measure's demand savings during those peak hours is then calculated. This approach was adopted for use beginning in Texas TRM version 3.1, used by all investor-owned electric utilities since 2016. Fundamentally, this approach requires several key steps:

1. Establish the predicted peak hours in summer for CPS Energy.

This estimation approach involves identifying a set of hours during which CPS Energy peaks are likely to happen. Given the variability in when peaks occur, using a wider range of potential peak hours within a logistic model is optimal for estimating the actual, expected impact for a single utility peak hour per year. In other words, a probabilistic approach using 20 hours provides a better chance of estimating the actual peak rather than an approach that relies on a single hour. The 20 most probable hours for this estimate are based on a regression of 2010-2019 June to September 2:00-6:00 PM historical load data plus CPS Energy's estimated hourly demand response load and provide a sufficient range of hours to assign the highest probability of being within the set of actual peak hours.

2. Correlate weather and load data.

A logistic regression model and CPS Energy historical load data are used to estimate a relationship between CPS Energy peak hours and a set of explanatory variables, including a temperature variable and dummy variables representing the time-of-day and month-of-year.

3. Select Peak Hours in TMY Weather Files.

This step applies regression results to San Antonio TMY3 weather data by calculating the probability of an hour coinciding with CPS Energy peak by using marginal probabilities assigned to the explanatory variables. The twenty hours selected are those with the highest probability of occurring during CPS Energy's peak.

[3] Data collected at the Kelly Field Air Force Base (Kelly AFB) station were generally used, because the temperature data series collected at the San Antonio International Airport is inexplicably higher than the readings collected at other local weather stations. (See Itron, CPS Energy June 2014 Electricity Forecast, Sept. 2014, p. 8-9.).

The following table shows the selected top 20 hours in order of decreasing relative probability. Additional hours are shown because some hours, such as those occurring on weekends or holidays, are eliminated for some measures. This analysis was completed in 2020 using weather and load data from 2016 to 2019.

Estimated coincident peak savings are calculated as the probability-weighted average of the kW in the top twenty applicable time periods for each measure. This approach was used for all measures, except where noted.

Table 2-1: Evaluation Methods – Top Hours in Order of Relative Probability

Month	Day	Hour (start)	Temp (°F)	Peak Probability (with DR addback)	Month	Day	Hour (start)	Temp (°F)	Peak Probability (with DR addback)
6	19	15	104.00	0.868682	6	17	16	97.88	0.056450
6	19	16	102.92	0.846070	6	18	16	97.88	0.056450
6	20	16	102.92	0.846070	7	30	16	98.96	0.054889
6	20	15	101.84	0.488014	8	20	14	98.96	0.035089
6	19	14	102.92	0.354302	8	23	14	98.96	0.035089
6	20	14	102.92	0.354302	6	10	14	99.86	0.034069
6	19	17	100.94	0.327983	6	18	14	99.86	0.034069
6	10	15	100.94	0.298350	7	31	14	100.94	0.033105
6	18	15	100.94	0.298350	8	18	17	96.98	0.031332
7	31	15	102.02	0.292170	8	19	17	96.98	0.031332
8	20	15	99.86	0.271695	8	20	17	96.98	0.031332
8	19	16	98.96	0.267009	6	17	17	97.88	0.030418
8	20	16	98.96	0.267009	6	18	17	97.88	0.030418
6	10	16	99.86	0.261069	7	31	17	98.96	0.029554
8	17	15	98.96	0.142675	6	13	15	97.88	0.026605
7	31	16	100.04	0.132695	6	14	15	97.88	0.026605
8	18	16	97.88	0.121478	6	21	15	97.88	0.026605
6	20	17	98.96	0.076337	6	5	16	96.98	0.025995
6	17	15	98.96	0.067168	6	11	16	96.98	0.025995
8	18	15	97.88	0.059418	6	13	16	96.98	0.025995
8	19	15	97.88	0.059418	6	21	16	96.98	0.025995
8	17	16	96.98	0.058101	8	7	16	95.90	0.022879
8	23	16	96.98	0.058101	8	28	16	95.90	0.022879
6	12	16	97.88	0.056450	6	17	14	98.96	0.015490
6	16	16	97.88	0.056450	7	30	14	100.04	0.015044

2.3.3 Avoided Transmission Charge (ERCOT 4CP TCOS)

CPS Energy is electrically interconnected to the other electric utilities in the Electric Reliability Council of Texas (ERCOT) region, which encompasses most of Texas. All the users of the ERCOT transmission system share the annual cost of operating the high-voltage transmission system, called the ERCOT transmission cost of service (TCOS). Each user's share of the TCOS is allocated based upon their individual electrical demand during the prior year's monthly ERCOT system peak for the months of June through September, known as the four coincident peaks (4CP).

To reduce their allocated share of the ERCOT 4CP TCOS charge, CPS Energy anticipates likely 4CP events and deploys demand response resources to reduce demand accordingly. Energy efficiency measures also contribute to demand reduction during 4CP events.

To estimate gross demand reduction within each demand response program/subprogram, the estimated load reduction per participant is multiplied by the number of active participants and a deployment success rate, the rate at which CPS Energy correctly anticipated and deployed each resource during historical 4CP events.

The CPS Energy FY 2016 evaluation saw the addition of ERCOT 4CP demand savings resulting from energy efficiency programs. In previous CPS Energy evaluations, ERCOT 4CP demand savings were calculated only for demand response programs. For energy efficiency programs, hourly load shapes for each measure provide the estimate of the impacts during 4CP event hours for each weekday during the months of June through September. Based on historical CPS Energy interval data, the 4CP has typically occurred in the hour ending 17 for each 4CP month since 2011. Hourly kW values are extracted from measure load shapes for the hour ending 17 for each day during the 4CP months. Finally, the 90th percentile maximum monthly value is averaged across the 4CP months to estimate the 4CP impact for each program. The evaluation team and CPS Energy are closely tracking 4CP trends to determine if an adjustment may be needed for future fiscal years.

2.4 NET IMPACTS

To derive net impacts, the evaluation team applies net-to-gross (NTG) ratios and line loss factors to the gross energy and peak demand impacts for each measure.

NTG ratios are estimated at the individual program level, and account for the net effects of free ridership and spillover. Free riders are defined as customers who would have delivered energy or demand savings without any program incentives but who received a financial incentive or rebate anyway. Spillover effects derive from customers who delivered energy or demand savings because of the program but did not participate in the program or receive a financial incentive or rebate.

Based on industry standards for low-income programs in Texas, a 100 percent NTG factor was used for the Weatherization program. Residential NTG ratios were updated for FY 2025 through a combination of industry benchmarking and a surveyed sample of FY 2024 program participants. Commercial NTG ratios were provided by CPS Energy but are expected to be updated for FY 2026.

Line loss factors account for the fact that utilities must generate or import a greater amount of energy or demand than is required at the customer or end-user level because some energy is lost in distribution. Separate line loss factors relating to energy and demand are based on information provided by CPS Energy.

2.5 AVOIDED COST BENEFITS

Avoided cost benefits were calculated based on projected capacity and energy costs provided by CPS Energy. Between FY 2024 and FY 2025, average avoided cost inputs increased. Avoided energy costs increased between 10-39 percent, and avoided capacity costs increased between 23-33 percent, resulting in a significant positive impact on overall PACT ratios for individual programs and the overall portfolio.

2.5.1 Avoided Capacity and Energy

Avoided cost benefits were calculated using avoided energy and capacity costs provided by CPS Energy, and CPS Energy's standard discount rate.[4,5] To calculate avoided energy benefits, annual kWh was allocated into the following seasonal blocks based on day of the week and hour of the day.

The evaluation team developed or adopted appropriate 8760-hour load shapes for each STEP measure to assign annual kWh to corresponding cost periods:

- Summer On-Peak
- Summer Mid-Peak
- Summer Off-Peak
- Non-Summer Mid-Peak
- Non-Summer Off-Peak

Avoided capacity costs (nominal $/kW-yr) were developed for on-peak and off-peak STEP measures. On-peak avoided capacity cost was defined as the forecasted capital and fixed operation and maintenance cost of a Reciprocating Internal Combustion Engine (RICE) brownfield plant with selective catalytic reduction (SCR) and carbon monoxide (CO) catalyst post-combustion controls, annuitized over 35 years. Off-peak avoided capacity cost was defined as the blended cost of CPS Energy's forecasted capital and

[4] A discount rate is a percentage used to adjust the value of future costs and benefits to their present value, reflecting the time value of money and the preference for current benefits over future ones. Since costs typically occur upfront and savings occur over time, the lower the discount rate, the more likely the cost-effectiveness result is to be positive.
[5] After remaining steady for several years, the FY 2025 discount rate increased by approximately 10 percent.

fixed operation and maintenance cost of a RICE and a natural gas combined cycle (NGCC GE Flex 1X1), with the blending ratio defined as the ratio of the added NGCC/RICE capacity in CPS Energy's 25-year expansion plan.

2.5.2 Avoided Transmission Cost of Service (ERCOT 4CP TCOS)

ERCOT recovers the costs of transmission incurred by transmission service providers via a charge on load-serving entities, including CPS Energy. The charge is allocated to load-serving entities based on each entity's average demand during four ERCOT system peaks (known as four coincident peaks, or 4CP events) from June to September each year. To minimize this charge, CPS Energy anticipates likely 4CP events and deploys demand response resources to reduce demand accordingly. Energy efficiency measures also contribute to demand reduction during 4CP events.

To estimate gross demand reduction during 4CP events within each demand response program/subprogram, we multiplied the estimated load reduction per participant by the number of active participants and a deployment success rate, the rate at which CPS Energy correctly anticipated and deployed each resource during 4CP events.

For energy efficiency and renewable energy programs, we used hourly load shapes for each program measure to estimate the impacts during 4CP event hours for each weekday during the months of June through September. These monthly impacts were then averaged to estimate the 4CP impact for each program. The total reduction to 4CP demand is then valued at the expected future TCOS provided by CPS Energy.

2.5.3 Avoided Price Spikes Savings (kWh)

Avoiding intervals of especially high energy prices in the ERCOT market is another benefit of demand response programs. By reducing demand during price spikes, CPS Energy benefits by avoiding high energy prices, or by selling energy from its own or contracted generation sources into the market. Avoided price spike savings are calculated for DR programs, which can sometimes be deployed in anticipation of price spike events.

Price spikes in the ERCOT market have various causes, occur irregularly, and are hard to predict. Price spikes are difficult to react to in a timely manner with some demand response resources. For example, rapid response to an unexpected price spike event would be impossible for a program that requires day-ahead notice to the program implementer.

To estimate the value of energy (kWh) saved during price spike events, we compiled energy savings from all DR programs for every deployment interval and multiplied the sum within each interval by the corresponding ERCOT load zone energy price less CPS Energy's avoided cost of energy during the

summer peak period. This method estimates the value of energy savings achieved during DR events without double counting the value of avoided energy costs.

2.6 ECONOMIC ANALYSIS

The following cost-effectiveness metrics were calculated for CPS Energy's programs. For results, see section 3.5.

Cost of Saved Energy (CSE) is the cost per kWh of energy efficiency and/or demand response program impact. The CSE is the ratio of the levelized program costs divided by the annual energy kWh savings. Levelized program costs are calculated using a Capital Recovery Factor (CRF), which incorporates the estimated useful life (EUL)[6] of the savings (weighted by measure) and an annual discount rate.

$$CSE = \frac{Levelized\ Program\ Costs}{Annual\ kWh\ savings}$$

Net Avoided Cost Benefit, or reduced revenue requirement (RRR), is the net reduction in utility costs from the energy and demand saved by CPS Energy's programs, calculated as the avoided cost benefit minus the total program costs.

$$RRR = PV\ of\ Avoided\ Energy + PV\ of\ Avoided\ Demand - Total\ Program\ Costs$$

Program Administrator Benefit-Cost (PACT) Ratio is the ratio of the net present value (NPV) of avoided energy and capacity benefit, divided by the program's incentives and administrative costs, expressed as:

$$Benefit\ Cost\ Ratio = \frac{NPV\ of\ Avoided\ Cost\ Benefit}{Program\ Incentives + Admin\ Costs}$$

For all DR programs except Automated Demand Response (ADR), benefit-cost calculations considered only the group of participants added during the current fiscal year. ADR participants are contracted for 10 years, but because the costs and impacts change each year, benefit-cost was calculated with an EUL of one year and the impacts include all active participants. This approach is consistent with other program benefit-cost calculations, but caution is advised when comparing DR results to benefit-cost calculations from prior years. This is especially the case where there are significant differences between cohorts from the current and past years, as significant differences in the composition of cohorts from year to year affect the outcome.

[6] The Estimated Useful Life (EUL) values from the Texas TRM were utilized for all STEP measures, except where noted.

3. PORTFOLIO IMPACTS AND COST EFFECTIVENESS

3.1 PORTFOLIO SUMMARY

The FY 2025 portfolio consists of 20 active programs across residential weatherization, residential and commercial energy efficiency, residential and commercial demand response, and commercial renewable sectors. They are implemented by a combination of internal CPS Energy staff and external implementation vendors.

Net energy and demand savings are listed in the following table. The savings are represented on an annualized basis to simplify the reporting structure streamline year-to-year comparisons. Net savings = gross savings x net-to-gross ratio ÷ (1 - line loss factor).

Table 3-1: FY 2025 Portfolio Impacts and Cost Effectiveness[7]

Program	NTG Ratio	Net Energy Savings (kWh)	Net CP Demand Savings (kW)	Net NCP Demand Savings (kW)	Net ERCOT 4CP Demand Savings (kW)	Rebate $	Admin and Marketing $	Total Program $	PACT [8]
Weatherization Program									
Weatherization	100%	6,383,190	3,520	6,395	3,265	$15,583,601	$2,390,490	$17,974,091	0.71
Energy Efficiency Programs									
Residential HVAC	85%	5,218,743	2,257	2,503	2,257	$3,150,210	$144,444	$3,294,654	2.49
Home Efficiency	95%	1,067,662	670	1,023	611	$792,869	$36,511	$829,380	3.03
New Home Construction	100%	19,006,644	6,213	7,176	6,213	$7,907,855	$377,660	$8,285,515	3.58
Retail Discounts	77%	2,548,365	280	1,125	442	$743,492	$34,631	$778,123	2.51
Home Energy Assessment	100%	5,562,554	116	353	92	$1,320,363	$61,248	$1,381,611	1.88
High-Performance AC Tune-up	100%	24,717,233	8,870	9,797	8,870	$2,652,706	$119,665	$2,772,371	5.27
Multifamily[9]	100%	190,729	48	89	48	$140,261	$624,379	$764,640	0.23
Residential Subtotal		58,311,930	18,454	22,066	18,532	$16,707,756	$1,398,538	$18,106,295	3.30
Commercial & Industrial Solutions	96%	49,685,410	9,418	12,984	9,159	$6,782,090	$334,094	$7,116,184	5.28
Schools & Institutions	97%	22,816,550	4,627	6,243	4,837	$2,632,644	$133,543	$2,766,187	5.21
Small Business Solutions	97%	54,832,178	11,998	16,556	11,679	$7,024,879	$348,494	$7,373,373	5.59
Commercial Subtotal		127,334,138	26,043	35,782	25,674	$16,439,613	$816,131	$17,255,744	5.40
Energy Efficiency Subtotal		185,646,069	44,496	57,848	44,206	$33,147,369	$2,214,670	$35,362,039	4.32

Table continues on next page.

[7] NTG = Net-to-gross, NCP = Non-coincident peak, CP = Coincident peak, 4CP = ERCOT four coincident peak, PACT = Program administrator benefit-cost ratio.

[8] The Program Administrator Cost Test (PACT) output, the benefit-cost ratio, is the ratio of the net present value (NPV) of avoided energy and capacity benefits, divided by the program's incentives and administrative costs. A PACT ratio greater than 1.0 indicates that the program delivered more benefits than costs incurred from the utility's perspective. The PACT is sometimes referred to as the Utility Cost Test (UCT).

[9] The Multifamily program first-year PACT score is limited based on several factors, including higher start-up costs and low participation rates due to the program launching in October 2024 and the fiscal year ending at the end of January 2025. It is expected to increase in future fiscal years.

Program	NTG Ratio	Net Energy Savings (kWh)	Net CP Demand Savings (kW)	Net NCP Demand Savings (kW)	Net ERCOT 4CP Demand Savings (kW)	Rebate $	Admin and Marketing $	Total Program $	PACT [10]
Demand Response Programs [11]									
Smart Thermostat[12]	100%	406,743	11,158	17,095	7,221	$770,029	$35,370	$805,399	N/A
Power Players	100%	975,340	11,475	14,317	5,121	$1,216,334	$56,342	$1,272,676	1.55
Direct Install Thermostats	100%	22,704,525	19,943	26,836	9,558	$431,048	$19,960	$451,008	4.94
Bring Your Own Thermostat	100%	63,672,259	58,968	78,001	27,902	$4,369,094	$203,208	$4,572,302	8.03
Commercial and Industrial DR	100%	3,900,463	80,960	112,303	67,394	$4,723,591	$216,232	$4,939,822	3.20
FlexEV Smart Rewards	100%	–	88	160	76	$64,499	$113,227	$177,726	0.27
FlexEV Off-Peak Rewards	100%	–	91	156	44	$26,530	$47,187	$73,717	0.34
My Battery Rewards	100%	769	157	202	–	$1,380	$26,315	$27,695	4.68
Demand Response Subtotal		91,660,098	182,840	249,069	117,315	$11,602,505	$717,840	$12,320,345	4.48
Renewable Energy Programs [13]									
Commercial Solar PV	100%	6,276,435	2,210	4,921	1,856	$1,679,862	$117,524	$1,797,386	6.04
Roofless Solar	100%	–	–	–	–	–	$43,176	$43,176	–
Solar Energy Subtotal		6,276,435	2,210	4,921	1,856	$1,679,862	$160,700	$1,840,562	6.02
Grand Total [14]		289,965,792	233,067	318,233	166,642	$62,013,337	$5,483,699	$67,497,037	3.41

[10] The Program Administrator Cost Test (PACT) output, the benefit-cost ratio, is the ratio of the net present value (NPV) of avoided energy and capacity benefits, divided by the program's incentives and administrative costs. A PACT ratio greater than 1.0 indicates that the program delivered more benefits than costs incurred from the utility's perspective. The PACT is sometimes referred to as the Utility Cost Test (UCT).

[11] The PACT for Demand Response Programs is calculated based on the net present value of avoided cost benefits divided by the net present value of program costs attributable to new, incremental participants during the program year. Because total program costs in the table represent the costs attributable to all participants, the PACT for Demand Response Programs cannot be directly calculated from data presented in the table. Demand response program net energy and demand savings (in lighter shade) represent end-of-fiscal year program capability based on end-of-fiscal year enrollment.

[12] The Smart Thermostat program is a legacy program that is no longer enrolling new customers. No PACT score is calculated because there was no incremental participation. Savings and costs reported for this program are for end-of-year participation.

[13] CPS Energy's solar rebate programs are evaluated independently from the utility's net metering rate policy.

[14] The sum of the individual programs and sectors may not match the totals due to rounding.

3.2 CUMULATIVE GOAL PROGRESS TOWARD FIVE-YEAR STEP GOALS

3.2.1 Goal Metrics and Targets

The STEP program aims to achieve the following goal metrics by the completion of FY 2028.

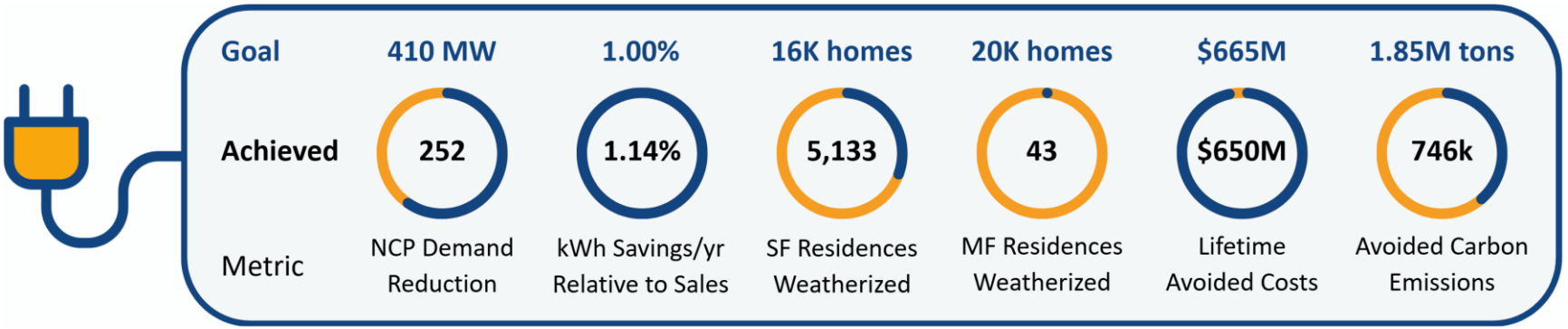


Figure 3-1: STEP Goal Targets and Achieved Results

3.2.2 Cumulative Goal Progress

The following figure shows the cumulative progress toward individual STEP goal metrics.

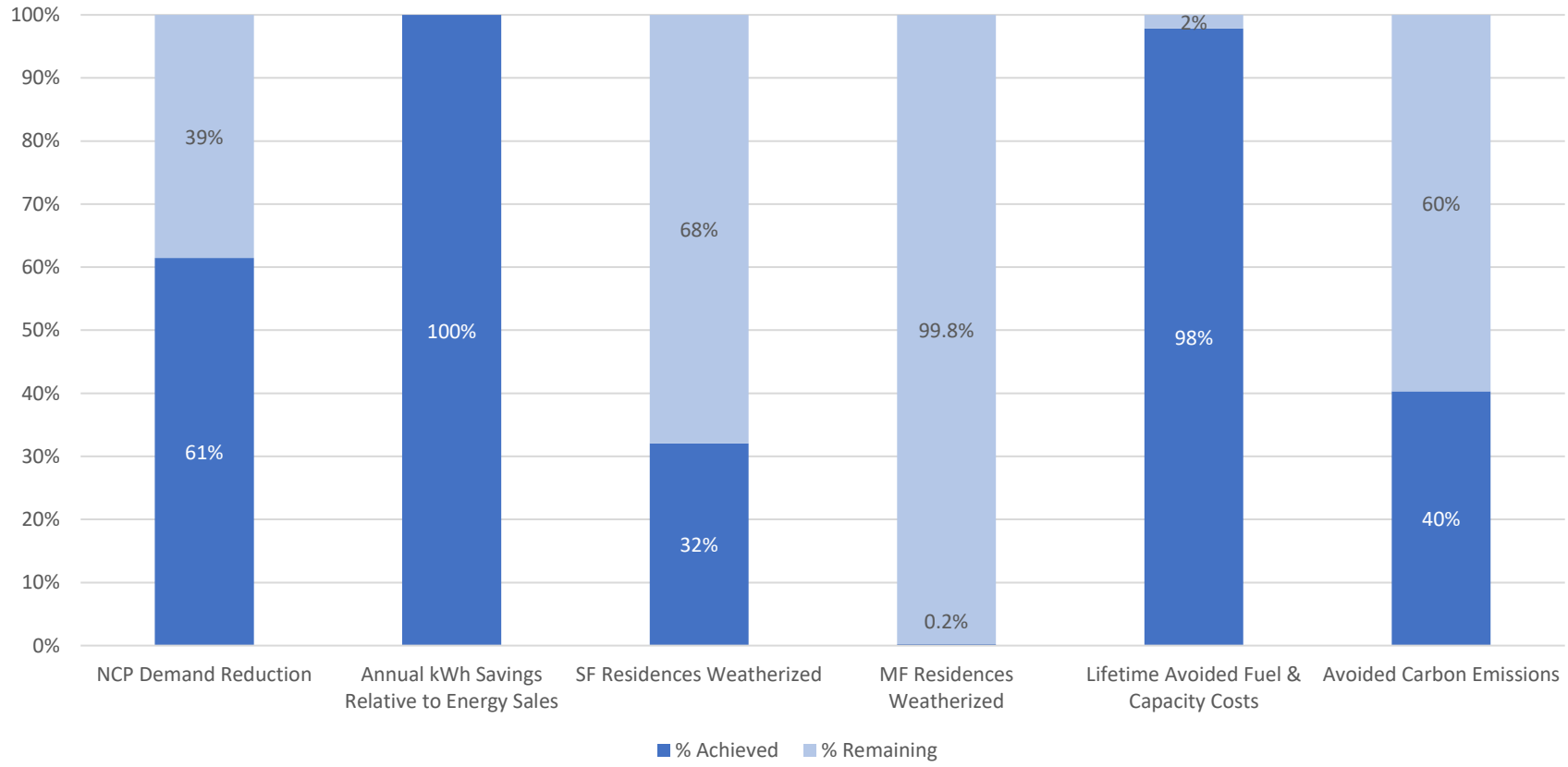


Figure 3-2: Cumulative Goal Progress[15]

[15] In FY 2025, CPS Energy achieved 1.1 percent energy savings relative to energy sales. This represents 100 percent achievement of the 1.0 percent goal.

3.2.3 Achieved Demand Reduction

In FY 2025, CPS Energy added 68 MW, accumulating a total NCP demand reduction of 252 MW contributing toward its 410 MW goal. Annual STEP contributions are counted as the net avoided non-coincident peak (NCP) MW delivered by incremental program participants.

68 MW	252 MW
NCP demand reduction, FY 2025 Annual STEP	Cumulative demand reduction, FY 2023-FY2025 Total STEP

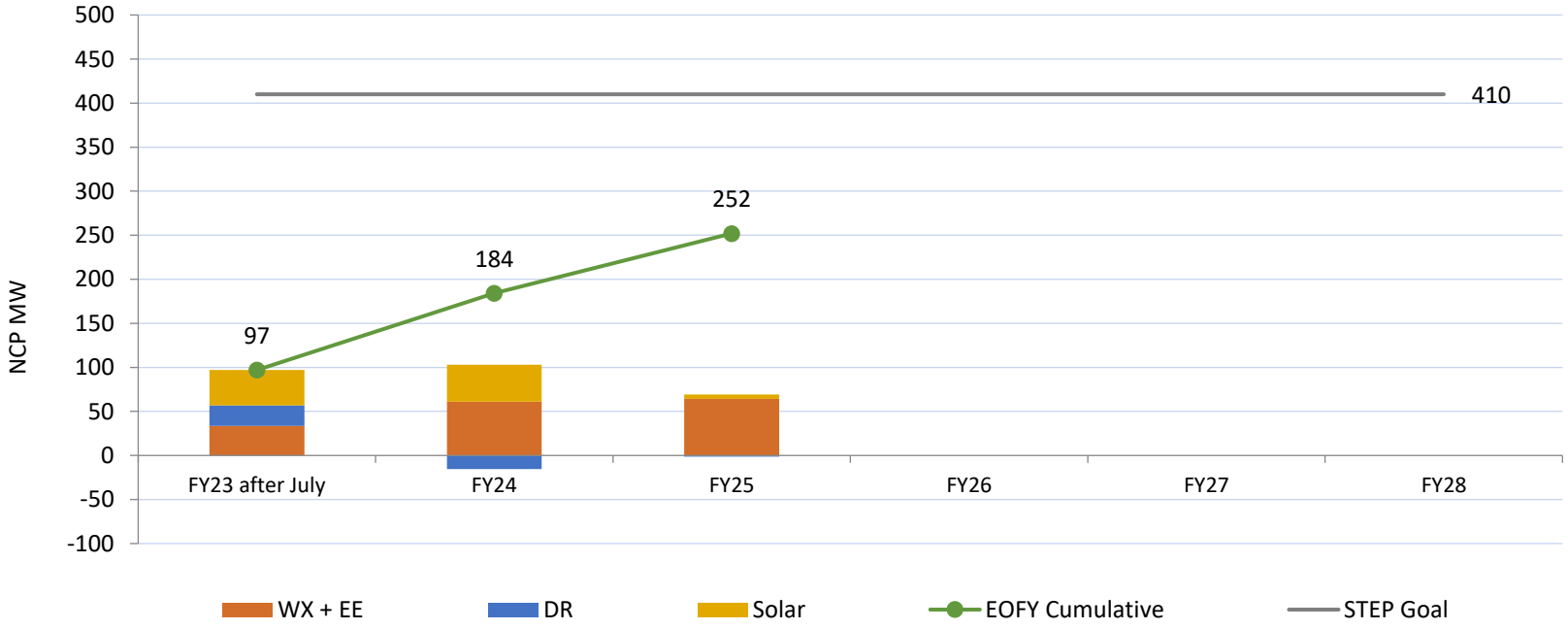


Figure 3-3: Cumulative Achieved Demand Reduction
In the figure: NCP = Non-coincident peak, FY = Fiscal year, WX = Weatherization, EE = Energy efficiency, and DR = Demand response.

3.3 PROGRAM MIX FOR ACHIEVED DEMAND REDUCTION

The STEP portfolio includes contributions from a diverse mix of programs reaching all customer sectors. On a percentage of total portfolio basis, the FY 2025 Commercial Energy Efficiency contribution experienced the most significant increase (by approximately 23 percent) compared to FY 2024. Despite lower contributions to overall NCP MW, residential Weatherization (WX) and Residential Energy Efficiency impacts both increased marginally, delivering relatively consistent results compared to FY 2024. Demand response programs were strong performers despite seeing an overall reduction in Commercial Demand Response.

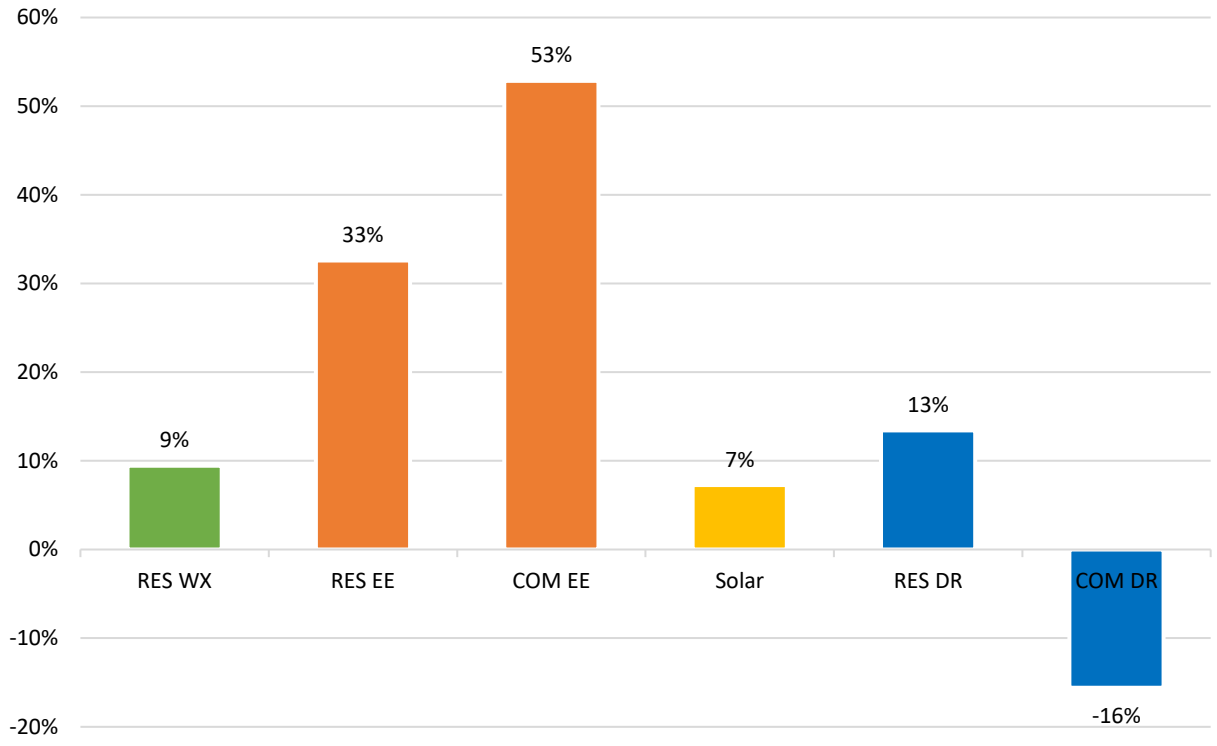


Figure 3-4: FY 2025 Net Incremental Contribution toward STEP by Portfolio and Sector
In the figure: RES = Residential, COM = Commercial, WX = Weatherization, EE = Energy Efficiency, DR = Demand Response.

The FY 2025 STEP portfolio served 538,313 residences and 4,942 businesses through its initiatives from weatherization, energy efficiency, demand response, and solar programs. The Retail Discounts program also impacted additional residences, though exact customer counts cannot be determined. The number of impacted businesses represents a significant increase over FY 2024 because Small Business Solutions Midstream program participants are now tracked and included in the total. Demand response programs reach the largest number of customers due to their wide applicability and minimal or no upfront investment cost to the participating customers. The participation counts listed in the following table represent enrolled/participating customers.

Table 3-2: FY 2025 Count of Customers Served

Portfolio	Residential	Commercial
Demand Response[16]	475,068	1,843
Energy Efficiency[17]	29,877	3,027
Solar[18]	–	72
Weatherization	2,455	–
Total	**538,313**	**4,942**

3.4 SUMMARY OF SAVINGS EVALUATION APPROACH

The evaluation team applied evaluation standards published in the FY 2025 CPS Energy Guidebook, which establishes a single common reference for estimating energy and peak demand savings resulting from the installation or implementation of energy efficiency and demand response measures provided through CPS Energy's programs. The methodologies included in the CPS Energy Guidebook are based on the Public Utility Commission of Texas' (PUCT) Technical Reference Manual (TRM) version 11.0, with certain modifications required to accommodate CPS Energy's weather zone and STEP program goals and metrics. The CPS Energy Guidebook is updated annually to maintain consistency with the TRM.

CPS Energy's implementation vendors operate under annual program years running from August 1st through July 31st. FY 2025 included contributions from the second and third program years under the STEP Program, Program Year 2 (PY2) and Program Year 3 (PY3), respectively. FY 2025 includes PY2 projects completed between February 1, 2024 and July 31, 2024. Similarly, it also includes PY3 projects completed between August 1, 2024 and January 31, 2025.

Desk reviews were completed for a sampling of projects designed to deliver a 90/10 percent confidence and precision interval. The weatherization program is sampled at 90/5. Contributions for PY2 and PY3 were sampled separately. Adjustments were made to project-level input assumptions where the reported measure inputs did not match project documentation and inspection results.

3.5 SUMMARY OF ECONOMIC IMPACTS

As part of the evaluation process, data was collected on administrative, management, and marketing costs as well as total incentives paid. The following economic impact metrics were calculated as described in section 2.6.

[16] Power Players (Behavioral Demand Response) contributed 384,510 out of 475,068 total residential DR participants.
[17] The Residential Energy Efficiency participant count does not include customers affected by the Retail Discounts program. Because impacts are quantified by product count, there is no way to align program participation metrics with other program designs.
[18] Solar participation does not include Residential Solar or Roofless Solar customers. The Residential Solar rebate program was sunset, and there was no new participation in the Roofless Solar program in FY 2025, as the program is fully subscribed.

- Benefit-Cost Ratio, representing the output of the Program Administrator Cost Test (PACT) run at the portfolio level, was 3.41.
- Cost of Saved Energy (CSE), representing the levelized program cost per annual kWh saved, was $0.0380/kWh. The FY 2025 value represents a 26 percent increase compared to FY 2024 and 20 percent increase compared to the average since FY 2019. Contributing factors include a higher discount rate (see section 2.5.1), marginally lower overall energy savings[19], and a measure mix with a lower weighted program-level measure lifetimes impacted by increased HVAC tune-up participation (low lifetime) and decreased savings for residential and commercial general service lamp LEDs (high lifetime).

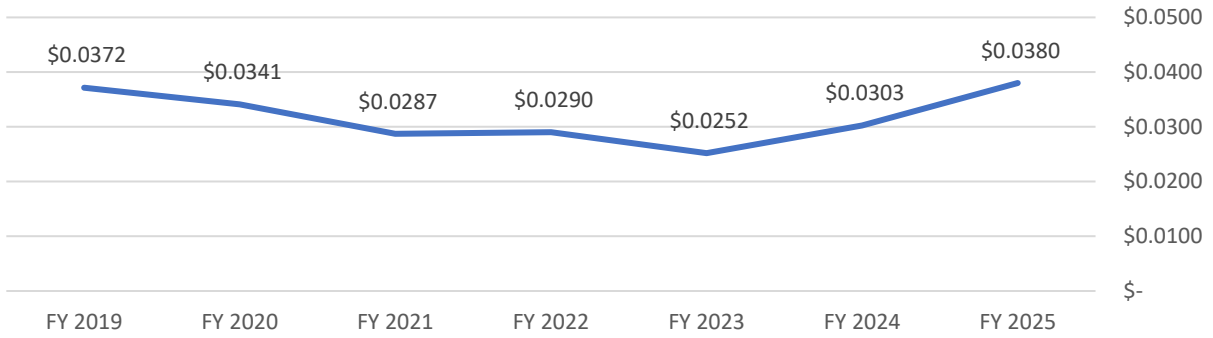


Figure 3-5: Levelized CSE Trend

- Net Avoided Cost Benefit, or Reduction in Revenue Requirements (RRR), was $156,243,836. This value represents the total avoided costs, or net reduction in utility costs, due to the impact of energy efficiency improvements. The FY 2025 value is approximately equivalent to FY 2024 and a seven percent increase compared to the average since FY 2019.

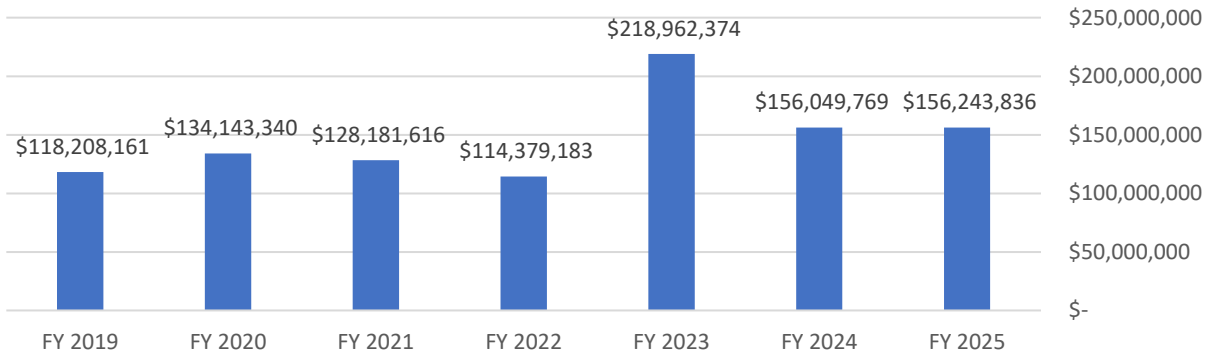
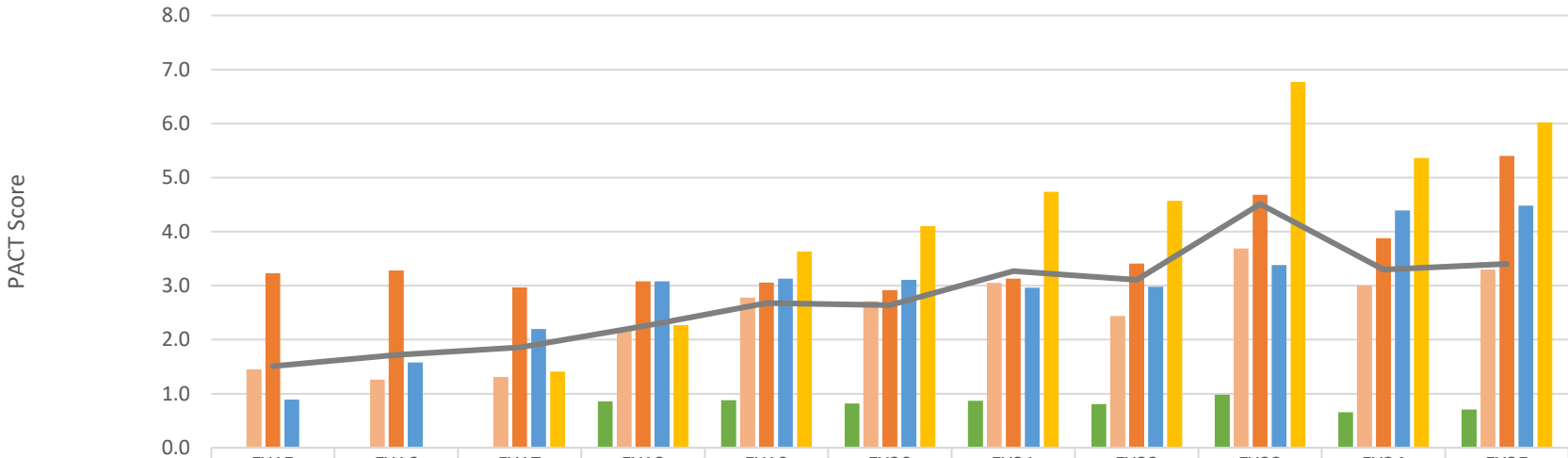


Figure 3-6: Levelized RRR Trend

[19] FY 2025 WX, RES EE, and DR energy impacts were similar to FY 2024. COM EE energy impacts increased, but they were offset by a large reduction in Solar energy impacts due to sunsetting the RES Solar program. Overall energy impacts decreased by only four percent.

3.6 YEAR-BY-YEAR COST-EFFECTIVENESS COMPARISON

CPS Energy's STEP portfolio continues to deliver cost-effective overall performance as measured by the PACT. Annual results should be interpreted within the overall context of each fiscal year evaluation and associated cost-effectiveness inputs. The FY 2025 STEP portfolio outperformed the 1.9 PACT STEP portfolio target by 79 percent.



	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25
WX				0.86	0.88	0.82	0.87	0.81	0.98	0.66	0.71
RES EE	1.45	1.26	1.31	2.18	2.78	2.71	3.05	2.44	3.69	3.00	3.30
COM EE	3.23	3.28	2.97	3.08	3.06	2.92	3.13	3.41	4.68	3.88	5.40
DR	0.89	1.58	2.20	3.08	3.13	3.11	2.96	2.98	3.38	4.39	4.48
Solar			1.41	2.27	3.63	4.10	4.74	4.57	6.77	5.36	6.02
Portfolio Total	1.51	1.72	1.86	2.25	2.68	2.64	3.27	3.11	4.51	3.30	3.41

Figure 3-7: STEP Cost Effectiveness from FY 2015 through FY 2025

In the figure: RES = Residential, COM = Commercial, WX = Weatherization, EE = Energy Efficiency, DR = Demand Response.
In 2015 and 2016, Solar programs were included in Residential and Commercial Energy Efficiency. From FY 2015 through FY 2017, Weatherization was included in Residential Energy Efficiency.

4. CASA VERDE WEATHERIZATION PROGRAM

4.1 WEATHERIZATION PROGRAM IMPACTS

4.1.1 Overview

The Casa Verde Weatherization program (Weatherization) provides comprehensive retrofits for income-eligible residential customers. To qualify for the Weatherization program, customers must have an annual household income of less than or equal to 200 percent of the Federal Poverty Limit (FPL) or demonstrate an annual Energy Burden of greater than or equal to 10 percent.

CPS Energy offers a complimentary program to remove barriers to participate in their existing Weatherization program. The Weatherization Repair Assistance Program (WRAP) assists customers who need minor repair services like gas stove replacements and sheetrock work, and repairs to roofing, plumbing, and electrical systems. For more information, see section 4.1.3.

The Weatherization program assists families in need with reducing their monthly utility bills. Eligible participants receive free upgrades designed to increase the energy efficiency of their homes. In FY 2025, the program provided a range of services to 2,455 residences, continuing a trend of increasing participation since FY 2022. Increased participation is likely driven by several factors related to program design, but it is also directly impacted by WRAP's efforts to target repair measures and qualify more customers.

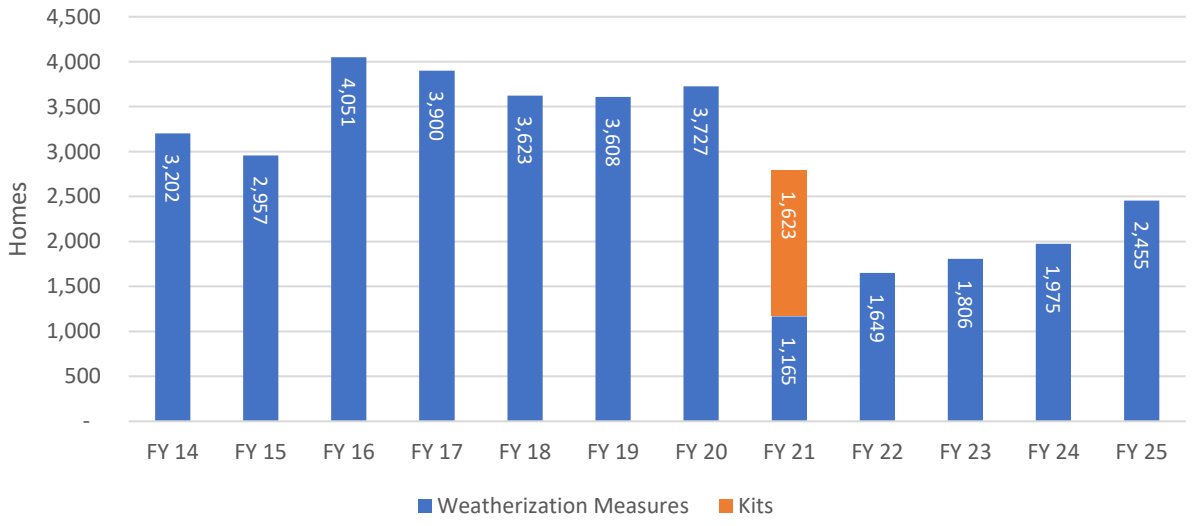


Figure 4-1: Weatherization – Participation Trends[20]

[20] Due to COVID-19 restrictions limiting access to customer residences in FY 2021, customers were offered kits containing LED light bulbs, faucet aerators, and pipe insulation.

Installed measures include the following equipment:

- Air infiltration reduction
- Duct sealing
- Faucet aerators
- Insulation (attic, floor, and wall)
- LED lighting
- Low-flow showerheads (LFSHs)
- Solar screens
- Water heater pipe insulation

The following figure demonstrates installation frequency by measure type.

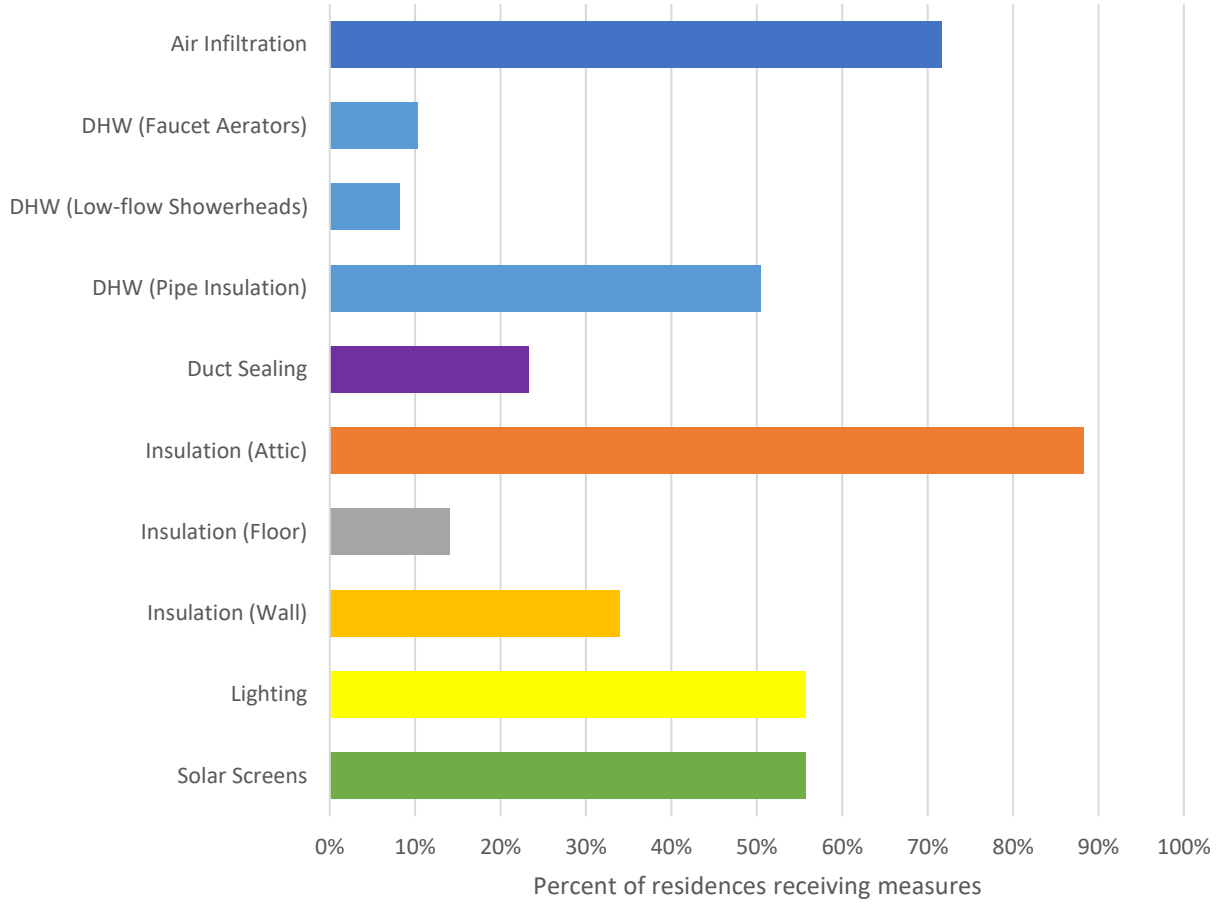


Figure 4-2: Weatherization – Frequency of Installation by Measure[21]

[21] DHW refers to measures that are related to Domestic Hot Water end uses.

While the program features a diverse measure mix, envelope measures were by far the largest contributor to total program impacts for both energy and demand savings in FY 2025. The building envelope is the primary boundary between conditioned and unconditioned space, protecting the residence from exterior elements. Envelope measures installed in the Weatherization program include air infiltration (reducing amount of unconditioned air coming in), insulation (improving indoor resistance to temperature change), and solar screens (reducing cooling load from sunlight through windows). 70+ percent of treated residences received air infiltration reduction and attic insulation. More than 50 percent received lighting, solar screens, and hot water pipe insulation. Other measures are only applicable to specific home configurations or target only electric water heating fuel types.

- Insulation was the largest single FY 2025 contributor in terms of energy savings and contributed approximately 65 percent of energy savings, 61 percent of NCP kW savings, and 75 percent of CP kW savings, increasing around 5 percent compared to FY 2024.
- Air infiltration is the next highest contributor, up from third in FY 2024. The measure accounted for 15 percent of energy savings, 23 percent of NCP kW savings, and 13 percent of CP kW savings. This is a slight increase from the previous year.
- Solar screens stayed about the same at about 9 percent contribution to kWh savings and NCP kW savings, and 7 percent CP kW savings.
- Lighting impacts have decreased significantly year-over-year due to a combination of increasing baselines and market saturation. Lighting only accounted for 6 percent of energy savings, 3 percent of NCP demand savings, and 1 percent of CP demand savings.
- Duct sealing contributed approximately 3-4 percent of energy and demand savings, but it is only performed if existing ducts are in poor condition. Furthermore, many residences in the Weatherization program are not heated and cooled by central HVAC equipment and are not eligible for the measure. However, installation rates increased significantly from 16 percent in FY 2024 to 23 percent in FY 2025.
- Domestic Hot Water (DHW) measures are responsible for approximately 1 percent or less of total energy and demand savings. Faucet aerators and low-flow showerheads are distributed at a lower rate of 10 and 8 percent, respectively. In utility energy efficiency programs across the country, low-flow device adoption and persistence have historically been demonstrated to be driven by customer reluctance to reduce water pressure. Installation rates for water heater pipe insulation increased to 51 percent of weatherized homes in FY2025, compared to 43 percent in FY 2024.

Percent contribution to gross program-level energy and demand impacts are shown in the following figure. Combined envelope measures contribute approximately 89 percent of gross energy impacts and 93-95 percent of gross demand impacts.

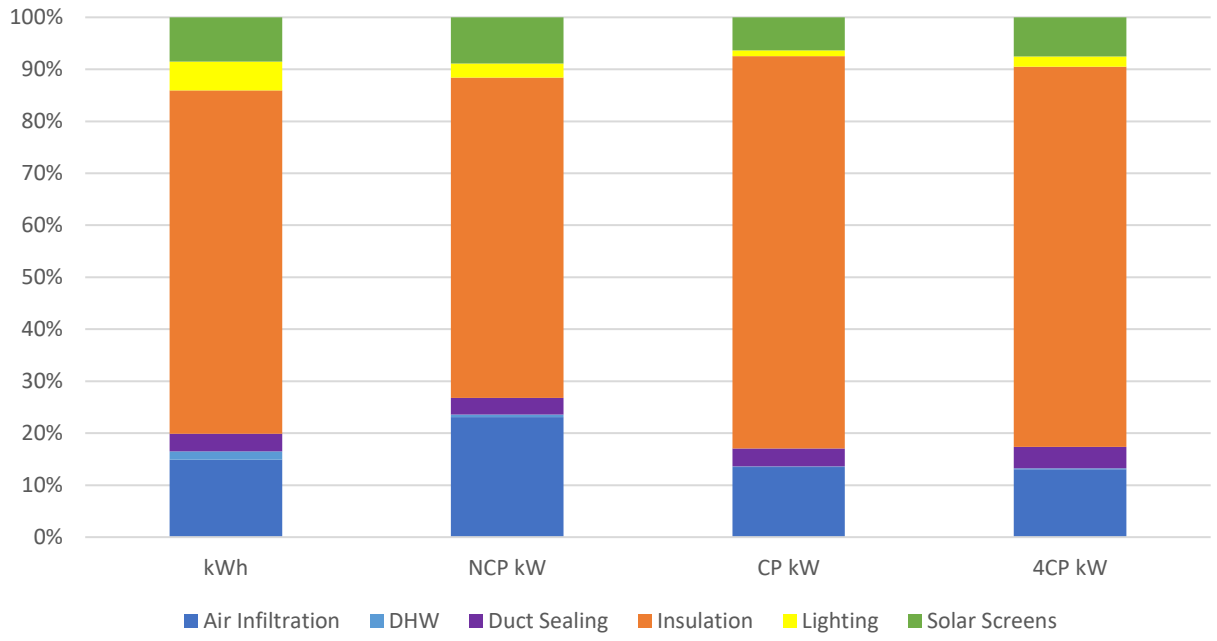


Figure 4-3: Weatherization – Gross Energy and Demand Impact Percentages by Measure

The following figures demonstrate installation frequency and average per-residence energy and demand impacts by envelope measure. Attic and wall insulation delivered the largest average energy savings per treated residence for envelope measures.

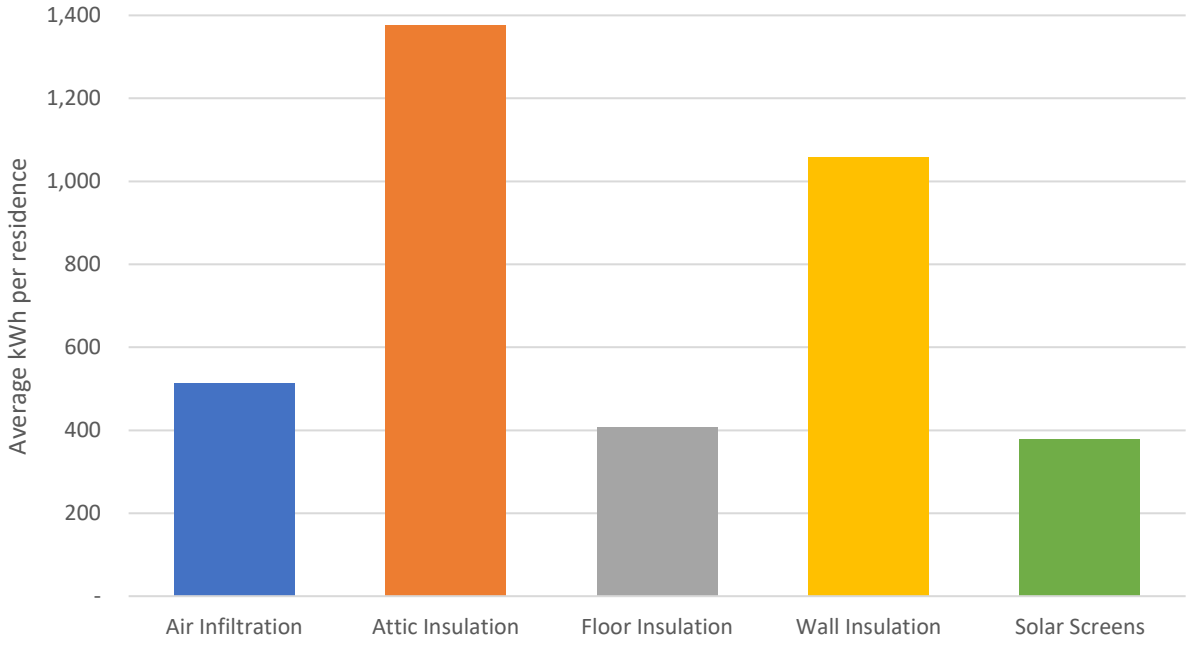


Figure 4-4: Weatherization – Average kWh/Residence by Envelope Measure

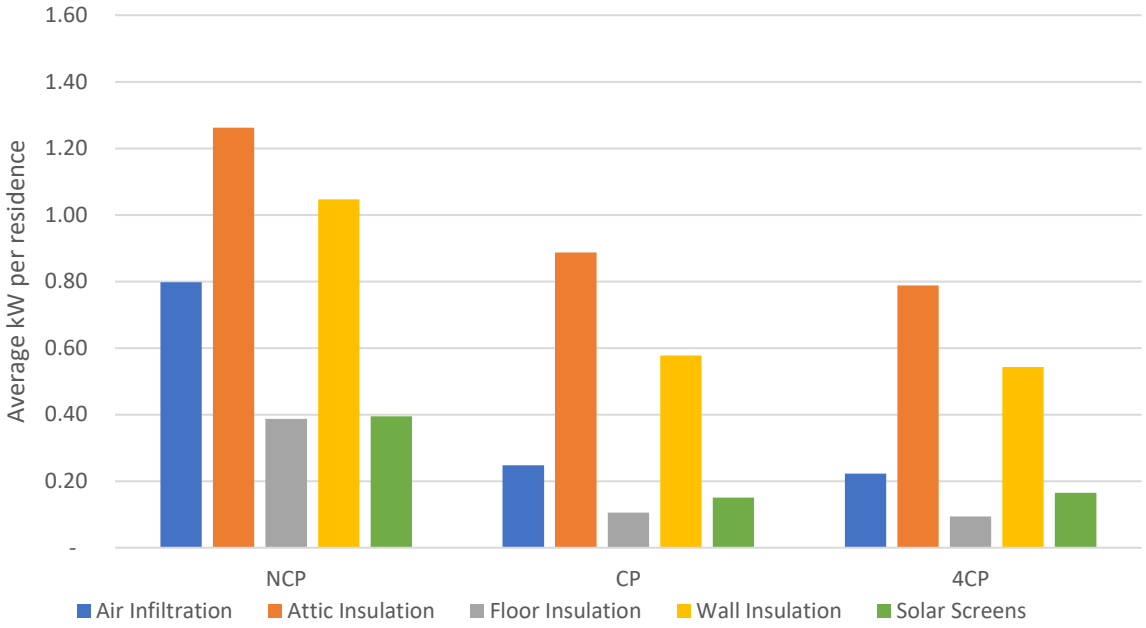


Figure 4-5: Weatherization – Average CP, NCP, and 4CP kW/Residence by Envelope Measure

4.1.2 Results

A desk review was performed for a sample of projects incentivized in this program. The evaluation team selected a sample size to achieve a 90/5 percent confidence and precision interval. The savings verification results of the analyzed sample were applied to the entire program population. The following are the gross energy and demand savings for the Weatherization program, per residence and total by measure.

Table 4-1: Weatherization – Average Gross Savings per Residence

Measure	# Residences	kWh/Residence	NCP kW/ Residence	CP kW/ Residence	4CP kW/ Residence
Air Infiltration	1,759	513	0.8	0.25	0.22
DHW (Faucet Aerators)	252	29	0.01	0.001	0.001
DHW (Low-flow Showerheads)	202	388	0.11	0.03	0.03
DHW (Pipe Insulation)	1,240	8	0.002	0.0004	0.0005
Duct Sealing	573	358	0.34	0.19	0.21
Insulation (Attic)	2,168	1,376	1.26	0.89	0.79
Insulation (Floor)	346	408	0.39	0.11	0.09
Insulation (Wall)	832	1,059	1.05	0.58	0.54
Lighting	1,367	244	0.12	0.03	0.04
Solar Screens	1,367	379	0.39	0.15	0.17
Average savings per residence[22]		**2,468**	**2.47**	**1.32**	**1.22**

[22] Average values are not cumulative because each treated residence did not receive every measure.

Table 4-2: Weatherization – Gross Energy and Demand Savings

Measure	Gross Energy Savings (kWh)	Gross NCP Demand Savings (kW)	Gross CP Demand Savings (kW)	Gross ERCOT 4CP Demand Savings (kW)
Air Infiltration	902,445	1,402.99	435.07	391.16
DHW	95,696	26.93	5.68	6.16
Duct Sealing	205,191	194.56	111.56	122.50
Insulation	4,004,553	3,740.64	2,439.23	2,193.93
Lighting	333,484	165.70	35.48	59.57
Solar Screens	517,556	539.56	205.94	225.62
Total[23]	**6,058,925**	**6,070.39**	**3,232.96**	**2,998.95**

4.1.3 Weatherization Repair Assistance Program

Aligned with their goal to remove barriers to customer participation, CPS Energy created a program to enable acceptance into their existing Weatherization program. Since the Weatherization program's inception in 2012, CPS Energy received feedback from customers who need services but cannot participate due to program requirements prohibiting improvements that do not generate energy savings.

WRAP helps customers who lack the financial means for minor home repairs necessary to qualify and participate in the Weatherization program. This new assistance program is funded through donations to REAP that are designated specifically for weatherization. Through 2022, San Antonio residents have graciously donated over $25,000 towards WRAP. In 2023, the City of San Antonio's Neighborhood Housing and Services Department (NHSD) donated $1,000,000 towards the WRAP program over two years. NHSD will assess future donation opportunities based on current funding application run rate. In 2024, CPS Energy celebrated another $1,000,000 contribution to WRAP from the federal appropriations set forth by Congressman Joaquin Castro (TX-20).[24]

CPS Energy administers the WRAP program and supports the following program objectives:

- Providing minor home repairs to the 43 percent (fall out rate) of residences that do not qualify for weatherization due to repairs needed beyond existing guidelines
- CPS Energy's Weatherization program assessor and installers work in conjunction to make necessary repairs after initial assessment

[23] The sum of the individual measures may not match the total due to rounding.
[24] CPS Energy Newsroom announcement. https://newsroom.cpsenergy.com/congressman-joaquin-castro-secures-1-million-grant-to-grow-cps-energys-casa-verde-home-weatherization-program/.

- All repairs must be approved by CPS Energy prior to WRAP repairs, and cost must not exceed $3,500
- WRAP repairs and home weatherization are completed in tandem, where possible

Examples of measure types covered by the WRAP program:

- Gas stove replacement (for inoperable or high carbon monoxide emitting)
- Sheetrock work (over Casa Verde program limits)
- Minor roof repairs
- Plumbing and electrical repairs

The WRAP program greatly reduces the Casa Verde fall out rate and will aid in advancing CPS Energy efforts to help reduce energy burden and energy insecurity for customers. As of January 2025, WRAP has repaired 612 residences since its inception in December 2023. During this period, the WRAP program spent $736,000 on repairs, averaging $1,203 per residence, making previously deferred customers eligible for weatherization services.

Table 4-3: Weatherization – WRAP Participation

Fiscal Year	Residences	Repair Cost
FY 2024[25]	57	$64,000
FY 2025	555	$672,000
Total	**612**	**$736,000**

[25] The WRAP program began accepting participants in December of 2023, so there were only two months of participation before the end of FY 2024.

4.2 WEATHERIZATION PROGRAM RECOMMENDATIONS

The updated CPS Energy Guidebook, applicable to FY 2026, contains updates that impact savings calculations. The evaluation team recommends updating savings calculation input assumptions to ensure consistency between claimed and evaluated savings.

The evaluation team has identified specific recommendations related to savings calculations and program documentation in a separate memo to program administrators. In addition to these savings calculations and documentation recommendations, the evaluation team makes the following general recommendations for Weatherization program offerings:

- Envelope measures:
    - Participating residences often use multiple forms of cooling and heating. For example, a residence may have central cooling but also use supplemental room/window air conditioning. Similarly, a residence may have central gas heating but use supplemental electric resistance space heaters. Therefore, it is important to designate the primary cooling and heating source.
    - Reported cooling and heating types should differentiate between central and space conditioning.
- Attic insulation:
    - Baseline R-value should be determined using a weighted average of the overall insulated area.
    - Residences insulated above R-30 are eligible to claim increased savings using the adjustment factors specified in the CPS Energy Guidebook.
- Duct sealing:
    - When using the visual inspection savings approach, reported home characteristics are mapped to low, average, and high leakage categories. Corresponding savings are awarded based on historical program averages. Pre- and post-condition photos must be collected to highlight key duct repairs. Without these photos, duct sealing projects must conduct pre- and post-leakage testing.
- LEDs:
    - Most specialty LED designations have been removed. All LED products currently distributed through the program should use the general service lamp (GSL) LED savings methodology.

  - All calculated savings for GSL LEDs should use the reduced 45 lumens per watt tier 2 baseline outlined in the CPS Energy guidebook. Rated lumens should be used to determine the applicable baseline.
    - For programs targeting low-income customers, the higher tier 1 baseline can be applied over the first two years of the measure lifetime before reverting to the tier 2 baseline for the remaining lifetime, calculated as estimated useful life (EUL) – 2. However, the savings calculation will also need to be updated to use the dual-baseline approach described in the CPS Energy Guidebook. Photo documentation demonstrating the presence of existing incandescent or halogen lighting is required when claiming these additional savings.
  - Coincident peak and HVAC interactive effects are available for lamps installed in conditioned spaces. For lamps that can be installed in both interior and exterior applications, specifying lamp location will justify additional savings.
  - Lighting savings are claimed using a default 16-year rated life. Reporting lamp rated life would increase the measure life to 20 years for products rated at 17,500+ hours.

- Smart thermostats:
  - Where possible, include nominal cooling tonnage in EM&V reporting for thermostats installed with existing HVAC equipment. This can typically be determined from the model number on the outdoor condenser nameplate. If the model number is illegible, the CPS Energy Guidebook specifies a default tonnage. For thermostats installed with new HVAC equipment, include rated cooling and heating capacity from the AHRI certificate.

- Consider adding the following new measures to existing program offerings:
  - Cool roof coatings
  - Tank insulation for electric DHW (recommended reintroduction of measure)
  - Duct insulation (new measure in CPS Energy Guidebook)
  - HVAC replacements (mini-split ACs, mini-split HPs, window ACs)
  - Low-E storm windows (lower cost alternative to window replacements)

5. RESIDENTIAL PROGRAMS

5.1 SUMMARY OF RESIDENTIAL IMPACTS

CPS Energy's portfolio of residential programs addresses all markets and major residential end-use loads. Residential demand response programs are included in Section 7. CPS Energy offered the following energy efficiency programs for the residential sector in FY 2025.

Home Efficiency – Targets a range of prescriptive energy efficiency measures that save on cooling and heating energy in existing residences.

Home Energy Assessment – Offers free in-person or virtual home assessments to help identify energy savings opportunities and direct install measures.

Residential Heating, Ventilation, and Air Conditioning (HVAC) – Rebates for high-efficiency cooling and heating equipment.

High-Performance A/C Tune-up – Free comprehensive check of HVAC equipment to help identify ways to improve existing central air conditioner or heat pump efficiency, performance, and maintenance.

New Home Construction – Rebates for developers to build homes that are at least 15 percent more energy efficient than current City of San Antonio building codes.

Retail Discounts – Point of purchase rebates on lighting, room space conditioning, and air purification products at participating retailers.

Multifamily – Pilot program offering comprehensive energy efficiency offerings to residents in multifamily complexes.

The new Multifamily program was implemented by CPS Energy in FY 2025, but it will be implemented by CLEAResult starting in FY 2026. All other Residential Energy Efficiency programs were implemented by CLEAResult for the duration of FY 2025 under the supervision of CPS Energy.

The contributions of each program to the residential portfolio's energy and peak demand savings are shown in the following figures, as measured at the participant or end-user level and adjusted to account for net-to-gross ratios and line losses. Program names are abbreviated in chart labels.[26]

[26] Home Efficiency = HE, Home Energy Assessment = HEA, Residential HVAC = HVAC, High-Performance A/C Tune-up = HPTU, New Home Construction = NHC, Retail Discounts = Retail, and Multifamily = MF.

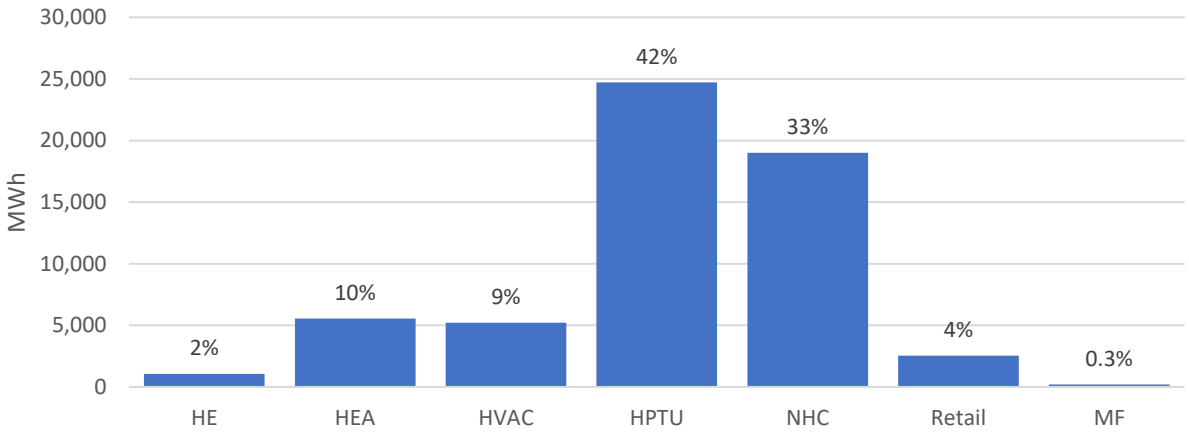


Figure 5-1: Residential Summary – Net Avoided Energy by Program

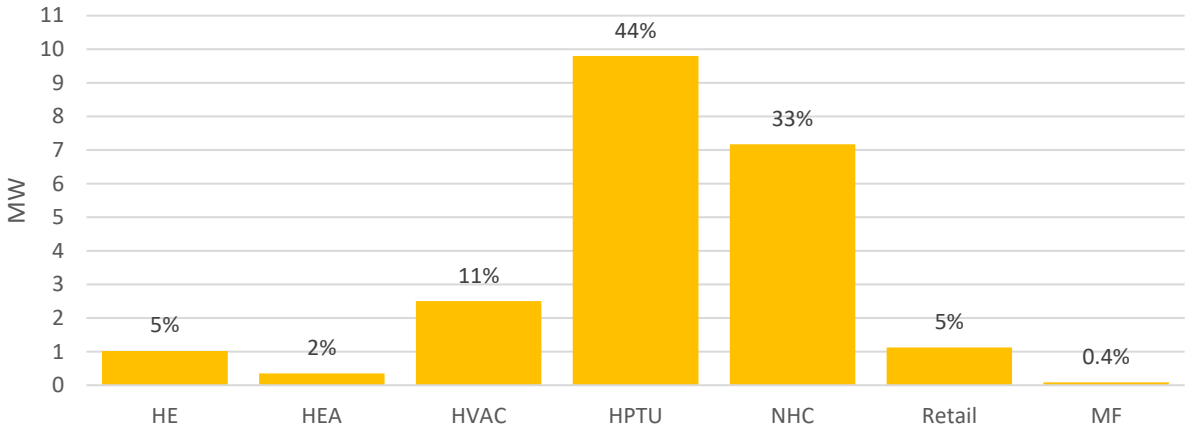


Figure 5-2: Residential Summary – Net Avoided Non-Coincident Peak by Program

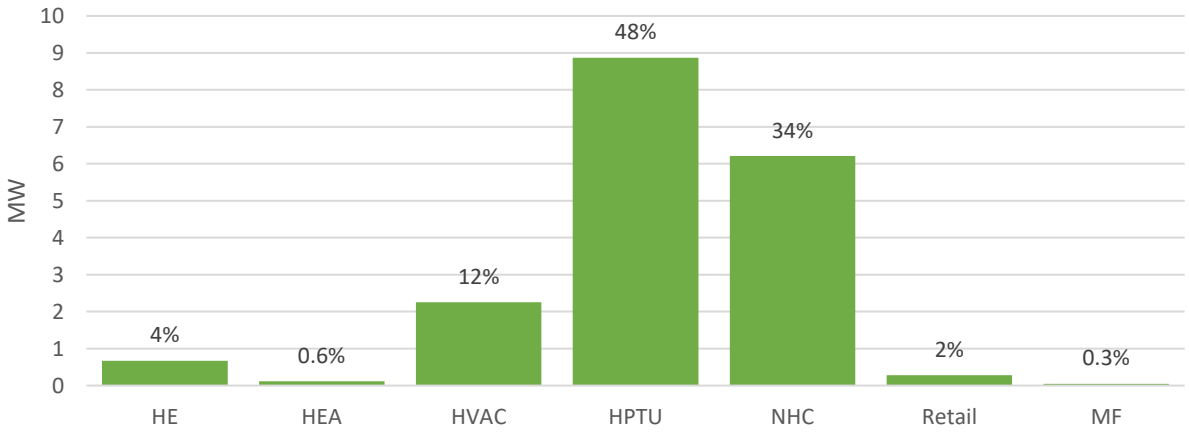


Figure 5-3: Residential Summary – Net Avoided Coincident Peak by Program

5.2 HOME EFFICIENCY

5.2.1 Overview

The Home Efficiency program offers incentives for attic insulation, reflective cool roofs, and variable-speed pool pumps. The program served 1,169 residences in FY 2025, compared to 1,209 residences in FY 2024.

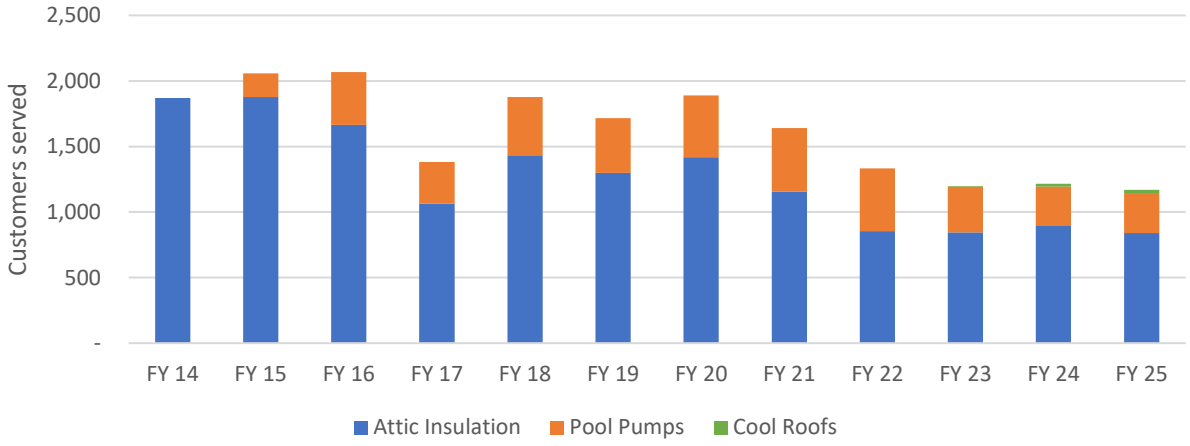


Figure 5-4: Home Efficiency – Participation Trends

The proportion of total program energy and peak impacts derived from each measure type is presented below. Attic insulation delivers the majority of savings, accounting for about 94% of total savings. Pool pumps see lower peak demand savings because they typically operate outside of peak hours.

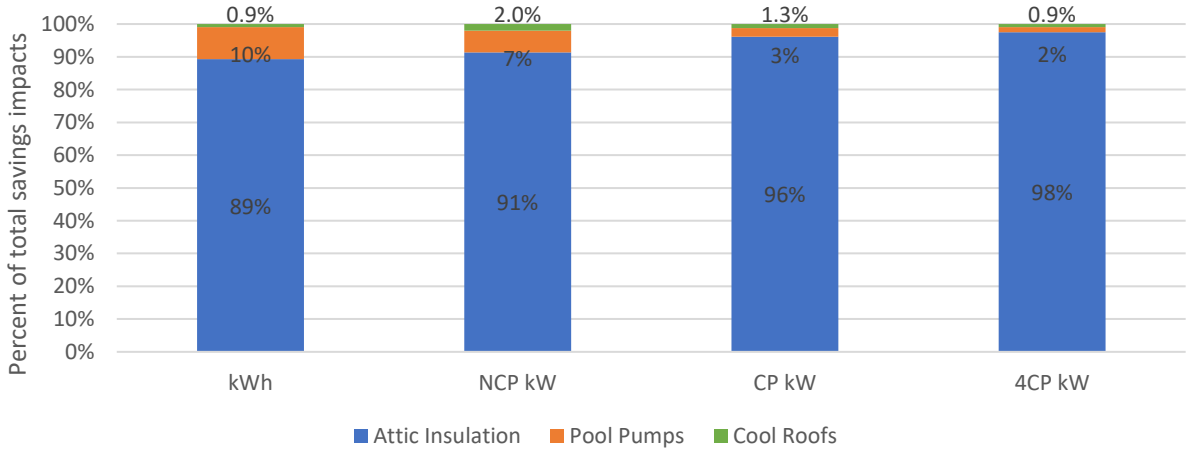


Figure 5-5: Home Efficiency – Gross Energy and Demand Impact Percentages by Measure

5.2.2 Results

A desk review was performed for a sample of projects incentivized in this program. The evaluation team selected a sample size to achieve a 90/10 percent confidence and precision interval. The savings verification results of the analyzed sample were applied to the entire program population. The following table shows the gross energy and demand savings for the Home Efficiency program, per residence and total by measure.

Attic insulation delivers the most program savings. It is accessible to a wide range of participants and improves comfort along with efficiency. Savings for pool pumps decreased considerably compared to FY 2024 after updating the savings calculation methodology for compliance with the current federal standard. They are also limited to a smaller subset of participants who have pools. Roofing projects are infrequent and expensive, so they experience the lowest participation.

Table 5-1: Home Efficiency – Average Gross Savings per Residence

Measure	# Residences	kWh/ Residence	NCP kW/ Residence	CP kW/ Residence	4CP kW/ Residence
Attic Insulation	839	1,134	1.11	0.74	0.69
Cool Roofs	25	390	0.83	0.33	0.22
Pool Pumps	306	342	0.22	0.05	0.03
Average savings per residence[27]		**912**	**0.87**	**0.55**	**0.51**

Table 5-2: Home Efficiency – Gross Energy and Demand Savings

Measure	Gross Energy Savings (kWh)	Gross NCP Demand Savings (kW)	Gross CP Demand Savings (kW)	Gross ERCOT 4CP Demand Savings (kW)
Attic Insulation	951,343	932.80	622.48	575.75
Cool Roofs	9,742	20.85	8.22	5.61
Pool Pumps	104,556	67.19	16.57	9.07
Total[28]	**1,065,641**	1,020.84	**647.22**	**590.42**

[27] Average values are not cumulative because each treated residence did not receive every measure.
[28] The sum of the individual measures may not match the total due to rounding.

5.3 HOME ENERGY ASSESSMENT

5.3.1 Overview

The Home Energy Assessment (HEA) program offers virtual and in-home energy assessments to provide energy-saving products to residential customers. An HEA assessor performs a full home energy audit for customers, identifies potential energy efficiency measures, and discusses tailored energy savings opportunities with the customer. Finally, they install basic measures, such as advanced power strips, faucet aerators, low-flow showerheads, LED lighting, and smart thermostats. The program sees the highest installation rates for advanced power strips and lighting (>50% of residences).

After relaunching with a new implementation vendor in FY 2023, the program continues to expand in participation, serving 5,854 residences in FY 2025 compared to 2,016 residences in FY 2024. Participation trends and measure frequency are displayed in the figures below.

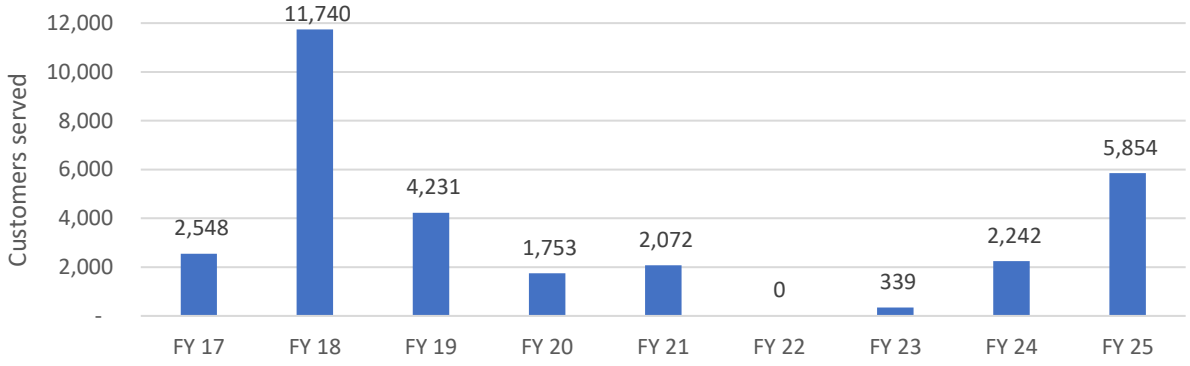


Figure 5-6: Home Energy Assessment – Participation Trends

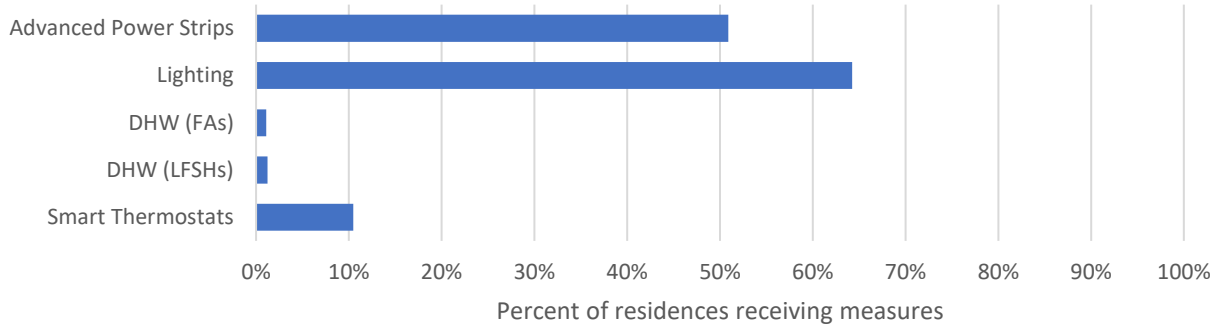


Figure 5-7: Home Energy Assessment – Installation Frequency by Measure[29]

[29] DHW = Domestic hot water, FA = Faucet aerator, and LFSH = Low-flow showerhead.

The percentage breakdown of program savings by measure type is presented below. Advanced power strips are the leading energy and demand savings contributor, due to their effectiveness at reducing standby power and their ease of installation. Lighting savings continue to decline in response to an updated federal standard but still provide relatively strong savings with a long lifespan. Smart thermostats are a significant contributor to HEA energy savings claimed through Residential Energy Efficiency, but all corresponding demand savings are claimed separately through Demand Response.

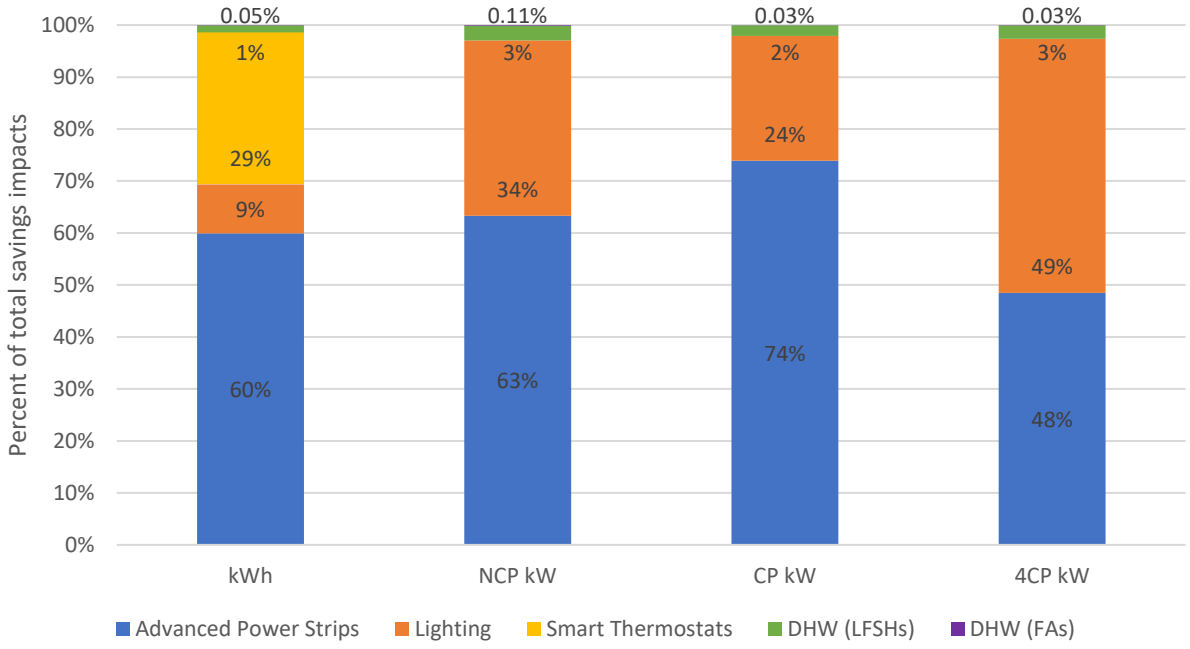


Figure 5-8: Home Energy Assessment – Gross Energy and Demand Impact Percentages by Measure

5.3.2 Results

A desk review was performed for a sample of projects incentivized in this program. The evaluation team selected a sample size to achieve a 90/10 percent confidence and precision interval. The savings verification results of the analyzed sample were applied to the entire program population. The following are the gross energy and demand savings for the Home Energy Assessments program, per residence and total by measure.

Deemed demand savings are not awarded to smart thermostats here because they are claimed separately through Demand Response programs using the savings methodologies described in Section 7.3 Direct Install Thermostats.

Table 5-3: Home Energy Assessments – Average Gross Savings per Residence

Measure	# Residences	kWh/ Residence	NCP kW/ Residence	CP kW/ Residence	4CP kW/ Residence
Advanced Power Strips	2,979	511	0.075	0.027	0.015
DHW (FAs)	65	20	0.006	0.0004	0.0005
DHW (LFSHs)	72	488	0.140	0.032	0.033
Lighting	3,761	64	0.032	0.007	0.012
Smart Thermostats	613	1,210	–	–	–
Average savings per residence[30]		**434**	**0.060**	**0.019**	**0.016**

Table 5-4: Home Energy Assessments – Gross Energy and Demand Savings

Measure	Gross Energy Savings (kWh)	Gross NCP Demand Savings (kW)	Gross CP Demand Savings (kW)	Gross ERCOT 4CP Demand Savings (kW)
Advanced Power Strips	1,522,084	224.07	81.63	44.14
DHW (FA/LFSHs)	36,413	10.47	2.30	2.42
Lighting	239,881	119.19	26.51	44.49
Smart Thermostats	741,629	–	–	–
Total[31]	**2,540,006**	**353.74**	**110.44**	**91.05**

5.3.3 Additional Considerations

In-Service Rates

The calculations for both Advanced Power Strips and Lighting use an in-service rate (ISR), referring to the percentage of units that are incentivized but ultimately not operating due to being stored or removed from service afterward. The ISRs used for various measures have changed over the years to account for a better understanding of the implementation and persistence of the measures. In FY 2025, the lighting ISR changed from a single 97 percent ISR value to one that ranges from 60-97 percent based on program delivery type. In FY 2025, an 83 percent ISR was also added for advanced power strips, whereas none was applied previously. This value is being monitored to determine whether to break out by program type in future evaluations. Finally, while no ISR is currently applied to the faucet aerators or low-flow showerhead measures, an ISR is under consideration for future years.

[30] Average values are not cumulative because each treated residence did not receive every measure.
[31] The sum of the individual measures may not match the total due to rounding.

5.4 RESIDENTIAL HVAC PROGRAM

5.4.1 Overview

The Residential HVAC program promotes the installation of energy-efficient heating, ventilation, and air conditioning (HVAC) equipment. The program covers the installation of central air conditioners (ACs), central heat pumps (HPs), and window air conditioners (WACs). During FY 2025, a total of 4,762 units were installed in 4,364 residences compared to 4,687 HVAC systems in 4,475 residences in FY 2024.

The following figures illustrate residential HVAC participation trends from FY 2014 to FY 2025. A new federal standard change went into effect on January 1, 2023, changing HVAC testing procedures from SEER to SEER2 and increasing minimum efficiency standards to 13.8 or 14.3 SEER2 (equivalent of 14.5 or 15 SEER) based on system type and capacity. While this change had a minor negative impact on FY 2023, FY 2024 participation was impacted more significantly as existing stock was depleted. FY 2025 participation levels indicate that the market may be getting closer to catching up to the new minimum efficiency standards.

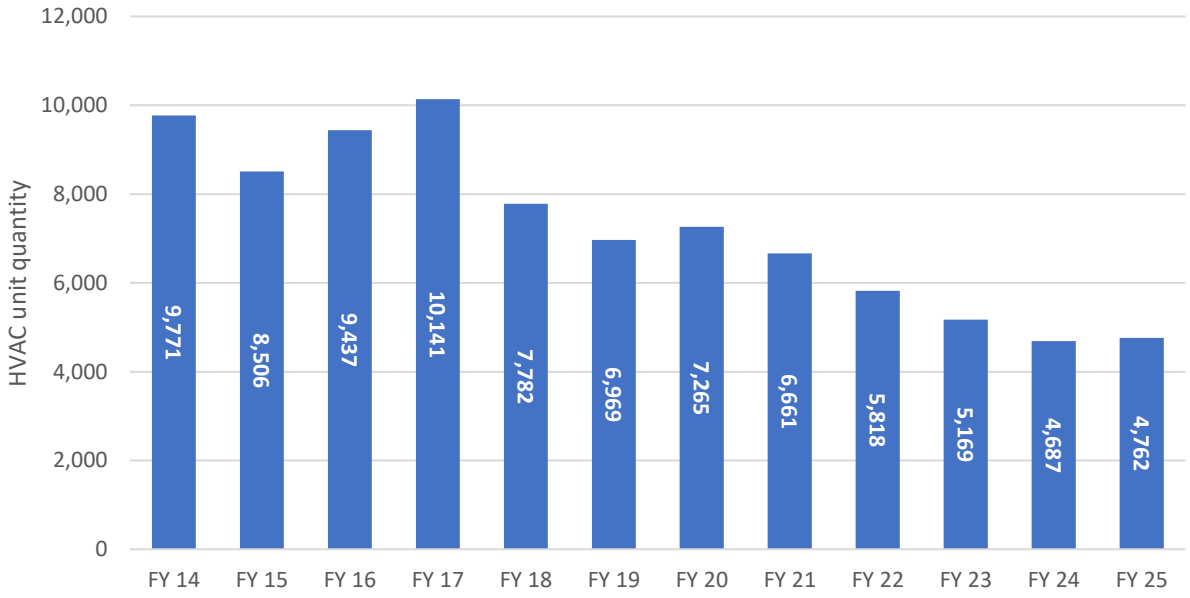


Figure 5-9: Residential HVAC – Participation Trends

Individual system type trends show an increase in central air conditioners and heat pumps and a decrease in window air conditioners, with the net impact showing a decrease in total systems based on residences with window units having multiple units per residence.

Central ACs continue to be the primary driver of program participation. Window ACs are more often encountered in targeted low-income programs, and participation could shift to the Retail Discounts program after the measure was incorporated in FY 2025.

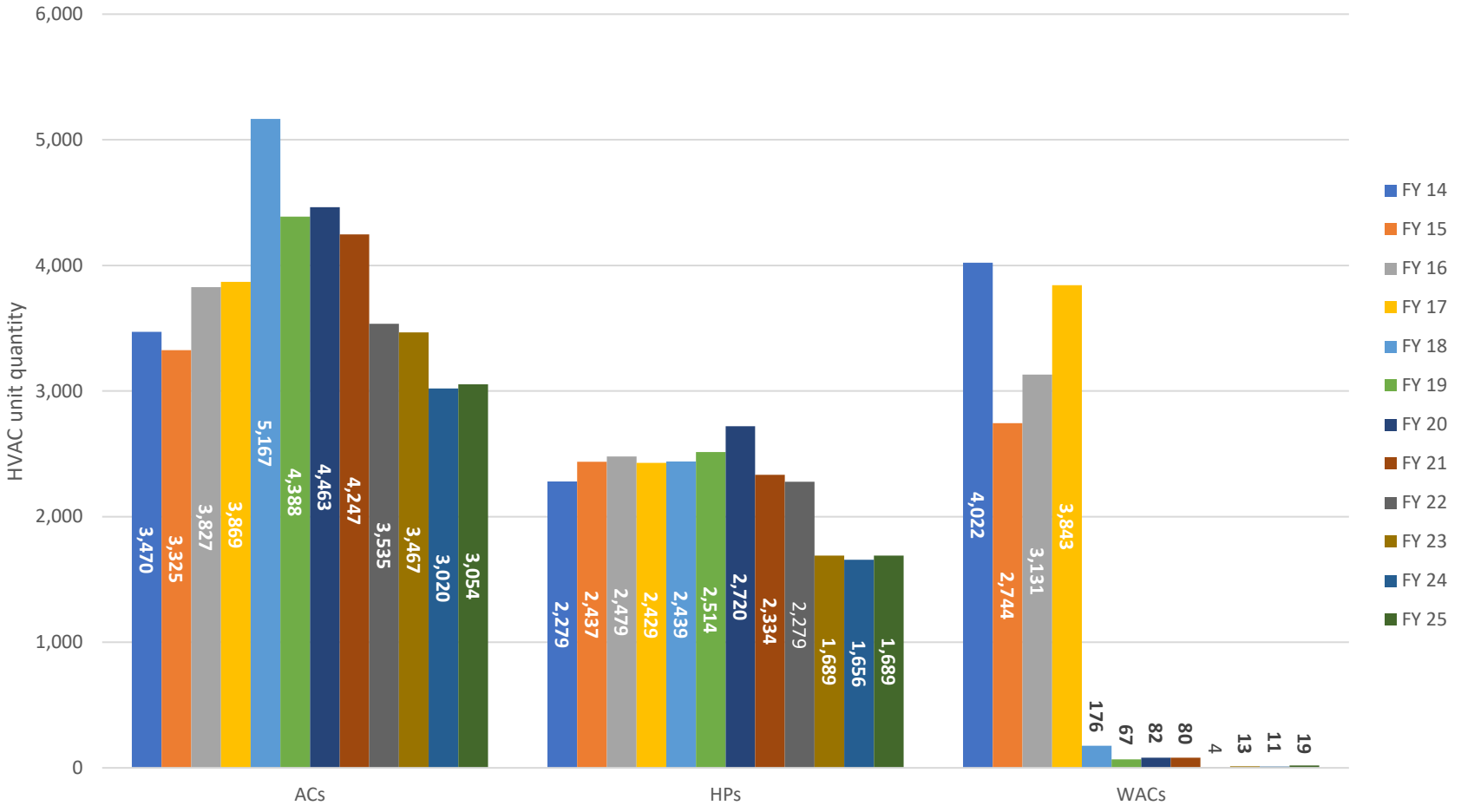


Figure 5-10: Residential HVAC – Participation Trends by System Type

The following figure presents a percentage breakdown of program savings by system type. Central ACs make up approximately half of the energy impacts and two-thirds of demand impacts.

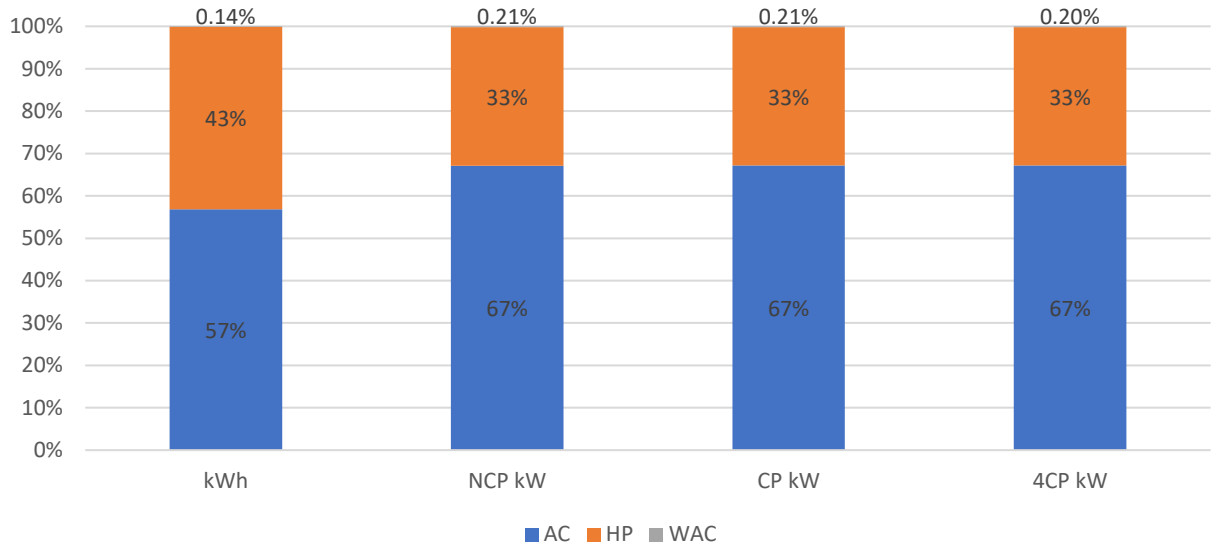


Figure 5-11: Residential HVAC – Gross Energy and Demand Impact Percentages by Measure

5.4.2 Results

A desk review was performed for a sample of projects incentivized in this program. The evaluation team selected a sample size to achieve a 90/10 percent confidence and precision interval. The savings verification results of the analyzed sample were applied to the entire program population. The following are the gross energy and demand savings for the Residential HVAC program, per residence and total by measure.

Table 5-5: Residential HVAC – Average Gross Savings per Residence

Measure	# Residences	kWh/ Residence	NCP kW/ Residence	CP kW/ Residence	4CP kW/ Residence
AC	2,802	1,188	0.67	0.59	0.59
HP	1,544	1,627	0.59	0.52	0.52
WAC	19	428	0.32	0.28	0.26
Average savings per residence[32]		**1,340**	**0.64**	**0.56**	**0.56**

[32] Average values are not cumulative because each treated residence did not receive every measure.

Table 5-6: Residential HVAC – Gross Energy and Demand Savings

Measure	Gross Energy Savings (kWh)	Gross NCP Demand Savings (kW)	Gross CP Demand Savings (kW)	Gross ERCOT 4CP Demand Savings (kW)
AC	3,326,927	1,882.35	1,643.13	1,642.94
HP	2,511,827	915.99	798.81	798.72
WAC	8,004	5.92	5.15	4.88
Total[33]	**5,846,758**	**2,804.26**	**2,447.09**	**2,446.55**

5.4.3 Additional Considerations

Equipment Verification

To verify the accuracy of the reported equipment specifications, reported system capacities and efficiencies were validated against the Air-Conditioning, Heating, and Refrigeration Institute (AHRI) certified product directory[34] for AC/HPs and against the ENERGY STAR certified product listing[35] for WACs.

Early retirement projects use an alternate dual baseline that requires confirmation of several additional measure inputs. Reported existing system type, condition, model numbers, and age were validated against available project documentation. Savings were calculated against an adjusted replace-on-burnout baseline for projects where this documentation was inconsistent or unavailable.

For heat pump projects replacing air conditioners with an electric furnace, heating energy savings were calculated against an electric resistance baseline when the baseline heating type can be verified using project documentation. An adjusted heat pump baseline was applied for projects where this documentation was inconsistent or unavailable.

[33] The sum of the individual measures may not match the total due to rounding.
[34] AHRI Directory. https://www.ahridirectory.org/Search/SearchHome.
[35] ENERGY STAR Certified Room Air Conditioners: https://www.energystar.gov/productfinder/product/certified-room-air-conditioners/.

5.5 HIGH-PERFORMANCE A/C TUNE-UP

5.5.1 Overview

The High-Performance A/C Tune-up (HPTU) program services residential air conditioners and heat pumps at no customer cost, helping improve operating efficiency. Service items may include cleaning the condenser, evaporator, and blower assembly, changing filters, adjusting airflow, and adjusting refrigerant charge as needed.

FY 2025 participation was almost double that of FY 2024. There were 9,833 individual residential HVAC tune-ups across 8,963 residences performed in FY 2025, compared to 4,956 tune-ups across 4,542 sites in FY 2024.

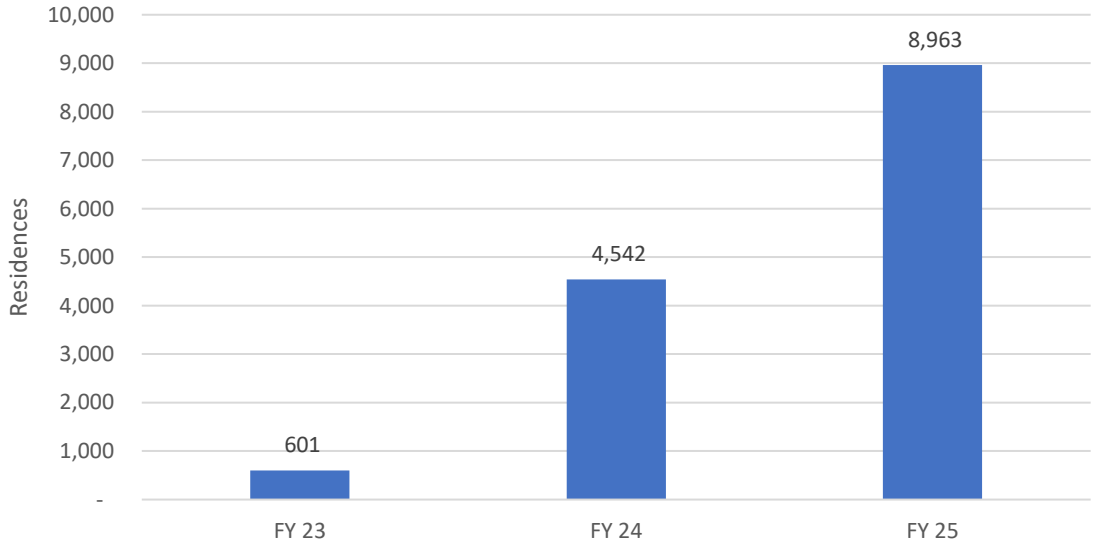


Figure 5-12: HPTU – FY 2025 Participants by program

5.5.2 Results

A desk review was performed for a sample of projects incentivized in this program. The evaluation team selected a sample size to achieve a 90/10 percent confidence and precision interval. Adjustments were made to project-level input assumptions where the reported measure inputs did not match project documentation and inspection results. The savings verification results of the analyzed sample were applied to the entire program population.

Table 5-7: HPTU – Average Gross Savings per Residence

Program	# Residences	# of Tune-Ups	kWh/ Residence	NCP kW/ Residence	CP kW/ Residence	4CP kW/ Residence
HPTU	8,963	9,833	2,618	1.04	0.91	0.91

Table 5-8: HPTU – Gross Energy and Demand Savings

Program	Gross Energy Savings (kWh)	Gross NCP Demand Savings (kW)	Gross CP Demand Savings (kW)	Gross ERCOT 4CP Demand Savings (kW)
HPTU	23,461,598	9,299.14	8,146.66	8,146.66

5.5.3 Additional Considerations

The CPS Energy Guidebook contains a default efficiency loss factor used to estimate savings impacts for tune-ups. Energy savings are calculated by estimating the efficiency of the cooling equipment before the tune-up using an efficiency loss factor because of dirty coils, blower, and filter, improper airflow, and/or incorrect refrigerant charge. The implementation vendor requested that the evaluation team apply alternate efficiency loss factors obtained from field-measured performance data. Efficiency losses, calculated in the field in full for a sampled subset of tune-ups, are utilized alongside previous years' measurements to derive a rolling 3-year average efficiency loss of projects with valid EER-post ratings. These averages are then grouped by project characteristics which are statistically significant in affecting the efficiency loss. Currently, these variables are market sector and whether a refrigerant charge adjustment was made. The resulting average efficiency loss factors are applied to projects that do not have test-in field measurements but do exhibit identical project characteristics to the groupings used in the averaging procedure.

5.6 NEW HOME CONSTRUCTION PROGRAM

5.6.1 Overview

The New Home Construction program offers an incentive to home builders to construct homes that are 15 percent or more efficient than the 2021 International Energy Conservation Code® (IECC) code requirements. The City of San Antonio approved IECC 2021 on November 10, 2022, becoming effective on February 1, 2023.[36]

Participants can qualify for higher incentives by obtaining certification through the BSAG program. The BSAG single family new construction program incorporates additional elements to achieve certification, including water, site, and health requirements. BSAG also requires a Home Energy Rating System (HERS) rating in addition to meeting all ENERGY STAR New Homes program requirements.

Table 5-9: New Home Construction – Incentive Levels

Requirement	Incentive
15% or better than code without BSAG certification	$800
15% or better than code with BSAG certification	$1,000

CPS Energy's FY 2025 New Home Construction program provided incentives for 7,074 new homes compared to 7,487 homes in FY 2024.

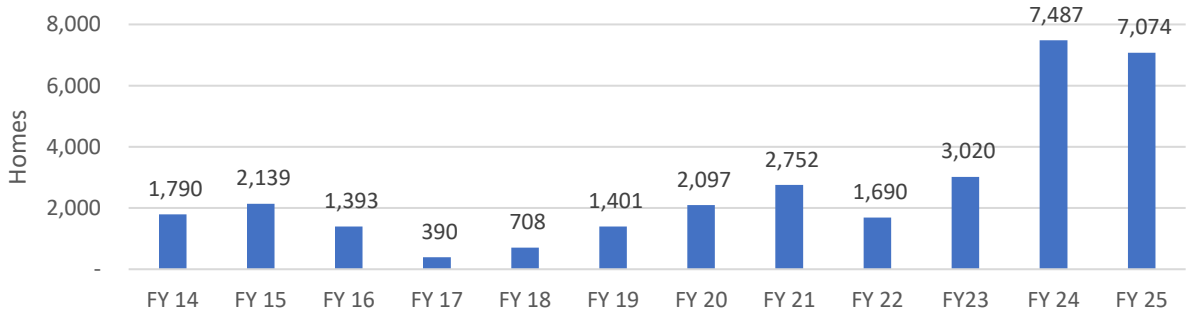


Figure 5-13: New Home Construction – Participation Trends

In FY 2025, 6,984 homes were certified by BSAG, approximately 99 percent of the total population. This represents an increase of 2 percent compared to FY 2024. Ten builders participated in the program in FY 2025, increasing from six in FY 2024.

[36] City of San Antonio Codes & Ordinances. https://www.sa.gov/Directory/Departments/DSD/Codes-Ordinances.

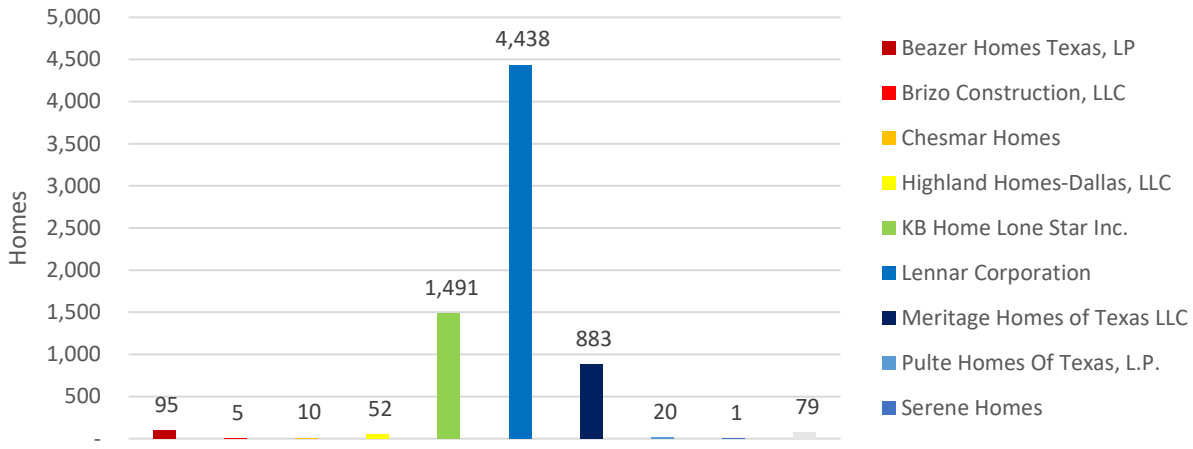


Figure 5-14: New Home Construction – Builder Participation

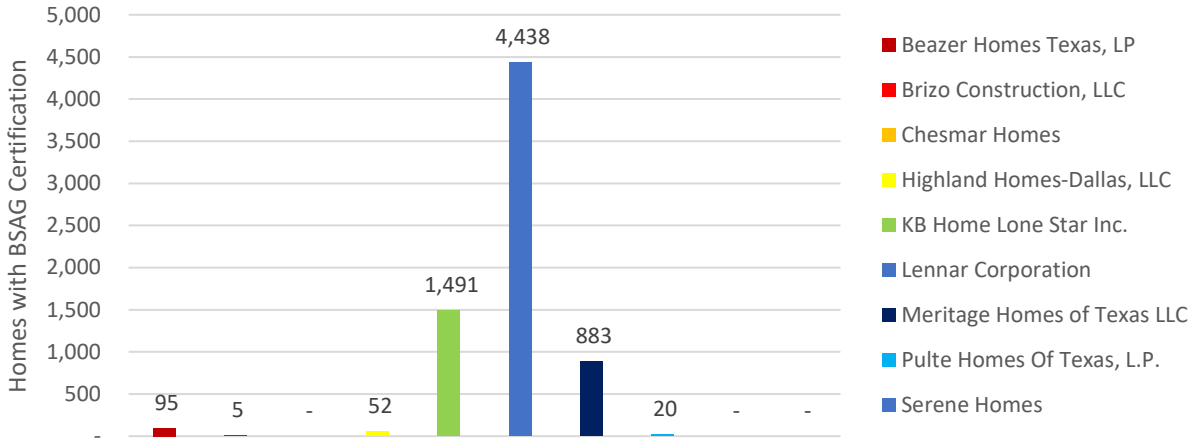


Figure 5-15: New Home Construction – BSAG Certified Builder Participation

5.6.2 Results

A desk review was performed for a sample of projects incentivized in this program. The evaluation team selected a sample size to achieve a 90/10 percent confidence and precision interval. The savings verification results of the analyzed sample were applied to the entire program population. The following are the gross energy and demand savings for the New Home Construction program, per residence and total by measure.

Table 5-10: New Home Construction – Average Gross Savings per Residence

Measure	# Residences	kWh/Residence	NCP kW/ Residence	CP kW/ Residence	4CP kW/ Residence
New Homes	7,074	2,550	0.96	0.81	0.81

Table 5-11: New Home Construction – Gross Energy and Demand Savings

Measure	Gross Energy Savings (kWh)	Gross NCP Demand Savings (kW)	Gross CP Demand Savings (kW)	Gross ERCOT 4CP Demand Savings (kW)
New Homes	18,041,107	6,811.67	5,706.79	5,706.79

5.6.3 Additional Considerations

At the onset of FY 2025, savings estimates were calculated using the modeled prescriptive savings methodology specified in the FY 2025 Guidebook. However, the evaluation team retroactively updated FY 2025 savings to align with a new methodology specified for FY 2026.

Previously, program savings were claimed for prescriptive 15- and 30-percent improvements over code performance for a typical reference home. Updated savings reference site-specific HERS modeling reports provided by the builders, raters, and Build San Antonio Green (BSAG). This approach increases savings precision per home, enhances adaptability to future code changes, and brings the New Home Construction program into better alignment with the Texas TRM.

Until the FY 2026 CPS Energy Guidebook can be updated to reflect the revised savings methodology, recommended documentation requirements have been shared with CPS Energy and the program implementation team.

The Texas TRM is considering implementing a process by which the HERS Index is mapped to energy savings using historical utility program data. That approach will be considered as a secondary option as more information becomes available.

5.7 RETAIL DISCOUNTS

5.7.1 Overview

The Retail Discounts program is designed to reach low-to-moderate-income customers through retail locations in their neighborhoods by offering in-store rebates for ENERGY STAR-certified lighting and appliances. After relaunching with lighting in FY 2023, the program saw increased participation in FY 2024 with more retailers. It expanded again in FY 2025 to add new products, including window air conditioners and room air purifiers.

There were 13 unique participating retailers in the program for FY 2025. Average gross savings per retailer were 242,278 kWh, 106.96 NCP kW, 25.78 CP kW, and 40.64 4CP kW. Average impacts per product are as follows:

- Light Bulbs: 7 kWh, 0.003 NCP kW, 0.001 CP kW, and 0.001 4CP kW
- Window Air Conditioners: 316 kWh, 0.23 NCP kW, 0.20 CP kW, and 0.20 4CP kW
- Air Purifiers: 222 kWh, 0.04 NCP kW, 0.02 CP kW, and 0.03 4CP kW

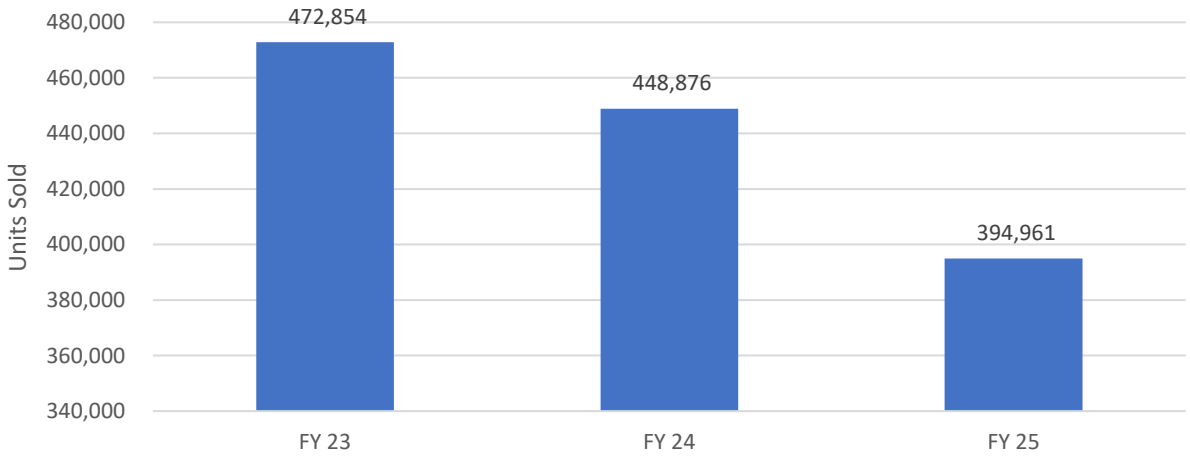


Figure 5-16: Retail Discounts – Units Sold per Fiscal Year[37]

[37] FY 2023 quantities are estimated based on overall savings. Earlier batches of project data did not include quantity.

5.7.2 Results

A desk review was performed for a sample of projects incentivized in this program. The evaluation team selected a sample size to achieve a 90/10 percent confidence and precision interval. The savings verification results of the analyzed sample were applied to the entire program population.

Table 5-12: Retail Discounts – Gross Energy and Demand Savings

Measure	Units Sold	Gross Energy Savings (kWh)	Gross NCP Demand Savings (kW)	Gross CP Demand Savings (kW)	Gross ERCOT 4CP Demand Savings (kW)
LED Lighting	392,398	2,579,759	1,284.87	273.22	458.62
Window AC	2	632	0.47	0.41	0.41
Air Purifier	2,561	569,229	105.12	61.56	69.23
Total	**394,961**	**3,149,620**	**1,390.46**	**335.19**	**528.26**

5.8 MULTIFAMILY

5.8.1 Overview

In FY 2025, CPS Energy piloted a new Multifamily program to bring a variety of no-cost measures to tenants residing in multifamily complexes. The program presents a unique opportunity to offer a more comprehensive set of energy efficiency measures to multiple customers at a single location. The pilot project targeted a single 43-unit complex and implemented the following measures: air infiltration reduction, attic insulation, duct sealing, HVAC tune-up, LED lighting, low-flow faucet aerators and showerheads, and smart thermostats.

5.8.2 Results

A desk review was performed on the deemed savings methodologies used to report measure savings. The average savings per residence were 4,210 kWh, 1.97 NCP kW, 1.02 CP kW, and 1.03 4CP kW.

Table 5-13: Multifamily – Gross Energy and Demand Savings

Measure	Gross Energy Savings (kWh)	Gross NCP Demand Savings (kW)	Gross CP Demand Savings (kW)	Gross ERCOT 4CP Demand Savings (kW)
Air Infiltration Reduction	11,841	21.16	2.75	2.47
Attic Insulation	29,858	19.29	11.31	10.40
Duct Sealing	28,713	22.64	12.20	13.71
HVAC Tune-up	45,768	19.14	16.65	16.65
LED Lighting	679	0.34	0.09	0.15
Low-Flow Faucet Aerator	1,160	0.33	0.12	0.13
Low-Flow Showerhead	6,370	1.83	0.66	0.70
Smart Thermostat	56,651	–	–	–
Total[38]	**181,040**	**84.74**	**43.77**	**44.20**

[38] The sum of the individual measures may not match the total due to rounding.

Table 5-14: Multifamily –Energy and Demand Savings per residence

Measure	kWh/Residence	NCP kW/Residence	CP kW/Residence	ERCOT 4CP kW/Residence
Air Infiltration Reduction	275	0.49	0.06	0.06
Attic Insulation	694	0.45	0.26	0.24
Duct Sealing	668	0.53	0.28	0.32
HVAC Tune-up	1,064	0.45	0.39	0.39
LED Lighting	16	0.01	0.00	0.00
Low-Flow Faucet Aerator	27	0.01	0.00	0.00
Low-Flow Showerhead	148	0.04	0.02	0.02
Smart Thermostat	1,317	0.00	0.00	0.00
Total[39]	**4,210**	**1.97**	**1.02**	**1.03**

5.8.3 Additional Considerations

Equipment Verification

Because this is a pilot program, documentation protocols are still under development. Whenever necessary, the evaluation team made conservative assumptions based on evaluated results for other units from the same project location. The evaluation team will work with CPS Energy and the implementation vendor to finalize documentation protocols for future program years.

Documentation of Central Electric Resistance Heat

Additional project documentation is required when claiming central electric resistance heating. In most cases, this can be verified using furnace model number, site photos, or inspection forms. The CPS Energy Guidebook specifies an adjustment penalty when this documentation is not provided. However, that penalty was waived for FY 2025 while the evaluation team works with CPS Energy and the implementation vendor to finalize documentation protocols.

[39] The sum of the individual measures may not match the total due to rounding.

5.9 RESIDENTIAL PROGRAM RECOMMENDATIONS

The updated CPS Energy Guidebook, applicable to FY 2026, contains updates that impact savings calculations. The evaluation team recommends updating savings calculation input assumptions to ensure consistency between claimed and evaluated savings.

The evaluation team has identified specific recommendations related to savings calculations and program documentation in a separate memo to program administrators. In addition to these savings calculations and documentation recommendations, the evaluation team makes the following general recommendations for residential program offerings:

5.9.1 General Recommendations

- Reported heating and cooling types should distinguish between central and space conditioning.
- Additional documentation is required when claiming central electric resistance heating. The FY 2025 CPS Energy Guidebook incorporated a documentation adjustment factor applicable to cases where supplemental documentation is not available.
- For each measure, ensure to report all information requested in the tracking requirements section of the CPS Energy Guidebook.

5.9.2 Home Efficiency

- Pool pumps:
    - Measure savings in the FY 2025 CPS Energy Guidebook were updated to comply with current federal standards. Minimum efficiency requirements are now measured in terms of hydraulic horsepower.
    - Additional optional energy efficiency standards were also added for FY 2025, aligning with recommendations from the Consortium for Energy Efficiency (CEE) residential swimming pool pump specification. For all in-ground pumps, CEE Tier 1 matches the current federal standard, and CEE Tier 2 matches the current ENERGY STAR specification for in-ground standard sized pumps. Additional savings are only specified for CEE tiers where there is an incremental efficiency improvement above the ENERGY STAR specification.
- Consider adding the following new measures to existing program offerings:
    - Heat pump and solar water heaters
    - Solar screens
    - Window replacements

5.9.3 Home Energy Assessment

- Specify heating and cooling type for homes with smart thermostats and when reporting conditioned space for LED lighting measures.
- Differentiate between heat pump, central electric furnace, and space heat when reporting electric heating.
- Specify water heater fuel type (electric or gas) when reporting faucet aerators and low-flow showerheads. Homes with gas water heating are not eligible to claim savings for these measures.

5.9.4 Residential HVAC

- Air Conditioners and Heat Pumps:
    - The FY 2025 CPS Energy Guidebook has removed the one-year exceptions for HPs less than 65,000 Btu/h with only a SEER rating. All HPs must have a SEER2 rating to comply with the current federal standard.
- Window Air Conditioners:
    - Enforce updated ENERGY STAR version 5.0 specification and increased minimum CEER efficiency requirements.

5.9.5 High-Performance A/C Tune-Up

- Routinely assess the regression diagnostics and variable selection process used to determine how efficiency loss is grouped for deemed averaging.

5.9.6 New Home Construction

- See Section 5.6.3 for information about the pending FY 2026 CPS Energy Guidebook update and corresponding documentation requirements.
- In addition to collecting the physical model reports, extracting the following information will assist with future reporting:
    - Modeled energy and demand savings (kWh, summer kW, and winter kW)
    - Heating fuel type (gas, electric)
    - Heating equipment type (gas furnace, electric furnace, heat pump)
    - Home conditioned area (ft2)
    - Home conditioned volume (ft3)
- Explore the benefits of gas efficiency.

5.9.7 Retail Discounts

- Update product assumptions to incorporate desk review feedback from the qualified product listing (QPL) review.
- Update deemed savings assumptions to match the FY 2026 CPS Energy Guidebook, with a particular focus on the air purifiers measure.

5.9.8 General Lighting Recommendations

- Most specialty LED designations have been removed. All LED products currently distributed through the program should use the general service lamp (GSL) LED savings methodology.
- All calculated savings for GSL LEDs should use the reduced 45 lumens per watt tier 2 baseline outlined in the CPS Energy Guidebook. Rated lumens should be used to determine the applicable baseline.
- Savings may default to a 16-year measure life, but reporting lamp rated life will allow an increased 20-year measure life for products rated at 17,500+ hours.

6. COMMERCIAL PROGRAMS

6.1 SUMMARY OF COMMERCIAL IMPACTS

CPS Energy's portfolio of commercial programs addresses most markets and major commercial end-uses. Commercial demand response programs are included in Section 7. CPS Energy offered the following energy efficiency programs for the commercial sector in FY 2025:

- Commercial & Industrial Solutions (C&I) – Energy assessments to identify opportunities and rebates for a wide range of measures, including lighting upgrades, HVAC replacements and controls, refrigeration, building envelope, and building optimization.
- Schools & Institutions (S&I) – Helps schools and government agencies reduce energy use through benchmarking, technical assistance, energy master planning, and standard rebate offerings like those in C&I Solutions.
- Small Business Solutions (SBS) – Contractor-driven incentive program for small business customers with less than 100 kW demand, primarily focused on lighting and HVAC tune-ups. Additionally, this program offers a midstream lighting component targeting distributors.

All programs were implemented by CLEAResult under the supervision of CPS Energy.

The contributions of each program to the commercial portfolio's energy and peak demand savings are shown in the following figures, as measured at the participant or end-user level, and adjusted to account for net-to-gross ratios and line losses. Program names are abbreviated in chart labels.[40] Overall, the commercial portfolio saw about a 30% increase in energy and demand savings over FY 2024.

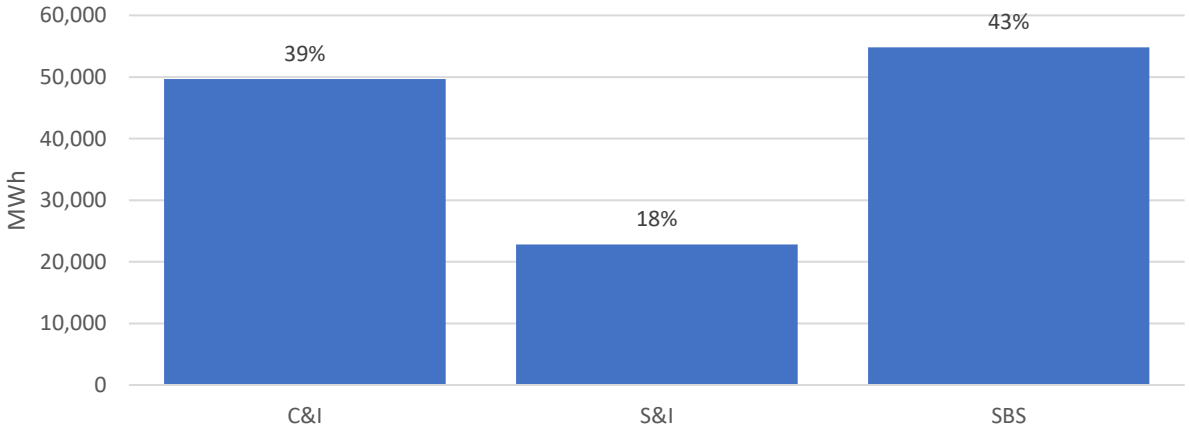


Figure 6-1: Commercial Summary – Net Avoided Energy by Program

[40] C&I = Commercial and Industrial, S&I = Schools & Institutions, SBS = Small Business Solutions.

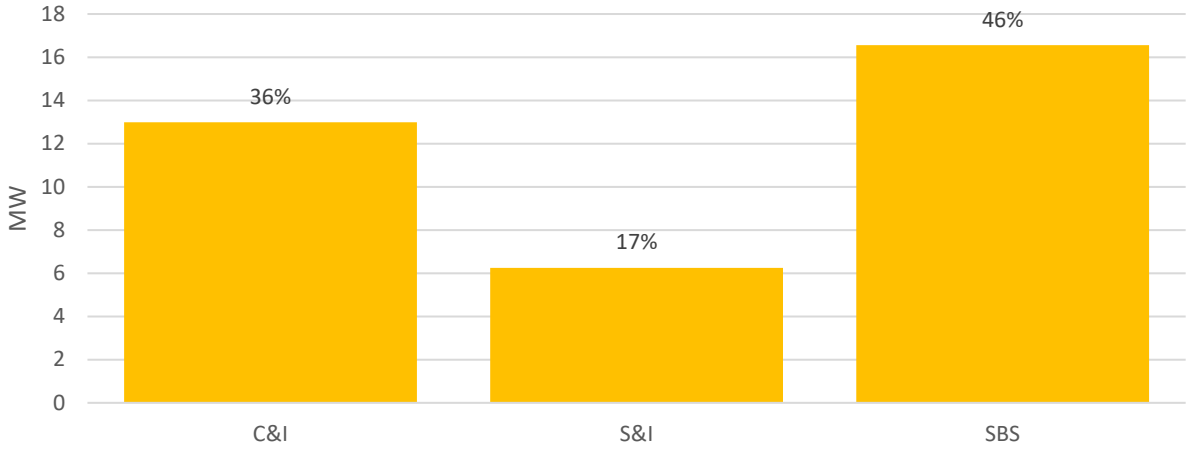


Figure 6-2: Commercial Summary – Net Avoided NCP by Program

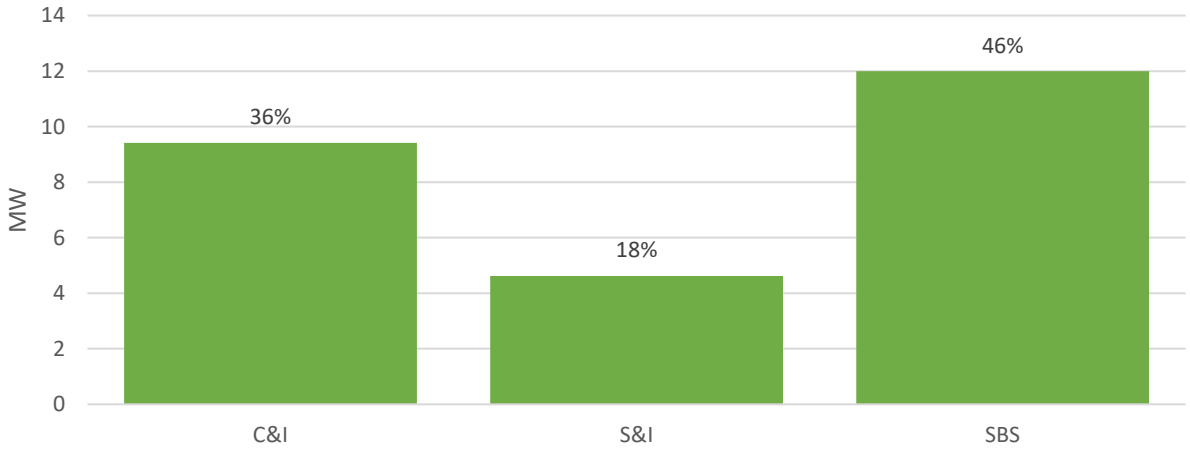


Figure 6-3: Commercial Summary – Net Avoided CP by Program

6.2 COMMERCIAL & INDUSTRIAL SOLUTIONS

6.2.1 Overview

The Commercial & Industrial (C&I) Solutions program delivers energy savings primarily through lighting, envelope, HVAC, retro-commissioning, variable frequency drive measures, and several other measures. In FY 2025, a total of 604 customers participated in the C&I program, compared to 356 in FY 2024. FY 2025 saw a large increase in the number of HVAC tune-ups compared to previous years, contributing to a higher project count.

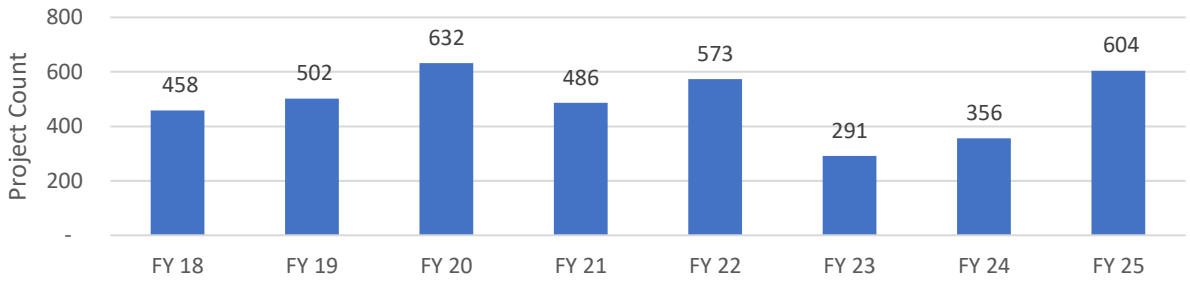


Figure 6-4: C&I Solutions – Participation Trends

The figure below presents a percentage breakdown of gross energy savings and demand savings. The C&I program is predominantly driven by lighting measures followed by envelope measures. Lighting contributions have decreased as the market reaches saturation and baselines increase.

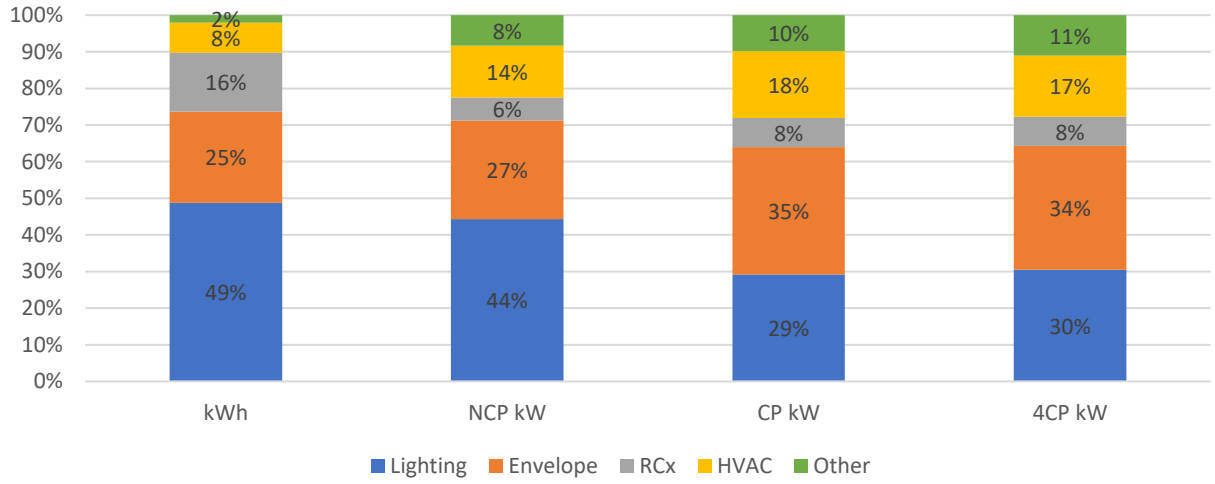


Figure 6-5: C&I Solutions – Gross Energy and Demand Impacts by Measure[41]

[41] RCx = Retrocommissioning. Envelope measures include air infiltration reduction, reflective cool roofs, and window treatments. Measures categorized as Other are not labeled individually in graph because they contribute less than 1 percent of savings impacts.

Most FY 2025 lighting savings are attributable to outdoor applications, followed by warehouse and manufacturing based on a review of sampled projects with verified building types.

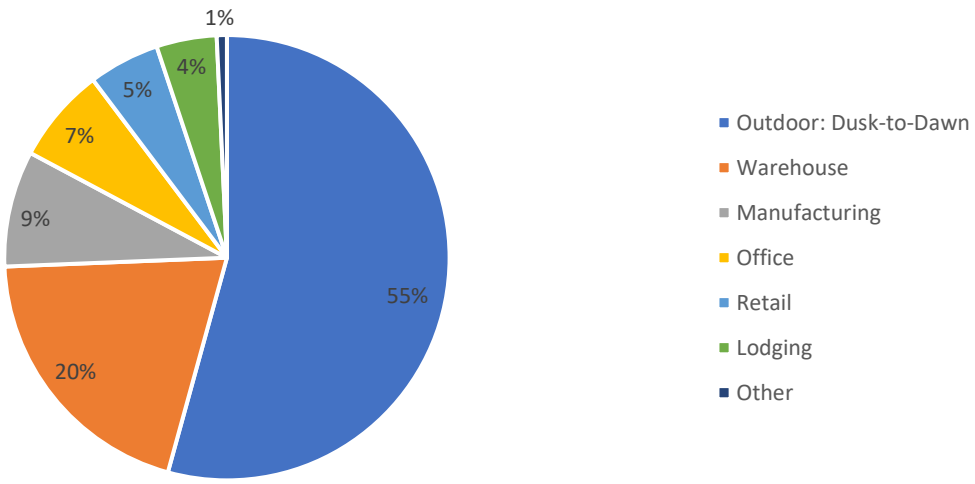


Figure 6-6: C&I Solutions – Percent of kWh Savings by Building Type for Sampled Lighting Projects

Chillers were responsible for the majority of sampled HVAC project savings in FY 2025, with water-cooled chillers at 47% and air-cooled chillers at 12%. HVAC DX AC/HP projects made up the remaining 41% of kWh savings.

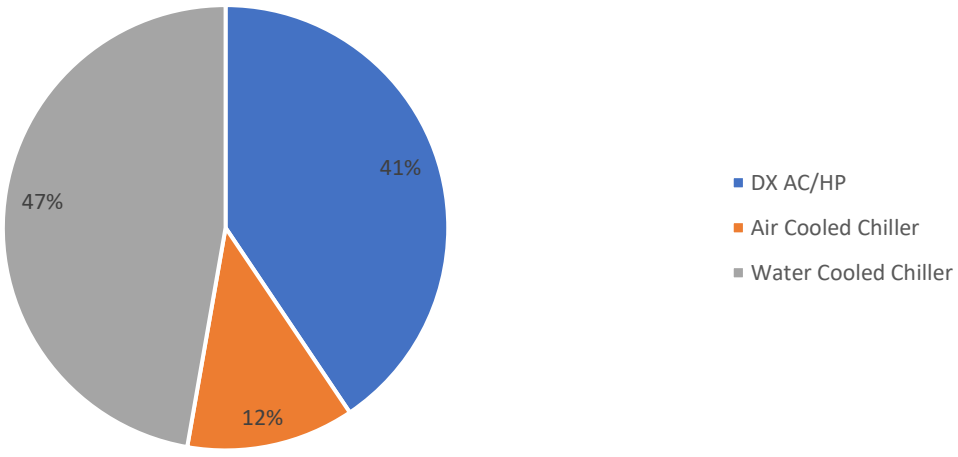


Figure 6-7: C&I Solutions – Percent of kWh Savings by System Type for Sampled HVAC Projects

6.2.2 Results

A desk review was performed for a sample of projects incentivized in this program. The evaluation team selected a sample size to achieve a 90/10 percent confidence and precision interval. The savings verification results of the analyzed sample were applied to the entire program population.

Table 6-1: C&I Solutions – Gross Energy and Demand Savings

Measure	Gross Energy Savings (kWh)	Gross NCP Demand Savings (kW)	Gross CP Demand Savings (kW)	Gross ERCOT 4CP Demand Savings (kW)
Lighting	23,914,960	5,673.23	2,617.64	2,660.90
Envelope	12,216,587	3,436.32	3,119.07	2,950.94
Retro-commissioning	7,872,583	803.15	711.48	693.31
HVAC	2,139,477	748.81	626.47	568.79
HVAC Tune-Ups	950,972	492.50	464.61	408.77
Other	638,925	1,018.01	835.27	919.68
Refrigeration	371,588	43.71	42.86	43.56
Total[42]	**49,047,556**	**12,793.10**	**8,968.36**	**8,725.68**

6.2.3 Additional Considerations

All Measures

Savings are calculated based on the applicable sector (i.e., residential, commercial). However, savings are claimed in a program that matches the applicable customer utility rate classification. For example, master-metered commercial utility accounts in multifamily applications are calculated using residential HVAC savings calculation methodologies but are attributed to commercial programs.

HVAC Tune-ups

The CPS Energy Guidebook contains a default efficiency loss factor used to estimate savings impacts for tune-ups. Energy savings are calculated by estimating the efficiency of the cooling equipment before the tune-up using an efficiency loss factor because of dirty coils, blower, and filter, improper airflow, and/or incorrect refrigerant charge. The implementation vendor requested that the evaluation team apply alternate efficiency loss factors obtained from field-measured performance data. Efficiency losses, calculated in the field in full for a sampled subset of tune-ups, are utilized alongside previous years' measurements to derive a rolling 3-year average efficiency loss of projects with valid EER-post ratings.

[42] The sum of the individual measures may not match the total due to rounding.

These averages are then grouped by project characteristics, which are statistically significant in affecting the efficiency loss. Currently, these variables are the market sector and whether a refrigerant charge adjustment was made. The resulting average efficiency loss factors are applied to projects that do not have test-in field measurements but do exhibit identical project characteristics to the groupings used in the averaging procedure.

6.3 SCHOOLS & INSTITUTIONS

6.3.1 Overview

The Schools & Institutions (S&I) program delivers energy savings primarily through lighting, HVAC, variable frequency drive, retro-commissioning, Strategic Energy Management (SEM)[43], and other measures. In FY 2025, a total of 635 projects were completed in the S&I program, compared to 192 in FY 2024. Similar to C&I Solutions, a large increase in HVAC tune-ups contributed to the significant jump in project count. Most of these tune-ups were performed on residential units at military bases or college campuses with master-metered commercial accounts.

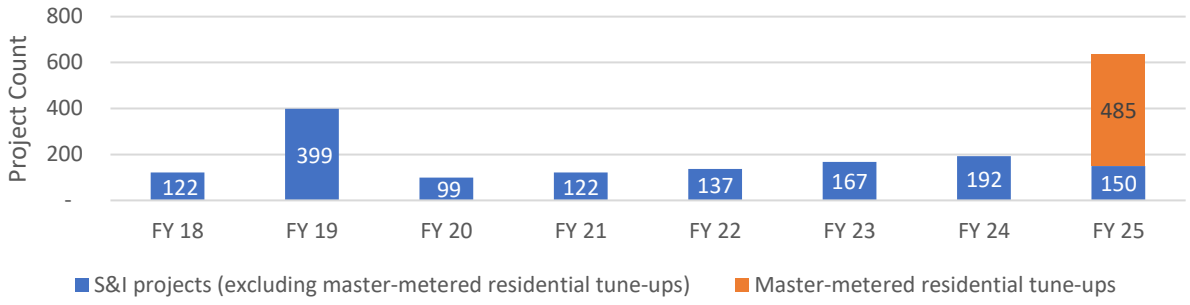


Figure 6-8: Schools & Institutions – Participation Trends

The figure below presents a percentage breakdown of gross energy savings and demand savings. The S&I program is predominantly driven by SEM behavioral measures. HVAC measures are also a key contributor, including HVAC retrofits, tune-ups, and variable frequency drives.

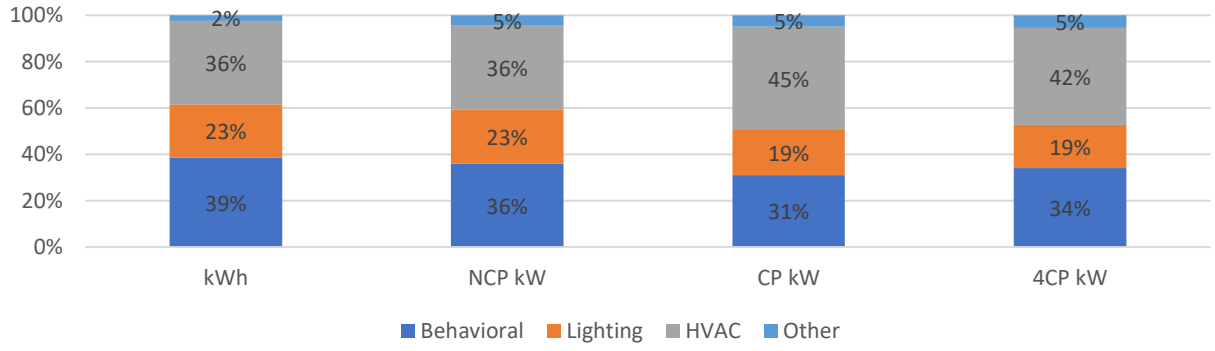


Figure 6-9: Schools & Institutions – Gross Energy and Demand Impacts by Measure Type[44]

[43] SEM refers to Strategic Energy Management, a program where an energy coach works directly with school districts or institutional organizations to identify and implement energy savings measures. While the focus is on behavioral opportunities such as turning off equipment when not in use, staff education of best energy practices, etc., the program also includes building control system enhancements and capital improvement opportunities.

[44] For FY 2025, "Other" refers to retro-commissioning and other custom measures.

Consistent with the targeted program customer base, most FY 2025 lighting savings are attributable to schools based on a review of sampled projects with verified building types. The next largest contributor is outdoor lighting, with office, lodging, and other building types rounding out the group.

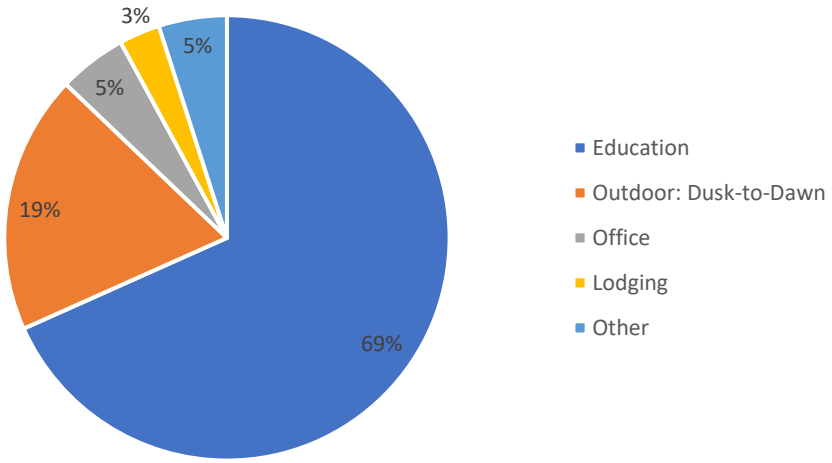


Figure 6-10: Schools & Institutions – Percent of kWh Savings by Building Type for Sampled Lighting Projects

Chillers make up the vast majority of sampled HVAC retrofit energy impacts, with water-cooled at 50% and air-cooled at 47%. The remainder of energy impacts were for split/packaged air conditioners & heat pumps.

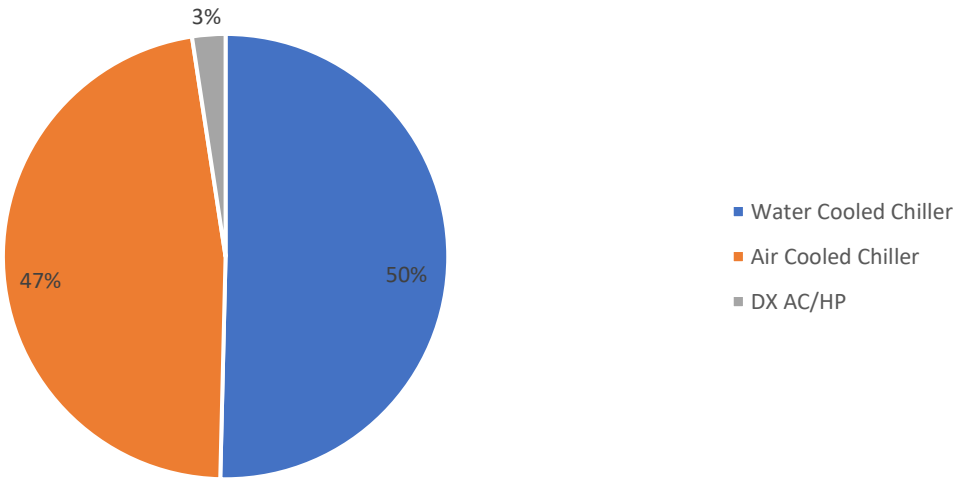


Figure 6-11: Schools & Institutions – Percent of kWh Savings by System Type for HVAC Projects

6.3.2 Results

A desk review was performed for a sample of projects incentivized in this program. The evaluation team selected a sample size to achieve a 90/10 percent confidence and precision interval. The savings verification results of the analyzed sample were applied to the entire program population.

Table 6-2: Schools & Institutions – Gross Energy and Demand Savings

Measure	Gross Energy Savings (kWh)	Gross NCP Demand Savings (kW)	Gross CP Demand Savings (kW)	Gross ERCOT 4CP Demand Savings (kW)
Behavioral	8,618,956	2,195.87	1,359.05	1,556.24
Lighting	5,106,113	1,411.22	846.78	856.26
HVAC	6,454,351	1,381.65	1,187.50	1,195.31
HVAC Tune-Up	1,593,020	826.17	761.88	713.30
Retro-commissioning	199,359	52.47	53.45	53.51
Envelope	160,665	124.92	112.01	113.28
Other	181,378	99.87	47.56	83.19
Total[45]	**22,313,841**	**6,092.18**	**4,368.23**	**4,571.09**

6.3.3 Additional Considerations

HVAC Tune-ups

The CPS Energy Guidebook contains a default efficiency loss factor used to estimate savings impacts for tune-ups. Energy savings are calculated by estimating the efficiency of the cooling equipment before the tune-up using an efficiency loss factor because of dirty coils, blower, and filter, improper airflow, and/or incorrect refrigerant charge. The implementation vendor requested that the evaluation team apply alternate efficiency loss factors obtained from field-measured performance data. Efficiency losses, calculated in the field in full for a sampled subset of tune-ups, are utilized alongside previous years' measurements to derive a rolling 3-year average efficiency loss of projects with valid EER-post ratings. These averages are then grouped by project characteristics, which are statistically significant in affecting the efficiency loss. Currently, these variables are market sector and whether a refrigerant charge adjustment was made. The resulting average efficiency loss factors are applied to projects that do not have test-in field measurements but do exhibit identical project characteristics to the groupings used in the averaging procedure.

[45] The sum of the individual measures may not match the total due to rounding.

6.4 SMALL BUSINESS SOLUTIONS

6.4.1 Overview

The Small Business Solutions program is a contractor-driven program for small business customers with less than 100 kW demand that delivers energy savings primarily through air infiltration reduction measures, HVAC tune-ups, and the installation of lighting and controls. In FY 2025, domestic hot water (DHW) and efficient hand dryer measures were added. A separate midstream lighting component is also offered to promote the sales of qualifying LED lighting.

In FY 2025, direct install measures included a total of 813 HVAC tune-ups, 132 lighting, 38 air infiltration, 35 domestic hot water (DHW), and 9 hand dryer projects compared to 840 tune-up, 198 lighting, and 34 air infiltration projects in FY 2024. While total participation remained fairly consistent with FY 2024, direct install lighting participation decreased by 33 percent, potentially due to a trend toward market saturation and an increased focus on new measures in response to increasing lighting standards.

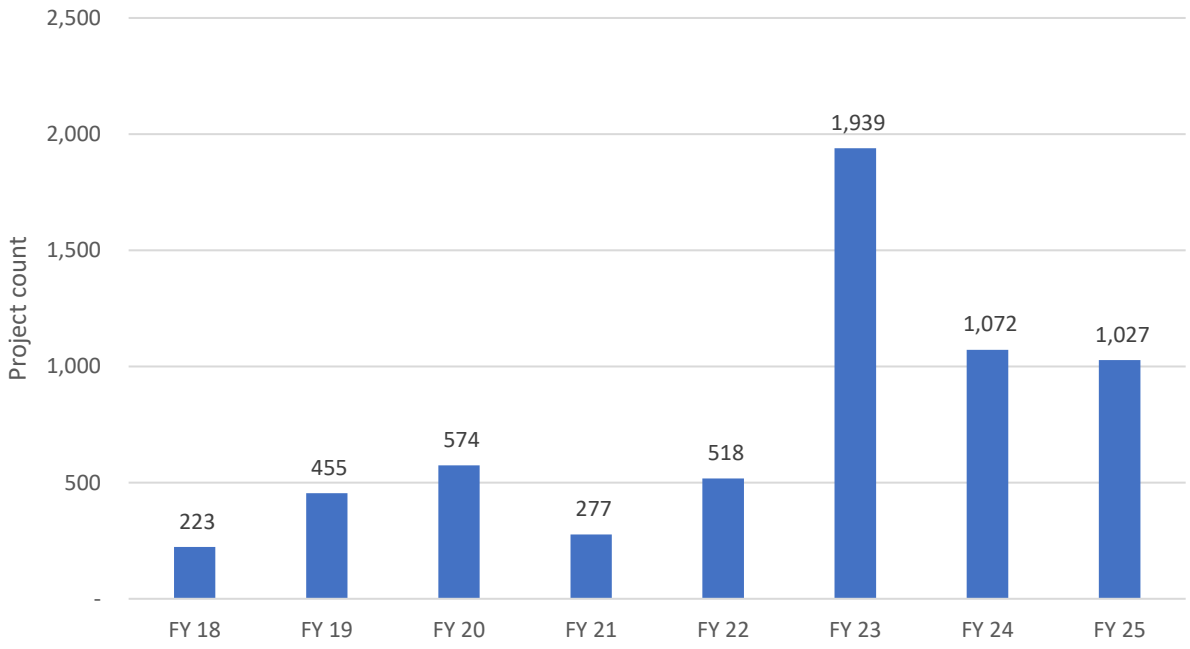


Figure 6-12: Small Business Solutions – Direct Install Participation Trends

In FY 2024 the midstream program shifted to report sales by customer rather than by distributor batch, therefore prior years cannot be directly compared. In FY 2025, the midstream program sold product to 761 customers compared to 295 in FY 2024.

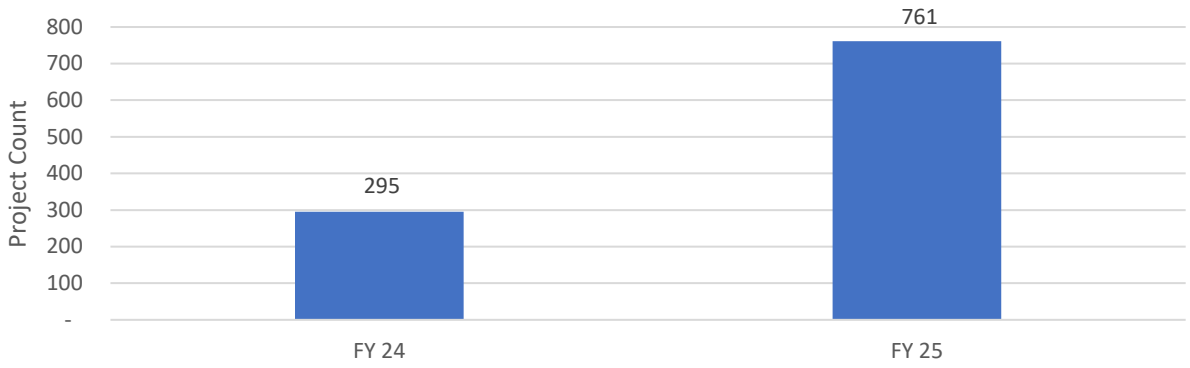


Figure 6-13: Small Business Solutions – Midstream Lighting Participation Trends

Percentage breakdowns of gross energy, NCP, CP, and 4CP demand impacts are presented below by measure. Midstream Lighting comprised approximately 70 percent of energy savings and about 50 percent of demand impacts.

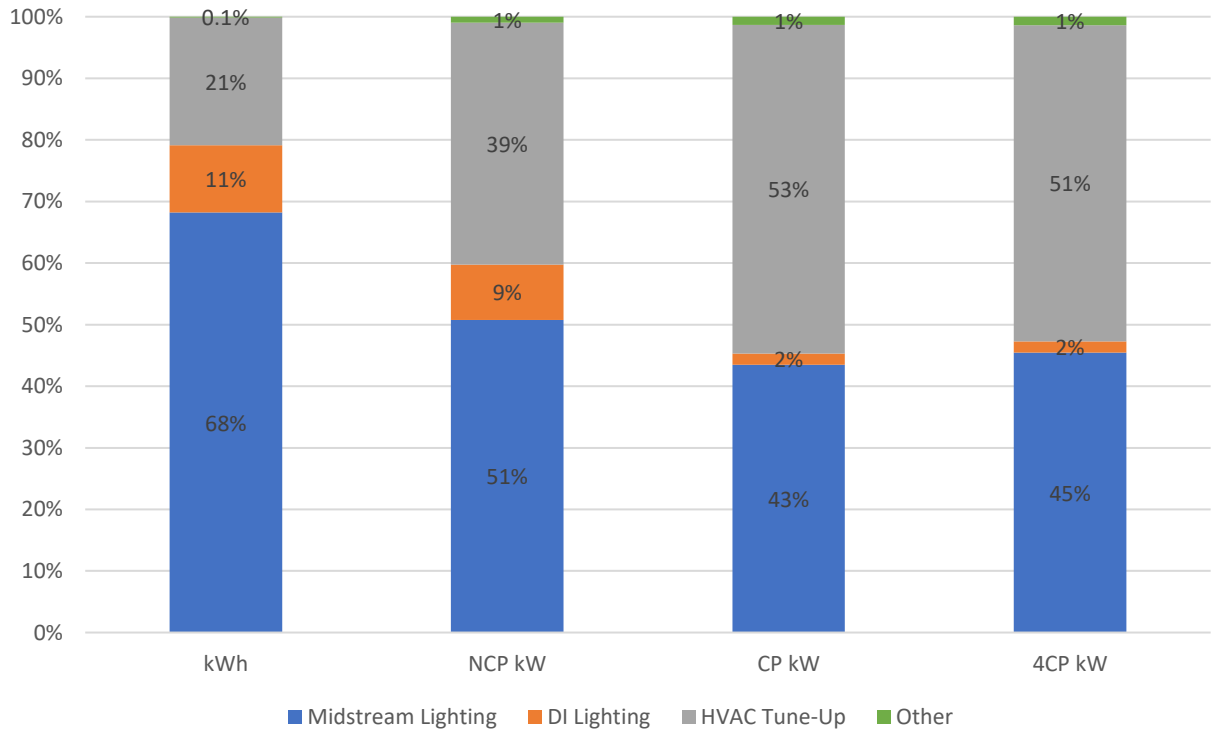


Figure 6-14: Small Business Solutions – Gross Energy and Demand Impacts by Measure[46]

[46] Measures categorized as Other are not labeled individually in graph because they contribute less than 1 percent of savings impacts.

Most FY 2025 lighting savings are attributable to outdoor and mercantile applications based on a review of sampled projects with verified building types.

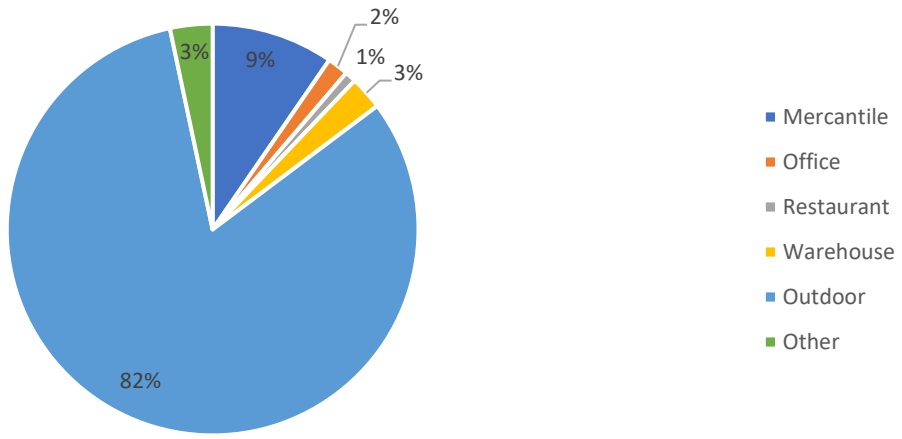


Figure 6-15: Small Business Solutions – Percent of kWh Savings by Building Type for DI Lighting

6.4.2 Results

A desk review was performed for a sample of projects incentivized in this program. The evaluation team selected a sample size to achieve a 90/10 percent confidence and precision interval. The savings verification results of the analyzed sample were applied to the entire program population.

Table 6-3: Small Business Solutions – Gross Energy and Demand Savings

Measure	Gross Energy Savings (kWh)	Gross NCP Demand Savings (kW)	Gross CP Demand Savings (kW)	Gross ERCOT 4CP Demand Savings (kW)
Midstream Lighting	36,212,661	8,099.59	4,834.62	4,942.03
DI Lighting	5,799,828	1,427.95	204.09	197.43
HVAC Tune-Up	11,011,268	6,266.00	5,936.96	5,582.26
Air Infiltration	23,803	5.61	3.87	2.52
Hand Dryer	16,527	143.58	139.83	142.83
DHW	16,887	6.48	2.34	2.47
Total[47]	**53,080,973**	**15,949.22**	**11,121.72**	**10,869.53**

[47] The sum of the individual measures may not match the total due to rounding.

6.4.3 Additional Considerations

HVAC Tune-ups

The CPS Energy Guidebook contains a default efficiency loss factor used to estimate savings impacts for tune-ups. Energy savings are calculated by estimating the efficiency of the cooling equipment before the tune-up using an efficiency loss factor because of dirty coils, blower, and filter, improper airflow, and/or incorrect refrigerant charge. The implementation vendor requested that the evaluation team apply alternate efficiency loss factors obtained from field-measured performance data. Efficiency losses, calculated in the field in full for a sampled subset of tune-ups, are utilized alongside previous years' measurements to derive a rolling 3-year average efficiency loss of projects with valid EER-post ratings. These averages are then grouped by project characteristics which are statistically significant in affecting the efficiency loss. Currently, these variables are market sector and whether a refrigerant charge adjustment was made. The resulting average efficiency loss factors are applied to projects that do not have test-in field measurements but do exhibit identical project characteristics to the groupings used in the averaging procedure.

Hand Dryers

The deemed savings amounts have been updated in the FY 2026 CPS Energy Guidebook, so program calculators should be adjusted accordingly.

6.5 COMMERCIAL PROGRAM RECOMMENDATIONS

The updated CPS Energy Guidebook, applicable to FY 2026, contains updates that impact savings calculations. The evaluation team recommends updating savings calculation input assumptions to ensure consistency between claimed and evaluated savings.

The evaluation team has identified specific recommendations related to savings calculations and program documentation in a separate memo to program administrators. In addition to these savings calculations and documentation recommendations, the evaluation team makes the following general recommendations for commercial program offerings:

6.5.1 General Lighting Recommendations

- Most specialty LED designations have been removed. Most screw-in or plug-in LED products currently distributed through the program should use the general service lamp (GSL) LED savings methodology.
- All calculated savings for GSL LEDs should use the reduced 45 lumens per watt tier 2 baseline outlined in the CPS Energy Guidebook.
- Savings should be claimed separately by measure life category. Specifically, savings should distinguish between fixture and control savings.
- Update commercial lighting fixture codes to align with the latest publication on the Texas Efficiency website at texasefficiency.com/dse.

6.5.2 General HVAC Recommendations

- The FY 2025 CPS Energy Guidebook removed the one-year exceptions for heat pumps (HP) less than 65,000 Btu/h with only a SEER rating. All HPs must have a SEER2 rating to comply with the current federal standard.

6.5.3 Commercial & Industrial Solutions (C&I) and Schools & Institutions (S&I)

- Lighting:
    - The FY 2025 CPS Energy Guidebook specifies specific applications where building type combinations are appropriate, such as office—warehouse, office—manufacturing, manufacturing with different shift schedules, inpatient healthcare—outpatient healthcare, and lodging common areas—lodging rooms. Otherwise, select a single predominant building type.

- HVAC:
    - If deemed savings are not available for a specific equipment—building type combination, projects may default to the "Other" building type. Additional savings may be available when obtaining evaluator pre-approval to map to one of the other deemed building types.
- Behavioral and Custom:
    - The evaluation team plans to work together with CPS Energy and the program implementer to inform future applications of SEM baselines, including those that are currently referencing older utility data.
    - The evaluation team plans to routinely assess aggregate savings calculations for composite measures attributable to the retro-commissioning and SEM behavioral measures.
    - Measure life for retro-commissioning projects should be reported using the deemed 5-year EUL from the CPS Energy Guidebook.

6.5.4 Small Business Solutions (SBS)

- Midstream Lighting:
    - When updating program qualified product listing (QPL) to include new products, the evaluation team requests that a record of legacy products be maintained in a single consolidated document. This will allow the evaluation team to apply a consistent QPL to the entire fiscal year population more easily.
    - Update QPL assumptions to incorporate desk review feedback from evaluation findings.
- Direct-Install Lighting:
    - Ensure that reported building type matches business function and location type.
    - Ensure that contractors take documentation of the equipment wattage found onsite and do not use past photo documentation from other projects to confirm equipment wattage.
    - Ensure that DesignLights Consortium (DLC) or ENERGY STAR rating certificates are provided for all qualifying equipment and for all projects.
    - Ensure that contractors obtain pre-photo documentation of original lamps and fixtures, including both close-up and installed.
    - Ensure that contractors are correctly reporting which fixtures are installed in interior conditioned or interior unconditioned spaces.

- Air Infiltration:
    - Ensure that reported gap widths align with photo documentation.
    - HVAC equipment nameplate photos must be provided to verify heating type.
- Faucet Aerators/Low Flow Showerheads:
    - Ensure that savings calculations and assumptions reflect the most recent version of the source material, in this case Arkansas TRM version 10.0.
    - Provide documentation of water heating type.
- HVAC Tune-up:
    - See recommendations from C&I/S&I section.
- Hand Dryers:
    - Provide specification sheets or nameplate photos to validate baseline equipment wattage.

7. DEMAND RESPONSE PROGRAMS

7.1 SUMMARY OF DEMAND RESPONSE IMPACTS

Since early 2000, CPS Energy has engaged customers through various Demand Response (DR) programs. The DR program portfolio reaches both residential and commercial markets, with end-uses primarily focused on thermostats. Some programs are actively offered to customers, while other legacy programs are in maintenance mode and are no longer accepting new customers. Active programs will continue to grow as the programs move forward, and legacy programs will continue to decline with program attrition.

DR benefit-cost calculations only account for the incremental impacts of new participants added in the current fiscal year, consistent with the approach used in all energy efficiency program benefit-cost calculations. C&I DR is an exception, using impacts from all active participants for benefit-cost calculations.

CPS Energy offered the following active and legacy DR programs in FY 2025: Bring Your Own Thermostat (BYOT), Direct Install Thermostats, Power Players, and Commercial & Industrial (C&I) Demand Response are active programs accepting new customers. All others are legacy programs and are not open for new enrollments, though CPS Energy is still actively managing them.

Active Residential Demand Response

In FY 2025, CPS Energy implemented the following residential DR programs:

Bring Your Own Thermostat (BYOT) – CPS Energy partners with EnergyHub and Resideo to offer customers who purchase or already own various brands of smart thermostats an opportunity to participate in CPS Energy's Wi-Fi Thermostat Rewards program.

Direct Install Thermostat Programs – CPS Energy offers thermostat installation programs, which offer a free smart thermostat device.

- The Home Energy Assessment (HEA) program is currently installing Google Nest, Emerson Sensi, Honeywell, and ecobee thermostats.
- The Casa Verde Weatherization (WX) program installs Wi-Fi thermostats for income-eligible residential customers at no cost.

All devices on BYOT and Direct Install Thermostat Programs are hosted on either EnergyHub or Resideo platforms. The following table lists thermostat brands by platform.

Table 7-1: DR Summary – BYOT/Direct Install Thermostat Brands by Platform

Platform	Thermostat Brands
Resideo	Google Nest, Honeywell Home, Sensi, Emerson, Amazon
EnergyHub	ecobee, Honeywell Home, Alarm.com, Lux Products

Power Players Program – CPS Energy partners with Oracle to implement a Behavioral Demand Response (BDR) program for residential customers. Participants receive messaging encouraging them to make minor adjustments to their residence's energy use on peak energy days.

Legacy Residential Demand Response

Smart Thermostat – This program launched in 2003 and has been running for more than 20 years. Customers were provided with free Honeywell traditional cycling (pager type) thermostats and no-cost installation. Thermostats are engaged to cycle off the compressors of participating air conditioners during periods of peak summer demand. This program is a legacy program that is no longer accepting new enrollments. Existing customers are eligible for free upgrades through the Direct Install Thermostat Programs.

Direct Install Thermostat Programs – CPS Energy has offered multiple thermostat installation channels, each offering a free smart thermostat device.

- The Direct Install (DI) program launched as an effort to replace Home Manager Consert devices previously installed in customer residences by CPS Energy. This program offered Home Manager participants one or more Google Nest thermostats at no cost.
- The Mail Me a Thermostat (MMAT) program was a first of its kind pilot where CPS Energy mailed customers one or more pre-enrolled Google Nest thermostats.

Active Commercial Demand Response

Commercial & Industrial (C&I) DR – C&I customers are incentivized to curtail during times of peak demand. DR customers lower their energy demand for a one- to three-hour curtailment period, and incentives are tied to performance during this period. CPS Energy offers several commercial demand response participation paths: Options 1-4 and an Automated Demand Response (ADR) option. Starting in FY 2025, a new program offering called Bonus Hours was added in the C&I DR program portfolio. These options are described in Section 7.6.

The contribution of each DR program to energy and peak demand savings is shown in Figure 7-1 through Figure 7-3. In Table 3-1 and Table 10-1, estimated savings are reported from all active participants to most accurately represent actual program capability at the end of FY (EOFY) 2025. These savings are measured at the participant or end-user level and are adjusted to account for discount rate and distribution line losses.

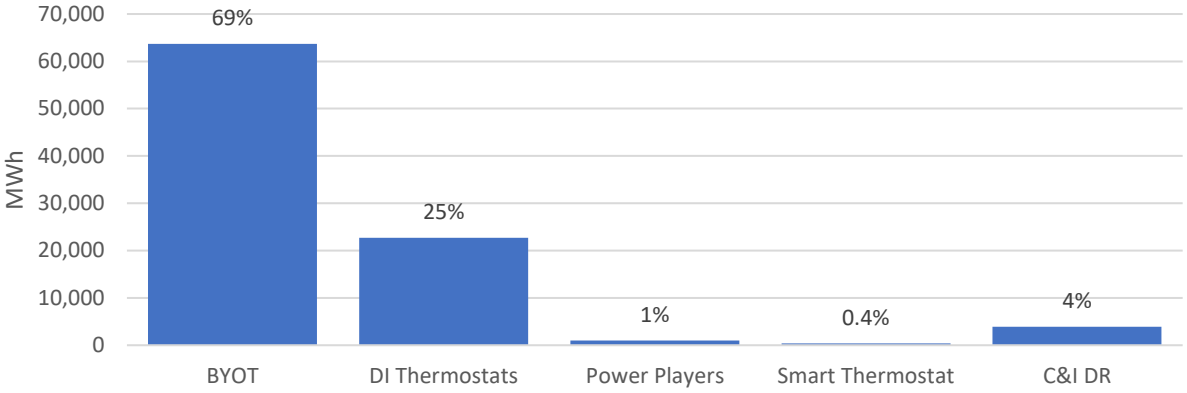


Figure 7-1: DR Summary – Energy (MWh) by Program

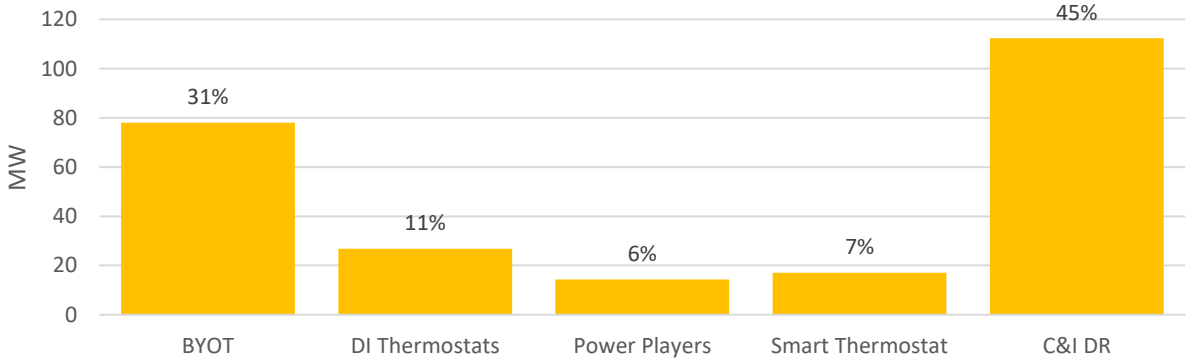


Figure 7-2: DR Summary – Non-Coincident Peak Demand (MW) by Program

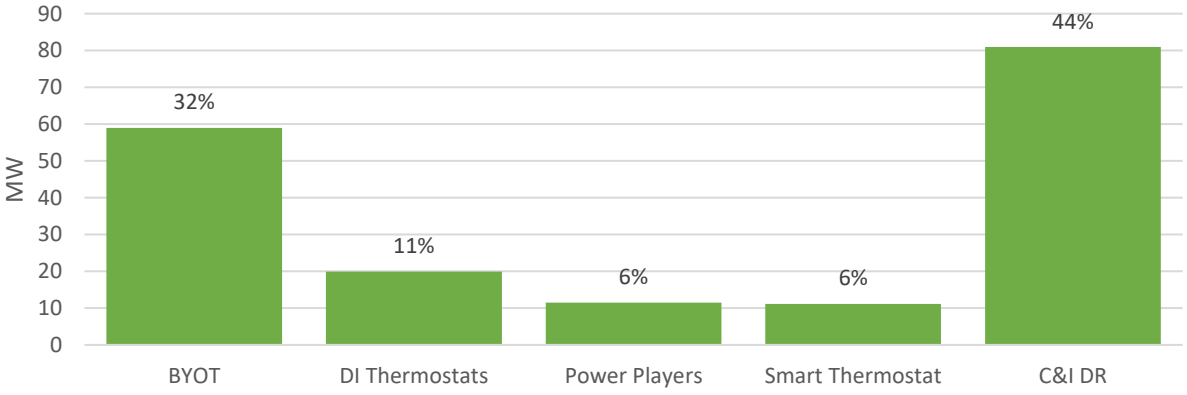


Figure 7-3: DR Summary – Coincident Peak Demand (MW) by Program

7.2 BRING YOUR OWN THERMOSTAT (BYOT) PROGRAM

7.2.1 Overview

Bring Your Own Thermostat (BYOT)[48] is a program that integrates customer-provided thermostats with CPS Energy load curtailment events. The program launched in FY 2015 when CPS Energy partnered with Google Nest to implement the Rush Hour Rewards (RHR) pilot program for customers with Google Nest thermostats. RHR uses a combination of pre-cooling in anticipation of a rush hour that coincides with a CPS Energy-initiated DR event and air conditioner cycling during events to achieve load reduction. Because of Google Nest's learning capabilities, reductions may vary based on whether the residence is occupied at the time of the event, along with several other variables. More information on Nest's RHR program is available from the Google Nest website.[49]

In FY 2015, the program initially hosted 1,434 customer devices. Starting in FY 2016, CPS Energy began incorporating existing Google Nest RHR customers into a more broadly defined BYOT program, offering incentives to customers who self-install any of several qualifying thermostats. Starting in May 2020, ecobee thermostats on the EnergyHub platform were incorporated into the eco+ program, which can automatically adjust temperature settings of ecobee thermostats and save energy year-round. In FY 2024, Emerson BYOT and Honeywell BYOT migrated to the Resideo platform. As of FY 2025, the program hosts 45,905 customer devices. Refer to Table 7-1 for a list of thermostat brands by platform.

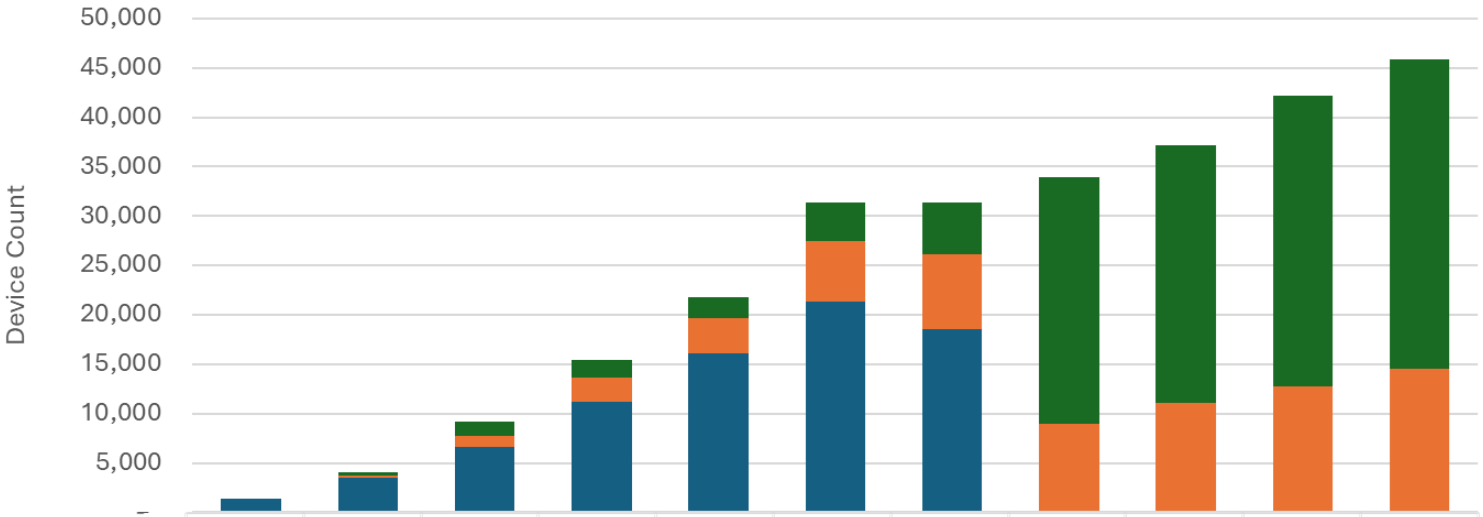
The key differentiator of BYOT relative to other residential DR programs is that the customer purchases and installs a qualifying thermostat, thus reducing direct install costs incurred by CPS Energy. Customers enrolling in the program will receive a one-time bill credit of $85 per thermostat device and an annual $30 bill credit at the end of each summer they participate in the program.

[48] CPS Energy externally markets this program as Wi-Fi Thermostat Rewards: https://cpsenergy.com/wifithermostatrewards.
[49] Google Nest Support, "Learn more about Rush Hour Rewards." https://support.google.com/googlenest/answer/9244031?hl=en.

7.2.2 Program Participation

BYOT Program Level Overall Participation Trends

The following figure shows the number of enrolled BYOT devices by thermostat brand/platform from FY 2015 to FY 2025.



	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Resideo	-	387	1,410	1,859	2,104	3,802	5,222	24,921	26,005	29,412	31,381
EnergyHub	-	244	1,060	2,441	3,592	6,164	7,570	8,951	11,131	12,713	14,524
Google Nest	1,434	3,477	6,671	11,155	16,055	21,349	18,541	-	-	-	-
Total	1,434	4,108	9,141	15,455	21,751	31,315	31,333	33,872	37,136	42,125	45,905

Figure 7-4: BYOT – FY 2015-2025 Participation Trends[50]

[50] Starting in FY 2022, Google Nest devices were incorporated into the Resideo platform. However, Nest has its own event-calling schedule, which is different from other thermostat brands on the Resideo platform. Therefore, Nest impacts are reported separately.

The total number of BYOT devices increased in FY 2025, with participation increasing on the Resideo and EnergyHub platforms. The following figure shows EOFY 2025 participating BYOT thermostat counts by category. Google Nest thermostats account for more than half of the total EOFY 2025 BYOT thermostats, and thermostats on EnergyHub platform account for approximately one-third of the total.

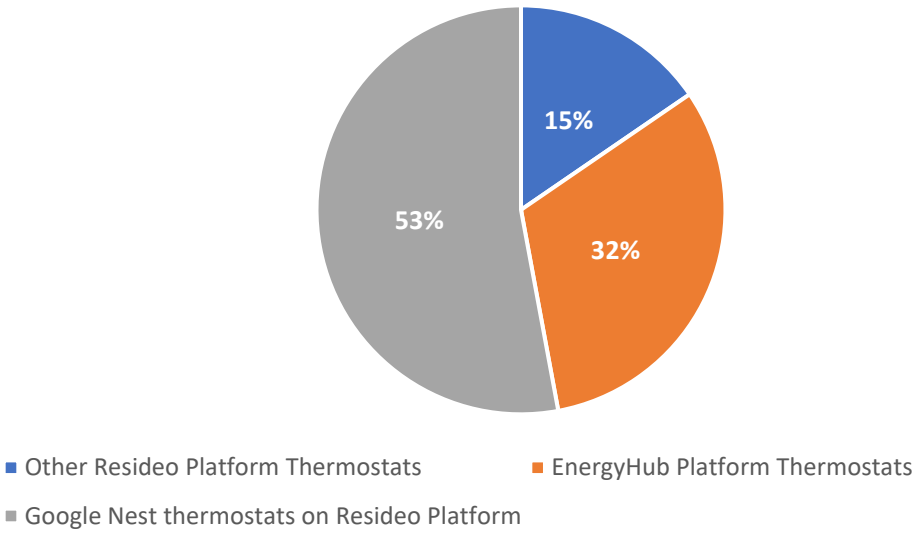


Figure 7-5: BYOT – EOFY 2025 Participating Thermostats by Category

The following figure shows FY 2025 incremental BYOT thermostat counts, with Google Nest thermostats contributing the largest proportion of incremental counts at 62 percent.

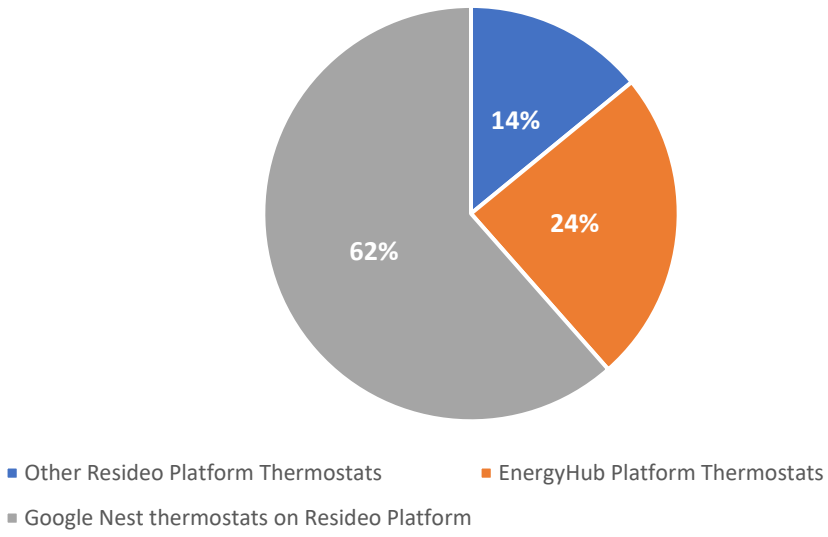


Figure 7-6: BYOT – Incremental Participating Thermostats by Category

7.2.3 Savings Calculation Method

Per-Device kW and kWh Savings

Starting in FY 2021, BYOT program demand and energy savings have been estimated using actual interval consumption data.

There were two separate data sources for FY 2025 raw consumption interval data:

- CPS Energy residential DR dashboard: This data source contains aggregated 15-minute interval data for thermostats in residential dwellings. CPS Energy developed the residential DR dashboard that was launched in FY 2021. The DR dashboard aggregates 15-minute interval kW load along with the daily number of accounts by thermostat platform or cycling category. For the Resideo platform, thermostat brands included Google Nest, Honeywell Home, Sensi, Emerson, and Amazon. For the Energy Hub platform, thermostat brands included ecobee, Honeywell Home, Alarm.com, and Lux Products.
- 15-minute interval kWh AMI data: This data source is used for analyzing savings of small commercial thermostats. For the Energy Hub platform, thermostat brands included Alarm.com and ecobee. For the Resideo platform, thermostat brands included Amazon, Emerson, Google Nest, and Honeywell.[51]

Savings analyses are conducted in the following steps:

Step 1: Convert CPS Energy residential DR dashboard interval consumption data and AMI raw interval data into averages on a per-account basis by each category. Specifically, for each category on the residential DR dashboard, dividing aggregated interval kW by the corresponding account count yields average per-account kW. For small commercial AMI customers, multiply the 15-minute interval mean kWh for each category by four to obtain average per-account kW.

Step 2: For each event, use two methodologies: temperature-based regression and CPS Energy's top 3 of 10 analysis.

Specifically, for each event, take the event day along with the previous 10 eligible days and use those 11 days to perform the following:

(1) Regression: Average per account kW is modeled as a function of an *event* dummy variable indicating whether a time period is within the event period, a *precool* dummy variable indicating whether a time period is within the one-hour precool period before each event,[52] a *snapback*

[51] The Resideo platform hosted thermostats from both the BYOT and Direct Install program (referred to as "Smart Thermostat Upgrade" in the Direct Install Program) in the summer of 2024. Thus, savings results generated from the Resideo category on CPS Energy's residential DR dashboard apply to both residential thermostats from the BYOT program and Wi-Fi thermostats from the Direct Install program.
[52] There was no obvious precooling consumption pattern for traditional 33% and 50% cycling thermostats and this dummy variable was therefore not included.

dummy variable indicating whether a time period is within the two-hour snapback period right after each event, a *cdh* variable (cooling degree hours, with a balance point set as 65°F), a *cdh-squared* variable (cooling degree hours squared, to account for the non-linear relationship between temperature an load to some extent), and 3 *time-of-day* dummy variables indicating time of day – 12:00-6:00 AM, 6:00 AM-12:00 PM, 12:00-6:00 PM or 6:00 PM-12:00 AM. The model equation can be expressed as follows:

$$kW_t = \beta_0 + \beta_1 \times event_t + \beta_2 \times precool_t + \beta_3 \times snapback_t + \beta_4 \times cdh_t^2 + \beta_5 \times cdh_t + \sum_{i=6}^{8} \beta_i \times time - of - day_t$$

$-\beta_1$ is the estimated kW load reduction per account during a certain event with regression method. Similarly, β_2 is the estimated kW precool and β_3 is the estimate kW snapback per account during a certain event. Net energy (kWh) savings per account are calculated as $-\beta_1$ x event duration $-\beta_2 - \beta_3$ x 2 hours.

(2) CPS Energy's high 3-of-10 baseline analysis. This methodology ranks the last ten eligible days based on total kWh during the event period. The three days with the highest kWh during the event period are selected. These three days are averaged for each interval to create a calculated baseline. An adjustment ratio to the calculated baseline is applied to factor in weather effects and customer operation levels on the event day. The adjustment ratio is calculated as the ratio between the average kW of the event day versus the three baseline days during the one-hour adjustment window just before the precool period or event period (if there is no precool period). The average kW difference during the event period is the kW savings estimate. The kWh difference during the combination of one-hour precool period, event period and two-hour snapback period is the estimated net kWh savings under the high 3-of-10 baseline analysis.

Step 3: Select the methodology that has the lowest Root Mean Square Error (RMSE) during the test period. Compare the RMSE of these two analyses during the test period and select the results generated by the methodology that has the lower RMSE. Here, the test period consists of four separate periods. The first three periods are the event time periods during the top previous three days (i.e., the three baseline days illustrated in the high 3-of-10 baseline analysis section above); the last period is 10:00 AM-2:00 PM during the event day. Taking the Energy Hub platform during the June 27, 2024, 4:00-5:30 PM event as an example, the following table compares savings estimates using the two methodologies (regression and high 3-of-10 baseline analysis).

Table 7-2: BYOT – Example Per-Account kW and kWh Savings Analysis Process

Methodology	Estimated Per-Account kW Savings	Estimated Per-Account Precool kW savings	Estimated Per-Account Snapback kW Savings	Estimated Per-Account Net kWh Savings (During Event)	RMSE
Regression	1.23	0.43	0.39	0.62	0.21
High 3-of-10	1.44	0.24	0.23	1.46	0.06

As shown, the RMSE of the high 3-of-10 methodology is lower than that of the regression methodology (0.06 vs 0.21), indicating a better fit during the test period. As a result, the savings from high 3-of-10 were selected, yielding final per-account savings of 1.44 kW and 1.46 kWh[53].

Step 4: Apply the device/account ratio to estimate per-device kW and kWh savings.

The following figure shows the EnegyHub platform thermostat event day versus the baseline load profile on June 27, 2024. Other platform categories are calculated in a similar manner.

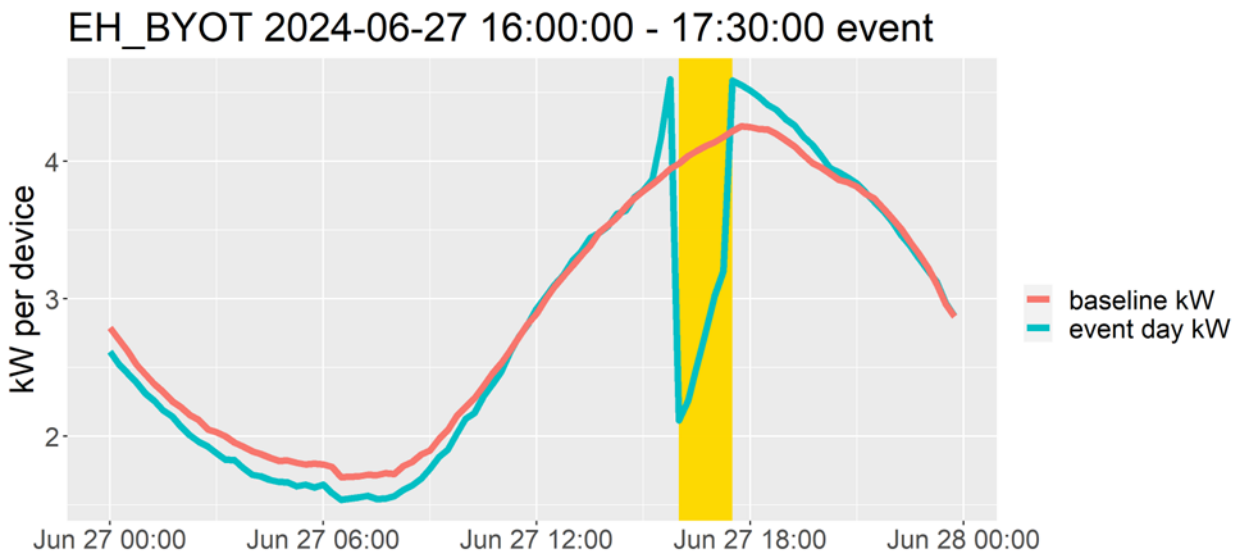


Figure 7-7: BYOT – Example Per-account Load Profile vs. Baseline Profile – June 27, 2024 Event

[53] Note that 1.46 kWh here is the per-account savings estimate during the 6/27/2024 16:00-17:30 event for EnergyHub platform customers, this is different from the kWh Savings for Wi-Fi deemed annual savings, which is 1,274 kWh per thermostat.

kWh Savings for Wi-Fi Thermostats

The CPS Energy Guidebook specifies a deemed annual savings of 1,274 kWh per thermostat.

Coincident Peak (CP) Demand Savings (kW)

To compute CP kW savings, the per-device demand savings value are multiplied by the total number of devices for each event. The claimed achieved CP kW savings are the average kW savings during high temperature standard events.[54] Scaling the average CP kW savings by the EOFY customer count and newly installed customer count yields EOFY and incremental CP kW savings, respectively.

Non-Coincident Peak (NCP) Demand Savings (kW)

Achieved NCP kW savings for residential DR programs (Smart Thermostat, BYOT, Direct Install Thermostats) are the savings during the day when maximum demand savings of all residential DR programs occurred among all FY 2025 events. In the summer of 2024, all residential DR programs reached maximum program level demand reduction during the 6/7/2024 event. Therefore, the kW savings on 6/7/2024 are used as the NCP kW savings for BYOT program. Scaling the average NCP kW savings by the EOFY customer count and newly installed customer count yields EOFY and incremental NCP kW savings, respectively.

7.2.3.1 ERCOT 4CP Demand Savings (kW)

In the summer of 2024, thermostats on Resideo platform, EnergyHub platform and Google Nest thermostats all successfully hit two of the four 4CP intervals, with a success rate of 50 percent. Unique to this year, one 4CP occurred on Sunday, June 30th at interval ending 5:45 PM. To estimate the 4CP kW savings, kW savings were estimated for each event, selecting the events that coincided with the ERCOT 4CPs, and multiplying the result by the ERCOT 4CP success rate. Scaling the average 4CP kW savings by the EOFY customer count and newly installed customer count yields EOFY and incremental 4CP kW savings, respectively.

7.2.4 Results

Program impacts are presented in four manners:

1) Estimated per-device kW and net kWh savings by thermostat type during the summer of 2024.
2) Estimated program impacts during the summer of 2024 DR events.
3) EOFY program capability based on program enrollment at the EOFY 2025.

[54] The high-temperature threshold is set as 95°F for the event period (i.e., only events that occurred at 95°F or higher are included in the CP calculation).

4) EOFY program capability based on incremental enrollment during FY 2025. This information is used for program benefit-cost analysis, consistent with the methods used for energy efficiency programs.

Per-Device Average kW and Net kWh Savings

The following table summarizes the per-device and per-event (with both usual and voluntary events included) average kW and net kWh savings by thermostat category in the summer of 2024 BYOT program.

Table 7-3: BYOT – Per-Device Average kW and Net kWh Savings by Thermostat Category

Platform	Dwelling Type/ Brand	Average Per-Device CP kW Savings	Average Per-Device NCP kW Savings	Average Per-Device Per-Event Net kWh Savings
EnergyHub	Residential	1.03	1.29	0.95
	Small commercial	1.25	1.71	0.97
Resideo (Google Nest only)	Residential	1.30	1.76	1.28
	Small commercial	1.06	1.16	0.11
Resideo (all other)	Residential	1.09	1.43	1.11

Achieved Impacts

Event schedules vary between platforms. The following table summarizes the number of events called and the average event duration in the summer of 2024 for each category.

Table 7-4: BYOT – Event Number and Duration Summary by Platform

Platform	# of Events Called	Average Event Duration
EnergyHub	18	1.76
Resideo (Google Nest only)	20	1.83
Resideo (all other)	21	1.63

BYOT program-level total achieved impacts of FY 2025 events ranged from 7,857 kW (9/16/2024) to 68,671 kW (6/7/2024), with the Google Nest thermostats contributing most of the kW savings across all events except for those where there were no participating Google Nest thermostats. These demand reduction estimates are shown below

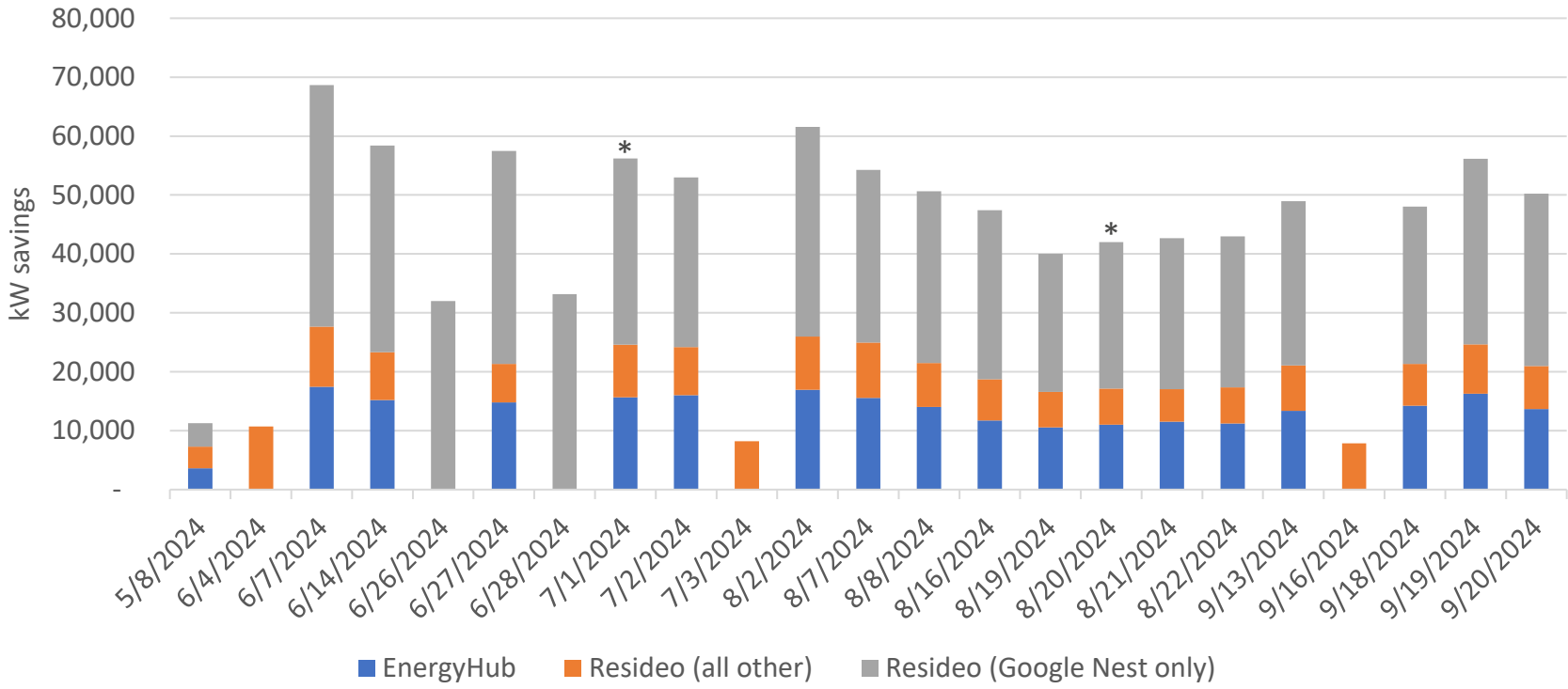


Figure 7-8: BYOT – Summer of 2024 Achieved Demand Reduction[55]

[55] Events coinciding with ERCOT 4CP intervals are designated with an asterisk (*). In FY 2025, one 4CP occurred on Sunday, June 30th at interval ending 5:45 PM. Another 4CP on September 20th ended at interval ending 4:00 PM, and the DR event did not start until that time.

The following table shows the energy and demand savings achieved during the fiscal year. For each type of thermostat, coincident peak demand savings are the average of estimated savings during high-temperature events. ERCOT 4CP savings are the average estimated savings during ERCOT 4CP events, multiplied by success rate. Non-coincident peak savings are the savings that occurred on June 7, 2024, which is the maximum demand savings day for all residential DR programs combined among all FY 2025 events. Due to variations in schedule and cycling strategy among the different thermostat types, total savings are presented as the sum of the savings achieved by each category.

Table 7-5: BYOT – Achieved Gross Energy and Demand Savings

Platform	Gross Energy Savings (kWh)	Gross NCP Demand Savings (kW)	Gross CP Demand Savings (kW)	Gross ERCOT 4CP Demand Savings (kW)
EnergyHub	17,280,536	17,465	13,942	6,676
Resideo (Google Nest only)	29,682,926	41,030	30,218	14,120
Resideo (all other)	9,042,852	10,176	7,737	3,763
Total[56]	**56,006,314**	**68,671**	**51,897**	**24,559**

End-of-Fiscal Year Program Capability

EOFY program capability is based on EOFY enrollment and is shown in the following table.

Table 7-6: BYOT – EOFY Gross Energy and Demand Savings

Platform	EOFY Enrollment	Gross Energy Savings (kWh)	Gross NCP Demand Savings (kW)	Gross CP Demand Savings (kW)	Gross ERCOT 4CP Demand Savings (kW)
EnergyHub	14,524	18,503,576	18,699	14,928	7,148
Resideo (Google Nest only)	24,293	30,949,282	42,783	31,508	14,723
Resideo (all other)	7,088	9,030,112	10,162	7,726	3,758
Total[57]	**45,905**	**58,482,970**	**71,644**	**54,162**	**25,628**

[56] The sum of the individual measures may not match the total due to rounding.
[57] Same as previous footnote.

Incremental Impacts

Incremental impacts used in benefit-cost analysis are based on gross incremental enrollment during the program year and are shown in the following table.

Table 7-7: BYOT – Gross Incremental Energy and Demand Savings

Platform	Gross Incremental Enrollment	Gross Energy Savings (kWh)	Gross NCP Demand Savings (kW)	Gross CP Demand Savings (kW)	Gross ERCOT 4CP Demand Savings (kW)
EnergyHub	2,438	3,002,818	3,029	2,420	1,158
Resideo (Google Nest only)	6,139	7,821,086	10,828	7,969	3,721
Resideo (all other)	1,406	1,791,244	2,016	1,533	745
Total[58]	**9,983**	**12,615,148**	**15,873**	**11,921**	**5,625**

[58] Same as previous footnote.

7.3 DIRECT INSTALL THERMOSTATS

7.3.1 Overview

The Direct Install (DI) Thermostats program was launched in FY 2018. Starting in the early summer of 2017, Home Manager customers were gradually migrated to the DI program. CPS Energy offered these customers one or more free Google Nest thermostats and free installation to replace the older Home Manager Consert devices in their residences.

The Nest DI program expanded to support installation through the Home Energy Assessment (HEA), Weatherization (WX), and Mail Me a Thermostat (MMAT) pilot programs that launched in FY 2020. HEA and WX program customers (see section 5.3 and section 4.1 respectively for details), received an installation of one or more Google Nest thermostats through those two program channels. For MMAT, CPS Energy mailed selected customers one or more pre-enrolled Google Nest thermostats.

Starting in FY 2021, DI, HEA, MMAT, and WX were combined into one single program due to their homogenous characteristics.

In FY 2022, all Google Nest thermostats were migrated from the Google Nest platform to the Resideo platform. Starting in FY 2023, Emerson and ecobee thermostats were introduced in the HEA program alongside Google Nest thermostats. Honeywell and Amazon thermostats were introduced in FY 2024. As of FY 2024, all Wi-Fi thermostats in the Resideo platform from the legacy Smart Thermostat program have been designated as Smart Thermostat Upgrades (STU). This service is offered to legacy CPS Energy customers with traditional cycling thermostats.

Among the subcategories of Direct Install Thermostats programs, DI, MMAT and WX are legacy programs and no longer implement new installations, while HEA and STU are active program and still accept new installations.

7.3.2 Program Participation

The following figure shows participation trends for this program from FY 2018 to FY 2025. Overall, FY 2025 participation was very similar to FY 2024, with 1,874 active program thermostat installations. Among these thermostats, there were 418 Google Nest, 437 Emerson, and 1,019 Honeywell thermostatsl.

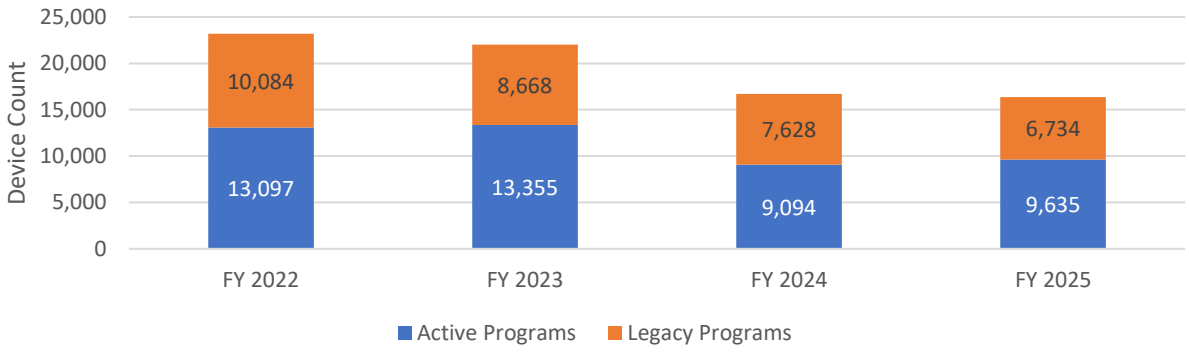


Figure 7-9: Direct Install Thermostats – Participation Trends

7.3.3 Savings Calculation Method

Per-Device kW and kWh Savings

EnergyHub and Resideo thermostats received the same DR scheduling for their respective platforms as in other programs. Participating thermostats in this program are incorporated in the same platforms as thermostats in other residential DR programs, and savings are calculated using the same methods. Per-device demand and energy savings by event can be estimated in the same manner as illustrated in section 7.2.3. Those per-device savings are directly applied to the direct install program.

Table 7-8: Direct Install Thermostats –Per-Device Savings by Platform

Category	Per-Device kW Savings – Resideo (Google Nest only)	Per-Device kW Savings – Resideo (all other)	Per-Device kW Savings – EnergyHub
Per-device CP kW savings	1.30	1.09	1.03
Per-device NCP kW savings	1.76	1.43	1.29
Per-device 4CP kW savings	0.61	0.53	0.49
Per-device annual kWh savings[59]	–	–	–

Coincident Peak (CP) Demand Savings (kW)

The per-device demand savings are multiplied by the total number of devices installed by each event to compute CP kW savings. The claimed achieved CP kW savings are the average kW savings during high-

[59] No energy savings were applied to direct install thermostats this year because they all belong to HEA program. Energy savings in the HEA program are already awarded in section 5.3.

temperature events.[60] Scaling the average CP kW savings by the EOFY customer count and newly installed customer count yields EOFY and incremental CP demand savings, respectively.

Non-Coincident Peak (NCP) Demand Savings (kW)

Achieved NCP kW savings are based on the maximum event demand savings of all residential programs combined (Smart Thermostat, BYOT, Direct Install Thermostats) among FY 2025 events occurring on June 7, 2024. Multiplying the per-device NCP kW savings from the previous table by the total number of devices in the summer of 2024 yields the total achieved NCP kW savings. Scaling the average NCP kW savings by the EOFY customer count and newly installed customer count yields EOFY and incremental NCP kW savings, respectively.

ERCOT 4CP Demand Savings (kW)

During the summer of 2024, all the thermostats in all platforms (Nest, Resideo, and EnergyHub) coincided with two of the four ERCOT 4CP events, yielding a 50 percent success rate. Unique to this year, one 4CP occurred on Sunday, June 30th at interval ending 5:45 PM. To estimate ERCOT 4CP kW savings, we estimated the demand savings for each event, selected the events which coincided with the ERCOT 4CPs, and multiplied the result by the ERCOT 4CP success rate. Scaling the average 4CP kW savings by the EOFY customer count and newly installed customer count yields EOFY and incremental 4CP kW savings, respectively.

7.3.4 Results

Program impacts are presented in three manners:

1) Estimated program impacts during the summer of 2024 DR events.

2) EOFY program capability based on program enrollment at the EOFY 2025.

3) EOFY program capability based on incremental enrollment during FY 2025.
   This information is used for program benefit-cost analysis, consistent with the methods used for energy efficiency programs.

Achieved Impacts

In the summer of 2024, 18 events were called for EnergyHub thermostats, 20 events were called for Resideo thermostats (Google Nest only), and 21 events were called for Resideo thermostats (all other). Event impacts ranged from 5,343 kW (5/8/2024 event) to 25,146 kW (6/7/2024 event). Calculated demand reductions are shown below.

[60] The high-temperature threshold is set as 95°F for the event period (i.e., only events that occurred at 95°F or higher are included in the CP calculation).

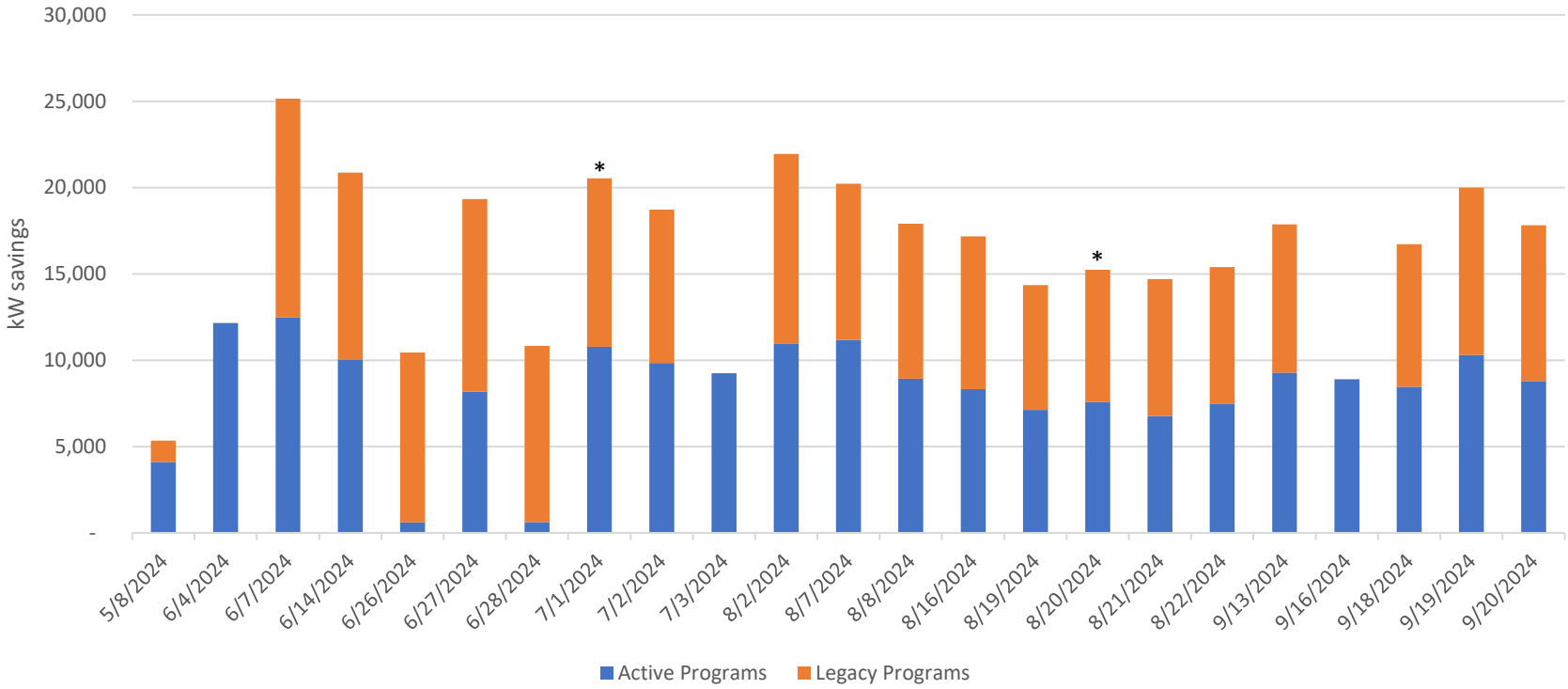


Figure 7-10: Direct Install Thermostats – Achieved Summer of 2024 Demand Reduction[61]

[61] Events coinciding with ERCOT 4CP intervals are designated with an asterisk (*). In FY 2025, one 4CP occurred on Sunday, June 30th at interval ending 5:45 PM. Another 4CP on September 20th ended at interval ending 4:00 PM, and the DR event did not start until that time.

The following table shows the energy and demand savings achieved during the fiscal year.

Table 7-9: Direct Install Thermostats – Achieved Gross Energy and Demand Savings

Measure	Gross Energy Savings (kWh)	Gross NCP Demand Savings (kW)	Gross CP Demand Savings (kW)	Gross ERCOT 4CP Demand Savings (kW)
Active Programs	11,931,010	12,479	9,368	4,592
Legacy Programs	9,148,594	12,666	9,322	4,353
Total[62]	**21,079,604**	**25,146**	**18,690**	**8,945**

End-of-Fiscal Year Program Capability

EOFY program capability is based on EOFY enrollment and is shown in the following table.

Table 7-10: Direct Install Thermostats – EOFY Gross Energy and Demand Savings

Measure	EOFY Enrollment	Gross Energy Savings (kWh)	Gross NCP Demand Savings (kW)	Gross CP Demand Savings (kW)	Gross ERCOT 4CP Demand Savings (kW)
Active Programs	9,635	12,274,990	12,771	9,576	4,697
Legacy Programs	6,734	8,579,116	11,878	8,741	4,082
Total[63]	**16,369**	**20,854,106**	**24,649**	**18,317**	**8,779**

[62] The sum of the individual measures may not match the total due to rounding.
[63] Same as previous footnote.

Incremental Impacts

Incremental impacts used in benefit-cost analysis are based on gross incremental enrollment during the program year and are shown in the following table. DI, MMAT, and WX are legacy programs with no incremental savings.

Table 7-11: Direct Install Thermostats – Incremental Demand Savings[64]

Measure	Gross Incremental Enrollment	Gross Energy Savings (kWh)	Gross NCP Demand Savings (kW)	Gross CP Demand Savings (kW)	Gross ERCOT 4CP Demand Savings (kW)
HEA	1,057	–	1,653	1,239	592
STU	817	1,040,858	933	687	344
Total[65]	**1,874**	**1,040,858**	**2,587**	**1,926**	**937**

[64] HEA energy savings are claimed separately through the HEA program in Residential Energy Efficiency, as seen in section 5.3.
[65] The sum of the individual measures may not match the total due to rounding.

7.4 SMART THERMOSTAT PROGRAM

7.4.1 Overview

The Smart Thermostat direct load control program has been available to residential sector participants in single family residences since 2003 and expanded to include multifamily and small commercial customers in 2010. The original pager-style devices for the Smart Thermostat program are no longer in production. Therefore, the program is in maintenance mode, and the enrolled customers still actively participate in the demand response season. The program will continue to experience attrition as customers remove themselves from the program or move from their residence.

Through the program, Honeywell installed programmable controllable thermostats (PCT) in participant residences or places of business at no cost to the customer. In return, CPS Energy was permitted to remotely control customer central air conditioning equipment during demand response events. Once an event is called, CPS Energy can cycle the air conditioner compressor on and off for short periods of time on event days. Cycling events occur during the summer months of May through September between the weekday hours of 3:00-7:00 PM.

Single family, multifamily, and small commercial customers participate at either a 33 percent cycling rate (units are cycled off for 10 minutes during each half hour) or a 50 percent cycling rate (units are cycled off for 15 minutes during each half hour). Pager thermostats were available on either a 33 or 50 percent cycling rate, while Wi-Fi Thermostats had an offset strategy.

In FY 2018, a small portion of single-family Wi-Fi enabled thermostats were selected as a pilot trial for a new thermostat offset strategy – a different load reduction pattern operated on the Resideo platform. The pilot trial showed that savings on the Resideo platform were higher than those from traditional cycling. As of FY 2021, all new enrollments or upgrades are Wi-Fi enabled and have been migrated to the Resideo platform.

7.4.2 Program Participation

The following figure shows overall participation throughout the fiscal year, including at the time of DR events from June through September 2024.

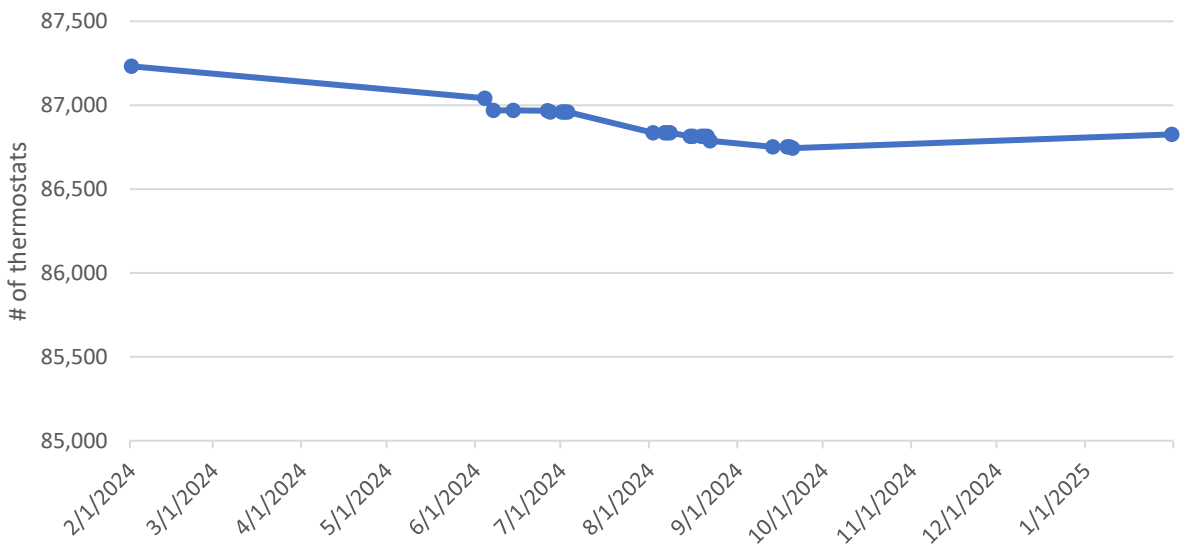


Figure 7-11: Smart Thermostat – Participation Trend

There was a 0.5 percent participation drop in overall participation in the Smart Thermostat program in FY 2025. The Smart Thermostat program has been running for more than 20 years and is no longer accepting new enrollments. As a result, there has been continuous natural participation decay among these traditional cycling thermostats.

The following figure shows participation trends by customer dwelling type over the past three fiscal years. Similar to previous fiscal years, most participating thermostats in the Smart Thermostat program are in the residential sector, with the commercial sector accounting for approximately 2.5 percent of total devices.

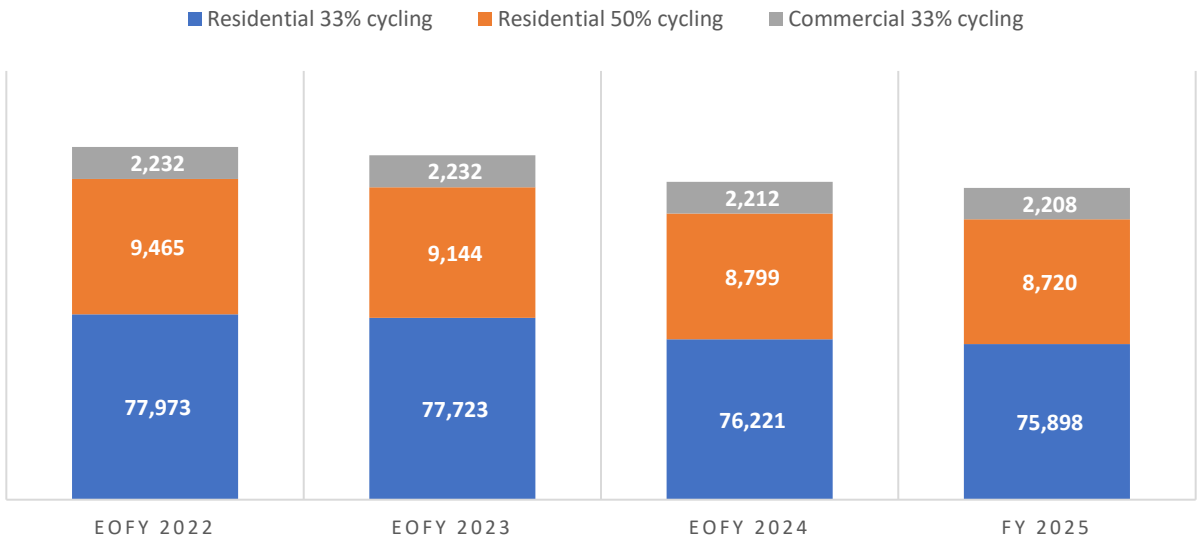


Figure 7-12: Smart Thermostat – FY 2022-2025 Participation Trends by Segment

The following table summarizes EOFY 2025 participation levels by customer segment and cycling strategy. In FY 2025, there were 22 events called, with an average event duration of 1.56 hours.

Table 7-12: Smart Thermostat – EOFY Participation by Group

Dwelling Type	Cycling/Temperature Setback Strategy	Device Count
Residential	33% cycling	75,898
	50% cycling	8,720
Commercial	33% cycling	2,208
	50% cycling	–
	Total	**86,826**

7.4.3 Savings Calculation Methods

Per-Device/Account kW and kWh Savings

Since FY 2021, demand and energy savings have been determined using actual interval consumption data.

There were two separate data sources of FY 2025 raw consumption interval data:

- CPS Energy residential DR dashboard: This data source contains aggregated 15-minute interval data for thermostats in residential dwellings. CPS Energy developed the residential DR dashboard in FY 2021. The DR dashboard aggregates 15-minute interval kW load along with the daily number of accounts by thermostat platform or cycling category. The categories pertinent to the Smart Thermostat program are Smart Thermostat 33 percent cycling and Smart Thermostat 50 percent cycling.

- 15-minute interval kWh AMI data: This data source is used for analyzing the savings of small commercial thermostats, which are not covered in the CPS Energy residential DR dashboard. This includes per-AMI-account raw meter data from all small commercial Smart Thermostat customers.

Per-device demand and energy savings by event can be estimated in the same manner as illustrated in section 7.2.3.

Coincident Peak (CP) Demand Savings (kW)

To determine CP kW savings, the per-device kW savings were multiplied by the total number of devices by category for each event to find total demand savings. The claimed achieved CP kW savings are the

average kW savings during high-temperature standard events.[66] To estimate program level savings capability based on EOFY and incremental enrollment, the result was scaled to the number of smart thermostats at the EOFY 2025 and to the number of new thermostats installed in FY 2025, respectively.

Non-Coincident Peak (NCP) Demand Savings (kW)

Achieved NCP kW savings for residential DR programs (Smart Thermostat, BYOT, and Direct Install Thermostats) are the savings on the day when the maximum demand savings of all residential DR programs occurred among all FY 2025 events. In the summer of 2024, with all residential DR programs combined, maximum program level demand reduction was reached during the June 7, 2024 event, so the kW savings value from the event day is used as NCP demand savings for the Smart Thermostat program. Scaling the average NCP kW savings by the EOFY customer count and newly installed customer count yields EOFY and incremental NCP kW savings, respectively.

ERCOT 4CP Demand Savings (kW)

During the summer of 2024, Smart Thermostat program hit two of the four ERCOT 4CP events, with a program-wide success rate of 50 percent. Unique to this year, one 4CP occurred on Sunday, June 30th at interval ending 5:45 PM. To report the ERCOT 4CP kW savings, we found the total demand savings for each event, selected the two events which coincided with ERCOT 4CP, and multiplied the result by the ERCOT 4CP success rate, which is 50 percent in FY 2025. Scaling the average 4CP kW savings by the EOFY customer count and newly installed customer count yields EOFY and incremental 4CP kW savings, respectively.

7.4.4 Results

Program impacts are presented in four manners:

1) Average per-device kW and kWh savings during the summer of 2024 DR events.
2) Verified program impacts during the summer of 2024 DR events.
3) EOFY program capability based on program enrollment at the EOFY 2025.
   This information is useful for planning purposes.
4) EOFY program capability based on incremental enrollment during FY 2025.
   This information is used for program benefit-cost analysis, consistent with the methods used for energy efficiency programs.

Per-Device Average kW and Net kWh Savings

The following table summarizes average per-device kW and kWh savings for each category across all summer of 2024 DR events:

[66] The high-temperature threshold is set as 95°F for the event period. Voluntary events are also included while calculating CP kW savings.

Table 7-13: Smart Thermostat – Summer of 2024 Per-Device Average kW and Net kWh Savings

Dwelling Type	Cycling/Temperature Setback Strategy	Per-Device Average kW Savings	Per-Device and Per-Event Average Net kWh Savings
Residential	33% cycling	0.11	0.18
	50% cycling	0.19	0.27
Commercial	33% cycling	0.07	0.03

Achieved Impacts

During the summer of 2024, 22 events were called for the Smart Thermostat program, with a 4CP success rate of 50 percent. These demand reduction amounts are shown in the following figure. For the summer of 2024, total kW reduction ranged from 422 kW (6/26/2024) to 16,529 kW (9/19/2024), while the average reduction was 10,021 kW across all events.

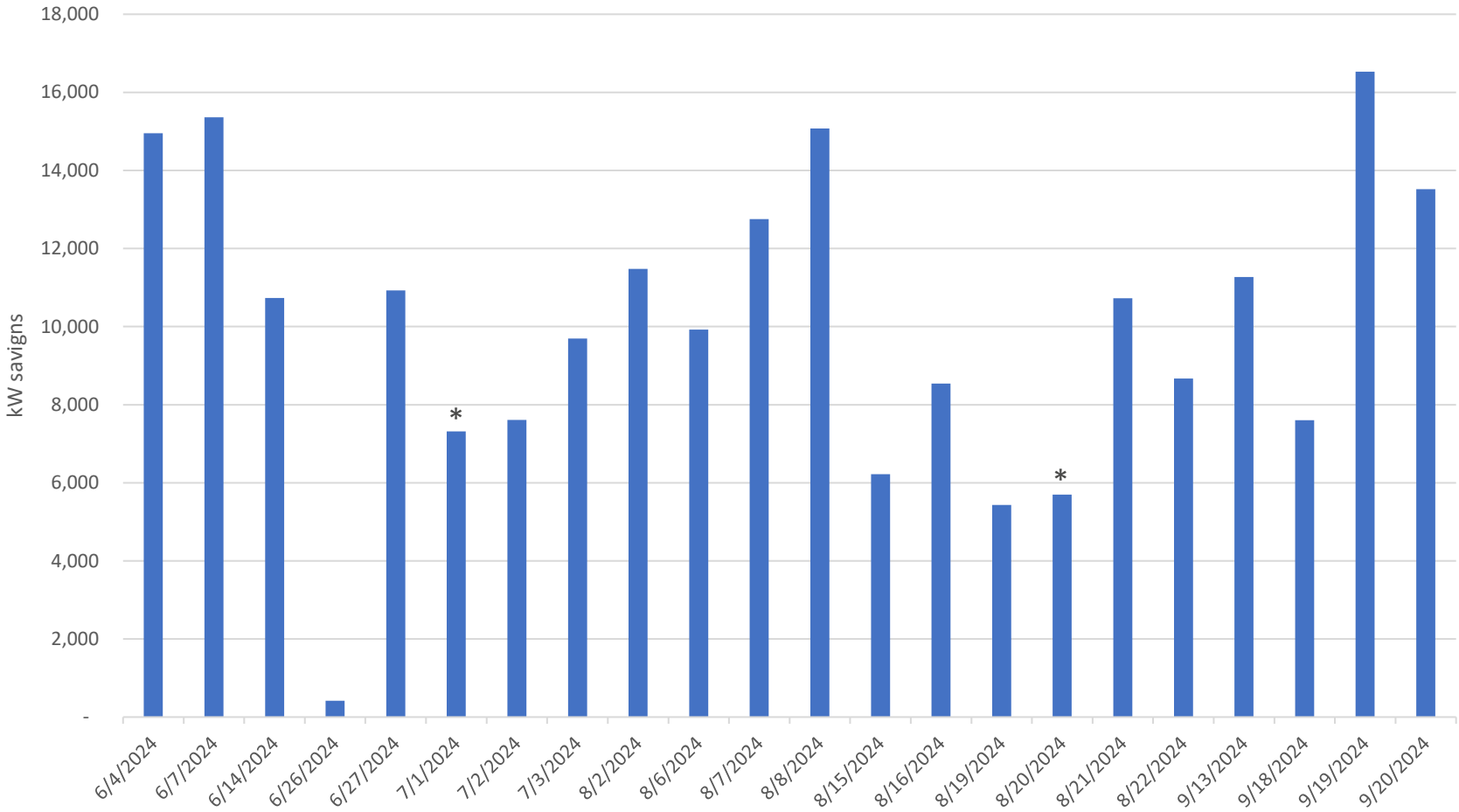


Figure 7-13: Smart Thermostat – Summer of 2024 Achieved Demand Reduction[67]

[67] Events coinciding with ERCOT 4CP intervals are designated with an asterisk (*). In FY 2025, one 4CP occurred on Sunday, June 30th at interval ending 5:45 PM. Another 4CP on September 20th ended at interval ending 4:00 PM, and the DR event did not start until that time.

The following table shows the energy and demand savings achieved during the fiscal year. CP kW savings are the average demand savings across high-temperature events. 4CP kW savings are the average savings during ERCOT 4CP events. NCP kW savings are the savings achieved on 6/7/2024, which is the day when maximum demand savings of all residential DR programs occurred among all FY 2025 events.

Table 7-14: Smart Thermostat – Achieved Gross Energy and Demand Savings

Measure	Gross Energy Savings (kWh)	Gross NCP Demand Savings (kW)	Gross CP Demand Savings (kW)	Gross ERCOT 4CP Demand Savings (kW)
Smart Thermostat	365,772	15,364	10,037	6,508

End-of-Fiscal Year Program Capability

EOFY program capability is based on EOFY enrollment and is shown in the following table.

Table 7-15: Smart Thermostat – EOFY Gross Energy and Demand Savings

Measure	Device Count	Gross Energy Savings (kWh)	Gross NCP Demand Savings (kW)	Gross CP Demand Savings (kW)	Gross ERCOT 4CP Demand Savings (kW)
Smart Thermostat	86,826	373,593	15,701	10,249	6,633

Incremental Impacts

Incremental impacts used in benefit-cost analysis are based on gross incremental enrollment during the program year. This is a legacy program, so there are no new enrollments and no incremental impacts for this program.

7.5 POWER PLAYERS (BEHAVIORAL DEMAND RESPONSE)

7.5.1 Overview

Beginning in 2017, CPS Energy partnered with Oracle to implement the Power Players program for residential customers, deploying messaging to encourage customers to make minor adjustments in their residence's energy use on peak energy days. This program was implemented as an opt-out randomized controlled trial (RCT). Eligible households/accounts must be equipped with AMI meters and cannot participate in other CPS Energy DR programs.

Participants receive a welcome letter before the annual program starts. Either one day before each event or the morning of the event day, participants receive a notification message through an email and/or a phone call. These notifications also contain information explaining peak days and providing personalized energy conservation tips. After each event, customers receive a follow-up call and/or email containing personalized customer performance feedback.

Throughout the summer of 2024, 11 events were called. All events occurred between 3:00-8:00 PM, ranging from 3 hours to 5 hours.

7.5.2 Program Participation

FY 2025 participation was made up of a combination of participants enrolled from summer 2017 to 2024. Each year's participation is referred to as a wave. For example, participants enrolled in the summer of 2017 are designated the 2017 wave.

The following table shows the number of active customers by wave throughout the summer of 2024.

In the summer of 2024, there were 46,481 additional households participating who remained active in the Power Players program as the treatment group of the 2024 wave. However, the biggest share of treatment group participation was contributed by 2019 participants (103,544 remained active in the summer of 2024).

Table 7-16: Power Players (BDR) – Summer of 2024 Participation

Wave	Treatment Group # of Households	Control Group # of Households
2017	61,429	13,824
2018	10,154	2,896
2019	103,544	13,057
2020	37,445	9,363
2021	23,197	5,534
2022	33,416	8,423
2023	68,844	17,195
2024	46,481	11,639
Total	**384,510**	**81,931**

7.5.3 Savings Calculation Method

Per Household kW and kWh Savings

The evaluation team used aggregated 15-minute interval AMI meter level data by group and wave from June 1, 2024 to September 30, 2024 for most of participants.[68] Savings are calculated as the difference of the mean values of the two groups.

For each event, demand savings per household are the average household consumption difference between the treatment and control groups during the event period. The difference is calculated by each wave separately.

Energy savings per household are calculated based on the following rationale. Participants were notified of most events either the previous day or early the morning of the event day, so it is likely that participants took conservation actions in advance of the start of each event. To calculate energy savings, treatment group participants are assumed to start taking conservation actions as early at 9 AM on the event day. Therefore, energy savings are the consumption difference between the treatment and control groups during the event period and pre-event period, combined.

Using the first event (6/27/2024) of the 2021 wave as an example, the load per account by group and time period is tabulated below.

[68] Around 67% of all active customers were included in the aggregated 15-minute interval AMI data for analysis.

Table 7-17: Power Players (BDR) – Example: 2021 Wave Average Load by Group, Wave, and Time Period for 6/27/2024

Event period (4:00 PM to 7:00 PM) (kW per household)		Pre-event period (9:00 AM to 4:00 PM) (kW per household)	
Treatment Group	Control Group	Treatment Group	Control Group
3.792	3.863	2.793	2.864

For the June 27, 2024 event, per-household kW savings for the 2021 wave are calculated as 3.863 – 3.792 = 0.071 kW. Total kW savings for the 2021 wave is 0.071 x 23,197 = 1,648 kW. Energy savings during the event period are calculated as 1,648 kW x 3 hours = 4,945 kWh.

kW savings during the pre-event period can be calculated in the same manner: (2.864 kW – 2.793 kW) x 23,197 = 1,638 kW.

Energy savings during the pre-event period are calculated as 1,638 kW x 7 hours = 11,468 kWh.

Total energy savings for the 2022 wave during the June 27, 2024 event are the combination of savings from the pre-event period and event period: 4,945 + 11,468 = 16,413 kWh.

Savings from the other three waves can be calculated in the same manner.

Coincident Peak (CP) Demand Savings (kW)

CP kW savings are the average kW savings across all high-temperature events.[69] Because participants are recruited each year, the EOFY and incremental savings are identical to the achieved demand savings.

Non-Coincident Peak (NCP) Demand Savings (kW)

Achieved NCP kW savings represent the maximum event demand savings among FY 2025 events. Because all savings occur during the peak period, EOFY and incremental CP and NCP kW savings are equivalent to the achieved demand savings.

ERCOT 4CP Demand Savings (kW)

During the summer of 2024, two of the Power Players events coincided with the ERCOT 4CP events, with a success rate of 50 percent. Unique to this year, one 4CP occurred on Sunday, June 30th at interval ending 5:45 PM. The ERCOT 4CP kW savings are the average kW savings for the events that coincided with ERCOT 4CP times, multiplied by the ERCOT 4CP success rate. Year-end capability and incremental calculations are equivalent to achieved 4CP kW savings.

[69] High-temperature events those with an average temperature no lower than 95°F.

7.5.4 Results

Program impacts are presented in three manners:

1) Verified program impacts during the summer of 2024 DR events.
2) EOFY program capability based on program enrollment at the EOFY 2025.
3) EOFY program capability based on incremental enrollment during FY 2025.
   This information is used for program benefit-cost analysis, consistent with the methods used for energy efficiency programs.

Achieved Impacts

In FY 2025, kW savings per account by wave are tabulated below.

Table 7-18: Power Players (BDR) – kW Savings per Household by Wave

Wave	Average kW savings per household
2017	0.010
2018	0.037
2019	0.034
2020	0.012
2021	0.061
2022	0.011
2023	0.038
2024	0.020

In the summer of 2024, 11 events were called for the Power Players program. Event impacts ranged from 6,277 kW (9/13/2024 event) to 13,150 kW (6/27/2024 event). These demand reduction amounts are shown in the following figure

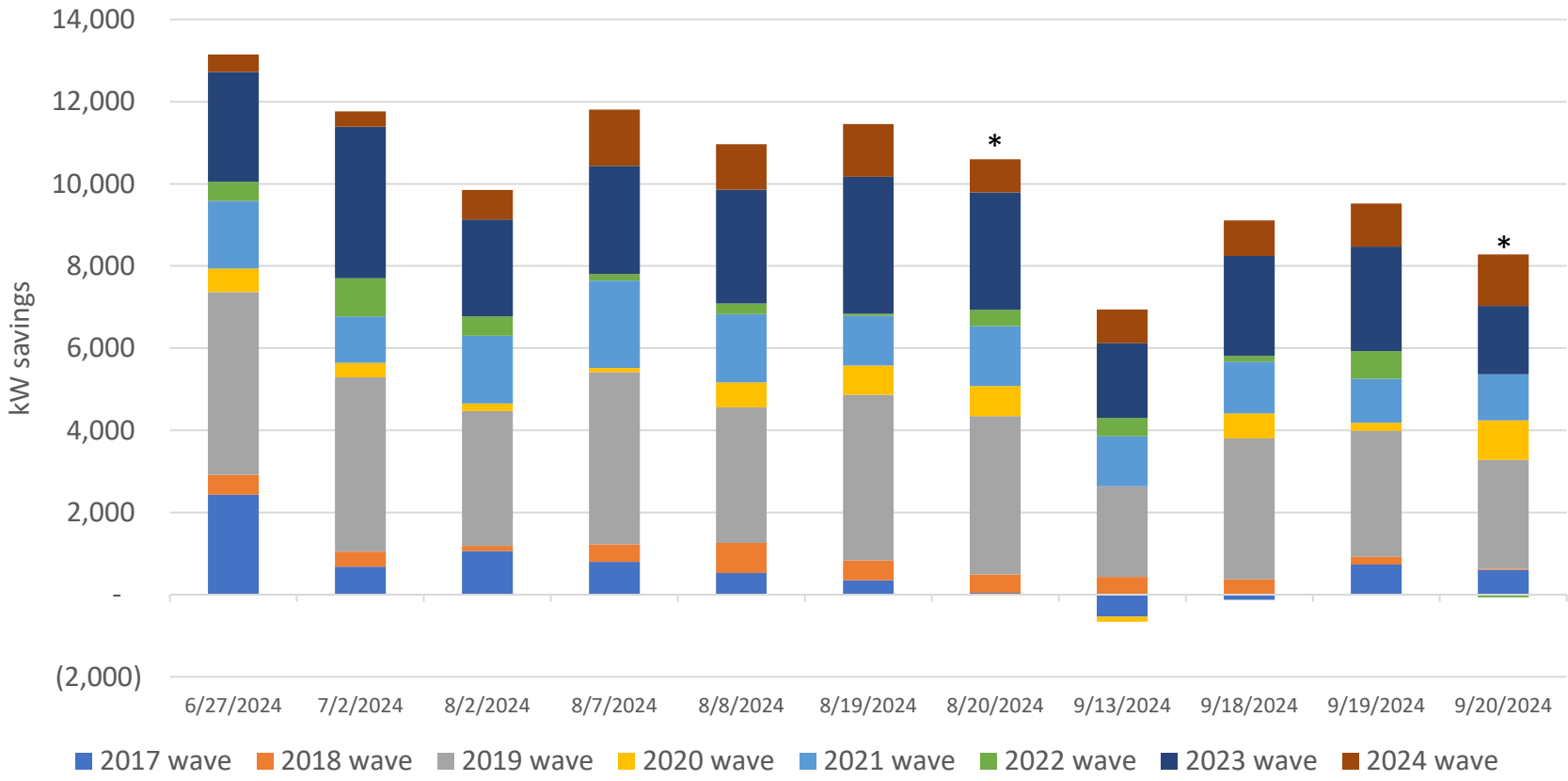


Figure 7-14: Power Players (BDR) – kW Reduction by Event[70]

[70] Events coinciding with ERCOT 4CP intervals are designated with an asterisk (*). In FY 2025, one 4CP occurred on Sunday, June 30th at interval ending 5:45 PM. Another 4CP on September 20th ended at interval ending 4:00 PM, and the DR event did not start until that time.

The following table shows the energy and demand savings achieved during the fiscal year.

Table 7-19: Power Players (BDR) – Achieved Program Energy and Demand Savings

Program	Energy Savings (kWh)	NCP Demand Savings (kW)	CP Demand Savings (kW)	ERCOT 4CP Demand Reduction (kW)
Power Players	895,849	13,150	10,539	4,703

End-of-Fiscal Year Program Capability

EOFY program capability is based on EOFY enrollment and is shown in the following table. These values are the same as the achieved savings.

Table 7-20: Power Players (BDR) – EOFY Program Energy and Demand Savings

Program	EOFY Enrollment	Energy Savings (kWh)	NCP Demand Savings (kW)	CP Demand Savings (kW)	ERCOT 4CP Demand Reduction (kW)
Power Players	384,510	895,849	13,150	10,539	4,703

Incremental Impacts

Incremental impacts used in benefit-cost analysis are based on gross incremental enrollment during the program year and are shown in the following table. In this case, incremental impacts are the same as the achieved and EOFY impacts.

Table 7-21: Power Players (BDR) – Incremental Program Energy and Demand Savings

Program	EOFY Enrollment	Energy Savings (kWh)	NCP Demand Savings (kW)	CP Demand Savings (kW)	ERCOT 4CP Demand Reduction (kW)
Power Players	384,510	895,849	13,150	10,539	4,703

7.6 COMMERCIAL AND INDUSTRIAL DEMAND RESPONSE PROGRAMS

7.6.1 Overview

CPS Energy's Commercial and Industrial DR (C&I DR) programs are voluntary load curtailment programs for commercial and industrial customers. They are designed to reduce peak load by incentivizing customers to shed electric loads on peak summer days. The programs run from June 1st through September 30th. Participating customers commit to participate in events from 1:00-7:00 PM.[71]

Before FY 2019, the C&I DR programs consisted of Options 1, 2, and 3, and Automated DR (ADR). In FY 2019, Option 4 was introduced to the program portfolio. Unlike Options 1, 2, and 3, customers were given notice only a half-hour in advance.

Starting in FY 2025, a new program offering called Bonus Hours was added in the C&I DR program portfolio. Events are only called between 7:00-10:00 PM during weekdays in June to September. This option is designed to reduce load when the demand in the market is still high and renewable generation begins to fade with the sun setting, creating scarcity in the market. This is generally referred to as the solar generation ramp down period. Participants are also given notices a half-hour before each event begins. In FY 2025, Bonus Hours was created as an additional option for customers already participating in Options 1, 2, 3, or 4 to extend their curtailment to later hours. All FY 2025 Bonus Hours program participants were enrolled in either Option 2 or Option 4.

CPS Energy uses each program differently to achieve different purposes, capabilities, and contractual stipulations. The following table summarizes specifications of the various C&I DR options.

Table 7-22: C&I DR – Program Characteristics

Option	Performance Period	Time Period	Event Days	Max Events	Total Hours Available	Advanced Notice (Hours)
Option 1	Jul 1 – Aug 31	13:00 – 19:00	Weekdays	18	55	2
Option 2	Jun 1 – Sep 30	13:00 – 19:00	Weekdays	25	75	2
Option 3	Jun 1 – Sep 30	13:00 – 19:00	Weekdays	6	25	1
Option 4	Jun 1 – Sep 30	13:00 – 19:00	Weekdays	25	75	0.5
ADR[72]	Jun 1 – Sep 30	24/7	All Days	–	50	–
Bonus Hours	Jun 1 – Sep 30	19:00 – 22:00	Weekdays	16	–	0.5

Programs vary by performance period, events available, total hours available, and advanced notice. Option 1 is not available in June and September, whereas other program options operate throughout

[71] Excluding ADR program, which is introduced in the following paragraphs.
[72] This program only evaluates summer ADR.

the entire summer. ADR is the most responsive, with load being curtailed immediately after calling an event. Other programs have 0.5-2 hours advanced notice.

7.6.2 Program Participation

In FY 2025, sponsor count increased slightly from 146 to 150, site count increased from 936 to 1,029 sites, and contracted kW increased from 82.0 MW to 98.1 MW.[73] The total number of sponsors, sites, and contracted kW are shown in the figures below.

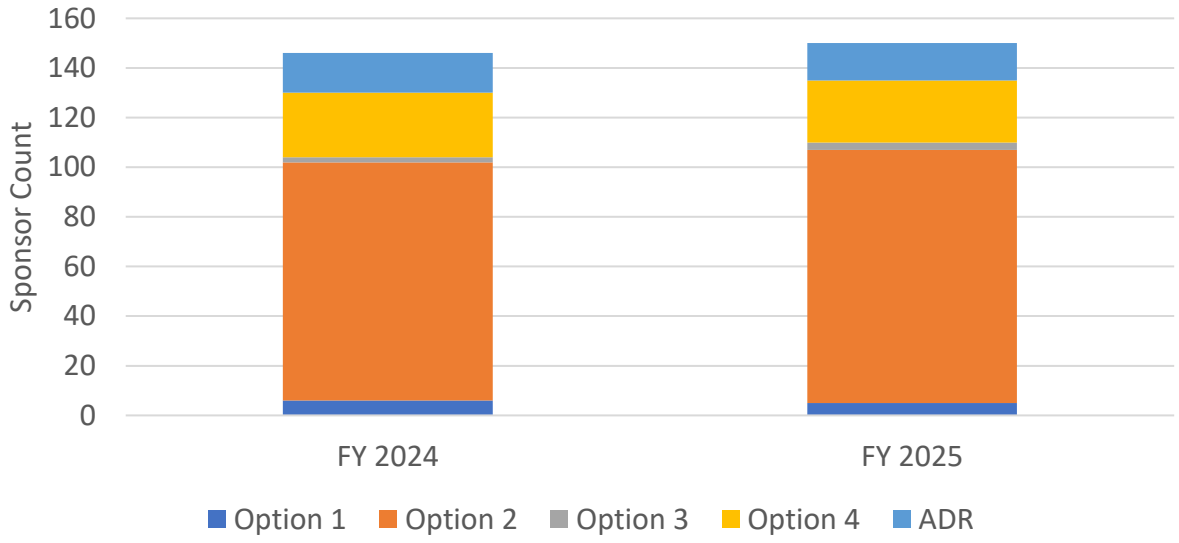


Figure 7-15: C&I DR – Sponsor Counts[74]

[73] Among these contracted kW, 13 MW is contracted from Bonus Hours DR, with participants from a subset of Option 2 and Option 4 customers.
[74] In FY 2025, 18 sponsors from either option 2 or option 4 participated in "Bonus Hours" option.

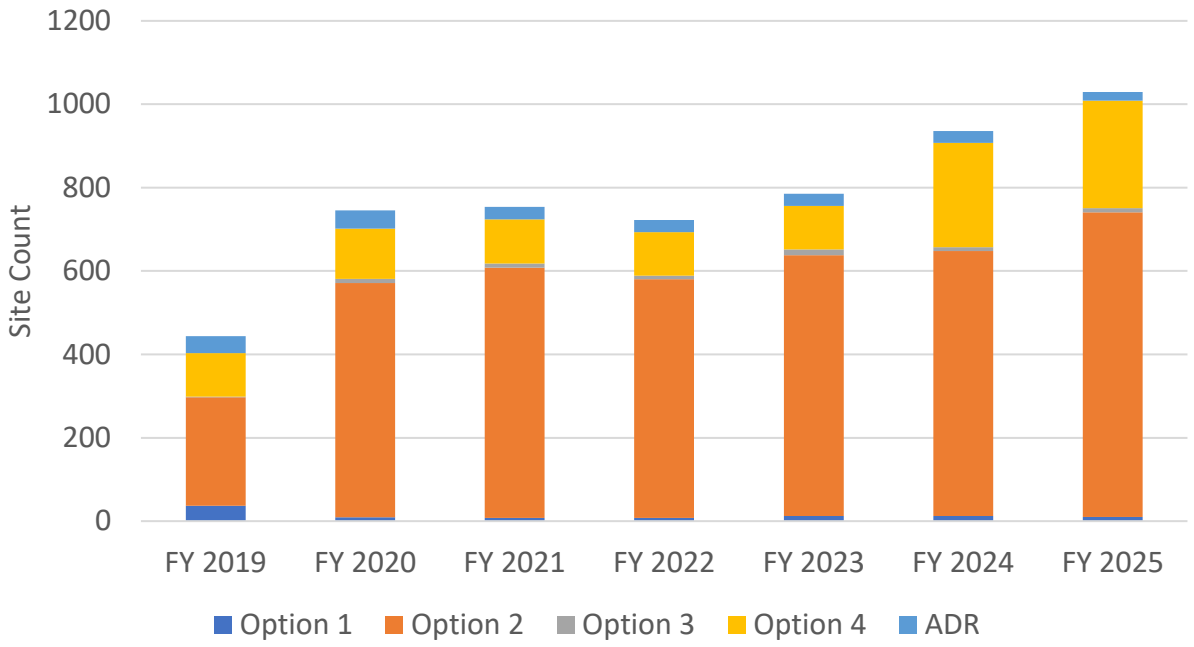


Figure 7-16: C&I DR – FY 2019-2025 Site Counts

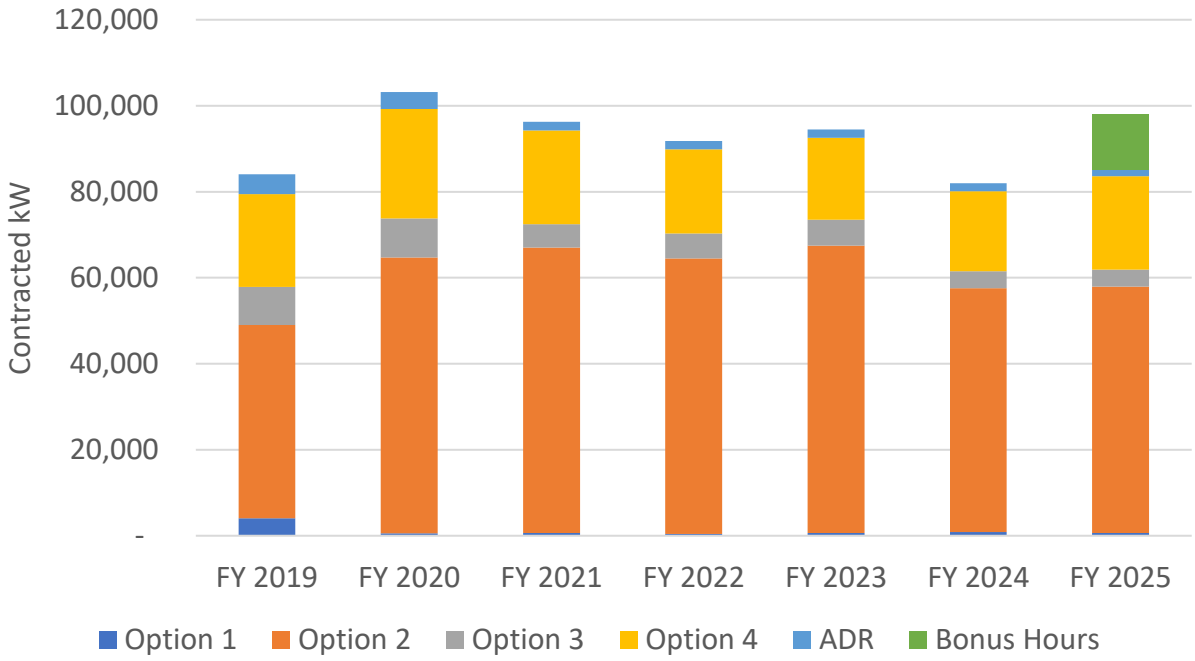


Figure 7-17: C&I DR – FY 2019-2025 Contracted kW

All Bonus Hours participants are also customers from either Option 2 or Option 4. There was no separate option for Bonus Hours in Figure 7-15 through Figure 7-16 above. The following table shows the number of sponsors, sites, and contracted kW for Bonus Hours option only.

Table 7-23: C&I DR – Bonus Hours Participation Summary

Measure	# of Sponsors	# of Sites	Contracted kW
Bonus Hours Participants from Option 2	15	108	8,645
Bonus Hours Participants from Option 4	7	164	4,355
Bonus Hours Total	**22**	**272**	**13,000**

CPS Energy deployed its C&I DR programs 24 days in FY 2025. As seen in the following table, Option 2, Option 4, and ADR were called most frequently, while Option 3 was called six times due to a limit on the maximum number of allowed events.

In the table below, 4CP days are highlighted in yellow. On June 30, 2024, none of the C&I DR programs hit the 4CP event. On July 1, 2024 and August 20, 2024 4CP days, four C&I DR programs hit the 4CP event.[75] On September 20, 2024, none of the C&I DR programs hit the 4CP event, as the 4CP interval on that day was 15:45-16:00, before any of the events called on that day. A detailed event scheduling summary is provided below.

Table 7-24: C&I DR – Event Date Distribution

Date	Option 1	Option 2	Option 3	Option 4	ADR	Bonus Hours
6/14/2024		X				
6/26/2024		X				
6/27/2024		X	X	X	X	
6/30/2024[76]						
7/1/2024	X	X		X	X	
7/2/2024	X	X	X	X	X	
8/2/2024	X	X		X	X	
8/5/2024						X
8/6/2024	X					X
8/7/2024	X	X	X	X	X	X
8/8/2024	X	X	X	X	X	

[75] For the August 20, 2024 4CP day, even though event was also called on Bonus Hours, it was called between 19:00-21:00, which did not coincide with 4CP interval (16:45-17:00).
[76] This 4CP occurred on a Sunday, which is outside the window for calling DR events. This is the first time in ERCOT's history that the 4CP occurred on a weekend.

Date	Option 1	Option 2	Option 3	Option 4	ADR	Bonus Hours
8/14/2024					X	
8/15/2024	X					X
8/16/2024	X	X		X	X	X
8/19/2024	X	X		X	X	X
8/20/2024	X	X		X	X	X
8/21/2024	X	X		X	X	X
8/22/2024	X	X		X	X	X
8/23/2024	X				X	
9/13/2024		X		X	X	
9/16/2024		X		X		
9/17/2024		X		X		
9/18/2024		X	X	X	X	
9/19/2024		X	X	X	X	
9/20/2024		X		X	X	

The following table shows the total number of events called for the past six years, broken down by program. In FY 2025, the C&I DR program was called on 24 days. This is a decrease compared to FY 2024, reflecting a milder summer.

Table 7-25: C&I DR – FY 2019-2025 Total Number of Events Called

Option	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Option 1	14	11	12	13	13	20 (2 voluntary)	13
Option 2	19	19	16	21	25	30 (4 voluntary)	19
Option 3	6	6	5	6	6	9 (3 voluntary)	6
Option 4	19	17	16	21	25	29 (4 voluntary)	17
ADR	19	16	16	23	27	19	17
Bonus Hours	–	–	–	–	–	–	9
Total Event Days	**22**	**22**	**19**	**27**	**36**	**33**	**24**

The following figure compares the average event duration from FY 2019 to FY 2025. The FY 2025 average event duration for all C&I programs was 2.56 hours, slightly shorter than FY 2024.

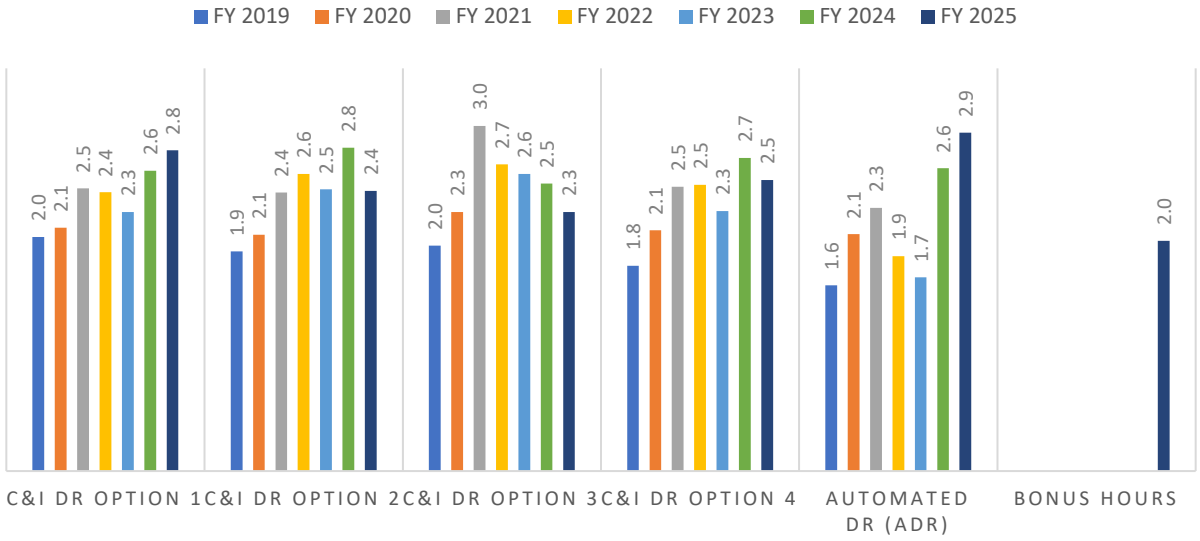


Figure 7-18: C&I DR – FY 2019-2025 Average Event Duration

7.6.3 Savings Calculation Method

For most cases in the summer of 2024, CPS Energy adopted the following methodologies to determine savings for C&I DR programs:

- High 3 of 10
- Middle 8 of 10
- Matching Day Pair[77]

The best fit baseline was selected based on statistical criteria that determined how well each estimation method aligned with the 10:00 AM-1:00 PM time frame for the event day.

Consistent with the methodology adopted in the past three fiscal years, the evaluation team has employed a multiple-baselining method to verify CPS Energy's savings estimates in FY 2025. This approach calculates savings using four different methods and then selects the savings generated by the most appropriate method by evaluating some statistical criteria.

Specifically, the general calculation process of this multiple-baselining method is as follows:

[77] The Matching Day Pair methodology uses a deterministic algorithm like the X of Y methodology. The algorithm looks for pairs of days that match a reference pair associated with the forecasted day. The similarity between two pairs of days is assessed using the mean squared error (MSE) between the two pairs. The 10 best pairs are then selected and averaged to obtain the baseline for the forecasted day.

Step 1: Data Selection. For each event and each customer, the previous 10 eligible days and the event day are selected. These 11 days of data are used for the analysis as outlined in the following steps.

Step 2: Calculation. For each customer on each event, kW savings are calculated using four methods:

- Regression: Load is modeled as a function of *cdh* (cooling degree hours), a notify period dummy variable indicating whether a time period is within the notification period, an event dummy variable indicating whether a time period is within the event period, 10 day-dummy variables indicating date, and three time-of-day dummy variables indicating time of day – 0:00-6:00, 6:00-12:00, 12:00-18:00 or 18:00-24:00. The model equation can be expressed as follows:

  $kW_t = \beta_0 + \beta_1 \times cdh_t + \beta_2 \times event_t + \beta_3 \times notify\text{-}period_t + \sum_{i=4}^{6} \beta_i \times time\text{-}of\text{-}day_t + \sum_{j=7}^{16} \beta_j \times date_t$

  $-\beta_2$ is the estimated load reduction for a certain customer during a certain event.

- CPS Energy's high 3-of-10 baseline analysis.

- Previous X hours: X = event duration + notifying period. For example, if an event duration is 2 hours, and CPS Energy notifies customers 2 hours in advance, then X = 4. If an event is from 3:30-5:30 PM, then the baseline would be the average load within the period from 11:30 AM-1:30 PM.

- Average everything: This method calculates the average of all the load for the previous 10 eligible days to provide a baseline. This approach is designed for customers with a rather amorphous and irregular load.

Step 3: Evaluation. For the testing data period,[78] three measures including accuracy RMSE, bias (difference), and variability (standard deviation) are calculated. This step measures how well-fit the model results are when compared with actual results for a similar time period.

Step 4: Final Selection. For the three measures described in Step 3, a pairwise comparison is conducted using a ranking method.[79] The method with the top ranking (lowest score) is selected.

Energy Savings (kWh)

Energy savings achieved from the C&I DR programs are determined by multiplying the demand savings estimated for each participant for each event by that event's duration and summing these energy reductions across all events (including both usual and voluntary events) for all the programs. The

[78] Testing data period refers to the same time as the event period on the top three of the previous 10 eligible days, plus 9:00 AM-1:00 PM on the event day.

[79] General rule for pairwise comparison using ranking: if the difference for a pair of baselines is greater than 2%, the baseline with the higher one gets one point. Otherwise, both baselines get 0.5 point. At the end of this process, for each method respectively, the RMSE, bias, and standard deviation score are added together.

calculation assumes there is no load shifting (e.g., rescheduling of industrial processes), pre-cooling, or snapback.

Coincident Peak (CP) Demand Savings (kW)

The evaluation team uses multiple-baselining analysis per event for each customer to calculate CP kW savings. For each option/program, an average kW savings of all standard events (excluding voluntary events) in the summer of 2024 was then calculated. This is the number used to report achieved CP kW savings.

Non-Coincident Peak (NCP) Demand Savings (kW)

NCP kW savings for the C&I DR programs represent the maximum standard event (excluding voluntary events) demand savings among all events for each option/program. The achieved NCP kW savings reported for each sub-program (or program option) may have occurred on different event dates. EOFY and incremental estimates of NCP kW savings were the maximum event demand savings from those customers comprising the EOFY or incremental enrollees. For the C&I DR program, the evaluation team sums the maximum event demand savings from each program option.

ERCOT 4CP Demand Savings (kW)

ERCOT 4CP kW savings obtained from the C&I DR programs are directly estimated by evaluating the average load reductions achieved by all events (including voluntary events) when each month's 4CP event occurred, multiplied by the 4CP success rate[80] for each program in FY 2025. Unique to this year, one 4CP occurred on Sunday, June 30th at interval ending 5:45 PM.

7.6.4 Results

Program impacts are presented as follows:

1) Verified program impacts during the summer of 2024 DR events.
2) EOFY program capability based on program enrollment at the EOFY 2025; this information is useful for planning purposes.
3) EOFY program capability based on incremental enrollment during FY 2025; this information is used for program benefit-cost analysis, consistent with the methods used for energy efficiency programs.

For C&I DR programs, there is no distinction between total EOFY participation and incremental enrollment. All participants are treated as new participants each program year. Therefore, the analysis of incremental impacts of these programs is no different than the analysis of total impacts.

[80] Success rate = # of 4CPs hit ÷ 4. For example, if only one of the 4CPs are hit, the success rate is 1/4 = 25%.

Achieved Impacts

During the summer of 2024, C&I DR events were called on 24 days. The aggregated kW savings estimates are shown in the following figure.

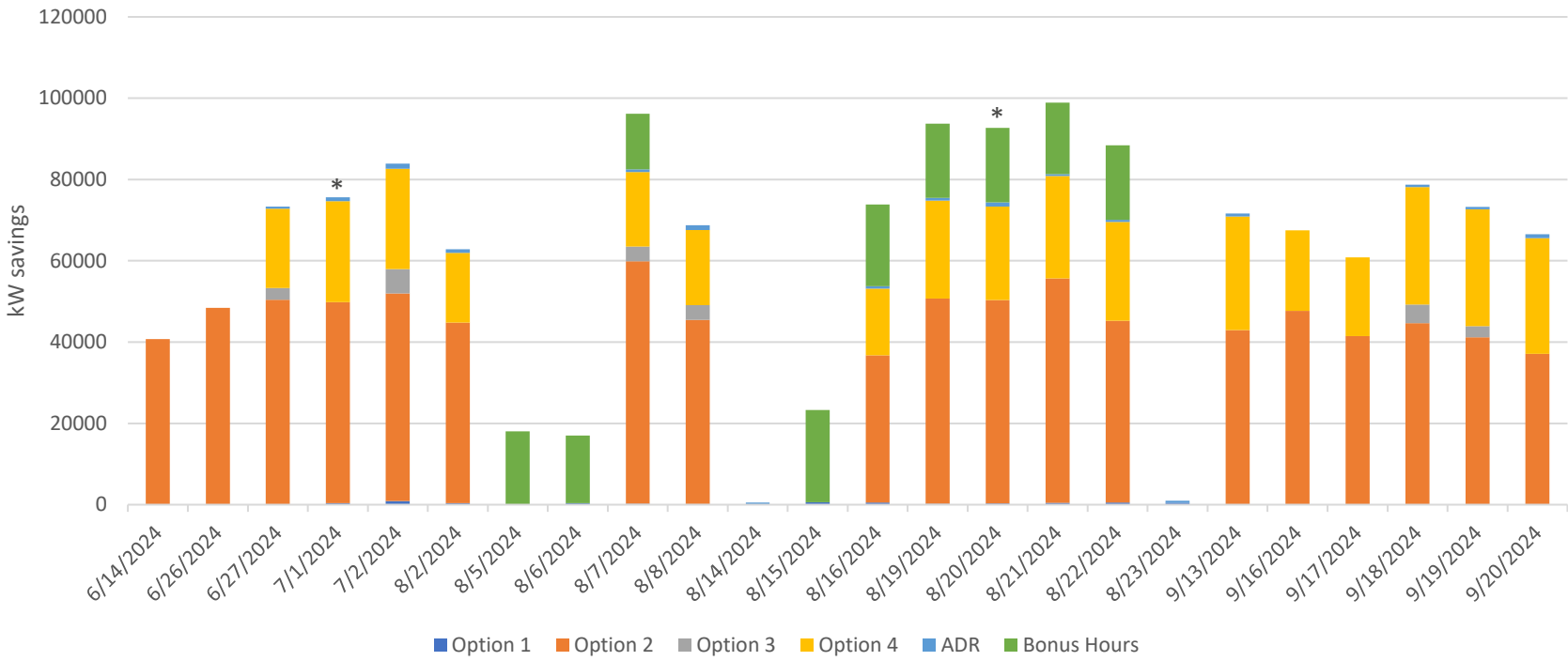


Figure 7-19: C&I DR – Summer of 2024 Achieved Demand Savings[81]

[81] Events coinciding with ERCOT 4CP intervals are designated with an asterisk (*). In FY 2025, one 4CP occurred on Sunday, June 30th at interval ending 5:45 PM. Another 4CP on September 20th ended at interval ending 4:00 PM, and the DR event did not start until that time.

Maximum total demand reduction was achieved on 7/2/2024. The total demand reduction on this day from all C&I DR programs was 83.9 MW. Given the differences in how the individual C&I DR programs are used, the evaluation team determines the demand savings achieved by each program individually. Total demand savings are presented as the sum of the demand savings achieved by each of the respective programs. The demand reduction and the number of customers participating in each option/program are shown in the following figures.

Option 1 average demand savings for standard events was 421 kW.

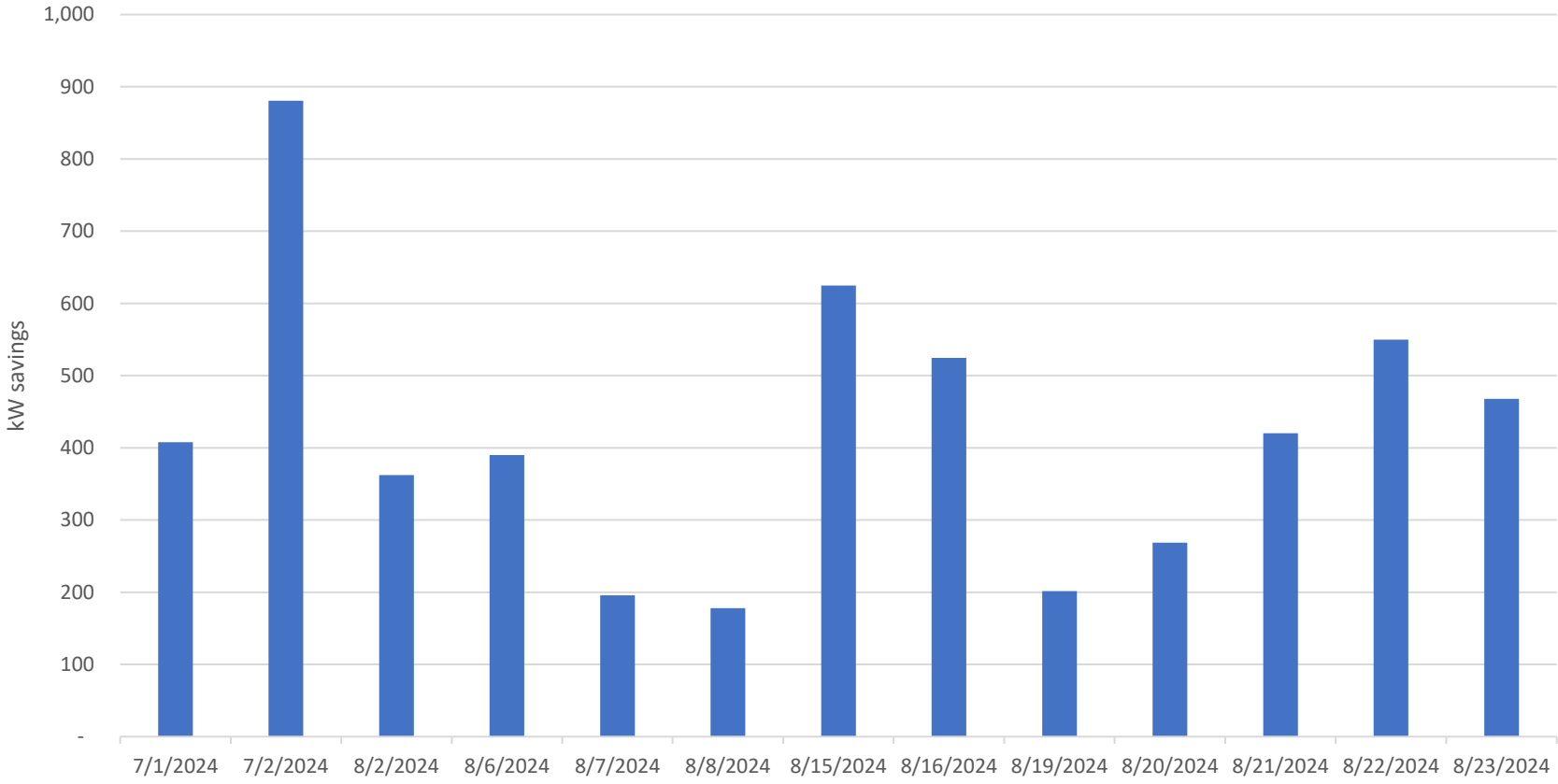


Figure 7-20: C&I DR – Option 1 Demand Savings by Event

For Option 2 participants, average demand savings for standard events was 46,386 kW.

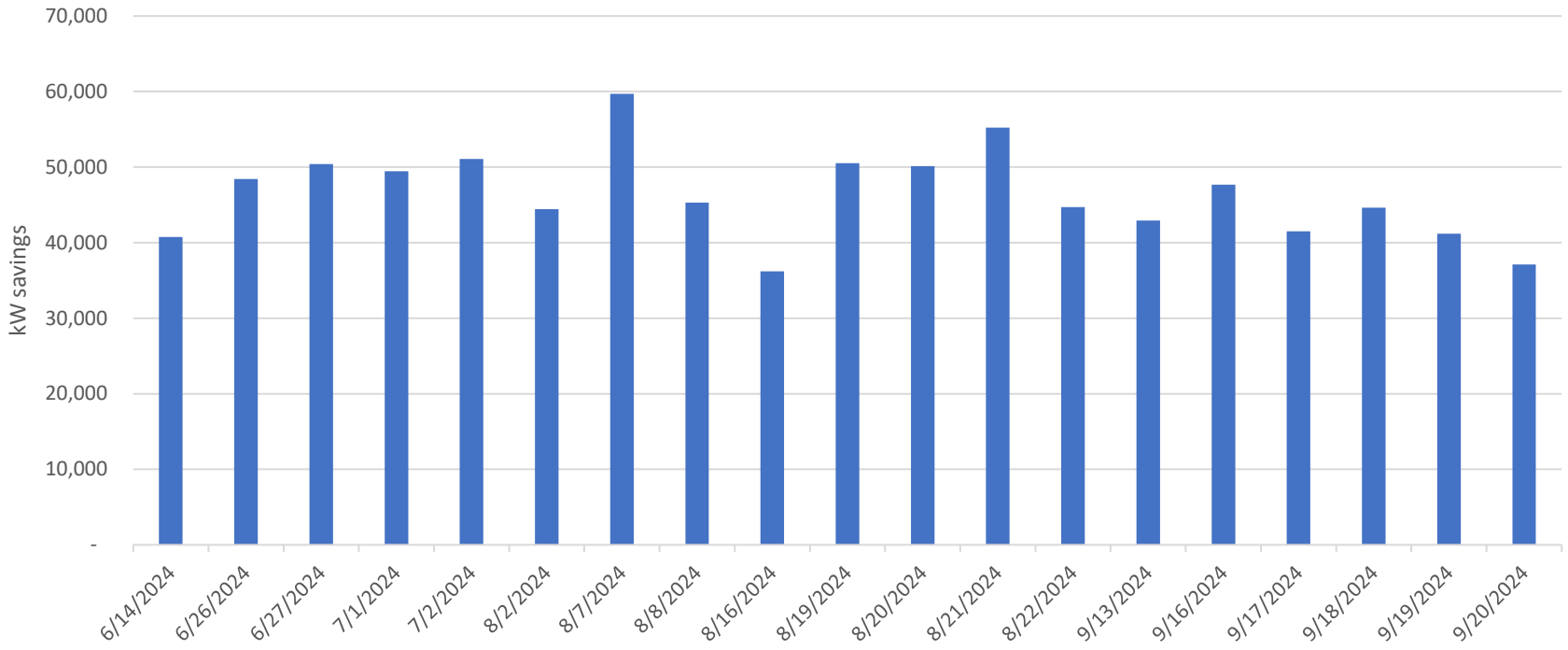


Figure 7-21: C&I DR – Option 2 Demand Savings by Event

Option 3 average demand savings for standard events was 3,914 kW.

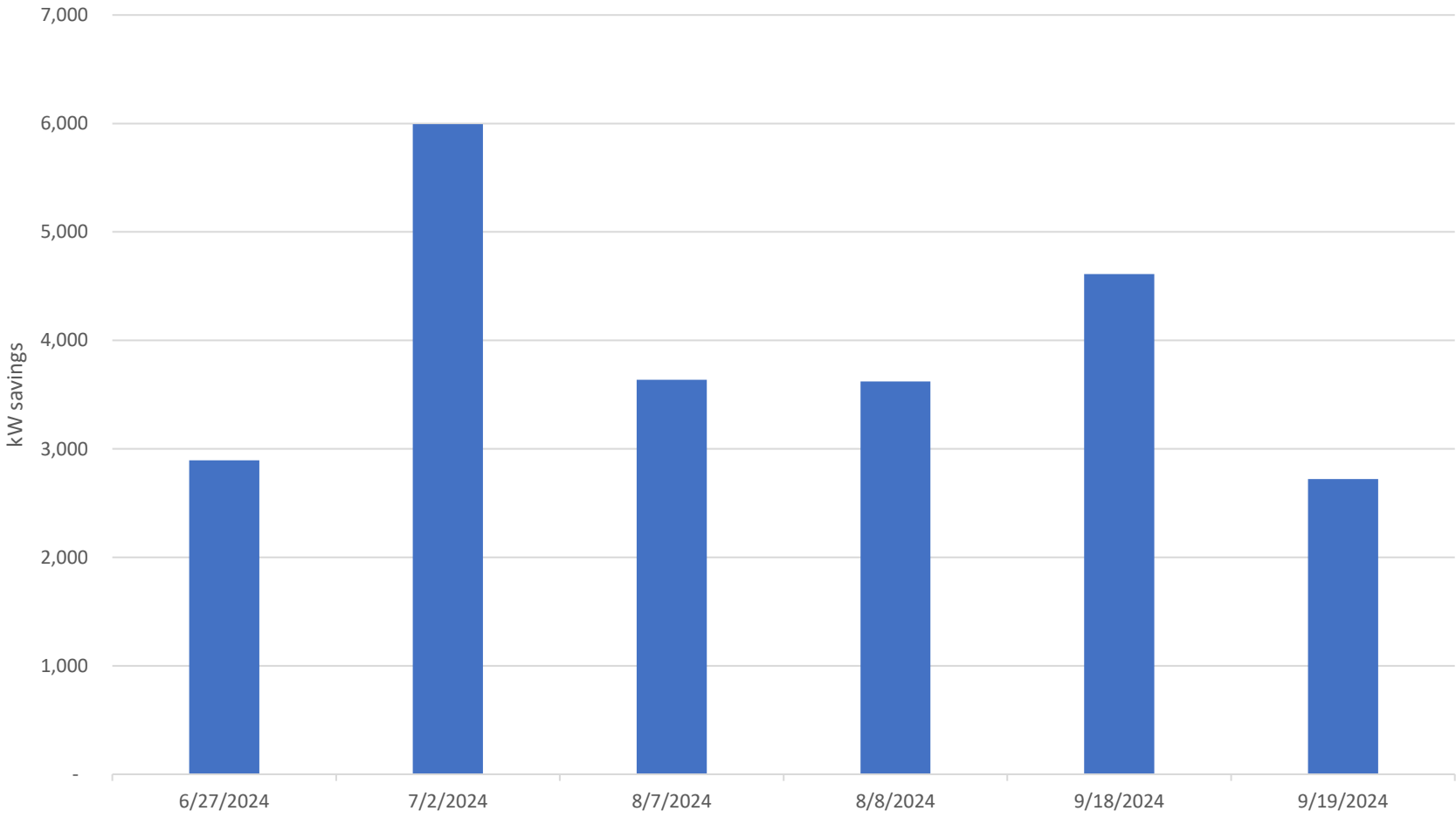


Figure 7-22: C&I DR – Option 3 Demand Savings by Event

For Option 4 participants, average demand savings for standard events was 22,889 kW.

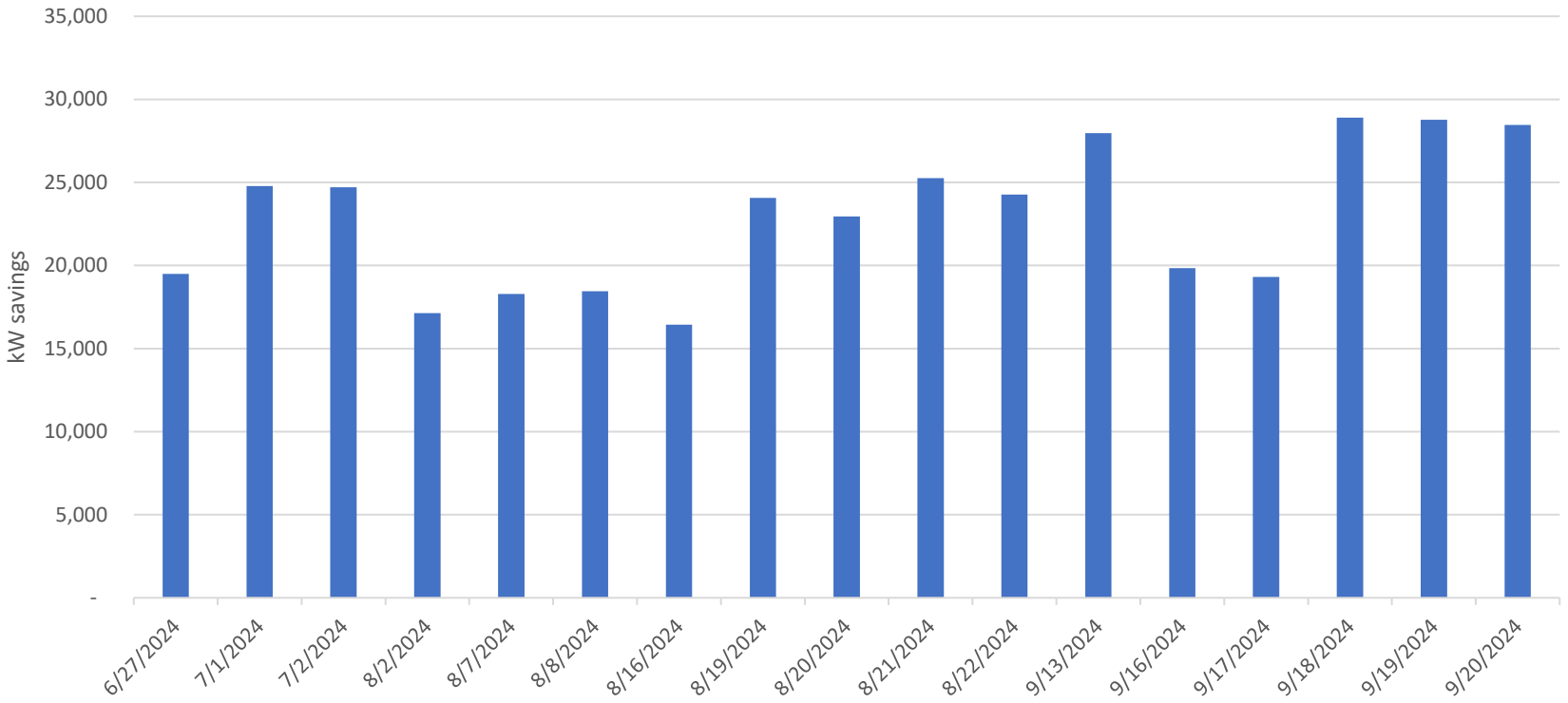


Figure 7-23: C&I DR – Option 4 Demand Savings by Event

ADR average demand savings were 752 kW.

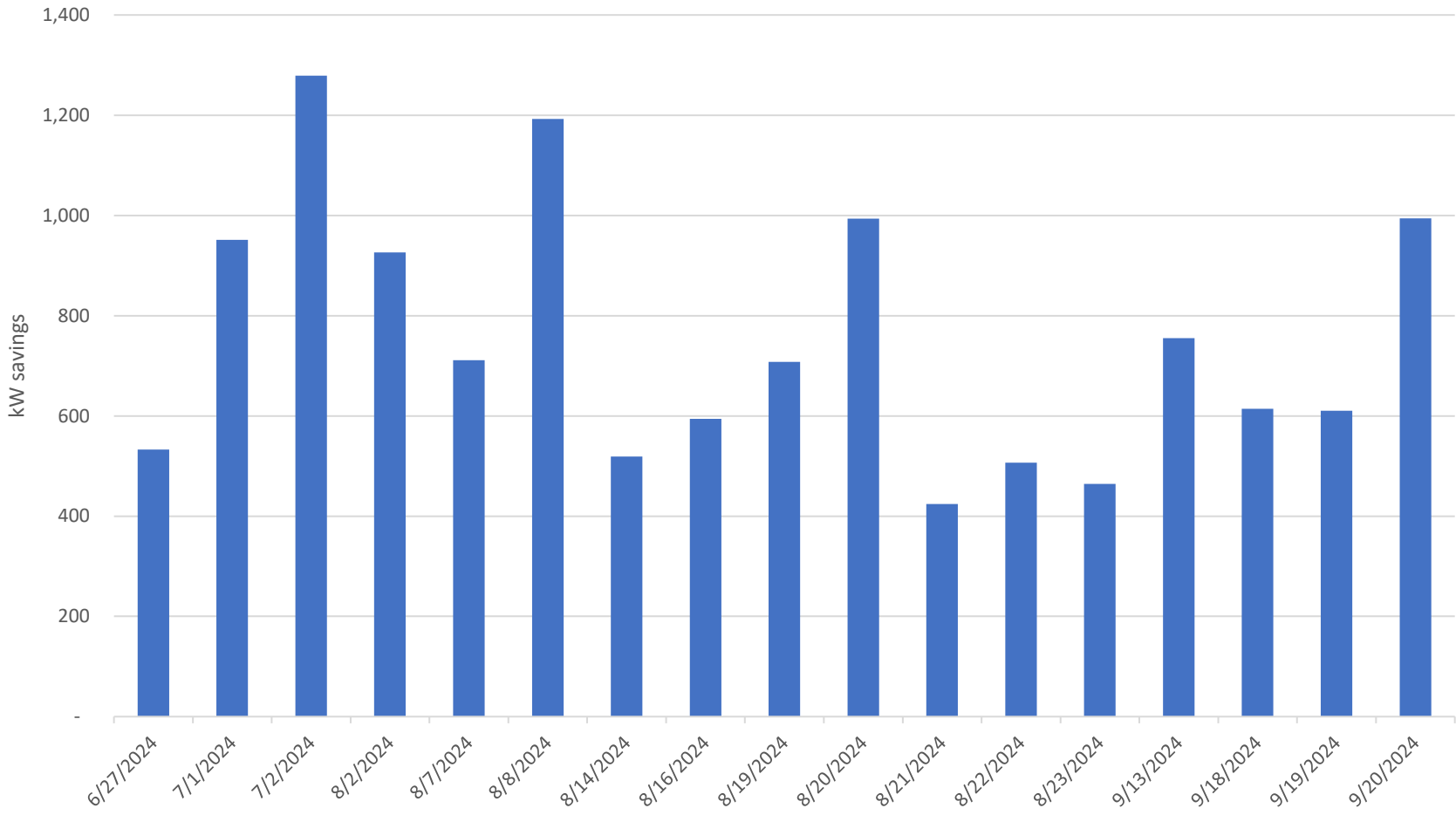


Figure 7-24: C&I DR – Automated DR Demand Savings by Event

Bonus Hours average demand savings were 18,174 kW.

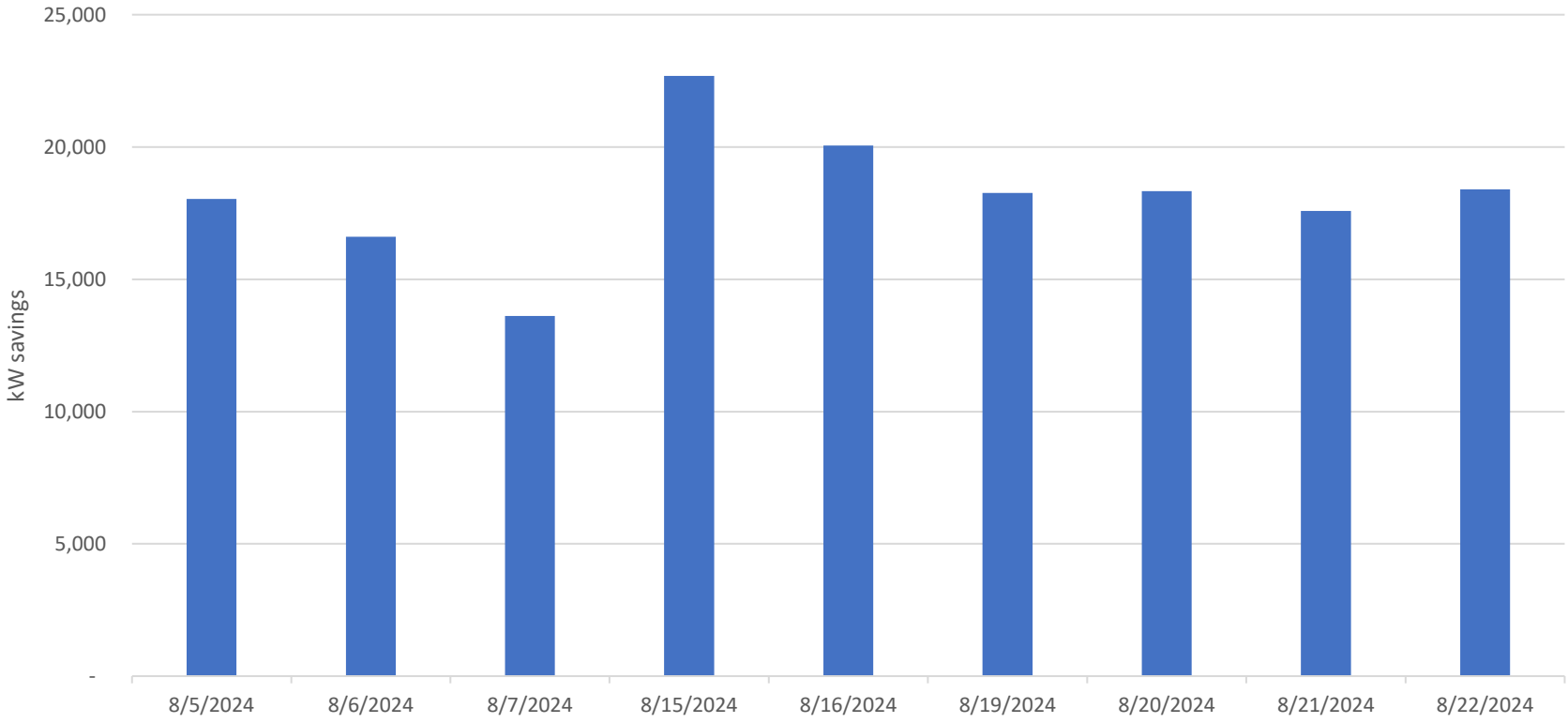


Figure 7-25: C&I DR – Bonus Hours Demand Savings by Event

A comparison of the CP kW impacts from FY 2019 to FY 2025 is shown below:

Table 7-26: C&I DR – FY 2019-2025 Achieved kW Impacts Comparison

Option	FY 2019 CP Savings (kW)	FY 2020 CP Savings (kW)	FY 2021 CP Savings (kW)	FY 2022 CP Savings (kW)	FY 2023 CP Savings (kW)	FY 2024 CP Savings (kW)[82]	FY 2025 CP savings (kW)
Option 1	3,900	964	726	319	614	662	421
Option 2	43,216	57,302	65,746	55,955	65,373	52,275	46,386
Option 3	4,998	5,016	5,240	7,028	5,844	4,874	3,914
Option 4	20,647	22,877	20,671	20,377	18,862	23,493	22,889
ADR	3,662	2,510	637	555	923	1,072	752
Total[83]	**76,423**	**88,669**	**93,020**	**84,234**	**91,616**	**82,376**	**74,631**

The following table shows the energy and demand savings achieved during the fiscal year.

Table 7-27: C&I DR – Achieved Gross Energy and Demand Savings

Option	Energy Savings (kWh)	Gross NCP Demand Savings (kW)	Gross CP Demand Savings (kW)	ERCOT 4CP Demand Savings (kW)
Option 1	14,806	881	421	169
Option 2	2,168,627	63,069	46,386	24,890
Option 3	52,448	5,994	3,914	–
Option 4	981,747	31,927	22,889	11,938
ADR	37,810	1,279	752	486
Bonus Hours[84]	327,137	–	–	–
Total[85]	**3,582,577**	**103,149**	**74,361**	**37,483**

[82] In FY 2024, there were standard events and voluntary events. Only standard event savings are averaged in FY 2024.
[83] The sum of the individual measures may not match the total due to rounding.
[84] There are no CP or 4CP kW savings claimed for Bonus Hours option, as the event calling time period is outside the range of the CP or 4CP time period. For NCP kW savings, Bonus Hours savings are blended into the option 2 and option 4 NCP kW savings respectively.
[85] Same as previous footnote.

End-of-Fiscal Year Program Capability

Residential DR programs typically see recurring annual participation. By contrast, most C&I DR programs are short and contract-based, lasting only one to two years. ADR is an exception. For energy, CP kW, and NCP kW savings, the evaluation team uses the savings achieved in the summer of 2024 as an EOFY result. Because 4CP targeting has an observable success rate, the evaluation team considers it reasonable to use the average success rate of the past ten fiscal years to estimate EOFY program capability for ERCOT 4CP demand savings.[86] For example, the average success rate for Option 1 in the past ten fiscal years was 43 percent, as shown in the following table. With success rate as 50 percent in FY 2024, converting achieved 4CP kW savings to EOFY demand savings yields 342 kW ÷ 50% x 43% = 291 kW.[87]

[86] For option 4, we average the success rate of past six fiscal years since it was launched six fiscal years ago.
[87] Number may not exactly match due to rounding.

Table 7-28: C&I DR – EOFY ERCOT 4CP Demand Savings

Option	Success Rate											Average Success Rate	Achieved FY 2025 ERCOT 4CP Demand Savings (kW)	EOFY 2025 ERCOT 4CP Demand Savings (kW)
	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	FY 25			
Option 1	25%	50%	50%	25%	50%	25%	50%	50%	50%	50%	50%	43%	169	146
Option 2	75%	75%	100%	75%	100%	75%	75%	100%	50%	100%	50%	80%	24,890	39,599
Option 3	50%	75%	25%	75%	50%	50%	50%	75%	25%	25%	0%	45%	–	–
Option 4	N/A	N/A	N/A	N/A	100%	100%	75%	100%	100%	100%	50%	89%	11,938	21,317
ADR	75%	100%	100%	100%	100%	100%	75%	100%	75%	75%	50%	86%	486	840
												Total[88]	**37,483**	**61,901**

[88] The sum of the individual measures may not match the total due to rounding.

Option 1 participants are not available in June or September, meaning at least two 4CP events will always be missed with that option. Therefore, the maximum success rate for hitting 4CP would be 50 percent. Option 3 participants are available for a maximum of six events, limiting CPS Energy's ability to use these program options for 4CP avoidance. Therefore, the EOFY program capability is summarized as follows.

Table 7-29: C&I DR – EOFY Gross Energy and Demand Savings

Options	Energy Savings (kWh)	Gross NCP Demand Savings (kW)	Gross CP Demand Savings (kW)	ERCOT 4CP Demand Savings (kW)
Option 1	14,806	881	421	146
Option 2	2,168,627	63,069	46,386	39,599
Option 3	52,448	5,994	3,914	–
Option 4	981,747	31,927	22,889	21,317
ADR	37,810	1,279	752	840
Total[89]	**3,255,438**	**103,149**	**74,361**	**61,901**

Table 7-30: C&I DR – EOFY Gross Energy and Demand Savings – Bonus Hours

Options	Energy Savings (kWh)	Average Demand Savings (kW)
Bonus Hours	327,137	18,174

Incremental Impacts

For all the C&I DR programs, there is no distinction between total participation and incremental participation. All participants are treated as new for FY 2025. Therefore, the analysis of incremental impacts of these programs is the same as the analysis of total impacts.

[89] Same as previous footnote.

7.7 DEMAND RESPONSE PROGRAM RECOMMENDATIONS

The updated CPS Energy Guidebook, applicable to FY 2026, contains updates that impact savings calculations. The evaluation team recommends updating savings calculation input assumptions to ensure consistency between claimed and evaluated savings.

The evaluation team has identified specific recommendations related to savings calculations and program documentation in a separate memo to program administrators. In addition to these savings calculations and documentation recommendations, the evaluation team makes the following general recommendations for DR program offerings:

CPS Energy DR programs have leveraged their active and legacy DR programs to alleviate price volatility and balance several overall goals:

- Load shedding to avoid the ERCOT 4CP peak
- Load reduction during CPS Energy load zone peak times, which typically occur slightly after ERCOT 4CP peak
- Overall NCP load reduction goals
- Cost effectiveness of each DR program
- Maximizing grid resiliency

Physical limitations were considered while trying to reach the above goals:

- Upper limits on the maximum number of events that can be called for most programs
- Time period limitations for select programs, especially C&I DR Option 1, where events can only be called in July and August
- For thermostat related DR programs, customer fatigue may occur if the event duration is longer, which can pose a challenge in covering both ERCOT and CPS Energy peaks
- For all DR programs, fatigue may occur from back-to-back events, which can happen during heat waves and multiple days with high demand
- For thermostat related DR programs, achievable kW savings can vary for each thermostat type. For example, the per-device average savings of traditional cycling thermostats in the Smart Thermostat Legacy Program are significantly lower than those from Wi-Fi thermostats. Additionally, savings continue to decline due to natural program decay.

In addition, before FY 2025, ERCOT 4CP peak almost never occurred on weekends or outside the range of 4:00-5:00 PM. However, in the summer of 2024, the June 4CP event occurred on a Sunday in the late afternoon (6/30/2024, 5:30-5:45 PM) and the September 4CP event occurred before 4 PM (9/20/2024, 3:45-4:00 PM). This pattern change lowers the 4CP savings for DR programs in FY 2025 and poses more challenges for CPS Energy to balance overall DR goals. It may be worthwhile to investigate whether this pattern change for ERCOT 4CP is permanent or temporary, which may affect the future event calling strategies.

Despite reduced achieved 4CP kW savings compared to previous years, CP and NCP kW performance was consistent with the previous fiscal year. Additionally, BYOT program performed significantly better than the previous fiscal year (72 MW in FY 2025 compared to 61 MW in FY 2024) due to shorter event duration. Using residential and small commercial thermostats on the Resideo platform as an example, the FY 2025 average event duration was 1.63 hours, compared to 2.27 hours in FY 2024.

Finally, a Bonus Hours option was added in the C&I DR program to help shed load when the demand in the market is still high and renewable generation begins to fade with the sun setting, creating scarcity in the market. This is generally referred to as the solar generation ramp down period. The evaluation team recommends maintaining this flexibility to accommodate achieving multiple combined goals, especially considering that the FY 2025 ERCOT 4CP occurred outside of expected day/time ranges.

7.7.1 Smart Thermostat Program

This is a legacy program with traditional cycling thermostats. The evaluation team recommends continuing to upgrade these legacy thermostats to new Wi-Fi thermostats, which yield significantly higher per-device savings.

7.7.2 Direct Install Thermostat Program

The evaluation team recommends an annual account review to ensure device counts are updated to reflect participants migrated to other active programs.

7.7.3 BYOT (Bring Your Own Thermostat) Program

FY 2025 saw significant increases in NCP and CP kW savings, mainly due to a shorter event period. The average event duration was 1.63-1.83 hours. The evaluation team recommends continuing the strategy of using shorter event periods.

7.7.4 Power Players Program

Frontier is working with CPS Energy and Oracle to develop new strategies related to program evolution.

7.7.5 Commercial and Industrial Demand Response Program

The following table presents the realization rate by option (except Bonus Hours DR) in FY 2025:

Table 7-31: C&I DR – Realization Rate by Option

Option	Achieved CP kW Savings	Contracted kW	Realization Rate
Option 1	421	610	69%
Option 2	46,386	57,295	81%
Option 3	3,914	3,975	98%
Option 4	22,889	21,737	105%
ADR	752	1,450	52%
Total	**74,361**	**85,067**	**87%**

Option 3 and Option 4 realization rates are 98% and 105% respectively, indicating contracted kW fulfilled or almost fulfilled. While Option 1, Option 2, and ADR have a lower realization rate, especially for Option 2, which accounts for more than half of the overall savings in C&I DR. It might be helpful to further explore the options/participants with lower realization rate and see if any improvements can be made.

In FY 2025, a new option was added to C&I DR program – Bonus Hours. This option was designed to alleviate the ERCOT solar generation ramp down period. The first year of the Bonus Hours option demonstrated significant savings, as shown in the following table.

Table 7-32: C&I DR – Bonus Hours Realization Rate

Option	Average kW Savings	Contracted kW	Realization Rate
Bonus Hours	18,174	13,000	140%

Frontier recommends continuing recruiting customers to this option, to balance the overall goals of DR program.

8. EMERGING TECHNOLOGY PROGRAMS

8.1 SUMMARY OF EMERGING TECHNOLOGY PROGRAMS

This section includes three programs – Two electric vehicle (EV) charging programs (*Flex*EV Smart Rewards program and *Flex*EV Off-Peak Rewards program), and the My Battery Rewards Program.

*Flex*EV Smart Rewards Program – Launched in FY 2022, this load management Electric Vehicle (EV) program provides incentives to customers who allow CPS Energy to make remote adjustments to participating level 2 EV chargers during an event period. EV chargers can either be turned off or reduced to level 1 charging. Events can be scheduled throughout the year.

*Flex*EV Off-Peak Rewards Program – Launched in FY 2022, this behavioral EV program provides incentives to customers who enroll to not charge their EVs during peak hours (from 4:00-9:00 PM) throughout the year. Customers with an eligible level 2 EV charger can choose to participate in either the *Flex*EV Smart Rewards program or *Flex*EV Off-Peak Rewards program.

My Battery Rewards Program – Launched in FY 2025, the My Battery Rewards pilot program is a collaborative, customer-driven program where CPS Energy partners with homeowners who own a Battery Energy Storage System (BESS) to support the grid and strengthen reliability. During select times of high demand, CPS Energy notifies participants via email, phone call, or text to engage their BESS to help reduce load and lessen the strain on the grid. Customers receive a $10 bill credit for each event they participate in.

Although these programs operate similarly to demand response (DR), the evaluation team categorizes and presents Electric Vehicle and My Battery Rewards program results separately as emerging technology programs due to their unique end-uses. For simplicity and reporting clarity, the results from these emerging technologies are combined with DR results in Table 3-1. As participation grows and evaluations provide new insights, future assessments may warrant an updated methodology for establishing baselines and measuring impacts.

The following figures show each program's contributions to the Emerging Technologies program portfolio, as measured at the device level and adjusted to account for line losses.

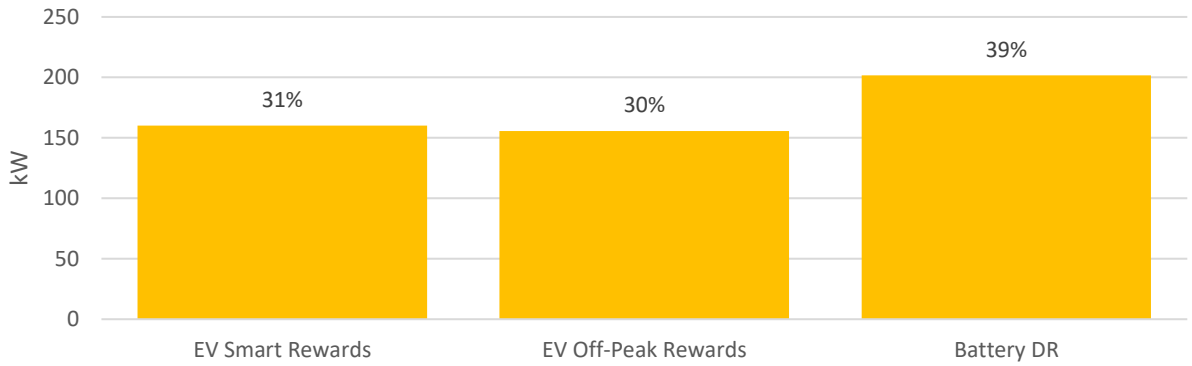


Figure 8-1: Emerging Technology Summary – Non-Coincident Peak Demand (kW) by Program

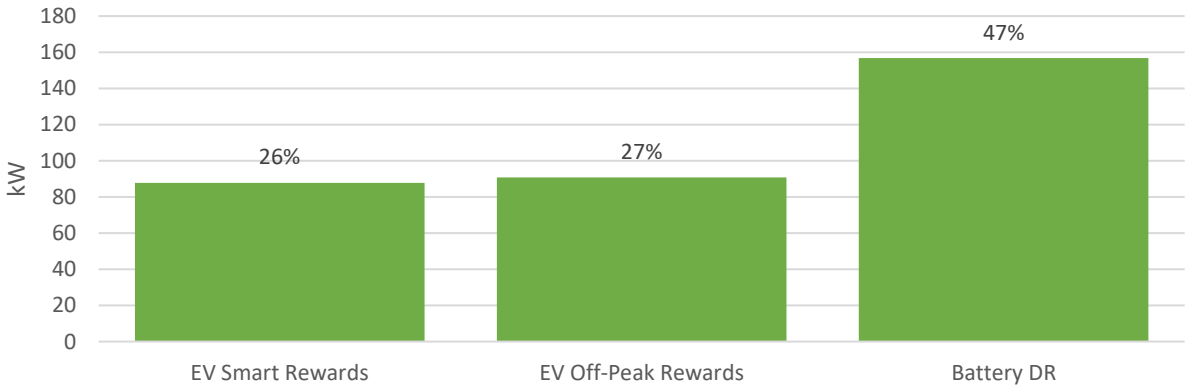


Figure 8-2: Emerging Technology Summary – Coincident Peak Demand (kW) by Program

8.2 *FLEX*EV SMART REWARDS

8.2.1 Overview

In the *Flex*EV Smart Rewards program, CPS Energy can make remote adjustments to participating EV chargers during event periods. EV chargers can be turned off or reduced to level 1 charging (charging rate no higher than 1.8 kW). Unlike other demand response programs, which usually have DR events during summer afternoons, the *Flex*EV Smart Rewards program events can be called from 2:00-9:00 PM during weekdays throughout the year. In return, customers receive a one-time $250 credit on their utility bill at signup. They also receive a $5 monthly bill credit for remaining enrolled in the program.

*Flex*EV Smart Rewards program events can help alleviate snap-back effect (i.e., overconsumption) immediately after thermostat events (usually around 3:00-6:00 PM), as EV charging tends to begin coincidentally with the end of thermostat DR events (usually around 6:00-7:00 PM).

The following table shows the number of events by month in FY 2025.

Table 8-1 *Flex*EV Smart Rewards – Program Events by Month

Month/Year	# of Events
May 2024	1
June 2024	9
July 2024	2
August 2024	14
September 2024	6
Total	**32**

8.2.2 Program Participation

The following figure shows the participation trend for *Flex*EV Smart Rewards program. In FY 2025, the total number of net participating chargers increased significantly from 253 to 397 participants. In October 2024, Enel X charger ended its DR offering. The last Enel X participation was on October 4, 2024. By EOFY 2025, ChargePoint was the only active charger brand.

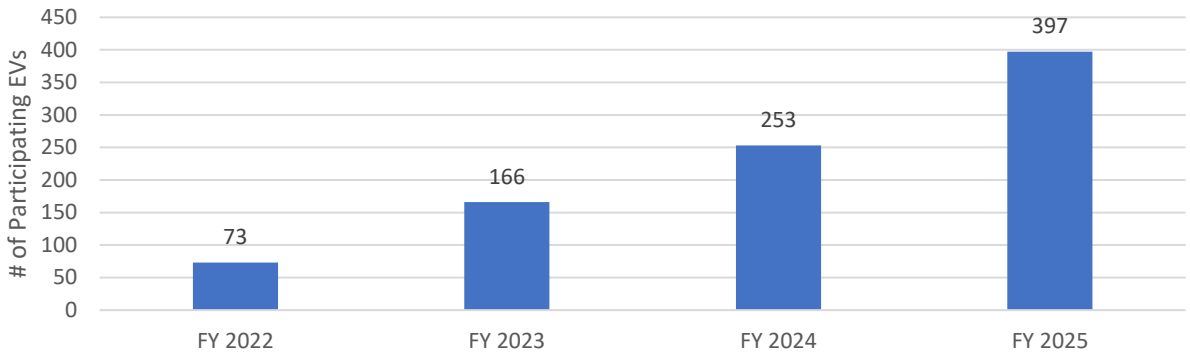


Figure 8-3: *Flex*EV Smart Rewards Participation Trend

8.2.3 Savings Calculation Methods

8.2.3.1 Per-Device kW and kWh Savings

To estimate *Flex*EV Smart Rewards program savings, the following challenges exist and are therefore considered during EM&V process:

(1) EV charging load profile is different from load profiles in residential thermostat DR programs, which are much more weather-sensitive. Factors that affect EV charging profile may include but are not limited to size, fullness, age, maximum charging rate, and the customer's personal schedule. This information has been unavailable to date.
(2) Charger level 15-minute interval data is only available after a customer joins *Flex*EV Smart Rewards Program. Interval charging data is automatically set to zero before joining the program. As a result, there is no prior information on EV charging load profiles for customers prior to participation.

Device-level data includes 15-minute interval energy consumption (kWh), average power, and peak power, captured and stored on the EnergyHub platform. Customer enrollment data, including enrollment/unenrollment date and device type, is also available. This data is available for the complete FY 2025.

Savings analyses are conducted in the following steps:

Step 1: Plot aggregated average non-event day device-level load profile by month to produce a brief visual inspection on whether there were any significant EV charging behavioral changes throughout FY 2025.

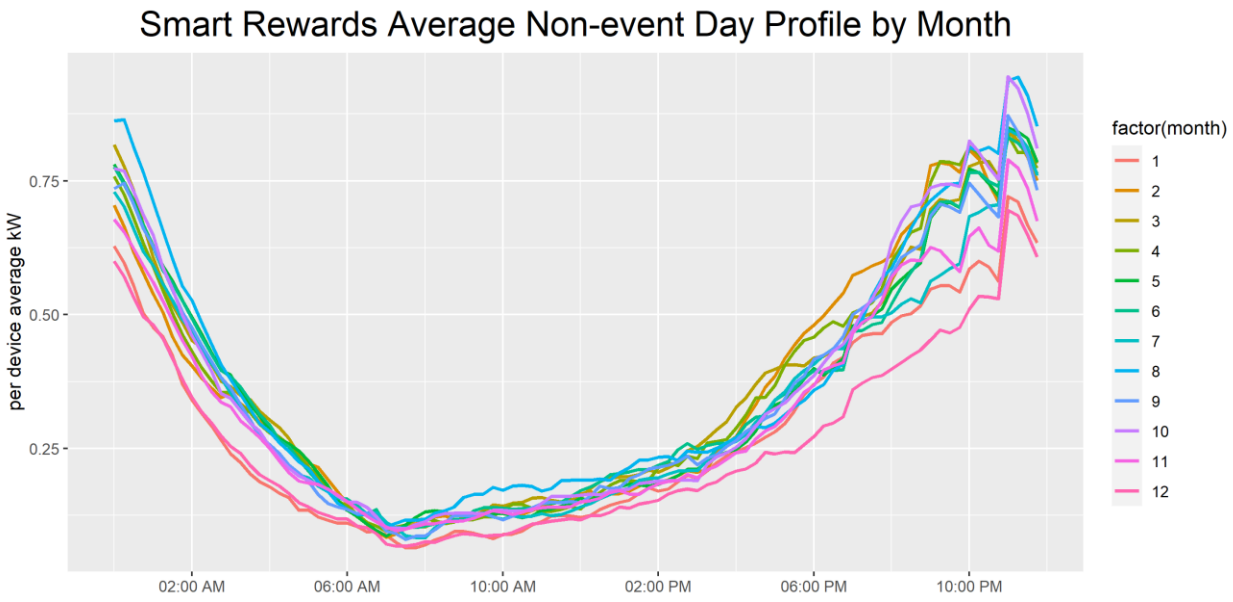


Figure 8-4: *Flex*EV Smart Rewards – Average Non-Event Day Profile by Month

As seen in the figure above, no significant EV charging behavioral changes have been detected from visual inspection. Therefore, we assume all non-event weekdays can serve as eligible days, and we adopt 10 previous + 10 post eligible days analysis, which is illustrated in the following steps.

Step 2: Using device-level interval data, calculate baseline device-level load profile by aggregating load for 20 days – 10 eligible days prior to event day and 10 eligible days after event day. The baseline load profile is the average load profile for these 20 days.

Step 3: Demand savings are the average kW difference during event-day load profile vs baseline-day load profile. Take 5/8/2024 event day as an example. As shown in the above figure, per-device demand savings for the 5/8/2024 event were calculated as 0.37 kW. Multiplying this value by the total number of participating devices (280 devices) yields achieved demand savings for that day: 0.37 x 280 = 104 kW.

8.2.3.2 Energy Savings (kWh)

Total energy savings are zero by default because the program assumes only load shifting rather than energy savings.

8.2.3.3 Coincident Peak (CP) Demand Savings (kW)

To compute CP kW savings, the per-device demand savings are multiplied by the total number of participating devices for each event. The claimed achieved CP kW savings are the average kW savings during June – September events. Therefore, events in other months were eliminated. Scaling the average kW savings by the EOFY customer count yields EOFY CP kW savings. Multiplying per-device CP kW savings by number of newly added participants yields incremental CP kW savings.

8.2.3.4 Non-Coincident Peak (NCP) Demand Savings (kW)

Achieved NCP kW savings for are represented by the maximum kW savings across all events in FY 2025. The program reached maximum program level demand reduction during the 5/8/2024 event. Therefore, the kW savings on this day are used as the NCP kW savings. EOFY NCP kW savings in FY 2025 were calculated by multiplying maximum FY 2025 per-device savings by EOFY 2025 number of participants. Multiplying per-device NCP kW savings by number of newly added participants yields incremental CP kW savings.

8.2.3.5 ERCOT 4CP Demand Savings (kW)

During the summer of 2024, three *Flex*EV Smart Rewards DR events coincided with ERCOT 4CP events, yielding a 75 percent success rate in 4CP alignment. To estimate ERCOT 4CP kW savings, we estimated the kW savings for each event, selected the events that coincided with the ERCOT 4CPs, and multiplied the result by the success rate. For the EOFY capability calculations, per-device kW savings during 4CP intervals were scaled to the number of devices at the EOFY 2025. Multiplying per-device 4CP kW savings by the number of newly added participants yields incremental 4CP kW savings.

8.2.4 Results

Program impacts are presented in four manners:

1) Estimated per-device kW savings during FY 2025.
2) Estimated program impacts during FY 2025 DR events.
3) EOFY program capability based on program enrollment at the EOFY 2025.
4) EOFY program capability based on incremental enrollment during FY 2025. This information is used for program benefit-cost analysis, consistent with the methods used for energy efficiency programs.

8.2.4.1 Estimated Impacts During FY 2025 DR Events

As shown in the following figure, per-device kW savings varied greatly across each DR event in FY 2025. Average per-device kW savings are approximately 0.20 kW.

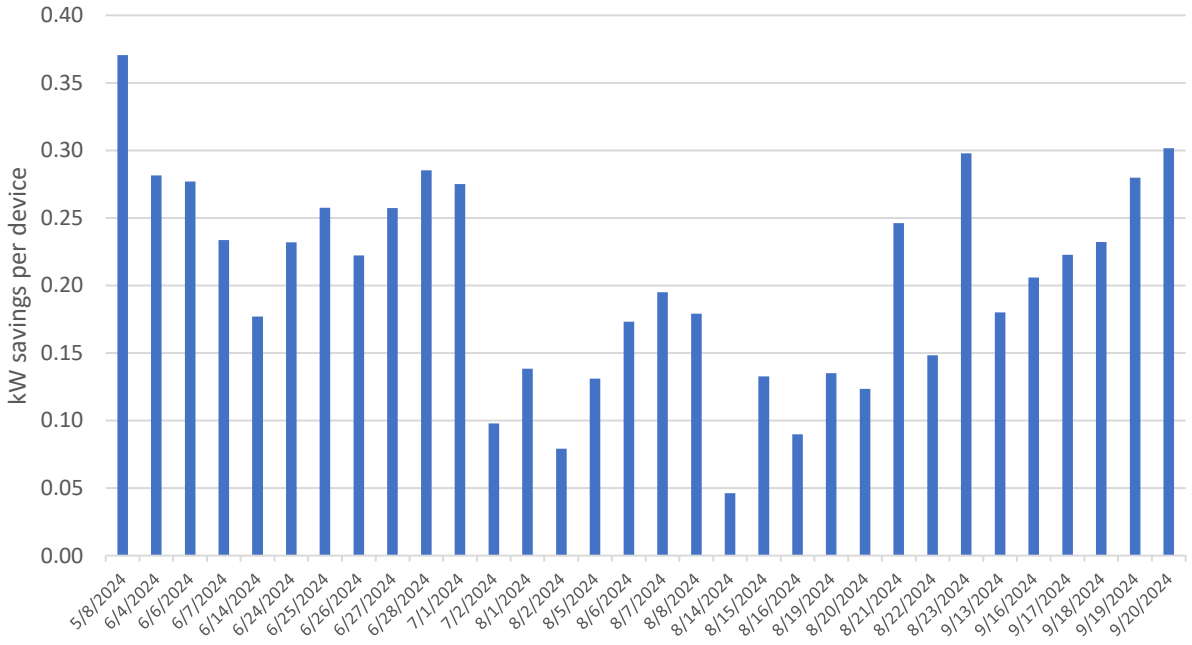


Figure 8-5: *Flex*EV Smart Rewards – Per-Device/Charger kW Savings by Event

The following figure shows total kW savings by event throughout FY 2025. Average savings across all 32 events are approximately 65 kW.

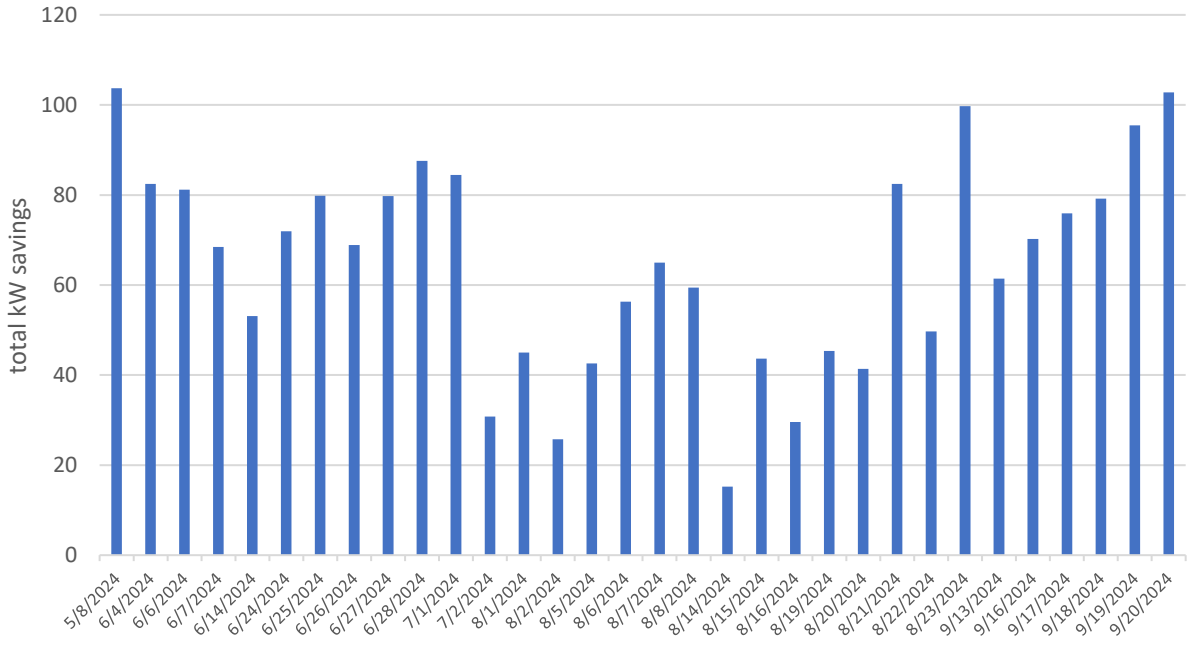


Figure 8-6: *Flex*EV Smart Rewards – Total kW Savings by Event

The following table shows estimated energy, peak demand, non-coincident peak demand, and ERCOT 4CP demand savings achieved in FY 2025.

Table 8-2: *Flex*EV Smart Rewards – Achieved Energy and Demand Savings

Measure	Gross Energy Savings (kWh)	Gross NCP Demand Savings (kW)	Gross CP Demand Savings (kW)	Gross ERCOT 4CP Demand Savings (kW)
*Flex*EV Smart Rewards	–	103.74	64.94	57.15

8.2.4.2 End-of-Fiscal Year Program Capability

EOFY program capability is based on EOFY enrollment and is shown in the following table.

Table 8-3: *Flex*EV Smart Rewards – EOFY Program Energy and Demand Savings

Measure	EOFY Enrollment	Gross Energy Savings (kWh)	Gross NCP Demand Savings (kW)	Gross CP Demand Savings (kW)	Gross ERCOT 4CP Demand Savings (kW)
*Flex*EV Smart Rewards	397	–	147.08	80.69	69.47

8.2.4.3 Incremental Impacts

Incremental impacts used in benefit-cost analysis are based on gross incremental enrollment during the program year and are shown in the following table.

Table 8-4: *Flex*EV Smart Rewards – Incremental Program Energy and Demand Savings

Measure	Gross Incremental Enrollment	Gross Energy Savings (kWh)	Gross NCP Demand Savings (kW)	Gross CP Demand Savings (kW)	Gross ERCOT 4CP Demand Savings (kW)
*Flex*EV Smart Rewards	200	–	74.10	40.65	35.00

8.3 *FLEX*EV OFF-PEAK REWARDS

8.3.1 Overview

The *Flex*EV Off-Peak Rewards program incentivizes customers to voluntarily stop charging during peak hours without any direct intervention from CPS Energy.[90] In return, customers receive a one-time $125 credit on their utility bill and can earn a $10 monthly bill credit if charging is limited to no more than twice monthly during peak hours.

8.3.2 Program Participation

The following figure shows the participation trend by date throughout the fiscal year. In FY 2025, the number of new participating chargers increased significantly from 175 to 247 participants. Like the *Flex*EV Smart Rewards program, participating charger providers were limited to ChargePoint and Enel X.[91]

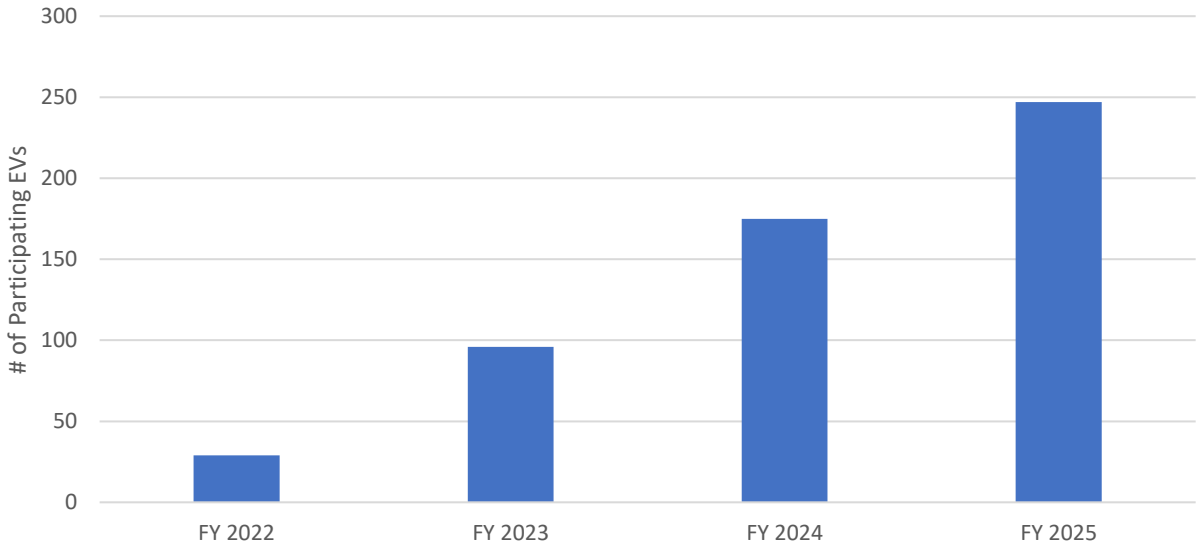


Figure 8-7: *Flex*EV Off-Peak Rewards Participation Trend

8.3.3 Savings Calculation Methods

Unlike *Flex*EV Smart Rewards program, the 10 previous + 10 post eligible days methodology does not apply to *Flex*EV Off-Peak Rewards program because it is not an event-based program, and participant charging behaviors may have changed immediately after joining the program.

[90] Starting on July 3, 2024, this on peak period changed from 4:00 – 9:00 PM weekdays to 4:00 – 10:00 PM weekdays.
[91] In October 2024, Enel X charger ended its DR offering. The last Enel X participation was on September 3, 2024. From this point forward, all participating chargers were provided by ChargePoint.

Additionally, with device-level 15-minute interval charging data only available from 2/1/2024 to 1/31/2025, it is difficult to develop a valid baseline because there was neither a valid control group nor load profile before joining the program.

Considering these challenges, eligible non-event days from the *Flex*EV Smart Rewards program serve as the control group to generate baselines for savings estimation. As illustrated in the previous section for the *Flex*EV Smart Rewards program, non-event days were the best option for a control group because no significant charging behavior change has been detected for these days. Savings analysis is described in detail by the following steps:

Step 1: For both *Flex*EV Smart Rewards and *Flex*EV Off-Peak Rewards datasets, aggregate non-event, non-holiday weekdays to generate two separate average load profiles. The average daily *Flex*EV Smart Rewards charging amount was then calculated at 7.97 kW while average daily *Flex*EV Off-Peak Rewards was calculated at 7.22 kW.

Step 2: Calculate the adjusting ratio between *Flex*EV Off-Peak Rewards and *Flex*EV Smart Rewards: 7.22 kW ÷ 7.97 kW = 0.91.

Step 3: Apply adjusting ratio 0.91 to *Flex*EV Smart Rewards interval EV load to force the average load profile to be the same with that of *Flex*EV Off-Peak Rewards and therefore create a comparable baseline. The following figure shows the average daily load profile of *Flex*EV Off-Peak Rewards and adjusted *Flex*EV Smart Rewards (baseline), with expected load shifting period (4:00-9:00 PM/4:00-10:00 PM) highlighted in yellow.

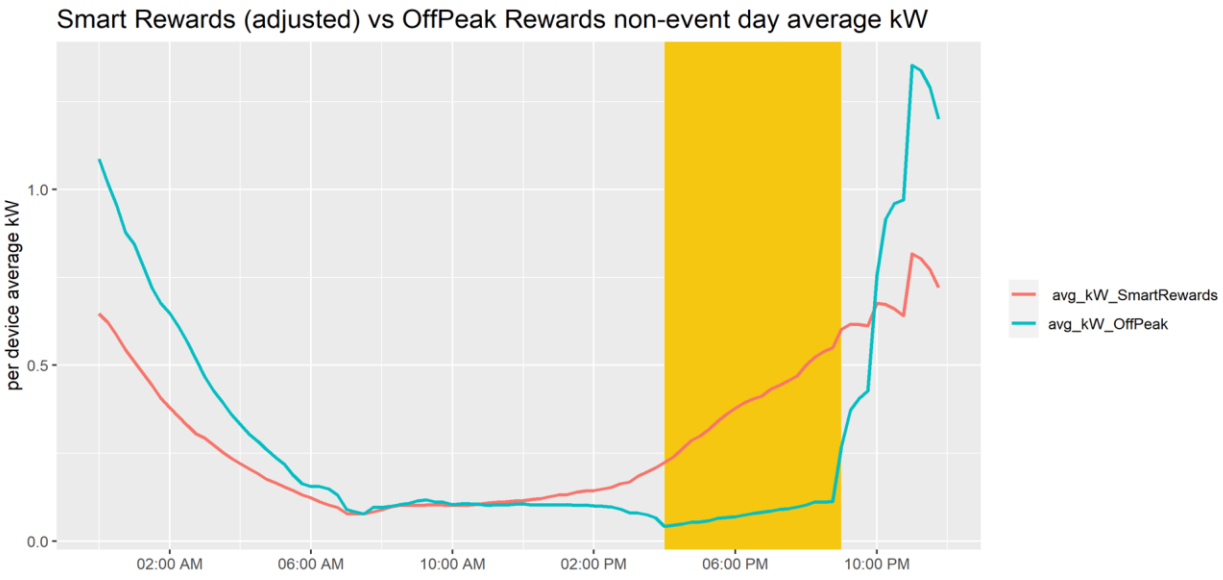


Figure 8-8: *Flex*EV Off-Peak Rewards – Comparison to Adjusted *Flex*EV Smart Rewards Non-Event Non-Holiday Weekday Average Load Profile

Step 4: For both adjusted *Flex*EV Smart Rewards and *Flex*EV Off-Peak Rewards datasets, calculate daily average kW level during 4:00-9:00 PM/4:00-10:00 PM for every non-event, non-holiday weekday. The differences between 4:00-9:00 PM/4:00-10:00 PM kW level for these two datasets are the estimated kW savings for each non-event, non-holiday weekday.

Step 5: For the days which fall on event days of the *Flex*EV Smart Rewards program, per-device kW savings were assumed as the average kW savings level throughout FY 2025 – 0.32 kW.

8.3.3.1 Energy Savings (kWh)

Total energy savings are zero by default because the program assumes only load shifting rather than energy savings.

8.3.3.2 Coincident Peak (CP) Demand Savings (kW)

To compute CP kW savings, the per-device demand savings are multiplied by the total number of participating devices for each event. The claimed achieved CP kW savings are the average kW savings during the summer of 2024 from non-holiday weekdays. Scaling the per-device average kW savings by the EOFY customer count yields EOFY CP kW savings. Multiplying per-device CP kW savings by number of newly added participants yield incremental CP kW savings.

8.3.3.3 Non-Coincident Peak (NCP) Demand Savings (kW)

Achieved NCP kW savings are represented by the maximum kW savings across all events in FY 2025, which occurred during 10/8/2024 4:00-10:00 PM. Therefore, the kW savings on this day are used as the NCP kW savings. EOFY NCP kW in FY 2025 were calculated by multiplying maximum per-device savings throughout FY 2025 non-holiday weekdays by EOFY number of participants. Multiplying per-device NCP kW savings by the number of newly added participants yields incremental NCP kW savings.

8.3.3.4 ERCOT 4CP Demand Savings (kW)

During the summer of 2024, two of the four 4CP intervals occurred after 4:00 PM on weekdays, therefore coinciding with the *Flex*EV Off-Peak Rewards load shifting period (4:00-9:00 PM/4:00-10:00 PM) at a success rate of 50 percent. For the remaining two intervals, one occurred on a Sunday, and the other occurred at 3:45-4:00 PM. To estimate 4CP kW savings in FY 2025, average kW savings for these two days is multiplied by the success rate. For the EOFY capability calculations, per-device kW savings during 4CP intervals were scaled to the number of devices at the EOFY 2025. Multiplying per-device 4CP kW savings by number of newly added participants yields incremental 4CP kW savings.

8.3.4 Results

Program impacts are presented in four manners:

1) Estimated per-device kW savings during FY 2025.
2) Estimated program impacts throughout FY 2025.

3) EOFY program capability based on program enrollment at the EOFY 2025.

4) EOFY program capability based on incremental enrollment during FY 2025. This information is used for program benefit-cost analysis, consistent with the methods used for energy efficiency programs.

8.3.4.1 Estimated Impacts During FY 2025

The following figures shows the monthly average kW savings per device for *Flex*EV Off-Peak Rewards program in FY 2025. The average demand savings throughout FY 2025 was 0.32 kW.

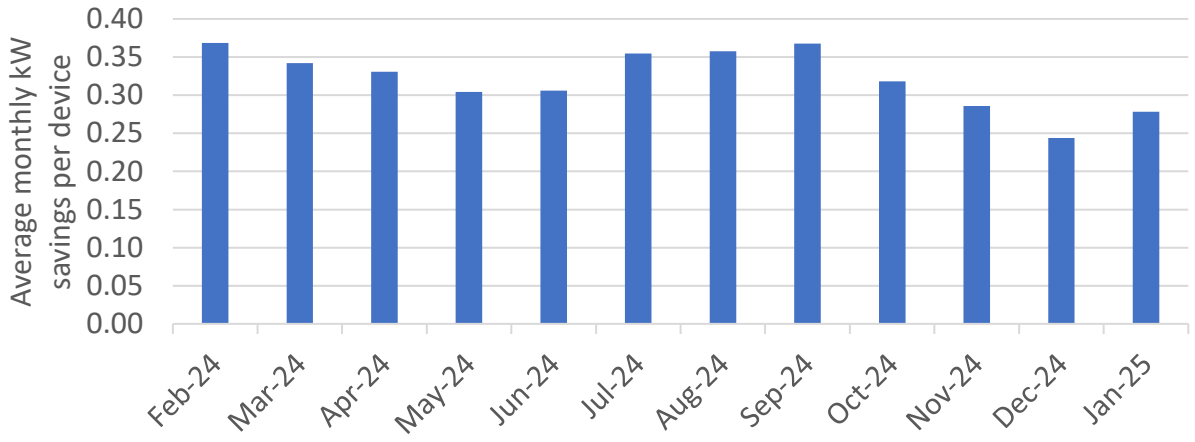


Figure 8-9: *Flex*EV Off-Peak Rewards – Monthly Average Per-Device kW Saving in FY 2025

The figure below shows monthly average total kW savings throughout FY 2025. The average demand savings throughout FY 2025 was estimated at 67 kW.

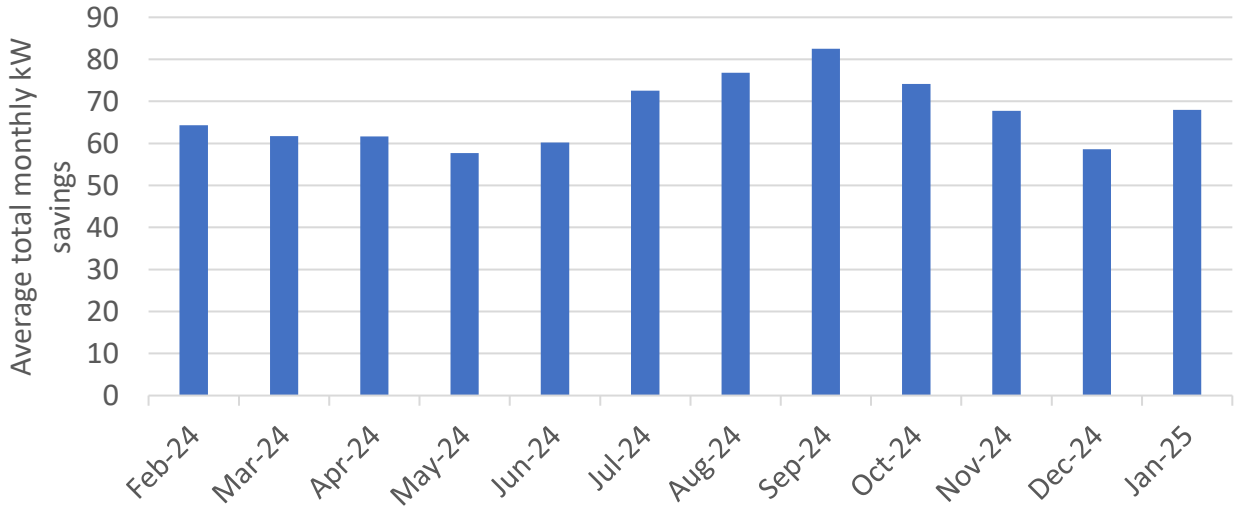


Figure 8-10: *Flex*EV Off-Peak Rewards – Monthly Average Total kW Savings in FY 2025

The following table shows estimated energy, peak demand, non-coincident peak demand, and ERCOT 4CP demand savings achieved in FY 2025.

Table 8-5: *Flex*EV Off-Peak Rewards – Achieved Energy and Demand Savings

Measure	Gross Energy Savings (kWh)	Gross NCP Demand Savings (kW)	Gross CP Demand Savings (kW)	Gross ERCOT 4CP Demand Savings (kW)
*Flex*EV Off-Peak Rewards	–	105.93	71.75	33.53

8.3.4.2 End-of-Fiscal Year Program Capability

EOFY program capability is based on EOFY enrollment and is shown in the following table.

Table 8-6: *Flex*EV Off-Peak Rewards – EOFY Program Energy and Demand Savings

Measure	EOFY Enrollment	Gross Energy Savings (kWh)	Gross NCP Demand Savings (kW)	Gross CP Demand Savings (kW)	Gross ERCOT 4CP Demand Savings (kW)
*Flex*EV Off-Peak Rewards	247	–	142.96	84.14	39.81

8.3.4.3 Incremental Impacts

Incremental impacts used in benefit-cost analysis are based on gross incremental enrollment during the program year and are shown in the following table.

Table 8-7: *Flex*EV Off-Peak Rewards – Incremental Program Energy and Demand Savings

Measure	Gross Incremental Enrollment	Gross Energy Savings (kWh)	Gross NCP Demand Savings (kW)	Gross CP Demand Savings (kW)	Gross ERCOT 4CP Demand Savings (kW)
*Flex*EV Off-Peak Rewards	99	–	57.30	33.72	15.96

8.4 MY BATTERY REWARDS PROGRAM

8.4.1 Overview

Launched in FY 2025, the My Battery Rewards pilot program is a collaborative, customer-driven program where CPS Energy partners with homeowners who own a Battery Energy Storage System (BESS) to support the grid and strengthen reliability. During select times of high demand, CPS Energy notifies participants via email, phone call, or text to engage their BESS to help reduce load. For each event, customers are notified half an hour in advance. Customers receive a $10 bill credit for each event they participate in.

In FY 2025, only four events were called on 8/7/2024, 8/19/2024, 8/20/2024, and 8/21/2024. Each event occurred between 7:00-9:00 PM.

8.4.2 Program Participation

The following figure shows the participation trend by date throughout the fiscal year. By the EOFY 2025, there were 59 participants. Each participant had a solar photovoltaics (PV) system, and 29 also participated in the BYOT residential thermostat DR program.

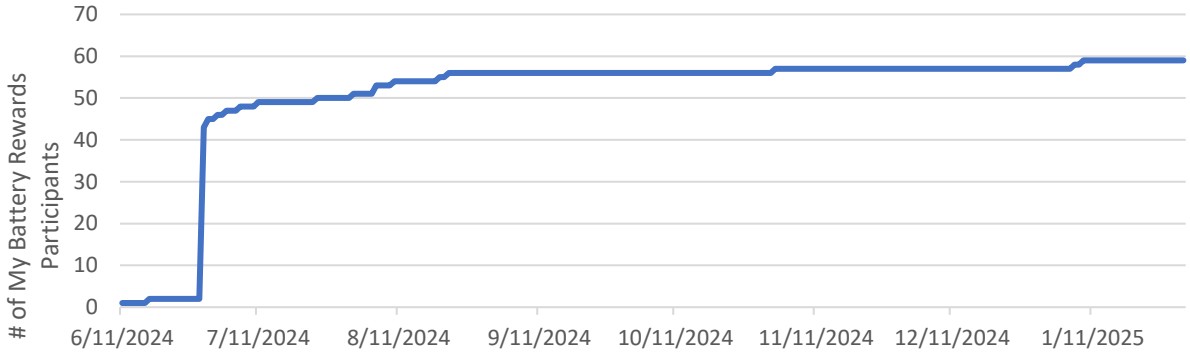


Figure 8-11: My Battery Rewards – FY 2025 Program Participation Trend

The table below tabulates the participating battery brands among these 59 participants in FY 2025.

Table 8-8: My Battery Rewards – FY 2025 Participation by Battery Brand

Battery Brand	Participants
Tesla	39
Enphase	13
Franklin	5
LG	1
Growatt	1

Not all customers participated in each battery DR event. The average participating rate[92] was 62%. The following table specifies participating rates for each event.

Table 8-9: My Battery Rewards – FY 2025 Participation Rate

Date	Total Customers	Participants	Participating Rates
8/7/2024	50	30	60%
8/19/2024	54	35	65%
8/20/2024	54	33	61%
8/21/2024	54	34	63%
Average Participating Rates			**62%**

8.4.3 Savings Calculation Methods

Both 15-min interval AMI revenue meter and solar meter data between May and September 2024 for each participant were available for review. The following data categories were included in the 15-minute interval datasets:

- Overall consumption – customer consumption data
- PV generation – customer PV generation data
- Flow-out – customer generation that flows out and/or is pushed back to the grid

Customer net consumption is the difference between customer consumption data and customer generation that is returned to the grid:

Customer net consumption = overall consumption – flow-out

Note that electric bills are based upon customer net consumption.

The following figure includes average overall consumption, PV generation, flow-out, and customer net consumption kW between May to September 2024.

[92] Participating rate for each event is defined as the number of participants who participated/get $10 credit divided by total number of My Battery Rewards customers on that event.

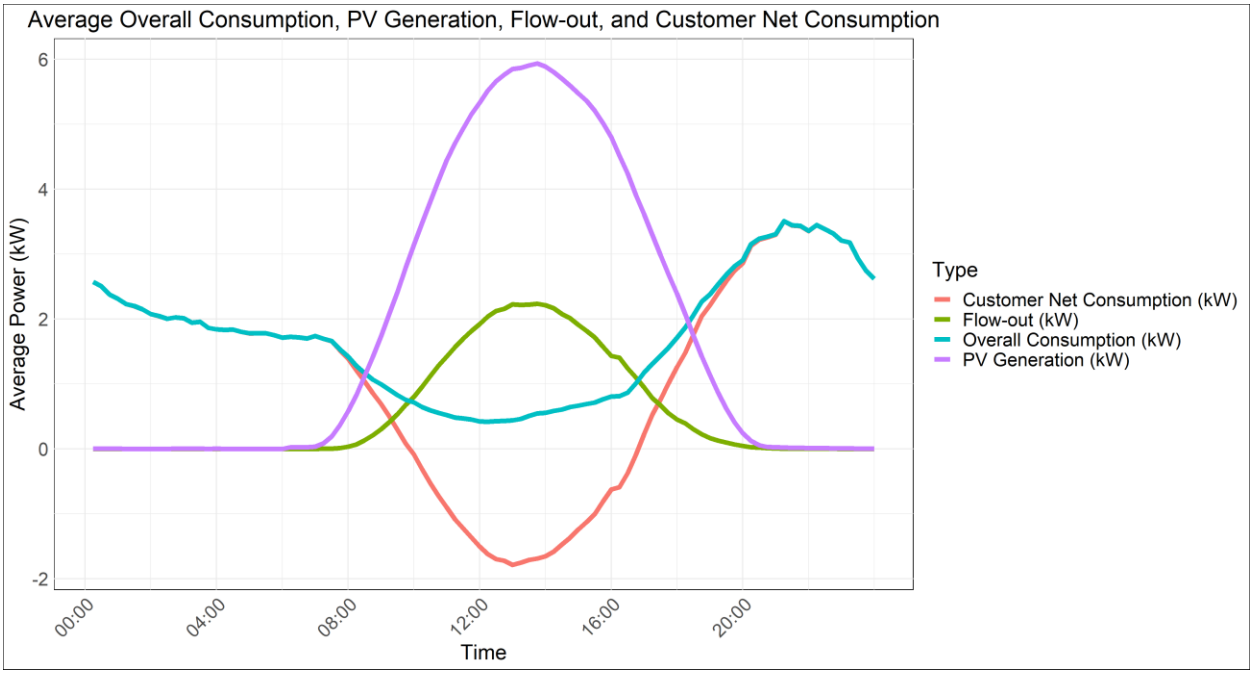


Figure 8-12: My Battery Rewards – Average Overall Consumption, PV generation, Flow-out and Customer Net Consumption kW between May to September 2024

The following figures plot average customer consumption, PV generation, flow-out and customer net consumption kW during four event days, respectively. The event period is identified by yellow shading.

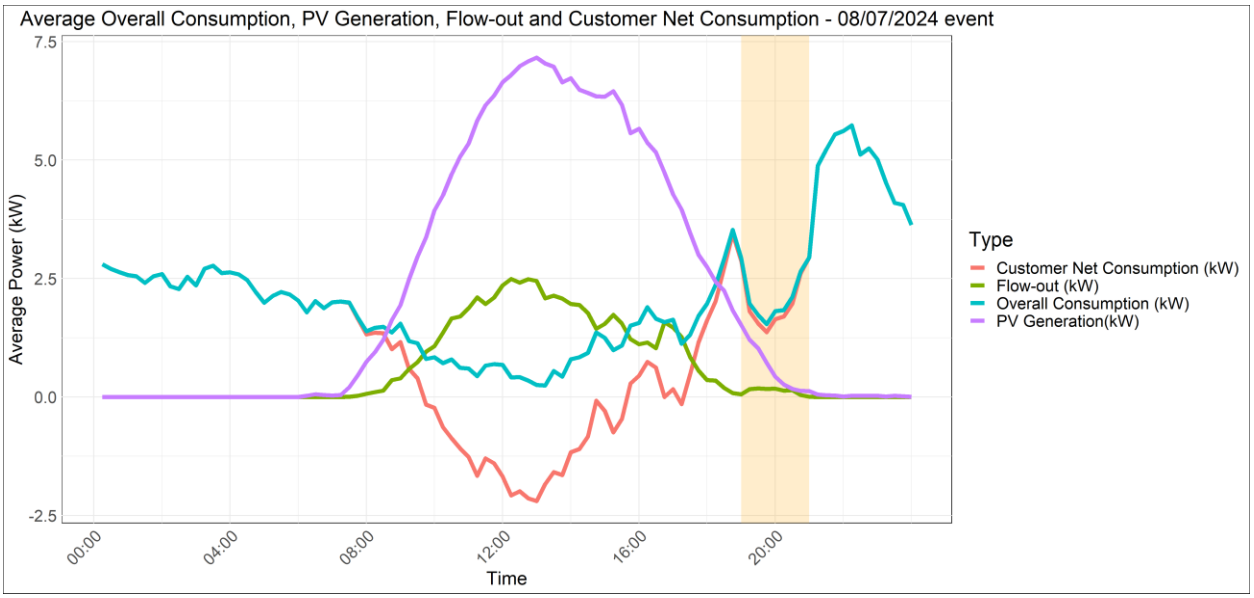


Figure 8-13: My Battery Rewards – Average Consumption, PV generation, Flow-out, and Customer Net Consumption kW – 08/07/2024 Event

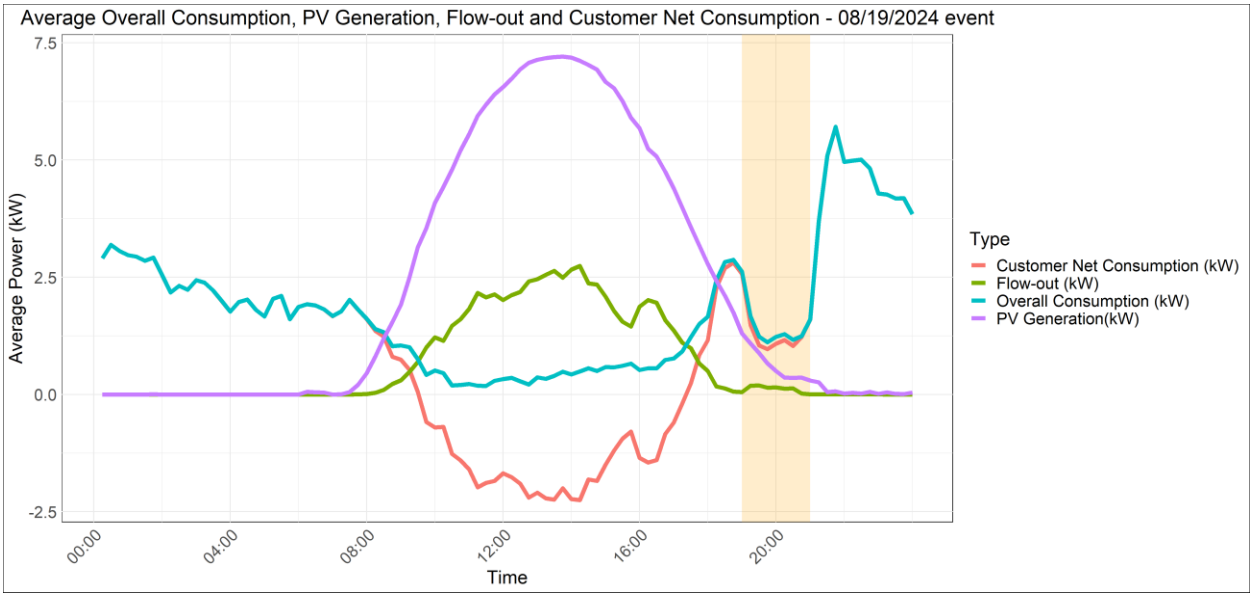


Figure 8-14: My Battery Rewards – Average Consumption, PV generation, Flow-out, and Customer Net Consumption kW – 08/19/2024 Event

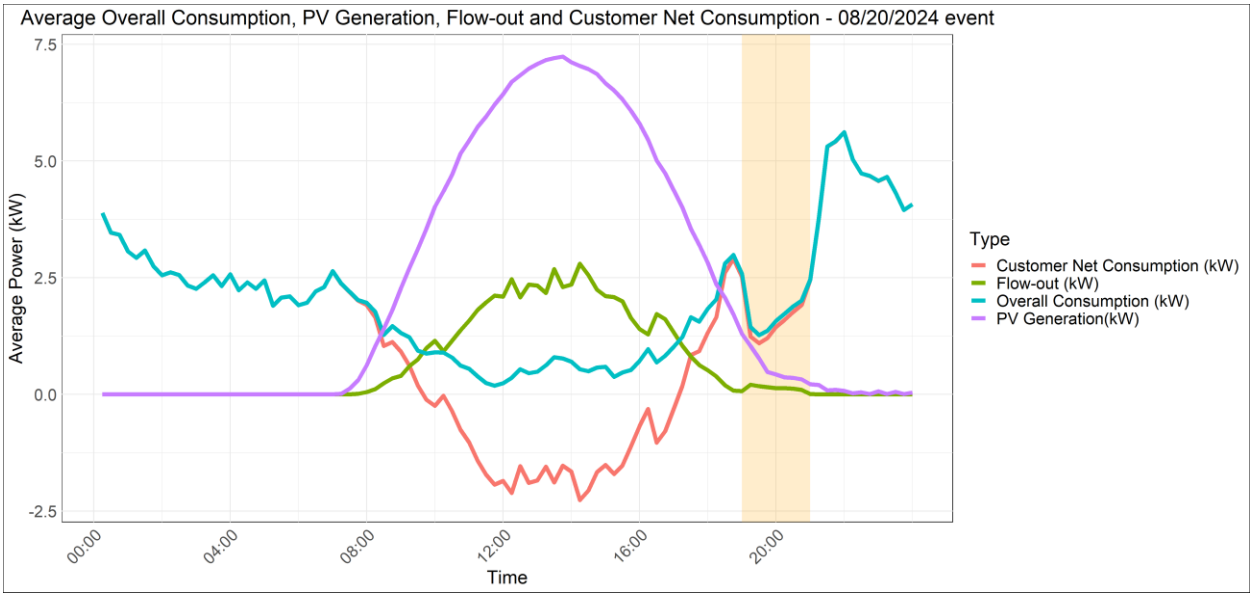


Figure 8-15: My Battery Rewards – Average Consumption, PV generation, Flow-out, and Customer Net Consumption kW – 08/20/2024 Event

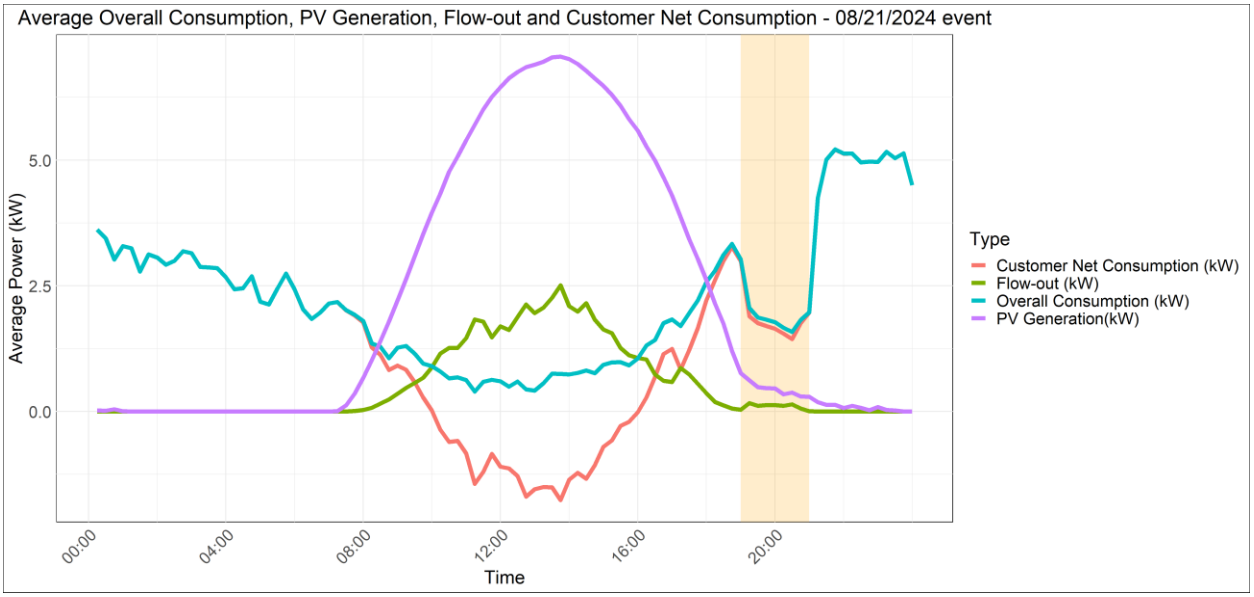


Figure 8-16: My Battery Rewards – Average Consumption, PV generation, Flow-out, and Customer Net Consumption kW – 08/21/2024 Event

As shown in above figures, there was obvious load drop during all four events for both consumption and net consumption profile.

Both kW and kWh Savings analysis is based on net consumption, as this dataset is directly related to customers' electric bills. A top 3 of 10 analysis with a difference adjustment is adopted for this program. Specifically, this EM&V methodology is implemented as follows (using 08/07/2024 event as an example):

Step 1: Aggregate customer net consumption data, and identify the top 3 days during event period (19:00-21:00) among the previous eligible days – 7/29/2024, 7/31/2024 and 8/6/2024. These are baseline days.

Step 2: Aggregate and average load profile for these baseline days, and calculate kW during the event period – 3.58 kW.

Step 3: Calculate average kW during the event period on the event day – 1.95 kW.

Step 4: Calculate original savings: original savings = baseline during event period – event day during event period = 3.58 – 1.95 = 1.63 kW.

Step 5: Calculate the average kW during the adjustment period (15:00-17:00) for both baseline and event day – 0.02 kW and 0.58 kW, respectively.

Step 6: Calculate difference between baseline and event day during the adjustment period: 0.58 – 0.02 = 0.56 kW. The adjustment period is identified by purple shading in the below figure.

Step 7: Adjusted kW savings are the original savings adding the difference generated in step 6: 1.63 + 0.56 = 2.19 kW.

Load profile and savings for 08/07/2024 event are plotted as follows. kW savings per account for other events can be calculated in a similar manner.

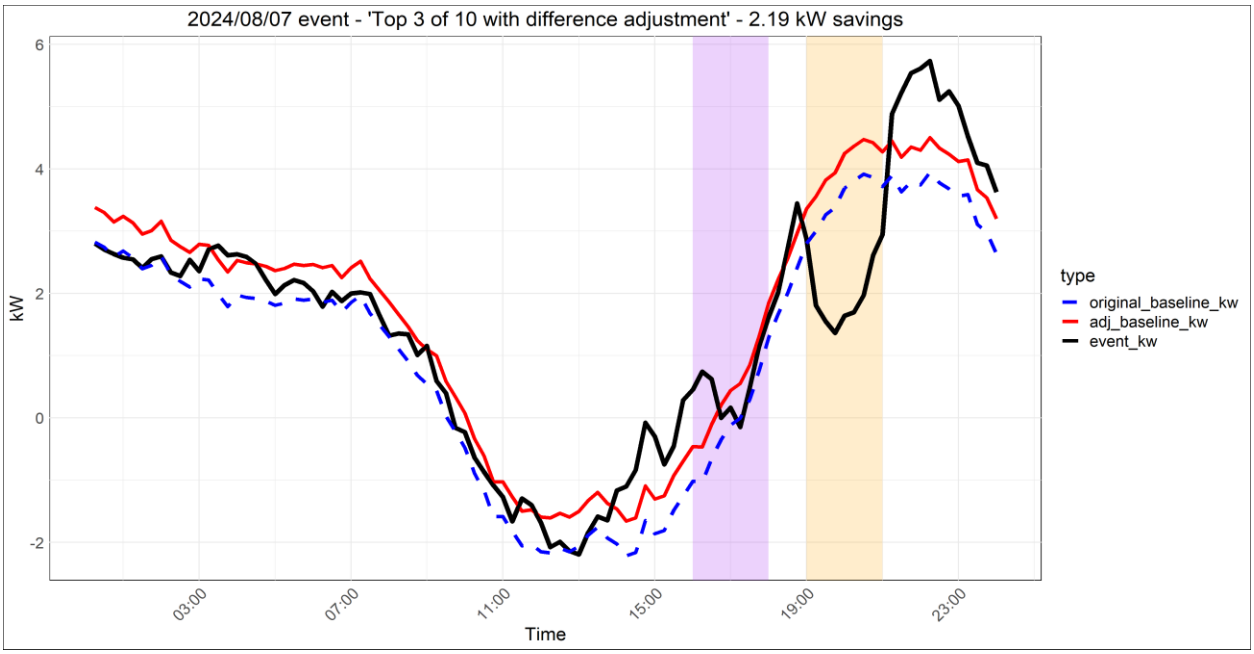


Figure 8-17: My Battery Rewards – Event vs Baseline Load Profile – 08/07/2024 Event

8.4.3.1 Energy Savings (kWh)

Energy Savings per event per device is defined as follows:

$$\begin{aligned} &Net\ Energy\ Savings \\ &\quad = Adjusted\ kW\ Savings \times Event\ Duration \\ &\quad - Adjusted\ kW\ Overconsumption \times Snapback\ Period\ Duration \end{aligned}$$

Define the snapback period as the 3-hour window immediately after the event ends. In the case of 08/07/2024 event, it's 9:00pm – 12:00am (till midnight).

Continue using 08/07/2025 event as an example, the net energy savings is calculated in the following manner:

Step 1: Calculate the average kW during the snapback period for both baseline and event day – 3.53 kW and 4.89 kW, respectively.

Step 2: Calculate difference between baseline and event day during the snapback period: 4.89 - 3.53 = 1.36 kW.

Step 3: Adjusted kW overconsumption during snapback period is the original savings minus the difference generated in step 6 in the kW savings calculation steps: 1.36 - 0.56 = 0.8 kW.

Step 4: The net energy savings is calculated as the energy savings during event period offsetting the overconsumption during the snapback period:

$$Net\ Energy\ Savings = 2.19 \times 2 - 0.8 \times 3 = 1.97\ kWh$$[93]

Net energy savings per account for other events can be calculated in a similar manner.

8.4.3.2 Coincident Peak (CP) Demand Savings (kW)

To compute CP kW savings, the per-device demand savings are multiplied by the total number of participating devices for each event. The claimed achieved CP kW savings are the average kW savings during all events. Scaling the average kW savings by the EOFY customer count yields EOFY CP kW savings. Multiplying per-device CP kW savings by the number of newly added participants yields incremental CP kW savings. Because this program started in FY 2025, incremental and EOFY savings are equivalent.

8.4.3.3 Non-Coincident Peak (NCP) Demand Savings (kW)

Achieved non-coincident peak savings for My Battery Rewards program is the maximum kW savings throughout all events in FY 2025, which occurred during 8/21/2024 19:00-21:00. Therefore, the kW savings on this day are used as the NCP kW savings for My Battery Rewards program. EOFY NCP kW in FY 2025 were calculated as multiplying maximum per-device savings throughout FY 2025 non-holiday weekdays by EOFY number of participants. Multiplying per-device NCP demand savings by number of newly added participants yield incremental NCP kW savings. As this is a new program starting in FY 2025, incremental and EOFY numbers as the same.

8.4.3.4 ERCOT 4CP Demand Savings (kW)

During the summer of 2024, all events occurred between 19:00-21:00 PM, targeting the ERCOT solar generation ramp down period, which is later than all the ERCOT 4CPs. Therefore, there are no 4CP kW savings.

8.4.4 Results

Program impacts are presented in four manners:

5) Estimated per-device kW savings during FY 2025.
6) Estimated program impacts during FY 2025 DR events.

[93] Calculation may not match exactly due to rounding.

7) EOFY program capability based on program enrollment at the EOFY 2025.

8) EOFY program capability based on incremental enrollment during FY 2025. This information is used for program benefit-cost analysis, consistent with the methods used for energy efficiency programs.

8.4.4.1 Estimated Impacts During FY 2025 DR Events

The following tables show per account and overall kW and net energy savings for each event.

Table 8-10: My Battery Rewards – FY 2025 Savings Summary – kW Savings

Date	kW Savings Per Account/Device	Total kW Savings
08/07/2024	2.19	110
08/19/2024	2.21	119
08/20/2024	2.21	119
08/21/2024	3.14	170
Average	**2.44**	**129**

Table 8-11: My Battery Rewards – FY 2025 Savings Summary – Net Energy Savings (kWh)

Date	Net Energy Per Account/Device (kWh)	Total Net Energy Savings (kWh)
08/07/2024	1.97	99
08/19/2024	1.36	73
08/20/2024	2.22	120
08/21/2024	6.42	347
Total	**11.97**	**639**

The following table shows estimated energy, peak demand, non-coincident peak demand, and ERCOT 4CP demand savings achieved in FY 2025.

Table 8-12: My Battery Rewards –Achieved Energy and Demand Savings

Measure	Gross Energy Savings (kWh)	Gross NCP Demand Savings (kW)	Gross CP Demand Savings (kW)	Gross ERCOT 4CP Demand Savings (kW)
My Battery Rewards	639	170	129	–

8.4.4.2 End-of-Fiscal Year Program Capability

EOFY program capability is based on EOFY enrollment and is shown in the following table.

Table 8-13: My Battery Rewards – EOFY Program Energy and Demand Savings

Measure	EOFY Enrollment	Gross Energy Savings (kWh)	Gross NCP Demand Savings (kW)	Gross CP Demand Savings (kW)	Gross ERCOT 4CP Demand Savings (kW)
My Battery Rewards	59	706	185	144	–

8.4.4.3 Incremental Impacts

Incremental impacts used in benefit-cost analysis are based on gross incremental enrollment during the program year and are shown in the following table.

Table 8-14: My Battery Rewards – Incremental Program Energy and Demand Savings

Measure	Gross Incremental Enrollment	Gross Energy Savings (kWh)	Gross NCP Demand Savings (kW)	Gross CP Demand Savings (kW)	Gross ERCOT 4CP Demand Savings (kW)
My Battery Rewards	59	706	185	144	–

8.5 EMERGING TECHNOLOGY PROGRAM RECOMMENDATIONS

The evaluation team makes the following recommendations for electric vehicle program offerings.

8.5.1 *Flex*EV Smart Rewards/Off-Peak Rewards Programs

In March 2025, CPS Energy made the decision to sunset the Smart Rewards program and transition all participants to the Off-Peak Rewards program. As of May 2025, all Smart Rewards program participants have joined Off-Peak Rewards program. There are also a significant number of new participants actively enrolling. The evaluation team will work with CPS Energy to determine if moving from CPS Energy-controlled event calling to customer behavioral load reduction during 4:00-10:00 PM is effective.

Unlike previous years, there is no EV charger device level data for future evaluation. Frontier is working with CPS Energy to develop new evaluation strategies for the EV program.

8.5.2 My Battery Rewards Program

The pilot year of the My Battery Rewards program has shown significant savings per participant. The incentive structure has also yielded cost-effective results. Currently, there are approximately 1,600 batteries within CPS Energy's service territory, with a total nameplate power around 32 MW. This program has significant room for potential growth.

During this pilot program, the average charging load profile shows snapback/overconsumption immediately after the event period ends (9:00 PM). Battery charging may be optimized further with increased daytime charging when solar electricity generation is prevalent. Frontier recommends exploring different ways to shift charging and optimize the load profile towards solar generation time.

In FY 2025, only 4 events were called, each in August between 19:00-21:00 PM. Moving forward, the evaluation team recommends calling more events during alternate time periods. Varying event calling strategies can help inform strategies to improve the program performance.

9. SOLAR ENERGY PROGRAMS

9.1 SUMMARY OF SOLAR ENERGY IMPACTS

Over the past several years, CPS Energy has shifted its solar efforts significantly. Residential and many commercial solar installations have continued without rebates, and CPS Energy now focuses more on providing solar education for customers through the Bring Solar Home program[94] provided by Build San Antonio Green, and on promoting solar among hard-to-reach customers via community solar programs.

Commercial solar projects contributed 100% of all solar savings achieved during FY 2025.

9.2 COMMERCIAL SOLAR PROGRAM

9.2.1 Overview

CPS Energy has offered rebates for solar PV systems installed on commercial buildings for 18 years. CPS Energy's current commercial solar programs are focused on supporting the adoption of solar for small businesses (system size under 100 kW AC), schools, and non-profit organizations. Rebates are $0.60 per AC Watt for the first 25 kW, and $0.40 per AC Watt for over 25 kW, with a $0.10 per AC Watt premium for projects utilizing locally-manufactured modules. All commercial solar rebates are capped at $80,000 or 50% of the invoice cost, whichever is less. The rebate for registered non-local installers is reduced to 75% of the local installer rebates as detailed above.

The following table summarizes FY 2025 Commercial Solar participation by rebate level. Installed systems that did not receive a rebate are not included in this review.

Table 9-1: Commercial Solar – Summary by Rebate Level[95]

Incentive Level (First 25 kW_{DC}/ next kW_{DC})	# of Projects	Total Capacity (kW_{DC})	Rebated Amount
$0.70/$0.50	11	909	$463,463
$0.60/$0.40	59	3,914	$1,487,542
$0.40/$0.30	2	117	$39,160
Total[96]	**72**	**4,940**	**$1,990,164**

[94] Bring Solar Home, https://www.bringsolarhome.com/.
[95] One project at the $0.70/$0.50 incentive level and two projects at the $0.60/$0.40 level received a maximum $80,000 incentive.
[96] The sum of the individual line items may not match the total due to rounding.

Commercial solar systems varied in size from 5 kW_{DC} to greater than 450 kW_{DC}. Large installations (>100 kW_{DC}) comprised most of the new capacity added and rebates earned. The following table summarizes FY 2025 Commercial Solar participation by system size.

Table 9-2: Commercial Solar – Summary by System Size

System Size (kW_{DC})	# of Projects	Total Capacity (kW_{DC})	Rebated Amount
0-10 kW_{DC}	16	116	$64,363
>10-25 kW_{DC}	13	178	$98,662
>25-50 kW_{DC}	7	264	$129,953
>50-100 kW_{DC}	16	1,121	$498,860
>100-250 kW_{DC}	18	2,445	$1,038,326
>250-500 kW_{DC}	2	815	$160,000
Total[97]	**72**	**4,940**	**$1,990,164**

All systems are required to be interconnected to the CPS Energy distribution system on the customer's side of the meter. Systems must be approved, permitted, pass all required inspections, and comply with CPS Energy's requirements for interconnection.

In FY 2025, there were 72 rebated commercial solar PV systems installed through the program, totaling 4,940 kW_{DC} and $1.99 million in distributed rebates. The average rebated commercial system size was 69 kW_{DC}. Additionally, 17 commercial solar projects were completed without rebates during FY 2025, comprising another 12,289 kW_{DC}. Since these projects did not receive energy efficiency rebates, neither the projects nor their associated energy or demand savings are included in this summary.

The figure below summarizes the rebated Commercial Solar program history in terms of installed capacity, average system prices, and annual rebate levels.

[97] Same as previous comment.

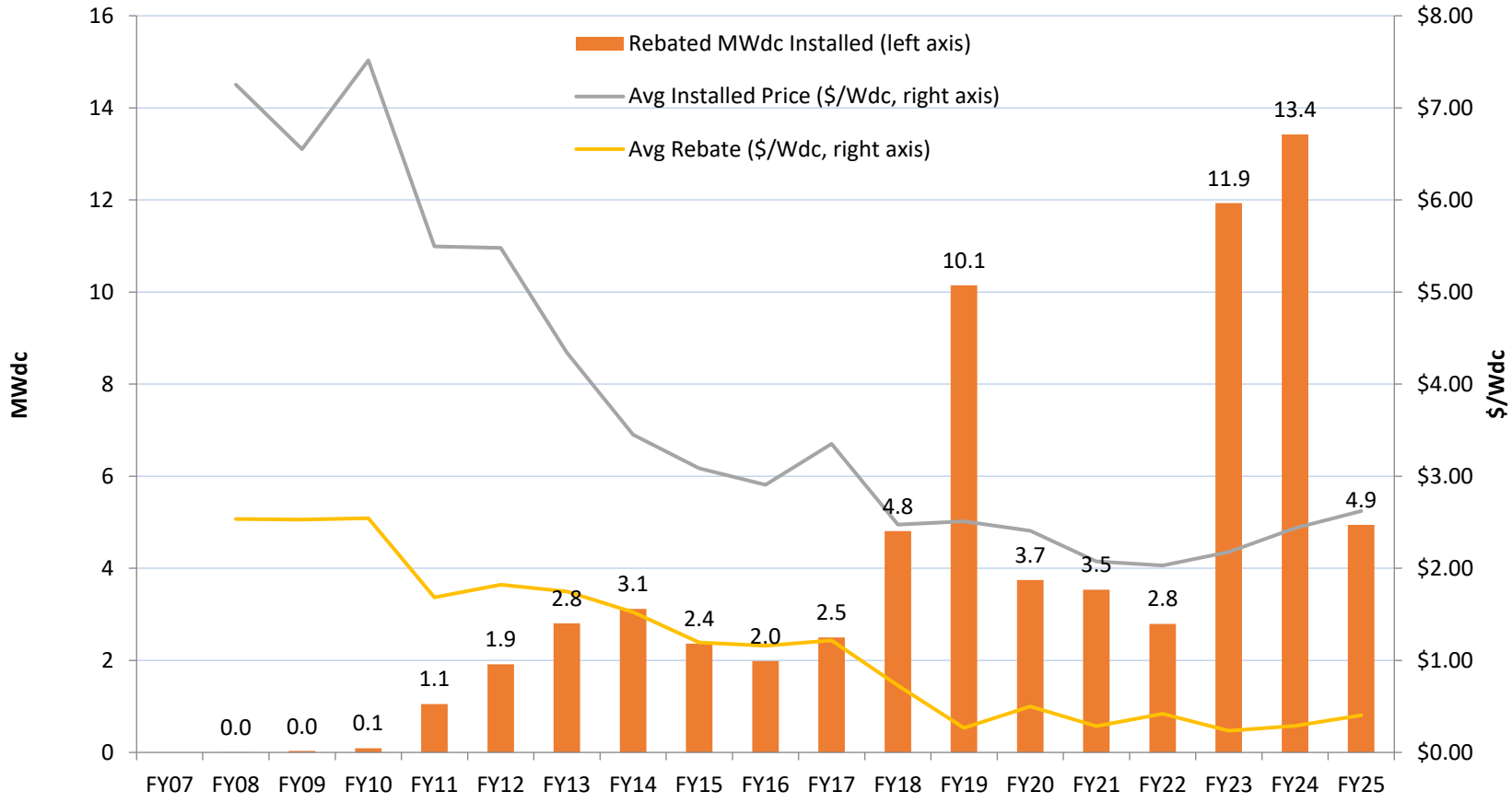


Figure 9-1: Commercial Solar – Program History: Annual Capacity Installed, Average System Price, and Average Rebate Levels

FY 2025 utility rebates currently covered approximately 15 percent of installed costs. This metric tends to vary widely depending on the number of very large systems installed, with rebate amounts capped at a maximum limit, each year.

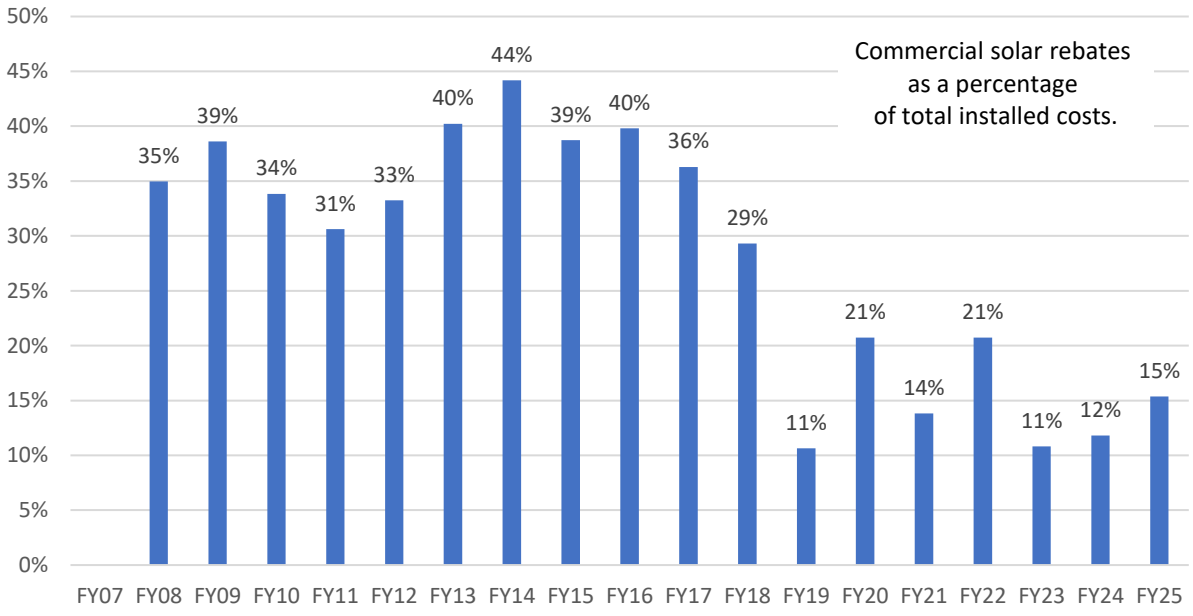


Figure 9-2: Commercial Solar – Percent of Installed System Costs Paid by Program Rebates

9.2.2 Results

The gross energy and demand savings for the Commercial Solar program are presented below.

Table 9-3: Commercial Solar – Program Gross Energy and Demand Savings

Measure	Gross Energy Savings (kWh)	Gross NCP Demand Savings (kW)	Gross CP Demand Savings (kW)	Gross ERCOT 4CP Demand Savings (kW)
Commercial Solar PV	5,957,592	4,520	2,030	1,704

Deemed savings values originally developed by the evaluation team in FY 2017 were validated via desk and field reviews during FY 2019. All savings calculations were updated during FY 2022 based on evaluated metered solar data. These updated deemed savings were applied to current FY 2025 projects.

9.3 OTHER SOLAR PROGRAMS

Legacy rebate programs supporting residential and larger commercial solar installations have been largely successful in creating and sustaining a vibrant local solar market.

In addition to the Commercial Solar rebates discussed above, 17 installations comprising more than 12 MW_{DC} of new solar capacity were completed without rebates. In the residential sector, 3,056 new non-rebated installations were completed, comprising approximately 27 MW_{DC} of new solar capacity.

10. TOTAL IMPACTS AND COST EFFECTIVENESS

10.1 NET PROGRAM IMPACTS & COST EFFECTIVENESS

Program impacts presented in the Weatherization, Residential Energy Efficiency, Commercial Energy Efficiency, Demand Response, and Solar Energy sections of this report are gross program impacts (measured at the customer's meter) without any adjustments for distribution losses or Net-to-Gross (NTG) adjustments.

Adjustments to gross impacts include accounting for energy losses in the transmission and distribution system at the time of peak demand.

- The net program energy savings values shown here and in the executive summary were derived by converting the program-level gross energy savings at the meter to savings at the source using an energy loss factor provided by CPS Energy equal to 5.08 percent.
- The net program capacity savings values were derived by converting the program-level gross capacity savings at the meter to savings at the source using a CPS Energy-provided capacity loss factor equal to 8.15 percent.

The gross energy and capacity savings were further adjusted using the NTG values as shown in the following table. Based on industry standards for low-income programs in Texas, a 100 percent NTG factor was used for the Weatherization program. Residential NTG ratios were updated for FY 2025 through a combination of industry benchmarking and a surveyed sample of FY 2024 program participants. Commercial NTG ratios were provided by CPS Energy but are expected to be updated for FY 2026.

Overall, CPS Energy's Energy Efficiency, Demand Response, and Solar portfolio produced positive net benefits. The evaluation team also calculated the following three economic metrics, in line with previous evaluations:

1. Cost of Saved Energy (includes DR) ($/kWh) = $0.0380/kWh
2. Reduction in Revenue Requirements (includes DR) = $156,243,836
3. Benefit-Cost Ratio = 3.41

The net program impacts and results of the benefit-cost tests are provided in the following table.

Table 10-1: FY 2025 Net Portfolio Impacts and Cost Effectiveness[98,99]

Program	NTG Ratio	Net Energy Savings (kWh)	Net CP Demand Savings (kW)	Net NCP Demand Savings (kW)	Net ERCOT 4CP Demand Savings (kW)	Rebate $	Admin and Marketing $	Total Program $	PACT [100]
Weatherization Program									
Weatherization	100%	6,383,190	3,520	6,395	3,265	$15,583,601	$2,390,490	$17,974,091	0.71
Energy Efficiency Programs									
Residential HVAC	85%	5,218,743	2,257	2,503	2,257	$3,150,210	$144,444	$3,294,654	2.49
Home Efficiency	95%	1,067,662	670	1,023	611	$792,869	$36,511	$829,380	3.03
New Home Construction	100%	19,006,644	6,213	7,176	6,213	$7,907,855	$377,660	$8,285,515	3.58
Retail Discounts	77%	2,548,365	280	1,125	442	$743,492	$34,631	$778,123	2.51
Home Energy Assessment	100%	5,562,554	116	353	92	$1,320,363	$61,248	$1,381,611	1.88
High-Performance AC Tune-up	100%	24,717,233	8,870	9,797	8,870	$2,652,706	$119,665	$2,772,371	5.27
Multifamily[101]	100%	190,729	48	89	48	$140,261	$624,379	$764,640	0.23
Residential Subtotal		58,311,930	18,454	22,066	18,532	$16,707,756	$1,398,538	$18,106,295	3.30
Commercial & Industrial Solutions	96%	49,685,410	9,418	12,984	9,159	$6,782,090	$334,094	$7,116,184	5.28
Schools & Institutions	97%	22,816,550	4,627	6,243	4,837	$2,632,644	$133,543	$2,766,187	5.21
Small Business Solutions	97%	54,832,178	11,998	16,556	11,679	$7,024,879	$348,494	$7,373,373	5.59
Commercial Subtotal		127,334,138	26,043	35,782	25,674	$16,439,613	$816,131	$17,255,744	5.40
Energy Efficiency Subtotal		185,646,069	44,496	57,848	44,206	$33,147,369	$2,214,670	$35,362,039	4.32

Table continues on next page.

[98] NTG = Net-to-gross, NCP = Non-coincident peak, CP = Coincident peak, 4CP = ERCOT four coincident peak, PACT = Program administrator benefit-cost ratio.
[99] Net savings = gross savings x net-to-gross ratio ÷ (1 - line loss factor).
[100] The Program Administrator Cost Test (PACT) output, the benefit-cost ratio, is the ratio of the net present value (NPV) of avoided energy and capacity benefits, divided by the program's incentives and administrative costs. A PACT ratio greater than 1.0 indicates that the program delivered more benefits than costs incurred from the utility's perspective. The PACT is sometimes referred to as the Utility Cost Test (UCT).
[101] The Multifamily program first-year PACT score is limited based on several factors, including higher start-up costs and low participation rates due to the program launching in October 2024 and the fiscal year ending at the end of January 2025. It is expected to increase in future fiscal years.

Program	NTG Ratio	Net Energy Savings (kWh)	Net CP Demand Savings (kW)	Net NCP Demand Savings (kW)	Net ERCOT 4CP Demand Savings (kW)	Rebate $	Admin and Marketing $	Total Program $	PACT [102]
Demand Response Programs[103]									
Smart Thermostat[104]	100%	406,743	11,158	17,095	7,221	$770,029	$35,370	$805,399	N/A
Power Players	100%	975,340	11,475	14,317	5,121	$1,216,334	$56,342	$1,272,676	1.55
Direct Install Thermostats	100%	22,704,525	19,943	26,836	9,558	$431,048	$19,960	$451,008	4.91
Bring Your Own Thermostat	100%	63,672,259	58,968	78,001	27,902	$4,369,094	$203,208	$4,572,302	7.99
Commercial and Industrial DR	100%	3,900,463	80,960	112,303	67,394	$4,723,591	$216,232	$4,939,822	3.20
FlexEV Smart Rewards	100%	–	88	160	76	$64,499	$113,227	$177,726	0.27
FlexEV Off-Peak Rewards	100%	–	91	156	44	$26,530	$47,187	$73,717	0.34
My Battery Rewards	100%	769	157	202	–	$1,380	$26,315	$27,695	4.68
Demand Response Subtotal		91,660,098	182,840	249,069	117,315	$11,602,505	$717,840	$12,320,345	4.48
Renewable Energy Programs [105]									
Commercial Solar PV	100%	6,276,435	2,210	4,921	1,856	$1,679,862	$117,524	$1,797,386	6.04
Roofless Solar	100%	–	–	–	–	–	$43,176	$43,176	–
Solar Energy Subtotal		6,276,435	2,210	4,921	1,856	$1,679,862	$160,700	$1,840,562	6.02
Grand Total [106]		289,965,792	233,067	318,233	166,642	$62,013,337	$5,483,699	$67,497,037	3.41

[102] The Program Administrator Cost Test (PACT) output, the benefit-cost ratio, is the ratio of the net present value (NPV) of avoided energy and capacity benefits, divided by the program's incentives and administrative costs. A PACT ratio greater than 1.0 indicates that the program delivered more benefits than costs incurred from the utility's perspective. The PACT is sometimes referred to as the Utility Cost Test (UCT).

[103] The PACT for Demand Response Programs is calculated based on the net present value of avoided cost benefits divided by the net present value of program costs attributable to new, incremental participants during the program year. Because total program costs in the table represent the costs attributable to all participants, the PACT for Demand Response Programs cannot be directly calculated from data presented in the table. Demand response program net energy and demand savings (in lighter shade) represent end-of-fiscal year program capability based on end-of-fiscal year enrollment.

[104] The Smart Thermostat program is a legacy program that is no longer enrolling new customers. No PACT score is calculated because there was no incremental participation. Savings and costs reported for this program are for end-of-year participation.

[105] CPS Energy's solar rebate programs are evaluated independently from the utility's net metering rate policy.

[106] The sum of the individual programs and sectors may not match the totals due to rounding.

10.2 EMISSIONS REDUCTION

Environmental emission reductions are based on annual energy savings and represent the emissions avoided through the STEP portfolio. Emission factors were provided by CPS Energy and include avoided Carbon Dioxide (CO_2) emissions factors in tons per kWh with a 25-year forecast, and emission factors in pounds per kWh for Nitrous Oxide (NOx), Sulfur Dioxide (SO_2) and Total Suspended Particles (TSP).[107]

First year avoided emissions include avoided CO_2 emissions attributable to the gross number of participants in FY 2025. Lifetime avoided emissions include avoided CO_2 emissions attributable to program impacts across the estimated useful lifetime (EUL) of each measure within each program. Measure EULs are documented in the CPS Energy Guidebook; program-level weighted average EULs are listed below.

Table 10-2: FY 2025 CO_2 Emissions Reduction Impacts by Program (tons)

Program	1st Year CO_2 Emissions (tons)	Lifetime CO_2 Emissions (tons)	Program Weighted Average EUL
Weatherization (Casa Verde)	2,275	22,552	20.7
Residential HVAC	1,860	17,786	17.4
Home Efficiency	381	4,014	23.4
New Home Construction	6,774	72,885	23.0
Retail Discounts	908	8,021	14.9
Home Energy Assessment	1,982	14,853	10.9
High-Performance AC Tune-up	8,809	37,900	5.0
Multifamily	68	518	12.9
Residential Subtotal	20,782	155,976	
Commercial & Industrial Solutions	17,708	134,401	11.9
Schools & Institutions	8,132	48,055	10.8
Small Business Solutions	19,542	153,152	12.6
Commercial Subtotal	45,382	335,608	
Energy Efficiency Subtotal	68,439	514,137	

Table continues on next page.

[107] First year emissions factors provided by CPS Energy. The evaluation team converted these values to report imperial tons of each pollutant, consistent with past evaluations. Lifetime CO_2 emissions were derived from a long-term forecast of CPS Energy emissions factors.

Program	1st Year CO_2 Emissions (tons)	Lifetime CO_2 Emissions (tons)	Program Weighted Average EUL
Smart Thermostat	–	–	–
Power Players	348	348	1.0
Direct Install Thermostats	8,092	57,657	10.0
BYOT	22,693	161,693	10.0
C&I DR	1,390	1,390	1.0
FlexEV Smart Rewards	–	–	–
FlexEV Off-Peak Rewards	–	–	–
Battery DR	0.3	2	10.0
Demand Response Subtotal	32,523	221,090	
Comm Solar PV	2,237	25,593	30.0
Roofless Solar	–	–	–
Solar Energy Subtotal	2,237	25,593	
Grand Total[108]	**103,199**	**760,819**	

Commercial EE programs delivered the most first-year and lifetime avoided CO_2 emissions. Based on their implementation design, C&I DR and the Power Players behavioral DR programs have a one-year EUL. This short EUL is a primary reason why DR programs contribute a lower share of overall lifetime avoided CO_2 compared to first-year avoided emissions.

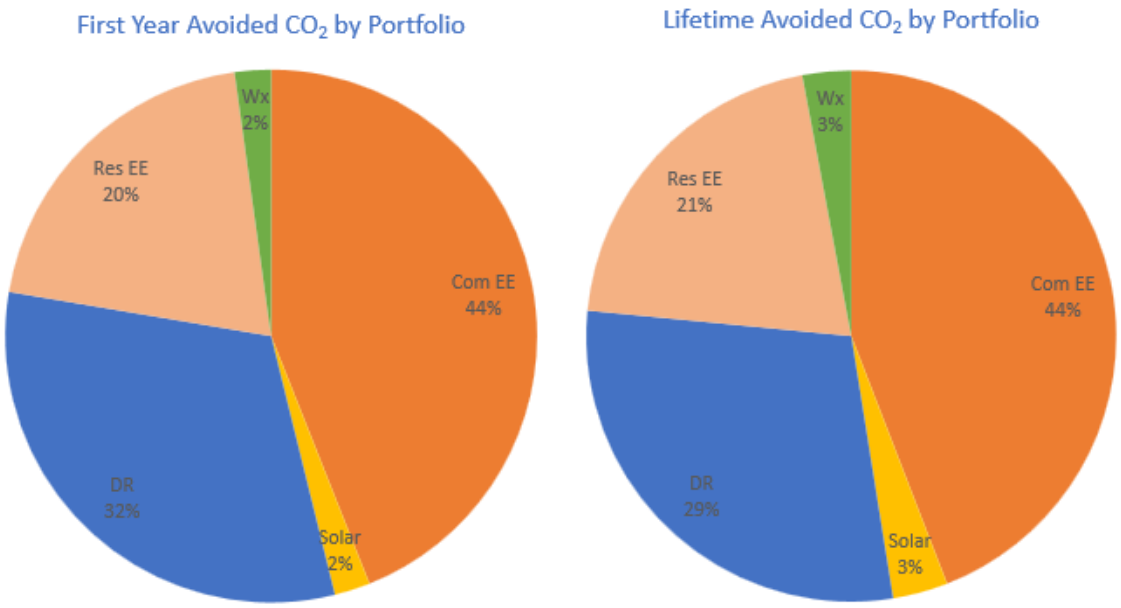


Figure 10-1: First Year and Lifetime Avoided CO_2 Emissions

[108] The sum of the individual measures may not match the total due to rounding.

Commercial EE programs provide the highest level of avoided emissions per customer due to the larger overall energy savings opportunity per site, followed by solar programs. Although Weatherization contributes only 2-3 percent of avoided emissions, it has a higher avoided emission value per participating residence than residential EE or DR programs. Program participation counts are provided in section 3.2.3.

Table 10-3: FY 2024 First Year Avoided CO_2 Emissions per Program Participant[109]

Portfolio	1st Year Avoided CO_2 Emissions (tons) per Participant	Lifetime Avoided CO_2 Emissions (tons) per Participant
Weatherization	0.93	9.19
Residential Energy Efficiency	0.70	5.22
Commercial Energy Efficiency	14.99	110.87
Demand Response	0.07	0.46
Solar	31.07	355.45
Portfolio Average	**0.20**	**0.05**

First year avoided emissions for Nitrous Oxide (NOx), Sulfur Dioxide (SO_2) and Total Suspended Particles (TSP) are presented in the following table.

Table 10-4: FY 2024 First Year Avoided NOx, SO_2, and TSP Emissions

Program	1st Yr NOx (lbs)	1st Yr SO_2 (lbs)	1st Yr TSP (lbs)
Weatherization (Casa Verde)	2,483	253	456
Residential HVAC	2,030	207	373
Home Efficiency	415	42	76
New Home Construction	7,393	754	1,358
Retail Lighting Discounts	991	101	182
Home Energy Assessment	2,164	221	397
High-Performance AC Tune-up	9,614	981	1,766
Multifamily	74	8	14
Residential Subtotal	22,680	2,314	4,166
Commercial & Industrial Solutions	19,325	1,972	3,549
Schools & Institutions	8,874	906	1,630
Small Business Solutions	21,327	2,176	3,917
Commercial Subtotal	49,526	5,054	9,097
Energy Efficiency Subtotal	74,689	7,621	13,718

[109] Retail Discounts participants are not included in participant counts because savings are claimed per product.

Program	1st Yr NOx (lbs)	1st Yr SO_2 (lbs)	1st Yr TSP (lbs)
Smart Thermostat	–	–	–
Power Players (Behavioral DR)	379	39	70
Direct Install Thermostats	8,831	901	1,622
BYOT	24,765	2,527	4,549
C&I DR	1,517	155	279
FlexEV Smart Rewards	–	–	–
FlexEV Off-Peak Rewards	–	–	–
Battery DR	–	–	–
Demand Response Subtotal	35,492	3,622	6,519
Res Solar PV	–	–	–
Com Solar PV	2,441	249	448
Roofless Solar	–	–	–
Solar Energy Subtotal	2,441	249	448
Grand Total[110]	112,622	11,492	20,686

[110] The sum of the individual measures may not match the total due to rounding.

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