

2025 LOAD IMPACT EVALUATION OF THE CALIFORNIA STATEWIDE BASE INTERRUPTIBLE PROGRAM

CALMAC STUDY ID: SCE0504

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ABSTRACT

This report contains the Program Year (PY) 2025 load impact evaluation results for the Base Interruptible Program (BIP) offered by Pacific Gas and Electric (PG&E) and Southern California Edison (SCE). The BIP is an emergency demand response (DR) program that offers customers a monthly capacity incentive in exchange for their commitment to reduce their energy consumption to an amount that meets each customer's minimum operational requirements, also known as a Firm Service Level (FSL).

This report contains the ex-post load impact estimates for program year 2025 (PY2025) as well as the forecasted ex-ante load impacts for PY2026 through PY2036, which are based on customer performance in PY2025 (and earlier, where relevant) and the program enrollment forecasts provided by each investor-owned utility (IOU). Load impacts were estimated using an hourly customer-specific regression approach in a manner consistent with the Load Impact Protocols (LIP) adopted by the CPUC in Decision (D.) 24-12-003.

In PY2025, PG&E dispatched four events. The first was a winter test event on January 22nd (from 3:00PM – 5:00PM), followed by a re-test event on February 12th (from 3:00PM – 5:00PM). The first summer event was a test event on September 23rd (from 4:00PM – 6:00PM), followed by a re-test event on November 6th (from 4:00PM – 6:00PM). SCE dispatched one test event on September 23rd (from 4:00PM – 6:00PM).

PG&E's primary September test dispatched a total of ■ customers who provided an average of ■ MWh/h of load reduction in the full BIP PY2025 event hour, equating to ■% of their average FSL commitment. Ex-ante program-level load impacts for a four-hour event on a PG&E-specific August 1-in-2 Monthly System Worst Day are forecasted to grow from 166.7 MWh/h in PY2026 to 249.1 MWh/h in PY2036 as program participation is expected to increase in future program years.

SCE's September event dispatched a total of 326 customers who provided an average of 430.5 MWh/h of load reduction during the event hours, equating to 98% of their average FSL commitment. At the request of SCE, Verdant produced ex-ante impacts for two dispatch scenarios which included a four-hour and six-hour dispatch. Because the four-hour dispatch represents a more typical BIP event dispatch and more closely follows the Availability Assessment Hour (AAH) criteria of the LIP protocols, the SCE six-hour dispatch is not discussed in this report. SCE's ex ante program-level load impacts for a four-hour dispatch on an SCE-specific August 1-in-2 Monthly System Worst Day are forecasted to be 456.9 MWh/h per event hour through the forecast period because SCE anticipates constant program participation PY2026 through PY2036.

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1 EXECUTIVE SUMMARY

This report presents the statewide load impact evaluation results for the Base Interruptible Program (BIP) for the 2025 program year (PY2025). This report covers the statewide BIP offered by Pacific Gas and Electric (PG&E) and Southern California Edison (SCE).¹

The objective of this evaluation is to assess the PY2025 BIP in a manner that conforms to the Load Impact Protocols (LIP) adopted by the CPUC in Decision (D.) 24-12-003. At a high level, there are two main objectives related to the BIP load impact evaluation. These include:

- **Ex-post Analysis:** The goal of the ex-post analysis is to estimate load impacts for PY2025 BIP events and for an average event day in a manner that conforms to the LIP.
- **Ex-ante Analysis:** The goal of the ex-ante analysis is to forecast BIP aggregate MWh/h and per capita kWh/h load reductions for PY2026 through PY2036 under 1-in-2 and 1-in-10 weather scenarios in a manner that conforms to the LIP.

1.1 PROGRAM OVERVIEW

The BIP is an emergency demand response (DR) program that offers customers a monthly capacity incentive in exchange for their commitment to reduce their energy consumption to an amount that meets each customer's minimum operational requirements, also known as a Firm Service Level (FSL).

Each IOU's BIP is a tariff-based, emergency-triggered DR program that they can dispatch in response to California Independent System Operator (CAISO) Energy Emergency Alerts, emergencies local to their individual transmission or distribution systems, and for evaluation/testing purposes. The BIP is a Day-Of notification program and participants enroll in a 15-minute or 30-minute notification option. Customers enrolled in the BIP receive incentive payments in exchange for committing to reduce their electrical usage to a contractually established FSL. Participants who fail to reduce load down to or below their FSL are subject to an excess energy charge assessed on a kilowatt hour (kWh) basis.

¹ SDG&E does not have a BIP program covered by this evaluation.

BIP Enrollment

A total of 193 PG&E customers and 326 SCE customers were enrolled in the BIP for at least one event day in PY2025. This is a slight decrease from PY2024 participation levels, which were 198 and 337 customers for PG&E and SCE, respectively.² Table 1-1 shows customer enrollment by industry type for each utility.

TABLE 1-1: BIP ENROLLMENT BY INDUSTRY TYPE

PG&E BIP Participants		SCE BIP Participants	
Industry Group	Count of Customers	Industry Group	Count of Customers
Agriculture, Mining and Construction	66	Agriculture, Mining and Construction	31
Manufacturing	66	Manufacturing	203
Office, Hotels, Finance, Services	7	Office, Hotels, Finance, Services	6
Retail Stores	1	Retail Stores	1
Schools	0	Schools	1
Wholesale, Transport, and other Utilities	53	Wholesale, Transport, and other Utilities	69
Unknown/Other	0	Unknown/Other	15
Total	193	Total	326

BIP Events

In PY2025, PG&E had four event days and SCE had one. PG&E had one winter test event, one winter re-test event, one summer test event, and one summer re-test event. SCE had one summer test event. Table 1-2 shows the event information for PY2025.

TABLE 1-2: PY2025 BIP EVENT DAYS

IOU	Event Date	Program Options Deployed	Event Start and End Times	Event Duration (Hours)	Event Type	Customers Dispatched
PG&E	January 22 nd	BIP30	3:00PM-5:00PM	2	Test Event	6
	February 12 th	BIP30	3:00PM-5:00PM	2	Re-test Event	3
	September 23 rd	BIP15, BIP30	4:00PM-6:00PM	2	Test Event	141
	November 6 th	BIP30	4:00PM-6:00PM	2	Re-test Event	19
SCE	September 23 rd	BIP15, BIP30	4:00PM-6:00PM	2	Test Event	326

1.2 EX-POST METHODOLOGY

Verdant utilized an hourly customer specific regression-based approach for the ex-post analysis. The ex-post regression models are hourly models, where each hour of the day is modeled separately from other hours of the day. Non-residential customers typically have heterogenous loads, making it difficult to broadly apply a given regression model specification across all customers and thus necessitating site-specific models. Additionally, customer-specific regressions facilitate various aggregations of results required for reporting (i.e., industry type, customer size, etc.). The ex-post analysis followed four

² Note that while 193 customers were enrolled in the PG&E BIP program in PY2025, some historically high performing customers were not re-tested in PY2025. Additional details are in Section 3.3.3.

generalized steps which include: participant analysis, proxy day selection, model selection, and impact estimation. All ex-post models included variables to control for the day of the week, the month of the year, event days, and dual DR program enrollment (as applicable). Additional variables such as day-of load adjustments or weather variables were included as appropriate, depending on participant characteristics including weather sensitivity.

1.3 EX-ANTE METHODOLOGY

Verdant produced ex-ante load impacts for 11 years following PY2025 (PY2026-PY2036). For each IOU, the ex-ante impacts included the hourly ex-ante load impacts by, at minimum, Size Group, LCA, and SubLAP at the aggregate and per customer basis. Reference loads were produced for each typical event day and monthly IOU and CAISO System Worst Day under 1-in-2 and 1-in-10 weather conditions. Verdant produced ex-ante impacts for event hour windows based on each IOU's request. For PG&E, impacts were estimated for events comprising the first four hours of the RA period in each month. For SCE, impacts were estimated for both a four-hour (HE18 – HE21) and six-hour (HE17 – HE22) dispatch. Verdant's approach to the estimation of ex-ante load impacts was informed by the ex-post performance, future FSL commitments, PY2025 FSL achievement rates, and earlier PY FSL achievement rates where applicable.

1.4 EX-POST RESULTS

This section presents the ex-post load impacts and FSL achievement rates for the average full event hour for each event day. An FSL achievement rate of 0% indicates participants average event day load did not differ from their baseline load, an FSL achievement rate of 100% indicates that on average participant's event day load was reduced to their FSL, and an FSL achievement rate exceeding 100% indicates that participant's average event load reductions dropped below their FSL. For purposes of this summary of results, a full event hour is defined as an event hour where BIP participants were called to curtail their load for all 60 minutes of that hour.

1.4.1 PG&E Ex-Post Results

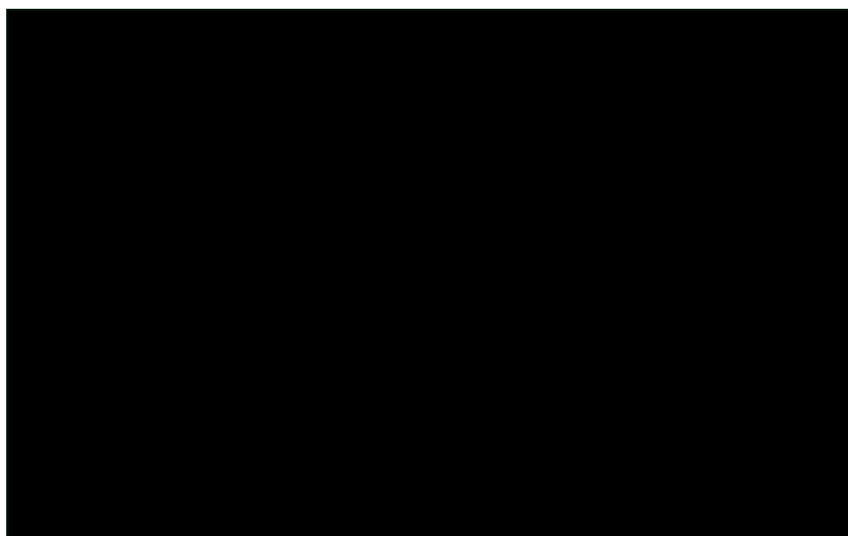
Table 1-3 presents the PG&E ex-post results for PY2025. As seen, the January 22nd first test event provided, on average, █ MWh/h of load reduction resulting in an █% FSL achievement rate and a █% reduction in load. The February 12th re- test event provided, on average, █ MWh/h of load reduction resulting in a █% FSL achievement rate and a █% reduction in load. The September 23rd test event provided █ MWh/h of load reduction with an FSL achievement rate of █%. For the BIP participants that were retested on November 6th, the FSL achievement rate was █%, providing an average load reduction of █ MWh/h.

TABLE 1-3: PG&E BIP AVERAGE FULL EVENT HOUR LOAD IMPACTS BY EVENT

Event Date (2025)	Num. of Participants Dispatched	Aggregate (MWh/h)		Per Capita (kWh/h)		Percent Load Reduction (%)	FSL (MW)	FSL Achievement Rate (%) ³
		Reference Load	Load Impact	Reference Load	Load Impact			
January 22 nd	6							
February 12 th	3							
September 23 rd	141							
November 6 th	19							

Average BIP event impacts are typically developed by averaging customer load shapes across all summer events. BIP events are generally not called during the winter months and, when they are, they tend to be localized events with limited participation. As such, winter events are not representative of overall program-wide capabilities and were therefore excluded from the average event calculation. Additionally, because of the small proportion of customers included in the re-test event, the September 23rd event alone was used to represent the ‘Average Event Day’ for PY2025. This event dispatched 141 customers for two hours (HE17 and HE18). Figure 1-1 presents the per capita average event day load shape for PG&E.

FIGURE 1-1: PG&E BIP AVERAGE PER CAPITA EVENT DAY LOAD SHAPE AND IMPACT



³ A value of 100% indicates customers reducing their load to their FSL on average.

1.4.2 SCE Ex-Post Results

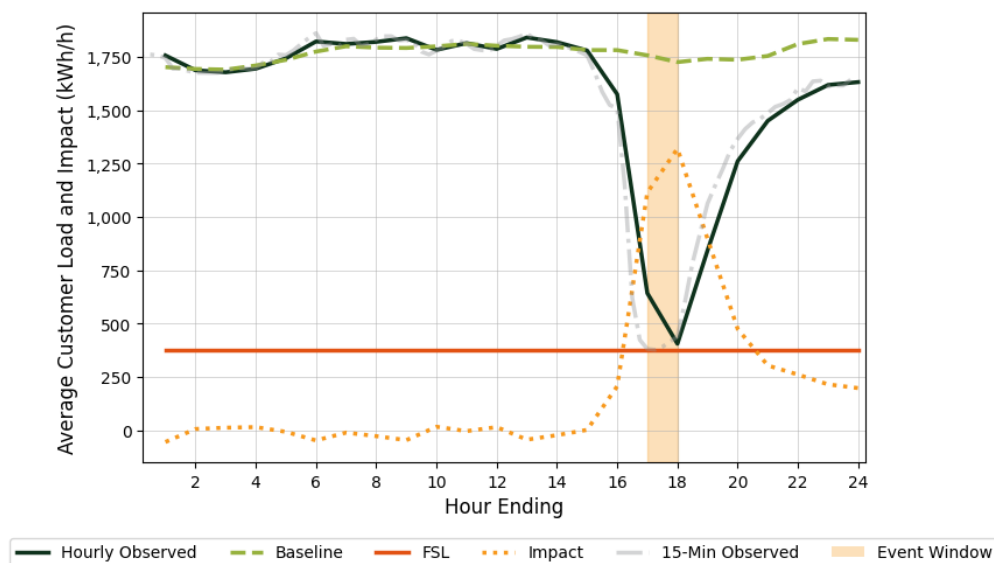
Table 1-4 presents the SCE ex-post results for PY2025. On September 23rd, all enrolled SCE BIP participants were dispatched for a test event. This event provided, on average, 430.5 MWh/h of load reduction, resulting in a 98% FSL achievement rate and a 76% reduction in load.

TABLE 1-4: SCE BIP AVERAGE FULL EVENT HOUR LOAD IMPACTS BY EVENT

Event Date (2025)	Num. of Participants Dispatched	Aggregate (MWh/h)		Per Capita (kWh/h)		Percent Load Reduction (%)	FSL (MW)	FSL Achievement Rate (%) ⁴
		Reference Load	Load Impact	Reference Load	Load Impact			
September 23 rd	326	562.8	430.5	1,726.4	1,320.5	76%	122.1	98%

Because there was only one event dispatched in PY2025 for SCE BIP customers, the September 23rd event and the “Average Event Day” are equivalent. Figure 1-2 presents the per capita average PY2025 event day load shape.

FIGURE 1-2: SCE BIP AVERAGE PER CAPITA EVENT DAY LOAD SHAPE AND IMPACT



1.5 EX-ANTE RESULTS

The following section presents the major results of the ex-ante analysis for each utility at the program level. Because BIP impacts are counted first, portfolio-level impacts are identical to program-level impacts, with the exception that load impacts are capped at 100% FSL achievement rates for forecasted dual

⁴ A value of 100% indicates customers reducing their load to their FSL on average.

enrolled ELRP customers through the ELRP program sunset in 2027. Portfolio level impacts are presented in addition to program level impacts in the full report.

1.5.1 PG&E Ex-Ante Results

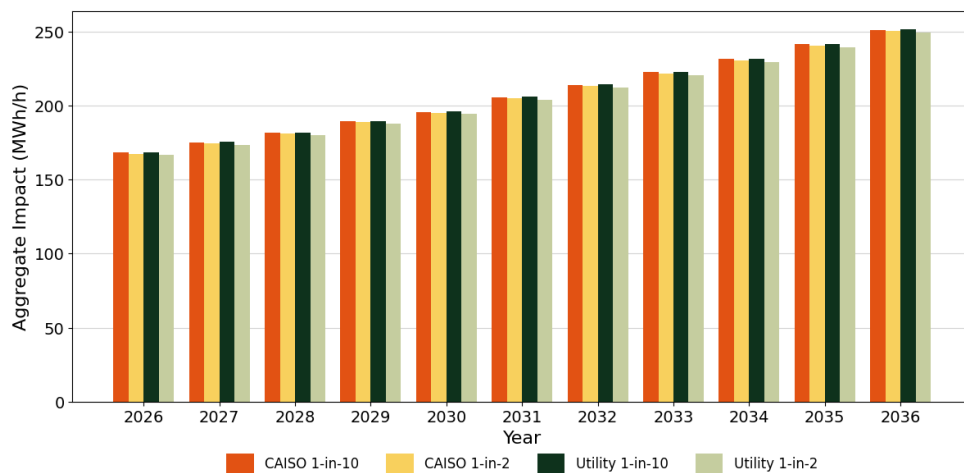
Table 1-5 presents the aggregate and per capita August System Worst Day average event hour ex-ante load impacts over the presumed four-hour dispatch in PY2026. Overall, PG&E BIP participants tend to have weather insensitive loads and impacts are driven by firm service level (FSL) commitments. As a result, there is little variation in estimated load impacts across weather scenarios. The ex-ante analysis found that the average program level ex-ante impacts for a four-hour dispatch in August 2026 ranged from 166.7 MWh/h to 168.4 MWh/h depending on the weather scenario.

TABLE 1-5: PG&E PROGRAM LEVEL EX-ANTE AVERAGE IMPACTS (AUGUST SYSTEM WORST DAY, 2026) FOR A 4-HOUR DISPATCH

Weather Source	Weather Year	Event Dispatch (HE)	Number of Participants	Aggregate (MWh/h)		Per Capita (kWh/h)		Percent Load Reduction (%)	FSL (MWh/h)	FSL Achievement Rate (%)
				Ref. Load	Load Impact	Ref. Load	Load Impact			
CAISO	1-in-10	17 - 20	204	217.3	168.3	1,065.0	825.0	77%	58.2	106%
CAISO	1-in-2	17 - 20	204	216.6	167.4	1,061.7	820.7	77%	58.2	106%
Utility	1-in-10	17 - 20	204	217.3	168.4	1,065.4	825.3	77%	58.2	106%
Utility	1-in-2	17 - 20	204	215.9	166.7	1,058.4	816.9	77%	58.2	106%

Figure 1-3 shows that impacts are forecasted to grow across years. This increase is due to PG&E’s forecasted growth in participant numbers as a result of increased customer outreach efforts.

FIGURE 1-3: PG&E PROGRAM AUGUST SYSTEM WORST DAY YEARLY AVERAGE EVENT HOUR IMPACTS



1.5.2 SCE Ex-Ante Results

Table 1-6 presents the aggregate and per capita August System Worst Day average event hour load impacts over the presumed four-hour dispatch across all BIP options. Overall, BIP participants tend to have weather insensitive loads and impacts are typically driven by firm service level (FSL) commitments. As a result, there is little variation in the estimated load impacts across the various weather scenarios. The ex-ante analysis found that the average program-level ex-ante impacts for a four-hour dispatch in August of PY2026 across all BIP options ranged from 456.1 MWh/h to 457.4 MWh/h depending on the weather scenario. Because SCE forecasts the same number of customers from PY2026 through PY2036, these values represent the forecasted load impacts for all years in the ex-ante analysis.

TABLE 1-6: SCE PROGRAM-LEVEL EX-ANTE AVERAGE IMPACTS (AUGUST SYSTEM WORST DAY, 2026-2036) FOR A 4-HOUR DISPATCH

BIP Option	Weather Source	Weather Year	Event Dispatch (HE)	Number of Customers	Aggregate (MWh/h)		Per Capita (kWh/h)		Percent Load Reduction (%)	FSL (MWh/h)	FSL Achievement Rate (%)
					Ref. Load	Load Impact	Ref. Load	Load Impact			
All	CAISO	1-in-10	18 - 21	329	597.9	457.4	1,817.2	1,390.3	77%	125.8	97%
All	CAISO	1-in-2	18 - 21	329	596.4	456.1	1,812.9	1,386.4	76%	125.8	97%
All	Utility	1-in-10	18 - 21	329	597.7	457.3	1,816.8	1,389.8	76%	125.8	97%
All	Utility	1-in-2	18 - 21	329	597.3	456.9	1,815.4	1,388.7	76%	125.8	97%

2 INTRODUCTION

This report presents the statewide load impact evaluation for the Base Interruptible Program (BIP) for the 2025 program year (PY2025). This report covers the statewide Base Interruptible Program (BIP), which is offered by Pacific Gas and Electric (PG&E) and Southern California Edison (SCE).⁵

2.1 PROGRAM OVERVIEW

The BIP is an emergency demand response (DR) program that offers customers a monthly capacity incentive in exchange for their commitment to reduce their energy consumption to an amount that meets each customer's minimum operational requirements, also known as a Firm Service Level (FSL).

Each IOU's BIP is a tariff-based, emergency-triggered DR program that they can dispatch in response to California Independent System Operator (CAISO) Energy Emergency Alerts, emergencies local to their individual transmission or distribution systems, or for program testing. The BIP is a Day-Of notification program, and participants enroll in a 15-minute or 30-minute notification option. Customers enrolled in BIP receive incentive payments in exchange for committing to reduce their electrical usage to a contractually established FSL. Participants who fail to reduce load down to or below their FSL are subject to an excess energy charge assessed on a kilowatt hour (kWh) basis.

2.2 EVALUATION OBJECTIVES

The objective of this evaluation is to assess the PY2025 BIP in a manner that conforms to the Load Impact Protocols (LIP) adopted by the CPUC in Decision (D.) 24-12-003. At a high level, there are two main objectives related to the BIP load impact evaluation. These include:

- **Ex-post Analysis:** The goal of the ex-post analysis is to estimate load impacts for PY2025 BIP events and for an average event day that conforms to the LIP.
- **Ex-ante Analysis:** The goal of the ex-ante analysis is to forecast BIP MW and kWh load reductions for 2026 through 2036 under 1-in-2 and 1-in-10 weather scenarios in a manner that conforms to the LIP.

2.3 PARTICIPANT CHARACTERISTICS

This section presents the participant characteristics for PG&E's and SCE's PY2025 BIP participants. For purposes of the participant characterization, only customers that were enrolled during at least one BIP

⁵ SDG&E does not have a BIP program covered by this evaluation.

event are represented. In total PG&E’s BIP had 193 participants in the PY2025 program, while SCE had 326 participants as presented in Table 2-1. ⁶

PG&E’s BIP customer base was largely comprised of Agriculture, Mining and Construction (66 participants), Manufacturing (66 participants), and Wholesale, Transport and other Utilities (53 participants), representing 34%, 34% and 27% of customers, respectively. SCE has a separate Agricultural & Pumping Interruptible (AP-I) program that operates similarly to BIP. As a result, there are fewer Agriculture, Mining and Construction participants in SCE’s BIP relative to PG&E. SCE’s PY2025 BIP was largely comprised of Manufacturing (203 participants), and Wholesale, Transport and other Utilities (69 participants), representing 62% and 21% of participants, respectively. Table 2-2 presents the North American Industry Classification System (NAICS) code descriptions for these customers

TABLE 2-1: BIP ENROLLMENT BY INDUSTRY TYPE

PG&E BIP Participants		SCE BIP Participants	
Industry Group	Count of Customers	Industry Group	Count of Customers
Agriculture, Mining and Construction	66	Agriculture, Mining and Construction	31
Manufacturing	66	Manufacturing	203
Office, Hotels, Finance, Services	7	Office, Hotels, Finance, Services	6
Retail Stores	1	Retail Stores	1
Schools	0	Schools	1
Wholesale, Transport, and other Utilities	53	Wholesale, Transport, and other Utilities	69
Unknown/Other	0	Unknown/Other	15
Total	193	Total	326

TABLE 2-2: INDUSTRY TYPE TO NAICS CODE MAPPING

Industry Type	NAICS Code (First Two Digits)
Agriculture, Mining and Construction	11, 21, 23
Institutional/Government	71, 92
Manufacturing	31 – 33
Office, Hotels, Finance, Services	51 – 56, 62, 72, 81
Retail Stores	44, 45
Schools	61
Wholesale, Transport and other Utilities	22, 42, 48, 49
Other/Unknown	Invalid or missing codes

Table 2-3 presents the count of participants and average August aggregate load (MWh/h) by SubLAP. Emergency events can be localized to a single SubLAP or block, so the geographic location of participants and their aggregate loads is important for understanding where available resources are physically available.

⁶ While 193 customers were enrolled in the PG&E BIP program in PY2025, some historically high performing customers were not re-tested in PY2025. Additional details are in Section 3.3.3.

TABLE 2-3: BIP PARTICIPATION BY SUBLAP

PG&E Participants				SCE Participants			
SubLAP	Count of Customers	Avg. August 2025 Aggregate Load (MWh/h)	Aggregate FSL (MW)	SubLAP	Count of Customers	Avg. August 2025 Aggregate Load (MWh/h)	Aggregate FSL (MW)
PGCC	5			SCEC	125		
PGEB	16			SCEN	19		
PGF1	71			SCEW	136		
PGFG	3			SCHD	15		
PGHB	1			SCNW	31		
PGKN	14			Total	326	573.3	122.1
PGCC	5						
PGNC	5						
PGNP	22						
PGP2	1						
PGSB	5						
PGSI	15						
PGST	10						
PGZP	24						
Total	192						

2.4 EVENT DAYS

In PY2025, PG&E had four event days and SCE had one. PG&E had one winter test event, one winter re-test event, one summer test event, and one summer re-test event. In PY2025, PG&E customers with a history of strong event performance were not re-tested to avoid potential customer dissatisfaction that can result from consistent testing. As such, counts of customers in event dispatches sum to less than total PG&E BIP program enrollment. SCE had one summer test event in which all enrolled customers were dispatched.

Table 2-4 presents the PY2025 BIP event day details, including event dates, options dispatched, event times, event duration, event type, and the number of customers dispatched, for PG&E and SCE.

TABLE 2-4: PY2025 BIP EVENT DAYS

IOU	Event Date	Program Options Deployed	Event Start and End Times	Event Duration (Hours)	Event Type	Customers Dispatched
PG&E	January 22 nd	BIP30	3:00PM-5:00PM	2	Test Event	6
	February 12 th	BIP30	3:00PM-5:00PM	2	Re-test Event	3
	September 23 rd	BIP15, BIP30	4:00PM-6:00PM	2	Test Event	141
	November 6 th	BIP30	4:00PM-6:00PM	2	Re-test Event	19
SCE	September 23 rd	BIP15, BIP30	4:00PM-6:00PM	2	Test Event	326

3 METHODOLOGY

This section describes the data sources and ex-post and ex-ante methodologies used in the PY2025 Load Impact Evaluation of BIP.

3.1 DATA SOURCES

Verdant worked with the IOUs to obtain the data necessary for conducting the ex-post and ex-ante load impact analyses for the BIP. Descriptions of the data sources are detailed below.

Customer information. These data consist of customer-level information for all PY2025 customers enrolled in the BIP. These data generally contain customer account and premise IDs alongside a variety of other attributes useful for the segmentation of impacts, including participant FSLs, customer size, nearest weather station, SubLAP, net-energy-metering (NEM) status, and North American Industry Classification System (NAICS) codes and/or descriptions.

AMI data. The service-point-level Advanced Metering Infrastructure (AMI) data for BIP customers. AMI data was requested for the period starting November 1st, 2024, through October 31st, 2025.⁷ In the ex-ante analysis, November and December load shapes are derived from November 2024 and December 2024 conditions. Given BIP events can occur with minimal notice, all AMI data was provided at 15-minute intervals.

Weather data. The study used hourly weather data for all weather stations represented in the customer information data. The dates of the hourly weather data match those of the AMI data.

BIP, and other DR program data. The study required comprehensive data on customer enrollment in BIP and any other DR programs available to customers for dual enrollment. These data include BIP event dates and times, the duration of each BIP event, and event type information. Verdant also requested relevant information for the AutoDR program and other programs in which BIP participants can be dually enrolled.

Participant forecasts. The ex-ante forecasts rely on participation projections over the forecast horizon. Each IOU provided their participant forecasts for the BIP.

Weather scenarios. The ex-ante forecasts rely on data representative of the various weather scenarios at each of the weather stations under different conditions (e.g., 1-in-2 and 1-in-10 weather years, typical event day, system peak, etc.). Separate versions of the weather scenario data were provided by both the

⁷ November 2025 data was requested for the PG&E customers that participated in the November 2025 event.

utility and CAISO, though they are typically very similar.

Data Validation

Upon data receipt, Verdant cataloged and validated the completeness of all datasets. Missing or erroneous data points were reported back to each IOU via a data completeness summary. Verdant flagged gaps in the participant-level AMI data to identify and submit additional requests for these missing AMI usage intervals. To detect potentially erroneous AMI data, Verdant programmatically and visually reviewed daily load shapes for all BIP participants. For example, Verdant reviewed periods of zero or near-zero AMI usage reads that may have indicated that a meter was not reporting usage normally for a given period. Generally, Verdant aimed to omit as little AMI data as possible.

Verdant also reviewed all weather data files for completeness and accuracy. For a few weather stations, Verdant filled in small gaps of missing hourly temperature reads using interpolated values (by way of the average of leading and lagging hourly intervals).

3.2 EX-POST METHODOLOGY

For the ex-post analysis, Verdant utilized an hourly customer specific regression-based approach with four generalized steps, depicted in Figure 3-1. Each step is explained in further detail in the following subsections.

FIGURE 3-1: EX-POST ANALYSIS STEPS



3.2.1 Participant Analysis

The participant analysis is Verdant’s first step in understanding the BIP participant characteristics and whether there are any considerations that may influence Verdant’s approach to the ex-post analysis. These include a review of participant load shapes, event day loads, and load variability. An additional key component of the participant analysis is a precursory weather sensitivity analysis to determine whether a participant’s non-event day load is temperature sensitive. Ex post models for weather sensitive customers included temperature variables to control for the influence of temperature on energy consumption. Given that BIP is active in all months of the year, Verdant examined both summer and winter temperature sensitivity. For purposes of the ex-ante modeling and weather sensitivity analysis, winter months are defined as November through April and summer is defined as May through October. For winter weather sensitivity Verdant explored both heating and cooling sensitivity. For summer weather sensitivity, Verdant only explored cooling sensitivity.

To perform the weather sensitivity analysis, Verdant conducted a linear regression of average load between hours ending 12 and 21 as a function of month of the year, day of the week, and a degree day threshold, generally CDH65, CDH70, HDH60 or HDH55. If the regression results in degree day coefficients with a positive, statistically significant value at the 95th percentile for at least one of thresholds, the load was considered weather sensitive. In a small number of cases, customers who were identified to be weather sensitive by this analysis later had the weather variables removed from their ex-post regressions. Additional details on the methods and results of the weather sensitivity analysis are presented in Appendix B.

3.2.2 Proxy Day Selection

The second step of the ex-post analysis was selecting proxy days (non-event days with event-like conditions) to test candidate model specifications. Verdant selected proxy event days as non-event day, non-holiday days with weather closest to the average event day temperatures in each season⁸ based on the following distance metric that prioritizes matching days on maximum daily temperature, mean daily temperature and mean mid-day temperature.⁹

EQUATION 3-1: PROXY DAY DISTANCE METRIC

$$Distance = |\Delta Max Daily Temp| + |\Delta Mean Daily Temp| + |\Delta Mean Midday Temp|$$

Where the differences (Δ) represent a difference between the corresponding value for a given potential proxy day and the average event day in the same season. For each customer, six weekday and three weekend proxy days were selected for each season in which the customer was dispatched in a BIP event.

3.2.3 Model Selection

Verdant tested candidate model specifications for each customer. Candidate models were comprised of two components; a component that includes independent variables to capture event impacts and a component that includes variables meant to capture effects related to the reference loads. Insights gained from the participant analysis (Step 1) informed the model specifications tested for each customer or group of customers. For example, customers with weather sensitive loads were tested with models that included

⁸ For the ex-post and ex-ante analysis, seasons were kept separate at all stages, with months Jan, Feb, Mar, Apr, Nov, Dec comprising 'winter' and months May, Jun, Jul, Aug, Sep, Oct comprising 'summer' months. However, for the customers dispatched in PG&Es November 6th event, November 2025 was marked as a 'summer' month because the event happened within the first week of the month where temperatures profiles more closely resemble typical summer days than typical winter days.

⁹ Mid-day hours are defined as hours ending (HE) 11 through 15. The max temperature, mean daily temperature, and mean temperature during mid-day hours were computed for the average event day in each season and for all non-event day non-holidays. The sum of the absolute difference in each of these metrics was used to select proxy days.

temperature variables, while those that were weather insensitive had specifications that relied on calendar and other effects. In all cases, the regression models controlled for day of the week, month of the year, event days, and dual DR program enrollment (as applicable). Further details on model variables are provided in Section 3.2.4.

A variety of factors were considered when selecting the appropriate model specification for each customer. The model selection process was as follows:

- Verdant reviewed the catalog of internal model specifications from prior DR evaluations (including those previously used for BIP customers) to develop a catalog of candidate models, while incorporating new adjustments based on the needs of the analysis and model performance.
- The performance of candidate models was evaluated using the proxy event days as holdout days with presumed event hours ending 16-18 (to represent each IOU's BIP event dispatch) to assess the bias and error of each candidate model and establish whether a candidate model generated statistically significant impact parameters. Generally, candidate models that produced statistically significant impact estimates on proxy event days were rejected because there should not be statistically significant impacts for days where events did not occur.¹⁰
- Next, the arbitration routine assessed the model coefficients for anticipated sign, size, and statistical significance. A parameter meant to capture temperature effects, for example, should not be negative. Additionally, Verdant reviewed the model fit statistics to ensure the model adequately explained the variance in the data. Models failing these tests were rejected.
- The bias and error of the remaining candidate models were then examined. Models were selected on a score that weighs the Normalized Mean Absolute Error (NMAE) and the absolute value of the Normalized Mean Bias Error (NMBE) of each model's predicted loads on proxy event days. The candidate model with the lowest score was selected as the final model, which represents the model minimizing bias and error.¹¹
- Verdant then compared the average estimated proxy event load for each participant to the average actual proxy event day load. If the selected model did not produce a load shape that sufficiently matched the actual proxy event day load or a shape that contained erroneous load fluctuations, then the candidate models for that participant were revised and the modeling data was reexamined for outliers. After which, steps one through four of the model selection process were repeated.

Because participant loads and weather sensitivity varied across seasons, separate winter and summer models were selected for PG&E participants with events in more than one season. Weekday and weekend models were also fit separately, with weekday models being fit only on weekday data and weekend

¹⁰ For four PG&E participants and five SCE participants, all candidate models showed event hour significance. In these cases, all candidate models were retained through the next steps of the model selection process.

¹¹ In a small number of cases, NMBE and NMAE were unable to be computed due to high rates of 0 kWh loads. In these cases, models were selected using RMSE instead.

models only on weekend data. Because all PY2025 events were weekday events, Verdant selected only one weekday-specific model per season per customer.

3.2.4 Impact Estimation

The final selected models were used to predict event day load and estimate program impacts for each hour of each event day. Importantly, model specifications included an event day impact variable to help capture additional event day effects outside of the event window (for example, snapback effects after an event). Equation 3-2 presents the general model specification used to estimate ex-post impacts.

EQUATION 3-2: EX-POST GENERAL MODEL SPECIFICATION

$$kWh_{d,h} = \beta_{0,h} + \beta_{1,d,h}EventDay_dEventID_d + \beta_{2,h}Weather_h + \sum_m \beta_{3,h,m}Month_m + \sum_d \beta_{4,h,d}Wday_d + \beta_{5,h,d}AvgLoad_d + \beta_{6,h}OtherEventHour_h + \varepsilon_{d,h}$$

Where:

$kWh_{d,h}$	The hourly delivered kWh usage on event day d during hour h .
$\beta_{0,h}$	The intercept of the regression model during hour h .
$EventDay_dEventID_d$	The interaction between the event day dummy and an event ID that corresponds to a specific event day. Its coefficient $\beta_{1,d,h}$ yields the impact of an event on usage on day d during hour h .
$Weather_h$	A temperature-based weather variable in hour h . ¹²
$Month_m$	A dummy variable for each month m .
$Wday_d$	A dummy variable indicating the day of the week d .
$AvgLoad_d$	The average daily load during a specific period (e.g., the afternoon) of day d .
$OtherEventHour_h$	A dummy variable, indicating whether hour h is an event hour for a participant dually enrolled in another event-based demand response program.
$\varepsilon_{d,h}$	The error term

The interaction between $EventDay_dEventID_d$ results in a set of 24 $\beta_{1,d,h}$ estimates (one from each hourly model) that capture event-specific impacts. The set of 24 estimates are used to estimate program impacts during the event window and capture any other event day effects, such as snapback, for hours outside of the event window. In essence, $\beta_{1,d,h}$ captures the difference between actual event day load for a given hour and the estimated baseline. For the ex-post analysis, $\beta_{1,d,h}$ estimates over the event window provide the impact estimates for each event day.

¹² Weather terms are only included for weather sensitive customers.



The estimated impacts for each participant are aggregated to multiple domains of interest for each BIP product, including but not limited to, industry type, customer size, and geographical location, to provide the IOUs with data on participant and FSL achievement performance at the desired levels.

Dual DR Enrollment

Verdant controlled for dual DR program enrollment when estimating ex-post load impacts. These impacts were accounted for by adding an additional parameter in the ex-post model that represents participation in another DR program. In general, any incremental load reduction beyond FSL commitments for dually enrolled participants in dual program event hours would be attributed to non-BIP programs. Only one PG&E customer had a dual-program event day during any PY2025 BIP event.

FSL Achievement Rates

FSL achievement rates were produced by comparing FSL commitments to actual loads during events. These values represent each participant's ability to reduce their load to their FSL. Mathematically, the achievement rate is the estimated load impact divided by the load impact that would have been observed if the participant exactly reached their FSL. An achievement rate greater than one represents load reductions that exceed a given participant's FSL and, for rates less than one, load reductions that fall short of the FSL commitment. Verdant estimated FSL achievement rates for each participant in each hour of each event as well as for the average event.

Confidence Intervals

As with most analysis using time series data, it is expected that there will be some autocorrelation in the data. As such, Verdant modelled each hour independently to help alleviate this concern. When estimating confidence intervals surrounding ex-post impacts, it was assumed that impacts are independent across participants. While estimating impacts, the variance of impact estimates were collected and summed according to each level of aggregation. From the sum of the variances, Verdant then calculated standard errors and confidence intervals at the 5%, 10%, 50%, 90%, and 95% levels.

3.3 EX-ANTE METHODOLOGY

Verdant produced ex-ante load impacts for 11 years following PY2025 (PY2026-PY2036). For each IOU, the ex-ante impacts included the hourly ex-ante load impacts by, at minimum, Size Group, LCA, and SubLAP at the aggregate and per customer basis. Reference loads were produced for each typical event day and monthly IOU and CAISO System Worst Day under 1-in-2 and 1-in-10 weather conditions. Verdant produced ex-ante impacts for event hour windows based on each IOU's request. For PG&E, impacts were estimated for events comprising the first four hours of the RA period in each month. For SCE, impacts were estimated for both a four hour (HE18 – 21) and six hour (HE17 – 22) event window.

Verdant’s approach to the estimation of ex-ante load impacts was largely informed by the ex-post methodology, future FSL commitments, and PY2025 FSL achievement rates. Per PG&E and SCE request, historical FSL achievement rates from prior program years were also incorporated where relevant. Using the same segmentation levels provided in each utility’s participant forecast, Verdant estimated ex-ante hourly load impacts and reference loads. The generalized steps in the ex-ante analysis are presented in Figure 3-2.

FIGURE 3-2: EX-ANTE ANALYSIS STEPS



3.3.1 Ex-Ante Driver Development

Prior to ex-ante modeling, Verdant developed an ex-ante drivers dataset containing presumed ex-ante event day characteristics, event hours and the ex-ante weather scenarios that were necessary to predict the ex-ante reference loads for each customer.

3.3.2 Estimate Ex-Ante Per Capita Reference Loads

For customers with a selected ex-post model, in each season (summer and winter) Verdant used the ex-post model and the ex-ante drivers to estimate ex-ante reference loads for each customer. For customers without an ex-post model in a given season (e.g., customers that were not dispatched in an event in that season in PY2025), a new ex-ante model was selected for that customer in that season. For example, all SCE customers required a winter model to be selected because no winter events were dispatched in PY2025. To select ex-ante models, the same approach was taken as for ex-post model selection with the only difference being in the proxy day selection step. Proxy days were selected as days that most closely resemble the 1-in-2 utility-specific Monthly System Worst Day weather scenario for each month. In total, two weekday proxy days were selected per month to ensure ex-ante models were tested for performance across the entire winter or summer season. The same set of models as used in ex-post were tested on these proxy days, and final ex-ante models were selected following the ex-post selection routine. Reference loads for these customers were then estimated using the fitted models and the ex-ante drivers data set. Verdant validated the reference loads by comparing them to reference loads observed in the ex-post analysis and to the average aggregate monthly loads seen on November, 2024 through October, 2025.

3.3.3 Estimate Ex-Ante Per Capita Impacts

BIP impacts are historically largely driven by FSL commitments, rather than weather. As a result, ex-ante impacts were guided by PY2025 ex-post FSL achievement rates, supplemented by prior year achievement rates where applicable. Mathematically, the achievement rate is the estimated load impact divided by the load impact that would have been observed if the participant exactly reached their FSL. To calculate ex-ante FSL achievement rates, Verdant used the estimated ex-post impacts for each customer and their PY2025 FSL commitments to reflect likely achievement rates in future program years.¹³ Verdant estimated an average FSL achievement rate for each hour relative to the hour of the start of the event for each customer in each season (i.e. and achievement rate for the first, second, third, etc. hour of an event). Customers that de-enrolled from the program prior to PY2026 were excluded from the ex-ante analysis.

To account for potential impacts outside of event hours, including snapback or persisting load reductions, Verdant estimated average FSL achievement rates for each customer in each season from the hour before the event started through to the end of the day. Ex-ante achievement rates were assumed to be 0% (no event influence) from hours HE1 until the hour before the presumed event start. The ex-ante analysis assumes that event notification happens in the hour before the start of the event.

Achievement rates were then multiplied by the expected impact at the FSL (e.g., the difference between the reference load and the FSL) to estimate the hourly event impacts. Hourly event loads are estimated as the difference between the reference load and the estimated impacts. Given this approach relies on the ex-post impact estimation of results, the standard errors from the ex-post analysis were used to develop confidence intervals around the ex-ante analysis.

To ensure the ex-ante forecasts best represent typical year performance, both PG&E and SCE requested that prior year FSL achievement rates be considered in the ex-ante analysis where relevant. For PG&E, this was necessary for all the historically high performing customers who were not re-tested in PY2025. To be considered for cross-year FSL achievement rate averaging, customers had to meet two criteria.

1. **Consistent FSL:** The customer must have maintained their current PY2025 FSL for all years included in the average.¹⁴
2. **Stable Baseline Usage:** The customer's average baseline usage must not vary by more than 2x in either direction across included years.

¹³ For customers that decreased their FSL (committed to greater load reductions) ex-ante FSL achievement rates were set to 100%.

¹⁴ For PG&E, the years 2022, 2024 and 2025 were included for cross-year FSL achievement averaging. For SCE, the years 2024 and 2025 were included.

These criteria ensure that two of the three key inputs to the FSL achievement rate calculation are held relatively constant. As such, any variation in the achievement rates can be more confidently attributed to differences in event-specific performance (e.g., how much a customer curtailed relative to their FSL target). This makes cross-year comparisons, and the resulting averages, more meaningful. Overall, 58% of PG&E customers (including the 24% of customers not tested in PY2025) and 78% of SCE customers used cross-year averaged FSL achievement rates for the ex-ante analysis.

3.3.4 Ex-Ante MW Forecast Development

The per capita reference loads and impacts were then averaged to the lowest level of aggregation provided in the participant forecast or desired reporting level (for example a combination of notification option, LCA, SubLAP, and customer size). The averaged reference loads and impacts represent the typical per capita BIP response by participant type under each ex-ante scenario. Afterwards, the per capita reference loads and impacts were multiplied by the participant forecasts to develop ex-ante MW forecasts.

Program and Portfolio Ex-Ante Impacts

For the ex-ante analysis, Verdant developed both program and portfolio ex-ante impacts. Program ex-ante impacts represent what the BIP is capable of providing given a BIP only program dispatch and does not account for dual enrollment, while portfolio impacts represent the contribution of BIP to the entire portfolio of demand response programs and accounts for dual enrollment. When accounting of portfolio level impacts, BIP impacts are counted first. However, BIP customers can also participate in the Emergency Load Reduction Program (ELRP). For dually enrolled BIP and ELRP customers, the BIP claims savings up to the dually enrolled participant's FSL. Impacts beyond the dually enrolled participant's FSL are attributed to ELRP (per ELRP program rules). As a result, BIP portfolio ex-ante impacts for dual BIP and ELRP participants are limited by FSLs. Impacts beyond the FSL are not claimed and are attributed to ELRP. Since the ELRP only operates in summer months (May through October), program and portfolio impacts are the same for winter months (November through April). Additionally, the ELRP programs open to eligible BIP participants (A.1 and A.2 for PG&E and A.2 for SCE) are planned to end after 2027. As a result, portfolio and program level ex-ante impacts are the same after 2027.

Hours of BIP Dispatch

At the request of PG&E, ex-ante impacts were developed using an assumption of a four-hour dispatch in the first four hours of the resource adequacy (RA) window.¹⁵ SCE requested ex-ante impacts for both a

¹⁵ Beginning in PY2025 for ex ante forecast year 2026 for 2027 Resource Adequacy (RA), the RA window is 4pm to 9pm in June through October and 5pm to 10pm in all other months.

four-hour and six-hour dispatch.¹⁶ For all months of the year, the four-hour and six-hour dispatches occur in HE18 to HE21 and HE17 to HE22.

Large Load Customers

Pursuant to the Load Impact Protocol Process Guide (version 6.1, released by the Energy Division on March 5, 2026), “Large loads (e.g. data centers, EV fleet charging station load) should be reported as a distinct load type within ex-ante and ex-post table generators.”

In PY2025, there were 52 customers with average hourly loads over 1 MW enrolled in PG&E’s BIP program and 87 in SCE’s BIP program. Judged from the NAICS code, none of these customers appear to be a data center or an EV fleet charging station. In both the ex-post and ex-ante impact table generators, there is a customer size indicator, which defines large as 200 kW or above for PG&E and 250 kW or above for SCE. Hourly load Impacts are available by customer size. Should a different definition for large load be desired, clarification in a future update to the Load Impact Protocol Process Guide would be helpful.

¹⁶ The BIP has a maximum event hour duration of six hours.

4 EX-POST RESULTS

This section presents the PG&E and SCE BIP ex-post results, which are discussed in separate subsections.

4.1 PG&E EX-POST RESULTS

Load impacts for the average full event hour on each event day are presented in Table 4-1. For purposes of this summary of results, a full event hour is defined as an event hour where BIP participants were called to fully curtail their load for all 60 minutes of that hour. As seen, the January 22nd first test event provided, on average, █ MWh/h of load reduction resulting in an █% FSL achievement rate and a █% reduction in load. The February 12th re- test event provided, on average, █ MWh/h of load reduction resulting in a █% FSL achievement rate and a █% reduction in load. The September 23rd test event provided █ MWh/h of load reduction with an FSL achievement rate of █%. For the BIP participants that were retested on November 6th, the FSL achievement rate was █%, providing an average load reduction of █ MWh/h.

TABLE 4-1: PG&E BIP AVERAGE FULL EVENT HOUR LOAD IMPACTS BY EVENT

Event Date (2025)	Num. of Participants Dispatched	Aggregate (MWh/h)		Per Capita (kWh/h)		Percent Load Reduction (%)	FSL (MW)	FSL Achievement Rate (%) ¹⁷
		Reference Load	Load Impact	Reference Load	Load Impact			
January 22 nd	6	█	█	█	█	█	█	█
February 12 th	3	█	█	█	█	█	█	█
September 23 rd	141	█	█	█	█	█	█	█
November 6 th	19	█	█	█	█	█	█	█

4.1.1 PG&E Load Impacts by Event

Each BIP event day, and their hourly load impacts, are presented in chronological order in Figure 4-1 through Figure 4-4. These figures present the aggregate event day load shape for January 22nd, February 12th, September 23rd and November 6th respectively. Each figure presents the aggregate reference loads, actual observed loads (hourly and 15-minute), load impacts and FSLs. Event hours are highlighted in orange.

Table 4-2 through Table 4-5 present the baseline (reference load), hourly observed load, and load impacts for each hour of the event day for January 22nd, February 12th, September 23rd and November 6th respectively (the event day tables following the event day figures). For brevity, only the hour prior to the first event hours through HE24 are presented in the tables. The full range of hours (HE1 through HE24)

¹⁷ A value of 100% indicates customers reducing their load to their FSL on average.

are presented in the Ex-Post Table Generator (Appendix A). All impacts are reported in MWh/h for consistency in scale, and all times are reported in local prevailing time for ease of interpretation.

January 22nd Winter Test Event

As previously stated, PG&E’s first PY2025 BIP event was a small test event on January 22nd, dispatching 6 BIP participants. Figure 4-1 presents the aggregate load shape for this event day. As seen in the 15-minute observed load, load reductions begin to appear in the hour prior to the event start, indicating a rapid response to event notifications.

FIGURE 4-1: PG&E BIP EVENT JANUARY 22, 2025 AGGREGATE LOAD SHAPE AND IMPACT

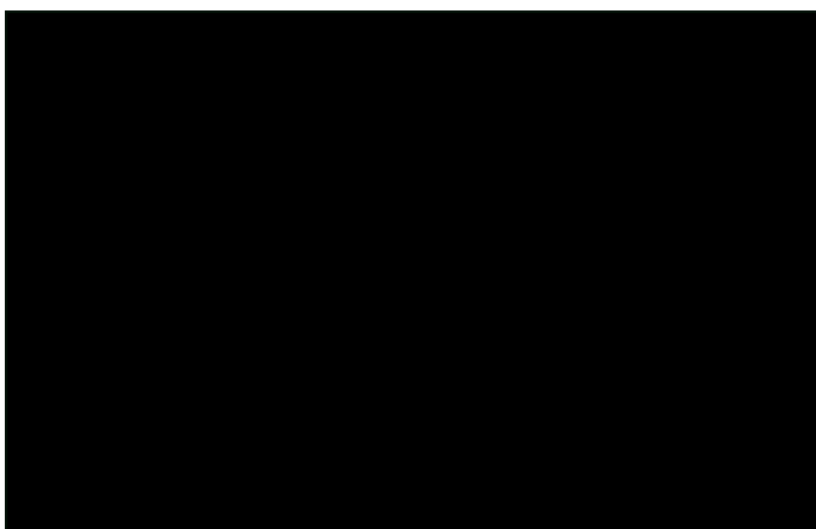


Table 4-2 presents the hour-by-hour aggregate load impacts for the January 22nd event. Across the 2 hour dispatch, these BIP customers approached but did not meet their average FSL commitment, resulting in an ■■■% FSL achievement rate in the second event hour, leading to an average load reduction of ■■■ MWh/h across the event. Note that because the event was called at 4:00PM local time, the first event hour (HE16) includes 15 to 30 minutes (depending on BIP option) of allowed time for customers to achieve their FSL. As such, the average event hour impacts only include the full curtailment hour (HE17).

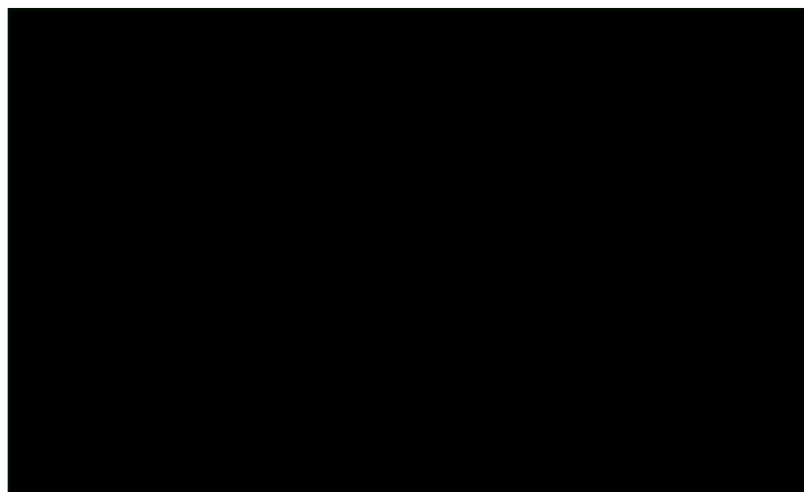
TABLE 4-2: PG&E BIP EVENT JANUARY 22, 2025 AGGREGATE LOAD HOURLY IMPACTS

Hour Ending (Prevailing Time)	Hour Type	Estimated Reference Load (MWh/hour)	Observed Event Day Load (MWh/hour)	Estimated Load Impact (MWh/hour)	Percent Load Reduction (%)	FSL (MW)	FSL Achievement Rate ¹⁸ (%)
15	Non-Event						
16	Event, First						
17	Event, Full						
18	Non-Event						
19	Non-Event						
20	Non-Event						
21	Non-Event						
22	Non-Event						
23	Non-Event						
24	Non-Event						
Avg. Event Hour							

February 12th Winter Re-Test Event

Three of the customers dispatched on the January 22nd event were re-tested on February 12th due to underperformance (based on their ability to reach their FSL commitment) in the first event. Figure 4-2 presents the aggregate load shape for this event day. It can be seen that customer performance increased relative to the January 22nd event, with customers reaching an overall FSL achievement rate of █%.

FIGURE 4-2: PG&E BIP EVENT FEBRUARY 12, 2025 AGGREGATE LOAD SHAPE AND IMPACT



¹⁸ A value of 100% would indicate customers exactly achieving their FSL on average.

Table 4-3 presents the hour by hour aggregate load impacts for the February 12th event. On average, customers met and substantially exceeded their FSL commitment during this event, yielding █ MWh/h of load impacts in the average event hour. As with the January 22nd event, HE17 is used as the average event hour because it is the only event hour where customers are expected to have reached their FSL commitment for the full duration of the hour (HE16 includes 15 to 30 minutes of allowed curtailment time, depending on program option).

TABLE 4-3: PG&E BIP EVENT FEBRUARY 12, 2025 AGGREGATE LOAD HOURLY IMPACTS

Hour Ending (Prevailing Time)	Hour Type	Estimated Reference Load (MWh/hour)	Observed Event Day Load (MWh/hour)	Estimated Load Impact (MWh/hour)	Percent Load Reduction (%)	FSL (MW)	FSL Achievement Rate ¹⁹ (%)
15	Non-Event	█	█	█	█	█	█
16	Event, First	█	█	█	█	█	█
17	Event, Full	█	█	█	█	█	█
18	Non-Event	█	█	█	█	█	█
19	Non-Event	█	█	█	█	█	█
20	Non-Event	█	█	█	█	█	█
21	Non-Event	█	█	█	█	█	█
22	Non-Event	█	█	█	█	█	█
23	Non-Event	█	█	█	█	█	█
24	Non-Event	█	█	█	█	█	█
Avg. Event Hour		█	█	█	█	█	█

September 23rd Test Event

As previously stated, the September 23rd event was the largest BIP test event day. This event included the majority of active BIP customers, with the exception of those customers identified as historically high performers who were not included in the yearly re-test to prevent customer test fatigue. In total 141 BIP participants were dispatched for testing. Figure 4-3, presents the aggregate load shape for this event day.

¹⁹ A value of 100% would indicate customers exactly achieving their FSL on average.

FIGURE 4-3: PG&E BIP EVENT SEPTEMBER 23, 2025 AGGREGATE LOAD SHAPE AND IMPACT



Table 4-4 presents the hour-by-hour aggregate load impacts for the September 23rd event. Customers reached a ███% FSL achievement rate on average during the final event hour, corresponding to ███ MWh/h of load reductions. HE18 is taken as the average event hour because it is the only event hour with expected full curtailment for the entirety of the hour.

TABLE 4-4: PG&E BIP EVENT SEPTEMBER 23, 2025 AGGREGATE LOAD HOURLY IMPACTS

Hour Ending (Prevailing Time)	Hour Type	Estimated Reference Load (MWh/hour)	Observed Event Day Load (MWh/hour)	Estimated Load Impact (MWh/hour)	Percent Load Reduction (%)	FSL (MW)	FSL Achievement Rate (%)
16	Non-Event	████	████	████	████	████	████
17	Event, First	████	████	████	████	████	████
18	Event, Full	████	████	████	████	████	████
19	Non-Event	████	████	████	████	████	████
20	Non-Event	████	████	████	████	████	████
21	Non-Event	████	████	████	████	████	████
22	Non-Event	████	████	████	████	████	████
23	Non-Event	████	████	████	████	████	████
24	Non-Event	████	████	████	████	████	████
Avg. Event Hour		████	████	████	████	████	████

November 6th Re-Test Event

After the September 23rd test event, a small group of poor performers (based on their ability to reduce load to FSL commitments on September 23rd) were asked to participate in a re-test of their BIP dispatch. A total of 19 customers were dispatched in the November 6th re-test event. Figure 4-4 presents the aggregate load shape for this re-test event day.

FIGURE 4-4: PG&E BIP EVENT NOVEMBER 6, 2025 AGGREGATE LOAD SHAPE AND IMPACT



Table 4-5 presents the hour-by-hour aggregate load impacts for the November 6th re-test event. Across the two hour dispatch, FSL achievement rates reached █% in HE18, providing █ MWh/h of load reduction. After this event, some of the participants de-enrolled from the program.

TABLE 4-5: PG&E BIP EVENT NOVEMBER 6, 2025 AGGREGATE LOAD HOURLY IMPACTS

Hour Ending (Prevailing Time)	Hour Type	Estimated Reference Load (MWh/hour)	Observed Event Day Load (MWh/hour)	Estimated Load Impact (MWh/hour)	Percent Load Reduction (%)	FSL (MW)	FSL Achievement Rate (%)
16	Non-Event	█	█	█	█	█	█
17	Event, First	█	█	█	█	█	█
18	Event, Full	█	█	█	█	█	█
19	Non-Event	█	█	█	█	█	█
20	Non-Event	█	█	█	█	█	█
21	Non-Event	█	█	█	█	█	█
22	Non-Event	█	█	█	█	█	█
23	Non-Event	█	█	█	█	█	█
24	Non-Event	█	█	█	█	█	█
Avg. Event Hour		█	█	█	█	█	█

4.1.2 PG&E Average Event Load Impacts

The impacts for the average PG&E BIP event are typically developed by averaging load shapes for each customer across all summer events in which they were dispatched. Because BIP events are not typically called in winter months, the winter event was not included in the average event. Additionally, because of the small proportion of customers included in the re-test event, the September 23rd event alone was used to represent the ‘Average Event Day’ for PY2025. This event dispatched 141 customers for two hours

(HE17 and HE18). Figure 4-5 presents the per capita average event day load shape for PG&E, and Table 4-6 presents the hour by hour per capita impacts.

FIGURE 4-5: PG&E BIP AVERAGE EVENT DAY PER CAPITA LOAD AND IMPACT

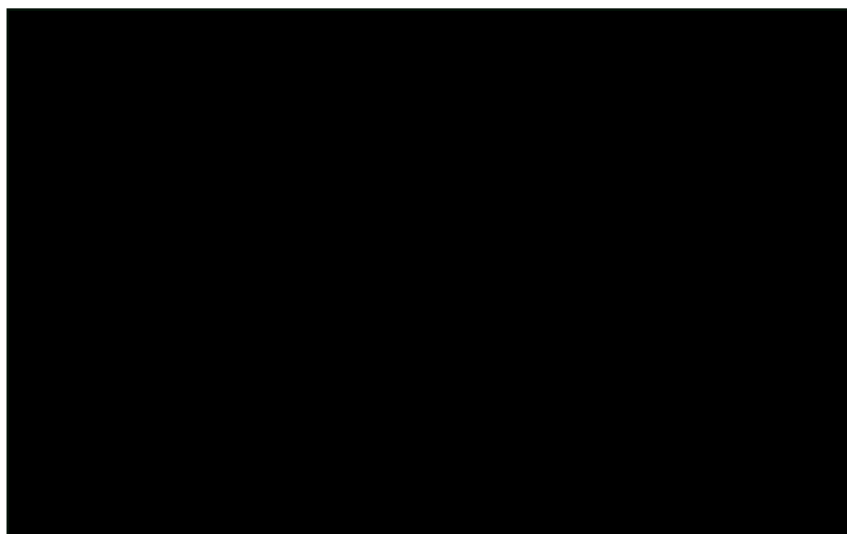


TABLE 4-6: PG&E BIP AVERAGE EVENT DAY PER CAPITA HOURLY IMPACTS

Hour Ending (Prevailing Time)	Hour Type	Estimated Reference Load (kWh/h)	Observed Event Day Load (kWh/h)	Estimated Load Impact (kWh/h)	Percent Load Reduction (%)	FSL (kW)	FSL Achievement Rate (%)
16	Non-Event						
17	Event, First						
18	Event, Full						
19	Non-Event						
20	Non-Event						
21	Non-Event						
22	Non-Event						
23	Non-Event						
24	Non-Event						
Avg. Event Hour							

4.1.3 PG&E Load Impacts by Subgroupings

Table 4-7 present the BIP load impacts by SubLAP for the PY2025 typical event day (represented as the largest test event day on September 23rd, 2025). As seen, the SubLAPs providing the greatest aggregate load reductions on average in PY2025 include [REDACTED] and [REDACTED].

TABLE 4-7: PG&E BIP LOAD IMPACTS BY SUBLAP (SEPTEMBER 23, 2025 EVENTS)

SubLAP	Number of Participants	Estimated Reference Load (MWh/h)	Observed Load (MWh/h)	Estimated Impact (MWh/h)	Percent Load Reduction (%)	Aggregate FSL (MW)	FSL Achievement Rate (%)
PGCC	5						
PGEB	11						
PGF1	48						
PGFG	3						
PGHB	1						
PGKN	10						
PGNC	5						
PGNP	17						
PGP2	1						
PGSB	4						
PGSI	11						
PGST	8						
PGZP	17						

Table 4-8 presents the typical event day load reductions by Industry Type on the September 23, 2025 event day.

TABLE 4-8: PG&E BIP LOAD IMPACTS BY INDUSTRY TYPE (SEPTEMBER 23, 2025 EVENT)

Industry Type	Number of Participants	Estimated Reference Load (MWh/h)	Observed Load (MWh/h)	Estimated Impact (MWh/h)	Percent Load Reduction (%)	Aggregate FSL (MW)	FSL Achievement Rate (%)
Agriculture, Mining and Construction	53						
Manufacturing	54	47.6	16.6	31.0	65%	14.6	94%
Office, Hotels, Finance, Services	6						
Retail Stores	1						
Wholesale, Transport, and other Utilities	27						

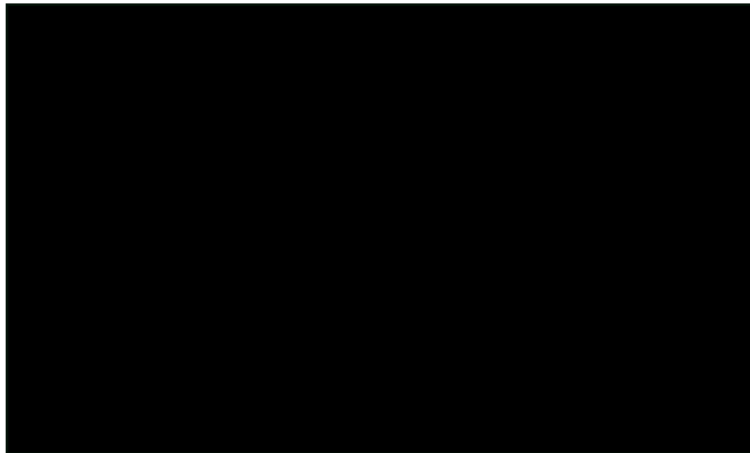
4.1.4 PG&E FSL Achievement Rates

Individual customers varied widely in FSL achievement rates. Figure 4-6 through Figure 4-9 present the share of customers and corresponding load impacts during full curtailment hours shown for bins of FSL achievement rates for the January 22nd, February 12th, September 23rd, and November 6th events, respectively. For the January 22nd, February 12th, and September 23rd events, the 100-125% and 125% or more FSL achievement rate bins represent [REDACTED] of the event participants. For the November 6th retest event, however, [REDACTED] customers had FSL achievement rates below 100%, consistent with the desire to retest these participants to determine if they could meet their FSL.

FIGURE 4-6: DISTRIBUTION OF FSL ACHIEVEMENT AND IMPACTS, JANUARY 22, 2025 EVENT²⁰



FIGURE 4-7: DISTRIBUTION OF FSL ACHIEVEMENT AND IMPACTS, FEBRUARY 12, 2025 EVENT

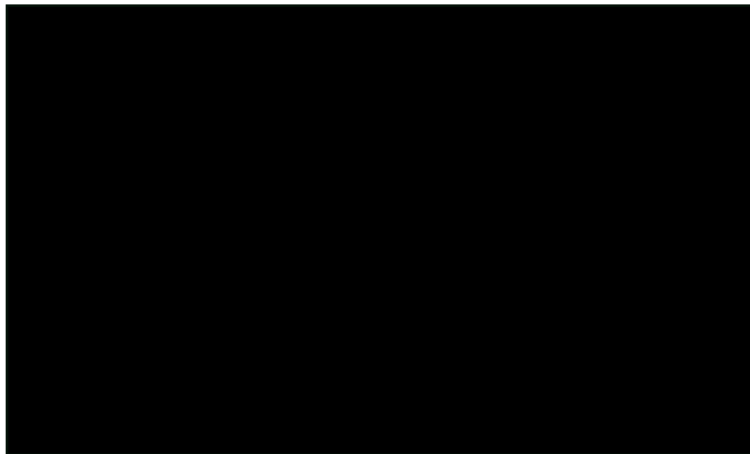


²⁰ Bins are inclusive of the lower extreme of each range and exclusive of the upper extreme. However, all values represented are fractional and, as such, all customers that achieve their FSL in the average event hour are included in the '100-125%' bin.

FIGURE 4-8: DISTRIBUTION OF FSL ACHIEVEMENT AND IMPACTS, SEPTEMBER 23, 2025 EVENT



FIGURE 4-9: DISTRIBUTION OF FSL ACHIEVEMENT AND IMPACTS, NOVEMBER 6, 2025 EVENT



4.2 SCE EX-POST RESULTS

Load impacts for the average full event hour on the SCE BIP PY2025 event day are presented in Table 4-9. For purposes of this summary of results, a full event hour is defined as an event hour where BIP participants were called to curtail their load for all 60 minutes of that hour. As seen, the September 23rd event provided, on average, 430.5 MWh/h of load reduction, resulting in a 98% FSL achievement rate.

TABLE 4-9: SCE BIP AVERAGE FULL EVENT HOUR LOAD IMPACTS BY EVENT

Event Date (2025)	Num. of Participants Dispatched	Aggregate (MWh/h)		Per Capita (kWh/h)		Percent Load Reduction (%)	FSL (MW)	FSL Achievement Rate (%) ²¹
		Reference Load	Load Impact	Reference Load	Load Impact			
September 23 rd	326	562.8	430.5	1,726.4	1,320.5	76%	122.1	98%

4.2.1 SCE Aggregate Load Impacts

For the September 23rd BIP test event day, SCE dispatched all active BIP participants. In total 326 BIP participants were dispatched for testing. Figure 4-10, presents the aggregate load shape for this event day, showing actual observed loads (hourly and 15-minute), load impacts and FSLs. Event hours are highlighted in orange. All times are reported in local prevailing time for ease of interpretation. As seen in the 15-minute observed load, load reductions begin to appear in the hour prior to the event start, indicating a rapid response to event notifications.

FIGURE 4-10: SCE BIP EVENT SEPTEMBER 23, 2025 AGGREGATE LOAD AND IMPACT

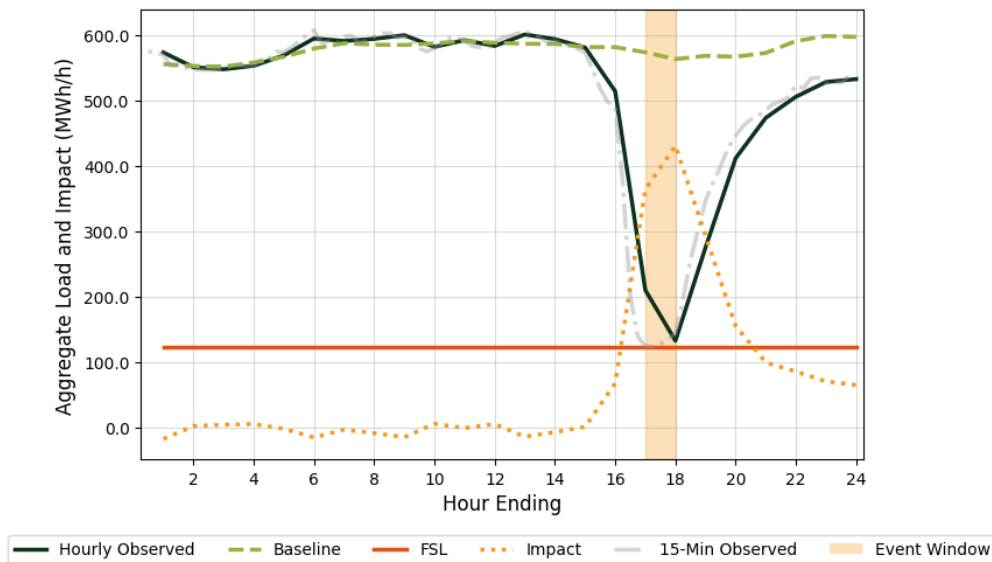


Table 4-10 presents the hour-by-hour aggregate load impacts for the September 23rd event. In the full curtailment hour (HE18), FSL achievement rates were 98%, providing 430.5 MWh/h of load reduction. For brevity, only the hour prior to the first event hours through HE24 are presented. The full range of hours (HE1 through HE24) are presented in the Ex-Post Table Generator (Appendix A). HE18 is used as the average event hour because it is the only event hour where customers are expected to have reached their

²¹ A value of 100% indicates customers reducing their load to their FSL on average.

FSL commitment for the full duration of the hour (HE17 includes 15 to 30 minutes of allowed curtailment time, depending on program option).

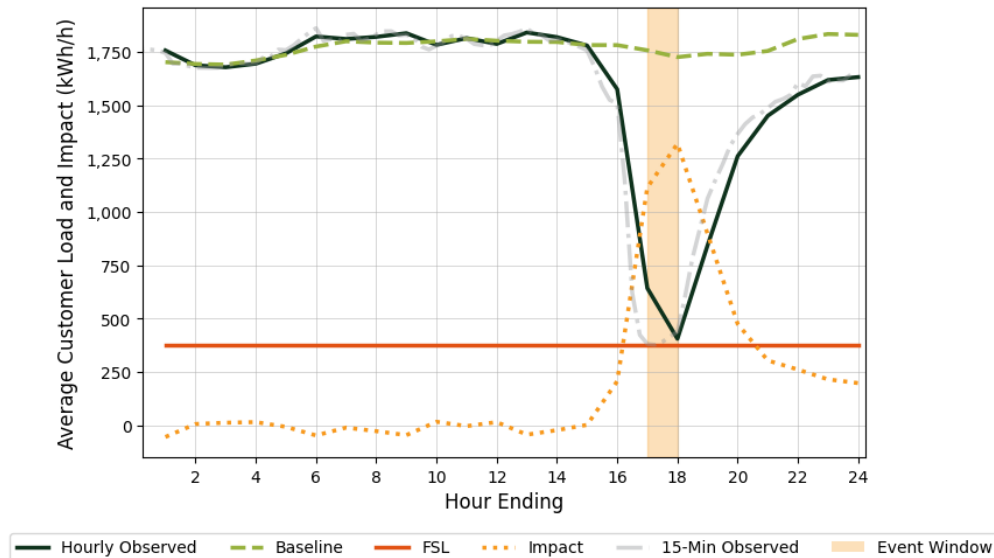
TABLE 4-10: SCE BIP EVENT SEPTEMBER 23, 2025 AGGREGATE LOAD HOURLY IMPACTS

Hour Ending (Prevailing Time)	Hour Type	Estimated Reference Load (MWh/hour)	Observed Event Day Load (MWh/hour)	Estimated Load Impact (MWh/hour)	Percent Load Reduction (%)	FSL (MW)	FSL Achievement Rate (%)
16	Non-Event	581.1	513.7	67.5	12%	122.1	15%
17	Event, First	573.2	209.7	363.5	63%	122.1	81%
18	Event, Full	562.8	132.3	430.5	76%	122.1	98%
19	Non-Event	567.8	275.1	292.7	52%	122.1	66%
20	Non-Event	566.4	411.4	155.0	27%	122.1	35%
21	Non-Event	572.2	473.1	99.1	17%	122.1	22%
22	Non-Event	590.5	505.3	85.2	14%	122.1	18%
23	Non-Event	598.1	527.9	70.2	12%	122.1	15%
24	Non-Event	596.8	532.3	64.6	11%	122.1	14%
Avg. Event Hour		562.8	132.3	430.5	76%	122.1	98%

4.2.2 SCE Per Capita Event Load Impacts

To demonstrate the impacts associated with the typical SCE BIP customer in PY2025, Figure 4-11 illustrates the average baseline, event load impact and hourly and 15 minute observed load associated with the September 23rd event. Table 4-11 presents the hour by hour average event per capita hourly impacts.

FIGURE 4-11: SCE BIP AVERAGE EVENT PER CAPITA LOAD AND IMPACT



The average SCE BIP customer provided 1,320.5 kWh/h of load reduction during the full curtailment hour of the September 23rd event, corresponding to a load reduction of 76%.

TABLE 4-11: SCE BIP AVERAGE EVENT PER CAPITA LOAD HOURLY IMPACTS

Hour Ending (Prevailing Time)	Number of Events Full Event Hour	Estimated Reference Load (kWh/hour)	Observed Event Day Load (kWh/hour)	Estimated Load Impact (kWh/hour)	Percent Load Reduction (%)	Per Capita FSL (kW)	FSL Achievement Rate (%)
16	Non-Event	1,782.6	1,575.7	206.9	12%	374.4	15%
17	Event, First	1,758.4	643.2	1,115.1	63%	374.4	81%
18	Event, Full	1,726.4	405.9	1,320.5	76%	374.4	98%
19	Non-Event	1,741.7	843.7	898.0	52%	374.4	66%
20	Non-Event	1,737.5	1,262.1	475.4	27%	374.4	35%
21	Non-Event	1,755.3	1,451.3	304.0	17%	374.4	22%
22	Non-Event	1,811.3	1,550.0	261.3	14%	374.4	18%
23	Non-Event	1,834.7	1,619.2	215.4	12%	374.4	15%
24	Non-Event	1,830.8	1,632.7	198.0	11%	374.4	14%
Avg. Event Hour		1,726.4	405.9	1,320.5	76%	374.4	98%

4.2.3 SCE Load Impacts by Customer Subgroupings

Table 4-12 presents the SCE BIP load impacts by SubLAP for the September 23rd event. As seen, the SubLAPs providing the greatest aggregate load reductions on average in PY2025 include [REDACTED] and [REDACTED].

TABLE 4-12: SCE BIP LOAD IMPACTS BY SUBLAP SEPTEMBER 23, 2025 EVENT

SubLAP	Number of Participants	Estimated Reference Load (MWh/h)	Observed Load (MWh/h)	Estimated Impact (MWh/h)	Percent Load Reduction (%)	Aggregate FSL (MW)	FSL Achievement Rate (%)
SCEC	125	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
SCEN	19	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
SCEW	136	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
SCHD	15	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
SCNW	31	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Table 4-13 presents the typical event day load reductions by Industry Type. As seen, the largest share of customer and load impacts belong to the Manufacturing industry type with 203 participants and 253.9 MWh/h of load reductions.

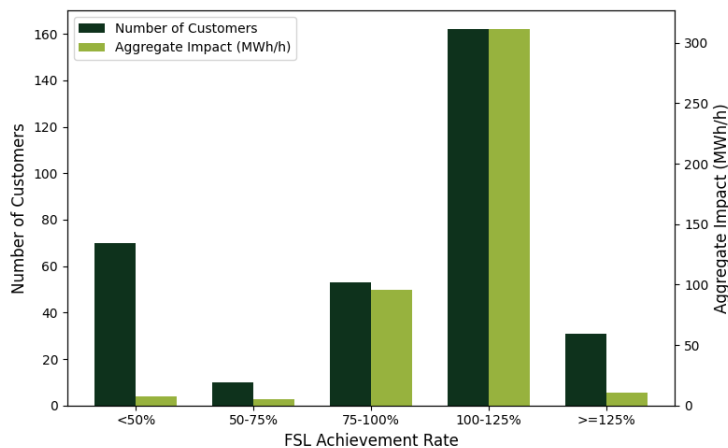
TABLE 4-13: SCE BIP LOAD IMPACTS BY INDUSTRY TYPE SEPTEMBER 24, 2025 EVENT

Industry Type	Number of Participants	Estimated Reference Load (MWh/h)	Observed Load (MWh/h)	Estimated Impact (MWh/h)	Percent Load Reduction (%)	Aggregate FSL (MW)	FSL Achievement Rate (%)
Agriculture, Mining and Construction	31	█	█	█	█	█	█
Manufacturing	203	341.4	87.6	253.9	74%	82.7	98%
Office, Hotels, Finance, Services	6	█	█	█	█	█	█
Retail Stores	1	█	█	█	█	█	█
Schools	1	█	█	█	█	█	█
Wholesale, Transport, and other Utilities	69	█	█	█	█	█	█
Unknown/Other	15	█	█	█	█	█	█

4.2.4 SCE FSL Achievement Rates

Individual customers varied widely in FSL achievement rates. Figure 4-12 presents the share of customers and corresponding load impacts during the full curtailment hour on September 23, 2025. The 100-125% FSL achievement bin has the largest number of participants, consistent with the high observed program level FSL achievement rate.

FIGURE 4-12: DISTRIBUTION OF FSL ACHIEVEMENT AND IMPACTS, SEPTEMBER 23, 2025 EVENT



5 EX-ANTE RESULTS

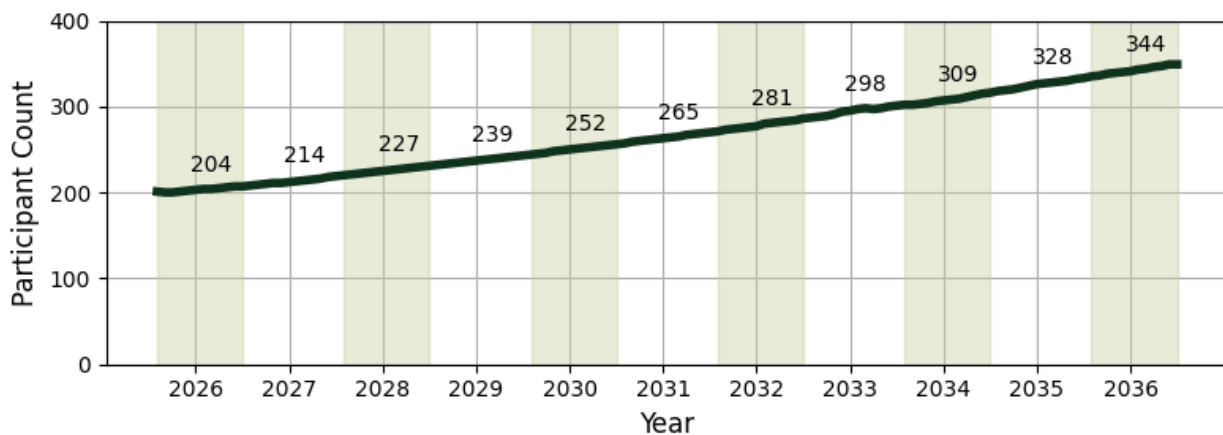
This section presents the ex-ante enrollment forecasts and load impacts for PG&E and SCE. Given that program and portfolio level impacts are very similar for both PG&E and SCE, the ex-ante discussion focuses on program level impacts. However, portfolio level impacts for PY2025 are provided at the end of each IOU’s ex-ante discussion. Additionally, ex-ante impacts for SCE were developed for both a four-hour and six-hour dispatch. Since the four-hour dispatch represents a more typical BIP event dispatch and more closely follows the Availability Assessment Hour (AAH) criteria of the LIP protocols, the SCE six-hour dispatch is not discussed in this report. Ex ante scenarios not discussed in this report are presented in the Ex-Ante Table Generators for each IOU (Appendix A).

5.1.1 Enrollment Forecasts

5.1.2 PG&E Ex-Ante Enrollment Forecasts

PG&E provided Verdant with participant forecasts for PY2026 through PY2036 which are presented in Figure 5-1. This figure shows the month over month forecast growth and the forecasted enrollment count for August of each year. PG&E projects an average annual growth rate of approximately 5.47% such that participation is expected to grow from 204 customers in August of 2026 to 344 customers by August 2036 (349 customers by December 2036) due to increased customer outreach and marketing efforts.

FIGURE 5-1: PG&E PARTICIPANT FORECAST – 2026 THROUGH 2036



Note: Participant counts are labeled for August of each year. Background color alternates by calendar year.

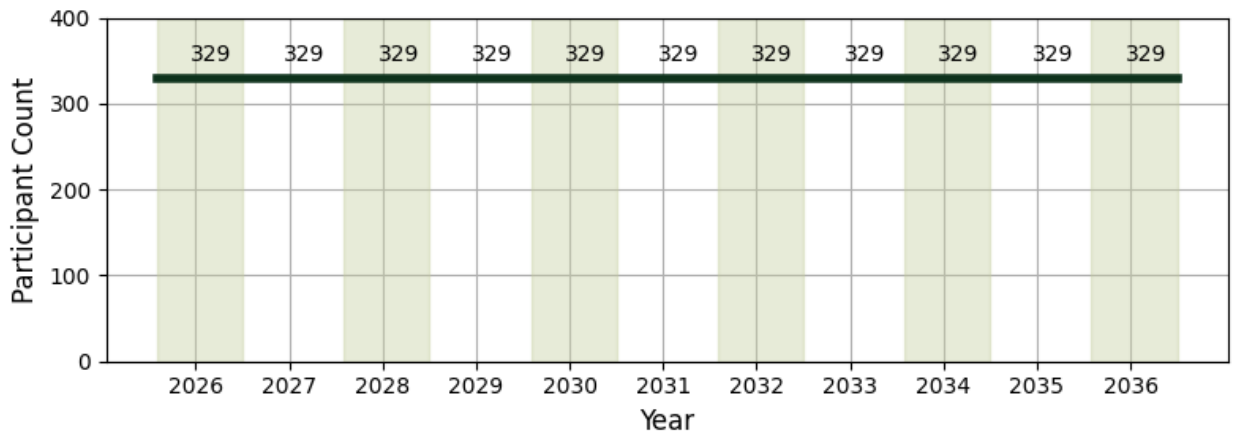
The PG&E supplied enrollment forecasts were delivered to Verdant with segmented enrollment counts by LCA, SubLAP, Industry Type, Dual Enrollment status, and Size Group. The enrollment forecasts were

not segmented by BIP option (BIP15 or BIP30). As a result, the PG&E ex-ante analysis only produced ex-ante impacts for the BIP overall and did not account for notification type enrollment.

5.1.3 SCE Ex-Ante Enrollment Forecasts

SCE provided Verdant with participant forecasts for PY2026 through PY2036 as presented in Figure 5-2. SCE’s participant forecasts were segmented by BIP option (BIP15 and BIP30). SCE anticipates 50 BIP15 enrollees and 279 BIP30 enrollees for the entirety of the forecast window (for a total of 329 BIP enrollees). Verdant segmented the enrollment forecasts by LCA, SubLAP, and Size Group based on the distribution of customers in the BIP in January of 2026.

FIGURE 5-2: SCE PARTICIPANT FORECAST – 2026 THROUGH 2036



Note: Participant counts are labeled for August of each year. Background color alternates by calendar year.

5.2 PG&E EX-ANTE MW FORECASTS

Prior to discussing the ex-ante results for PG&E, it is worth visually presenting the ex-ante load shape for context. Figure 5-3 presents the program-level aggregate ex-ante load shape for PY2025 under PG&E 1-in-2 August System Worst Day conditions. PG&E ex-ante results are presented for a four-hour event dispatch in the first four hours of the RA window for all months of the year. The average event hour FSL achievement rate forecasted is 106%. Because customers may rapidly increase load after the end of an event (resulting in snapback) or may continue reduced operations after participating in a BIP event, impacts are modeled through HE24. The orange highlighted hours indicate the full RA window. The grey dashed lines denote the start and end of the four-hour dispatch. As seen in Figure 5-3, impacts are forecasted to persist throughout the remainder of the day after the end of the event dispatch.

FIGURE 5-3: PG&E BIP PROGRAM LEVEL EX-ANTE LOAD SHAPE AND IMPACT (PG&E 1-IN-2 AUGUST SYSTEM WORST DAY, 2026)

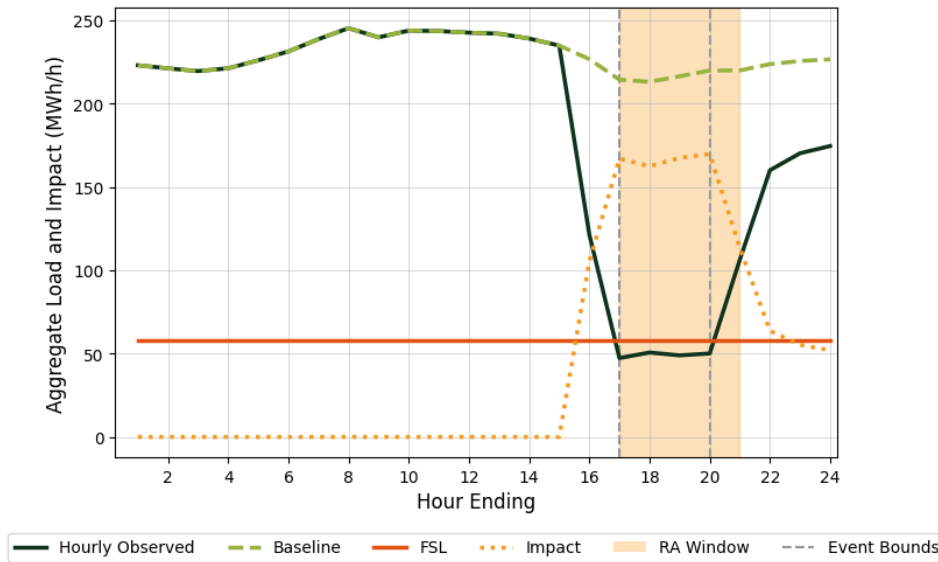


Table 5-1 presents the aggregate and per capita August System Worst Day average event hour ex-ante load impacts over the presumed four-hour dispatch in PY2026. Overall, PG&E BIP participants tend to have weather insensitive loads and impacts are driven by firm service level (FSL) commitments. As a result, there is little variation in estimated load impacts across weather scenarios. The ex-ante analysis found that the average program level ex-ante impacts for a four-hour dispatch in August 2026 ranged from 166.7 MWh/h to 168.4 MWh/h depending on the weather scenario. Across all weather scenarios, the ex-ante analysis anticipates a 77% load reduction and a 106% FSL achievement rate after accounting for participant changes in FSL commitments.

TABLE 5-1: PG&E PROGRAM LEVEL EX-ANTE AVERAGE IMPACTS (AUGUST SYSTEM WORST DAY, 2026) FOR A 4-HOUR DISPATCH

Weather Source	Weather Year	Event Dispatch (HE)	Number of Participants	Aggregate (MWh/h)		Per Capita (kWh/h)		Percent Load Reduction (%)	FSL (MWh/h)	FSL Achievement Rate (%)
				Ref. Load	Load Impact	Ref. Load	Load Impact			
CAISO	1-in-10	17 - 20	204	217.3	168.3	1,065.0	825.0	77%	58.2	106%
CAISO	1-in-2	17 - 20	204	216.6	167.4	1,061.7	820.7	77%	58.2	106%
Utility	1-in-10	17 - 20	204	217.3	168.4	1,065.4	825.3	77%	58.2	106%
Utility	1-in-2	17 - 20	204	215.9	166.7	1,058.4	816.9	77%	58.2	106%

Table 5-2 presents the average aggregate and per capita August System Worst Day load impacts over the full five-hour RA window. Given that the fifth hour of the RA window is not an event hour, the average impacts are lower than the average of the four-hour dispatch. However, impacts are still expected to

persist after the end of the four-hour BIP event. The ex-ante analysis found that the average August program level ex-ante impacts over the full RA window ranged from 156.0 MWh/h to 157.6 MWh/h depending on the weather scenario. Across all weather scenarios, the ex-ante analysis anticipates a 72% load reduction and a 98% FSL achievement rate.

TABLE 5-2: PG&E PROGRAM LEVEL EX-ANTE AVERAGE IMPACTS (AUGUST SYSTEM WORST DAY, 2026) OVER THE 5-HOUR RA WINDOW

Weather Source	Weather Year	RA Window (HE)	Number of Customers	Aggregate (MWh/h)		Per Capita (kWh/h)		Percent Load Reduction (%)	FSL (MWh)	FSL Achievement Rate (%)
				Ref. Load	Load Impact	Ref. Load	Load Impact			
CAISO	1-in-10	17 - 21	204	218.1	157.5	1,069.1	771.9	72%	58.2	98%
CAISO	1-in-2	17 - 21	204	217.4	156.7	1,065.9	768.3	72%	58.2	98%
Utility	1-in-10	17 - 21	204	218.1	157.6	1,069.4	772.3	72%	58.2	98%
Utility	1-in-2	17 - 21	204	216.7	156.0	1,062.3	764.9	72%	58.2	98%

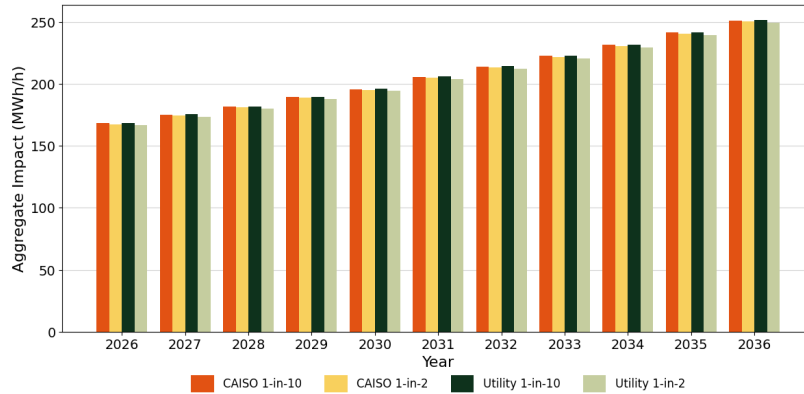
Table 5-3 presents the forecast PY2026 event impact for each weather scenario in the 2027 CEC forecasted peak hours for each month. All peak hours occur within forecasted event hours, and impacts do not vary greatly between the weather scenarios as most large BIP customers are not weather sensitive. The months with the highest forecast impacts during CEC Peak hours are May and April.

TABLE 5-3: PG&E 2026 PROGRAM LEVEL MONTHLY SYSTEM WORST DAY PEAK HOUR EX-ANTE IMPACTS (MWH/H)

CEC Forecasted Peak Hour	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	19	19	19	19	20	18	18	18	18	18	18	18
CAISO 1-in-10	162.1	171.9	162.8	187.4	191.7	164.3	159.4	163.9	173.5	162.0	180.1	169.0
CAISO 1-in-2	161.5	171.8	161.5	183.9	189.8	164.7	159.6	163.1	170.4	160.7	179.5	168.0
Utility 1-in-10	161.8	171.8	161.9	187.4	192.4	165.7	160.0	164.0	174.4	163.0	178.3	168.9
Utility 1-in-2	161.5	171.9	163.8	186.4	190.4	164.6	159.7	162.4	171.8	160.3	177.5	167.8

Figure 5-4 presents the predicted average event hour (four-hour dispatch) aggregate load impact for each year in the participant forecast. This figure shows again that the difference in predicted load impacts does not vary greatly by weather scenario. Impacts are forecast to grow across program years due to increases in the participant forecast, which are expected by PG&E to result from increased customer outreach and marketing efforts August impacts are forecast to reach a maximum of 251 MWh/h in 2036. At its highest peak in the full forecast, the ex-ante load impacts (~284 MWs) in May of 2036 are still below the capacity MW cap for PG&E.

FIGURE 5-4: PG&E PROGRAM AUGUST SYSTEM WORST DAY YEARLY AVERAGE EVENT HOUR IMPACTS



5.2.1 PG&E Hourly Ex-Ante Load Impacts

Table 5-4 shows the forecasted 2026 aggregate load impacts for HE16 through the end of the day for each month in the PG&E System Worst Day 1-in-2 weather scenario. Cells are colored by event hour and RA window, where green cells are event hours in the RA window and orange cells are non-event hours in the RA window. Blue cells represent the CEC Peak hour in that month. Table 5-5 shows the same information for the PG&E System Worst Day 1-in-10 weather scenario. Impacts do not vary greatly between the weather scenarios as most large BIP customers are not weather sensitive. In most months, impacts are equivalent or marginally higher on average in the 1-in-10 scenario relative to the 1-in-2 scenario. In February and March, impacts are slightly higher in the 1-in-2 scenario relative to the 1-in-10 scenario because some customers are expected to consume more energy in colder temperatures (e.g., are winter heating sensitive). As such, in the 1-in-10 scenario, where February and March are forecasted to be warmer relative to the 1-in-2 scenario, these customers are forecasted to use less energy.

TABLE 5-4: 2026 PG&E PROGRAM 1-IN-2 SYSTEM WORST DAY HOURLY TABLE (HE16 THROUGH HE24, MWH/H)

Hour Ending	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
16	0.0	0.0	0.0	0.0	0.0	108.1	104.5	105.3	106.4	103.1	0.0	0.0
17	92.1	98.3	94.7	110.2	111.2	167.9	164.8	167.0	171.8	163.1	98.3	90.2
18	167.6	176.5	164.2	186.6	182.4	164.6	159.7	162.4	171.8	160.3	177.5	167.8
19	161.5	171.9	163.8	186.4	186.4	167.7	163.9	167.4	178.2	160.1	172.4	165.3
20	159.0	169.6	165.4	189.8	190.4	171.0	166.9	169.8	177.3	154.0	171.0	164.5
21	157.9	167.5	163.2	189.1	190.6	112.6	113.2	113.6	113.9	102.7	170.8	163.8
22	112.4	118.5	115.8	123.8	124.9	67.2	65.0	63.7	65.0	59.7	116.8	112.0
23	65.5	69.9	65.8	70.4	70.2	58.7	56.9	55.3	56.0	51.7	65.1	64.3
24	57.5	59.7	56.9	60.0	61.1	55.5	52.9	52	51.8	47.7	56.2	53.8

Event Hour in RA Window
 Non-Event Hour in RA Window
 Event Hour in 2027 CEC Peak Hour

TABLE 5-5: 2026 PG&E PROGRAM 1-IN-10 SYSTEM WORST DAY HOURLY TABLE (HE16 THROUGH HE24, MWH/H)

Hour Ending	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
16	0.0	0.0	0.0	0.0	0.0	108.6	104.8	105.9	107.9	104.4	0.0	0.0
17	92.0	98.3	93.5	110.4	112.2	169.1	165.1	168.6	174.7	165.8	98.2	90.8
18	167.8	176.4	162.0	187.0	184.3	165.7	160.0	164	174.4	163	178.3	168.9
19	161.8	171.8	161.9	187.4	188.5	168.9	164.2	169.4	180.9	162.9	173.3	166.0
20	159.2	169.5	163.3	191.7	192.4	172.0	167.2	171.5	180	156.4	171.4	164.8
21	157.9	167.5	162.3	191.4	193.0	113.3	113.3	114.3	114.9	103.6	171.0	163.8
22	112.5	118.5	115.7	124.3	125.8	67.3	65.0	63.8	65.1	59.8	117.1	112.1
23	65.7	69.9	66.4	70.5	70.3	58.8	56.9	55.4	56.1	51.8	65.6	64.4
24	57.7	59.7	57.5	60.0	61.1	55.5	52.9	52.0	51.9	47.8	56.5	53.9

Event Hour in RA Window
 Non-Event Hour in RA Window
 Event Hour in 2027 CEC Peak Hour

5.2.2 PG&E Portfolio-Level Impacts

Table 5-6, Table 5-7, and Table 5-8 present the August System Worst Day average hourly portfolio-level ex-ante impacts for PY2026 event hours in a four-hour dispatch, over the full RA window, and in CEC monthly Peak hours, respectively. Overall, program-level and portfolio-level ex-ante impacts are very similar. The only difference between them is that the portfolio-level impacts account for dual participation in the ELRP. In portfolio-level impacts, dual BIP and ELRP program participants have their BIP ex-ante impacts capped by their FSL. However, since the ELRP season only occurs in summer months (May through October), program and portfolio-level impacts are the same in the winter months. Additionally, the ELRP programs that are open to BIP customers are planned to sunset at the end of 2027. As a result, portfolio and program-level ex-ante impacts are the same for all months starting in 2028.

The aggregate portfolio-level impacts for an average event hour in a four-hour dispatch presented in Table 5-6 are roughly 3 MWh/h lower than program-level impacts (shown in Table 5-1 above) and range from 163.5 MWh/h to 165.0 MWh/h depending on the weather scenario.

TABLE 5-6: PG&E PORTFOLIO-LEVEL EX-ANTE IMPACTS (AUGUST SYSTEM WORST DAY, 2026) AVERAGE IMPACTS OF A 4-HOUR DISPATCH

Weather Source	Weather Year	Event Dispatch (HE)	Number of Customers	Aggregate (MWh/h)		Per Capita (kWh/h)		Percent Load Reduction (%)	FSL (MWh)	FSL Achievement Rate (%)
				Ref. Load	Load Impact	Ref. Load	Load Impact			
CAISO	1-in-10	17 - 20	204	217.3	164.9	1,065.0	808.2	76%	58.2	104%
CAISO	1-in-2	17 - 20	204	216.6	164.2	1,061.7	804.8	76%	58.2	104%
Utility	1-in-10	17 - 20	204	217.3	165.0	1,065.4	809.0	76%	58.2	104%
Utility	1-in-2	17 - 20	204	215.9	163.5	1,058.4	801.5	76%	58.2	104%

Similarly, the average August System Worst Day portfolio-level impacts over the full five-hour RA window presented in Table 5-7 are roughly 3 MWh/h lower than program-level impacts (shown in Table 5-2 above) and range from 153.4 MWh/h to 154.8 MWh/h depending on the weather scenario.

TABLE 5-7: PG&E PORTFOLIO-LEVEL EX-ANTE IMPACTS (AUGUST SYSTEM WORST DAY, 2026) AVERAGE IMPACTS OVER THE 5-HOUR RA WINDOW

Weather Source	Weather Year	Event Dispatch (HE)	Number of Customers	Aggregate (MWh/h)		Per Capita (kWh/h)		Percent Load Reduction (%)	FSL (MWh)	FSL Achievement Rate (%)
				Ref. Load	Load Impact	Ref. Load	Load Impact			
CAISO	1-in-10	17 - 21	204	218.1	154.6	1,069.1	758.1	71%	58.2	97%
CAISO	1-in-2	17 - 21	204	217.4	154.0	1,065.9	755.1	71%	58.2	97%
Utility	1-in-10	17 - 21	204	218.1	154.8	1,069.4	758.7	71%	58.2	97%
Utility	1-in-2	17 - 21	204	216.7	153.4	1,062.3	752.1	71%	58.2	97%

Table 5-8 shows the forecast 2026 portfolio level impacts for the 2027 CEC peak hours in each month. Portfolio level impacts are approximately 2-4 MWh/h lower than Program level impacts across all months and weather scenarios.

TABLE 5-8: PG&E 2026 PORTFOLIO-LEVEL PEAK HOUR EX-ANTE IMPACTS (MWH/H)

CEC Forecasted Peak Hour	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	19	19	19	19	20	18	18	18	18	18	18	18
CAISO 1-in-10	162.1	171.9	162.8	187.4	188.3	162.8	157.3	160.6	170.0	160.3	180.1	169.0
CAISO 1-in-2	161.5	171.8	161.5	183.9	186.6	163.1	157.5	159.9	167.3	159.1	179.5	168.0
Utility 1-in-10	161.8	171.8	161.9	187.4	188.9	164.0	157.8	160.8	170.8	161.2	178.3	168.9
Utility 1-in-2	161.5	171.9	163.8	186.4	187.2	163.0	157.5	159.4	168.5	158.8	177.5	167.8

5.3 SCE EX-ANTE MW FORECASTS

Prior to discussing the ex-ante results for SCE it is worth visually presenting the ex-ante load shape for context. Figure 5-5 presents the program-level aggregate PY2025 ex-ante load shape for SCE’s BIP under 1-in-2 SCE August System Worst Day conditions. SCE ex-ante results are presented for a four-hour event dispatch starting in HE18 for all months of the year such that all four event hours will be within the RA window in every month (some months making up the first four hours and other months the last four hours). The average event hour FSL achievement rate forecasted is 97%. Because customers may rapidly increase load after the end of an event (resulting in snapback) or may continue reduced operations after participating in a BIP event, impacts are modeled through hour ending (HE) 24. The yellow highlighted hours indicate the full resource adequacy (RA) window. The grey dashed lines denote the start and end of the four-hour dispatch. As shown in Figure 5-5, impacts are forecasted to persist throughout the remainder of the day after the end of the event dispatch, with an expected load reduction in this

scenario of 45% in the first hour after the end of the event. Load reductions are expected to decrease each hour after the event, returning to less than 20% by three hours after the end of the event.

FIGURE 5-5: SCE BIP PROGRAM 1-IN-2 2026 AUGUST SYSTEM WORST DAY FORECASTED LOAD SHAPE AND IMPACT

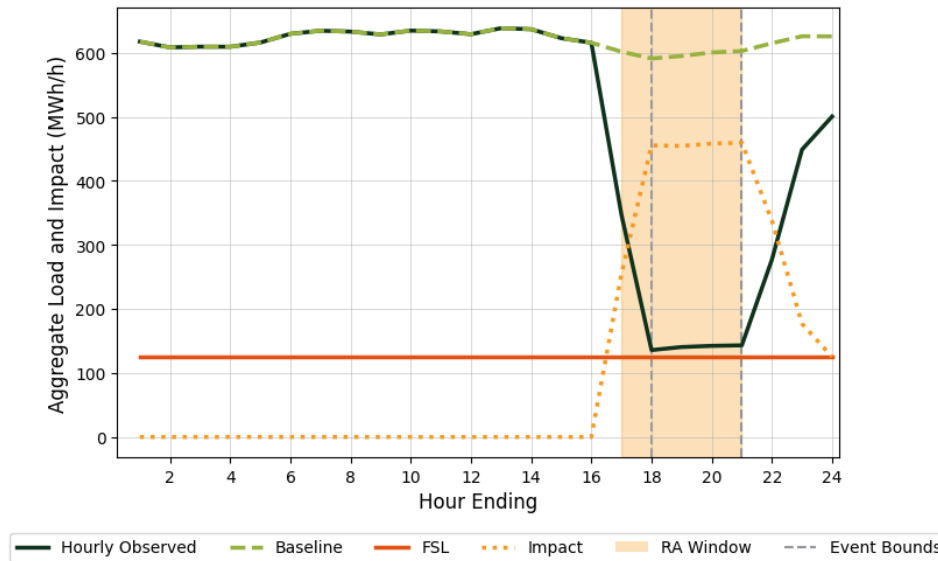


Table 5-9 presents the aggregate and per capita August System Worst Day average event hour load impacts over the presumed four-hour dispatch across all BIP options, as well as the BIP15 and BIP30 options separately. Overall, BIP participants tend to have weather insensitive loads and impacts are typically driven by firm service level (FSL) commitments. As a result, there is little variation in estimated load impacts across the various weather scenarios. The ex-ante analysis found that the average program-level ex-ante impacts for a four-hour dispatch in August of PY2026 across all BIP options ranged from 456.1 MWh/h to 457.4 MWh/h depending on the weather scenario. Across all weather scenarios, the ex-ante analysis anticipates a 76% load reduction and a 97% FSL achievement rate after accounting for participant changes in FSL commitments. Further, the ex-ante analysis anticipates that approximately █% of BIP total load impacts will be attributable to BIP15 customers despite them comprising only 15% of participant counts. BIP15 customers have per capita reference loads █ kWh/h higher than BIP30 customers and average FSL achievement rates of █% as opposed to █% for BIP 30 customers.

TABLE 5-9: SCE PROGRAM-LEVEL EX-ANTE AVERAGE IMPACTS (AUGUST SYSTEM WORST DAY, 2026) OF A 4-HOUR DISPATCH

BIP Option	Weather Source	Weather Year	Event Dispatch (HE)	Number of Customers	Aggregate (MWh/h)		Per Capita (kWh/h)		Percent Load Reduction (%)	FSL (MWh)	FSL Achievement Rate (%)
					Ref. Load	Load Impact	Ref. Load	Load Impact			
All	CAISO	1-in-10	18 - 21	329	597.9	457.4	1,817.2	1,390.3	77%	125.8	97%
All	CAISO	1-in-2	18 - 21	329	596.4	456.1	1,812.9	1,386.4	76%	125.8	97%
All	Utility	1-in-10	18 - 21	329	597.7	457.3	1,816.8	1,389.8	76%	125.8	97%
All	Utility	1-in-2	18 - 21	329	597.3	456.9	1,815.4	1,388.7	76%	125.8	97%
BIP15	CAISO	1-in-10	18 - 21	50							
BIP15	CAISO	1-in-2	18 - 21	50							
BIP15	Utility	1-in-10	18 - 21	50							
BIP15	Utility	1-in-2	18 - 21	50							
BIP30	CAISO	1-in-10	18 - 21	279							
BIP30	CAISO	1-in-2	18 - 21	279							
BIP30	Utility	1-in-10	18 - 21	279							
BIP30	Utility	1-in-2	18 - 21	279							

Table 5-10 presents the aggregate and per capita August System Worst Day average ex-ante load impacts over the five-hour RA window. Given that the fifth hour of the RA window is not an event hour, the average impacts are lower than the average of the four-hour dispatch. However, impacts are still expected to persist after the end of the four-hour BIP event. The ex-ante analysis found that the average August program level ex-ante impacts over the full RA window ranged from 415.7 MWh/h to 416.9 MWh/h depending on the weather scenario. Across all weather scenarios, the ex-ante analysis anticipates a 70% load reduction and an 88% FSL achievement rate in the full RA window. As with results for the specific event window, BIP15 customers are expected to deliver ███% of the load impacts across the full RA window while comprising 15% of the program participants.

TABLE 5-10: SCE PROGRAM-LEVEL EX-ANTE AVERAGE IMPACTS (AUGUST SYSTEM WORST DAY, 2026) OVER THE 5-HOUR RA WINDOW

Option	Weather Source	Weather Year	RA Window (HE)	Number of Customers	Aggregate (MWh/h)		Per Capita (kWh/h)		Percent Load Reduction (%)	FSL (MWh)	FSL Achievement Rate (%)
					Ref. Load	Load Impact	Ref. Load	Load Impact			
All	CAISO	1-in-10	17 - 21	329	598.8	416.9	1,820.0	1,267.3	70%	125.8	88%
All	CAISO	1-in-2	17 - 21	329	597.4	415.7	1,815.7	1,263.6	70%	125.8	88%
All	Utility	1-in-10	17 - 21	329	598.6	416.8	1,819.6	1,266.8	70%	125.8	88%
All	Utility	1-in-2	17 - 21	329	598.1	416.4	1,818.1	1,265.6	70%	125.8	88%
BIP15	CAISO	1-in-10	17 - 21	50							
BIP15	CAISO	1-in-2	17 - 21	50							
BIP15	Utility	1-in-10	17 - 21	50							
BIP15	Utility	1-in-2	17 - 21	50							
BIP30	CAISO	1-in-10	17 - 21	279							
BIP30	CAISO	1-in-2	17 - 21	279							
BIP30	Utility	1-in-10	17 - 21	279							
BIP30	Utility	1-in-2	17 - 21	279							

Table 5-11 presents the forecast PY2026 event impact for each weather scenario in the 2027 CEC Peak Hours for each month. Because SCE anticipates constant program participation PY2026 to PY2036, these values are representative of all forecast PYs. All peak hours occur within forecasted event hours, and impacts do not vary greatly between the weather scenarios as most large BIP customers are not weather sensitive. The months with the highest forecast impacts during CEC Peak hours are March and May.

TABLE 5-11: SCE 2026 PROGRAM-LEVEL PEAK HOUR EX-ANTE IMPACTS (MWH/H)

Option	Peak Hour	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
		19	19	19	19	20	18	18	18	18	18	18	18
All	CAISO 1-in-10	415.6	431.7	474.4	448.8	473.3	466.4	468.9	456.1	459.8	471.9	433.6	386.6
All	CAISO 1-in-2	415.3	431.6	474.6	448.7	469.9	464.0	468.2	454.7	458.4	469.8	433.5	386.0
All	Utility 1-in-10	415.9	430.7	474.4	448.9	474.4	466.2	472.5	455.9	461.0	471.6	433.7	385.9
All	Utility 1-in-2	414.0	431.6	473.8	448.6	470.7	464.3	468.9	455.3	459.5	470.4	433.5	385.7
BIP15	CAISO 1-in-10												
BIP15	CAISO 1-in-2												
BIP15	Utility 1-in-10												
BIP15	Utility 1-in-2												
BIP30	CAISO 1-in-10												
BIP30	CAISO 1-in-2												
BIP30	Utility 1-in-10												
BIP30	Utility 1-in-2												

5.3.1 SCE Hourly Ex-Ante Load Impacts

Table 5-12 shows the forecasted aggregate load impacts for HE17 (the hour preceding the four-hour dispatch) through the end of the day for each month under the SCE System Worst Day 1-in-2 weather scenario. Because ex-ante enrollment is static from 2026 to 2036, the hourly table represents the hourly forecasted load reductions for all years in the ex-ante forecast. Cells are colored by event hour and RA window, where green cells are event hours in the RA window and orange cells are non-event hours in the RA window. Blue cells represent the CEC Peak hour in that month. Table 5-13 shows the same information for the utility 1-in-10 weather year. Impacts do not vary greatly between the weather years because most large customers are not weather sensitive. However, impacts are somewhat higher for most of the year in the 1-in-10 scenario. In February, impacts are marginally lower for the 1-in-10 weather year. This decrease can be attributed to winter heating sensitive customers in these months that are predicted to use less heating energy in warmer winter months.

TABLE 5-12: SCE PROGRAM 1-IN-2 SYSTEM WORST DAY HOURLY TABLES (HE17 THROUGH HE24, MWH/H)

Hour Ending	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
17	229.2	238.2	261.6	242.5	258.1	254.9	258.1	254.5	254.6	263.7	239.7	212.8
18	420.2	434.5	473.9	448.5	468.8	464.3	468.9	455.3	459.5	470.4	433.5	385.7
19	414.0	431.6	473.8	448.6	466.4	460.7	466.2	454.4	458.5	470.5	424.5	380.8
20	412.6	430.0	466.5	452.4	470.7	461.4	471.0	458.2	457.3	470.6	419.2	378.4
21	412.9	433.3	470.0	459.9	474	466.8	474.0	459.6	459	471.6	421.1	380.2
22	298.2	313.6	333.1	331.4	336.2	334.1	343.1	337.9	337.6	342.1	308.6	285.9
23	158.4	169.4	163.1	169.0	174.9	174.8	177.5	176.9	174.4	182.0	164.0	154.9
24	109.1	116.8	112.3	118.1	123.6	125.4	125.7	125.1	121.3	129.4	113.7	105.3

Event Hour in RA Window
 Non-Event Hour in RA Window
 Event Hour in 2027 CEC Peak Hour

TABLE 5-13: SCE PROGRAM 1-IN-10 SYSTEM WORST DAY HOURLY TABLES (HE16 THROUGH HE24, MWH/H)

Hour Ending	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
17	231.7	237.8	261.9	242.6	260.8	255.8	260.3	254.8	255.4	264.5	239.7	213.3
18	422.8	433.4	474.5	448.8	472.6	466.2	472.5	455.9	461	471.6	433.7	385.9
19	415.9	430.7	474.4	448.9	470.5	461.6	469.6	454.7	459.7	471.5	424.7	381.0
20	414.5	429	467.1	452.7	474.4	461.5	474	458.5	457.9	471.2	419.3	378.6
21	414.5	432.3	470.1	460.3	477.1	466.7	476.6	459.9	459.6	472.2	421.3	380.4
22	299.3	312.9	332.9	331.7	338.5	333.9	344.4	338.4	338.2	342.7	308.7	286.1
23	158.9	169.1	162.8	169.2	176.1	174.7	178.5	177.2	174.8	182.4	164.1	154.9
24	109.3	116.6	112.2	118.3	124.2	125.3	126.5	125.2	121.6	129.7	114.0	105.3

Event Hour in RA Window
 Non-Event Hour in RA Window
 Event Hour in 2027 CEC Peak Hour

5.3.2 SCE Portfolio-Level Impacts

Table 5-14, Table 5-15 and Table 5-16 present the August System Worst Day average hourly portfolio-level ex-ante impacts for PY2026 event hours in a four-hour dispatch, over the full RA window, and in CEC monthly Peak hours, respectively. Overall, program-level and portfolio-level ex-ante impacts are very similar. The only difference between them is portfolio-level impacts account for dual participation in the ELRP. In portfolio-level impacts, dual BIP and ELRP program participants have their BIP ex-ante impacts capped by their FSL. However, since the ELRP season only occurs in summer months (May through October), program and portfolio-level impacts are the same in winter months. Additionally, the ELRP programs that are open to BIP customers are planned to sunset at the end of 2027. As a result, portfolio and program-level ex-ante impacts are the same for all months starting in 2028. As with program-level impacts, BIP15 customers are expected to comprise ████% of aggregate load impacts.

As presented in Table 5-14 portfolio-level impacts over the average event hour in a four-hour dispatch are roughly 4 MWh/h lower than program level impacts and range from 452.6 MWh/h to 453.9 MWh/h depending on the weather scenario.

TABLE 5-14: SCE PORTFOLIO-LEVEL EX-ANTE AVERAGE IMPACTS (AUGUST SYSTEM WORST DAY, 2026) OF A 4-HOUR DISPATCH

BIP Option	Weather Source	Weather Year	Event Dispatch (HE)	Number of Customers	Aggregate (MWh/h)		Per Capita (kWh/h)		Percent Load Reduction (%)	FSL (MWh)	FSL Achievement Rate (%)
					Ref. Load	Load Impact	Ref. Load	Load Impact			
All	CAISO	1-in-10	18 - 21	329	597.9	453.9	1,817.2	1,379.5	76%	125.8	96%
All	CAISO	1-in-2	18 - 21	329	596.4	452.6	1,812.9	1,375.7	76%	125.8	96%
All	Utility	1-in-10	18 - 21	329	597.7	453.7	1,816.8	1,379.1	76%	125.8	96%
All	Utility	1-in-2	18 - 21	329	597.3	453.3	1,815.4	1,377.9	76%	125.8	96%
BIP15	CAISO	1-in-10	18 - 21	50	████	████	████	████	████	████	████
BIP15	CAISO	1-in-2	18 - 21	50	████	████	████	████	████	████	████
BIP15	Utility	1-in-10	18 - 21	50	████	████	████	████	████	████	████
BIP15	Utility	1-in-2	18 - 21	50	████	████	████	████	████	████	████
BIP30	CAISO	1-in-10	18 - 21	279	████	████	████	████	████	████	████
BIP30	CAISO	1-in-2	18 - 21	279	████	████	████	████	████	████	████
BIP30	Utility	1-in-10	18 - 21	279	████	████	████	████	████	████	████
BIP30	Utility	1-in-2	18 - 21	279	████	████	████	████	████	████	████

As presented in Table 5-15, portfolio-level impacts over the full five-hour RA window are roughly 3 MWh/h lower than program-level impacts and range from 412.9 MWh/h to 414.1 MWh/h depending on the weather scenario.

TABLE 5-15: SCE PORTFOLIO-LEVEL EX-ANTE AVERAGE IMPACTS (AUGUST SYSTEM WORST DAY, 2026) OVER A 5-HOUR RA WINDOW

BIP Option	Weather Source	Weather Year	RA Window (HE)	Number of Customers	Aggregate (MWh/h)		Per Capita (kWh/h)		Percent Load Reduction (%)	FSL (MWh)	FSL Achievement Rate (%)
					Ref. Load	Load Impact	Ref. Load	Load Impact			
All	CAISO	1-in-10	17 - 21	329	598.8	414.1	1,820.0	1,258.7	69%	125.8	88%
All	CAISO	1-in-2	17 - 21	329	597.4	412.9	1,815.7	1,255.0	69%	125.8	88%
All	Utility	1-in-10	17 - 21	329	598.6	413.9	1,819.6	1,258.2	69%	125.8	88%
All	Utility	1-in-2	17 - 21	329	598.1	413.6	1,818.1	1,257.0	69%	125.8	88%
BIP15	CAISO	1-in-10	17 - 21	50							
BIP15	CAISO	1-in-2	17 - 21	50							
BIP15	Utility	1-in-10	17 - 21	50							
BIP15	Utility	1-in-2	17 - 21	50							
BIP30	CAISO	1-in-10	17 - 21	279							
BIP30	CAISO	1-in-2	17 - 21	279							
BIP30	Utility	1-in-10	17 - 21	279							
BIP30	Utility	1-in-2	17 - 21	279							

Table 5-16 presents the forecast PY2026 portfolio level event impact for each weather scenario in the 2027 CEC Peak Hours for each month. All peak hours occur within forecasted event hours, and impacts do not vary greatly between the weather scenarios as most large BIP customers are not weather sensitive. The months with the highest forecast impacts during CEC Peak hours are March and May.

TABLE 5-16: SCE PORTFOLIO-LEVEL PEAK HOUR EX-ANTE IMPACTS (MWH/H)

Option	Peak Hour	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
		19	19	19	19	20	18	18	18	18	18	18	18
All	CAISO 1-in-10	415.6	431.7	474.4	448.8	470.1	462.7	465.2	452.4	456.1	468.0	433.6	386.6
All	CAISO 1-in-2	415.3	431.6	474.6	448.7	466.7	460.3	464.5	450.9	454.7	466.0	433.5	386.0
All	Utility 1-in-10	415.9	430.7	474.4	448.9	471.2	462.5	468.8	452.2	457.3	467.7	433.7	385.9
All	Utility 1-in-2	414.0	431.6	473.8	448.6	467.4	460.6	465.2	451.6	455.8	466.5	433.5	385.7
BIP15	CAISO 1-in-10												
BIP15	CAISO 1-in-2												
BIP15	Utility 1-in-10												
BIP15	Utility 1-in-2												
BIP30	CAISO 1-in-10												
BIP30	CAISO 1-in-2												
BIP30	Utility 1-in-10												
BIP30	Utility 1-in-2												

6 COMPARISON OF RESULTS

This section presents a comparison of PY2025 results with prior years. For both PG&E and SCE the following comparisons are made:

- Previous versus current ex-post results
- Previous ex-ante versus current ex-post results
- Previous versus current ex-ante
- Current ex-post versus current ex-ante

6.1 PG&E COMPARISON OF RESULTS

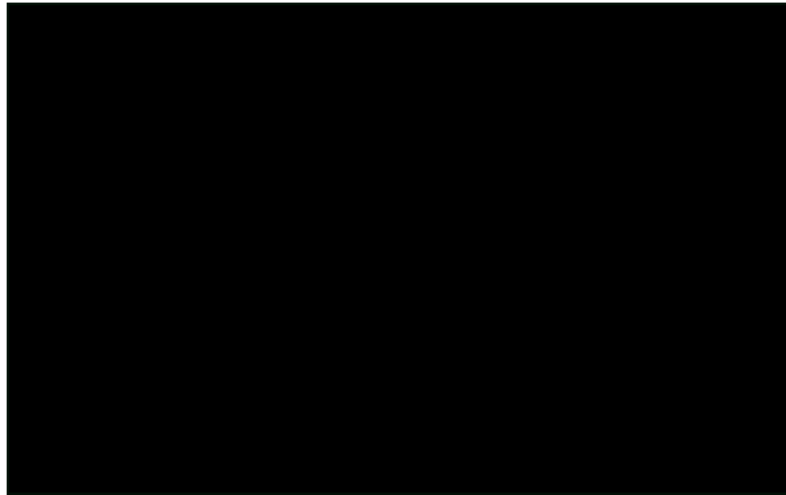
6.1.1 PG&E Previous Versus Current Ex-Post

Table 6-1 shows the average aggregate and per customer load impacts for the main test event day in PY2024 and PY2025. Percent load reductions (68% in PY2024 and █% in PY2025) and FSL achievement rates (100% in PY2024 and █% in PY2025) are similar between the years. PY2025 load impacts are lower both at the per capita and aggregate level than in PY2024. However, this difference is largely attributable to several large, historically high performing customers not being dispatched for PY2025 test events. The exclusion of these customers in PY2025 was meant to prevent participation burden and customer dissatisfaction from strong performing customers. Among customers that were tested in both PY2024 and PY2025 September test events, while baselines were slightly lower in PY2025, per capita impacts in full curtailment hours were statistically indistinguishable between the years. The load shapes from these customer are presented in Figure 6-1.

TABLE 6-1: PG&E COMPARISON OF PY2024 AND PY2025 EX-POST LOAD IMPACTS

Evaluation Year	Ex Post Event Date	Number of Customers per Event	Aggregate (MWh/h)		Per Capita (kWh/h)		Percent Load Reduction (%)	FSL (MWh)	FSL Achievement Rate (%)
			Ref. Load	Load Impact	Ref. Load	Load Impact			
2024	Sept 24. Event	163	144.7	99.1	887.6	607.7	68%	46	100%
2025	Sept. 23 Event	141	█	█	█	█	█	█	█

FIGURE 6-1: PG&E SEPTEMBER 24TH, 2024 AND SEPTEMBER 23RD, 2025 EVENT DAY LOAD SHAPES OF CUSTOMERS IN BOTH EVENTS



6.1.2 PG&E Previous Ex-Ante Versus Current Ex-Post

Table 6-2 compares the PY2024 ex-ante estimate for 2025 (PG&E August 1-in-2 August System Worst Day) to the PY2025 ex-post average event day. As with the ex-post comparison, differences in load impacts and FSLs are largely attributable to the set of historically high performing customers who were not re-tested in PY2025. Ex-ante predictions from the PY2024 evaluation included the aggregate capacity of a full program dispatch that would include those non-rested customers that are expected to be capable of delivering substantial impacts. Regardless, actual FSL achievements in PY2025 (█%) were similar to forecasted FSL achievement (101%).

TABLE 6-2: PG&E COMPARISON OF PY2024 EX-ANTE AND PY2025 EX-POST LOAD IMPACTS

Evaluation Year	Estimate Type	Number of Participants	Aggregate (MWh/h)		Per Capita (kWh/h)		Percent Load Reduction (%)	FSL (MWh)	FSL Achievement Rate (%)
			Ref. Load	Load Impact	Ref. Load	Load Impact			
2024	Ex-ante for 2025	173	186.6	132.4	1,078.6	765.4	71%	55	101%
2025	Ex-post Sept. 23 Event	141	█	█	█	█	█	█	█

6.1.3 PG&E Previous Versus Current Ex-Ante

Table 6-3 shows a comparison of the PY2024 and PY2025 ex-ante forecasts for PY2026 (PG&E 1-in-2 August System Worst Day). The PY2025 participant forecast includes higher forecast enrollments than the PY2024 forecast, based on observed program participation at the end of 2025. As a result, the forecast for 2026 is roughly 30 MWh/h larger in PY2025 than previously forecasted in PY2024.

As such, it is more relevant to examine any differences at the per-capita level. At the per capita level, the two evaluation years forecast reference loads within 10 kWh/h per customer of one another. However, the PY2025 evaluation forecast impacts are approximately 57 kWh/h per customer higher than those forecast in PY2024.

TABLE 6-3: PG&E COMPARISON OF PY2024 EX-ANTE AND PY2025 EX-ANTE LOAD IMPACTS

Evaluation Year	Estimate Type	Number of Participants	Aggregate (MWh/h)		Per Capita (kWh/h)		Percent Load Reduction (%)	FSL (MWh)	FSL Achievement Rate (%)
			Ref. Load	Load Impact	Ref. Load	Load Impact			
2024	Ex-ante for 2026	182	194.4	138.3	1,067.9	760.1	71%	57	100%
2025	Ex-ante for 2026	204	215.9	166.7	1,058.4	816.9	77%	58.2	106%

Several factors contribute to the increase in forecast per capita impacts. First, FSL commitments for PY2026 are slightly lower than forecast based on PY2024 enrollments (by approximately 30 kW per customer). These commitments to more load curtailment, combined with the higher forecasted FSL achievement rate result in higher forecasted impacts per customer.

6.1.4 PG&E Current Ex-Post Versus Current Ex-Ante

Table 6-4 shows a comparison of the PY2025 ex-post average event day and ex-ante forecasts for PY2025 under a PG&E August System Worst Day 1-in-2 weather year to demonstrate how program performance is expected to change between the current and future program year. It is most relevant to focus on per capita results due to different interpretations of participant counts between the ex-post average event day and ex-ante enrollment forecast.

TABLE 6-4: PG&E COMPARISON OF PY2025 EX-POST AND EX-ANTE (PG&E AUGUST SYSTEM WORST DAY 1-IN-2, 2025) IMPACTS

Evaluation Year	Estimate Type	Number of Participants	Aggregate (MWh/h)		Per Capita (kWh/h)		Percent Load Reduction (%)	FSL (MWh)	FSL Achievement Rate (%)
			Ref. Load	Load Impact	Ref. Load	Load Impact			
2025	Ex Post Sept. 23 Event	141							
2025	Ex-ante for 2026	204	215.9	166.7	1,058.4	816.9	77%	58.2	106%

Program performance is expected to “improve” in PY2026 relative to the PY2025 main test event day. This finding is likely due to several factors including:

- **Inclusion of historically high performing customers:** The ex-ante analysis models a full program dispatch, including all customers forecast to be active in the following program year. As such, the historically high performing customers who were not re-tested in PY2025 (and, as such, not included in the ex-post analysis) are included in the ex-ante forecast. These customers have an average FSL

achievement rate over █ % and contribute an average of approximately █ kWh/h of load impacts per customer.

- **De-enrollment/FSL increases of underperforming customers:** PG&E gave underperforming customers the option to de-enroll from BIP or increase their FSL commitments. Several underperforming customers opted to de-enroll. These enrollment changes contribute to the higher overall FSL achievement rate forecasted for PY2026.

6.2 SCE COMPARISON OF RESULTS

6.2.1 SCE Previous Versus Current Ex-Post

Table 6-5 shows the average aggregate and per capita impacts for the primary test event days in PY2024 and PY2025, the September 24, 2024 and September 23, 2025 events. Differences in aggregate load impacts and FSLs are largely attributable to the difference in the number of customers deployed in each program year, with PY2025 including 12 additional customers relative to PY2024. As such, the more relevant comparison is between the per capita reference load and load impacts, the percent load reduction and the FSL achievement rates.

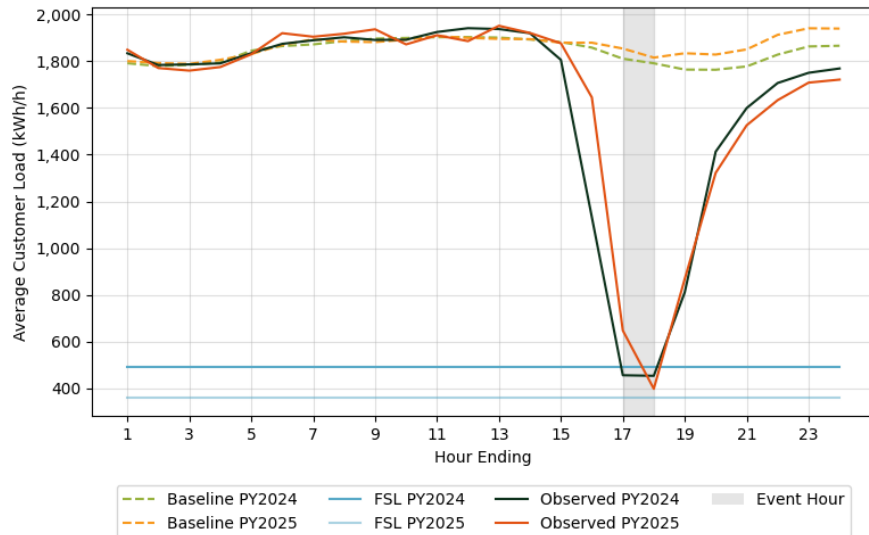
TABLE 6-5: SCE COMPARISON OF PY2024 AND PY2025 EX-POST IMPACTS

Evaluation Year	Ex Post Event Date	Number of Participants	Aggregate (MWh/h)		Per Capita (kWh/h)		Percent Load Reduction (%)	FSL (MWh)	FSL Achievement Rate (%)
			Ref. Load	Load Impact	Ref. Load	Load Impact			
2024	Sept. 24 th	314	535.5	396.4	1,705.4	1,262.5	74%	146	102%
2025	Sept. 23 rd	326	562.8	430.5	1,726.4	1,320.5	76%	122	98%

Per capita reference loads were within approximately 20 kWh/h per customer between the program years, which is within the typical error bounds for these estimates. Load impacts were approximately 58 kWh/h higher per customer in PY2025 than in PY2024, which is also within the 95% error bounds for these estimates, and, as such, should not be too heavily emphasized. Similarly, percent load reductions were marginally higher in PY2025, while FSL achievement rates were marginally lower. However, the lower achievement rates correspond to significantly lower FSL commitments (e.g., customers committing to more load reduction than in PY2024), yielding similar overall per capita impacts between the program years.

Figure 6-2 presents the load shapes for the customers dispatched in the main September events in both PY2024 and PY2025.

FIGURE 6-2: SCE SEPTEMBER 24TH, 2024 AND SEPTEMBER 23RD, 2025 EVENT DAY LOAD SHAPES OF CUSTOMERS IN BOTH EVENTS



6.2.2 SCE Previous Ex-Ante Versus Current Ex-Post

Table 6-6 shows the PY2024 ex-ante estimates for 2025 (under SCE August 1-in-2 typical event day conditions) and the PY2025 ex-post results for September 23rd. The difference between ex-ante and ex-post per capita load impacts is less than 54 kWh/h. This difference is within the typical uncertainty range for average event hour impact values, meaning they are statistically indistinguishable. The 11MW difference between the forecast and realized aggregate load impacts are also statistically indistinguishable. As such, PY2025 performance closely resembles the ex-ante forecasts.

TABLE 6-6: SCE COMPARISON OF PY2024 EX-ANTE AND EVENT EX-POST (SEPTEMBER 23RD) LOAD IMPACTS

Evaluation Year	Estimate Type	Number of Customers per Event	Aggregate (MWh/h)		Per Capita (kWh/h)		Percent Load Reduction (%)	FSL (MWh)	FSL Achievement Rate (%)
			Ref. Load	Load Impact	Ref. Load	Load Impact			
2024	Ex-ante for 2025	331	580.7	419.3	1,754.3	1,266.7	72%	140	95%
2025	Ex-post Sept. 23 rd	326	562.8	430.5	1,726.4	1,320.5	76%	122	98%

6.2.3 SCE Previous Versus Current Ex-Ante

Table 6-7 presents the PY2024 and PY2025 ex-ante forecasts for a four-hour event in 2026 (under SCE 1-in-2 August typical event day conditions). The PY2025 forecast program per capita impacts are approximately 120 kWh/h per customer higher than the PY2024 forecast impacts, resulting in an increase in forecast aggregate load impacts of approximately 40MW.

TABLE 6-7: SCE COMPARISON OF PY2024 EX-ANTE AND PY2025 EX-ANTE (SCE 1-IN-2 AUGUST SYSTEM WORST DAY, 2026)

Evaluation Year	Estimate Type	Number of Customers per Event	Aggregate (MWh/h)		Per Capita (kWh/h)		Percent Load Reduction (%)	FSL (MWh)	FSL Achievement Rate (%)
			Ref. Load	Load Impact	Ref. Load	Load Impact			
2024	Ex-ante for 2026	331	580.7	419.3	1,754.3	1,266.7	72%	140	95%
2025	Ex-ante for 2026	329	597.3	456.9	1,815.4	1,388.7	76%	126	97%

Several factors contribute to the increase in forecasted impacts from PY2024 to PY2025.

- Higher Proportion of BIP15 Customers :** While the total forecast customer count is lower by two customers in the 2025 evaluation year forecast, the PY2025 forecast includes an additional two BIP15 customers relative to the PY2024 forecast. SCE BIP15 customers are expected to deliver almost 140 MWh/h more event hour impacts than a typical BIP30 customer.
- Enrollment of New Large Customers/De-enrollment of Small Customers:** At the end of PY2025, several new high baseline customers enrolled in the SCE BIP program, while several smaller baseline (and, thus, impact) customers de-enrolled. These enrollment changes corresponded to higher forecast per capita reference loads, which ultimately correspond to higher forecast load impacts.
- Commitments to Larger Load Reductions:** The aggregate FSL for customers in the PY2025 forecast is 14MW lower than in the PY2024 forecast due to updated enrollments, de-enrollments, and FSL changes. This commitment to larger load reduction, in addition to the marginally higher forecast FSL achievement rate, is a major contributor to the increase in forecast impacts.

6.2.4 SCE Current Ex-Post Versus Current Ex-Ante

Table 6-8 shows a comparison of PY2025 ex-post results and the ex-ante forecast (under SCE 1-in-2 August System Worst Day conditions for 2025) to demonstrate how program performance is expected to change between the current and future program year. It is most relevant to focus on per capita results as ex-ante predictions represent full program deployment of a forecast 329 customers, compared to the 326 actually dispatched in the PY2025 event. Per capita load impacts are forecast to be marginally higher than observed ex-post impacts. However, once again, the difference between per capita load impacts are statistically indistinguishable at the 95% confidence level, so they should be interpreted with caution.

TABLE 6-8: SCE COMPARISON OF PY2025 EX-POST (SEPTEMBER 23RD) AND PY2025 EX-ANTE (SCE 1-IN-2 AUGUST WORST DAY, 2026)

Program Year Evaluation	Estimate Type	Number of Customers per Event	Aggregate (MWh/h)		Per Capita (kWh/h)		Percent Load Reduction (%)	FSL (MWh)	FSL Achievement Rate (%)
			Ref. Load	Load Impact	Ref. Load	Load Impact			
2025	Ex-post Sept. 23 rd	326	562.8	430.5	1,726.4	1,320.5	76%	122	98%
2025	Ex-ante for 2026	329	597.3	456.9	1,815.4	1,388.7	76%	126	97%

7 FINDINGS

PG&E Findings

The PY2025 BIP Load Impact Evaluation key findings for the PG&E BIP are as follows:

- On January 22nd, a subset of BIP participants were dispatched for a test event. On average these customers provided █ MWh/h of load reductions during event hours, and the event hour FSL achievement rate was █%.
- On February 12th, a subset of BIP participants that underperformed in the January 22nd event were dispatched for a re-test event. On average these customers provided █ MWh/h of load reductions during event hours, and the event hour FSL achievement rate was █%.
- On September 23rd, almost all BIP customers were dispatched for a test event. On average these customers provided 66.5 MWh/h of load reductions during event hours with an FSL achievement rate of █%. Customers delivered an average of █ kWh/h of per capita load impacts during the full curtailment event hour.
- On November 6th, a subset of BIP customers that underperformed in earlier events were re-tested. On average, these customers provided █ MWh/h of load reductions during event hours with an FSL achievement rate of █%. After this event, some customers de-enrolled from the program.
- The ex-ante analysis finds that PG&E's BIP is anticipated to provide an average hourly load reduction of 166.7 MWh/h to 168.3 MWh/h during a four-hour dispatch of all customers in August 2026 depending on the weather scenario (156.0 MWh/h to 157.7 MWh/h over the full five-hour RA window). Peak hour impacts are forecast to range from 159.4 to 192.4 MWh/h in 2026, depending on month and weather scenario. Per capita impacts in PY2026 are expected to increase relative to the main PY2025 ex-post event due largely to the inclusion of historically high performing customers who were not tested in PY2025 as well as de-enrollments from under-performing participants.

SCE Findings

The PY2025 Load Impact Evaluation key findings for the SCE BIP are as follows:

- On September 23rd, all BIP customers were dispatched for a test event. On average, these customers provided 430.5 MWh/h of load reductions during event hours with an FSL achievement rate was 98%.
- Customers delivered an average of 1,320.5 kWh/h of per capita load impacts during September 23rd full curtailment event hours, representing a 76% reduction in load.
- The ex-ante analysis finds that SCE's BIP is anticipated to provide an average hourly load reduction of 456.1 MWh/h to 457.4 MWh/h during a four-hour dispatch of all customers in August 2026 depending on the weather scenario (415.7 MWh/h to 416.9 MWh/h over the full five-hour RA window). Peak

hour impacts are forecast to range from 385.7 to 474.6 MWh/h in 2026, depending on month and weather scenario.

- The ex-ante analysis also finds that BIP15 customers are expected to provide almost █% of aggregate load impacts, despite having substantially lower forecasted enrollment than BIP30 customers (50 versus 279 customers). BIP15 customers are expected to provide █ to █ MWh/h of load impacts over a 4 hour event window while BIP30 customers are expected to provide █ to █ MWh/h for a 2026 August Monthly System Worst Day, dependent on weather year.



APPENDIX A TABLE GENERATORS

Verdant produced table generators for each utility that produce all tables as required by the Protocols. These are provided in separate files:

- Appendix A-1: PY2025_PG&E_BIP_Ex_Post_Load_Impacts_FINAL_PUBLIC.xlsx
- Appendix A-2: PY2025_SCE_BIP_Ex_Post_Load_Impacts_FINAL_PUBLIC.xlsx
- Appendix A-3: PY2025_PG&E_BIP_Ex_Ante_Load_Impacts_FINAL_PUBLIC.xlsx
- Appendix A-4: PY2025_SCE_BIP_Ex_Ante_Load_Impacts_FINAL_PUBLIC.xlsx

APPENDIX B WEATHER SENSITIVITY RESULTS

The suite of candidate models tested on proxy days for each participant was dependent on their weather sensitivity. Verdant explored various types of weather sensitivity, including summer cooling, winter heating, and winter cooling for each participant. Equation B-1 presents the general model specification used to estimate the impact of cooling degree days on customer load (e.g., ‘cooling sensitivity’). The approach for testing heating sensitivity is identical to cooling sensitivity except that the CDD term is replaced with HDD (Heating Degree Day). Verdant tested exclusively for cooling sensitivity in summer months (May – October). However, Verdant tested for both cooling and heating sensitivity in the winter months (January- April and November - December) as some Californians experience mild winters. For the weather sensitivity analysis, energy usage data were limited to hours between 11am and 9pm. Additionally, weekday and weekend weather sensitivity results were assessed separately to account for the frequent differences in weekday and weekend loads. For the ex-post analysis, modeling data were limited to weekdays only as all PY2025 events occurred on weekdays.

EQUATION B-1: WEATHER SENSITIVITY MODEL SPECIFICATION

$$AvgLoad_i = \beta_0 + \beta_1 CDD_i + \sum_d \beta_{2d} DayType_d + \sum_m \beta_{3m} Month + \varepsilon_i$$

Where:

$AvgLoad_i$	The average daily kWh load for customer i between 11am and 9pm
β_0	The intercept of the regression model
β_1	The coefficient for effect on load of Cooling Degree Days (or Heating Degree Days for winter models)
CDD_i	The total Cooling Degree Days for customer i . This value is replaced with HDD (Heating Degree Days) to determine heating sensitivity.
β_{2d}	The set of coefficients for effect on load by day of the week d (either Monday through Friday or Saturday-Sunday)
$DayType_d$	A dummy variable for the day of the week for day d
β_{3m}	The set of coefficients for effect on load by month of the year (Summer months or Winter months)
$Month$	A dummy variable for the month of the year for day d
ε_i	The error term

The cooling weather sensitivity regression model was tested for three separate CDD thresholds for each participant (CDD60, CDD65, and CDD70). The heating weather sensitivity regression model was also tested for three separate HDD thresholds (HDD50, HDD55 and HDD60 degrees). If the coefficient on β_1 is positive and statistically significant at the 95% level for any CDD or HDD threshold, the participant was considered cooling or heating sensitive (respectively). Table B-1 and Table B-2 show the results of the weather sensitivity analysis for PG&E and SCE, respectively.

TABLE B-1: PG&E WEATHER SENSITIVITY ANALYSIS RESULTS

Industry Type	Summer Cooling Sensitivity			Winter Cooling Sensitivity			Winter Heating Sensitivity		
	Num. Tested	Num. Weather Sensitive	Percent Weather Sensitive	Num. Tested	Num. Weather Sensitive	Percent Weather Sensitive	Num. Tested	Num. Weather Sensitive	Percent Weather Sensitive
Agriculture, Mining and Construction	66	14	21%	68	13	19%	68	5	7%
Manufacturing	66	8	12%	65	2	3%	65	5	8%
Office, Hotels, Finance, Services	7	1	14%	7	1	14%	7	1	14%
Retail Stores	1	1	100%	1	1	100%	1	0	0%
Wholesale, Transport, and other Utilities	53	12	23%	54	5	9%	54	6	11%
Total	193	36	19%	195	22	11%	195	17	9%

Note: Totals vary slightly between seasons because of cases of mid-season enrollment and de-enrollment

TABLE B-2: SCE WEATHER SENSITIVITY ANALYSIS RESULTS

Industry Type	Summer Cooling Sensitivity			Winter Cooling Sensitivity			Winter Heating Sensitivity		
	Num. Tested	Num. Weather Sensitive	Percent Weather Sensitive	Num. Tested	Num. Weather Sensitive	Percent Weather Sensitive	Num. Tested	Num. Weather Sensitive	Percent Weather Sensitive
Agriculture, Mining and Construction	31	4	13%	31	3	10%	31	3	10%
Manufacturing	203	44	22%	203	10	5%	203	8	4%
Office, Hotels, Finance, Services	6	3	50%	6	3	50%	6	1	17%
Retail Stores	1	1	100%	1	0	0%	1	1	100%
Schools	1	1	100%	1	0	0%	1	0	0%
Wholesale, Transport, and other Utilities	69	23	33%	69	6	9%	69	11	16%
Unknown/Other	15	2	13%	15	1	7%	15	1	7%
Total	326	78	24%	326	23	7%	326	25	8%

APPENDIX C MODEL VALIDITY

The model selection for each participant is based on an assessment of candidate model performance on a set of proxy event days. Proxy days are set of non-event, non-holiday days that have event-like weather conditions. Proxy days were constrained to exclude dates within three days of any BIP event, reducing the potential for pre-emptive or residual event impacts to affect model validation. Ex-post proxy days were chosen for each season in which an event occurred for a given utility. Proxy day selection was based on a distance metric (Equation 3-1) that compared each non-event day's temperature profile and the temperature profile of the average event day in the same season. This was done for each participant for each weather station. Ex ante proxy days were selected using the same distance metric but compared each candidate day's temperature profile to that of the utility-specific 1-in-2 weather year forecast in the same month for each weather station. For both ex-ante and ex-post, a different set of proxy days were selected for each weather station. Table C-1 and Table C-2 show the primary ex-post proxy days selected for PG&E and SCE, respectively. In rare cases, customers had missing AMI data for one or more of the proxy days selected for their weather station. In these cases, the next best proxy day(s) were used for that customer. Table C-1 and Table C-2 present the selected ex-post proxy days for PG&E and SCE respectively.



TABLE C-1: PG&E EX-POST PROXY DAYS

Weather Station	Summer Weekday	Winter Weekday
Angels Camp	2025-05-30, 2025-07-15, 2025-08-21, 2025-09-03, 2025-09-16, 2025-09-17	
Auburn	2025-07-10, 2025-07-14, 2025-08-08, 2025-08-21, 2025-08-25, 2025-09-17	
Bakersfield	2025-05-30, 2025-06-18, 2025-06-26, 2025-07-10, 2025-07-31, 2025-08-14	
Belmont	2025-05-30, 2025-08-06, 2025-08-20, 2025-08-21, 2025-09-15, 2025-09-17	
Chico	2025-05-15, 2025-07-22, 2025-07-23, 2025-08-18, 2025-09-11, 2025-10-08	
Concord	2025-05-30, 2025-07-10, 2025-07-11, 2025-08-08, 2025-08-21, 2025-09-17	
Cupertino	2025-05-30, 2025-08-08, 2025-08-20, 2025-08-21, 2025-09-15, 2025-09-17	
Eureka	2025-07-29, 2025-08-08, 2025-08-15, 2025-08-21, 2025-09-04, 2025-11-14	
Fresno	2025-05-30, 2025-06-09, 2025-06-18, 2025-07-07, 2025-08-27, 2025-09-04	2024-11-12, 2025-01-02, 2025-01-14, 2025-01-17, 2025-01-29, 2025-01-30
Marysville	2025-07-07, 2025-07-31, 2025-08-07, 2025-08-15, 2025-08-20, 2025-09-17	
Milpitas	2025-05-30, 2025-08-20, 2025-08-21, 2025-09-15, 2025-09-16, 2025-09-17	
Oakland	2025-08-20, 2025-08-21, 2025-09-15, 2025-09-16, 2025-09-17, 2025-10-06	
Paso Robles	2025-05-09, 2025-06-16, 2025-06-17, 2025-07-09, 2025-08-12, 2025-09-16	
Red Bluff	2025-06-18, 2025-06-27, 2025-07-14, 2025-08-01, 2025-08-20, 2025-09-03	
Sacramento	2025-05-30, 2025-06-18, 2025-07-10, 2025-09-02, 2025-09-16, 2025-09-17	2024-11-19, 2024-12-11, 2025-01-28, 2025-01-29, 2025-01-30, 2025-02-05
Salinas	2025-09-15, 2025-09-30, 2025-10-01, 2025-10-06, 2025-10-28, 2025-10-29	
San Rafael	2025-08-20, 2025-08-21, 2025-09-15, 2025-09-16, 2025-09-17, 2025-10-07	
San Ramon	2025-05-30, 2025-07-11, 2025-08-08, 2025-08-21, 2025-09-16, 2025-09-17	
Santa Cruz	2025-08-18, 2025-08-19, 2025-08-20, 2025-08-21, 2025-09-15, 2025-10-29	
Santa Maria	2025-05-09, 2025-08-19, 2025-09-10, 2025-09-17, 2025-09-30, 2025-10-02	
Santa Rosa	2025-05-30, 2025-08-06, 2025-08-07, 2025-08-20, 2025-08-21, 2025-09-17	
Stockton	2025-07-10, 2025-08-07, 2025-08-22, 2025-09-02, 2025-09-16, 2025-09-17	2024-11-29, 2025-01-13, 2025-01-16, 2025-01-17, 2025-01-27, 2025-01-29
Ukiah	2025-07-14, 2025-08-11, 2025-08-12, 2025-08-20, 2025-08-22, 2025-09-17	

TABLE C-2: SCE EX-POST PROXY DAYS

Weather Station	Summer Weekday
Barstow	2025-05-09, 2025-05-29, 2025-07-22, 2025-07-23, 2025-08-27, 2025-09-15
Cathedral City	2025-05-22, 2025-06-25, 2025-07-24, 2025-07-25, 2025-08-29, 2025-09-03
El Segundo	2025-08-12, 2025-08-13, 2025-08-15, 2025-08-26, 2025-09-15, 2025-10-01
Goleta	2025-08-18, 2025-08-25, 2025-08-27, 2025-09-04, 2025-09-11, 2025-09-19
Long Beach	2025-08-22, 2025-08-27, 2025-09-04, 2025-09-08, 2025-09-17, 2025-09-19
Moorpark	2025-05-21, 2025-06-17, 2025-08-06, 2025-08-25, 2025-08-28, 2025-09-16
Rialto	2025-05-09, 2025-06-16, 2025-07-09, 2025-07-10, 2025-08-06, 2025-08-20
Ridgecrest	2025-05-09, 2025-05-23, 2025-05-28, 2025-06-04, 2025-07-23, 2025-09-15
Rimforest	2025-05-30, 2025-06-09, 2025-08-05, 2025-08-27, 2025-09-03, 2025-09-05
Romoland	2025-05-09, 2025-06-17, 2025-07-08, 2025-08-27, 2025-09-05, 2025-09-17
Rosemead	2025-05-09, 2025-08-06, 2025-08-20, 2025-08-25, 2025-08-27, 2025-09-17
San Dimas	2025-08-06, 2025-08-27, 2025-08-29, 2025-09-16, 2025-09-17, 2025-10-29
Santa Ana	2025-08-06, 2025-08-20, 2025-08-27, 2025-08-28, 2025-09-04, 2025-09-19
Tulare	2025-06-11, 2025-06-18, 2025-07-16, 2025-07-29, 2025-08-14, 2025-08-20
Valencia	2025-05-09, 2025-06-16, 2025-06-30, 2025-08-29, 2025-09-05, 2025-09-16
Ventura	2025-08-06, 2025-08-25, 2025-08-29, 2025-09-03, 2025-09-16, 2025-09-17
Victorville	2025-05-09, 2025-06-06, 2025-06-25, 2025-07-28, 2025-08-18, 2025-09-15
Westminster	2025-08-06, 2025-08-19, 2025-09-04, 2025-09-08, 2025-09-18, 2025-09-19

Selected Model Performance

The assessment of model performance on proxy days is concerned primarily with accuracy and precision. Accuracy represents how closely on average the calculated baseline matches the observed load. Bias is a component of measuring accuracy, which indicates the extent to which the calculated baseline over- or under-estimates the load. In contrast, precision indicates how reliably close estimated load is to actual observed load. It is possible to have a model that on average is highly accurate with very poor precision, such as when a method both under- and over-predicts load by substantial amounts with regularity. Likewise, it is possible to have a method that is very precise but highly inaccurate, such as when a model over- or under-estimates the load with high consistency.

The primary metrics for accuracy and precision in this analysis are Normalized Mean Bias Error (NMBE) and Normalized Mean Absolute Error (NMAE), respectively. Other assessments of baselines have often used the Mean Percent Error (MPE) as the metric to assess accuracy and the Mean Absolute Percent Error (MAPE) and Coefficient of Variation of the Root Mean Square Error (CVRMSE) as the metrics for precision. Table C-3 presents descriptions and the equations for all metrics.

TABLE C-3: DESCRIPTIONS AND EQUATIONS FOR PERFORMANCE METRICS

Metric Type	Metric	Description	Equation
Accuracy/Bias	Mean Percent Error (MPE)	Represents the average of the errors in the calculated baselines as a percentage of the observed load.	$MPE = \frac{1}{n} \sum_{i=1}^n \frac{y_i - \hat{y}_i}{y_i}$
	Normalized Mean Bias Error (NMBE)	Represents the normalized average bias in the calculated baselines.	$NMBE = \frac{\frac{1}{n} \sum_{i=1}^n (y_i - \hat{y}_i)}{\bar{y}}$
	Root Mean Squared Errors (RMSE)	Represents the average of the squared errors between the observed load and the calculated baselines.	$RMSE = \sqrt{\frac{1}{n} \sum_{i=1}^n (y_i - \hat{y}_i)^2}$
Precision	Mean Absolute Percent Error (MAPE)	Represents the average of the absolute errors in the calculated baselines as a percentage of the observed load.	$MAPE = \frac{1}{n} \sum_{i=1}^n \left \frac{y_i - \hat{y}_i}{y_i} \right $
	Normalized Mean Absolute Error (NMAE)	Represents the average of the normalized absolute error in the calculated baselines.	$NMAE = \frac{\frac{1}{n} \sum_{i=1}^n y_i - \hat{y}_i }{\bar{y}}$
	Coefficient of Variation of the Root Mean Squared Errors (CV[RMSE])	Represents the normalized average of the squared errors between the observed load and calculated baselines.	$CV[RMSE] = \frac{\sqrt{\frac{1}{n} \sum_{i=1}^n (y_i - \hat{y}_i)^2}}{\bar{y}}$

Where y_i indicates observed loads, \hat{y}_i indicated estimated loads, and \bar{y} indicates average loads. The preference for NMBE and NMAE is based primarily on a shortcoming of the MPE and MAPE when working with observed values of zero, which result in a division-by-zero error and the loss of the corresponding data point. Notably, the formulas for the NMBE and NMAE go against a convention seen in some contexts (e.g., ASHRAE), where the error is calculated as the baseline minus the observed. This runs contrary to the more typical conventions of calculating MPE and MAPE. For the sake of consistent interpretation of the NMBE and MPE, where negative values indicate overestimation of the baseline, Verdant has calculated the error as the observed load minus the calculated baseline for all metrics.

Because different industries tend to vary in their load volatility (and, therefore, predictability) Table C-4 and Table C-5 show the selected model performance results for the ex-post analysis segmented by industry type. Results are shown only for customers deployed in at least one event in the corresponding season in PY2025. Models were selected by a combination of NMBE and NMAE. In all cases, model fits are statistically significant and generally good, with some variation by industry type.

TABLE C-4: PG&E EX-POST PROXY DAY TESTING SPECIFICATION RESULTS

Industry Type	Summer Weekday					Winter Weekend				
	Num. of Cust.	CV RMSE	NMBE	NMAE	Adj. R ²	Num. of Cust.	CV RMSE	NMBE	NMAE	Adj. R ²
Agriculture, Mining and Construction	53	0.242	0.000	0.067	0.610	3	16.469	0.000	10.377	0.560
Manufacturing	54	0.219	0.000	0.097	0.549	3	0.126	0.000	0.084	0.724
Office, Hotels, Finance, Services	6	0.105	0.000	0.069	0.469	0	-	-	-	-
Retail Stores	1	0.022	0.000	0.016	0.557	0	-	-	-	-
Wholesale, Transport and other Utilities	27	0.766	0.000	0.220	0.567	0	-	-	-	-

TABLE C-5: SCE EX-POST PROXY DAY TESTING SPECIFICATION RESULTS¹

Industry Type	Num. of Customers	CV RMSE	NMBE	NMAE	Adjusted R ²
Agriculture, Mining and Construction	31	0.065	0.000	0.032	0.592
Manufacturing	203	0.395	0.000	0.074	0.608
Office, Hotels, Finance, Services	6	0.019	0.000	0.011	0.631
Retail Stores	1	0.067	0.000	0.046	0.323
Schools	1	0.041	0.000	0.030	0.869
Wholesale, Transport and other Utilities	69	0.186	0.000	0.075	0.497
Other/Unknown	15	0.149	0.000	0.066	0.660

Table C-6 and Table C-7 show the model specification results for the ex-ante analysis, which includes results for the additional models selected for customers who did not have an ex-post model selected for the corresponding season. In the ex-ante analysis, event days were presumed to be weekdays. As such, all model specifications in the following tables are for weekday-specific models. Industries that tend to have more consistent daily load shapes, such as Offices, Retail Stores, and Schools tend to have the best (e.g., lowest) NMAE values for both utilities.

¹ SCE ex-post models were only tested on summer weekdays because all PY2025 events occurred on summer weekdays.

TABLE C-6: PG&E EX-ANTE PROXY DAY TESTING SPECIFICATION RESULTS

Industry Type	Summer Weekday					Winter Weekday				
	Num. of Cust.	CV RMSE	NMBE	NMAE	Adj. R ²	Num. of Cust.	CV RMSE	NMBE	NMAE	Adj. R ²
Agriculture, Mining and Construction	68	0.399	0.000	0.078	0.596	70	0.240	0.000	0.062	0.551
Manufacturing	67	0.230	0.000	0.083	0.561	66	0.262	0.000	0.092	0.588
Office, Hotels, Finance, Services	14	0.080	0.000	0.044	0.514	14	0.075	0.000	0.040	0.436
Retail Stores	1	0.026	0.000	0.019	0.558	1	0.037	0.000	0.027	0.613
Wholesale, Transport and other Utilities	55	0.508	0.000	0.173	0.572	56	0.751	0.000	0.197	0.587

TABLE C-7: SCE EX-ANTE PROXY DAY TESTING SPECIFICATION RESULTS

Industry Type	Summer Weekday					Winter Weekday				
	Num. of Cust.	CV RMSE	NMBE	NMAE	Adj. R ²	Num. of Cust.	CV RMSE	NMBE	NMAE	Adj. R ²
Agriculture, Mining and Construction	31	0.113	0.000	0.043	0.582	31	0.227	0.000	0.058	0.587
Institutional/Government	1	0.188	0.000	0.118	0.804	1	0.737	0.000	0.415	0.678
Manufacturing	203	0.439	0.000	0.088	0.609	203	0.403	0.000	0.089	0.661
Office, Hotels, Finance, Services	5	0.031	0.000	0.016	0.619	5	0.147	0.000	0.030	0.663
Retail Stores	1	0.106	0.000	0.076	0.331	1	0.131	0.000	0.080	0.343
Schools	1	0.034	0.000	0.026	0.871	1	0.035	0.000	0.026	0.847
Wholesale, Transport and other Utilities	69	0.228	0.000	0.086	0.497	69	0.254	0.000	0.089	0.555
Other/Unknown	21	0.123	0.000	0.061	0.646	21	0.143	0.000	0.065	0.601

Actual versus Predicted Proxy Day Load Shapes

The best performing model (based on accuracy and bias metrics) are selected for each customer based on predictions of load on proxy days. Figure C-1 and Figure C-2 show the actual and model-predicted average customer loads on the average proxy day for PG&E and SCE, respectively. Overall, customer proxy day loads are well predicted by the selected models on average.

Figure C-1 represents 141 customers for summer and 6 for winter, corresponding to the number of customers dispatched and day type of events in PY2025 for each season. Likewise, Figure C-2 represents 326 customers for summer.

FIGURE C-1: PG&E AVERAGE PROXY DAY LOAD PREDICTION

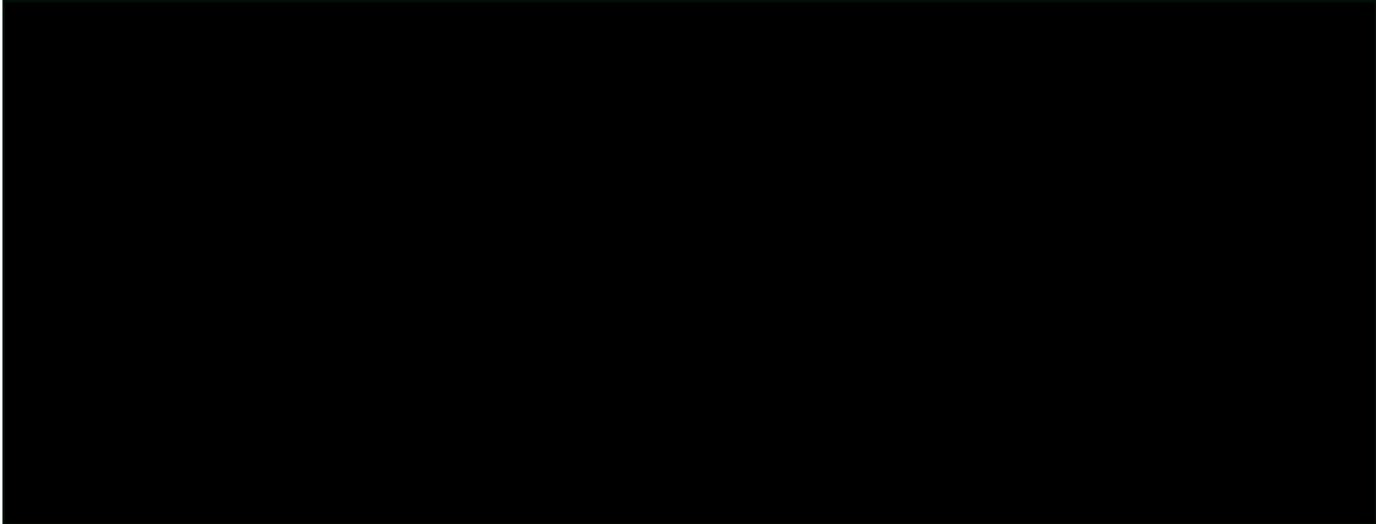


FIGURE C-2: SCE AVERAGE PROXY DAY LOAD PREDICTION

