# Statewide Residential Emergency Load Reduction Program Baseline Evaluation

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ACKNOWLEDGEMENTS

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1 EXECUTIVE SUMMARY

In response to the extreme grid conditions in the summer of 2020, the California Public Utilities Commission (CPUC) directed the three electric Investor Owned Utilities (IOUs or Joint IOUs) to create a program designed to access incremental load reductions during periods of grid stress[1]. This Decision resulted in the development of the Emergency Load Reduction Program (ELRP), of which there are multiple sub-programs targeting different customer segments and controllable loads. This report concerns the A6 sub-program, which began in 2022 and consists of residential customers across all three IOUs. In marketing to participants, the A6 ELRP program is known as Power Saver Rewards.

Participants in Power Saver Rewards are compensated for reductions in consumption during periods of high grid stress. A key design component of this program is that reductions are calculated on the basis of individual customer baselines, which form the basis of settlement to the customer. A baseline is a procedure to generate an estimate of what the participant consumption profile would have been had there been no event. There is no penalty for participants who increase their load relative to the baseline. A baseline provides a basis, or counterfactual, which can be used to estimate program load reduction for the purpose of calculating customer compensation. The counterfactual is an estimate of what the participant would have done had they not been dispatched for the program. As a result, the Joint IOUs requested an evaluation of the methods used to compute these baselines, produce an independent summary of baseline reductions, and provide recommendations for alternative baselines to be used going forward. This report summarizes the individual customer baseline results for the population in the summer of 2022 and also provides findings from a baseline accuracy assessment from the summer of 2020.

ELRP Events are triggered based on CAISO system conditions, including FlexAlerts[2], alerts to all customers, and other CAISO Energy Emergency Alerts, on a day-ahead basis. Events last from 4pm to 9pm. Over the 2022 summer, there was an extreme heat wave in early September, and as a result, 9 of the 10 Residential ELRP events called this year occurred in that time frame. Table 1 lists all 2022 A6 ELRP event days and the participant-weighted average daily max temperature (degrees Fahrenheit) for each utility.

Table 1: A6 ELRP Event Days

Day of Week	Date	Daily Max Temperature		
		PG&E	SCE	SDG&E
Wednesday	8/17/2022	86.3	92.4	83.8
Thursday	9/1/2022	89.4	98.8	89.3
Friday	9/2/2022	87.2	98	90.4
Saturday	9/3/2022	89.1	100	94.5
Sunday	9/4/2022	96.6	102.7	90.7
Monday (Labor Day)	9/5/2022	101.6	100.4	89.9
Tuesday	9/6/2022	103.9	99.9	89.2

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[1] Per CPUC Decision 21-12-015. Details found in Appendix 2 at
https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M428/K821/428821668.PDF
[2] https://www.flexalert.org/

Wednesday	9/7/2022	97.8	99.5	92
Thursday	9/8/2022	99.1	97.6	92.2
Friday	9/9/2022	90.7	94.8	86.5

1.1   BASELINE REDUCTIONS FOR 2022 SUMMER

Baseline methodologies are common ways to produce settlement-level estimates of load reduction. They are relatively simple to compute, can be constructed for individual participants, and are easy to understand. Nevertheless, these methods can never out-perform methods that rely on control groups or methods that include more complex regression approaches, especially for volatile, weather-sensitive customers. For these reasons, it is important to interpret the results in this report as the Residential ELRP load reductions as constructed by the baseline rules, rather than as true load impact that might come out of a demand response evaluation. Table 2 describes the baselines in use for the summer 2022 event days.

Table 2: IOU Baseline Methodologies

Baseline	PG&E	SCE	SDG&E
Weekday	Top 5/10	Top 5/10	Top 3/5
Weekend	Weighted 3/5 (50% on most recent baseline day, 30% on second most recent, 20% on third most recent)	Weighted 3/5 (50% on most recent baseline day, 30% on second most recent, 20% on third most recent)	Top 1/3
Adjustment	40% multiplicative adjustment cap with a 2 hour pre/post adjustment and a 2 hour buffer.	40% multiplicative adjustment cap with a 2 hour pre/post adjustment and a 2 hour buffer.	None
On the basis of	Delivered Load	Delivered Load	Net Load

 A summary of the individual first aggregate reductions calculated by each IOU's specified baseline method is shown in Table 3.

Table 3: Aggregate[3] Baseline Reductions by Event Day[4]

Event	Reduction (MW)		
	PG&E	SCE	SDG&E[a]
08/17/2022	341.9	516.5	116.0
09/01/2022	170.3	495.5	-10.8
09/02/2022	383.0	651.0	-11.4
09/03/2022	263.8	79.6	-185.0

[3] The results in this table are computed using the best estimate count of enrolled sites for each IOU. For all three IOUs, DSA received a sample of customers active as of late August/early September. As customers enrolled and de-enrolled from the program throughout the summer, enrollment numbers fluctuated. The values in this table represent the best available understanding of participants for whom settlement was calculated by each IOU. The total population values used in this analysis and the remainder of the report will vary slightly from this table as a result of the snapshot nature of the data received by DSA.

[4] Negative values in this table indicate an increase in usage relative to the baseline.

09/04/2022	112.4	173.8	-142.0
09/05/2022	-118.8	-242.0	-167.2
09/06/2022	109.8	551.0	-30.2
09/07/2022	254.0	570.8	-95.2
09/08/2022	93.6	575.5	11.3
09/09/2022	426.3	1592.5	211.1
Average Event	203.6	496.4	-30.3
Average Weekday Event	254.1	707.5	27.3
Average Weekend Event	85.8	3.8	-164.7

[a] SDG&E baseline does not include a day-of baseline adjustment. Therefore the baseline often understates load by relying fully on days leading up to the event. These days are cooler than actual event days. A baseline that underestimates load can lead to negative savings.

1.2 BASELINE ACCURACY

This study sought to understand the drivers of baseline accuracy to inform the Joint IOUs of alternative baselines that could be used for this program in future years. Baseline accuracy studies assess how well the baseline methods do at modeling actual participant consumption on days when no event was called, and the true counterfactual is known. A variety of baseline methods were tested for accuracy:

Table 4: Definitions of Baseline Parameters

Parameter	Option	Description
Baseline Framework The general type of baseline, indicating the construction methodology	Day Matching	Find X high-usage days in the last Y eligible days. Requires only participant interval data
	Day-Weather Matching	Find X high-usage days in the last Y eligible days, and keep those with similar weather conditions to the event day.
	Meter-Before	Average the participant's usage in the hour(s) prior to and directly after the event. Least data and computation-intensive
Baseline Type The specific algorithm to compute the baseline.	Top 1/3	Use the participant loads on the highest usage day of the last 3 eligible.
	Top 3/5	Use the average - simple or weighted - of the participant loads on the highest 3 usage days out of the last 5 eligible days
	Top 5/10	Use the average of the participant loads on the highest 5 usage days out of the last 10 eligible days
	Top 3/14 with THI Screen (BG&E Method)	Use the average of the participant loads on the highest 3 usage days out of the last 14. Screen only to days that have similar Temperature-Humidity Index values to the event day
	Meter-Before	Average participant loads in the one or two hours directly prior to an event
	Meter-Before/Meter-After	Average participant loads in the one or two hours directly prior to, and directly after, an event
Adjustment Type The way in which a same-day adjustment is applied to the baseline load to	Unadjusted	Do not apply a same-day adjustment
	40%	Construct the ratio between the unadjusted baseline and the observed loads during non-event hours. Cap the ratio at +/- 40% and apply the capped ratio to the unadjusted baseline to calibrate to event-day loads
	100%	Construct the ratio between the unadjusted baseline and the observed loads during non-event hours. Cap the ratio at +/- 100% and apply the capped ratio to the unadjusted baseline to calibrate to event-day loads

calibrate for event-day conditions	Unlimited	Construct the ratio between the unadjusted baseline and the observed loads during non-event hours. Apply the ratio to the unadjusted loads without any cap.
Days Included	Lookback 45	Find the Y eligible days in the 45 days prior to the event
What days are eligible for inclusion in the list of eligible baseline days	Lookback 45/ Lookforward 15	Find the Y eligible days in the 45 days prior to, and 15 days post-event

The best baselines are unbiased, meaning they do not systematically tend to overstate or understate loads, and are precise, meaning that they are accurate for all customers on all days. The perfect baselines would correspond to having a bias (Mean Percent Error - MPE) of 0% and typical error (Normalized Root Mean Squared Error - CVRMSE) of 0[5]. Across all the baseline methods tested, the best-performing baselines tended to be day-matching baselines with a 40% adjustment cap.

Figure 1: Drivers of Baseline Accuracy

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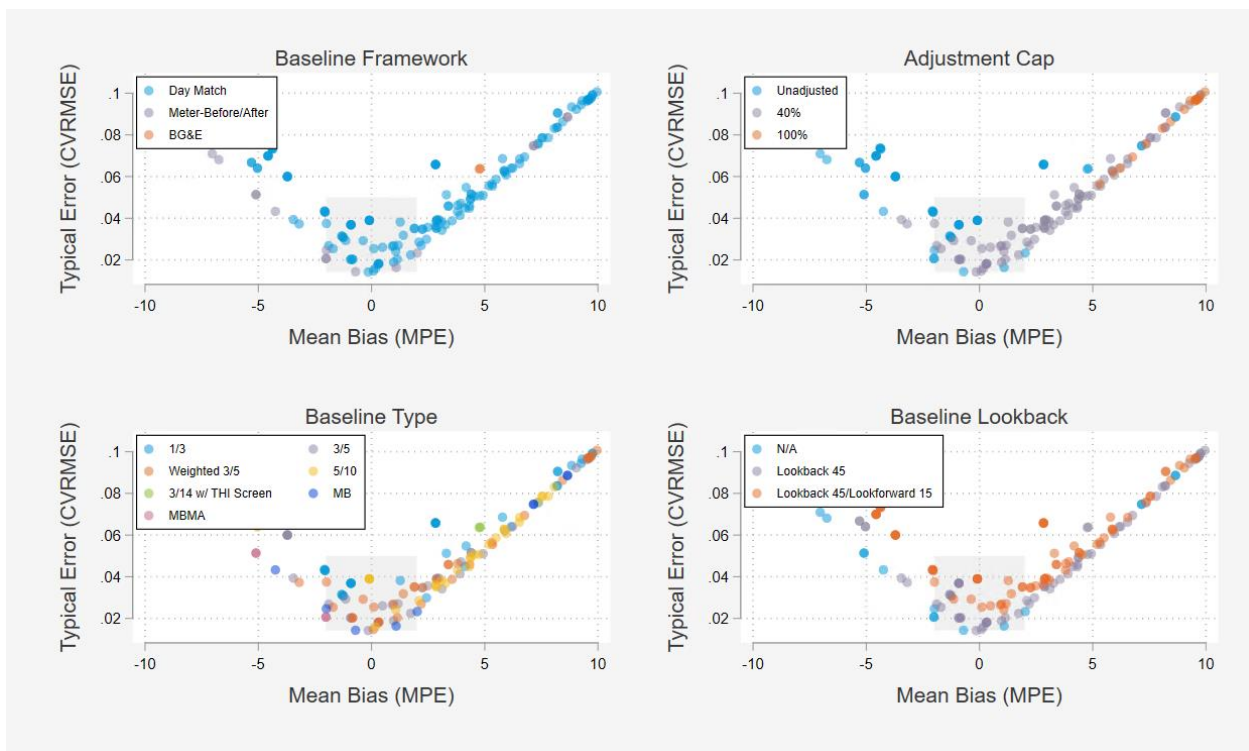
[5] The MPE indicates the percentage by which the measurement, on average, over or underestimates the true demand reduction, while the CVRMSE measures the relative magnitude of errors across event days, regardless of positive or negative direction. It can be thought as the typical percent error, but with heavy penalties for large errors. Formulas for each of these statistics can be found in Section 3.1.

The best baselines in this graphic lie in the shaded gray area, where bias is less than +/- 2% and the typical error is less than 5%. The interpretation of these statistics is as follows:

1. A 2% mean bias (MPE) implies that the baseline is, on average, 2% higher than the observed loads across all observations.
2. A 5% typical error (CVRMSE) implies that for any given event, the error will fall within approximately +/- 8% with 90% confidence

In practice, these statistics can be computed at a variety of different levels of aggregation. Of particular importance in this study are assessments of bias and precision computed for individual customers across event days as well as aggregated populations across event days. A more detailed discussion of the accuracy of each baseline can be found in Section 5. While Section 5 will look at the baseline accuracy for individual IOUs, results were combined across IOUs to produce a more holistic picture of statewide baseline accuracy. Table 5 shows the baseline specifications weighted equally across the three IOUs. The unique combinations of baseline specifications were ranked by:

1. Keeping the top 5 baselines with the smallest absolute MPE.
2. Generating the rank based on the smallest CVRMSE.

Table 5: Performance of Best Baselines Across IOUs

Rank	Baseline Type	Adjustment[6]	Average Absolute MPE[7]	CVRMSE
1	Top 3/5 with a Lookback 45	40% Asymmetric Adjustment	1.66	0.03
2	Top Weighted 3/5 with a Lookback 45	40% Asymmetric Adjustment	1.75	0.03
3	Top 3/5 with a Lookback 45	40% Symmetric Adjustment	2.07	0.03
4	Top Weighted 3/5 with a Lookback 45/Lookforward 15	40% Asymmetric Adjustment	1.62	0.03
5	Top 3/5 with a Lookback 45/Lookforward 15	40% Asymmetric Adjustment	2.26	0.03

The accuracy of the current IOU baselines is shown in Table 6. The SDG&E unadjusted baselines exhibit downward bias on average across all IOUs, while the PG&E/SCE baselines 3/5 and 5/10 with a 40% adjustment are biased slightly upwards.

Table 6: Accuracy Results for the Current IOU Baselines

Baseline	MPE			CVRMSE		
	PG&E	SCE	SDG&E	PG&E	SCE	SDG&E
SDG&E Weekday	-8.64	-14.13	-11.38	0.09	0.15	0.12
SDG&E Weekend	-1.28	-7.42	-0.91	0.03	0.08	0.04
PG&E/SCE Weekday	5.43	1.72	2.86	0.06	0.03	0.04
PG&E/SCE Weekend	3.26	-1.56	-0.83	0.04	0.03	0.02

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[6] A symmetric adjustment cap allows baselines to be adjusted between 1 + X and 1/(1 + X), while an asymmetric adjustment limits the range between 1 + X and 1 – X. For a 40% cap, a symmetric adjustment would range from 0.71 to 1.4, while an asymmetric adjustment would range from 0.6 to 1.4.
[7] These values are computed on an absolute basis to find the baselines that minimize overall bias. The values in this table are a simple average across the three IOUs.

The findings in this report are summarized, with recommendations, in Table 7.

Table 7: Key Findings

CONCLUSION	EXPLANATION
Baselines that are currently in use are among the better options for the IOUs	Day matching baselines balance accuracy, precision, and ease of construction and comprehension. Given the requirement to use individual participant baselines for settlement, the 3/5 and 5/10 baseline methods are sufficiently accurate for use in the Residential ELRP program. The 1/3 baseline exhibits higher bias and may only be appropriate for weekend baselines where averaging 3 or 5 baseline days instead would mean searching across multiple weeks of history.
Adding a same-day adjustment improves results across a wide range of conditions	Same-day adjustments improve the accuracy of baselines on extreme (hot) days. Nevertheless, because of the tradeoff between baseline accuracy – accurately quantifying the load reductions – and settlement accuracy – paying participants for real reductions – it is important to cap the adjustments. A 40% adjustment cap balances these two competing requirements on all but the most extreme days. The difference in performance between symmetric and asymmetric adjustment caps is minimal for typical adjustment caps (less than 100%).
Baselines are inaccurate for individual customers and individual events even if on average they are unbiased	No baseline method will perfectly predict the counterfactual and some amount of error will persist even with the best baseline. Even the best baseline methods produce highly variable estimates for individual sites on individual events. Moreover, even the most accurate baselines for the overall population can systematically over or underestimate the reductions and payments (show bias) for individual sites.
There is a fundamental tradeoff between overall baseline accuracy and payment accuracy	Because baseline methods are inherently noisy, even the best baseline will yield some amount of settlement error, where participants are compensated for noise rather than true reduction. Baselines that are accurate on average will result in underpayment for some participants and overpayment for others. Baselines that are biased downwards on average will not capture true load reductions for some participants.
The calculations for settlement are asymmetric	The Residential ELRP program was designed to use individual customer baselines for participant compensation, specifically introducing asymmetry in payments. Positive and negative baseline errors do not cancel each other out. Baseline errors that favor the customers are counted as reductions, while errors that do not favor the customer are zeroed out. As a result, the kWh reductions used for settlement are asymmetric and overstate the actual reductions delivered.
The level of aggregation of baseline reductions has a large effect on the amount of settlement error	Aggregating noise from the hourly or event level will improve the ability of baseline methods to detect true reductions. Instead of paying participants for reductions on an event hour by event hour basis, providing compensation at the event level or the monthly level will minimize payment error and ensure participants are fairly compensated for real reductions.

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2 INTRODUCTION

In response to the extreme grid conditions in the summer of 2020, the California Public Utilities Commission (CPUC) directed the three electric Investor-Owned Utilities (IOUs or Joint IOUs) to create a program designed to access incremental load reductions during periods of grid stress[8]. This Decision resulted in the development of the Emergency Load Reduction Program (ELRP), of which there are different sub-programs targeting different customer segments and controllable loads. This report concerns the A6 sub-program, which began in 2022 and consists of residential customers across all three IOUs. In marketing to participants, the A6 ELRP program is known as Power Saver Rewards.

Participants in Power Saver Rewards are compensated for reductions in consumption during periods of high grid stress. The program was designed to provide incentives to customers to reduce consumption by compensating them based on reductions relative to individual customer baselines. This report summarizes the individual customer baseline results for the population in the summer of 2022 and also provides findings from a baseline accuracy assessment from the summer of 2020.

2.1 PROGRAM DESCRIPTION

ELRP is a pilot program implemented statewide for various customer segments and end-use interventions. All segments are intended to be dispatched during emergency conditions and times of high grid stress when there are inadequate market resources. This evaluation focuses on the A6 ELRP subgroup which includes residential customers.

Participants in Residential ELRP are incentivized to reduce consumption during event hours (4pm-9pm) by providing a $2.00 bill credit for each kilowatt-hour of energy reduced. The reduction is calculated on the basis of individual customer baselines. A baseline is a procedure to generate an estimate of what the participant consumption profile would have been had there been no event. There is no penalty for participants who increase their load relative to the baseline.

Per the CPUC Decision[9], each IOU was instructed to automatically enroll residential customers on either the California Alternative Rates for Energy (CARE) or the Family Electric Rate Assistance (FERA)[10] rates within their territory. Each IOU was also instructed to default additional groups of customers in to the program. PG&E defaulted customers in their Home Energy Report program, both treatment and control. SCE defaulted high usage customers, specifically customers with a peak demand higher than 2.5 kW on August 18, 2020. SDG&E defaulted customers on their existing Behavioral Demand Response Program, both treatment and control. Customers not in these segments may opt-in to the program.

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[8] Per CPUC Decision 21-12-015. Details found in Appendix 2 at
https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M428/K821/428821668.PDF
[9] Ibid.
[10] CARE: California Alternative Rates for Energy. FERA: Family Electric Rate Assistance

The count of customers enrolled in the program for each default group as of September 2022 are shown in Table 8.

Table 8: Enrollment by IOU[11]

IOU	IOU-Specific Default	CARE/FERA Defaulted	Opt-In	Total Customers Enrolled
PG&E	400,782	1,190,331	19,564	1,610,618
SCE	680,226	1,226,300	18,333	1,924,846
SDG&E	328,988	184,159	4,737	517,884

For each event, customers with contact information receive a notification either by email or text, informing them of the upcoming event. Email notifications are sent to all default and opt-in customers for whom the utility has contact information, while text notifications are sent to those who sign up for them. Table 9 details some of the additional program design elements including the eligibility and performance feedback provided to customers after the completion of an event.

Table 9: Program Design Elements

IOU	Eligibility	Performance Feedback
PG&E	▪ **CCAs:** Marin Clean Energy and Sonoma Power opted out. MCE opted back in on September 5, 2022 ▪ **DR:** Customers can be enrolled in SmartRate	Event feedback, including participant load reduction, is provided through the app.
SCE	▪ **DR:** Customers can be enrolled in Residential CPP	Event feedback, without the granularity of the participant load reduction, is provided through the app.
SDG&E	▪ **DR:** Customers can be enrolled in Residential CPP	Participants will receive event-by-event settlement.

2.2 EVENT DAYS IN SUMMER 2022

ELRP Events are triggered based on CAISO system conditions, including FlexAlerts[12], alerts to all customers, and other CAISO Energy Emergency Alerts, on a day-ahead basis. Events last from 4pm to 9pm. Over the 2022 summer, there was an extreme heat wave in early September, and as a result, 9 of the 10 Residential ELRP events called this year occurred in that time frame. Table 10 lists all 2022 A6 ELRP event days and the participant-weighted average daily max temperature (degrees Fahrenheit) for each utility.

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[11] For all three IOUs, DSA received a sample of customers active as of late August/early September. As customers enrolled and de-enrolled from the program throughout the summer, enrollment numbers fluctuated. The values in this table represent the best available understanding of participants for whom settlement was calculated by each IOU. The total population values used in this analysis and the remainder of the report will vary slightly from this table as a result of the snapshot nature of the data received by DSA.

[12] https://www.flexalert.org/

Table 10: A6 ELRP Event Days

Day of Week	Date	Daily Max Temperature		
		PG&E	SCE	SDG&E
Wednesday	8/17/2022	86.3	92.4	83.8
Thursday	9/1/2022	89.4	98.8	89.3
Friday	9/2/2022	87.2	98.0	90.4
Saturday	9/3/2022	89.1	100.0	94.5
Sunday	9/4/2022	96.6	102.7	90.7
Monday (Labor Day)	9/5/2022	101.6	100.4	89.9
Tuesday	9/6/2022	103.9	99.9	89.2
Wednesday	9/7/2022	97.8	99.5	92.0
Thursday	9/8/2022	99.1	97.6	92.2
Friday	9/9/2022	90.7	94.8	86.5

2.3 RESEARCH QUESTIONS

The Joint IOUs are interested in understanding two main questions: what are the Power Saver Rewards load reductions for ELRP events under different baseline methodologies, and how accurate are each of these methods at quantifying demand response? The following questions represent the specific research priorities for this evaluation.

1. What are the baseline load reductions and settled load reductions under each IOUs specified baseline method?
   a. For each event day in each IOU.
   b. For specific customer segments of interest, including low income rates, the auto-enrolled customer groups, or those customers residing in Disadvantaged Communities.
   c. For customers with generation technologies, including solar, storage, electric vehicles, or backup generation.
2. What would the baseline load reductions and settled load reductions be under alternative baseline methods?
   a. Day-matching baseline methods will be tested, including 5-in-10, 3-in-5, Weekend and Meter Before/Meter After, along with other methods of interest to the Joint IOUs.
   b. Methods will be modified to assess reductions with differing lookback periods and day-of adjustment caps.
3. What baseline methods yield the least error?
   a. What is the accuracy and precision of each baseline method?
   b. What is the distribution of error across participants and across relevant participant segments?
   c. What are the tradeoffs between baseline accuracy and payment asymmetry?
4. Are there any operational barriers to implementing any one of these baselines?
   a. What's the trade-off between accuracy/precision and feasibility?

3 METHODOLOGY

A baseline provides a basis, or counterfactual, which can be used to estimate program load reduction for the purpose of calculating customer compensation. The counterfactual is an estimate of what the participant would have done had they not been dispatched for the program. For this program, the Joint Utilities utilized day-matching baselines which estimate what electricity use would have been in the absence of curtailment by relying on electricity in the days leading up to the event. Customer electric use from a subset of non-event days in close proximity to the event day are identified and averaged to produce baselines.

These baselines can be adjusted up or down based on electricity use patterns during the hours leading up to or following an event: a procedure known as same-day adjustment. If, during adjustment hours, the baseline is less than the actual load, it is adjusted upwards. Similarly, if the baseline is above the actual load in the adjustment hours, it is adjusted downwards. To adjust the load, the initial baseline value is multiplied by the ratio between the unadjusted baseline and the actual load during adjustment hours. In other words, the baseline is calibrated to match actual usage patterns in the hours leading up to the event.

Table 11 summarizes the steps required to produce two of the baselines in this evaluation. In short, the procedure involves finding eligible days prior to the event day, selecting the baseline days according to a pre-specified heuristic, then computing a same-day adjustment. The difference between the adjusted baseline and the observed load during the event hours is the load reduction associated with the program. Reductions relative to the baseline are eligible for participant compensation, while any increases relative to the baseline are not penalized[13].

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[13] That is, if a participant increases their usage relative to the baseline, they simply do not receive any compensation and do not owe the utility.

Table 11: Example of Day Matching Baseline Components

Component	Weekday Baseline Highest 5 of 10	Weekend Baseline Highest 3 of 5 Weighted
Eligible baseline days	10 weekdays immediately prior to the event, excluding event days and federal holidays	5 weekend days, including federal holidays but excluding event days, immediately prior to the event
Baseline day selection criteria	Rank days from largest to smallest based on individual customer kWh over the event period, pick the top 5[14]	Rank days from largest to smallest based on individual customer kWh over the event period, pick the top 3
Application of weights (if needed)	N/A	50% - Day closest to event 30% - Next closest day to event 20% - Furthest day from event
Unadjusted baseline	The weighted hourly average of the resource's electric load during baseline days. The unadjusted baseline includes all 24 hours in day.	
Adjustment hours	The two hours immediately prior to the event period with a two hour buffer before the event and the two hours after an event after a 2 hour buffer. For example, if an event went from 4pm to 9pm, the adjustment hours would be 12pm to 2pm and 11pm-midnight[15].	
Same day adjustment ratio	Calculate the ratio between the resource's load and the unadjusted baseline during the adjustment hours. $$Adjustment\ ratio = \frac{Total\ kWh\ during\ adjustment\ hours}{Unadjusted\ baseline\ kWh\ during\ adjustment\ hours}$$	
Adjustment limit	Cap the ratio between 0.6 and 1.4[16].	
Adjusted baseline	Apply the capped same day adjustment ratio to the unadjusted baseline to calculate the final adjusted baseline. The ratio is applied to all 24 hours of the unadjusted baseline.	

The current baseline methodologies in place for the summer of 2022 for each IOU are shown in Table 12. PG&E and SCE rely on the same set of baseline calculations, while SDG&E relies on a slightly different set of day-matching baseline methods.

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[14] The method for picking the top X days relies on selecting either the days with the highest average kW during the event hours, or the sum of kWh across the event hours. From a mathematical perspective, these two options are equivalent assuming all event hours are populated evenly.

[15] Post-event hours that spill in to the next day are typically excluded from baseline adjustment windows

[16] A variety of symmetric and asymmetric adjustments were tested. The example given shows an asymmetric adjustment (a symmetric adjustment would be between 1.4 and 1/1.4)

Table 12: IOU Baseline Methodologies

Baseline	PG&E	SCE	SDG&E
Weekday	Top 5/10	Top 5/10	Top 3/5
Weekend	Weighted 3/5 (50% on most recent baseline day, 30% on second most recent, 20% on third most recent)	Weighted 3/5 (50% on most recent baseline day, 30% on second most recent, 20% on third most recent)	Top 1/3
Adjustment	40% multiplicative adjustment cap with a 2 hour pre/post adjustment and a 2 hour buffer.	40% multiplicative adjustment cap with a 2 hour pre/post adjustment and a 2 hour buffer.	None
On the basis of	Delivered Load	Delivered Load	Net Load

3.1   MEASURING BASELINE ACCURACY

The second research question this evaluation addresses is the accuracy of each baseline method in estimating demand response. In order to answer this question, the evaluation team assessed both the bias and precision of each method. This is important because baseline methods are designed to be easily computable and understandable by participants and other stakeholders. This means they are less complex than traditional load impact evaluations. Nevertheless, as participants are compensated based on their reductions relative to their baseline, it is important that the methods used are as accurate as possible.

Assessing baseline accuracy involved a test of each method using bootstrapped pseudo-event days. The distinction between actual ELRP events and the pseudo-events used for this accuracy test is critical: because customers receive instructions to curtail their load on event days, their true counterfactual – what they would have done in the absence of these instructions – cannot be known. To assess baseline accuracy, an analysis must be conducted on event-like non-event days. Because participants did not receive curtailment instructions on these days, their true counterfactual is known and any difference between it and the baseline value is due to modeling error. In order to evaluate event-like non-event days (pseudo-event days), the evaluation team looked at customer load data from the summer of 2020. The reason that this summer of data was used was twofold:

1. The program was not yet in effect, meaning that the actual event dispatch criteria (CAISO Alerts, Warnings, and Emergencies) could be used to simulate real events.
2. The 2020 summer was more extreme in California than 2021. This means that the 2020 pseudo-event days more closely mimicked the real event conditions when grid congestion was high.

As shown in Figure 2, 2020 had 10 separate FlexAlert days, which were selected as the pseudo-events. These days correspond to two heat waves that occurred throughout the state: one in mid-August and one in early September. Picking consecutive FlexAlert days in 2020 also reflected the reality of extreme grid conditions in 2022, where large-scale heat waves created high demand across the state for multiple days in a row. While pandemic-era effects were present in 2020, the baseline days should account for any changes in energy use associated changes in residential consumption that would also affect event days.

Figure 2: 2020 Pseudo-Event and Baseline Days
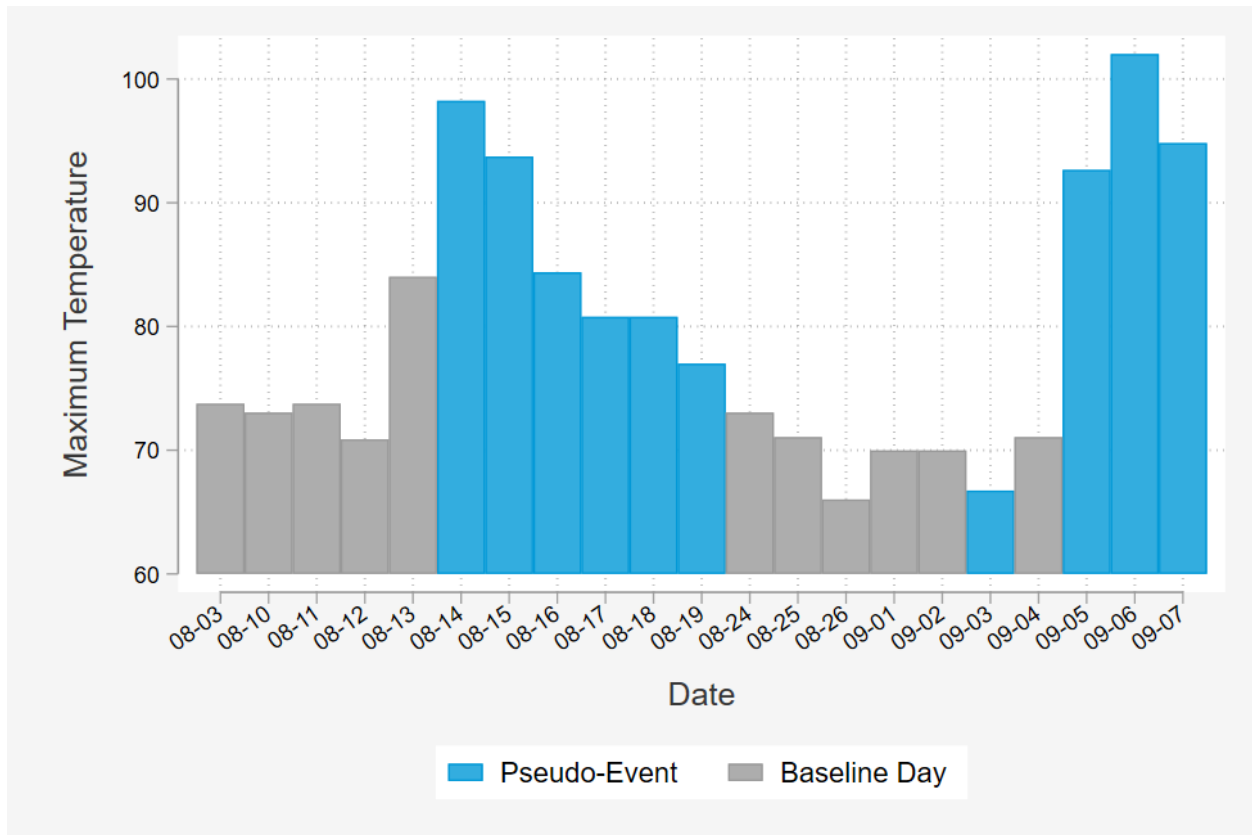
To further reinforce the accuracy evaluation, the evaluation team bootstrapped the sampled non-event days. Through bootstrapping, the non-event days are iteratively re-sampled to ensure that the results reflect a variety of event conditions. This process is shown in Figure 3.

Figure 3: Baseline Accuracy Assessment Process
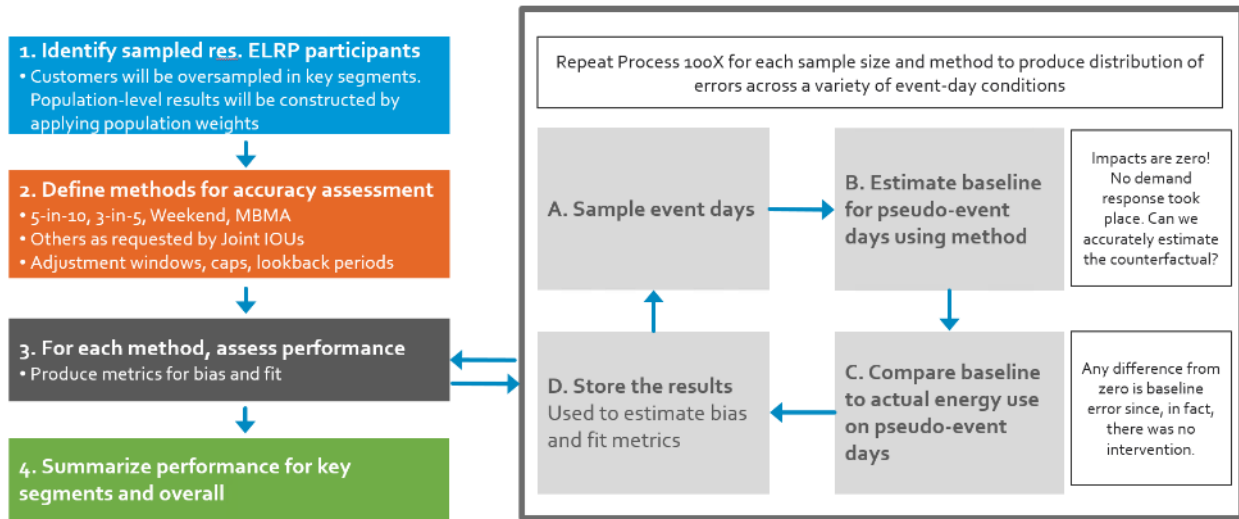
Table 13 summarizes the metrics for bias and precision. Bias metrics measure the tendency of each baseline to over or under predict and are measured over multiple days. The mean percent error describes the relative magnitude and direction of the bias. A negative value indicates a tendency to under-predict, and a positive value indicates a tendency to over-predict. The precision metrics describe the magnitude of errors for individual events days and are always positive. The closer they are to zero, the more precise the results.

Table 13: Definition of Bias and Precision Metrics

Type of Metric	Metric	Description	Mathematical Expression
Bias	Average Error	Absolute error, on average	$AE = \frac{1}{n}\sum_{i=1}^{n}(\hat{y}_i - y_i)$
	Normalized Mean Bias Error	Indicates the percentage by which the measurement, on average, over or underestimates the true demand reduction.	$\% \, Bias = \dfrac{\frac{1}{n}\sum_{i=1}^{n}(\hat{y}_i - y_i)}{\bar{y}}$
	Normalized Mean Absolute Error	Indicates the percentage by which the baseline deviates from the true value on average.	$NMAE = \dfrac{\frac{1}{n}\sum_{i=1}^{n}|\hat{y}_i - y_i|}{\bar{y}}$
Precision	Root mean squared error (RMSE)	Measures how close the results are to the actual answer in absolute terms, penalizes large errors more heavily	$RMSE = \sqrt{\frac{1}{n}\sum_{i=1}^{n}(\hat{y}_i - y_i)^2}$
	Relative RMSE	Measures the relative magnitude of errors across event days, regardless of positive or negative direction. It can be thought as the typical percent error, but with heavy penalties for large errors.	$CV(RMSE) = \dfrac{RMSE}{\bar{y}}$

Public

A key distinction between the Baseline Accuracy Results and the Baseline Assessment Results is that the underlying data used for each is fundamentally different. Baseline Accuracy Results are estimated using customer interval data from the summer of 2020. Baseline Assessment Results are estimated using customer interval data from the summer of 2022. In the table generators provided, these results are presented side-by-side, but it is important to remember that they are distinct in the data that informs their results.

3.2   SAMPLING PLAN

There is a large population of customers in the residential ELRP A6 program, and as a result, this evaluation relies on a stratified sample of participants. The sampling approach ensures that results are robust for smaller segments of the population, which may be otherwise overlooked in a simple random sample, while minimizing data transfer and computation overhead for each IOU.

Table 14 shows the number of cluster IDs that were requested in each stratum. For example, we requested 1,500 Opt-in, Solar + Storage enrolled premises in a disadvantaged community in any coastal climate zone. If there were not enough participants in any given cell, then all participants in that cell were provided. Appendix B lists the actual counts provided to the evaluation team for each IOU. These sample cell sizes were selected to ensure robust representation of participants within a given customer segment, while understanding that particular segments are not likely to have many participants. Additionally, the selected sample cell sizes helped minimize superfluous data transfer. Oversampling in the general population was employed as this is the largest group of customers and may represent a larger percentage of future ELRP participants.

Table 14: Sampling Plan

Region	DER	Disadvantaged Communities			Non-DAC		
		CARE/ FERA	IOU-Specific Default	Opt-in	CARE/ FERA	IOU-Specific Default	Opt-in
Coastal Climate Zones[17]	Solar-Only	1,000	1,000	1,500	1,000	1,000	1,500
	Solar+ Storage	1,000	1,000	1,500	1,000	1,000	1,500
	EV Rate (No Solar/Storage)	1,000	1,000	1,500	1,000	1,000	1,500
	Backup Generation (No Other DER)	All	All	All	All	All	All
	General Pop (no tech above, No CPP)	1,000	1,000	1,500	3,000	3,000	3,000
	CPP Participant (no tech above)	1,000	1,000	1,000	3,000	3,000	3,000
Inland Climate Zones[18]	Solar-Only	1,000	1,000	1,500	1,000	1,000	1,500
	Solar+ Storage	1,000	1,000	1,500	1,000	1,000	1,500
	EV Rate (No Solar/Storage)	1,000	1,000	1,500	1,000	1,000	1,500
	Backup Generation (No Other DER)	All	All	All	All	All	All
	General Pop (no tech above, No CPP)	1,000	1,000	1,500	3,000	3,000	3,000
	CPP Participant (no tech above)	1,000	1,000	1,000	3,000	3,000	3,000

Load reduction estimates and assessments of baseline accuracy are produced for each of these segments. In order to produce population-level results, population weights are applied to scale results up to the overall Residential ELRP program at each IOU.

3.3 PRESENTATION OF RESULTS

SEGMENTATION

To better understand how performance varies not only from event to event, but across the different enrolled customer groups, reductions were reported for different segments. These segments included:

1. **IOU:** Customers are analyzed as a whole and by each individual IOU.

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[17] Coastal Climate Zone Designations: PGE – 1, 3, 5; SCE – 5, 6, 7, 8; SDG&E – 6, 7, 8
[18] Inland Climate Zone Designations: PGE – 2, 4, 11, 12, 13, 16; SCE – 9, 10, 11, 12, 13, 14, 15, 16; SDG&E – 9, 10, 11, 12, 13, 14, 15, 16

2. **Generation Technologies:** Customers that possess generation technologies (solar, storage, electric vehicle, and/or backup generators).

3. **Low Income Status:** Customers are analyzed based on their rate program, California Alternate Rate for Electricity (CARE) and/or Family Electric Rate Assistance (FERA).

4. **DAC:** Customers that reside in a Disadvantaged Community.

5. **Default Status:** Customers that are part of a population that was automatically enrolled or part of a population that opted-in to the program.

6. **Notification Type:** Customers that receive an email and/or text notification of the event.

7. **Coastal vs. Inland Climate:** Customers that live in a coastal or inland climate zone.

8. **SubLAP:** Customer Sub Load Aggregation Point.

NET VS. DELIVERED LOADS

In most utility settings, consumption data is recorded at the meter using two channels: an import channel and an export channel. These channels can be combined to construct the customer's net load. Net load represents the customer's true demand on the grid and can mean that exporting customers may have negative net loads during times of high exports, such as mid-day when solar production is high. Using only delivered loads, rather than net loads, when evaluating baselines leads to bias in the underlying reduction due to the effects of data censoring.

Figure 4 illustrates this effect. It shows a hypothetical customer with solar where the site exports during the middle of the day. On a day without a demand response event (shown in the left two panes), delivered loads censor the interval data because any energy export is flattened to zero. If that day were an ELRP event, reductions measured using the delivered loads would not account for any reductions that make customer loads more negative (seen in the graph labeled "Net Load, with DR"). The effect is clearly shown in the right pane of the figure, where the measured reduction using delivered load fails to capture some of the true reductions that occur in the first part of the event.

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Figure 4: Net versus Delivered Loads
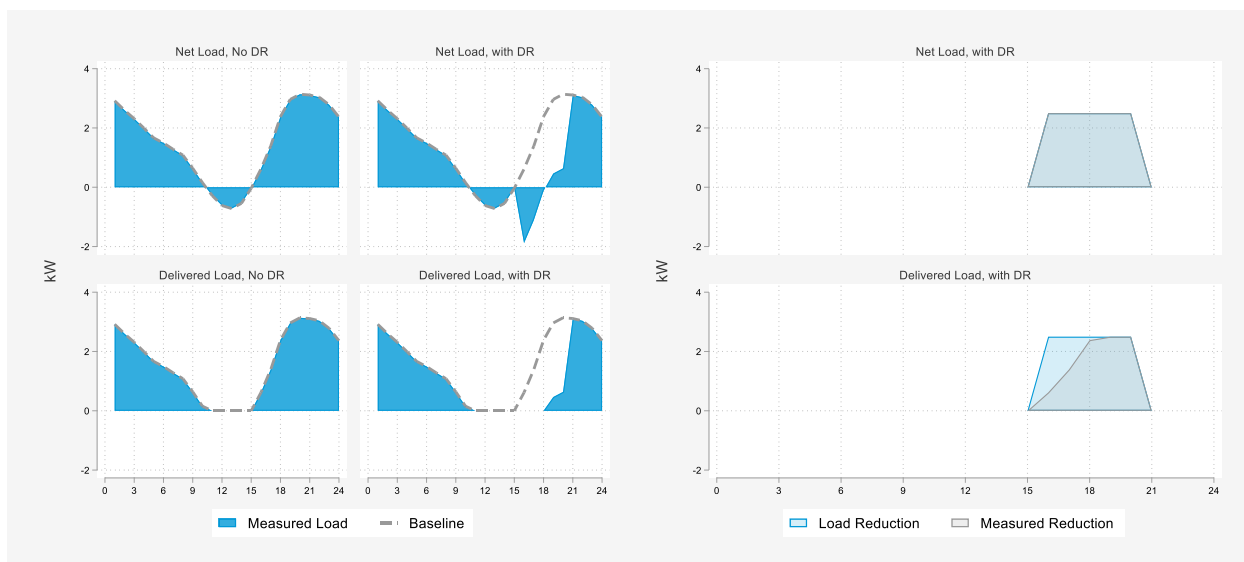
As part of this study is to validate load reductions for the current baseline methods at each IOU, the evaluation team conducted the baseline assessment using net or delivered loads as described by each IOU's baseline method. For the accuracy assessment, the team produced results for both net and delivered loads.

EFFECTS OF AGGREGATION

3.3.1.1 Aggregation in Baseline Calculations

The evaluation of baseline results for the Residential ELRP program was primarily focused on validating baseline reductions for the populations of interest. Nevertheless, as discussed throughout the report, even the best individual customer baselines are noisy and exhibit bias. As a result, the evaluation team also produced estimates of load reductions using aggregated baselines, whereby participant loads are first aggregated, then run through the baseline computation procedure. A simple outline of the procedure is shown in Table 15.

Table 15: Procedure for Computing Individual-First and Aggregate-First Baselines

Step	Individual First	Aggregate First
1	Identify participants	Identify participants
2	For each participant, pick the top X of Y days prior to the event	Average participant loads on all days to construct an average participant load profile
3	Compute the unadjusted baseline for each participant	Pick the top X of Y days prior to the event
4	Adjust the individual participant baselines	Compute the unadjusted baseline
5	Compute the individual participant baseline reductions	Adjust the baseline
6	Average the participant baseline reductions to get the average participant baseline reductions	Compute the average participant baseline reductions

Aggregation has the advantage of smoothing out site-level volatility, leading to higher accuracy in the final reduction estimates. These results are shown in the accompanying table generators for this study and in select areas of the baseline assessment results (Section 4). Aggregate baselines are not typically suitable for compensation at the individual-participant level, as no participant-level reductions are produced.

3.3.1.2 Aggregation in Payment Calculations

Customers participating in ELRP will receive incentive payments, in the form of a bill credit, in January, February, and March of 2023 for their load reductions during events dispatched in the summer of 2022. These payments will cover multiple event days. Since customers do not receive a penalty for increasing their load during event hours, we must understand how performance is aggregated. The order of operations of participant load aggregation has substantial implications for settlement.

1. **Incentives paid on the total kWh reduced over the summer:**

   a. Participant kWh reductions are summed for all events in the summer, regardless of whether they are positive or negative.

   b. The $2.00/kWh incentive is applied to this total. If the participant did not reduce load, or generated negative reductions (i.e. increases), they would not receive a payment or a penalty.

2. **Incentives paid on an event-by-event basis:**

   a. Participant kWh reductions are converted to settlement incentives for each event, and the total settlement payment for each event is summed for all events in the summer.

3. **Incentives paid on an hour-by-hour basis:**

   a. Participants are compensated for each hour that their observed consumption was lower than their baseline consumption.

4 BASELINE ASSESSMENT RESULTS

The purpose of this evaluation is to produce a comprehensive summary of the performance of various baselines across the three California IOUs, show what the reductions would have been under alternative baseline methods, and summarize load reductions for key customer segments. Results for each IOU for the event days in the summer of 2022 are shown separately below, followed by a discussion of alternative baseline results where each IOU uses the same set of baselines. It is important to note that events were called on weekdays and weekends. While 9/5 is on a Monday, it is classified as a weekend for the purpose of baseline specifications, since it is Labor Day. The accuracy results are discussed in Section 5.

4.1 PG&E

Unless otherwise specified, the results in the PG&E section will be constructed from the PG&E baseline specifications (Table 16).

Table 16: PG&E Baseline Specifications

IOU	Weekday Type	Weekend Type	Adjustment	Basis
PG&E	Top 5/10	Weighted 3/5	40% asymmetric, multiplicative adjustment cap with a 2 hour pre/post adjustment and a 2 hour buffer.	Delivered Load

AVERAGE EVENT DAY RESULTS

The 2022 season dispatched events on both weekdays and weekends, including the Labor Day holiday. Two average event days are constructed, given the alignment of event hours. The three weekend events, 9/3, 9/4, and 9/5 are calculated with the weekend baseline, while the remaining seven events days are calculated with the weekday baseline.

Figure 5 displays the average weekday event. This graph shows the usage across the event as well as the weekday baseline. The observed usage shows a slight reduction across event hours, and the baseline does indicate savings. The average participant-weighted temperature across the average event window is 85 F, and the aggregate savings for sites in our analysis are 249.2 MW, or 0.17 kW per participant.

Figure 5: PG&E Average Weekday Event
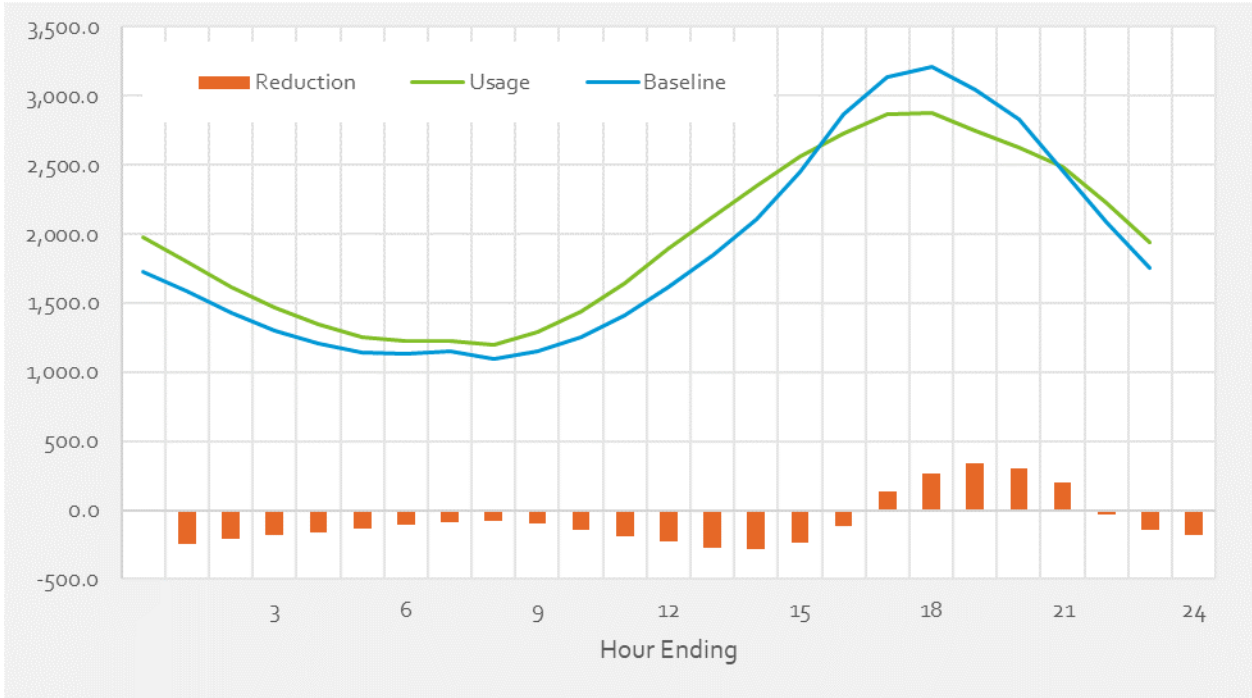
Figure 6 displays the average weekend event, which has a participant-weighted average event hour temperature of 88 F. These events do not appear to produce the same magnitude of savings that the average weekday event produces. The aggregate savings for sites in our analysis on the average weekend event are 86.2 MW, or 0.06 kW per participant.

Figure 6: PG&E Average Weekend Event
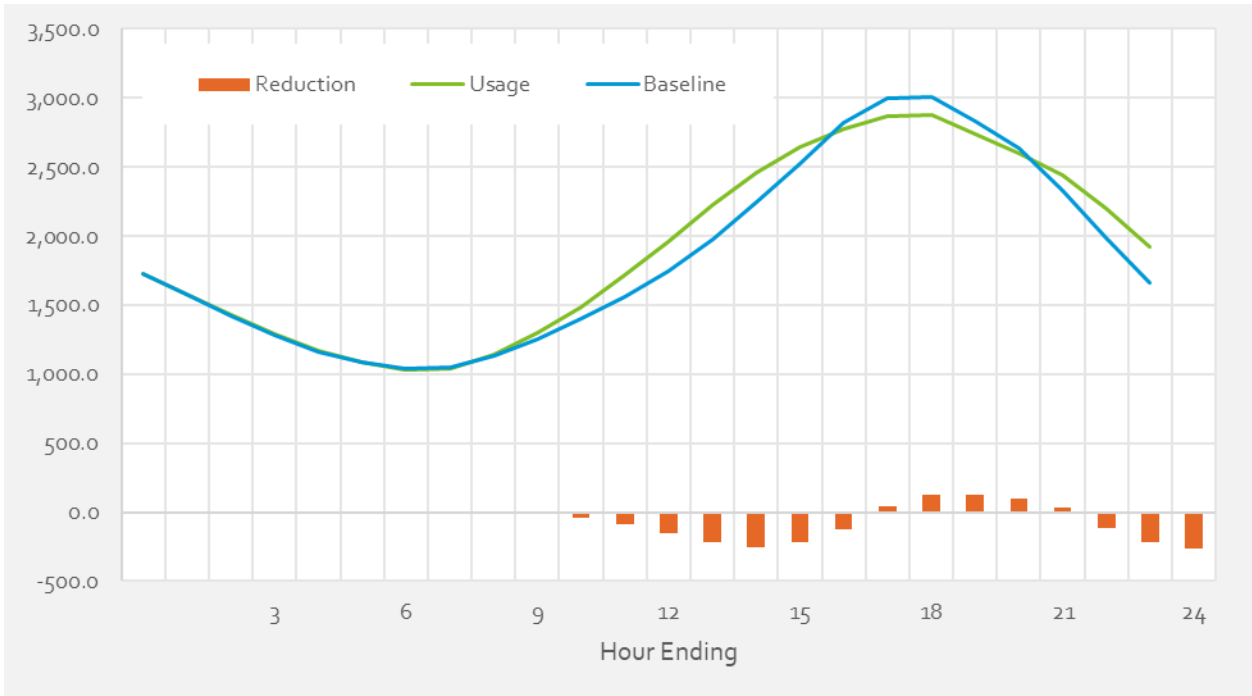
Public

INDIVIDUAL EVENT DAY RESULTS

The results can also be analyzed on individual event days. Table 17 displays the per-customer kW reduction across events hours for each event. All the individual event days produce savings, except September 5th or Labor Day. The settled kW is also presented. The settled kW is calculated by averaging only positive reductions relative to the baseline for each event hour . This creates an inherent bias in the results, since all negative results are removed prior to aggregation.

Table 17: PG&E Individual Event Results

Event	Max Daily Temperature	Reduction	Settled kW[19]
08/17/2022	86.3	0.24	0.46
09/01/2022	89.4	0.12	0.38
09/02/2022	87.2	0.27	0.47
09/03/2022	89.1	0.18	0.44
09/04/2022	96.6	0.08	0.42
09/05/2022	101.6	-0.09	0.39
09/06/2022	103.9	0.07	0.44
09/07/2022	97.8	0.16	0.46
09/08/2022	99.1	0.06	0.42
09/09/2022	90.7	0.27	0.51
Total		**0.13**	**0.44**

Results computed using PG&E baseline: Top 5/10 for Weekdays and Weighted Top 3/5 for Weekends, both with a 40% asymmetric adjustment cap. Negative values indicate an increase in consumption relative to the baseline.

SEGMENT SPECIFIC RESULTS

It is also important to gauge how segments of the population performed on the 2022 events days. Table 18 presents the percent kW reduction for the average event day. The segment with the most evident strength of performance are customers who received a SMS notification. This segment is also comprised of a considerably smaller population. Additionally, performance is strong for:

- **Disadvantaged Communities**: DAC
- **Default Group**: Opt-in
- **DER Status**: CPP[20]

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[19] This shows the average settled kW when settlement is done on an hour-by-hour basis.
[20] This is unsurprising since on a subset of ELRP event days these customers were also dispatched under the CPP program.

Table 18: PG&E Average Results by Segment

Category	Subcategory	Enrolled Accounts	Sampled Accounts	Average Weekday Reduction (%)	Average Weekend Reduction (%)
Climate	Coastal Climate Zone	379,381	16,622	7.7%	1.6%
	Inland Climate Zone	1,108,543	29,859	8.3%	3.2%
Disadvantaged Community	DAC	406,394	11,412	11.5%	7.2%
	Non-DAC	1,081,530	35,069	6.6%	0.9%
ELRP Default Group	CARE/FERA	1,069,114	19,055	9.7%	4.7%
	IOU Default	407,033	18,181	3.7%	-2.0%
	Opt-in	11,777	9,245	14.7%	9.4%
DER Status	Backup Generation	129	0		
	CPP (No DER)	22,120	7,502	14.1%	9.4%
	General Population (No DER or CPP)	1,307,907	26,466	8.3%	3.3%
	Solar + Storage	6,799	3,515	-6.3%	-14.8%
	Solar Only	150,969	8,999	7.3%	0.8%
CARE/FERA	CARE/FERA	1,032,662	18,653	9.7%	4.7%
	Non CARE/FERA	455,263	27,828	4.8%	-1.0%
Notification	Attempted: Email	472,168	11,782	9.2%	4.4%
	None	580,850	13,555	7.2%	1.0%
	Notified: Email	416,311	12,757	8.1%	2.9%
	Notified: Multiple	17,582	8,142	12.2%	10.9%
	Notified: SMS	1,013	245	13.5%	11.0%

4.2 SCE

Unless otherwise specified, the results in the SCE section will be constructed from the SCE baseline specifications (Table 19).

Table 19: SCE Baseline Specifications

IOU	Weekday Type	Weekend Type	Adjustment	Basis
SCE	Top 5/10	Weighted 3/5	40% asymmetric, multiplicative adjustment cap with a 2 hour pre/post adjustment and a 2 hour buffer.	Delivered Load

AVERAGE EVENT DAY RESULTS

The 2022 season dispatched events on both weekdays and weekends, including the Labor Day holiday. Two average event days are constructed, given the alignment of event hours. The three weekend

events, 9/3, 9/4, and 9/5 are calculated with the weekend baseline, while the remaining seven events days are calculated with the weekday baseline.

Figure 7 displays the average weekday event. This graph shows the usage across the event as well as the weekday baseline. The average participant-weighted temperature across the average event window is 89 F, and the aggregate savings for sites in our analysis are 693.0 MW, or 0.37 kW per participant.

Figure 7: SCE Average Weekday Event
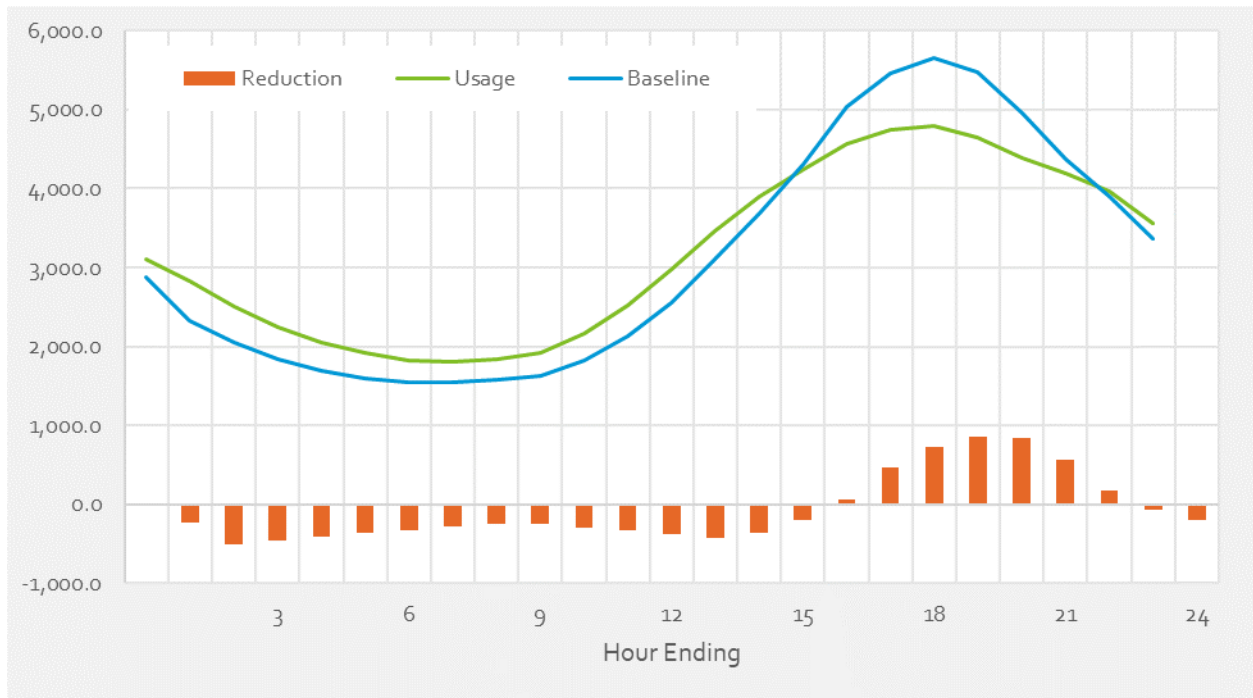
Figure 8 displays the average weekend event, which has a participant-weighted average event hour temperature of 92 F. These events do not appear to produce the same magnitude of savings that the average weekday event produces. The aggregate savings for sites in our analysis on the average weekend event are 3.8 MW, or 0.002 kW per participant.

Figure 8: SCE Average Weekend Event
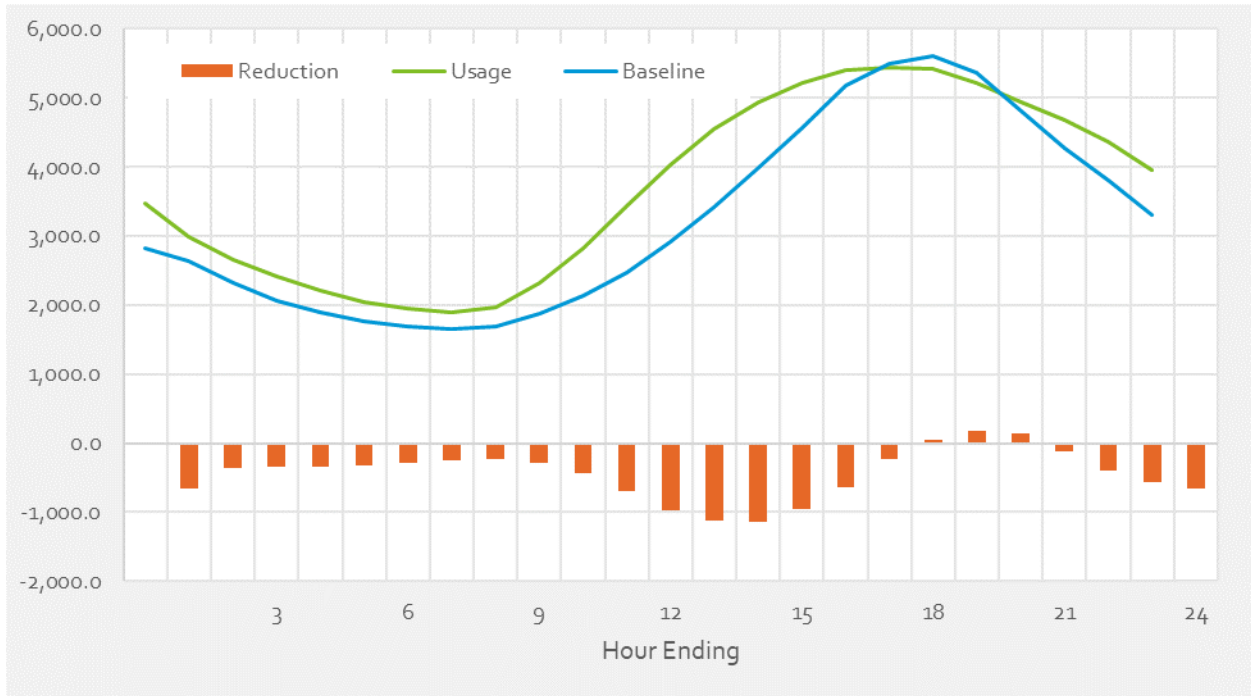
INDIVIDUAL EVENT DAY RESULTS

The results can also be analyzed on individual event days. Table 20 displays the per-customer kW reduction across events hours for each event. All the individual event days produce savings, except September 5th or Labor Day. The settled kW is also presented. The settled kW is calculated across the event hours for each customer and then zeroed out if the reduction is negative on the given hour. This creates an inherent bias in the results since all negative results are removed prior to aggregation.

Table 20: SCE Individual Event Results

Event	Max Daily Temperature	Reduction	Settled kW[21]
08/17/2022	92.4	0.27	0.54
09/01/2022	98.8	0.26	0.56
09/02/2022	98.0	0.34	0.63
09/03/2022	100.0	0.04	0.50
09/04/2022	102.7	0.09	0.54
09/05/2022	100.4	-0.13	0.43
09/06/2022	99.9	0.29	0.60
09/07/2022	99.5	0.30	0.61
09/08/2022	97.6	0.30	0.62
09/09/2022	94.8	0.83	1.01
Total		**0.26**	**0.60**

Results computed using SCE baseline: Top 5/10 for Weekdays and Weighted Top 3/5 for Weekends, both with a 40% asymmetric adjustment cap. Negative values indicate an increase in consumption relative to the baseline.

SEGMENT SPECIFIC RESULTS

It is also important to gauge how segments of the population performed on the 2022 events days. Table 21 presents the percent kW reduction for the average event days. The segments with the most evident strength of performance come from those customers in the inland climate zone and CPP[22] customers.

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[21] This shows settled kW when aggregated across the event hours.
[22] This is unsurprising since on a subset of ELRP event days these customers were also dispatched under the CPP program.

Category	Subcategory	Enrolled Accounts	Sampled Accounts	Average Weekday Reduction (%)	Average Weekend Reduction (%)
Climate	Coastal Climate Zone	665,303	15,519	8.7%	-6.5%
	Inland Climate Zone	1,221,737	16,316	14.5%	2.2%
Disadvantaged Community	DAC	579,090	8,855	12.3%	1.5%
	Non-DAC	1,307,950	22,981	13.3%	-0.4%
ELRP Default Group	CARE/FERA	1,056,849	14,126	12.9%	1.8%
	IOU Default	828,238	15,756	13.1%	-1.4%
	Opt-in	1,953	1,953	13.7%	-4.7%
DER Status	Backup Generation	2	2		
	CPP (No DER)	10	10		
	General Population (No DER or CPP)	1,669,019	16,914	13.4%	1.4%
	Solar + Storage	9,350	4,918	3.0%	-31.6%
	Solar Only	208,659	9,992	11.0%	-7.0%
CARE/FERA	CARE/FERA	1,056,987	14,264	12.9%	1.8%
	Non CARE/FERA	830,053	17,572	13.1%	-1.4%
Notification	Attempted: Email	506,380	8,574	13.7%	0.8%
	None	891,397	13,199	12.6%	0.1%
	Notified: Email	488,329	9,582	13.0%	-0.8%
	Notified: Multiple	2,138	1,103	12.1%	0.0%
	Notified: SMS	42	17	24.7%	0.0%

4.3 SDG&E

Unless otherwise specified, the results in the SDG&E section will be constructed from the SDG&E baseline specifications (Table 22).

Table 22: SDG&E Baseline Specifications

IOU	Weekday Type	Weekend Type	Adjustment	Basis
SDG&E	Top 3/5	Top 1/3	None	Net Load

AVERAGE EVENT DAY RESULTS

The 2022 season dispatched events on both weekdays and weekends, including the Labor Day holiday. Two average event days are constructed, given the alignment of event hours. The three weekend events, 9/3, 9/4, and 9/5 are calculated with the weekend baseline, while the remaining seven events days are calculated with the weekday baseline.

Figure 9 displays the average weekday event. This graph shows the usage across the event as well as the weekday baseline. The usage does appear to have a visible reduction during event hours. The average participant-weighted temperature across the average event window is 80 F, and the aggregate savings for sites in our analysis are 27.3 MW, or 0.05 kW per participant.

Figure 9: SDG&E Average Weekday Event
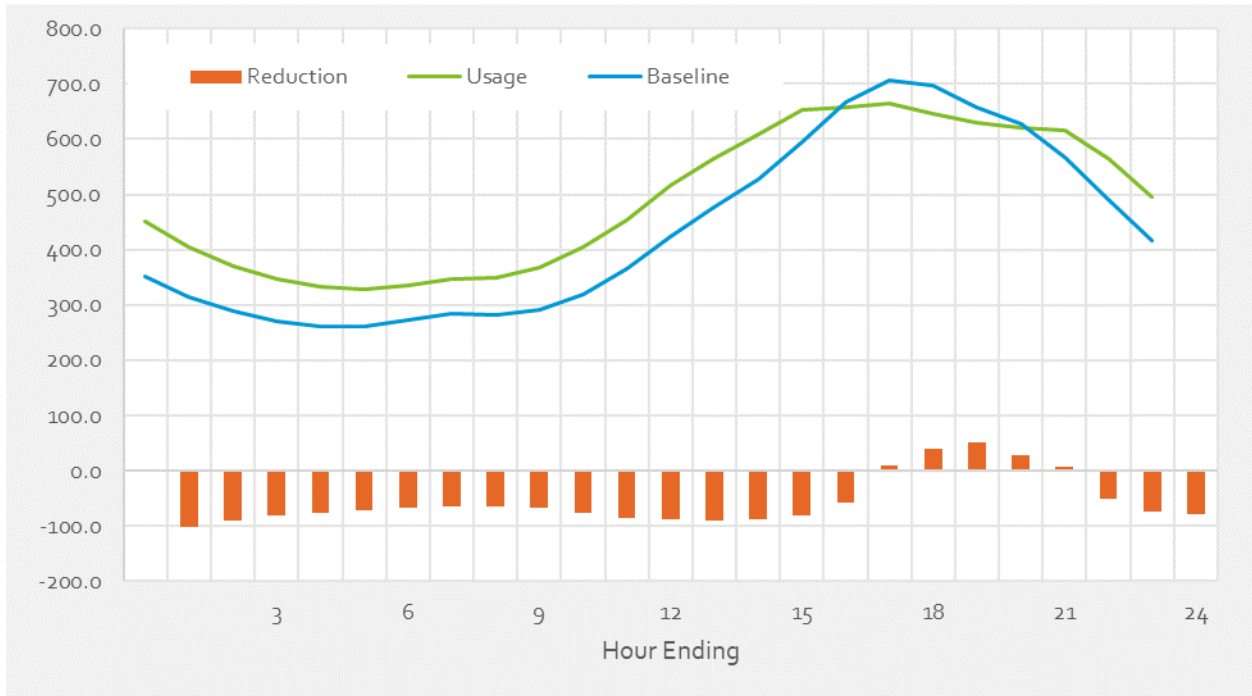
Figure 10 displays the average weekend event, which has a participant-weighted average event hour temperature of 85 F. These events do not produce savings, since the usage is above the baseline. This is attributable primarily to the lack of a same-day adjustment. The aggregate savings for site in our analysis on the average weekend event are -164.7 MW, or -0.32 kW per participant.

Figure 10: SDG&E Average Weekend Event
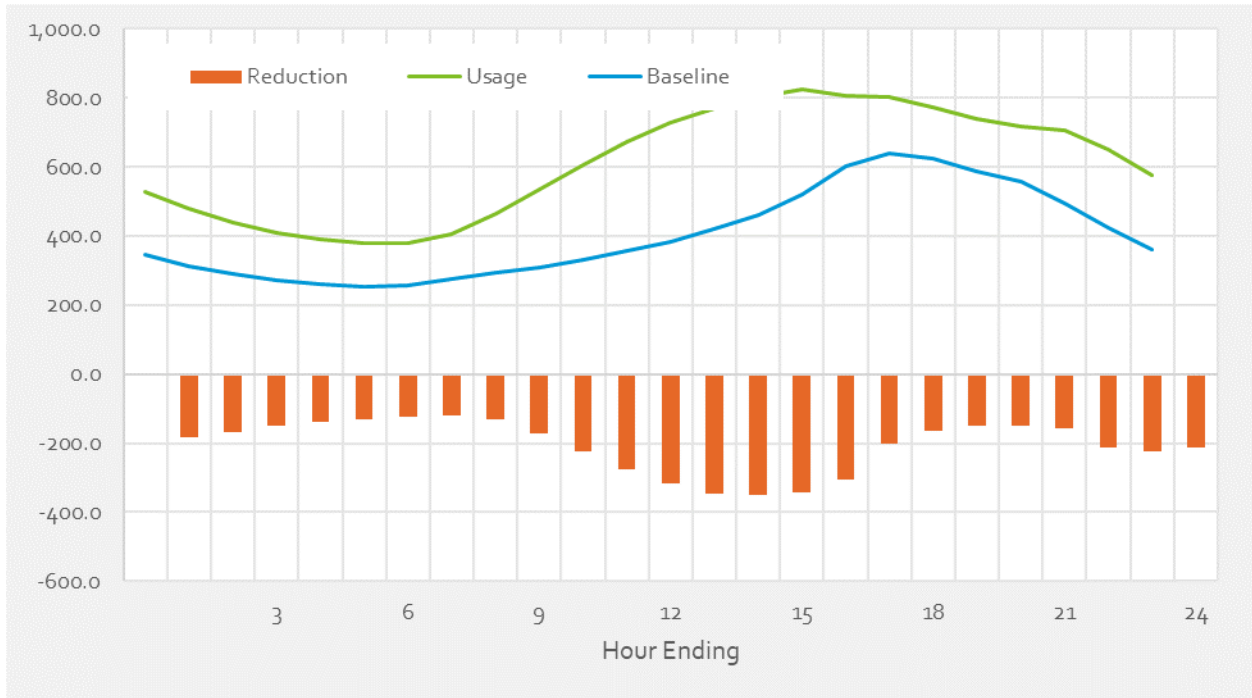
INDIVIDUAL EVENT DAY RESULTS

The results can also be analyzed on individual event days. Table 23 displays the per-customer kW reduction across events hours for each event. All of the weekend events produce negative savings or increases in usage, and all but three of the weekday events produce increases in usage. The settled kW is also presented. The settled kW is calculated by averaging reductions across the five event hours for each customer and then zeroing it out if the reduction is negative for the whole event. This creates an inherent bias in the results since all negative results are removed prior to aggregation.

Table 23: SDG&E Individual Event Results

Event	Max Daily Temperature	Reduction	Settled kW[23]
08/17/2022	83.8	0.22	0.29
09/01/2022	89.3	-0.02	0.17
09/02/2022	90.4	-0.02	0.19
09/03/2022	94.5	-0.36	0.17
09/04/2022	90.7	-0.27	0.17
09/05/2022	89.9	-0.32	0.15
09/06/2022	89.2	-0.06	0.18
09/07/2022	92.0	-0.18	0.14
09/08/2022	92.2	0.02	0.23
09/09/2022	86.5	0.41	0.49
Total		**-0.06**	**0.22**

*Results computed using SDG&E baseline: Unadjusted 3/5 for Weekdays and Unadjusted 1/3 for Weekends. Negative values indicate an increase in consumption relative to the baseline.

SEGMENT SPECIFIC RESULTS

It is also important to gauge how segments of the population performed on the 2022 events days. Table 24 presents the percent kW reduction for the average event day. SDG&E did not send out notification through Olivine, like SCE and PG&E. The segment with the most evident strength of performance come from those customers who are on a CPP rate[24]. Additionally, performance is strong for:

- **Disadvantaged Communities**: DAC
- **Default Group**: Opt-in

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[23] This shows settled kW when aggregated across the event hours.

[24] This is unsurprising since on a subset of ELRP event days these customers were also dispatched under the CPP program.

Table 24: SDG&E Average Results by Segment

Category	Subcategory	Enrolled Accounts	Sampled Accounts	Average Weekday Reduction (%)	Average Weekend Reduction (%)
Climate	Coastal Climate Zone	291,185	23,967	3.0%	-24.1%
	Inland Climate Zone	218,287	19,467	5.1%	-30.8%
	Unknown	8,412	14		
Disadvantaged Community	DAC	22,583	1,547	8.6%	-7.8%
	Non-DAC	486,889	41,887	3.9%	-28.0%
	Unknown	8,412	14		
ELRP Default Group	CARE/FERA	183,077	21,325	4.4%	-18.2%
	IOU Default	321,921	18,093	3.9%	-31.6%
	Opt-in	4,474	4,016	8.0%	-22.0%
	Unknown	8,412	14		
DER Status	CPP (No DER)	3,232	272	8.1%	-7.1%
	General Population (No DER or CPP)	492,725	31,135	4.5%	-26.4%
	Solar + Storage	4	1,017		
	Solar Only	13,511	11,010	-7.8%	-61.7%
	Unknown	8,412	14		
CARE/FERA	CARE/FERA	183,704	21,901	4.4%	-18.2%
	Non CARE/FERA	325,768	21,533	3.9%	-31.5%
	Unknown	8,412	14		

4.4 CROSS IOU RESULTS

RESULTS UNDER IOU BASELINES

Figure 11 displays the observed consumption and the counterfactual under each set of IOU baselines for the average event day. This allows us to see how the baselines that are already being employed perform across the three IOUs.

The PG&E and the SCE baselines are identical, which means they produce the same counterfactual. This can be seen in the first two columns of Figure 11. Under the PG&E and SCE baseline, savings are visible across all three IOUs. The hours leading up to the event also track closely.

In contrast, the SDG&E baseline tends to understate loads, since the baseline is unadjusted. None of the three IOUs produce savings under this baseline methodology. Without a day-of adjustment, the baseline is just a simple average of the top X days in the previous Y days, which tend to be cooler and less extreme.

Figure 11: Results under IOU Baselines
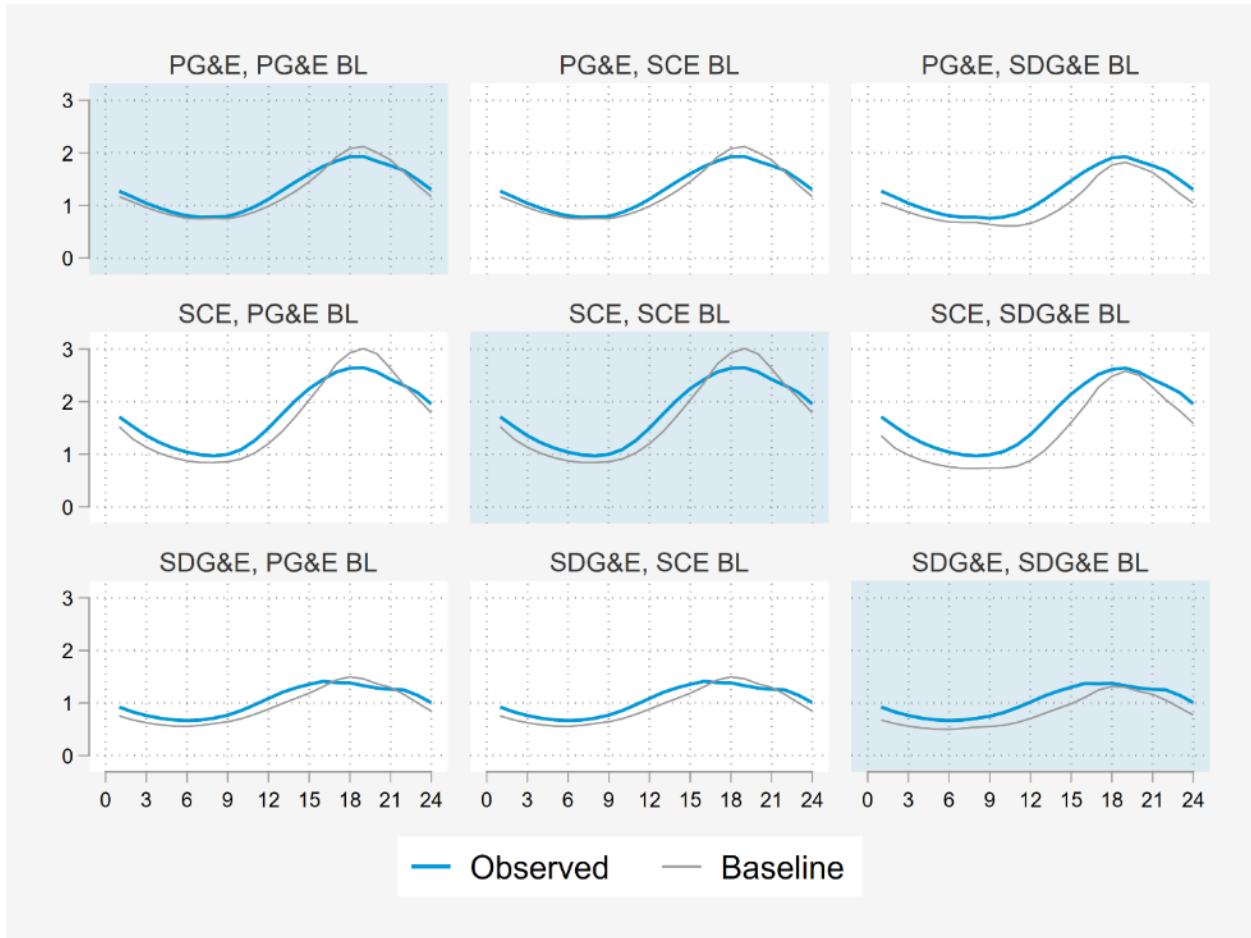
RESULTS FOR INDIVIDUAL FIRST AND AGGREGATE FIRST BASELINES

All of the results presented above are on the individual-first basis, where baselines are calculated for individual customers and then aggregated to the population. There is another basis, known as aggregate-first, which first aggregates the loads across the population and then calculates the baseline. Figure 12 displays the observed, individual first baseline, and aggregate first baseline for the average weekday event.

Figure 12: Individual First and Aggregate First Weekday Baseline
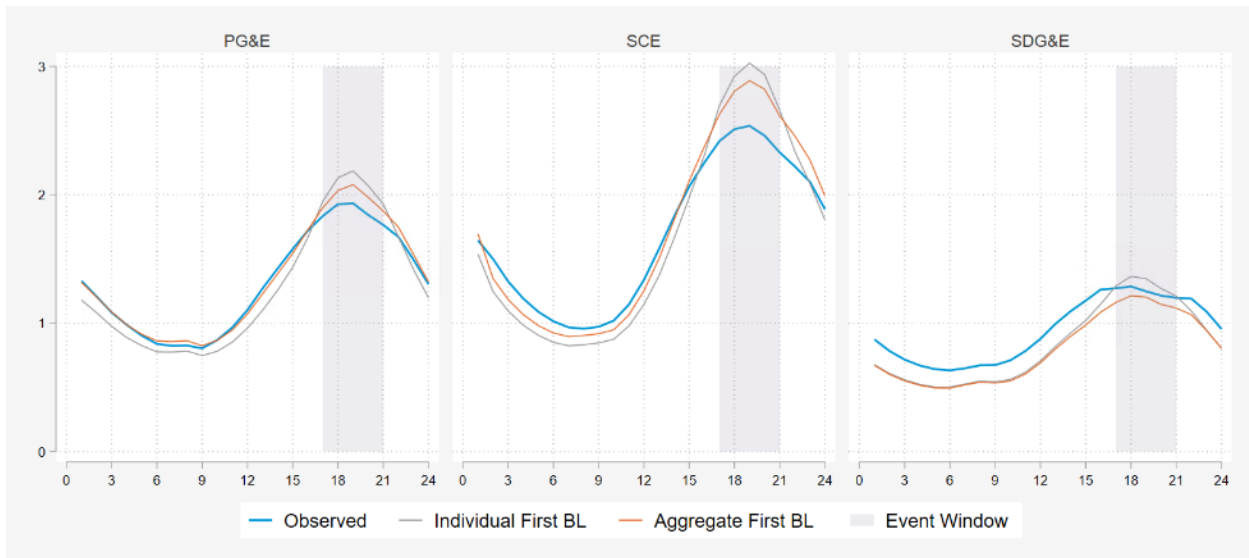
Individual first baselines tend to produce more bias and variation due to two primary reasons:

1. Same day adjustments produced at the individual level tend to be more volatile.
2. The absolute highest days are selected for each individual customer.

The variation that is minimized under the aggregate first method helps to produce a more reasonable counterfactual to the observed consumption, although all baselines are inherently limited because they rely on heuristics. Regardless of the order of operations of the baseline construction, results without a same-day adjustment show downward bias.

5 BASELINE ACCURACY RESULTS

The approach for assessing baseline accuracy involves a test of each method using non-event days. Because customers receive instructions to curtail their load on event days, their true counterfactual – what they would have done in the absence of these instructions – cannot be known. To assess baseline accuracy, an analysis must be conducted on event-like non-event days. Because participants did not receive curtailment instructions on these days, their true counterfactual is known and any difference between it and the baseline value is due to modeling error.

In an attempt to isolate the "best" baselines for the Residential ELRP population, four main baseline parameters were tested using summer 2020 data; baseline framework, adjustment cap, baseline type, and lookback days. The bias and precision of each specification was analyzed after running all baseline combinations, with the best baselines being both unbiased and precise. The mean percentage error (MPE) quantifies baseline bias. MPE captures the percentage that the measurement, on average, tends to over or underestimate the true value. A negative MPE indicates a tendency to under-predict and a positive value indicates a tendency to over-predict. On the other hand, the coefficient of the variation of the root mean square error (CVRMSE) quantifies precision. This is a normalized measure of how far the estimated values are from the true values. The lower the CVRMSE, the estimated values are more precise and therefore are closer to the actual values on average.

While the subsequent sections will look at the baseline accuracy for individual IOUs, results were combined across IOUs to produce a more holistic picture of statewide baseline accuracy. Figure 13 displays the baseline specifications weighted equally across the three IOUs. The "best" baselines will sit at the vertex of the graphs in Figure 13, where CVRMSE is low and bias is close to zero.

Figure 13: Drivers of Baseline Performance
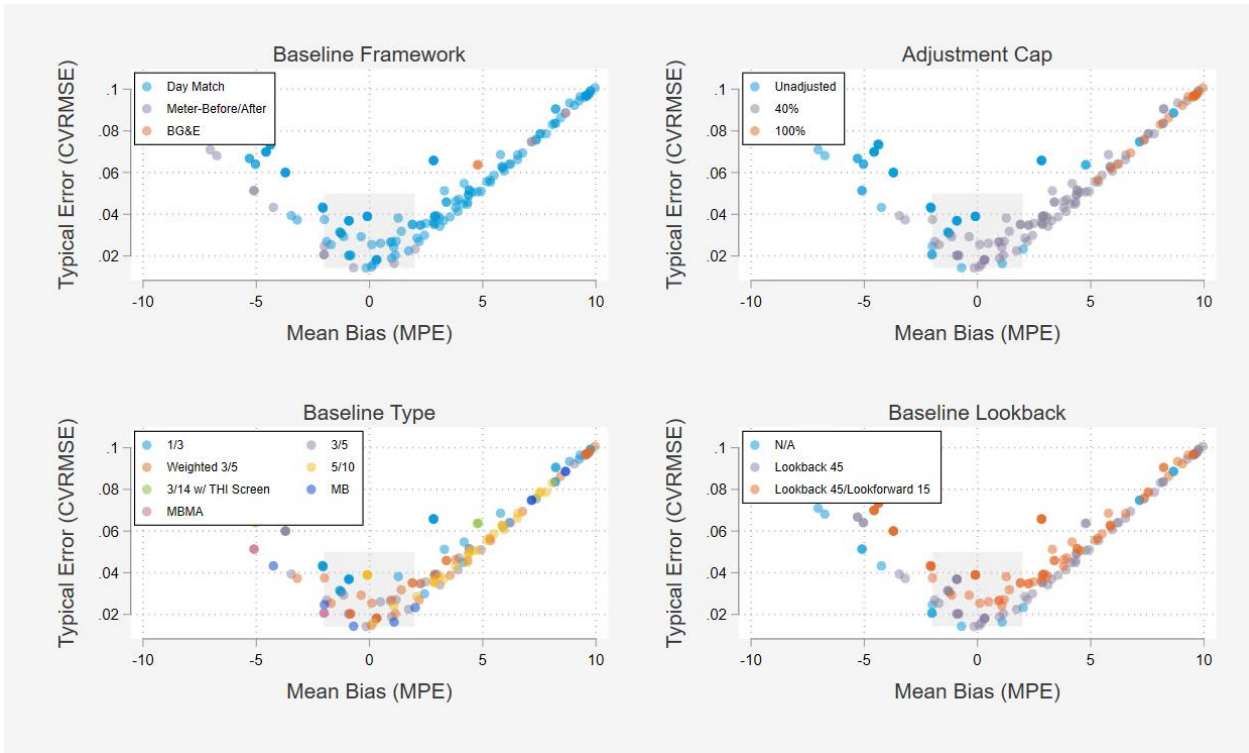
The unique combinations of baseline specifications were then ranked by:

1. Keeping the top 5 baselines with the smallest absolute MPE.
2. Generating the rank based on the smallest CVRMSE.

Table 25: Combined IOU Baseline Rank

Rank	Baseline Type	Adjustment	Average Absolute MPE[25]	CVRMSE
1	Top 3/5 with a Lookback 45	40% Asymmetric Adjustment	1.66	0.03
2	Top Weighted 3/5 with a Lookback 45	40% Asymmetric Adjustment	1.75	0.03
3	Top 3/5 with a Lookback 45	40% Symmetric Adjustment	2.07	0.03
4	Top Weighted 3/5 with a Lookback 45/Lookforward 15	40% Asymmetric Adjustment	1.62	0.03
5	Top 3/5 with a Lookback 45/Lookforward 15	40% Asymmetric Adjustment	2.26	0.03

The baselines that are ranked in Table 25 will be highlighted in green in the IOU-specific sections, if they also appear the IOU's top five baselines. For reference, the performance of the current baselines in

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[25] These values are computed on an absolute basis to find the baselines that minimize overall bias. The values in this table are a simple average across the three IOUs.

use are shown in Table 26. Unsurprisingly, the unadjusted baselines significantly underperform, where bias is negative for all IOUs. This indicates that the baseline understates true loads.

Table 26: Performance of Current IOU Baselines

Baseline	MPE			CVRMSE		
	PG&E	SCE	SDG&E	PG&E	SCE	SDG&E
SDG&E Weekday	-8.64	-14.13	-11.38	0.09	0.15	0.12
SDG&E Weekend	-1.28	-7.42	-0.91	0.03	0.08	0.04
PG&E/SCE Weekday	5.43	1.72	2.86	0.06	0.03	0.04
PG&E/SCE Weekend	3.26	-1.56	-0.83	0.04	0.03	0.02

5.1   PG&E

The day selection, lookback window, adjustment type, and adjustment cap were tested across 2020 pseudo-event days. The main metrics for baseline accuracy were produced at the program level (Table 27).

Table 27: PG&E Ranked Baselines

Rank	Baseline Type	Adjustment	MPE	CVRMSE
1	Top 1/3 with a Lookback 45	Unadjusted	-1.25	0.03
2	Top Weighted 3/5 with a Lookback 45/Lookforward 15	40% Asymmetric Adjustment	2.86	0.04
3	Top 3/5 with a Lookback 45/Lookforward 15	40% Asymmetric Adjustment	2.98	0.04
4	Top 1/3 with a Lookback 45/Lookforward 15	Unadjusted	-2.05	0.04
5	Top Weighted 3/5 with a Lookback 45/Lookforward 15	40% Symmetric Adjustment	3.81	0.05

The PG&E accuracy assessment appears to have a couple commonalities across the top five baselines, including a 3/5 day selection and a 40% adjustment cap. The remainder of this section will take a closer look at the performance of these top five baselines.

BASELINE ACCURACY

The mean percent error (MPE) gives the tendency of a baseline to over or underestimate the true value. The point estimate should be close to zero since the program did not exist in 2020. Additionally, the ideal distribution of MPE for individual customers would be tight so that the baseline would be accurate for more customers and lead to a better quantification of program reductions. Figure 14 displays the distribution of errors for an individual customer across the ten pseudo-event days. While the horizontal line shows the median error, the orange dot reports the mean error.

The distributions and average error are similar for the three baselines with a 40% asymmetric adjustment and for the two unadjusted baselines. Those baselines with a 40% asymmetric adjustment and a top 3/5 day selection have a tighter distribution.

Figure 14: PG&E Baseline Accuracy
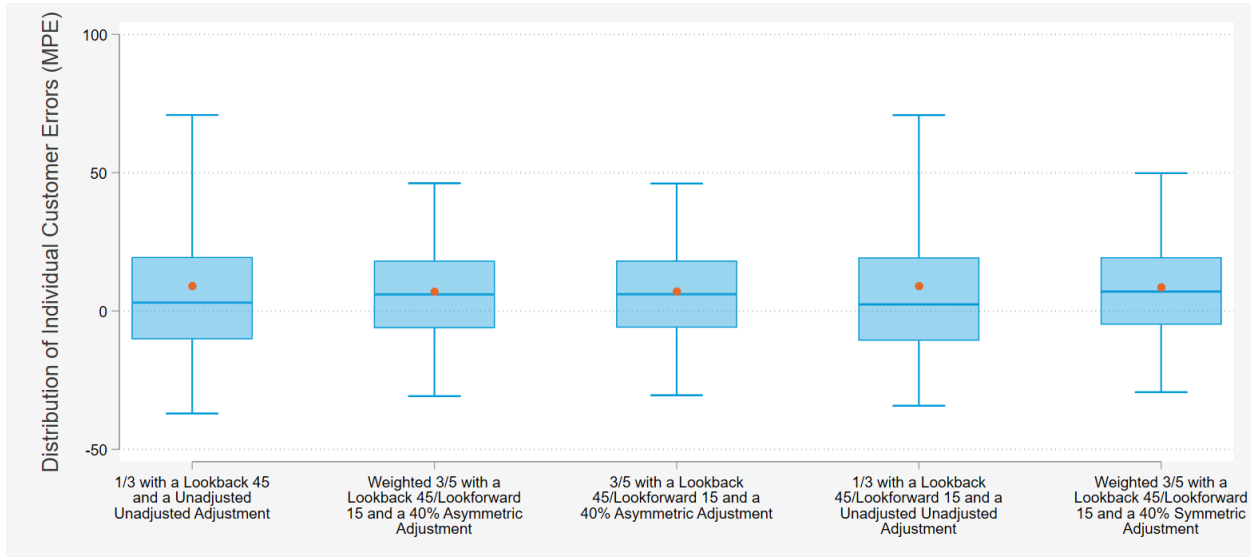
BASELINE PRECISION

The CVRMSE is a normalized measure of how far the estimated baseline values are from the true counterfactual. For a perfectly precise baseline, this metric would be zero. Figure 15 reports both the precision for the program overall, as well as the average precision for an individual customer. The overall and average individual precision are similar across the top five baseline, with the baseline for an individual customer being less precise than the baseline across the program. The three baselines with a 40% asymmetric adjustment and a top 3/5 day selection are more precise for individual customers.

Figure 15: PG&E Baseline Precision
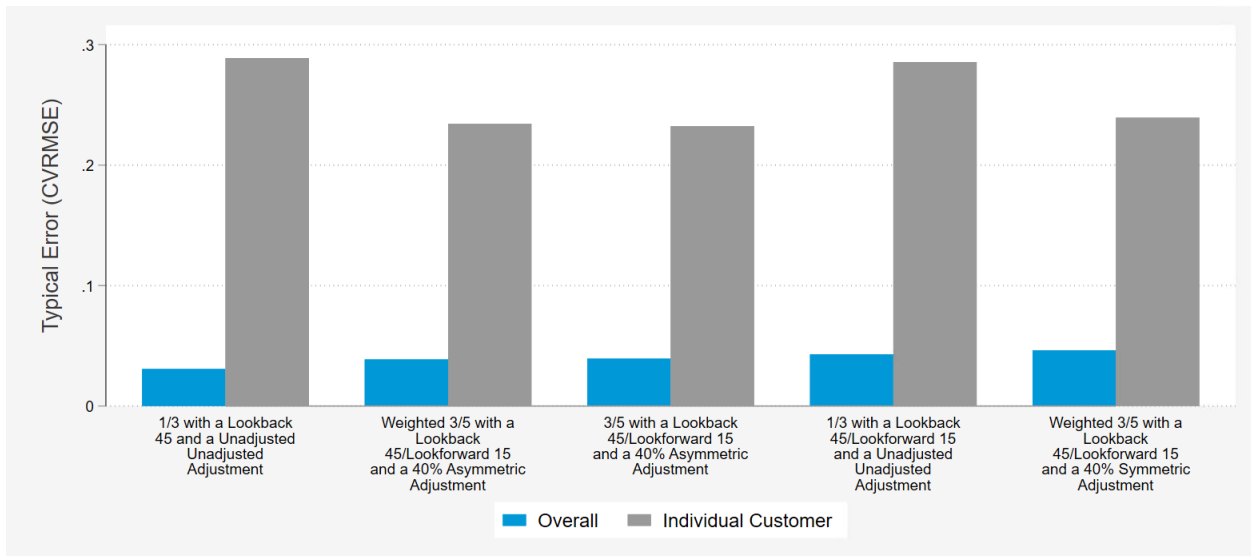
PAYMENT ERROR

It is important to note that even if the baseline is unbiased on average, some noise will be eligible for settlement, due to the asymmetry in settlement aggregation. In Figure 16 there is no actual event modeled – all results here are baseline error and yet there is still settlement that would occur.

Figure 16: PG&E Payment Error

SEGMENT SPECIFIC RESULTS

It is also important to gauge how segments of interest perform in the baseline accuracy assessment. Table 28 presents the metrics of bias and precision for climate and default group segments. The coastal climate zone appears to be more biased across the top five baselines, especially those baselines constructed from the top 1-of-3 days.

Table 28: PG&E Segmented Accuracy Results

Category	Subcategory	Population	Metric	1/3 with a Lookback 45 and an Unadjusted Adjustment	Weighted 3/5 with a Lookback 45/Lookforward 15 and a 40% Asymmetric Adjustment	3/5 with a Lookback 45/Lookforward 15 and a 40% Asymmetric Adjustment	1/3 with a Lookback 45/Lookforward 15 and an Unadjusted Adjustment	Weighted 3/5 with a Lookback 45/Lookforward 15 and a 40% Symmetric Adjustment
Climate	Coastal Climate Zone	332,948	MPE	9.57	4.66	4.55	11.07	6.45
			CVRMSE	0.10	0.05	0.05	0.11	0.06
	Inland Climate Zone	925,049	MPE	-2.83	2.56	2.72	-4.01	3.38
			CVRMSE	0.03	0.03	0.03	0.04	0.03
Default Group	CARE/FERA	847,627	MPE	0.51	4.23	4.34	-0.52	5.18
			CVRMSE	0.01	0.04	0.04	0.01	0.05
	IOU Default	403,877	MPE	-5.04	0.03	0.19	-5.57	0.93
			CVRMSE	0.05	0.00	0.00	0.06	0.01
	Opt-In	6,494	MPE	-0.21	1.57	1.71	-0.78	2.81
			CVRMSE	0.00	0.02	0.02	0.01	0.03

INDIVIDUAL CUSTOMER BIAS AND PRECISION

Table 29 presents the metrics of bias (accuracy) for the average individual customers on the top 5 baseline methods for PG&E. The 5th, 25th, median, average, 75th and 95th percentile of individual customer results are shown. Table 30 presents the CVRMSE, precision, statistics for individual customers on the top 5 baseline methods of PG&E. For the individual customer, the 3/5 day matching baselines with a 40% asymmetric adjustment perform best with the lowest MPE and CVRMSE. Even if a baseline is unbiased on average, the individual bias (%) result indicate that the baselines tend to systematically underestimate for some sites and overestimate for other locations.

Table 29: PG&E Individual Customer MPE Results

Baseline	P5	P25	P50	Average	P75	P95
1/3 with a Lookback 45 and Unadjusted	-37.0	-10.2	3.1	9.1	19.5	70.9
1/3 with a Lookback 45/Lookforward 15 and Unadjusted	-34.2	-10.7	2.4	9.1	19.4	70.8
Weighted 3/5 with a Lookback 45/Lookforward 15 and a 40% Symmetric Adjustment	-29.3	-4.9	7.0	8.7	19.4	49.8
3/5 with a Lookback 45/Lookforward 15 and a 40% Asymmetric Adjustment	-30.4	-6.0	6.1	7.2	18.3	46.1
Weighted 3/5 with a Lookback 45/Lookforward 15 and a 40% Asymmetric Adjustment	-30.8	-6.2	6.0	7.1	18.2	46.2

Figure 17: PG&E Individual Customer Errors Across All 2020 Pseudo-Events for Best Baseline
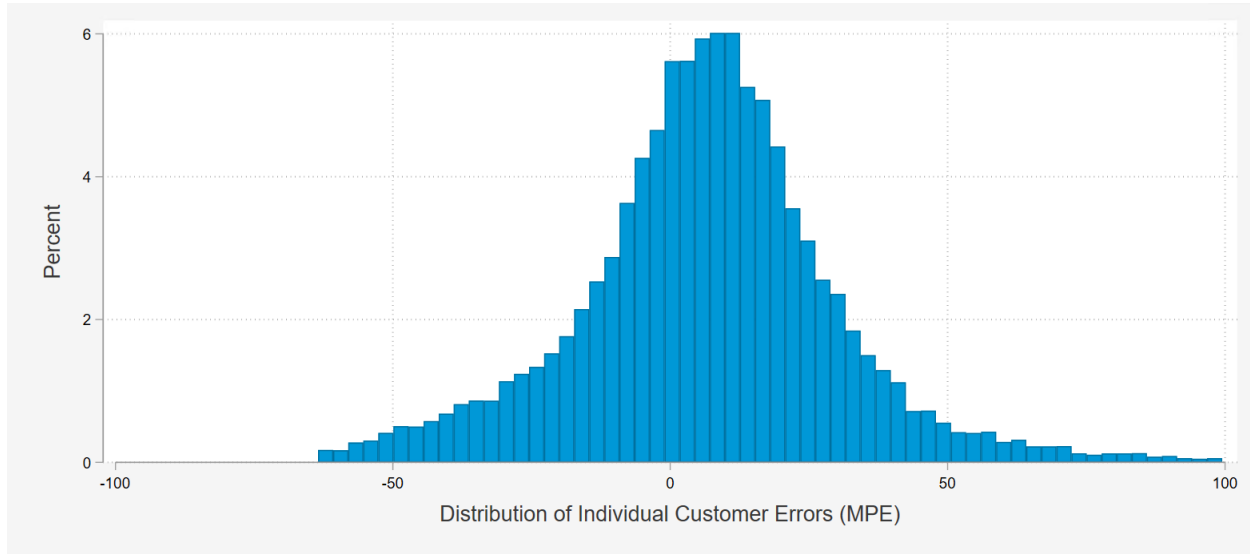
Table 30: PG&E Individual Customer CVRMSE Results

Baseline	P5	P25	P50	Average	P75	P95
1/3 with a Lookback 45 and Unadjusted	0.05	0.11	0.19	0.29	0.34	0.80
1/3 with a Lookback 45/Lookforward 15 and Unadjusted	0.05	0.11	0.19	0.29	0.34	0.78
Weighted 3/5 with a Lookback 45/Lookforward 15 and a 40% Symmetric Adjustment	0.06	0.11	0.18	0.24	0.30	0.59
3/5 with a Lookback 45/Lookforward 15 and a 40% Asymmetric Adjustment	0.06	0.11	0.18	0.23	0.29	0.56

Weighted 3/5 with a Lookback 45/Lookforward 15 and a 40% Asymmetric Adjustment	0.06	0.11	0.18	0.23	0.29	0.56

5.2   SCE

The day selection, lookback window, adjustment type, and adjustment cap were tested across 2020 pseudo-event days. The main metrics for baseline accuracy were produced at the program level (Table 31).

Table 31: SCE Ranked Baselines

Rank	Baseline Type	Adjustment	MPE	CVRMSE
1	Top 3/5 with a Lookback 45	40% Asymmetric Adjustment	-0.15	0.01
2	MB - 2 Hour	Unadjusted	-0.71	0.01
3	Top Weighted 3/5 with a Lookback 45	40% Asymmetric Adjustment	0.08	0.01
4	Top 3/5 with a Lookback 45	40% Symmetric Adjustment	0.97	0.02
5	Top Weighted 3/5 with a Lookback 45/Lookforward 15	40% Asymmetric Adjustment	0.10	0.03

The SCE accuracy assessment appears to have a couple commonalities across the top five baselines, including a 3/5 day selection and a 40% adjustment cap. The remaining portion of this section will take a closer look at the performance of these top five baselines.

BASELINE ACCURACY

The mean percent error (MPE) captures the tendency of a baseline to over or underestimate the true value. The point estimate should be close to zero since the program did not exist in 2020. Additionally, the ideal distribution of MPE for individual customers would be tight so that the baseline would be accurate for more customers and lead to a better quantification of program reductions. Figure 18 displays the distribution of errors for an individual customer across the ten pseudo-event days. While the horizontal line shows the median error, the orange dot reports the mean error.

The distributions and average error are similar across the top five baselines. The three baselines with a Lookback 45/Look forward 15 have a tighter distribution, while the two baselines with just a Lookback 45 have some of the lowest mean percent errors on average. While the Meter-Before method is unbiased on average, it has a wider distribution of individual customer errors.

Figure 18: SCE Baseline Accuracy
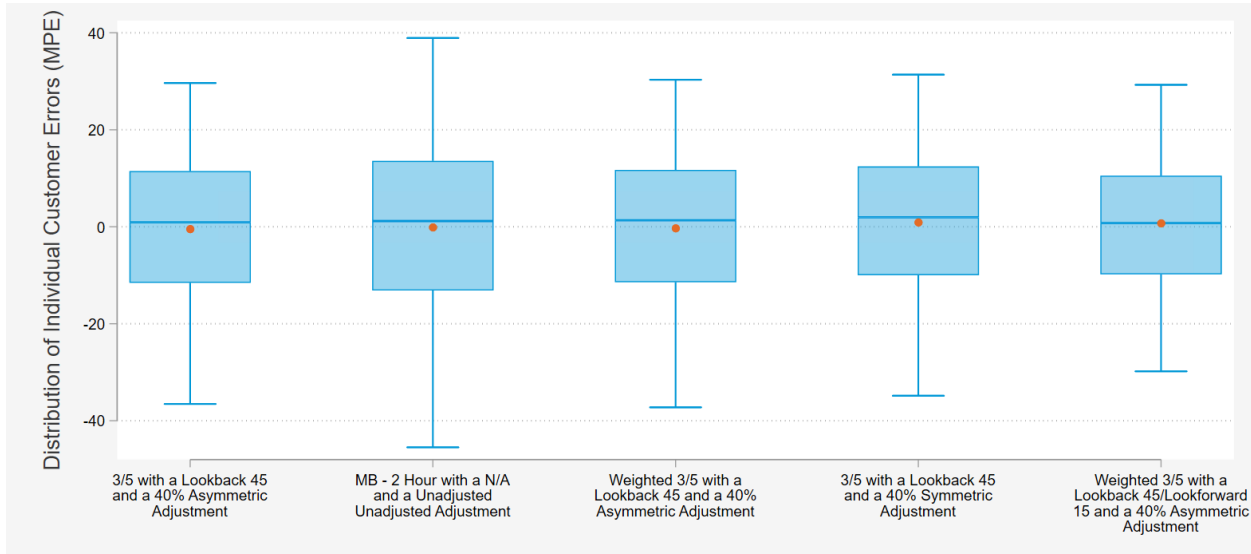
BASELINE PRECISION

The CVRMSE is a normalized measure of how far the estimated baseline values are from the true counterfactual. For a perfectly precise baseline, this metric would be zero. Figure 19 reports both the precision for the program overall, as well as the average precision for an individual customer. The overall and average individual precision are similar across the top five baselines given the similar nature of these baselines. Additionally, as we would expect, the baseline for an individual customer is less precise than the baseline across the program.

Figure 19: SCE Baseline Precision
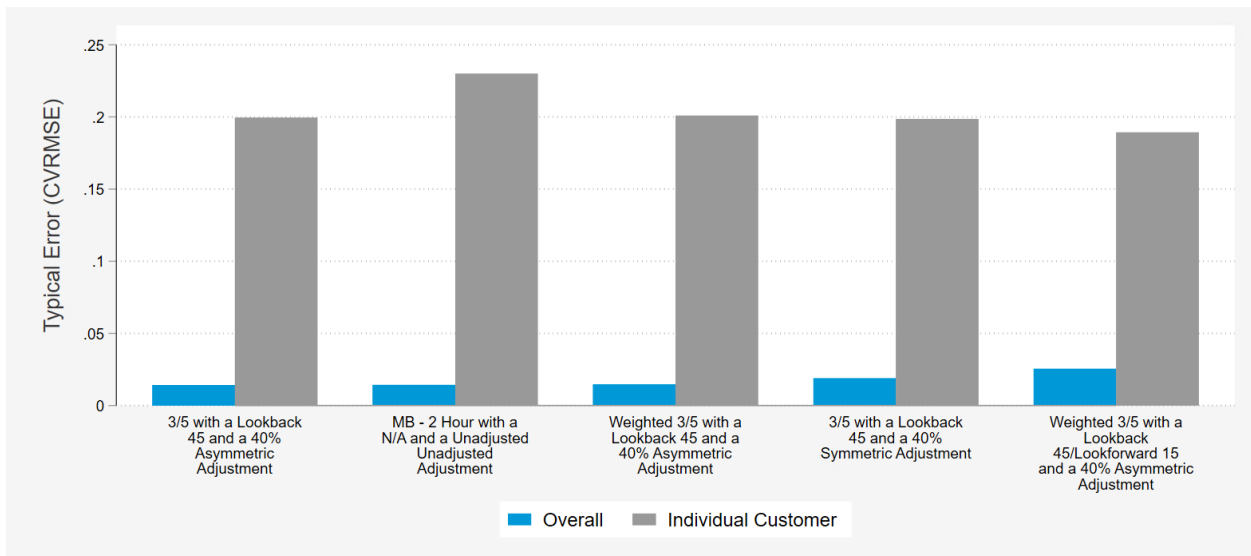
PAYMENT ERROR

It is important to note that even if the baseline is unbiased on average, some noise will be eligible for settlement, due to the asymmetry in settlement aggregation. In Figure 20 there is no actual event modeled – all results here are baseline error and yet there is still settlement that would occur.

Figure 20: SCE Payment Error
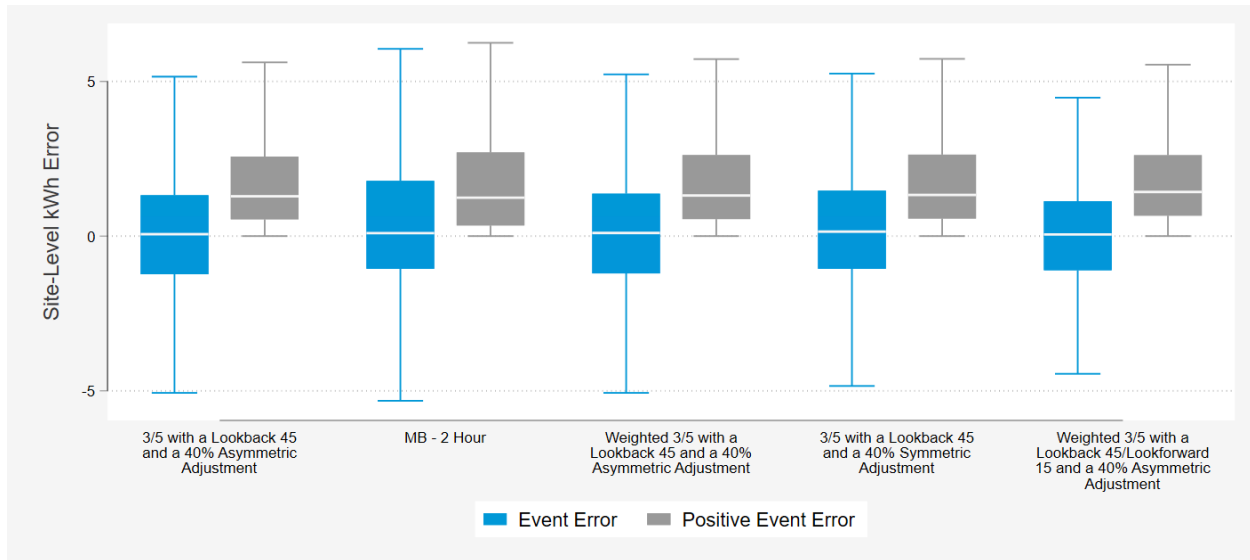
SEGMENT SPECIFIC RESULTS

It is also important to gauge how segments of interest perform in the baseline accuracy assessment. Table 32 presents the metrics of bias and precision for climate and default group segments. The coastal climate zone appears to be more biased across the top five baselines.

Table 32: SCE Segment Specific Accuracy Results

Category	Subcategory	Population	Metric	3/5 with a Lookback 45 and a 40% Asymmetric Adjustment	MB - 2 Hour with a N/A and a Unadjusted Adjustment	Weighted 3/5 with a Lookback 45 and a 40% Asymmetric Adjustment	3/5 with a Lookback 45 and a 40% Symmetric Adjustment	Weighted 3/5 with a Lookback 45/Lookforward 15 and a 40% Asymmetric Adjustment
Climate	Coastal Climate Zone	573,540	MPE	-5.57	0.04	-5.36	-4.33	-3.20
			CVRMSE	0.06	0.00	0.05	0.04	0.03
	Inland Climate Zone	1,019,915	MPE	1.81	-0.88	2.04	2.86	1.27
			CVRMSE	0.02	0.01	0.02	0.03	0.01
Default Group	CARE/FERA	797,805	MPE	0.35	1.76	0.56	1.49	0.71
			CVRMSE	0.00	0.02	0.01	0.01	0.01
	IOU Default	794,843	MPE	-0.40	-2.03	-0.17	0.67	-0.27
			CVRMSE	0.00	0.02	0.00	0.01	0.00
	Opt-In	807	MPE	-2.03	-5.38	-1.93	-0.16	0.54
			CVRMSE	0.02	0.05	0.02	0.00	0.01

INDIVIDUAL CUSTOMER BIAS AND PRECISION

Table 33 presents the metrics of bias (accuracy) for the average individual customers on the top 5 baseline methods for SCE. The 5th, 25th, median, average, 75th and 95th percentile of individual customer results are shown. Table 34 presents the CVRMSE, precision, statistics for individual customers on the top 5 baseline methods of SCE. For the individual customer on average, the 3/5 day matching baselines with a 40% adjustment perform best with the lowest MPE and CVRMSE. Even if a baseline is unbiased on average, the individual bias (%) result indicate that the baselines tend to systematically underestimate for some sites and overestimate for other locations.

Table 33: SCE Individual Customer MPE Results

Baseline	P5	P25	P50	Average	P75	P95
3/5 with a Lookback 45 and a 40% Symmetric Adjustment	-34.8	-10	1.9	0.9	12.4	31.4
3/5 with a Lookback 45 and a 40% Asymmetric Adjustment	-36.5	-11.6	0.9	-0.4	11.5	29.6
Weighted 3/5 with a Lookback 45 and a 40% Asymmetric Adjustment	-37.2	-11.4	1.3	-0.3	11.7	30.3
Weighted 3/5 with a Lookback 45/Lookforward 15 and a 40% Asymmetric Adjustment	-29.8	-9.8	0.8	0.8	10.5	29.3
MB - 2 Hour with a N/A and Unadjusted	-45.5	-13.1	1.2	-0.1	13.6	38.9

Figure 21: SCE Individual Customer Errors Across All 2020 Pseudo-Events for Best Baseline
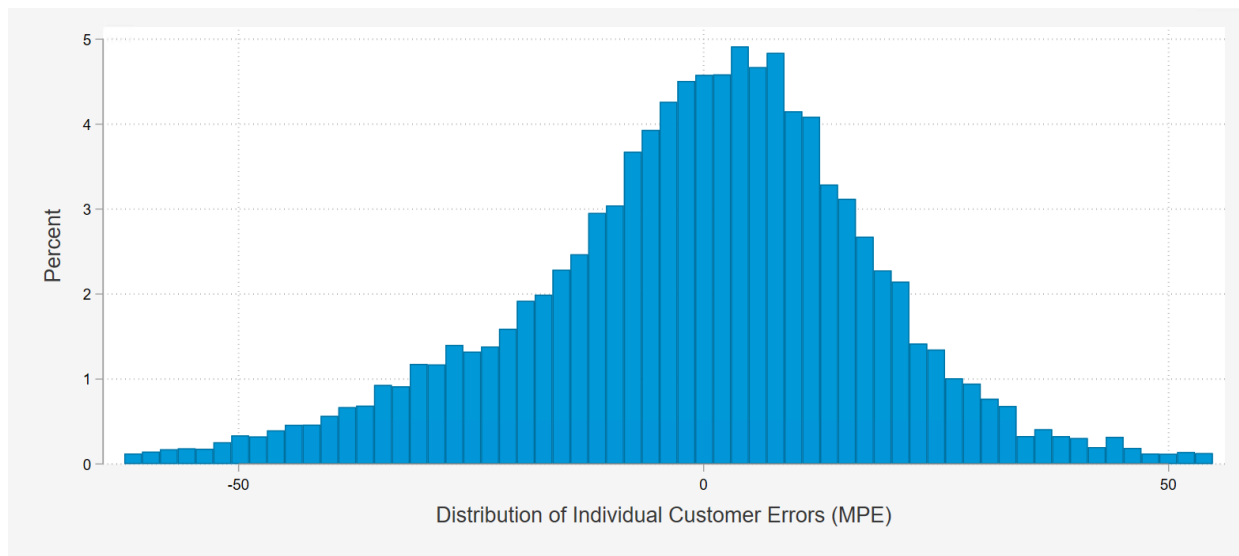
Table 34: SCE Individual Customer CVRMSE Results

Baseline	P5	P25	P50	Average	P75	P95
3/5 with a Lookback 45 and a 40% Symmetric Adjustment	0.05	0.1	0.16	0.2	0.25	0.48
3/5 with a Lookback 45 and a 40% Asymmetric Adjustment	0.05	0.1	0.16	0.2	0.25	0.48
Weighted 3/5 with a Lookback 45 and a 40% Asymmetric Adjustment	0.05	0.1	0.16	0.2	0.25	0.48

Weighted 3/5 with a Lookback 45/Lookforward 15 and a 40% Asymmetric Adjustment	0.05	0.1	0.15	0.19	0.24	0.43
MB - 2 Hour with a N/A and Unadjusted	0.04	0.1	0.18	0.23	0.3	0.59

5.3 SDG&E

The day selection, lookback window, adjustment type, and adjustment cap were tested across 2020 pseudo-event days. The main metrics for baseline accuracy were produced at the program level (Table 35).

Table 35: SDG&E Ranked Baselines

Rank	Baseline Type	Adjustment	MPE	CVRMSE
1	Top 3/5 with a Lookback 45	40% Symmetric Adjustment	0.29	0.02
2	Top Weighted 3/5 with a Lookback 45	40% Symmetric Adjustment	0.32	0.02
3	Top 3/5 with a Lookback 45	40% Asymmetric Adjustment	-0.92	0.02
4	Top Weighted 3/5 with a Lookback 45	40% Asymmetric Adjustment	-0.83	0.02
5	Top 1/3 with a Lookback 45	Unadjusted	-0.91	0.04

The SDG&E accuracy assessment appears to have a couple commonalities across the top five baselines, including a 3/5 day selection and a 40% adjustment cap. The remaining portion of this section will take a closer look at the performance of these top five baselines.

BASELINE ACCURACY

The mean percent error (MPE) gives the tendency of a baseline to over or underestimate the true value. The point estimate should be close to zero, since the program did not exist in 2020. Additionally, the ideal distribution of MPE for individual customers would be tight so that the baseline would be accurate for more customers and lead to a better quantification of program reductions. Figure 22 displays the distribution of errors for an individual customer across the ten pseudo-event days. While the horizontal line shows the median error, the orange dot reports the mean error.

The distributions and average error are similar across the top four adjusted baselines, with the one unadjusted baselines having a wider distribution and a higher mean percent error on average.

Figure 22: SDG&E Baseline Accuracy
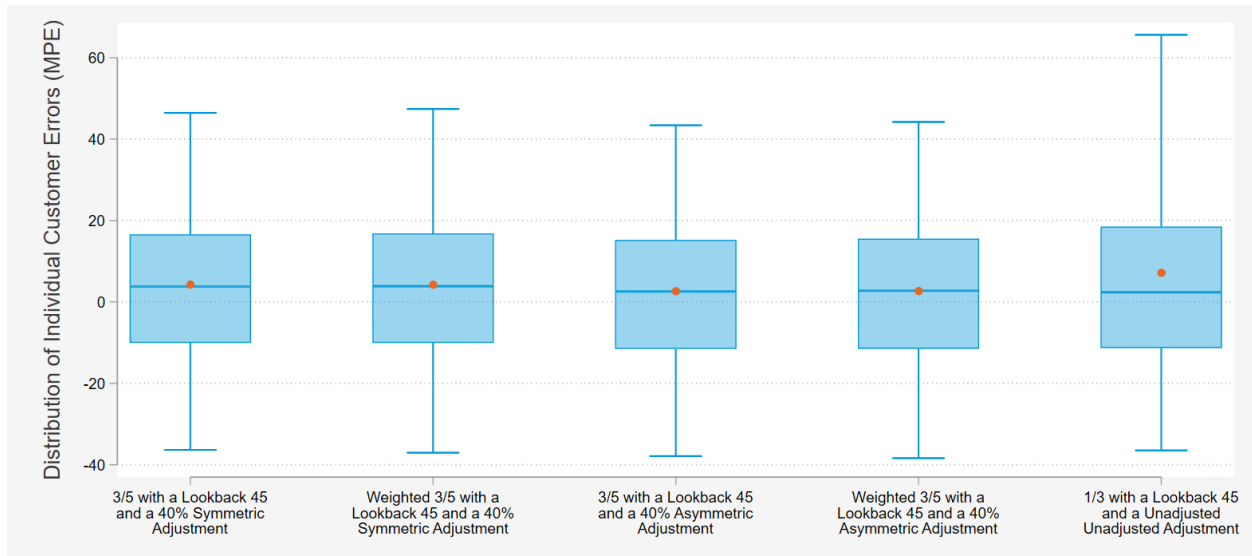
BASELINE PRECISION

The CVRMSE is a normalized measure of how far the estimated baseline values are from the true counterfactual. For a perfectly precise baseline, this metric would be zero. Figure 23 reports both the precision for the program overall, as well as the average precision for an individual customer. The overall and average individual precision are similar across the top five baseline, with the baseline for an individual customer being less precise than the baseline across the program.

Figure 23: SDG&E Baseline Precision
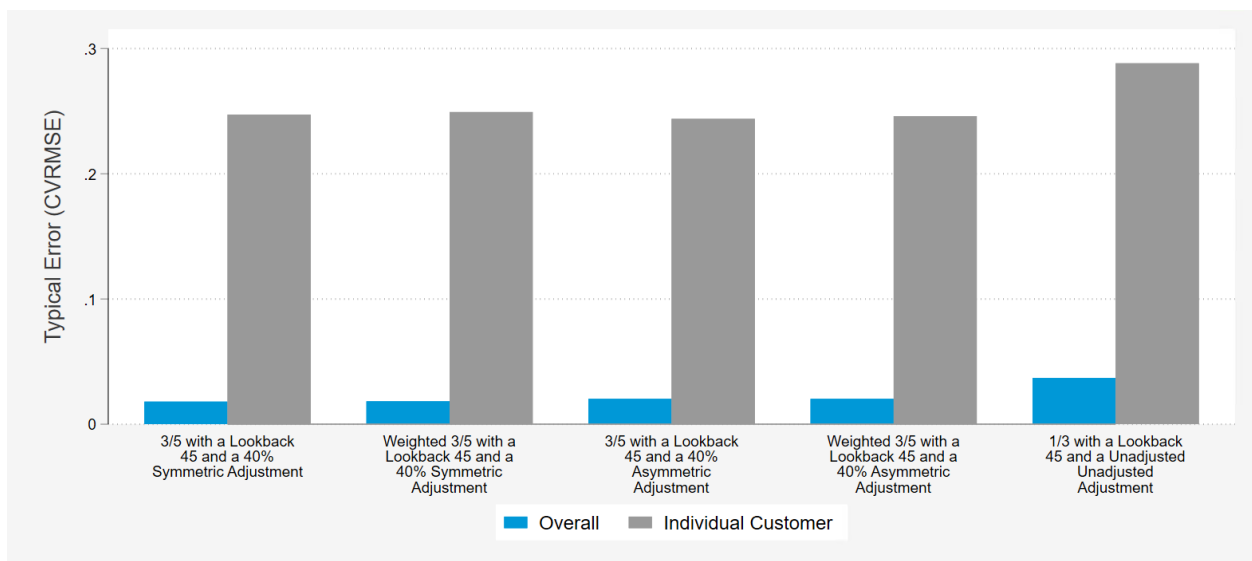
PAYMENT ERROR

It is important to note that even if the baseline is unbiased on average, some noise will be eligible for settlement, due to the asymmetry in settlement aggregation. In Figure 24 there is no actual event modeled – all results here are baseline error and yet there is still settlement that would occur.

Figure 24: SDG&E Payment Error
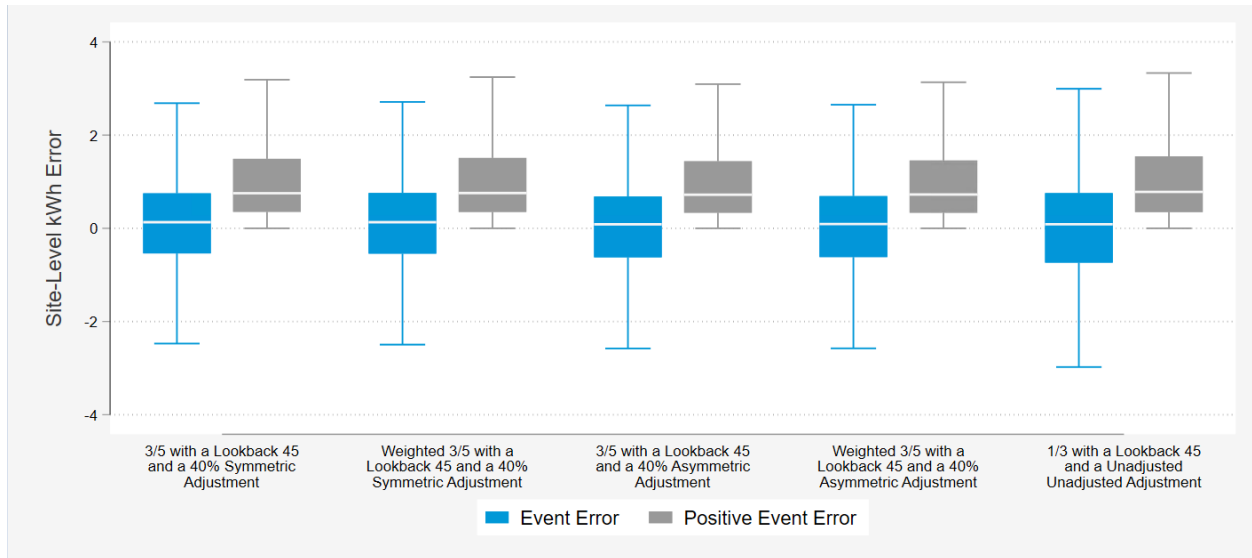
SEGMENT SPECIFIC RESULTS

It is also important to gauge how segments of interest perform in the baseline accuracy assessment. Table 36 presents the metrics of bias and precision for climate and default group segments. The customers on a CARE/FERA rate appear to be more biased across the top two baselines.

Table 36: SDG&E Segment Specific Accuracy Results

Category	Subcategory	Population	Metric	3/5 with a Lookback 45 and a 40% Symmetric Adjustment	Weighted 3/5 with a Lookback 45 and a 40% Symmetric Adjustment	3/5 with a Lookback 45 and a 40% Asymmetric Adjustment	Weighted 3/5 with a Lookback 45 and a 40% Asymmetric Adjustment	1/3 with a Lookback 45 and a Unadjusted Adjustment
Climate	Coastal Climate Zone	254,489	MPE	-0.56	-0.49	-1.89	-1.75	0.33
			CVRMSE	0.01	0.00	0.02	0.02	0.00
	Inland Climate Zone	190,786	MPE	1.02	1.03	-0.05	-0.01	-2.09
			CVRMSE	0.01	0.01	0.00	0.00	0.02
Default Group	CARE/FERA	156,707	MPE	3.47	3.56	2.24	2.37	2.79
			CVRMSE	0.03	0.04	0.02	0.02	0.03
	IOU Default	285,996	MPE	-0.98	-0.96	-2.16	-2.09	-2.28
			CVRMSE	0.01	0.01	0.02	0.02	0.02
	Opt-In	2,571	MPE	-1.36	-1.23	-2.70	-2.49	-0.76
			CVRMSE	0.01	0.01	0.03	0.02	0.01

INDIVIDUAL CUSTOMER BIAS AND PRECISION

Table 37 presents the metrics of bias (accuracy) for the average individual customers on the top 5 baseline methods for SDG&E. The 5th, 25th, median, average, 75th and 95th percentile of individual customer results are shown. Table 38 presents the CVRMSE, precision, statistics for individual customers on the top 5 baseline methods of SDG&E. For the individual customer on average, the 3/5 day matching baselines with a 40% asymmetric adjustment perform best with the lowest MPE and CVRMSE. Even if a baseline is unbiased on average, the individual bias (%) result indicate that the baselines tend to systematically underestimate for some sites and overestimate for other locations.

Table 37: SDG&E Individual Customer MPE Results

Baseline	P5	P25	P50	Average	P75	P95
1/3 with a Lookback 45 and Unadjusted	-36.5	-11.3	2.4	7.2	18.5	65.6
3/5 with a Lookback 45 and a 40% Symmetric Adjustment	-36.3	-10.1	3.8	4.3	16.6	46.5
Weighted 3/5 with a Lookback 45 and a 40% Symmetric Adjustment	-37.1	-10.1	3.9	4.3	16.8	47.4
3/5 with a Lookback 45 and a 40% Asymmetric Adjustment	-37.9	-11.5	2.6	2.7	15.3	43.4
Weighted 3/5 with a Lookback 45 and a 40% Asymmetric Adjustment	-38.4	-11.5	2.8	2.7	15.6	44.2

Figure 25: SDG&E Individual Customer Errors Across All 2020 Pseudo-Events for Best Baseline
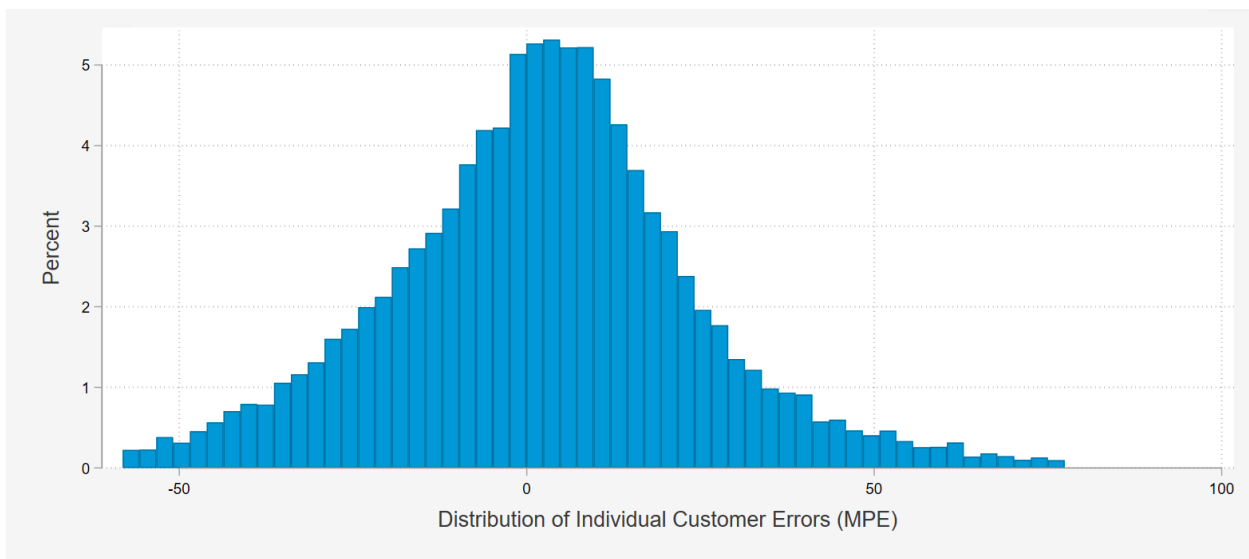
Table 38: SDG&E Individual Customer CVRMSE Results

Baseline	P5	P25	P50	Average	P75	P95
1/3 with a Lookback 45 and Unadjusted	0.05	0.12	0.21	0.29	0.35	0.77
3/5 with a Lookback 45 and a 40% Symmetric Adjustment	0.06	0.12	0.19	0.25	0.31	0.6
Weighted 3/5 with a Lookback 45 and a 40% Symmetric Adjustment	0.06	0.12	0.2	0.25	0.31	0.6

3/5 with a Lookback 45 and a 40% Asymmetric Adjustment	0.06	0.12	0.19	0.24	0.31	0.58
Weighted 3/5 with a Lookback 45 and a 40% Asymmetric Adjustment	0.06	0.12	0.19	0.25	0.31	0.59

6 DISCUSSION & CONCLUSIONS

Baseline methodologies are common ways to produce settlement-level estimates of load reduction. They are relatively simple to compute, can be constructed for individual participants, and are easy to understand. Nevertheless, these methods can never out-perform methods that rely on control groups or include more complex regression approaches, especially for volatile, weather-sensitive customers. For these reasons, it is important to interpret the results in this report as the Residential ELRP load reductions as constructed by the baseline rules, rather than as true load impacts that might come out of a demand response evaluation.

Upon summarizing the results, however, there are key insights that can inform future program design – for the ELRP program or other such programs. This section summarizes these findings and provides recommendations for the Residential ELRP program.

6.1 BASELINE ASSESSMENT

EVENT DAY CONDITIONS

Baseline methods rely on having proximate non-event days available to construct a counterfactual. Historically, baseline methods were used for settlement of large customer demand response, which relied on steady, weather-insensitive commercial loads to construct relatively accurate baselines. The addition of same-day adjustments would easily calibrate any small differences between the baseline and the observed pre-event loads. This approach is fundamentally challenged when the participants in question are sites with weather-sensitive loads. With weather-sensitive loads, such as residential customers, baseline days now must be similar in weather to the event day for a baseline to perform well. This requirement is often unfulfilled: the reason that an event is called on one day or another is most often because of extreme temperature. Figure 26 illustrates this challenge. The gray bars represent the participant-weighted daily maximum temperature on event days, while the blue bars are the same values for non-event days. It is clear that there is a fundamental difference in temperature conditions on event days. To accommodate this difference, a same-day adjustment must be used to calibrate the baseline to the higher event-day loads. While the August 17th event day may have an adequate amount of similar non-event days from which to construct a baseline, the September event days are far out of the historic trend, especially in Northern California.

Figure 26: Summer 2022 Weather Conditions by ELRP Event
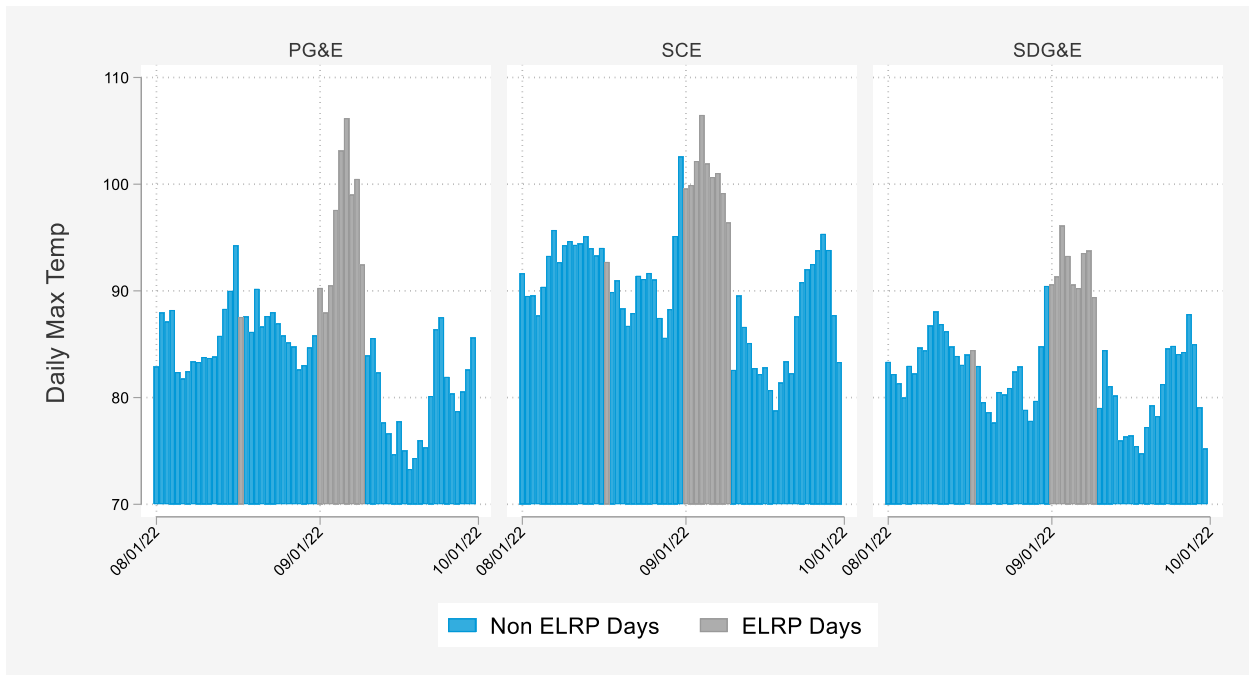
Examining this graph, it's also clear that the nine consecutive event days pose a substantial challenge to accurate estimates of participant baselines. By the time that the September 9th event occurs, the days from which the baseline can be selected are nearly two weeks prior to the event. Finally, the timing of the September events coincide with the Labor Day weekend, where residential households may experience atypical consumption patterns associated with travel, vacations, or hosting events.

EFFECTS OF COMPUTING INDIVIDUAL PARTICIPANT BASELINES

To produce per-participant estimates of load reduction for settlement, baselines must be computed on an individual basis. This is in contrast to how the baselines were designed for the CAISO Baseline Accuracy Study, which produced a recommendations for a menu of accurate baselines at the aggregate level. The distinction between the two - the order of operations - is subtle but critical. Event-day results vary dramatically between the two methods, with the results for the aggregated baselines nearly always producing a lower estimate of the load reductions provided by the program. Table 39 shows a summary by event day for the three IOUs. The method to compute the "individual first" and "aggregate first" results are outlined in Section 3.3.

Event	PG&E		SCE		SDG&E	
	Individual First Reduction	Aggregate First Reduction	Individual First Reduction	Aggregate First Reduction	Individual First Reduction	Aggregate First Reduction
08/17/2022	0.24	0.08	0.27	0.03	0.22	-0.04
09/01/2022	0.12	-0.07	0.26	0.18	-0.02	-0.20
09/02/2022	0.27	0.10	0.34	0.31	-0.02	-0.20
09/03/2022	0.18	0.06	0.04	0.09	-0.36	-0.71
09/04/2022	0.08	0.02	0.09	0.09	-0.27	-0.63
09/05/2022	-0.09	-0.06	-0.13	0.42	-0.32	-0.20
09/06/2022	0.07	0.10	0.29	0.33	-0.06	-0.24
09/07/2022	0.16	0.23	0.30	0.34	-0.18	-0.36
09/08/2022	0.06	0.15	0.30	0.21	0.02	-0.16
09/09/2022	0.27	0.20	0.83	0.71	0.41	0.23
Total	**0.13**	**0.08**	**0.26**	**0.27**	**-0.06**	**-0.25**

COMPARISON OF BASELINE RESULTS

Figure 27 presents the average per-participants reductions under each IOU's baseline methodology. This gives an insight into how results would have differed if all three IOUs used the same baseline methodology. In short:

1. PG&E and SCE baselines are the same for weekdays and weekends, so they produce the same results.

2. SDG&E baselines understate loads, which is a product of the unadjusted baseline. Unadjusted baselines perform poorly on extreme weather days, since they cannot account for the magnitude of usage on the event day.

3. Individual-first baselines tend to overstate loads, due to the same day adjustments and the ability for baseline days to vary from customer-to-customer. This can lead to savings being over-estimated.

Figure 27: Results under Same Baselines
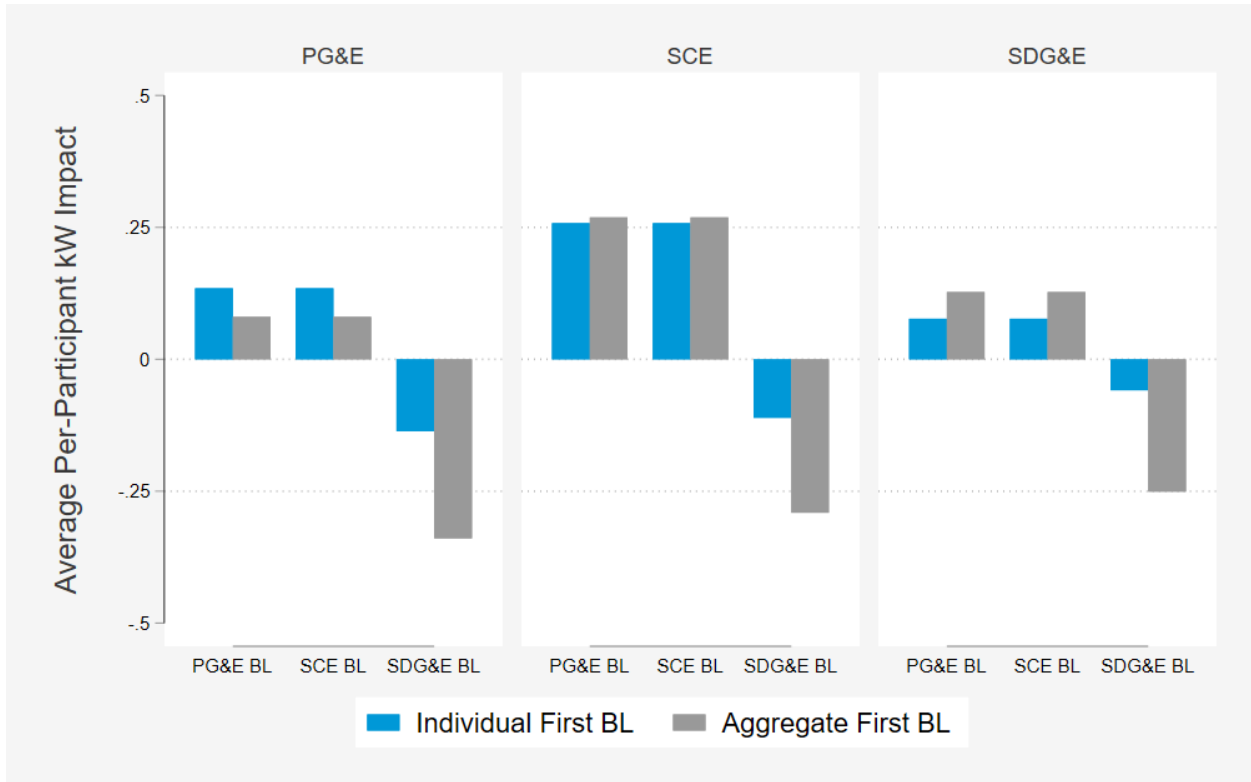
SEGMENTS WITH HIGH RESPONSE RATES

Segmentation of results provides information about the types of customers who are better able to respond to ELRP events. In general, similar segments performed well across the state, including opt-in participants, participants dually-enrolled in residential CPP, or those who were notified via SMS of an upcoming event. Details are shown in Table 40, using the IOU-specific individual-first baseline methods. While the table only shows the individual-first baseline results, the trends hold for aggregate-first baselines, indicating that these differences are reflective of the segment performance rather a quirk of individual participant baselines on the event days.

Table 40: ELRP Event Performance by IOU and Segment

Category	Subcategory	PG&E Population	PG&E % Reduction	SCE Population	SCE % Reduction	SDG&E Population	SDG&E % Reduction
All	All A6 Segments	1,487,832	6.7	1,886,786	9.2	517,884	-4.7
Climate Zone	Coastal Climate Zone	379,360	5.9	665,214	4.2	291,185	-4.6
	Inland Climate Zone	1,108,473	6.8	1,221,572	10.8	218,287	-4.7
Disadvantaged Communities	DAC	406,377	10.3	579,021	9.1	22,583	3.8
	Non-DAC	1,081,456	5.0	1,307,765	9.2	486,889	-4.9
Default Group	CARE/FERA	1,069,042	8.3	1,056,777	9.6	183,077	-2.0
	IOU Default	407,014	2.0	828,056	8.8	321,921	-5.9
	Opt-in	11,777	13.2	1,953	8.2	4,474	-0.5
DER Status	General Population	1,307,823	6.9	1,668,778	9.8	492,725	-4.1
	CPP (No DER)	22,119	12.8			3,232	3.7
	EV Rate (No DER)						
	Solar Only	150,963	5.5	208,647	5.8	13,511	-21.7
	Solar + Storage	6,799	-8.8	9,350	-6.6		
Notification Status	None	571,398	5.5	891,151	8.9	509,472	-4.7
	Attempted: Email	484,758	7.8	513,827	9.7		
	Notified: Email	413,131	6.4	481,154	9.0		
	Notified: SMS	913	10.9	42	23.8		
	Notified: Multiple	17,633	12.2	2,138	4.4		

Segmentation can also provide useful information about the drivers of reductions. For example, participants in the CPP segment did not solely experience the ELRP events. On several of the event days, this customer segment was also exposed to high prices associated with a Critical Peak Pricing Event. Looking at the event-by-event reductions for this segment, the difference between the CPP and non-CPP[26] segments show that the CPP customers tend to respond at a higher rate to ELRP than the non-CPP customers (Figure 28). However, roughly half of the ELRP days are also CPP days. Differences between the CPP and non-CPP segments on those days cannot be disambiguated.

Figure 28: CPP Participant Performance on CPP Days
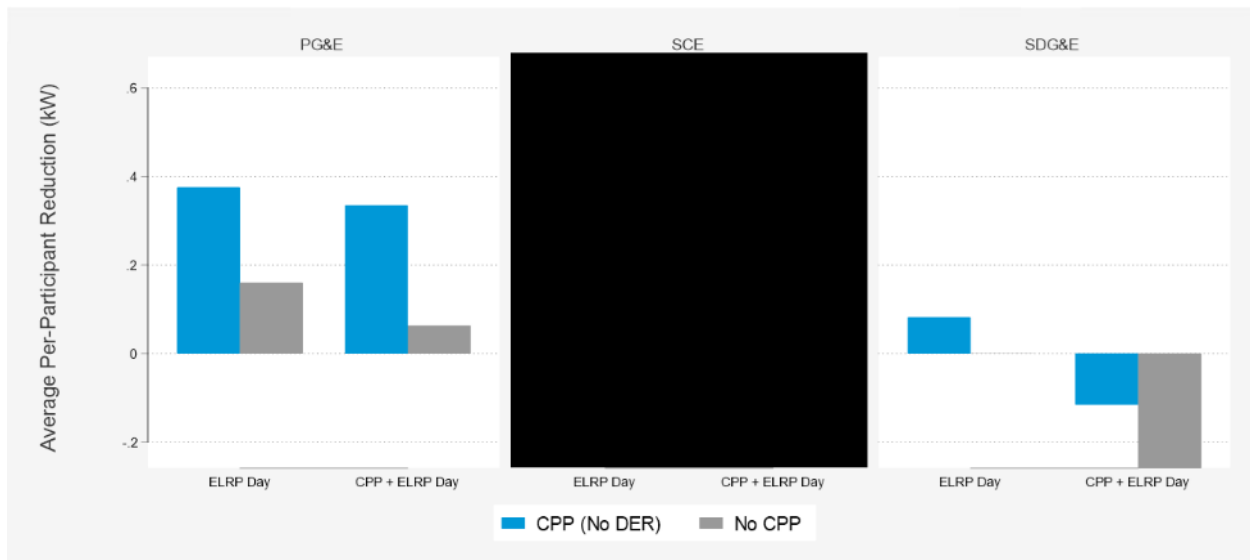
LIMITS OF SAME-DAY ADJUSTMENTS

Same-day adjustments calibrate baselines to the observed loads in non-event hours. This calibration is useful to the extent that it can account for differences in conditions between event and non-event days. With the extreme heat that was evident during the September 2022 events, the value of the same-day adjustment was clear: SDG&E relied on an unadjusted baseline which often resulted in load increases at the aggregate level. However, for reasons that are discussed in the methodology section as well as expanded on below, computing individual customer same-day adjustments can compound volatility and increase opportunities for gaming. A tradeoff must be made between a reasonable allowance for same-day calibration while ensuring participants are compensated fairly for true reductions and not simply noise.

For events during the September heat wave, the 40% adjustment cap applied by PG&E and SDG&E could not overcome the extreme heat. Consider the events on August 17th and September 6th; the

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[26] CPP was called at PG&E on 8/17 and 9/5 through 9/8. At SCE, CPP was called 8/17, 9/1, 9/5 through 9/8. At SDG&E, CPP was called 9/3 through 9/7

mildest and hottest weekdays, respectively (Figure 29). Using the PG&E/SCE weekday baseline, which includes a same-day adjustment capped at 140%, the baselines on 8/17 match perfectly in pre-event hours with the observed loads, while the baselines on September 6th fall short of the observed loads in the hours leading up to the event.

Figure 29: Baseline Comparison on Mildest and Hottest Weekday
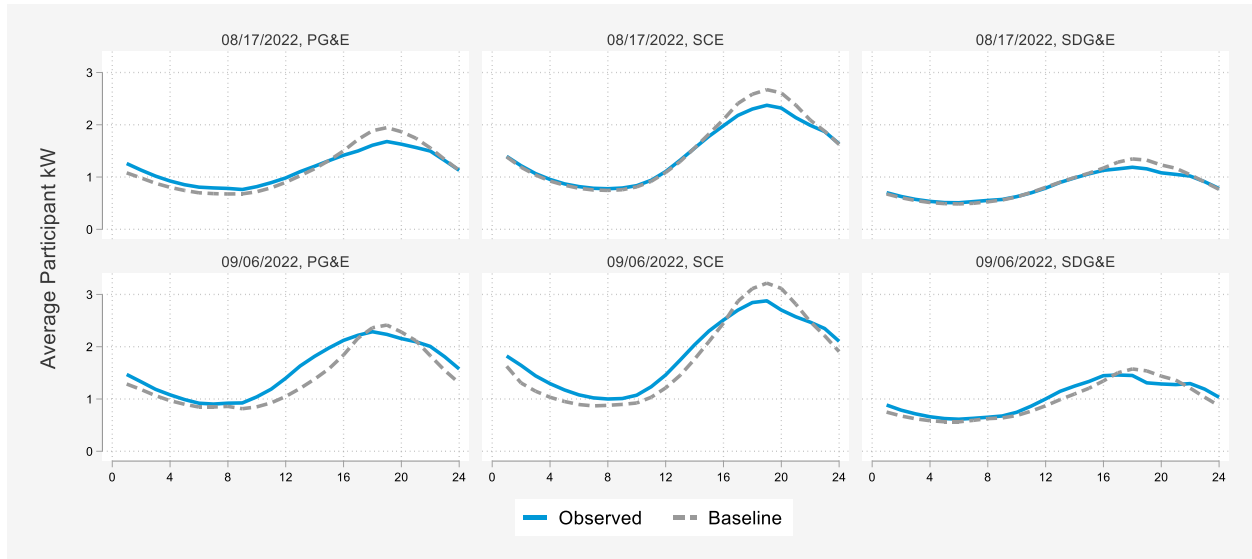
This is echoed in Figure 30, where for each IOU, reductions decrease as temperature increases. This is because the same-day adjustment is capped at 140%, meaning that at a certain point the baseline may not be able to match the extreme event conditions. With such a historic heat wave, the limits of same-day adjustments are clear. However, as discussed further in the Baseline Accuracy section, simply increasing the adjustment cap is not a reasonable solution as it also increases individual customer bias and payment error.

EVENT DAY REDUCTION VS TEMPERATURE
(PG&E/SCE WEEKDAY BASELINE)
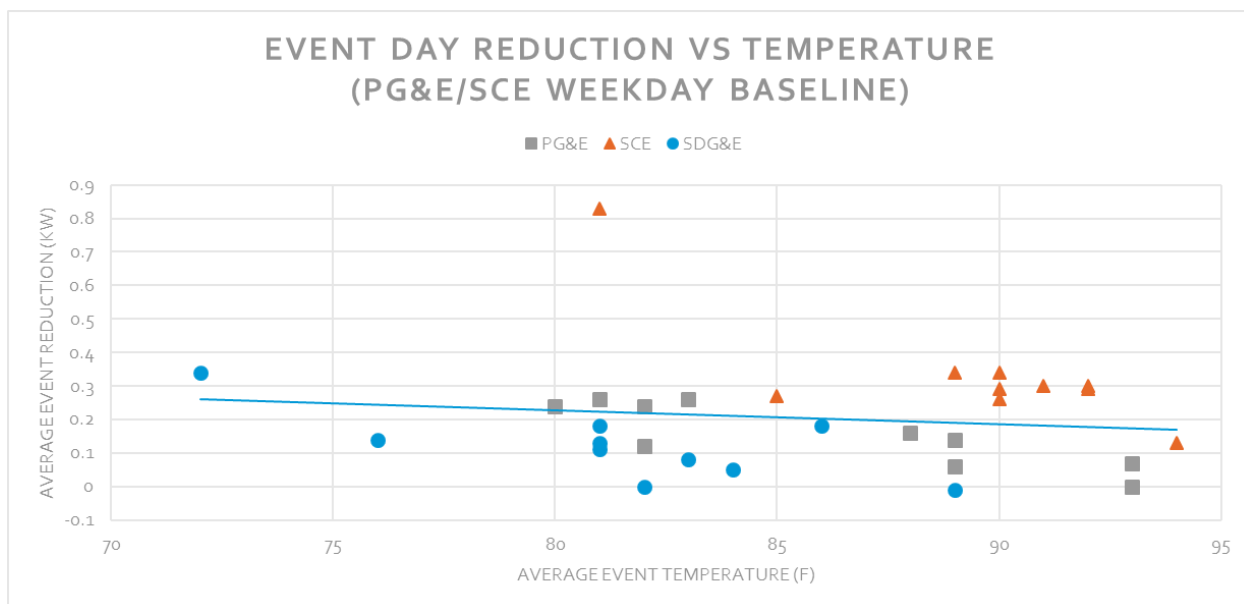
6.2 BASELINE ACCURACY

Given that participants are compensated on the basis of reductions calculated relative to a baseline, it is critical that the baseline selected for this approach be accurate for individual customers, across different segments of customers, and for a range of event days. It is also important that the baseline accurately compensates participants for true reductions and be easy to calculate and comprehend. These requirements are contradictory at times, so any recommendation regarding the best baseline must be judged as a series of tradeoffs between them. But as a matter of principle, there is no such thing as a perfect baseline, for several reasons:

1. Baselines are heuristics, meaning even the best baselines are subject to error. They simply cannot account for all exogenous factors that affect electricity consumption, especially without a control group.

2. Events are called on the hottest days, so the days used to construct the baseline tend to be cooler than event days. Loads are typically smaller on cooler days, especially for weather-sensitive customers. In addition to smaller loads, the load shape on these days can also vary with the magnitude of cooling loads that are needed.

3. Calculating baselines for individual customers introduces volatility. This is a result of individual customer loads being noisy. Applying a same-day adjustment to the already noisy individual customer loads can lead to over-estimation of the baseline in event hours.

4. The way in which payments are aggregated with asymmetry makes a substantial difference in how much participants are ultimately compensated.

OVERALL FINDINGS

Table 41 presents the accuracy statistics for the baselines currently employed by the three IOUs. It is clear that the unadjusted baselines perform worse than those that have an adjustment, when looked at on an overall basis.

Table 41: Accuracy Results for the Current IOU Baselines

Baseline	MPE			CVRMSE		
	PG&E	SCE	SDG&E	PG&E	SCE	SDG&E
SDG&E Weekday	-8.64	-14.13	-11.38	0.09	0.15	0.12
SDG&E Weekend	-1.28	-7.42	-0.91	0.03	0.08	0.04
PG&E/SCE Weekday	5.43	1.72	2.86	0.06	0.03	0.04
PG&E/SCE Weekend	3.26	-1.56	-0.83	0.04	0.03	0.02

Nevertheless, there is a tradeoff between overall accuracy and payment error. Because only positive reductions lead to participant compensation, any reductions relative to the baseline, even when they are a result of noise, produce reductions eligible for settlement (Figure 31). Effectively, baselines can be upward or downward biased, but payment is always positive due to the asymmetry of compensation. This is still the case even when there was no intervention, as in the baseline accuracy assessment. Adding higher caps to same-day adjustments can exacerbate overpayment, even if the overall baseline results exhibit only moderate bias. Finally, removing the same-day adjustment creates a risk that participants will not be credited for legitimate reductions in their usage, especially on hot days.

Figure 31: Tradeoffs of Accuracy and Payment Error
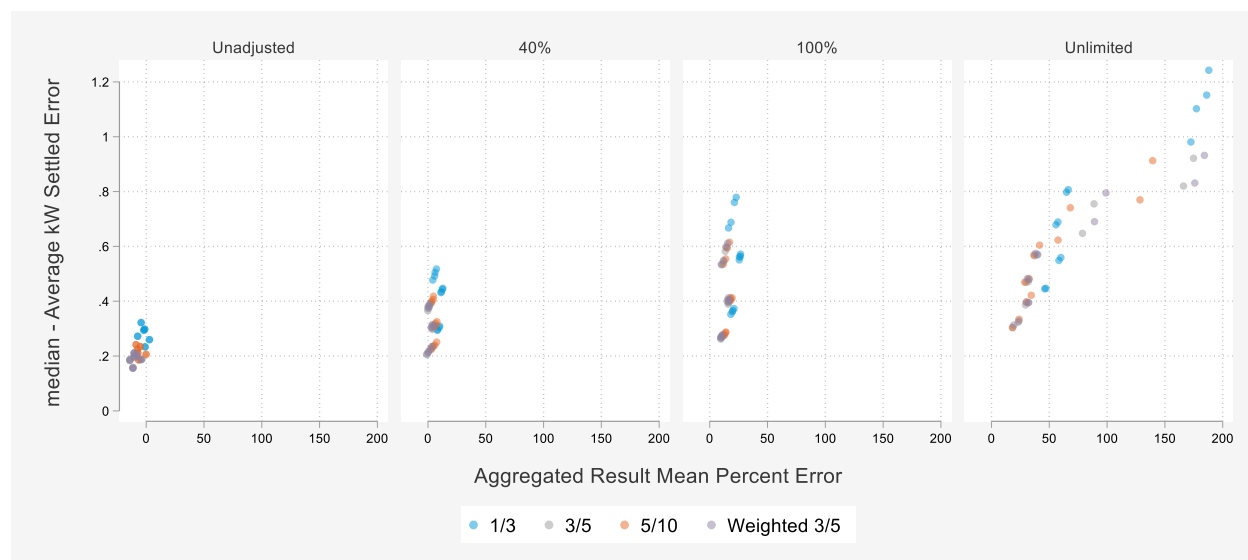
Across all the baseline methods tested, the best-performing baselines tended to be day-matching baselines with a 40% adjustment cap. Of the day matching baselines, Top 3/5, Weighted Top 3/5 and Top 5/10 all did well. Including a look-forward period, where baselines included both days prior to and after the event, did not improve overall results. This summary is shown in Figure 32.

Figure 32: Drivers of Baseline Accuracy
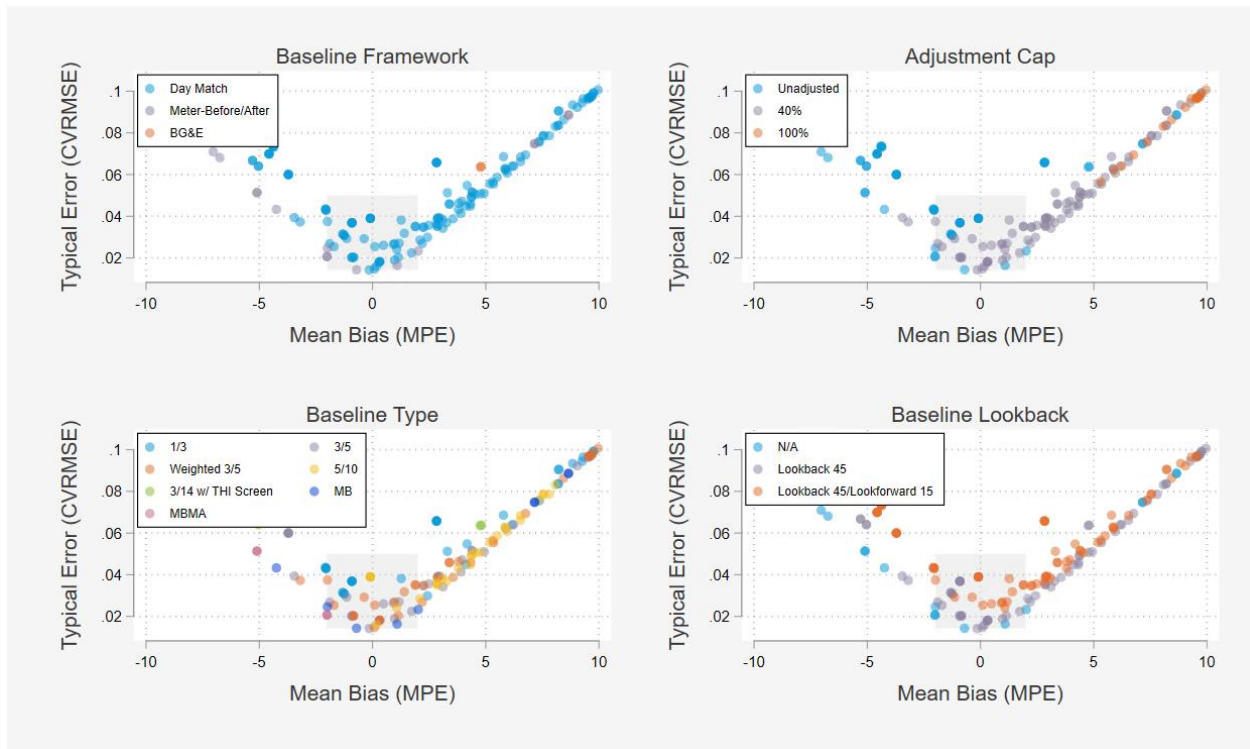
Looking at this figure, the meter-before and meter-after methods performed relatively well, although generally with some small amount of downward bias. These baselines are extremely simple to compute, relying on one or two hours immediately prior to and after the event to construct the baseline. It's clear from Figure 33 that these methods will always understate the reductions on an event day, as the loads that comprise the baseline cannot accommodate cooling load patterns. These methods appear to be better suited to less weather-sensitive participants and programs that rely on direct load control rather than a behavioral intervention. Such programs would demonstrate a larger load shed than residential ELRP, which could be more easily measured by a flat baseline.

Figure 33: Meter Before and Meter Before/After Baseline Results
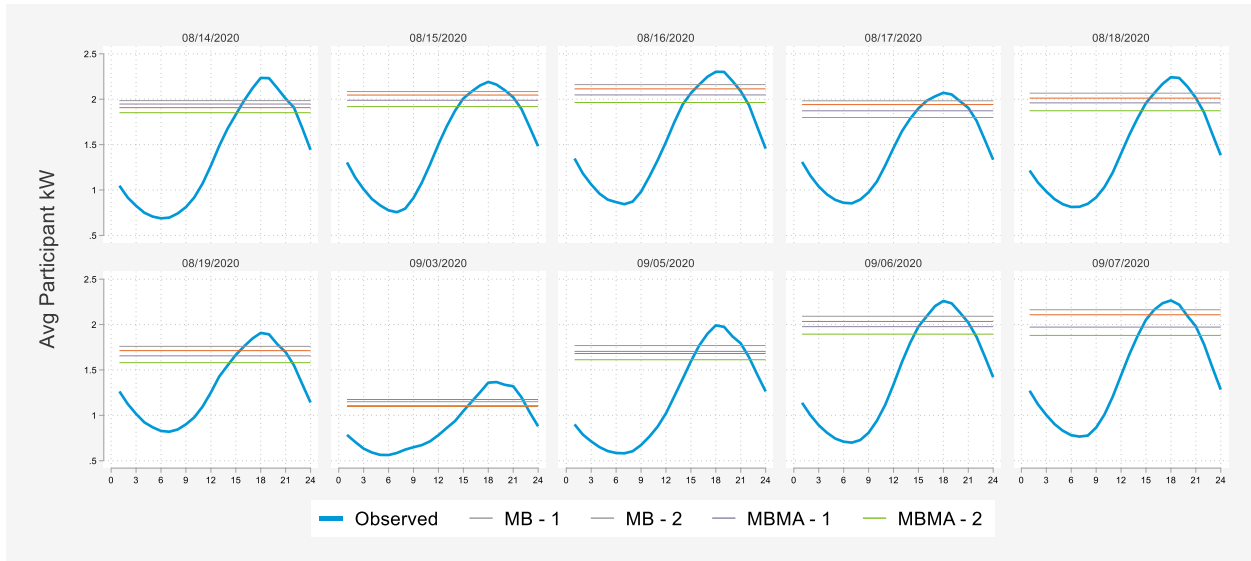
ACCURACY ON EXTREME DAYS

As the summer of 2022 has shown, California must be ready for extreme temperature events that drive unprecedented levels of peak demand. Programs designed to reduce demand on the grid should therefore pay close attention to how well evaluation and settlement methods perform as a function of temperature. While 2022 was nearly unprecedented, selecting another hot summer – 2020 – for which to do a baseline accuracy assessment can inform this choice. Table 40 shows the trend in average per-customer baseline error as a function of the pseudo-event day daily maximum temperature for the best baseline, with and without adjustment. With no adjustment, there is a clear negative relationship between hotter temperatures and more negative baseline error. As temperatures get hotter, baseline days become less and less similar to the pseudo-event days, leading to the impression that there are load increases relative to the unadjusted baseline. Adding adjustments cannot overcome this effect entirely, but it does mitigate it, with errors that are smaller in magnitude and with a less pronounced temperature trend.

Figure 34: Temperature Trend of Baseline Accuracy
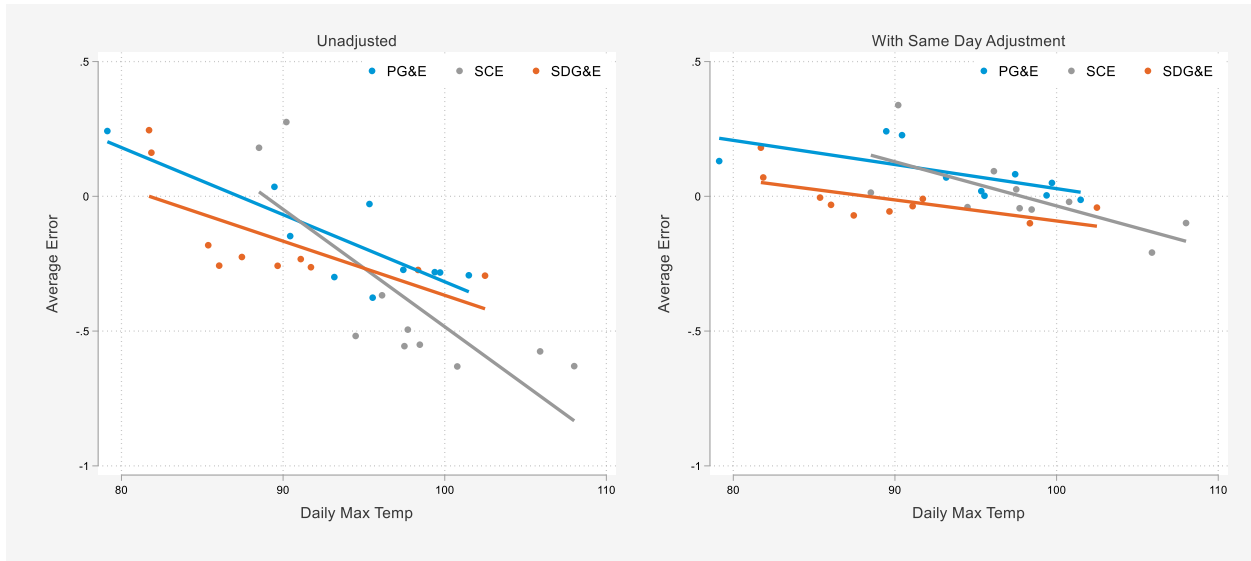
SETTLEMENT GRANULARITY

The method by which participants receive compensation for load reductions has a dramatic effect on the total payments to participants. While outside the scope of the baseline accuracy assessment, the combination of payment asymmetry – participants are compensated for reductions but not increases – and baseline noise jointly affect overall compensation. As an example, Figure 35 shows the hourly, daily, and monthly aggregate baseline error for a single example participant. Bars that are positive are reductions relative to the baseline and are eligible for compensation. When hourly errors are aggregated to an event basis, the magnitude of the errors – both positive and negative – decrease. When settlement is done at a less granular level still, payment error is effectively 0 for the best baseline.

Figure 35: Variations in Settled Error based on Aggregation

Public
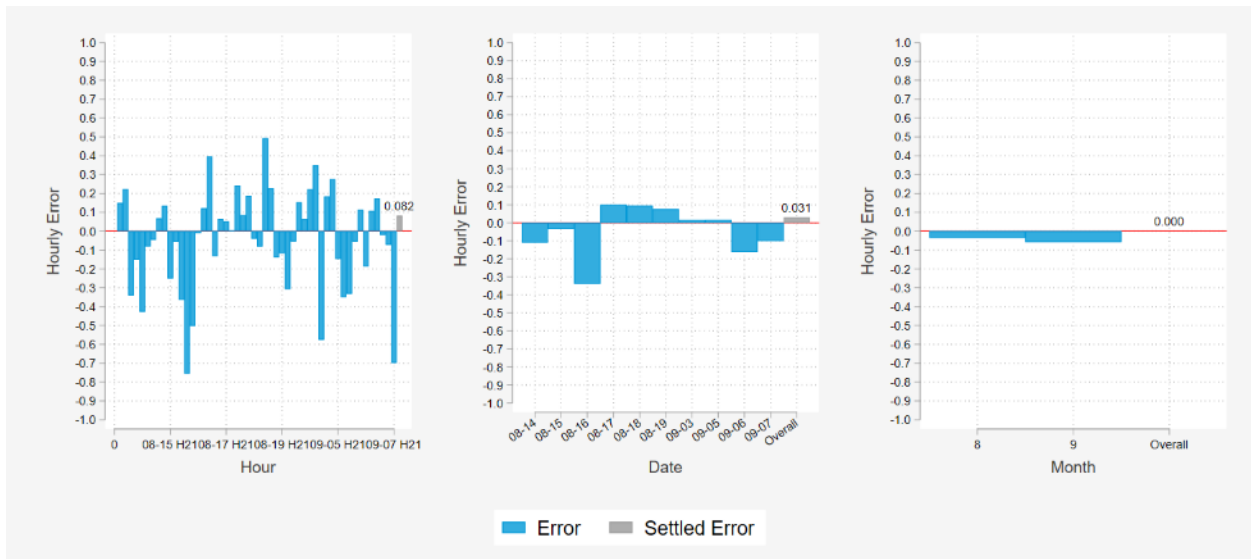
At a broader scale, Figure 36 shows the same concept for the population at each IOU. While baseline error will range between positive and negative for individual customers, it is unbiased for the average participant. However, because of asymmetry in payment, settlement error is always positive. Indeed, settling at the hourly level rather than the event level only compounds this effect, leading to higher per-kWh payments to participants.

Figure 36: Distribution of Overall and Settlement Error
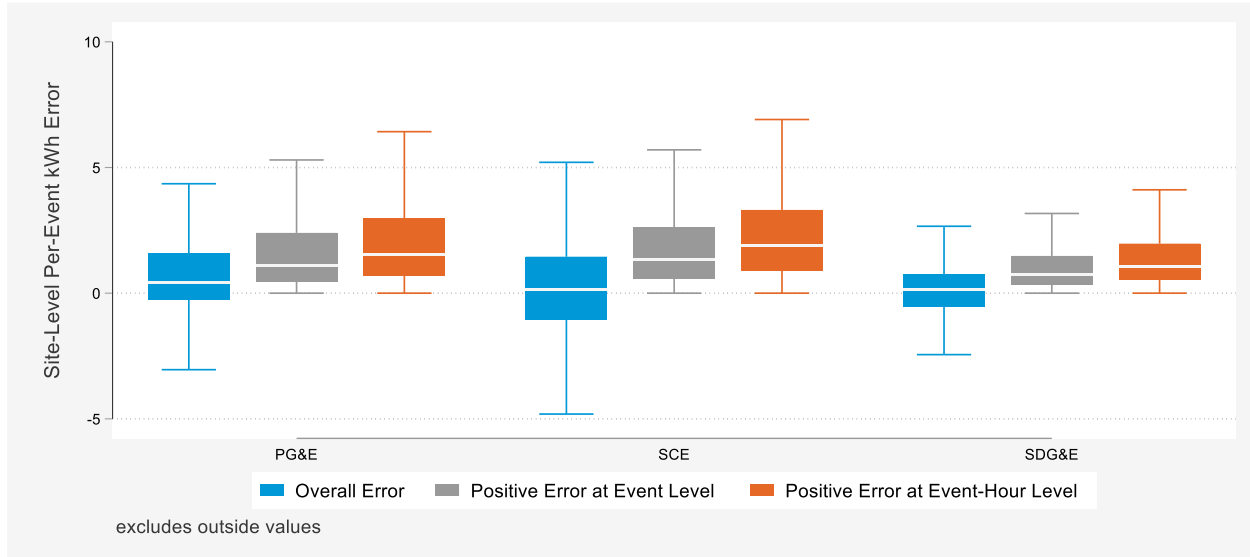
6.3   CONCLUSIONS

CONCLUSION	EXPLANATION
Baselines that are currently in use are among the better options for the IOUs	Day matching baselines balance accuracy, precision, and ease of construction and comprehension. Given the requirement to use individual participant baselines for settlement, the 3/5 and 5/10 baseline methods are sufficiently accurate for use in the Residential ELRP program. The 1/3 baseline exhibits higher bias and may only be appropriate for weekend baselines where averaging 3 or 5 baseline days instead would mean searching across multiple weeks of history.
Adding a same-day adjustment improves results across a wide range of conditions	Same-day adjustments improve the accuracy of baselines on extreme (hot) days. Nevertheless, because of the tradeoff between baseline accuracy – accurately quantifying the load reductions – and settlement accuracy – paying participants for real reductions – it is important to cap the adjustments. A 40% adjustment cap balances these two competing requirements on all but the most extreme days. The difference in performance between symmetric and asymmetric adjustment caps is minimal for typical adjustment caps (less than 100%).
Baselines are inaccurate for individual customers and individual events even if on average they are unbiased	No baseline method will perfectly predict the counterfactual and some amount of error will persist even with the best baseline. Even the best baseline methods produce highly variable estimates for individual sites on individual events. Moreover, even the most accurate baselines for the overall population can systematically over or underestimate the reductions and payments (show bias) for individual sites.
There is a fundamental tradeoff between overall baseline accuracy and payment accuracy	Because baseline methods are inherently noisy, even the best baseline will yield some amount of settlement error, where participants are compensated for noise rather than true reduction. Baselines that are accurate on average will result in underpayment for some participants and overpayment for others. Baselines that are biased downwards on average will not capture true load reductions for some participants.
The calculations for settlement are asymmetric	The Residential ELRP program was designed to use individual customer baselines for participant compensation, specifically introducing asymmetry in payments. Positive and negative baseline errors do not cancel each other out. Baseline errors that favor the customers are counted as reductions, while errors that do not favor the customer are zeroed out. As a result, the kWh reductions used for settlement are asymmetric and overstate the actual reductions delivered.
The level of aggregation of baseline reductions has a large effect on the amount of settlement error	Aggregating noise from the hourly or event level will improve the ability of baseline methods to detect true reductions. Instead of paying participants for reductions on an event hour by event hour basis, providing compensation at the event level or the monthly level will minimize payment error and ensure participants are fairly compensated for real reductions.

APPENDIX A: CONSTRUCTION ALGORITHMS FOR TESTED BASELINES

For this evaluation, three different baseline frameworks were evaluated resulting in 69 combinations of baselines including 64 combinations of day matching baselines, 4 combinations of Meter-Before/Meter-After baselines, and the BG&E baseline. This appendix details each baseline tested in the baseline accuracy evaluations and their construction.

DAY MATCHING BASELINES

As described in the Methodology section, Day Matching Baselines estimate what electricity use would have been in the absence of curtailment by relying on electricity in the days leading up to the event. Fundamentally, customer electric use from a subset of non-event days in close proximity to the event day are identified and averaged to produce baselines. There are multiple components that can be adjusted during the construction of a day-matching baseline that change its estimation methods. For this evaluation, the following components were adjusted:

- Baseline day selection: top 1 of 3, top 3 of 5, weighted top 3 of 5, and top 5 of 10
- Baseline Adjustment Symmetry: symmetrical and asymmetrical
- Baseline Adjustment Cap: 0% (unadjusted), 40%, 100%, and unlimited
- Lookback Window: lookback 45, and lookback 45/look forward 15

METER-BEFORE/METER-AFTER (MBMA) BASELINES

Meter-Before/Meter-After Baselines are constructed using loads from the hours immediately prior (and after) the event. MBMB baselines typically assume customer loads are flat. In the accuracy assessment, the following baselines were evaluated:

- Meter-Before, 1-hour window
- Meter-Before, 2-hour window
- Meter-Before/Meter-After, 1-hour window
- Meter-Before/Meter-After, 2-hour window

BG&E BASELINE

In addition to the Day Matching and MBMA baselines described above, the baseline methodology implemented by Baltimore Gas and Electric Company for their Peak Time rebate was tested. In this baseline, eligible days are selected from the previous 14 days (non-weekend, non-event). The heat index is multiplied by kWh for the event hours in the selected 14 days. Heat index is a measure of weather that is the function of temperature and relative humidity. The 3 days with the highest kWh values and are within 10% of the heat index of the event days are selected as baseline days.

APPENDIX B: IOU-SPECIFIC CUSTOMER SAMPLE COUNTS

Table 42, Table 43, and Table 44 below outline the customer counts for each sample group provided by each utility. It's important to note that some of the sample groups under specific DER breakouts (like EV Rates and Backup Generation) had little to no ELRP customers. If the total number of customers in each sample group were less than requested, then the utility provided the data for all customers allocated to that group. SDG&E had already provided Residential ELRP customer data for a separate evaluation, so to further reduce the burden of data transfer those customers were used for this evaluation. As a result, sample segments were populated differently from the other two IOUs.

Table 42: PG&E Customer Counts

Region	DER	Disadvantaged Communities			Non-DAC		
		CARE/ FERA	IOU-Specific Default	Opt-in	CARE/ FERA	IOU-Specific Default	Opt-in
Coastal Climate Zones	Solar-Only	892	390	19	875	807	269
	Solar+ Storage	9	14	1	187	858	33
	EV Rate (No Solar/Storage)	0	0	0	0	0	0
	Backup Generation (No Other DER)	0	0	0	0	0	0
	General Pop (no tech above, No CPP)	993	754	357	3329	3401	2798
	CPP Participant (no tech above)	73	10	2	471	187	42
Inland Climate Zones	Solar-Only	1062	1150	165	1078	1110	1291
	Solar+ Storage	319	172	7	888	1047	84
	EV Rate (No Solar/Storage)	0	0	0	0	0	0
	Backup Generation (No Other DER)	0	0	0	0	0	0
	General Pop (no tech above, No CPP)	1239	1150	165	1078	1110	1291
	CPP Participant (no tech above)	958	678	81	2653	2069	320

Table 43: SCE Customer Counts

Region	DER	Disadvantaged Communities			Non-DAC		
		CARE/ FERA	IOU-Specific Default	Opt-in	CARE/ FERA	IOU-Specific Default	Opt-in
Coastal Climate Zones	Solar-Only	1000	1000	13	1500	1500	28
	Solar+ Storage	54	144	0	157	1500	16
	EV Rate (No Solar/Storage)	0	0	0	1	5	0
	Backup Generation (No Other DER)	0	0	0	0	0	0
	General Pop (no tech above, No CPP)	1000	1000	162	3000	3000	937
	CPP Participant (no tech above)	0	0	0	0	0	0
Inland Climate Zones	Solar-Only	1000	1000	27	1500	1500	95
	Solar+ Storage	195	467	0	962	1500	13
	EV Rate (No Solar/Storage)	1	1	0	0	1	1
	Backup Generation (No Other DER)	0	0	0	0	0	0
	General Pop (no tech above, No CPP)	1000	1000	128	3000	3000	516
	CPP Participant (no tech above)	0	0	0	2	0	0

Table 44: SDG&E Customer Counts

Region	DER	Disadvantaged Communities			Non-DAC		
		CARE/ FERA	IOU-Specific Default	Opt-in	CARE/ FERA	IOU-Specific Default	Opt-in
Coastal Climate Zones	Solar-Only	97	33	0	1096	3940	98
	Solar+ Storage	1	2	0	77	589	12
	EV Rate (No Solar/Storage)	0	0	0	0	0	0
	Backup Generation (No Other DER)	0	0	0	1	4	1
	General Pop (no tech above, No CPP)	861	155	52	8674	5839	2386
	CPP Participant (no tech above)	0	0	1	43	2	102
Inland Climate Zones	Solar-Only	30	17	1	1845	3801	53
	Solar+ Storage	0	1	0	109	428	8
	EV Rate (No Solar/Storage)	0	0	0	0	0	0
	Backup Generation (No Other DER)	0	0	0	0	0	0
	General Pop (no tech above, No CPP)	270	24	8	8362	3261	1243
	CPP Participant (no tech above)	0	0	0	47	4	74

APPENDIX C: OVERALL BASELINE ACCURACY RESULTS

The following sections contain the results for all baselines tested in the baseline accuracy evaluation. Tables are divided by IOU, Net and Delivered Loads, and accuracy metric (MPE and CVRMSE).

PG&E

This section contains all baseline accuracy results for PG&E customers. Table 45 outlines the Mean Percent Error (MPE) statistics for individual customers for all baselines using Delivered Loads. Table 46 outlines the MPE statistics for individual customers for all baselines using Net Loads. Table 47 outlines the CVRMSE statistics for individual customers for all baselines using Delivered Loads. Finally, Table 48 outlines the CVRMSE statistics for individual customers for all baselines using Net Loads. CVRMSE by Baseline for Net Loads

Table 45: PG&E Mean Percent Error by Baseline for Delivered Loads

	Baseline							
Framework	Adjustment	Lookback	p5	p25	p50	p75	p95	Average
Day Match 1/3	Unadjusted Symmetric Adjustment	Lookback 45	-37.04	-10.19	3.06	19.52	70.88	9.10
Day Match 1/3	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	-34.22	-10.71	2.42	19.38	70.84	9.10
Day Match 3/5	Unadjusted Symmetric Adjustment	Lookback 45	-45.97	-15.97	-2.22	10.84	46.62	-0.65
Day Match 3/5	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	-40.14	-17.17	-4.39	10.20	47.68	-0.70
Day Match 5/10	Unadjusted Symmetric Adjustment	Lookback 45	-44.35	-12.67	1.21	15.88	57.39	4.09
Day Match 5/10	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	-38.44	-13.94	-1.00	14.64	54.61	3.32
Day Match Weighted 3/5	Unadjusted Symmetric Adjustment	Lookback 45	-44.88	-15.61	-2.35	10.52	46.69	-0.59
Day Match Weighted 3/5	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	-40.70	-17.59	-4.66	10.02	47.21	-1.03
Day Match 1/3	40% Symmetric Adjustment	Lookback 45	-26.64	0.96	14.74	31.65	80.41	19.83
Day Match 1/3	40% Symmetric Adjustment	Lookback 45/Lookforward 15	-22.93	0.78	14.40	31.35	77.97	20.01
Day Match 3/5	40% Symmetric Adjustment	Lookback 45	-35.58	-4.89	8.09	20.86	49.68	8.61
Day Match 3/5	40% Symmetric Adjustment	Lookback 45/Lookforward 15	-29.41	-4.71	7.11	19.53	49.57	8.75
Day Match 5/10	40% Symmetric Adjustment	Lookback 45	-33.95	-1.70	11.26	24.63	55.83	12.32
Day Match 5/10	40% Symmetric Adjustment	Lookback 45/Lookforward 15	-27.05	-1.45	9.79	22.15	53.39	11.77
Day Match Weighted 3/5	40% Symmetric Adjustment	Lookback 45	-34.59	-4.66	8.17	21.07	50.19	8.88
Day Match Weighted 3/5	40% Symmetric Adjustment	Lookback 45/Lookforward 15	-29.34	-4.92	7.04	19.45	49.80	8.66
Day Match 1/3	100% Symmetric Adjustment	Lookback 45	-20.51	6.65	23.84	47.29	101.72	30.99
Day Match 1/3	100% Symmetric Adjustment	Lookback 45/Lookforward 15	-17.11	6.89	24.25	47.28	99.63	31.58
Day Match 3/5	100% Symmetric Adjustment	Lookback 45	-27.06	0.45	14.56	31.47	67.14	17.33

Day Match 3/5	100% Symmetric Adjustment	Lookback 45/Lookforward 15	-21.81	1.21	14.32	30.68	64.28	17.60
Day Match 5/10	100% Symmetric Adjustment	Lookback 45	-24.23	3.00	17.32	35.21	71.76	20.57
Day Match 5/10	100% Symmetric Adjustment	Lookback 45/Lookforward 15	-19.21	3.71	16.53	32.44	66.62	19.82
Day Match Weighted 3/5	100% Symmetric Adjustment	Lookback 45	-26.28	0.65	14.80	31.91	67.72	17.67
Day Match Weighted 3/5	100% Symmetric Adjustment	Lookback 45/Lookforward 15	-21.98	1.27	14.64	30.92	64.22	17.75
Day Match 1/3	Unlimited Symmetric Adjustment	Lookback 45	-15.03	10.37	32.46	72.31	200.10	57.30
Day Match 1/3	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	-13.42	11.00	33.79	73.85	202.55	58.47
Day Match 3/5	Unlimited Symmetric Adjustment	Lookback 45	-19.70	3.53	19.06	42.83	113.56	30.12
Day Match 3/5	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	-17.94	4.23	18.82	41.69	105.93	29.39
Day Match 5/10	Unlimited Symmetric Adjustment	Lookback 45	-17.02	6.05	20.90	44.45	111.54	31.29
Day Match 5/10	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	-14.85	5.82	19.91	41.13	99.03	28.84
Day Match Weighted 3/5	Unlimited Symmetric Adjustment	Lookback 45	-19.51	3.63	19.45	43.54	115.60	30.79
Day Match Weighted 3/5	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	-17.51	4.68	19.70	43.04	108.45	30.35
Day Match 1/3	Unadjusted Asymmetric Adjustment	Lookback 45	-37.04	-10.19	3.06	19.52	70.88	9.10
Day Match 1/3	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	-34.22	-10.71	2.42	19.38	70.84	9.10
Day Match 3/5	Unadjusted Asymmetric Adjustment	Lookback 45	-45.97	-15.97	-2.22	10.84	46.62	-0.65
Day Match 3/5	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	-40.14	-17.17	-4.39	10.20	47.68	-0.70
Day Match 5/10	Unadjusted Asymmetric Adjustment	Lookback 45	-44.35	-12.67	1.21	15.88	57.39	4.09
Day Match 5/10	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	-38.44	-13.94	-1.00	14.64	54.61	3.32
Day Match Weighted 3/5	Unadjusted Asymmetric Adjustment	Lookback 45	-44.88	-15.61	-2.35	10.52	46.69	-0.59
Day Match Weighted 3/5	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	-40.70	-17.59	-4.66	10.02	47.21	-1.03

Day Match 1/3	40% Asymmetric Adjustment	Lookback 45	-28.43	-0.54	13.40	29.88	76.57	17.91
Day Match 1/3	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	-24.31	-0.74	13.12	29.63	73.88	18.11
Day Match 3/5	40% Asymmetric Adjustment	Lookback 45	-36.61	-6.25	6.96	19.59	46.72	7.02
Day Match 3/5	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	-30.44	-6.01	6.08	18.25	46.08	7.16
Day Match 5/10	40% Asymmetric Adjustment	Lookback 45	-34.96	-3.19	10.03	22.96	52.10	10.43
Day Match 5/10	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	-28.15	-2.78	8.66	20.73	49.69	10.02
Day Match Weighted 3/5	40% Asymmetric Adjustment	Lookback 45	-35.55	-6.10	7.14	19.72	47.35	7.31
Day Match Weighted 3/5	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	-30.75	-6.21	6.00	18.24	46.21	7.10
Day Match 1/3	100% Asymmetric Adjustment	Lookback 45	-22.98	5.49	22.69	46.03	97.94	29.21
Day Match 1/3	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	-19.94	5.77	23.27	45.98	96.72	29.74
Day Match 3/5	100% Asymmetric Adjustment	Lookback 45	-28.44	-0.36	13.80	30.49	64.94	16.07
Day Match 3/5	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	-24.00	0.29	13.54	29.70	62.49	16.31
Day Match 5/10	100% Asymmetric Adjustment	Lookback 45	-25.64	2.08	16.47	34.02	69.26	19.04
Day Match 5/10	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	-21.15	2.83	15.73	31.24	64.39	18.41
Day Match Weighted 3/5	100% Asymmetric Adjustment	Lookback 45	-27.76	-0.20	14.01	31.05	65.90	16.40
Day Match Weighted 3/5	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	-24.15	0.36	13.91	30.00	62.39	16.47
Day Match 1/3	Unlimited Asymmetric Adjustment	Lookback 45	-1.41	20.91	44.40	87.14	217.04	70.82
Day Match 1/3	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	0.25	21.73	45.93	88.31	220.09	71.99
Day Match 3/5	Unlimited Asymmetric Adjustment	Lookback 45	-7.65	13.04	29.02	55.08	129.58	41.66
Day Match 3/5	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	-5.61	13.06	28.56	53.43	122.95	40.98
Day Match 5/10	Unlimited Asymmetric Adjustment	Lookback 45	-4.34	16.19	32.54	59.11	131.75	44.71

Framework	Adjustment	Lookback	p5	p25	p50	p75	p95	Average
Day Match 5/10	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	-2.41	15.30	30.25	54.10	120.30	41.59
Day Match Weighted 3/5	Unlimited Asymmetric Adjustment	Lookback 45	-7.38	12.91	29.21	55.37	132.69	42.20
Day Match Weighted 3/5	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	-5.34	13.39	29.26	54.72	125.78	41.76
BG&E 3/14 w/ THI Screen	Unadjusted Unadjusted Adjustment	Lookback 45	-21.21	2.63	17.19	43.05	129.24	32.37
Meter-Before/After MB - 1 Hour	Unadjusted Unadjusted Adjustment	N/A	-54.99	-21.01	-5.20	7.52	32.87	-6.58
Meter-Before/After MB - 2 Hour	Unadjusted Unadjusted Adjustment	N/A	-59.02	-22.06	-6.93	5.65	31.58	-8.06
Meter-Before/After MBMA - 1 Hour	Unadjusted Unadjusted Adjustment	N/A	-31.35	-15.13	-6.26	2.43	24.14	-4.76
Meter-Before/After MBMA - 2 Hour	Unadjusted Unadjusted Adjustment	N/A	-36.64	-19.64	-9.68	0.07	24.29	-7.89

Table 46: PG&E Mean Percent Error by Baseline for Net Loads

Baseline								
Framework	Adjustment	Lookback	p5	p25	p50	p75	p95	Average
Day Match 1/3	Unadjusted Symmetric Adjustment	Lookback 45	-39.11	-10.50	2.90	19.51	72.48	7.44
Day Match 1/3	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	-35.78	-10.97	2.29	19.34	72.36	7.97
Day Match 3/5	Unadjusted Symmetric Adjustment	Lookback 45	-48.07	-16.51	-2.36	10.77	47.53	-2.00
Day Match 3/5	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	-41.63	-17.55	-4.59	10.14	48.83	-2.09
Day Match 5/10	Unadjusted Symmetric Adjustment	Lookback 45	-46.34	-13.31	1.03	15.78	58.30	2.66
Day Match 5/10	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	-39.78	-14.31	-1.17	14.57	56.02	2.02
Day Match Weighted 3/5	Unadjusted Symmetric Adjustment	Lookback 45	-46.98	-16.18	-2.50	10.48	47.67	-1.95
Day Match Weighted 3/5	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	-42.07	-18.00	-4.89	9.89	48.40	-2.32
Day Match 1/3	40% Symmetric Adjustment	Lookback 45	-33.55	-1.10	13.65	30.97	80.72	16.40
Day Match 1/3	40% Symmetric Adjustment	Lookback 45/Lookforward 15	-29.64	-1.35	13.39	30.70	78.38	17.39
Day Match 3/5	40% Symmetric Adjustment	Lookback 45	-41.66	-6.80	7.32	20.39	50.28	5.85

Day Match 3/5	40% Symmetric Adjustment	Lookback 45/Lookforward 15	-35.29	-6.26	6.50	19.29	50.70	6.11
Day Match 5/10	40% Symmetric Adjustment	Lookback 45	-40.29	-3.70	10.65	24.32	56.83	9.65
Day Match 5/10	40% Symmetric Adjustment	Lookback 45/Lookforward 15	-32.81	-2.92	9.21	21.96	54.83	9.32
Day Match Weighted 3/5	40% Symmetric Adjustment	Lookback 45	-40.48	-6.61	7.33	20.63	50.62	6.14
Day Match Weighted 3/5	40% Symmetric Adjustment	Lookback 45/Lookforward 15	-35.57	-6.71	6.46	19.08	50.68	6.12
Day Match 1/3	100% Symmetric Adjustment	Lookback 45	-31.72	4.06	22.08	45.77	101.63	26.03
Day Match 1/3	100% Symmetric Adjustment	Lookback 45/Lookforward 15	-28.27	4.38	22.42	45.93	99.85	27.62
Day Match 3/5	100% Symmetric Adjustment	Lookback 45	-38.78	-1.60	13.31	30.69	67.90	13.47
Day Match 3/5	100% Symmetric Adjustment	Lookback 45/Lookforward 15	-31.60	-0.58	13.30	30.24	65.72	13.93
Day Match 5/10	100% Symmetric Adjustment	Lookback 45	-38.29	1.14	16.06	34.65	72.87	16.98
Day Match 5/10	100% Symmetric Adjustment	Lookback 45/Lookforward 15	-29.40	2.24	15.60	32.17	68.38	16.58
Day Match Weighted 3/5	100% Symmetric Adjustment	Lookback 45	-37.98	-1.37	13.58	31.22	68.37	13.85
Day Match Weighted 3/5	100% Symmetric Adjustment	Lookback 45/Lookforward 15	-31.95	-0.84	13.57	30.36	65.38	14.19
Day Match 1/3	Unlimited Symmetric Adjustment	Lookback 45	-47.35	7.06	29.28	69.34	203.97	-1572226.88
Day Match 1/3	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	-44.40	7.45	30.74	70.49	207.76	637184.25
Day Match 3/5	Unlimited Symmetric Adjustment	Lookback 45	-50.28	1.03	17.20	41.45	121.14	42.81
Day Match 3/5	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	-38.93	1.96	17.24	41.11	118.44	24354.48
Day Match 5/10	Unlimited Symmetric Adjustment	Lookback 45	-50.88	3.31	19.33	43.03	118.22	-50.61
Day Match 5/10	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	-36.94	3.89	18.42	40.70	112.52	7.23
Day Match Weighted 3/5	Unlimited Symmetric Adjustment	Lookback 45	-49.53	1.26	17.70	42.45	125.72	37.22
Day Match Weighted 3/5	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	-42.12	2.17	17.94	42.16	119.40	18.67
Day Match 1/3	Unadjusted Asymmetric Adjustment	Lookback 45	-39.11	-10.50	2.90	19.51	72.48	7.44
Day Match 1/3	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	-35.78	-10.97	2.29	19.34	72.36	7.97
Day Match 3/5	Unadjusted Asymmetric Adjustment	Lookback 45	-48.07	-16.51	-2.36	10.77	47.53	-2.00

Day Match 3/5	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	-41.63	-17.55	-4.59	10.14	48.83	-2.09
Day Match 5/10	Unadjusted Asymmetric Adjustment	Lookback 45	-46.34	-13.31	1.03	15.78	58.30	2.66
Day Match 5/10	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	-39.78	-14.31	-1.17	14.57	56.02	2.02
Day Match Weighted 3/5	Unadjusted Asymmetric Adjustment	Lookback 45	-46.98	-16.18	-2.50	10.48	47.67	-1.95
Day Match Weighted 3/5	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	-42.07	-18.00	-4.89	9.89	48.40	-2.32
Day Match 1/3	40% Asymmetric Adjustment	Lookback 45	-36.62	-2.92	12.27	29.11	76.97	14.24
Day Match 1/3	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	-32.90	-2.98	12.00	28.95	74.33	15.26
Day Match 3/5	40% Asymmetric Adjustment	Lookback 45	-44.34	-8.47	6.11	19.13	46.99	4.05
Day Match 3/5	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	-38.10	-8.05	5.49	17.91	46.93	4.32
Day Match 5/10	40% Asymmetric Adjustment	Lookback 45	-42.99	-5.50	9.21	22.58	52.78	7.54
Day Match 5/10	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	-35.98	-4.43	7.98	20.46	50.95	7.36
Day Match Weighted 3/5	40% Asymmetric Adjustment	Lookback 45	-43.11	-8.26	6.31	19.21	47.70	4.36
Day Match Weighted 3/5	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	-38.22	-8.26	5.35	17.90	47.06	4.36
Day Match 1/3	100% Asymmetric Adjustment	Lookback 45	-42.03	2.46	20.46	44.20	97.54	23.15
Day Match 1/3	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	-39.51	2.47	21.05	44.19	96.48	24.74
Day Match 3/5	100% Asymmetric Adjustment	Lookback 45	-47.06	-2.93	12.28	29.70	65.11	11.15
Day Match 3/5	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	-39.35	-1.92	12.36	29.01	63.20	11.62
Day Match 5/10	100% Asymmetric Adjustment	Lookback 45	-46.86	-0.27	15.01	33.01	69.69	14.35
Day Match 5/10	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	-36.41	0.97	14.52	30.65	65.89	14.07
Day Match Weighted 3/5	100% Asymmetric Adjustment	Lookback 45	-45.70	-2.59	12.51	30.12	66.05	11.56
Day Match Weighted 3/5	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	-39.86	-2.10	12.61	29.14	63.27	11.92
Day Match 1/3	Unlimited Asymmetric Adjustment	Lookback 45	-6.29	19.39	43.13	87.09	233.80	-1665497.00
Day Match 1/3	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	-4.07	20.04	44.58	88.19	234.51	637220.44
Day Match 3/5	Unlimited Asymmetric Adjustment	Lookback 45	-15.39	11.75	28.32	55.80	146.76	87.80

Day Match 3/5	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	-10.51	12.09	28.26	55.10	145.42	24395.24
Day Match 5/10	Unlimited Asymmetric Adjustment	Lookback 45	-13.13	14.89	31.80	59.91	147.59	60.03
Day Match 5/10	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	-7.47	14.48	30.02	56.18	144.17	53.44
Day Match Weighted 3/5	Unlimited Asymmetric Adjustment	Lookback 45	-14.98	11.79	28.48	56.18	149.59	73.81
Day Match Weighted 3/5	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	-10.39	12.52	28.82	56.11	148.09	50.82
BG&E 3/14 w/ THI Screen	Unadjusted Unadjusted Adjustment	Lookback 45	-22.79	2.33	17.05	43.01	132.20	29.95
Meter-Before/After MB - 1 Hour	Unadjusted Unadjusted Adjustment	N/A	-62.95	-20.99	-5.12	7.73	34.71	-9.35
Meter-Before/After MB - 2 Hour	Unadjusted Unadjusted Adjustment	N/A	-70.58	-22.01	-6.80	5.82	33.03	-12.37
Meter-Before/After MBMA - 1 Hour	Unadjusted Unadjusted Adjustment	N/A	-37.10	-15.89	-6.54	2.26	24.41	-6.88
Meter-Before/After MBMA - 2 Hour	Unadjusted Unadjusted Adjustment	N/A	-44.62	-20.49	-10.00	-0.09	24.65	-11.16

Table 47: PG&E CVRMSE by Baseline for Delivered Loads

	Baseline							
Framework	Adjustment	Lookback	p5	p25	p50	p75	p95	Average
Day Match 1/3	Unadjusted Symmetric Adjustment	Lookback 45	0.05	0.11	0.19	0.34	0.80	0.29
Day Match 1/3	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.11	0.19	0.34	0.78	0.29
Day Match 3/5	Unadjusted Symmetric Adjustment	Lookback 45	0.04	0.10	0.18	0.32	0.63	0.25
Day Match 3/5	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.11	0.19	0.31	0.59	0.25
Day Match 5/10	Unadjusted Symmetric Adjustment	Lookback 45	0.05	0.10	0.18	0.34	0.67	0.26
Day Match 5/10	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.10	0.18	0.32	0.63	0.25
Day Match Weighted 3/5	Unadjusted Symmetric Adjustment	Lookback 45	0.04	0.10	0.18	0.32	0.63	0.25
Day Match Weighted 3/5	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.11	0.19	0.31	0.60	0.25
Day Match 1/3	40% Symmetric Adjustment	Lookback 45	0.07	0.14	0.24	0.40	0.88	0.33
Day Match 1/3	40% Symmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.14	0.23	0.38	0.84	0.32
Day Match 3/5	40% Symmetric Adjustment	Lookback 45	0.06	0.12	0.19	0.31	0.60	0.25
Day Match 3/5	40% Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.11	0.18	0.29	0.58	0.24
Day Match 5/10	40% Symmetric Adjustment	Lookback 45	0.06	0.12	0.21	0.33	0.64	0.27
Day Match 5/10	40% Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.11	0.19	0.30	0.60	0.24
Day Match Weighted 3/5	40% Symmetric Adjustment	Lookback 45	0.06	0.12	0.19	0.31	0.61	0.25
Day Match Weighted 3/5	40% Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.11	0.18	0.30	0.59	0.24
Day Match 1/3	100% Symmetric Adjustment	Lookback 45	0.08	0.19	0.32	0.54	1.09	0.43
Day Match 1/3	100% Symmetric Adjustment	Lookback 45/Lookforward 15	0.08	0.18	0.32	0.53	1.06	0.42
Day Match 3/5	100% Symmetric Adjustment	Lookback 45	0.07	0.14	0.25	0.39	0.74	0.31

Day Match 3/5	100% Symmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.14	0.23	0.38	0.71	0.30
Day Match 5/10	100% Symmetric Adjustment	Lookback 45	0.07	0.15	0.26	0.42	0.78	0.32
Day Match 5/10	100% Symmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.14	0.24	0.38	0.72	0.30
Day Match Weighted 3/5	100% Symmetric Adjustment	Lookback 45	0.07	0.15	0.25	0.40	0.75	0.31
Day Match Weighted 3/5	100% Symmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.15	0.24	0.38	0.71	0.30
Day Match 1/3	Unlimited Symmetric Adjustment	Lookback 45	0.09	0.21	0.40	0.82	2.19	0.71
Day Match 1/3	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	0.08	0.21	0.41	0.83	2.21	0.71
Day Match 3/5	Unlimited Symmetric Adjustment	Lookback 45	0.07	0.16	0.28	0.51	1.24	0.43
Day Match 3/5	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.15	0.27	0.49	1.17	0.41
Day Match 5/10	Unlimited Symmetric Adjustment	Lookback 45	0.07	0.16	0.29	0.52	1.20	0.42
Day Match 5/10	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.15	0.27	0.48	1.09	0.39
Day Match Weighted 3/5	Unlimited Symmetric Adjustment	Lookback 45	0.07	0.16	0.28	0.51	1.27	0.44
Day Match Weighted 3/5	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.16	0.28	0.51	1.20	0.42
Day Match 1/3	Unadjusted Asymmetric Adjustment	Lookback 45	0.05	0.11	0.19	0.34	0.80	0.29
Day Match 1/3	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.11	0.19	0.34	0.78	0.29
Day Match 3/5	Unadjusted Asymmetric Adjustment	Lookback 45	0.04	0.10	0.18	0.32	0.63	0.25
Day Match 3/5	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.11	0.19	0.31	0.59	0.25
Day Match 5/10	Unadjusted Asymmetric Adjustment	Lookback 45	0.05	0.10	0.18	0.34	0.67	0.26
Day Match 5/10	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.10	0.18	0.32	0.63	0.25
Day Match Weighted 3/5	Unadjusted Asymmetric Adjustment	Lookback 45	0.04	0.10	0.18	0.32	0.63	0.25
Day Match Weighted 3/5	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.11	0.19	0.31	0.60	0.25

Day Match 1/3	40% Asymmetric Adjustment	Lookback 45	0.07	0.14	0.23	0.38	0.84	0.32
Day Match 1/3	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.14	0.23	0.37	0.81	0.31
Day Match 3/5	40% Asymmetric Adjustment	Lookback 45	0.06	0.12	0.19	0.31	0.59	0.24
Day Match 3/5	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.11	0.18	0.29	0.56	0.23
Day Match 5/10	40% Asymmetric Adjustment	Lookback 45	0.06	0.12	0.20	0.32	0.62	0.26
Day Match 5/10	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.11	0.18	0.29	0.57	0.24
Day Match Weighted 3/5	40% Asymmetric Adjustment	Lookback 45	0.06	0.12	0.19	0.31	0.59	0.25
Day Match Weighted 3/5	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.11	0.18	0.29	0.56	0.23
Day Match 1/3	100% Asymmetric Adjustment	Lookback 45	0.08	0.19	0.32	0.53	1.06	0.42
Day Match 1/3	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.08	0.18	0.32	0.52	1.03	0.41
Day Match 3/5	100% Asymmetric Adjustment	Lookback 45	0.07	0.14	0.24	0.39	0.72	0.30
Day Match 3/5	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.14	0.23	0.37	0.69	0.29
Day Match 5/10	100% Asymmetric Adjustment	Lookback 45	0.07	0.15	0.25	0.41	0.76	0.32
Day Match 5/10	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.14	0.24	0.38	0.70	0.29
Day Match Weighted 3/5	100% Asymmetric Adjustment	Lookback 45	0.07	0.15	0.25	0.39	0.73	0.31
Day Match Weighted 3/5	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.15	0.24	0.38	0.70	0.29
Day Match 1/3	Unlimited Asymmetric Adjustment	Lookback 45	0.10	0.26	0.50	0.94	2.36	0.80
Day Match 1/3	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	0.10	0.27	0.51	0.95	2.38	0.80
Day Match 3/5	Unlimited Asymmetric Adjustment	Lookback 45	0.08	0.19	0.34	0.60	1.39	0.50
Day Match 3/5	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	0.08	0.19	0.33	0.59	1.32	0.48
Day Match 5/10	Unlimited Asymmetric Adjustment	Lookback 45	0.09	0.21	0.37	0.64	1.39	0.51

Day Match 5/10	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	0.08	0.20	0.34	0.58	1.27	0.48
Day Match Weighted 3/5	Unlimited Asymmetric Adjustment	Lookback 45	0.08	0.19	0.34	0.61	1.42	0.50
Day Match Weighted 3/5	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	0.08	0.19	0.34	0.60	1.35	0.49
BG&E 3/14 w/ THI Screen	Unadjusted Unadjusted Adjustment	Lookback 45	0.06	0.13	0.24	0.49	1.33	0.43
Meter-Before/After MB - 1 Hour	Unadjusted Unadjusted Adjustment	N/A	0.05	0.11	0.20	0.33	0.69	0.26
Meter-Before/After MB - 2 Hour	Unadjusted Unadjusted Adjustment	N/A	0.05	0.11	0.19	0.33	0.71	0.27
Meter-Before/After MBMA - 1 Hour	Unadjusted Unadjusted Adjustment	N/A	0.04	0.09	0.14	0.23	0.42	0.18
Meter-Before/After MBMA - 2 Hour	Unadjusted Unadjusted Adjustment	N/A	0.04	0.10	0.16	0.26	0.45	0.20

Table 48: PG&E CVRMSE by Baseline for Net Loads

Baseline Framework	Adjustment	Lookback	p5	p25	p50	p75	p95	Average
Day Match 1/3	Unadjusted Symmetric Adjustment	Lookback 45	0.05	0.11	0.19	0.35	0.83	0.28
Day Match 1/3	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.11	0.19	0.34	0.81	0.28
Day Match 3/5	Unadjusted Symmetric Adjustment	Lookback 45	0.04	0.10	0.18	0.32	0.65	0.25
Day Match 3/5	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.11	0.19	0.31	0.61	0.24
Day Match 5/10	Unadjusted Symmetric Adjustment	Lookback 45	0.04	0.10	0.19	0.34	0.70	0.26
Day Match 5/10	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.10	0.18	0.32	0.65	0.24
Day Match Weighted 3/5	Unadjusted Symmetric Adjustment	Lookback 45	0.04	0.10	0.18	0.32	0.65	0.24
Day Match Weighted 3/5	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.11	0.19	0.32	0.62	0.24
Day Match 1/3	40% Symmetric Adjustment	Lookback 45	0.07	0.14	0.24	0.40	0.89	0.32
Day Match 1/3	40% Symmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.14	0.24	0.39	0.86	0.32
Day Match 3/5	40% Symmetric Adjustment	Lookback 45	0.06	0.12	0.20	0.33	0.64	0.26
Day Match 3/5	40% Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.11	0.19	0.31	0.61	0.24
Day Match 5/10	40% Symmetric Adjustment	Lookback 45	0.06	0.13	0.21	0.35	0.68	0.27
Day Match 5/10	40% Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.12	0.19	0.31	0.63	0.25

Day Match Weighted 3/5	40% Symmetric Adjustment	Lookback 45	0.06	0.12	0.20	0.33	0.64	0.26
Day Match Weighted 3/5	40% Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.12	0.19	0.31	0.62	0.24
Day Match 1/3	100% Symmetric Adjustment	Lookback 45	0.08	0.19	0.32	0.54	1.10	0.42
Day Match 1/3	100% Symmetric Adjustment	Lookback 45/Lookforward 15	0.08	0.19	0.32	0.53	1.07	0.42
Day Match 3/5	100% Symmetric Adjustment	Lookback 45	0.07	0.15	0.25	0.41	0.77	0.31
Day Match 3/5	100% Symmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.14	0.24	0.39	0.73	0.30
Day Match 5/10	100% Symmetric Adjustment	Lookback 45	0.07	0.15	0.27	0.44	0.82	0.33
Day Match 5/10	100% Symmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.15	0.25	0.40	0.75	0.30
Day Match Weighted 3/5	100% Symmetric Adjustment	Lookback 45	0.07	0.15	0.26	0.41	0.78	0.31
Day Match Weighted 3/5	100% Symmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.15	0.25	0.40	0.74	0.30
Day Match 1/3	Unlimited Symmetric Adjustment	Lookback 45	0.08	0.21	0.43	0.90	2.61	24414.08
Day Match 1/3	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	0.08	0.21	0.44	0.91	2.69	-6845.07
Day Match 3/5	Unlimited Symmetric Adjustment	Lookback 45	0.07	0.16	0.30	0.57	1.70	1.24
Day Match 3/5	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.16	0.29	0.55	1.72	318.19
Day Match 5/10	Unlimited Symmetric Adjustment	Lookback 45	0.07	0.17	0.30	0.58	1.65	1.71
Day Match 5/10	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.16	0.28	0.53	1.74	1.11
Day Match Weighted 3/5	Unlimited Symmetric Adjustment	Lookback 45	0.07	0.16	0.30	0.58	1.75	1.09
Day Match Weighted 3/5	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.16	0.30	0.56	1.78	0.78
Day Match 1/3	Unadjusted Asymmetric Adjustment	Lookback 45	0.05	0.11	0.19	0.35	0.83	0.28
Day Match 1/3	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.11	0.19	0.34	0.81	0.28
Day Match 3/5	Unadjusted Asymmetric Adjustment	Lookback 45	0.04	0.10	0.18	0.32	0.65	0.25
Day Match 3/5	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.11	0.19	0.31	0.61	0.24
Day Match 5/10	Unadjusted Asymmetric Adjustment	Lookback 45	0.04	0.10	0.19	0.34	0.70	0.26
Day Match 5/10	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.10	0.18	0.32	0.65	0.24
Day Match Weighted 3/5	Unadjusted Asymmetric Adjustment	Lookback 45	0.04	0.10	0.18	0.32	0.65	0.24
Day Match Weighted 3/5	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.11	0.19	0.32	0.62	0.24
Day Match 1/3	40% Asymmetric Adjustment	Lookback 45	0.07	0.14	0.24	0.39	0.86	0.32
Day Match 1/3	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.14	0.23	0.38	0.82	0.31
Day Match 3/5	40% Asymmetric Adjustment	Lookback 45	0.06	0.12	0.20	0.32	0.63	0.25
Day Match 3/5	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.11	0.19	0.30	0.60	0.23
Day Match 5/10	40% Asymmetric Adjustment	Lookback 45	0.06	0.13	0.21	0.34	0.66	0.27

Day Match 5/10	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.12	0.19	0.31	0.61	0.24
Day Match Weighted 3/5	40% Asymmetric Adjustment	Lookback 45	0.06	0.12	0.20	0.33	0.63	0.25
Day Match Weighted 3/5	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.12	0.19	0.31	0.60	0.24
Day Match 1/3	100% Asymmetric Adjustment	Lookback 45	0.08	0.19	0.33	0.55	1.07	0.42
Day Match 1/3	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.08	0.19	0.33	0.55	1.05	0.42
Day Match 3/5	100% Asymmetric Adjustment	Lookback 45	0.07	0.15	0.26	0.42	0.81	0.32
Day Match 3/5	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.14	0.24	0.40	0.77	0.30
Day Match 5/10	100% Asymmetric Adjustment	Lookback 45	0.07	0.15	0.27	0.44	0.84	0.33
Day Match 5/10	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.15	0.25	0.41	0.78	0.31
Day Match Weighted 3/5	100% Asymmetric Adjustment	Lookback 45	0.07	0.15	0.26	0.42	0.81	0.32
Day Match Weighted 3/5	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.15	0.25	0.40	0.77	0.30
Day Match 1/3	Unlimited Asymmetric Adjustment	Lookback 45	0.10	0.26	0.49	0.95	2.54	25029.72
Day Match 1/3	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	0.09	0.26	0.50	0.96	2.54	-6845.15
Day Match 3/5	Unlimited Asymmetric Adjustment	Lookback 45	0.07	0.19	0.34	0.62	1.59	1.13
Day Match 3/5	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	0.08	0.19	0.34	0.61	1.57	318.06
Day Match 5/10	Unlimited Asymmetric Adjustment	Lookback 45	0.09	0.21	0.37	0.65	1.59	0.73
Day Match 5/10	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	0.08	0.20	0.35	0.61	1.57	0.91
Day Match Weighted 3/5	Unlimited Asymmetric Adjustment	Lookback 45	0.08	0.19	0.35	0.63	1.62	0.96
Day Match Weighted 3/5	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	0.08	0.19	0.34	0.62	1.61	0.64
BG&E 3/14 w/ THI Screen	Unadjusted Unadjusted Adjustment	Lookback 45	0.05	0.13	0.24	0.49	1.36	0.41
Meter-Before/After MB - 1 Hour	Unadjusted Unadjusted Adjustment	N/A	0.05	0.11	0.20	0.33	0.79	0.28
Meter-Before/After MB - 2 Hour	Unadjusted Unadjusted Adjustment	N/A	0.05	0.11	0.19	0.33	0.86	0.29
Meter-Before/After MBMA - 1 Hour	Unadjusted Unadjusted Adjustment	N/A	0.04	0.09	0.14	0.24	0.49	0.19
Meter-Before/After MBMA - 2 Hour	Unadjusted Unadjusted Adjustment	N/A	0.04	0.10	0.17	0.27	0.55	0.22

SCE

This section contains all baseline accuracy results for PG&E customers. Table 49 outlines the Mean Percent Error (MPE) statistics for individual customers for all baselines using Delivered Loads. Table 50 outlines the MPE statistics for individual customers for all baselines using Net Loads. Table 51 outlines the CVRMSE statistics for individual customers for all baselines using Delivered Loads. Finally, Table 52 outlines the CVRMSE statistics for individual customers for all baselines using Net Loads.

Table 49: SCE Mean Percent Error by Baseline for Delivered Loads

	Baseline							
Framework	Adjustment	Lookback	p5	p25	p50	p75	p95	Average
Day Match 1/3	Unadjusted Symmetric Adjustment	Lookback 45	-36.65	-16.45	-5.78	4.42	31.93	-4.29
Day Match 1/3	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	-27.97	-13.14	-4.01	6.62	34.99	-0.64
Day Match 3/5	Unadjusted Symmetric Adjustment	Lookback 45	-43.38	-23.07	-12.18	-2.08	19.26	-11.90
Day Match 3/5	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	-31.99	-17.59	-8.93	0.12	22.29	-6.95
Day Match 5/10	Unadjusted Symmetric Adjustment	Lookback 45	-37.94	-17.79	-7.50	2.53	27.08	-6.41
Day Match 5/10	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	-28.68	-14.83	-6.33	2.89	27.03	-3.89
Day Match Weighted 3/5	Unadjusted Symmetric Adjustment	Lookback 45	-44.55	-23.24	-12.11	-2.09	18.61	-12.11
Day Match Weighted 3/5	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	-32.40	-18.16	-9.51	-0.19	21.70	-7.52
Day Match 1/3	40% Symmetric Adjustment	Lookback 45	-29.06	-4.35	7.58	19.94	46.28	8.66
Day Match 1/3	40% Symmetric Adjustment	Lookback 45/Lookforward 15	-24.34	-5.98	5.50	18.37	47.35	8.39
Day Match 3/5	40% Symmetric Adjustment	Lookback 45	-34.84	-9.98	1.94	12.44	31.36	0.94
Day Match 3/5	40% Symmetric Adjustment	Lookback 45/Lookforward 15	-26.46	-7.38	2.64	12.32	31.92	3.17
Day Match 5/10	40% Symmetric Adjustment	Lookback 45	-30.23	-5.67	5.39	15.69	36.41	4.99
Day Match 5/10	40% Symmetric Adjustment	Lookback 45/Lookforward 15	-23.05	-4.50	4.79	14.25	34.57	5.72
Day Match Weighted 3/5	40% Symmetric Adjustment	Lookback 45	-35.61	-9.90	2.21	12.67	31.82	1.04
Day Match Weighted 3/5	40% Symmetric Adjustment	Lookback 45/Lookforward 15	-27.17	-8.08	1.94	11.68	31.36	2.39
Day Match 1/3	100% Symmetric Adjustment	Lookback 45	-23.50	2.80	19.30	39.53	78.47	22.96
Day Match 1/3	100% Symmetric Adjustment	Lookback 45/Lookforward 15	-22.08	-0.16	14.52	34.77	77.42	20.22
Day Match 3/5	100% Symmetric Adjustment	Lookback 45	-27.75	-1.45	12.35	27.62	56.28	13.45
Day Match 3/5	100% Symmetric Adjustment	Lookback 45/Lookforward 15	-22.41	-1.95	9.65	23.75	52.18	12.02
Day Match 5/10	100% Symmetric Adjustment	Lookback 45	-23.86	1.23	14.07	29.70	58.35	16.00
Day Match 5/10	100% Symmetric Adjustment	Lookback 45/Lookforward 15	-19.57	0.07	11.09	25.02	53.23	13.80
Day Match Weighted 3/5	100% Symmetric Adjustment	Lookback 45	-28.08	-1.20	12.77	28.38	56.99	13.80
Day Match Weighted 3/5	100% Symmetric Adjustment	Lookback 45/Lookforward 15	-23.20	-2.29	9.38	23.23	51.25	11.60
Day Match 1/3	Unlimited Symmetric Adjustment	Lookback 45	-20.79	7.77	33.29	96.39	387.56	140.93
Day Match 1/3	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	-21.07	5.20	28.57	87.64	338.11	130.86

Day Match 3/5	Unlimited Symmetric Adjustment	Lookback 45	-19.20	4.46	21.45	55.05	201.07	122.61
Day Match 3/5	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	-21.10	0.57	13.98	36.82	132.65	62.81
Day Match 5/10	Unlimited Symmetric Adjustment	Lookback 45	-17.30	5.28	20.42	47.91	166.31	101.12
Day Match 5/10	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	-17.76	1.47	13.88	33.89	112.41	49.74
Day Match Weighted 3/5	Unlimited Symmetric Adjustment	Lookback 45	-19.27	4.48	22.01	55.88	205.12	129.69
Day Match Weighted 3/5	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	-19.42	1.39	15.83	40.26	140.91	71.34
Day Match 1/3	Unadjusted Asymmetric Adjustment	Lookback 45	-36.65	-16.45	-5.78	4.42	31.93	-4.29
Day Match 1/3	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	-27.97	-13.14	-4.01	6.62	34.99	-0.64
Day Match 3/5	Unadjusted Asymmetric Adjustment	Lookback 45	-43.38	-23.07	-12.18	-2.08	19.26	-11.90
Day Match 3/5	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	-31.99	-17.59	-8.93	0.12	22.29	-6.95
Day Match 5/10	Unadjusted Asymmetric Adjustment	Lookback 45	-37.94	-17.79	-7.50	2.53	27.08	-6.41
Day Match 5/10	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	-28.68	-14.83	-6.33	2.89	27.03	-3.89
Day Match Weighted 3/5	Unadjusted Asymmetric Adjustment	Lookback 45	-44.55	-23.24	-12.11	-2.09	18.61	-12.11
Day Match Weighted 3/5	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	-32.40	-18.16	-9.51	-0.19	21.70	-7.52
Day Match 1/3	40% Asymmetric Adjustment	Lookback 45	-31.04	-5.90	6.38	18.74	44.69	7.15
Day Match 1/3	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	-27.12	-7.68	4.00	16.87	44.91	6.47
Day Match 3/5	40% Asymmetric Adjustment	Lookback 45	-36.54	-11.55	0.92	11.48	29.63	-0.44
Day Match 3/5	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	-28.87	-8.84	1.49	11.08	29.67	1.51
Day Match 5/10	40% Asymmetric Adjustment	Lookback 45	-32.69	-7.38	4.07	14.37	33.91	3.21
Day Match 5/10	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	-25.70	-6.24	3.49	12.95	32.16	3.89
Day Match Weighted 3/5	40% Asymmetric Adjustment	Lookback 45	-37.23	-11.43	1.33	11.73	30.32	-0.28
Day Match Weighted 3/5	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	-29.81	-9.81	0.76	10.53	29.27	0.76
Day Match 1/3	100% Asymmetric Adjustment	Lookback 45	-27.76	1.08	17.90	38.07	76.12	20.97
Day Match 1/3	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	-26.96	-2.26	12.63	32.69	74.62	17.59
Day Match 3/5	100% Asymmetric Adjustment	Lookback 45	-31.22	-2.96	11.08	26.22	54.20	11.57
Day Match 3/5	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	-27.48	-3.78	8.22	22.06	50.00	9.70
Day Match 5/10	100% Asymmetric Adjustment	Lookback 45	-27.91	-0.55	12.55	27.66	55.44	13.53
Day Match 5/10	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	-23.94	-1.77	9.47	23.00	50.13	11.25

Day Match Weighted 3/5	100% Asymmetric Adjustment	Lookback 45	-31.57	-2.79	11.46	26.96	54.88	12.02
Day Match Weighted 3/5	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	-28.22	-4.03	7.95	21.55	49.04	9.36
Day Match 1/3	Unlimited Asymmetric Adjustment	Lookback 45	-3.44	18.06	43.77	108.91	400.87	153.30
Day Match 1/3	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	-1.54	17.33	42.11	102.70	359.40	146.25
Day Match 3/5	Unlimited Asymmetric Adjustment	Lookback 45	-6.42	12.56	30.40	65.25	215.71	133.00
Day Match 3/5	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	-4.68	9.76	23.77	48.09	150.70	75.10
Day Match 5/10	Unlimited Asymmetric Adjustment	Lookback 45	-2.15	14.60	31.04	61.47	186.13	113.89
Day Match 5/10	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	-2.59	10.86	24.39	47.37	132.89	63.02
Day Match Weighted 3/5	Unlimited Asymmetric Adjustment	Lookback 45	-6.80	12.50	30.56	65.94	219.38	139.68
Day Match Weighted 3/5	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	-4.13	10.79	25.66	51.64	159.44	83.42
BG&E 3/14 w/ THI Screen	Unadjusted Unadjusted Adjustment	Lookback 45	-21.30	-4.90	4.07	16.76	54.18	9.42
Meter-Before/After MB - 1 Hour	Unadjusted Unadjusted Adjustment	N/A	-41.44	-10.56	3.19	15.63	40.64	2.33
Meter-Before/After MB - 2 Hour	Unadjusted Unadjusted Adjustment	N/A	-45.47	-13.13	1.18	13.59	38.92	-0.09
Meter-Before/After MBMA - 1 Hour	Unadjusted Unadjusted Adjustment	N/A	-28.96	-13.88	-6.14	1.31	19.83	-5.44
Meter-Before/After MBMA - 2 Hour	Unadjusted Unadjusted Adjustment	N/A	-34.50	-18.22	-9.56	-1.28	18.29	-8.85

Table 50: SCE Mean Percent Error by Baseline for Net Loads

	Baseline							
Framework	Adjustment	Lookback	p5	p25	p50	p75	p95	Average
Day Match 1/3	Unadjusted Symmetric Adjustment	Lookback 45	-37.20	-16.59	-5.88	4.41	32.01	-4.41
Day Match 1/3	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	-28.20	-13.19	-4.01	6.62	35.44	-0.71
Day Match 3/5	Unadjusted Symmetric Adjustment	Lookback 45	-44.02	-23.36	-12.29	-2.11	19.32	-11.98
Day Match 3/5	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	-32.37	-17.72	-8.98	0.13	22.47	-7.05
Day Match 5/10	Unadjusted Symmetric Adjustment	Lookback 45	-38.49	-17.96	-7.56	2.50	27.08	-6.46
Day Match 5/10	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	-28.94	-14.97	-6.36	2.89	27.12	-3.97
Day Match Weighted 3/5	Unadjusted Symmetric Adjustment	Lookback 45	-45.36	-23.50	-12.18	-2.11	18.63	-12.19
Day Match Weighted 3/5	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	-32.60	-18.30	-9.55	-0.19	21.82	-7.61
Day Match 1/3	40% Symmetric Adjustment	Lookback 45	-35.03	-7.43	6.08	18.67	45.39	6.36
Day Match 1/3	40% Symmetric Adjustment	Lookback 45/Lookforward 15	-28.25	-8.05	4.09	17.20	46.24	6.60
Day Match 3/5	40% Symmetric Adjustment	Lookback 45	-41.22	-13.06	0.69	11.77	30.68	-1.03
Day Match 3/5	40% Symmetric Adjustment	Lookback 45/Lookforward 15	-29.86	-8.87	1.86	11.79	31.59	1.92
Day Match 5/10	40% Symmetric Adjustment	Lookback 45	-37.51	-8.23	4.39	15.11	36.00	3.15
Day Match 5/10	40% Symmetric Adjustment	Lookback 45/Lookforward 15	-27.39	-6.10	4.08	13.82	34.48	4.47
Day Match Weighted 3/5	40% Symmetric Adjustment	Lookback 45	-42.01	-12.96	1.12	12.05	31.23	-0.92
Day Match Weighted 3/5	40% Symmetric Adjustment	Lookback 45/Lookforward 15	-30.56	-9.87	1.07	11.16	30.89	1.13
Day Match 1/3	100% Symmetric Adjustment	Lookback 45	-36.53	-1.24	16.23	35.74	74.20	18.34
Day Match 1/3	100% Symmetric Adjustment	Lookback 45/Lookforward 15	-30.00	-3.17	11.77	31.46	73.72	16.50
Day Match 3/5	100% Symmetric Adjustment	Lookback 45	-41.44	-5.14	9.90	25.33	53.43	9.54
Day Match 3/5	100% Symmetric Adjustment	Lookback 45/Lookforward 15	-29.49	-3.97	8.16	22.22	50.42	9.68
Day Match 5/10	100% Symmetric Adjustment	Lookback 45	-38.49	-2.07	12.01	27.50	56.97	12.36
Day Match 5/10	100% Symmetric Adjustment	Lookback 45/Lookforward 15	-27.17	-1.76	9.65	23.50	51.94	11.50
Day Match Weighted 3/5	100% Symmetric Adjustment	Lookback 45	-42.59	-4.84	10.37	25.98	54.59	9.92
Day Match Weighted 3/5	100% Symmetric Adjustment	Lookback 45/Lookforward 15	-30.21	-4.37	7.85	21.55	49.36	9.18
Day Match 1/3	Unlimited Symmetric Adjustment	Lookback 45	-60.11	3.91	28.39	83.21	310.10	-1738.16
Day Match 1/3	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	-50.55	1.99	24.07	76.85	283.12	-363073.09

Day Match 3/5	Unlimited Symmetric Adjustment	Lookback 45	-61.90	0.83	17.85	47.04	150.31	73114.16
Day Match 3/5	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	-43.45	-2.09	11.67	32.85	116.32	-1436.76
Day Match 5/10	Unlimited Symmetric Adjustment	Lookback 45	-55.04	1.84	16.91	41.36	128.34	104363.14
Day Match 5/10	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	-40.41	-0.96	11.77	30.32	99.51	-3476.99
Day Match Weighted 3/5	Unlimited Symmetric Adjustment	Lookback 45	-63.87	0.83	18.09	47.73	155.26	-248462.27
Day Match Weighted 3/5	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	-43.55	-1.24	12.89	35.52	119.35	16824.73
Day Match 1/3	Unadjusted Asymmetric Adjustment	Lookback 45	-37.20	-16.59	-5.88	4.41	32.01	-4.41
Day Match 1/3	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	-28.20	-13.19	-4.01	6.62	35.44	-0.71
Day Match 3/5	Unadjusted Asymmetric Adjustment	Lookback 45	-44.02	-23.36	-12.29	-2.11	19.32	-11.98
Day Match 3/5	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	-32.37	-17.72	-8.98	0.13	22.47	-7.05
Day Match 5/10	Unadjusted Asymmetric Adjustment	Lookback 45	-38.49	-17.96	-7.56	2.50	27.08	-6.46
Day Match 5/10	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	-28.94	-14.97	-6.36	2.89	27.12	-3.97
Day Match Weighted 3/5	Unadjusted Asymmetric Adjustment	Lookback 45	-45.36	-23.50	-12.18	-2.11	18.63	-12.19
Day Match Weighted 3/5	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	-32.60	-18.30	-9.55	-0.19	21.82	-7.61
Day Match 1/3	40% Asymmetric Adjustment	Lookback 45	-38.97	-9.24	4.86	17.45	43.52	4.52
Day Match 1/3	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	-32.30	-10.14	2.53	15.65	43.57	4.40
Day Match 3/5	40% Asymmetric Adjustment	Lookback 45	-44.79	-14.90	-0.37	10.80	29.04	-2.70
Day Match 3/5	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	-33.63	-10.79	0.63	10.55	29.29	0.06
Day Match 5/10	40% Asymmetric Adjustment	Lookback 45	-41.60	-10.26	3.09	13.83	33.33	1.09
Day Match 5/10	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	-31.39	-8.00	2.81	12.46	31.90	2.44
Day Match Weighted 3/5	40% Asymmetric Adjustment	Lookback 45	-45.70	-14.69	0.11	11.00	29.70	-2.53
Day Match Weighted 3/5	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	-33.99	-11.72	-0.16	9.94	28.80	-0.70
Day Match 1/3	100% Asymmetric Adjustment	Lookback 45	-48.95	-3.55	14.54	34.35	72.37	15.08
Day Match 1/3	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	-41.51	-6.23	9.92	29.41	70.81	12.68
Day Match 3/5	100% Asymmetric Adjustment	Lookback 45	-52.34	-7.30	8.68	23.89	51.89	6.56
Day Match 3/5	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	-38.80	-6.32	6.66	20.59	48.25	6.55
Day Match 5/10	100% Asymmetric Adjustment	Lookback 45	-50.08	-4.20	10.53	25.28	53.90	8.80
Day Match 5/10	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	-36.69	-3.89	8.01	21.57	49.17	8.14

Day Match Weighted 3/5	100% Asymmetric Adjustment	Lookback 45	-52.92	-6.94	9.18	24.56	52.46	7.04
Day Match Weighted 3/5	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	-39.73	-6.88	6.25	19.91	47.16	6.12
Day Match 1/3	Unlimited Asymmetric Adjustment	Lookback 45	-8.49	15.62	40.13	97.94	327.41	79471.98
Day Match 1/3	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	-3.90	15.79	39.01	95.10	305.67	104466.50
Day Match 3/5	Unlimited Asymmetric Adjustment	Lookback 45	-13.97	10.08	27.26	58.99	173.79	109852.69
Day Match 3/5	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	-7.40	8.70	22.32	46.23	144.72	85614.70
Day Match 5/10	Unlimited Asymmetric Adjustment	Lookback 45	-9.63	12.56	28.43	56.36	158.24	120338.87
Day Match 5/10	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	-5.39	9.67	23.05	45.51	132.31	19875.58
Day Match Weighted 3/5	Unlimited Asymmetric Adjustment	Lookback 45	-14.91	10.09	27.31	59.61	176.55	107087.26
Day Match Weighted 3/5	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	-7.08	9.67	24.10	49.27	146.43	18142.82
BG&E 3/14 w/ THI Screen	Unadjusted Unadjusted Adjustment	Lookback 45	-21.72	-4.97	4.04	16.77	54.46	9.29
Meter-Before/After MB - 1 Hour	Unadjusted Unadjusted Adjustment	N/A	-45.45	-10.75	3.13	15.62	40.66	3.50
Meter-Before/After MB - 2 Hour	Unadjusted Unadjusted Adjustment	N/A	-51.19	-13.33	1.16	13.57	38.93	0.92
Meter-Before/After MBMA - 1 Hour	Unadjusted Unadjusted Adjustment	N/A	-30.61	-14.14	-6.22	1.26	19.69	-5.19
Meter-Before/After MBMA - 2 Hour	Unadjusted Unadjusted Adjustment	N/A	-37.32	-18.53	-9.64	-1.36	18.24	-8.61

Table 51: SCE CVRMSE by Baseline for Delivered Loads

| Baseline | | | | | | | | |
Framework	Adjustment	Lookback	p5	p25	p50	p75	p95	Average
Day Match 1/3	Unadjusted Symmetric Adjustment	Lookback 45	0.04	0.10	0.16	0.26	0.52	0.21
Day Match 1/3	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.10	0.16	0.24	0.48	0.20
Day Match 3/5	Unadjusted Symmetric Adjustment	Lookback 45	0.05	0.11	0.18	0.29	0.50	0.22
Day Match 3/5	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.10	0.16	0.24	0.42	0.19
Day Match 5/10	Unadjusted Symmetric Adjustment	Lookback 45	0.04	0.10	0.16	0.26	0.49	0.20
Day Match 5/10	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	0.04	0.09	0.15	0.22	0.42	0.18
Day Match Weighted 3/5	Unadjusted Symmetric Adjustment	Lookback 45	0.05	0.11	0.18	0.29	0.52	0.22
Day Match Weighted 3/5	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.10	0.16	0.25	0.43	0.20
Day Match 1/3	40% Symmetric Adjustment	Lookback 45	0.06	0.11	0.18	0.29	0.56	0.23
Day Match 1/3	40% Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.11	0.18	0.28	0.54	0.23
Day Match 3/5	40% Symmetric Adjustment	Lookback 45	0.05	0.10	0.16	0.25	0.48	0.20
Day Match 3/5	40% Symmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.10	0.15	0.23	0.42	0.19
Day Match 5/10	40% Symmetric Adjustment	Lookback 45	0.05	0.10	0.16	0.25	0.48	0.20
Day Match 5/10	40% Symmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.10	0.15	0.23	0.43	0.19
Day Match Weighted 3/5	40% Symmetric Adjustment	Lookback 45	0.05	0.10	0.16	0.25	0.48	0.20
Day Match Weighted 3/5	40% Symmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.10	0.15	0.23	0.43	0.19
Day Match 1/3	100% Symmetric Adjustment	Lookback 45	0.07	0.17	0.29	0.46	0.83	0.35
Day Match 1/3	100% Symmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.15	0.25	0.42	0.82	0.33
Day Match 3/5	100% Symmetric Adjustment	Lookback 45	0.06	0.14	0.23	0.36	0.62	0.27
Day Match 3/5	100% Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.12	0.20	0.32	0.58	0.25
Day Match 5/10	100% Symmetric Adjustment	Lookback 45	0.06	0.14	0.23	0.36	0.64	0.28
Day Match 5/10	100% Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.12	0.21	0.32	0.58	0.25
Day Match Weighted 3/5	100% Symmetric Adjustment	Lookback 45	0.06	0.14	0.23	0.36	0.63	0.28
Day Match Weighted 3/5	100% Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.13	0.20	0.32	0.57	0.25
Day Match 1/3	Unlimited Symmetric Adjustment	Lookback 45	0.08	0.21	0.45	1.10	4.29	1.71
Day Match 1/3	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.19	0.40	1.02	3.82	1.60

Day Match 3/5	Unlimited Symmetric Adjustment	Lookback 45	0.07	0.17	0.32	0.65	2.21	1.52
Day Match 3/5	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.14	0.25	0.46	1.50	0.84
Day Match 5/10	Unlimited Symmetric Adjustment	Lookback 45	0.06	0.16	0.30	0.57	1.82	1.26
Day Match 5/10	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.13	0.24	0.43	1.27	0.68
Day Match Weighted 3/5	Unlimited Symmetric Adjustment	Lookback 45	0.07	0.17	0.32	0.66	2.27	1.60
Day Match Weighted 3/5	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.14	0.27	0.50	1.59	0.94
Day Match 1/3	Unadjusted Asymmetric Adjustment	Lookback 45	0.04	0.10	0.16	0.26	0.52	0.21
Day Match 1/3	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.10	0.16	0.24	0.48	0.20
Day Match 3/5	Unadjusted Asymmetric Adjustment	Lookback 45	0.05	0.11	0.18	0.29	0.50	0.22
Day Match 3/5	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.10	0.16	0.24	0.42	0.19
Day Match 5/10	Unadjusted Asymmetric Adjustment	Lookback 45	0.04	0.10	0.16	0.26	0.49	0.20
Day Match 5/10	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	0.04	0.09	0.15	0.22	0.42	0.18
Day Match Weighted 3/5	Unadjusted Asymmetric Adjustment	Lookback 45	0.05	0.11	0.18	0.29	0.52	0.22
Day Match Weighted 3/5	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.10	0.16	0.25	0.43	0.20
Day Match 1/3	40% Asymmetric Adjustment	Lookback 45	0.06	0.11	0.18	0.29	0.55	0.23
Day Match 1/3	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.12	0.18	0.28	0.53	0.23
Day Match 3/5	40% Asymmetric Adjustment	Lookback 45	0.05	0.10	0.16	0.25	0.48	0.20
Day Match 3/5	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.10	0.15	0.23	0.42	0.19
Day Match 5/10	40% Asymmetric Adjustment	Lookback 45	0.05	0.10	0.16	0.25	0.47	0.20
Day Match 5/10	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.10	0.15	0.23	0.42	0.19
Day Match Weighted 3/5	40% Asymmetric Adjustment	Lookback 45	0.05	0.10	0.16	0.25	0.48	0.20
Day Match Weighted 3/5	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.10	0.15	0.24	0.43	0.19
Day Match 1/3	100% Asymmetric Adjustment	Lookback 45	0.07	0.17	0.29	0.46	0.82	0.35
Day Match 1/3	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.15	0.26	0.42	0.80	0.33
Day Match 3/5	100% Asymmetric Adjustment	Lookback 45	0.06	0.14	0.23	0.36	0.62	0.27
Day Match 3/5	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.13	0.21	0.33	0.57	0.25
Day Match 5/10	100% Asymmetric Adjustment	Lookback 45	0.06	0.14	0.23	0.36	0.62	0.27
Day Match 5/10	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.12	0.21	0.32	0.58	0.25

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Day Match Weighted 3/5	100% Asymmetric Adjustment	Lookback 45	0.06	0.14	0.23	0.36	0.62	0.28
Day Match Weighted 3/5	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.13	0.21	0.32	0.57	0.25
Day Match 1/3	Unlimited Asymmetric Adjustment	Lookback 45	0.08	0.24	0.50	1.20	4.38	1.76
Day Match 1/3	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	0.08	0.22	0.48	1.13	3.97	1.68
Day Match 3/5	Unlimited Asymmetric Adjustment	Lookback 45	0.07	0.19	0.36	0.72	2.33	1.57
Day Match 3/5	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.15	0.29	0.53	1.64	0.89
Day Match 5/10	Unlimited Asymmetric Adjustment	Lookback 45	0.07	0.19	0.35	0.67	1.99	1.33
Day Match 5/10	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.15	0.28	0.52	1.44	0.74
Day Match Weighted 3/5	Unlimited Asymmetric Adjustment	Lookback 45	0.07	0.19	0.36	0.73	2.39	1.65
Day Match Weighted 3/5	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.16	0.30	0.57	1.75	0.99
BG&E 3/14 w/ THI Screen	Unadjusted Unadjusted Adjustment	Lookback 45	0.04	0.09	0.15	0.26	0.62	0.22
Meter-Before/After MB - 1 Hour	Unadjusted Unadjusted Adjustment	N/A	0.04	0.10	0.18	0.30	0.58	0.23
Meter-Before/After MB - 2 Hour	Unadjusted Unadjusted Adjustment	N/A	0.04	0.10	0.18	0.30	0.59	0.23
Meter-Before/After MBMA - 1 Hour	Unadjusted Unadjusted Adjustment	N/A	0.03	0.07	0.12	0.20	0.37	0.15
Meter-Before/After MBMA - 2 Hour	Unadjusted Unadjusted Adjustment	N/A	0.04	0.09	0.15	0.23	0.41	0.18

Table 52: SCE CVRMSE by Baseline for Net Loads

	Baseline							
Framework	Adjustment	Lookback	p5	p25	p50	p75	p95	Average
Day Match 1/3	Unadjusted Symmetric Adjustment	Lookback 45	0.04	0.10	0.16	0.26	0.52	0.21
Day Match 1/3	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.10	0.16	0.24	0.48	0.21
Day Match 3/5	Unadjusted Symmetric Adjustment	Lookback 45	0.05	0.11	0.18	0.29	0.51	0.22
Day Match 3/5	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.10	0.16	0.24	0.42	0.19
Day Match 5/10	Unadjusted Symmetric Adjustment	Lookback 45	0.04	0.10	0.16	0.26	0.50	0.21
Day Match 5/10	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	0.04	0.09	0.15	0.23	0.42	0.19
Day Match Weighted 3/5	Unadjusted Symmetric Adjustment	Lookback 45	0.05	0.11	0.18	0.29	0.52	0.22
Day Match Weighted 3/5	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.10	0.16	0.25	0.43	0.20
Day Match 1/3	40% Symmetric Adjustment	Lookback 45	0.06	0.12	0.19	0.30	0.57	0.24
Day Match 1/3	40% Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.12	0.18	0.29	0.54	0.23
Day Match 3/5	40% Symmetric Adjustment	Lookback 45	0.05	0.10	0.17	0.27	0.51	0.21
Day Match 3/5	40% Symmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.10	0.16	0.24	0.44	0.19
Day Match 5/10	40% Symmetric Adjustment	Lookback 45	0.05	0.10	0.17	0.27	0.50	0.21
Day Match 5/10	40% Symmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.10	0.15	0.24	0.45	0.19
Day Match Weighted 3/5	40% Symmetric Adjustment	Lookback 45	0.05	0.10	0.17	0.27	0.51	0.21
Day Match Weighted 3/5	40% Symmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.10	0.16	0.24	0.44	0.19
Day Match 1/3	100% Symmetric Adjustment	Lookback 45	0.07	0.17	0.29	0.45	0.80	0.35
Day Match 1/3	100% Symmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.15	0.25	0.41	0.79	0.32
Day Match 3/5	100% Symmetric Adjustment	Lookback 45	0.06	0.14	0.24	0.37	0.63	0.28
Day Match 3/5	100% Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.13	0.21	0.33	0.58	0.25
Day Match 5/10	100% Symmetric Adjustment	Lookback 45	0.06	0.14	0.24	0.38	0.64	0.28
Day Match 5/10	100% Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.12	0.21	0.33	0.59	0.25
Day Match Weighted 3/5	100% Symmetric Adjustment	Lookback 45	0.06	0.14	0.24	0.37	0.64	0.28
Day Match Weighted 3/5	100% Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.13	0.21	0.33	0.57	0.25
Day Match 1/3	Unlimited Symmetric Adjustment	Lookback 45	0.08	0.21	0.46	1.13	3.78	1650.95
Day Match 1/3	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.19	0.41	1.05	3.53	6612.70

Day Match 3/5	Unlimited Symmetric Adjustment	Lookback 45	0.07	0.17	0.32	0.67	2.11	1620.07
Day Match 3/5	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.14	0.26	0.49	1.76	2096.48
Day Match 5/10	Unlimited Symmetric Adjustment	Lookback 45	0.06	0.16	0.30	0.59	1.92	1533.12
Day Match 5/10	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.13	0.24	0.46	1.59	479.32
Day Match Weighted 3/5	Unlimited Symmetric Adjustment	Lookback 45	0.07	0.17	0.33	0.69	2.15	5447.71
Day Match Weighted 3/5	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.14	0.27	0.52	1.84	239.74
Day Match 1/3	Unadjusted Asymmetric Adjustment	Lookback 45	0.04	0.10	0.16	0.26	0.52	0.21
Day Match 1/3	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.10	0.16	0.24	0.48	0.21
Day Match 3/5	Unadjusted Asymmetric Adjustment	Lookback 45	0.05	0.11	0.18	0.29	0.51	0.22
Day Match 3/5	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.10	0.16	0.24	0.42	0.19
Day Match 5/10	Unadjusted Asymmetric Adjustment	Lookback 45	0.04	0.10	0.16	0.26	0.50	0.21
Day Match 5/10	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	0.04	0.09	0.15	0.23	0.42	0.19
Day Match Weighted 3/5	Unadjusted Asymmetric Adjustment	Lookback 45	0.05	0.11	0.18	0.29	0.52	0.22
Day Match Weighted 3/5	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.10	0.16	0.25	0.43	0.20
Day Match 1/3	40% Asymmetric Adjustment	Lookback 45	0.06	0.12	0.19	0.31	0.57	0.24
Day Match 1/3	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.12	0.19	0.29	0.53	0.24
Day Match 3/5	40% Asymmetric Adjustment	Lookback 45	0.05	0.10	0.17	0.28	0.53	0.21
Day Match 3/5	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.10	0.16	0.25	0.45	0.20
Day Match 5/10	40% Asymmetric Adjustment	Lookback 45	0.05	0.11	0.17	0.28	0.51	0.21
Day Match 5/10	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.10	0.16	0.25	0.45	0.19
Day Match Weighted 3/5	40% Asymmetric Adjustment	Lookback 45	0.05	0.11	0.17	0.28	0.53	0.22
Day Match Weighted 3/5	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.10	0.16	0.25	0.45	0.20
Day Match 1/3	100% Asymmetric Adjustment	Lookback 45	0.07	0.17	0.29	0.47	0.83	0.36
Day Match 1/3	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.15	0.27	0.44	0.80	0.33
Day Match 3/5	100% Asymmetric Adjustment	Lookback 45	0.06	0.14	0.24	0.38	0.70	0.29
Day Match 3/5	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.13	0.21	0.34	0.62	0.26
Day Match 5/10	100% Asymmetric Adjustment	Lookback 45	0.06	0.14	0.24	0.38	0.72	0.29
Day Match 5/10	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.13	0.21	0.34	0.63	0.26

Day Match Weighted 3/5	100% Asymmetric Adjustment	Lookback 45	0.06	0.15	0.24	0.39	0.72	0.29
Day Match Weighted 3/5	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.13	0.21	0.34	0.62	0.26
Day Match 1/3	Unlimited Asymmetric Adjustment	Lookback 45	0.08	0.23	0.47	1.09	3.61	927.42
Day Match 1/3	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	0.08	0.21	0.45	1.05	3.34	1303.36
Day Match 3/5	Unlimited Asymmetric Adjustment	Lookback 45	0.07	0.18	0.34	0.66	1.90	1272.18
Day Match 3/5	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.15	0.28	0.52	1.60	1078.10
Day Match 5/10	Unlimited Asymmetric Adjustment	Lookback 45	0.07	0.19	0.34	0.62	1.71	1312.82
Day Match 5/10	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.15	0.27	0.51	1.44	261.40
Day Match Weighted 3/5	Unlimited Asymmetric Adjustment	Lookback 45	0.07	0.18	0.34	0.67	1.93	1197.71
Day Match Weighted 3/5	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.16	0.29	0.55	1.62	221.45
BG&E 3/14 w/ THI Screen	Unadjusted Unadjusted Adjustment	Lookback 45	0.04	0.09	0.15	0.26	0.63	0.22
Meter-Before/After MB - 1 Hour	Unadjusted Unadjusted Adjustment	N/A	0.04	0.10	0.18	0.30	0.62	0.23
Meter-Before/After MB - 2 Hour	Unadjusted Unadjusted Adjustment	N/A	0.04	0.10	0.18	0.30	0.65	0.24
Meter-Before/After MBMA - 1 Hour	Unadjusted Unadjusted Adjustment	N/A	0.03	0.07	0.12	0.20	0.39	0.16
Meter-Before/After MBMA - 2 Hour	Unadjusted Unadjusted Adjustment	N/A	0.04	0.09	0.15	0.23	0.44	0.18

SDG&E

This section contains all baseline accuracy results for PG&E customers. Table 53 outlines the Mean Percent Error (MPE) statistics for individual customers for all baselines using Delivered Loads. Table 54 outlines the MPE statistics for individual customers for all baselines using Net Loads. Table 55 outlines the CVRMSE statistics for individual customers for all baselines using Delivered Loads. Finally, Table 56 outlines the CVRMSE statistics for individual customers for all baselines using Net Loads.

Table 53: SDG&E Mean Percent Error by Baseline for Delivered Loads

	Baseline							
Framework	Adjustment	Lookback	p5	p25	p50	p75	p95	Average
Day Match 1/3	Unadjusted Symmetric Adjustment	Lookback 45	-36.49	-11.32	2.39	18.51	65.64	7.21
Day Match 1/3	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	-27.36	-7.66	4.53	21.12	67.43	10.86
Day Match 3/5	Unadjusted Symmetric Adjustment	Lookback 45	-43.15	-20.21	-6.05	7.44	41.28	-4.24
Day Match 3/5	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	-30.42	-11.75	-0.40	12.25	46.86	3.13
Day Match 5/10	Unadjusted Symmetric Adjustment	Lookback 45	-39.64	-15.86	-2.27	12.43	50.86	1.21
Day Match 5/10	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	-26.13	-8.39	2.94	16.77	55.44	7.75
Day Match Weighted 3/5	Unadjusted Symmetric Adjustment	Lookback 45	-44.62	-20.36	-6.10	7.37	41.37	-4.55
Day Match Weighted 3/5	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	-31.38	-12.64	-1.06	11.69	45.78	2.31
Day Match 1/3	40% Symmetric Adjustment	Lookback 45	-30.14	-3.07	11.42	29.30	75.03	15.87
Day Match 1/3	40% Symmetric Adjustment	Lookback 45/Lookforward 15	-24.67	-2.47	11.41	28.91	74.98	16.91
Day Match 3/5	40% Symmetric Adjustment	Lookback 45	-36.34	-10.07	3.80	16.60	46.45	4.33
Day Match 3/5	40% Symmetric Adjustment	Lookback 45/Lookforward 15	-25.57	-5.22	6.10	18.69	49.78	8.46
Day Match 5/10	40% Symmetric Adjustment	Lookback 45	-32.64	-5.90	6.99	20.49	52.47	8.68
Day Match 5/10	40% Symmetric Adjustment	Lookback 45/Lookforward 15	-21.75	-2.15	8.80	21.69	53.68	11.97
Day Match Weighted 3/5	40% Symmetric Adjustment	Lookback 45	-37.05	-10.06	3.87	16.84	47.42	4.28
Day Match Weighted 3/5	40% Symmetric Adjustment	Lookback 45/Lookforward 15	-26.80	-6.01	5.50	18.11	48.56	7.71
Day Match 1/3	100% Symmetric Adjustment	Lookback 45	-26.30	1.51	18.81	42.17	98.11	25.71
Day Match 1/3	100% Symmetric Adjustment	Lookback 45/Lookforward 15	-22.35	1.18	18.06	41.27	96.70	25.61
Day Match 3/5	100% Symmetric Adjustment	Lookback 45	-30.11	-3.78	10.15	26.39	61.76	12.60
Day Match 3/5	100% Symmetric Adjustment	Lookback 45/Lookforward 15	-23.03	-1.92	10.33	25.83	61.70	13.95
Day Match 5/10	100% Symmetric Adjustment	Lookback 45	-26.24	-0.25	13.06	29.74	66.96	16.30
Day Match 5/10	100% Symmetric Adjustment	Lookback 45/Lookforward 15	-19.45	0.63	12.38	27.90	64.50	16.50
Day Match Weighted 3/5	100% Symmetric Adjustment	Lookback 45	-30.17	-3.71	10.30	26.31	63.36	12.69
Day Match Weighted 3/5	100% Symmetric Adjustment	Lookback 45/Lookforward 15	-23.86	-2.37	10.17	25.73	61.28	13.64
Day Match 1/3	Unlimited Symmetric Adjustment	Lookback 45	-19.70	5.75	26.47	64.44	192.15	49.36
Day Match 1/3	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	-17.98	5.81	26.24	63.86	188.01	49.11

Day Match 3/5	Unlimited Symmetric Adjustment	Lookback 45	-22.90	0.79	15.09	36.55	99.20	24.05
Day Match 3/5	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	-20.88	-0.18	13.10	31.90	87.52	20.97
Day Match 5/10	Unlimited Symmetric Adjustment	Lookback 45	-19.79	3.07	16.88	38.26	95.26	25.18
Day Match 5/10	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	-18.50	1.57	14.06	31.90	82.95	21.01
Day Match Weighted 3/5	Unlimited Symmetric Adjustment	Lookback 45	-23.08	0.72	15.31	37.15	103.10	24.68
Day Match Weighted 3/5	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	-20.43	0.34	13.77	33.16	89.35	21.94
Day Match 1/3	Unadjusted Asymmetric Adjustment	Lookback 45	-36.49	-11.32	2.39	18.51	65.64	7.21
Day Match 1/3	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	-27.36	-7.66	4.53	21.12	67.43	10.86
Day Match 3/5	Unadjusted Asymmetric Adjustment	Lookback 45	-43.15	-20.21	-6.05	7.44	41.28	-4.24
Day Match 3/5	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	-30.42	-11.75	-0.40	12.25	46.86	3.13
Day Match 5/10	Unadjusted Asymmetric Adjustment	Lookback 45	-39.64	-15.86	-2.27	12.43	50.86	1.21
Day Match 5/10	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	-26.13	-8.39	2.94	16.77	55.44	7.75
Day Match Weighted 3/5	Unadjusted Asymmetric Adjustment	Lookback 45	-44.62	-20.36	-6.10	7.37	41.37	-4.55
Day Match Weighted 3/5	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	-31.38	-12.64	-1.06	11.69	45.78	2.31
Day Match 1/3	40% Asymmetric Adjustment	Lookback 45	-32.07	-4.80	9.95	27.44	70.93	13.83
Day Match 1/3	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	-27.22	-4.57	9.78	26.68	70.75	14.50
Day Match 3/5	40% Asymmetric Adjustment	Lookback 45	-37.88	-11.53	2.59	15.25	43.41	2.70
Day Match 3/5	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	-28.12	-6.90	4.77	17.11	46.10	6.46
Day Match 5/10	40% Asymmetric Adjustment	Lookback 45	-34.66	-7.47	5.76	18.83	48.68	6.69
Day Match 5/10	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	-23.95	-3.83	7.31	19.69	49.33	9.73
Day Match Weighted 3/5	40% Asymmetric Adjustment	Lookback 45	-38.38	-11.49	2.77	15.55	44.23	2.71
Day Match Weighted 3/5	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	-29.03	-7.87	4.17	16.59	45.00	5.75
Day Match 1/3	100% Asymmetric Adjustment	Lookback 45	-29.24	0.04	17.44	40.62	94.35	23.69
Day Match 1/3	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	-26.44	-0.27	16.54	39.15	92.69	23.27
Day Match 3/5	100% Asymmetric Adjustment	Lookback 45	-32.17	-4.74	9.20	25.18	59.47	11.18
Day Match 3/5	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	-26.00	-3.08	9.25	24.65	58.96	12.26
Day Match 5/10	100% Asymmetric Adjustment	Lookback 45	-28.86	-1.31	12.05	28.03	63.77	14.40
Day Match 5/10	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	-22.13	-0.57	11.23	26.28	61.18	14.58

Day Match Weighted 3/5	100% Asymmetric Adjustment	Lookback 45	-32.38	-4.62	9.46	25.28	61.17	11.34
Day Match Weighted 3/5	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	-26.50	-3.52	9.16	24.43	58.50	12.00
Day Match 1/3	Unlimited Asymmetric Adjustment	Lookback 45	-5.50	17.39	39.63	80.71	209.86	63.81
Day Match 1/3	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	-1.23	19.73	41.64	82.78	210.80	65.96
Day Match 3/5	Unlimited Asymmetric Adjustment	Lookback 45	-10.83	9.68	24.78	49.06	116.94	35.75
Day Match 3/5	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	-5.59	10.72	24.66	46.82	110.12	35.28
Day Match 5/10	Unlimited Asymmetric Adjustment	Lookback 45	-6.59	12.93	28.20	52.85	117.40	39.24
Day Match 5/10	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	-2.65	12.85	26.52	48.33	109.09	36.95
Day Match Weighted 3/5	Unlimited Asymmetric Adjustment	Lookback 45	-11.62	9.32	24.57	49.46	120.82	36.01
Day Match Weighted 3/5	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	-5.75	11.16	25.42	48.20	112.32	36.01
BG&E 3/14 w/ THI Screen	Unadjusted Unadjusted Adjustment	Lookback 45	-22.41	-0.24	13.36	34.74	100.19	23.90
Meter-Before/After MB - 1 Hour	Unadjusted Unadjusted Adjustment	N/A	-40.10	-15.15	-0.19	18.64	62.01	5.25
Meter-Before/After MB - 2 Hour	Unadjusted Unadjusted Adjustment	N/A	-39.91	-16.01	-1.35	17.41	60.62	4.52
Meter-Before/After MBMA - 1 Hour	Unadjusted Unadjusted Adjustment	N/A	-27.05	-11.59	-2.40	8.22	39.99	1.49
Meter-Before/After MBMA - 2 Hour	Unadjusted Unadjusted Adjustment	N/A	-31.31	-15.12	-5.09	6.35	40.81	-0.86

Table 54: SDG&E Mean Percent Error by Baseline for Net Loads

| | Baseline | | | | | | | |
Framework	Adjustment	Lookback	p5	p25	p50	p75	p95	Average
Day Match 1/3	Unadjusted Symmetric Adjustment	Lookback 45	-36.49	-11.32	2.39	18.51	65.64	7.21
Day Match 1/3	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	-27.36	-7.66	4.53	21.12	67.43	10.86
Day Match 3/5	Unadjusted Symmetric Adjustment	Lookback 45	-43.15	-20.21	-6.05	7.44	41.28	-4.24
Day Match 3/5	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	-30.42	-11.75	-0.40	12.25	46.86	3.13
Day Match 5/10	Unadjusted Symmetric Adjustment	Lookback 45	-39.64	-15.86	-2.27	12.43	50.86	1.21
Day Match 5/10	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	-26.13	-8.39	2.94	16.77	55.44	7.75
Day Match Weighted 3/5	Unadjusted Symmetric Adjustment	Lookback 45	-44.62	-20.36	-6.10	7.37	41.37	-4.55
Day Match Weighted 3/5	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	-31.38	-12.64	-1.06	11.69	45.78	2.31
Day Match 1/3	40% Symmetric Adjustment	Lookback 45	-30.14	-3.07	11.42	29.30	75.03	15.87
Day Match 1/3	40% Symmetric Adjustment	Lookback 45/Lookforward 15	-24.70	-2.47	11.41	28.91	74.98	16.91
Day Match 3/5	40% Symmetric Adjustment	Lookback 45	-36.34	-10.07	3.80	16.60	46.45	4.33
Day Match 3/5	40% Symmetric Adjustment	Lookback 45/Lookforward 15	-25.57	-5.22	6.10	18.70	49.78	8.46
Day Match 5/10	40% Symmetric Adjustment	Lookback 45	-32.64	-5.90	6.99	20.49	52.47	8.68
Day Match 5/10	40% Symmetric Adjustment	Lookback 45/Lookforward 15	-21.74	-2.15	8.80	21.69	53.68	11.98
Day Match Weighted 3/5	40% Symmetric Adjustment	Lookback 45	-37.05	-10.06	3.87	16.84	47.42	4.28
Day Match Weighted 3/5	40% Symmetric Adjustment	Lookback 45/Lookforward 15	-26.80	-6.01	5.50	18.11	48.56	7.71
Day Match 1/3	100% Symmetric Adjustment	Lookback 45	-26.33	1.51	18.81	42.17	98.11	25.71
Day Match 1/3	100% Symmetric Adjustment	Lookback 45/Lookforward 15	-22.35	1.18	18.06	41.27	96.70	25.61
Day Match 3/5	100% Symmetric Adjustment	Lookback 45	-30.10	-3.78	10.15	26.39	61.76	12.60
Day Match 3/5	100% Symmetric Adjustment	Lookback 45/Lookforward 15	-23.03	-1.92	10.33	25.83	61.70	13.95
Day Match 5/10	100% Symmetric Adjustment	Lookback 45	-26.23	-0.24	13.07	29.74	66.96	16.30
Day Match 5/10	100% Symmetric Adjustment	Lookback 45/Lookforward 15	-19.43	0.63	12.38	27.92	64.50	16.51
Day Match Weighted 3/5	100% Symmetric Adjustment	Lookback 45	-30.17	-3.71	10.30	26.31	63.36	12.69
Day Match Weighted 3/5	100% Symmetric Adjustment	Lookback 45/Lookforward 15	-23.85	-2.37	10.17	25.73	61.28	13.64
Day Match 1/3	Unlimited Symmetric Adjustment	Lookback 45	-19.73	5.75	26.46	64.42	192.15	49.33
Day Match 1/3	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	-17.99	5.81	26.23	63.85	188.02	49.09

Day Match 3/5	Unlimited Symmetric Adjustment	Lookback 45	-22.91	0.79	15.09	36.56	99.21	24.06
Day Match 3/5	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	-20.91	-0.18	13.10	31.90	87.52	20.94
Day Match 5/10	Unlimited Symmetric Adjustment	Lookback 45	-19.82	3.07	16.88	38.26	95.26	25.15
Day Match 5/10	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	-18.48	1.57	14.06	31.91	83.00	21.03
Day Match Weighted 3/5	Unlimited Symmetric Adjustment	Lookback 45	-23.14	0.72	15.31	37.15	103.10	24.66
Day Match Weighted 3/5	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	-20.43	0.34	13.77	33.17	89.40	21.96
Day Match 1/3	Unadjusted Asymmetric Adjustment	Lookback 45	-36.49	-11.32	2.39	18.51	65.64	7.21
Day Match 1/3	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	-27.36	-7.66	4.53	21.12	67.43	10.86
Day Match 3/5	Unadjusted Asymmetric Adjustment	Lookback 45	-43.15	-20.21	-6.05	7.44	41.28	-4.24
Day Match 3/5	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	-30.42	-11.75	-0.40	12.25	46.86	3.13
Day Match 5/10	Unadjusted Asymmetric Adjustment	Lookback 45	-39.64	-15.86	-2.27	12.43	50.86	1.21
Day Match 5/10	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	-26.13	-8.39	2.94	16.77	55.44	7.75
Day Match Weighted 3/5	Unadjusted Asymmetric Adjustment	Lookback 45	-44.62	-20.36	-6.10	7.37	41.37	-4.55
Day Match Weighted 3/5	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	-31.38	-12.64	-1.06	11.69	45.78	2.31
Day Match 1/3	40% Asymmetric Adjustment	Lookback 45	-32.07	-4.80	9.95	27.44	70.93	13.83
Day Match 1/3	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	-27.23	-4.57	9.78	26.68	70.75	14.50
Day Match 3/5	40% Asymmetric Adjustment	Lookback 45	-37.88	-11.53	2.59	15.26	43.41	2.70
Day Match 3/5	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	-28.12	-6.90	4.77	17.11	46.10	6.46
Day Match 5/10	40% Asymmetric Adjustment	Lookback 45	-34.64	-7.47	5.76	18.83	48.68	6.70
Day Match 5/10	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	-23.92	-3.83	7.31	19.69	49.33	9.73
Day Match Weighted 3/5	40% Asymmetric Adjustment	Lookback 45	-38.38	-11.49	2.77	15.55	44.23	2.72
Day Match Weighted 3/5	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	-29.00	-7.87	4.17	16.59	45.00	5.75
Day Match 1/3	100% Asymmetric Adjustment	Lookback 45	-29.30	0.04	17.44	40.62	94.35	23.68
Day Match 1/3	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	-26.45	-0.27	16.54	39.15	92.69	23.27
Day Match 3/5	100% Asymmetric Adjustment	Lookback 45	-32.18	-4.74	9.20	25.18	59.47	11.18
Day Match 3/5	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	-26.00	-3.08	9.25	24.65	58.96	12.26
Day Match 5/10	100% Asymmetric Adjustment	Lookback 45	-28.85	-1.31	12.05	28.03	63.77	14.40
Day Match 5/10	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	-22.13	-0.57	11.23	26.29	61.18	14.58

Day Match Weighted 3/5	100% Asymmetric Adjustment	Lookback 45	-32.31	-4.62	9.46	25.28	61.17	11.34
Day Match Weighted 3/5	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	-26.49	-3.53	9.16	24.43	58.50	12.00
Day Match 1/3	Unlimited Asymmetric Adjustment	Lookback 45	-5.52	17.39	39.63	80.64	209.86	63.80
Day Match 1/3	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	-1.23	19.73	41.62	82.71	210.80	65.95
Day Match 3/5	Unlimited Asymmetric Adjustment	Lookback 45	-10.83	9.68	24.78	49.06	116.98	35.77
Day Match 3/5	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	-5.59	10.72	24.67	46.85	110.16	35.30
Day Match 5/10	Unlimited Asymmetric Adjustment	Lookback 45	-6.59	12.93	28.20	52.86	117.56	39.24
Day Match 5/10	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	-2.65	12.86	26.53	48.33	109.14	36.98
Day Match Weighted 3/5	Unlimited Asymmetric Adjustment	Lookback 45	-11.66	9.32	24.57	49.47	121.00	36.03
Day Match Weighted 3/5	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	-5.75	11.16	25.43	48.22	112.38	36.04
BG&E 3/14 w/ THI Screen	Unadjusted Unadjusted Adjustment	Lookback 45	-22.41	-0.24	13.36	34.74	100.19	23.90
Meter-Before/After MB - 1 Hour	Unadjusted Unadjusted Adjustment	N/A	-40.10	-15.15	-0.19	18.64	62.01	5.25
Meter-Before/After MB - 2 Hour	Unadjusted Unadjusted Adjustment	N/A	-39.91	-16.02	-1.35	17.41	60.62	4.52
Meter-Before/After MBMA - 1 Hour	Unadjusted Unadjusted Adjustment	N/A	-27.08	-11.59	-2.40	8.22	39.99	1.49
Meter-Before/After MBMA - 2 Hour	Unadjusted Unadjusted Adjustment	N/A	-31.31	-15.12	-5.09	6.35	40.81	-0.86

Table 55: SDG&E CVRMSE by Baseline for Delivered Loads

Framework	Baseline Adjustment	Lookback	p5	p25	p50	p75	p95	Average
Day Match 1/3	Unadjusted Symmetric Adjustment	Lookback 45	0.05	0.12	0.21	0.35	0.77	0.29
Day Match 1/3	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.12	0.20	0.34	0.76	0.29
Day Match 3/5	Unadjusted Symmetric Adjustment	Lookback 45	0.05	0.12	0.20	0.33	0.60	0.26
Day Match 3/5	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.11	0.18	0.29	0.58	0.23
Day Match 5/10	Unadjusted Symmetric Adjustment	Lookback 45	0.05	0.12	0.20	0.33	0.64	0.27
Day Match 5/10	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.11	0.18	0.29	0.62	0.24
Day Match Weighted 3/5	Unadjusted Symmetric Adjustment	Lookback 45	0.05	0.12	0.20	0.34	0.61	0.26
Day Match Weighted 3/5	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.11	0.18	0.29	0.57	0.24
Day Match 1/3	40% Symmetric Adjustment	Lookback 45	0.07	0.14	0.24	0.39	0.85	0.32
Day Match 1/3	40% Symmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.14	0.23	0.38	0.82	0.31
Day Match 3/5	40% Symmetric Adjustment	Lookback 45	0.06	0.12	0.19	0.31	0.60	0.25
Day Match 3/5	40% Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.12	0.19	0.29	0.58	0.24
Day Match 5/10	40% Symmetric Adjustment	Lookback 45	0.06	0.12	0.20	0.32	0.63	0.26
Day Match 5/10	40% Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.12	0.19	0.30	0.60	0.25
Day Match Weighted 3/5	40% Symmetric Adjustment	Lookback 45	0.06	0.12	0.20	0.31	0.60	0.25
Day Match Weighted 3/5	40% Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.12	0.19	0.29	0.57	0.24
Day Match 1/3	100% Symmetric Adjustment	Lookback 45	0.08	0.17	0.30	0.51	1.06	0.40
Day Match 1/3	100% Symmetric Adjustment	Lookback 45/Lookforward 15	0.08	0.17	0.29	0.49	1.03	0.39
Day Match 3/5	100% Symmetric Adjustment	Lookback 45	0.07	0.14	0.23	0.37	0.72	0.29
Day Match 3/5	100% Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.13	0.22	0.35	0.69	0.28
Day Match 5/10	100% Symmetric Adjustment	Lookback 45	0.07	0.14	0.24	0.38	0.75	0.30
Day Match 5/10	100% Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.13	0.22	0.36	0.71	0.28
Day Match Weighted 3/5	100% Symmetric Adjustment	Lookback 45	0.07	0.14	0.23	0.37	0.73	0.29
Day Match Weighted 3/5	100% Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.13	0.22	0.35	0.69	0.28
Day Match 1/3	Unlimited Symmetric Adjustment	Lookback 45	0.08	0.19	0.37	0.75	2.11	0.65
Day Match 1/3	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	0.08	0.19	0.36	0.73	2.07	0.64

Day Match 3/5	Unlimited Symmetric Adjustment	Lookback 45	0.07	0.15	0.26	0.47	1.11	0.39
Day Match 3/5	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.14	0.24	0.42	0.99	0.35
Day Match 5/10	Unlimited Symmetric Adjustment	Lookback 45	0.07	0.15	0.27	0.47	1.07	0.38
Day Match 5/10	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.14	0.24	0.41	0.93	0.33
Day Match Weighted 3/5	Unlimited Symmetric Adjustment	Lookback 45	0.07	0.15	0.26	0.47	1.15	0.40
Day Match Weighted 3/5	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.14	0.25	0.43	1.01	0.36
Day Match 1/3	Unadjusted Asymmetric Adjustment	Lookback 45	0.05	0.12	0.21	0.35	0.77	0.29
Day Match 1/3	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.12	0.20	0.34	0.76	0.29
Day Match 3/5	Unadjusted Asymmetric Adjustment	Lookback 45	0.05	0.12	0.20	0.33	0.60	0.26
Day Match 3/5	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.11	0.18	0.29	0.58	0.23
Day Match 5/10	Unadjusted Asymmetric Adjustment	Lookback 45	0.05	0.12	0.20	0.33	0.64	0.27
Day Match 5/10	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.11	0.18	0.29	0.62	0.24
Day Match Weighted 3/5	Unadjusted Asymmetric Adjustment	Lookback 45	0.05	0.12	0.20	0.34	0.61	0.26
Day Match Weighted 3/5	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.11	0.18	0.29	0.57	0.24
Day Match 1/3	40% Asymmetric Adjustment	Lookback 45	0.07	0.14	0.23	0.38	0.81	0.31
Day Match 1/3	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.14	0.23	0.37	0.78	0.31
Day Match 3/5	40% Asymmetric Adjustment	Lookback 45	0.06	0.12	0.19	0.31	0.58	0.24
Day Match 3/5	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.12	0.19	0.29	0.56	0.23
Day Match 5/10	40% Asymmetric Adjustment	Lookback 45	0.06	0.12	0.20	0.31	0.60	0.25
Day Match 5/10	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.12	0.19	0.29	0.57	0.24
Day Match Weighted 3/5	40% Asymmetric Adjustment	Lookback 45	0.06	0.12	0.19	0.31	0.59	0.25
Day Match Weighted 3/5	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.12	0.19	0.29	0.55	0.23
Day Match 1/3	100% Asymmetric Adjustment	Lookback 45	0.08	0.17	0.30	0.50	1.03	0.40
Day Match 1/3	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.17	0.29	0.48	1.00	0.38
Day Match 3/5	100% Asymmetric Adjustment	Lookback 45	0.07	0.14	0.23	0.37	0.70	0.29
Day Match 3/5	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.13	0.22	0.35	0.67	0.27
Day Match 5/10	100% Asymmetric Adjustment	Lookback 45	0.07	0.14	0.23	0.38	0.72	0.30
Day Match 5/10	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.13	0.22	0.35	0.68	0.28

Day Match Weighted 3/5	100% Asymmetric Adjustment	Lookback 45	0.07	0.14	0.23	0.37	0.71	0.29
Day Match Weighted 3/5	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.13	0.22	0.35	0.67	0.28
Day Match 1/3	Unlimited Asymmetric Adjustment	Lookback 45	0.09	0.24	0.46	0.89	2.27	0.74
Day Match 1/3	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	0.09	0.25	0.47	0.90	2.26	0.75
Day Match 3/5	Unlimited Asymmetric Adjustment	Lookback 45	0.07	0.18	0.31	0.56	1.27	0.45
Day Match 3/5	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.17	0.30	0.52	1.19	0.43
Day Match 5/10	Unlimited Asymmetric Adjustment	Lookback 45	0.08	0.20	0.34	0.58	1.25	0.47
Day Match 5/10	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	0.08	0.18	0.31	0.53	1.16	0.43
Day Match Weighted 3/5	Unlimited Asymmetric Adjustment	Lookback 45	0.07	0.18	0.31	0.56	1.30	0.46
Day Match Weighted 3/5	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.17	0.31	0.53	1.21	0.44
BG&E 3/14 w/ THI Screen	Unadjusted Unadjusted Adjustment	Lookback 45	0.06	0.13	0.23	0.43	1.06	0.37
Meter-Before/After MB - 1 Hour	Unadjusted Unadjusted Adjustment	N/A	0.06	0.14	0.23	0.37	0.73	0.30
Meter-Before/After MB - 2 Hour	Unadjusted Unadjusted Adjustment	N/A	0.06	0.13	0.23	0.36	0.72	0.30
Meter-Before/After MBMA - 1 Hour	Unadjusted Unadjusted Adjustment	N/A	0.04	0.09	0.15	0.24	0.51	0.20
Meter-Before/After MBMA - 2 Hour	Unadjusted Unadjusted Adjustment	N/A	0.04	0.10	0.16	0.26	0.52	0.22

Table 56: SDG&E CVRMSE by Baseline for Net Loads

	Baseline							
Framework	Adjustment	Lookback	p5	p25	p50	p75	p95	Average
Day Match 1/3	Unadjusted Symmetric Adjustment	Lookback 45	0.05	0.12	0.21	0.35	0.77	0.29
Day Match 1/3	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.12	0.20	0.34	0.76	0.29
Day Match 3/5	Unadjusted Symmetric Adjustment	Lookback 45	0.05	0.12	0.20	0.33	0.60	0.26
Day Match 3/5	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.11	0.18	0.29	0.58	0.23
Day Match 5/10	Unadjusted Symmetric Adjustment	Lookback 45	0.05	0.12	0.20	0.33	0.64	0.27
Day Match 5/10	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.11	0.18	0.29	0.62	0.24
Day Match Weighted 3/5	Unadjusted Symmetric Adjustment	Lookback 45	0.05	0.12	0.20	0.34	0.61	0.26
Day Match Weighted 3/5	Unadjusted Symmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.11	0.18	0.29	0.57	0.24
Day Match 1/3	40% Symmetric Adjustment	Lookback 45	0.07	0.14	0.24	0.39	0.85	0.32
Day Match 1/3	40% Symmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.14	0.23	0.38	0.82	0.31
Day Match 3/5	40% Symmetric Adjustment	Lookback 45	0.06	0.12	0.19	0.31	0.60	0.25
Day Match 3/5	40% Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.12	0.19	0.29	0.58	0.24
Day Match 5/10	40% Symmetric Adjustment	Lookback 45	0.06	0.12	0.20	0.32	0.63	0.26
Day Match 5/10	40% Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.12	0.19	0.30	0.60	0.25
Day Match Weighted 3/5	40% Symmetric Adjustment	Lookback 45	0.06	0.12	0.20	0.31	0.60	0.25
Day Match Weighted 3/5	40% Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.12	0.19	0.29	0.57	0.24
Day Match 1/3	100% Symmetric Adjustment	Lookback 45	0.08	0.17	0.30	0.51	1.06	0.40
Day Match 1/3	100% Symmetric Adjustment	Lookback 45/Lookforward 15	0.08	0.17	0.29	0.49	1.03	0.39
Day Match 3/5	100% Symmetric Adjustment	Lookback 45	0.07	0.14	0.23	0.37	0.72	0.29
Day Match 3/5	100% Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.13	0.22	0.35	0.69	0.28
Day Match 5/10	100% Symmetric Adjustment	Lookback 45	0.07	0.14	0.24	0.38	0.75	0.30
Day Match 5/10	100% Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.13	0.22	0.36	0.71	0.28
Day Match Weighted 3/5	100% Symmetric Adjustment	Lookback 45	0.07	0.14	0.23	0.37	0.73	0.29
Day Match Weighted 3/5	100% Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.13	0.22	0.35	0.69	0.28
Day Match 1/3	Unlimited Symmetric Adjustment	Lookback 45	0.08	0.19	0.37	0.75	2.11	0.65
Day Match 1/3	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	0.08	0.19	0.36	0.73	2.07	0.64

Day Match 3/5	Unlimited Symmetric Adjustment	Lookback 45	0.07	0.15	0.26	0.47	1.11	0.39
Day Match 3/5	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.14	0.24	0.42	0.99	0.35
Day Match 5/10	Unlimited Symmetric Adjustment	Lookback 45	0.07	0.15	0.27	0.47	1.07	0.38
Day Match 5/10	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.14	0.24	0.41	0.93	0.33
Day Match Weighted 3/5	Unlimited Symmetric Adjustment	Lookback 45	0.07	0.15	0.26	0.47	1.15	0.40
Day Match Weighted 3/5	Unlimited Symmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.14	0.25	0.43	1.01	0.36
Day Match 1/3	Unadjusted Asymmetric Adjustment	Lookback 45	0.05	0.12	0.21	0.35	0.77	0.29
Day Match 1/3	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.12	0.20	0.34	0.76	0.29
Day Match 3/5	Unadjusted Asymmetric Adjustment	Lookback 45	0.05	0.12	0.20	0.33	0.60	0.26
Day Match 3/5	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.11	0.18	0.29	0.58	0.23
Day Match 5/10	Unadjusted Asymmetric Adjustment	Lookback 45	0.05	0.12	0.20	0.33	0.64	0.27
Day Match 5/10	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.11	0.18	0.29	0.62	0.24
Day Match Weighted 3/5	Unadjusted Asymmetric Adjustment	Lookback 45	0.05	0.12	0.20	0.34	0.61	0.26
Day Match Weighted 3/5	Unadjusted Asymmetric Adjustment	Lookback 45/Lookforward 15	0.05	0.11	0.18	0.29	0.57	0.24
Day Match 1/3	40% Asymmetric Adjustment	Lookback 45	0.07	0.14	0.23	0.38	0.81	0.31
Day Match 1/3	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.14	0.23	0.37	0.78	0.31
Day Match 3/5	40% Asymmetric Adjustment	Lookback 45	0.06	0.12	0.19	0.31	0.58	0.24
Day Match 3/5	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.12	0.19	0.29	0.56	0.23
Day Match 5/10	40% Asymmetric Adjustment	Lookback 45	0.06	0.12	0.20	0.31	0.60	0.25
Day Match 5/10	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.12	0.19	0.29	0.57	0.24
Day Match Weighted 3/5	40% Asymmetric Adjustment	Lookback 45	0.06	0.12	0.19	0.31	0.59	0.25
Day Match Weighted 3/5	40% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.12	0.19	0.29	0.55	0.23
Day Match 1/3	100% Asymmetric Adjustment	Lookback 45	0.08	0.17	0.30	0.50	1.03	0.40
Day Match 1/3	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.17	0.29	0.48	1.00	0.38
Day Match 3/5	100% Asymmetric Adjustment	Lookback 45	0.07	0.14	0.23	0.37	0.70	0.29
Day Match 3/5	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.13	0.22	0.35	0.67	0.27
Day Match 5/10	100% Asymmetric Adjustment	Lookback 45	0.07	0.14	0.23	0.38	0.72	0.30
Day Match 5/10	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.13	0.22	0.35	0.68	0.28

Day Match Weighted 3/5	100% Asymmetric Adjustment	Lookback 45	0.07	0.14	0.23	0.37	0.71	0.29
Day Match Weighted 3/5	100% Asymmetric Adjustment	Lookback 45/Lookforward 15	0.06	0.13	0.22	0.35	0.67	0.28
Day Match 1/3	Unlimited Asymmetric Adjustment	Lookback 45	0.09	0.24	0.46	0.89	2.27	0.74
Day Match 1/3	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	0.09	0.25	0.47	0.90	2.26	0.75
Day Match 3/5	Unlimited Asymmetric Adjustment	Lookback 45	0.07	0.18	0.31	0.56	1.27	0.45
Day Match 3/5	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.17	0.30	0.52	1.19	0.43
Day Match 5/10	Unlimited Asymmetric Adjustment	Lookback 45	0.08	0.20	0.34	0.58	1.25	0.47
Day Match 5/10	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	0.08	0.18	0.31	0.53	1.17	0.43
Day Match Weighted 3/5	Unlimited Asymmetric Adjustment	Lookback 45	0.07	0.18	0.31	0.56	1.31	0.46
Day Match Weighted 3/5	Unlimited Asymmetric Adjustment	Lookback 45/Lookforward 15	0.07	0.17	0.31	0.53	1.21	0.44
BG&E 3/14 w/ THI Screen	Unadjusted Unadjusted Adjustment	Lookback 45	0.06	0.13	0.23	0.43	1.06	0.37
Meter-Before/After MB - 1 Hour	Unadjusted Unadjusted Adjustment	N/A	0.06	0.14	0.23	0.37	0.73	0.30
Meter-Before/After MB - 2 Hour	Unadjusted Unadjusted Adjustment	N/A	0.06	0.13	0.23	0.36	0.72	0.30
Meter-Before/After MBMA - 1 Hour	Unadjusted Unadjusted Adjustment	N/A	0.04	0.09	0.15	0.24	0.51	0.20
Meter-Before/After MBMA - 2 Hour	Unadjusted Unadjusted Adjustment	N/A	0.04	0.10	0.16	0.26	0.52	0.22