

Demand Side Analytics

DATA DRIVEN RESEARCH AND INSIGHTS

Program Year 2025 Southern California Edison Summer Discount Plan Impact Evaluation



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ABSTRACT

This study analyzes the impact of Southern California Edison's Summer Discount Plan program for a range of weather conditions and dispatch hours. Summer Discount Plan is a voluntary demand response program that provides incentives to residential and non-residential customers who allow SCE to manage the use of their air conditioner when grid conditions require additional resources. The impacts were evaluated using a quasi-experimental design where a matched control customer was identified for each participant. The load impacts were calculated via difference-in-differences by comparing the energy use of participants and the control customer during event and hot non-event days. The SDP program has nearly 146,000 residential customers enrolled and includes nearly 171,000 control devices and 633,000 tons of air conditioner load. Approximately 82% of residential customers elect the higher incentive option, allowing SCE to curtail air conditioner demand (100% cycling) during SDP demand response events. On the commercial side, there are approximately 6,200 customers enrolled with about 58,000 control devices and 292,000 tons of air conditioner load. Roughly 65% of customers elect the higher incentive, accounting for 59% of the total commercial air conditioner load. July 1st dispatched the entire territory for a single hour and reduced load by 46.8 MW for the 100% cycling group and ■■■ MW for the 50% and ■■■ for the 30% (commercial only) cycling groups. During the CAISO peak event day, August 21st, the SDP program dispatched 12% of participants and reduced demand by ■■■ MW per hour for the 100% cycling group and ■■■ MW for the 50% and ■■■ for the 30% (commercial only) cycling groups.

During normal (1-in-2) August worst day planning conditions, residential participants can reduce demand by 107 MW on average across the five-hour 4:00–9:00 PM resource adequacy window, while commercial participants can reduce demand by 14 MW on average across the five-hour window. In practice, program resources are dispatched by grid location, with varying event times and under different weather conditions.

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1 EXECUTIVE SUMMARY

This report presents the load impacts of the program year 2025 Summer Discount Plan (SDP). SDP is a voluntary demand response program that provides incentives to customers who allow Southern California Edison to curtail or reduce the use of their central air conditioner on summer days with high energy usage or high energy prices. The report has two primary objectives: estimate the demand reductions that were delivered via 2025 operations and quantify the magnitude of reductions available during peaking conditions used for planning over the next eleven years (2026 – 2036).¹

Additionally, this year SCE focused on dispatching customer groups at the A-bank/B-bank level across a range of temperature conditions. This approach was built on the September 6, 2024 localized emergency event in the Mira Loma A-Bank area, which demonstrated that granular geographic dispatch could provide valuable, targeted load relief to the distribution system. The 2025 season set out to confirm that SCE's systems could reliably dispatch participant groups at the A-bank/B-bank level.

1.1 SDP RESIDENTIAL KEY FINDINGS

The SDP Residential (SDP-R) program has nearly 146,000 customers enrolled and includes nearly 171,000 control devices and 633,000 tons of air conditioner load. Approximately 82% of customers elect the higher incentive option, which allows SCE to fully curtail air conditioner demand (100% cycling) during SDP demand response (DR) events. During normal conditions (1-in-2), participant loads peak at 382.8 MW, and participants can curtail demand by 107.4 MW on average during the 4–9 PM resource adequacy window.

Figure 1 summarizes the per participant demand reductions for each event hour in a single LCG as a function of temperature. Demand reductions grow larger in magnitude when temperatures are hotter and resources are needed most.

¹ Pursuant to the Load Impact Protocol Process Guide (version 6.1, released by the Energy Division on March 5, 2026), large loads (e.g. data centers, EV fleet charging station load) should be reported as a distinct load type within ex-ante and ex-post table generators. Because the formal definition of “large loads” is still under development, this study does not incorporate large-load effects in either the ex post load impact estimates or the ex ante forecasts.

Figure 1: Relationship between SDP-R Demand Reductions and Weather

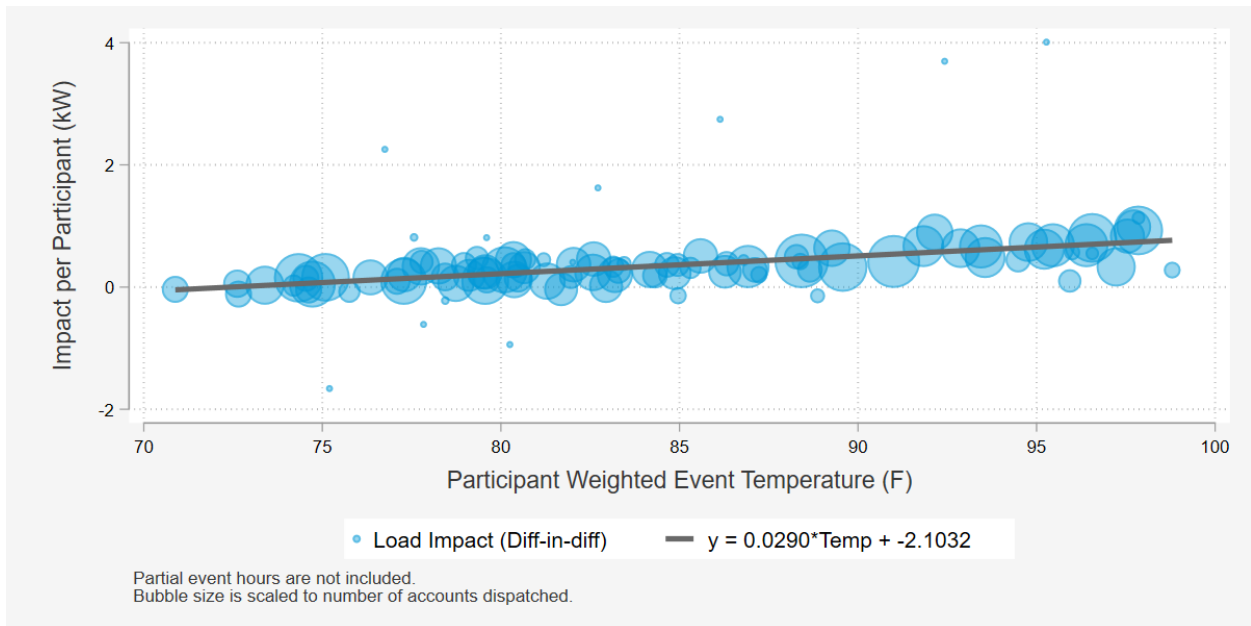


Table 1 summarizes the reductions attained during full event hours for each event in the evaluation period. Average impacts were approximately 0.39 kW per participant, and percent impacts were generally around 20% but highly temperature dependent.

Table 1: SDP-Residential Event Summary, 2025

| Date | Dispatch Group ² | Event Start | Event End | Accts | Reference Load (MWh/hour) | Load with DR (MWh/hour) | Impact (MWh/hour) | Standard Error | % Impact | Impact per Acct (kW) | Average Temp (°F) |
|-----------|-----------------------------|-------------|-----------|---------|---------------------------|-------------------------|-------------------|----------------|----------|----------------------|-------------------|
| 7/1/2025 | All | 3:00pm | 4:00pm | 143,260 | 143.16 | 99.71 | 43.45 | 0.66 | 30% | 0.30 | 84.6 |
| 8/6/2025 | 10 | 6:00pm | 8:00pm | 14,270 | 28.50 | 22.84 | 5.65 | 0.21 | 20% | 0.40 | 88.9 |
| 8/7/2025 | 2 | 5:00pm | 8:00pm | 15,830 | 35.39 | 26.68 | 8.71 | 0.39 | 25% | 0.55 | 91.0 |
| 8/20/2025 | 9 | 5:00pm | 7:00pm | 15,724 | 36.63 | 26.88 | 9.76 | 0.28 | 27% | 0.62 | 92.3 |
| 8/21/2025 | 1 | 4:00pm | 6:00pm | 18,548 | 54.59 | 38.51 | 16.08 | 0.33 | 29% | 0.87 | 97.2 |
| 8/22/2025 | 3 | 6:00pm | 8:00pm | 10,650 | 25.02 | 18.34 | 6.68 | 0.22 | 27% | 0.63 | 87.1 |
| 9/17/2025 | 5 | 5:00pm | 6:15pm | 15,714 | 25.33 | 20.74 | 4.59 | 0.30 | 18% | 0.29 | 81.0 |
| 9/17/2025 | 6 | 6:00pm | 7:15pm | 15,677 | 25.39 | 21.03 | 4.36 | 0.23 | 17% | 0.28 | 84.3 |
| 9/17/2025 | 7 | 7:00pm | 8:00pm | 12,398 | 18.29 | 15.18 | 3.11 | 0.19 | 17% | 0.25 | 79.2 |
| 9/17/2025 | 8 | 5:00pm | 8:00pm | 12,196 | 18.69 | 16.64 | 2.05 | 0.20 | 11% | 0.17 | 79.4 |
| 9/18/2025 | 4 | 7:00pm | 9:00pm | 12,253 | 17.82 | 15.07 | 2.75 | 0.19 | 15% | 0.22 | 80.0 |
| 9/19/2025 | 5 | 7:00pm | 9:00pm | 15,714 | 22.53 | 21.01 | 1.53 | 0.27 | 7% | 0.10 | 76.7 |

² Dispatch Group denotes a collection of A-banks randomly assigned by DSA for the purpose of distribution testing. These group numbers can be mapped to the assigned A-banks through Table 7.

Table 2: SDP-Residential Summary of Key Findings

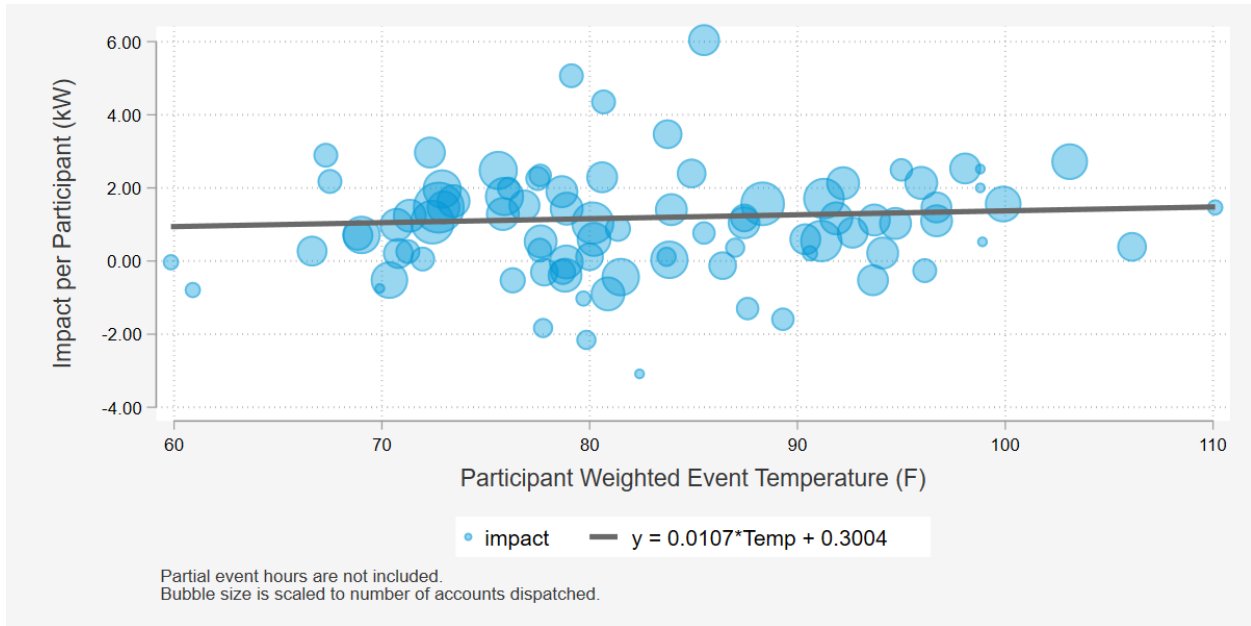
| Topic | Findings |
|---|--|
| <p>How did SDP-R perform during full event hours?</p> | <p>The summer of 2025 had nine event days that had full event hours, with twelve total events being called. There was an event called from 4:00 PM and 6:00 PM on the CAISO peak (August 21st), which dispatched 13% of participants. For the load control groups that were called, the 100% cycling group reduced demand by 14.97 MW per hour. The average demand reductions per customer, per device, and per ton for the 100% cycling dispatch were 0.97 kW, 0.78 kW, and 0.22 kW, respectively. The 50% cycling group reduced demand by 1.11 MW per hour on average between 4:00 PM and 6:00 PM. The average demand reductions per customer, per device, and per ton for the 50% cycling dispatch were 0.36 kW, 0.31 kW, and 0.09 kW, respectively.</p> |
| <p>Did performance differ for the 100% cycling and 50% cycling options?</p> | <p>The per-participant demand reductions for customers signed up for the 100% cycling were about three times as large as demand reductions for those on 50% cycling.</p> |
| <p>How did 2025 weather influence the magnitude of demand reductions?</p> | <p>Residential air conditioner loads are highly weather-sensitive. As a result, demand reductions are lower in magnitude when temperatures are cooler, and resources are not necessarily needed.</p> |
| <p>What is the magnitude of demand reduction capability under planning conditions?</p> | <p>Given current enrollments, the resource can deliver an average reduction of 107.4 MW during the resource adequacy window (4:00 PM – 9:00 PM) under 1-in-2 weather planning conditions (August monthly worst day).</p> |

1.2 SDP COMMERCIAL KEY FINDINGS

The SDP Commercial (SDP-C) program has approximately 6,200 customers enrolled with about 58,000 control devices and 292,000 tons of air conditioner load. Roughly 65% of customers elect the higher incentive option, which allows SCE to entirely curtail air conditioner demand (100% cycling) during SDP-C DR events. During normal conditions (1-in-2), participant loads peak around 216.7 MW, and participants can curtail demand by 13.6 MW on average during the 4–9 PM resource adequacy window.

Figure 2 summarizes the per participant demand reductions for each event hour in a single LCG as a function of temperature. This figure includes all full event hours in the resource adequacy window (4–9 PM). As expected for a load control program, the magnitude of demand reductions is larger when temperatures are hotter.

Figure 2: Relationship between SDP-C Demand Reductions and Weather



The table below summarizes the reductions attained during each event in 2025, where average percent impact was around █%.

Table 3: SDP-Commercial Event Summary, 2025

| Date | Dispatch Group ³ | Event Start | Event End | Accts | Reference Load (MWh/hour) | Load with DR (MWh/hour) | Impact (MWh/hour) | Standard Error | % Impact | Impact per Acct (kW) | Average Temp (°F) |
|-----------|-----------------------------|-------------|-----------|-------|---------------------------|-------------------------|-------------------|----------------|----------|----------------------|-------------------|
| 7/1/2025 | All | 3:00pm | 4:00pm | 6,127 | 96.95 | 88.52 | 8.43 | 2.09 | 9% | 1.38 | 80.9 |
| 8/6/2025 | 10 | 6:00pm | 8:00pm | 654 | | | | | | | |
| 8/7/2025 | 2 | 5:00pm | 8:00pm | 632 | | | | | | | |
| 8/20/2025 | 9 | 5:00pm | 7:00pm | 724 | | | | | | | |
| 8/21/2025 | 1 | 4:00pm | 6:00pm | 378 | | | | | | | |
| 8/22/2025 | 3 | 6:00pm | 8:00pm | 556 | | | | | | | |
| 9/17/2025 | 5 | 5:00pm | 6:15pm | 554 | | | | | | | |
| 9/17/2025 | 6 | 6:00pm | 7:15pm | 596 | | | | | | | |
| 9/17/2025 | 7 | 7:00pm | 8:00pm | 810 | | | | | | | |
| 9/17/2025 | 8 | 5:00pm | 8:00pm | 883 | | | | | | | |
| 9/18/2025 | 4 | 7:00pm | 9:00pm | 340 | | | | | | | |
| 9/19/2025 | 5 | 7:00pm | 9:00pm | 554 | | | | | | | |

³ Dispatch Group denotes a collection of A-banks randomly assigned by DSA for the purpose of distribution testing. These group numbers can be mapped to the assigned A-banks through Table 7.

Table 4: SDP-Commercial Summary of Key Findings

| Topic | Findings |
|---|--|
| <p>How did SDP-C perform during full event hours?</p> | <p>The summer of 2025 had nine event days that had full event hours, with twelve total events being called. There was an event called from 4:00 PM and 6:00 PM on the CAISO peak (August 21st), which dispatched 6% of participants. For the load control groups that were called in the 100% cycling group, demand decreased by █ MW per hour. The average demand reductions per customer, per device, and per ton for the 100% cycling dispatch were █ kW, █ kW, and █ kW, respectively. The 30% and 50% cycling groups reduced demand by █ MW and █ MW, respectively, between 4:00 PM and 6:00 PM.</p> |
| <p>How does the customer mix impact performance?</p> | <p>SDP-C is a very top-heavy program, as 10% of the program participants account for more than 60% of the total AC tonnage. In other words, a small handful of customers account for a majority of the AC tonnage. Schools also account for about 67% of the SDP-C AC tonnage, so demand reductions are tied to whether or not schools are in session and whether AC units are in operation on event days. School whole building and air conditioner loads drop off considerably after 3 PM, leaving limited controllable AC loads during the 4–9 PM hours.</p> |
| <p>Did performance differ for the 100% cycling and 50% cycling options?</p> | <p>On average, percent impacts in the 100% cycling strategy group are about three times as large as percent impacts in the 50% cycling group.</p> |
| <p>What is the magnitude of demand reduction capability under planning conditions?</p> | <p>Given current enrollments, the resource can deliver an average reduction of 13.6 MW during the resource adequacy window (4:00 PM – 9:00 PM) under 1-in-2 weather planning conditions.</p> |

2 INTRODUCTION

This report presents the results of the program year 2025 Summer Discount Plan (SDP) impact evaluation. SDP is a voluntary demand response program that provides incentives to residential and commercial customers who allow Southern California Edison to curtail or reduce the use of their central air conditioner on summer days with high energy usage or high energy prices. The report has two primary objectives: estimate the demand reductions that were delivered via 2025 operations and quantify the magnitude of reductions available during peaking conditions used for planning over the next eleven years (2026 – 2036).

Historically, utilities operated demand response programs to reduce peak demand and offset the need for additional peaking capacity. While peak demand reductions to offset capacity remain critical, existing programs have had to adjust as operating needs have evolved due to the higher penetration of renewable power. The most immediate changes have been the shift of system peaking conditions to the late afternoon and evening hours and the increased economic dispatch of resources.

2.1 KEY RESEARCH QUESTIONS

The impact evaluation study was designed to address the following research questions:

- What were the demand reductions due to program operations and interventions in 2025 for each event day?
- How do weather and event conditions influence the magnitude of demand response?
- How does the cycling strategy – the degree of control over the air conditioner units – relate to the magnitude of demand reductions?
- How do load impacts vary for different customer sizes, locations, and customer segments?
- What is the magnitude of resources available under planning conditions (1-in-2 and 1-in-10 ex ante weather)?
- What concrete steps can help improve program performance?

2.2 PROGRAM DESCRIPTION

SDP is a voluntary demand response program that provides incentives to customers who allow Southern California Edison to curtail or reduce the use of their central air conditioner on summer days with high energy usage or high energy prices. All SDP participants have a load cycling switch device installed on at least one air conditioner unit. The device enables SCE to cycle the customer's air conditioner off and on to reduce load during an SDP event. SCE initiates events by sending a signal to all participating devices through radio frequency transmission. The signals instruct the switch devices to either fully curtail the use of the air conditioning system or to cycle the air condition on and off, reducing the unit's run time during events, thus reducing demand.

SCE may dispatch SDP any month of the year, but total program dispatch is limited to 180 event hours annually. On a single day, dispatch of SDP is limited to a maximum of 6 hours. In total, events were called on nine days in 2025. While the program is designed to deliver flexible resources under system peaking conditions, SCE may dispatch SDP resources in response to:

- Grid operator warnings or emergencies;

Adverse reliability conditions on SCE's electric system such as high peak demand or loss of key transmission lines;

- High wholesale energy prices (based on CAISO bid awards); and
- Measurement and evaluation (M&E) testing.

2.3 SDP LOADS AND SYSTEM PEAKING CONDITIONS

SCE peak loads remain highly concentrated in a limited number of hours, as shown in Figure 3. System load rarely exceeded 20,000 MW during the 2025 summer. The 2025 system peak, which occurred on August 22nd, was 21,112 MW. There was one localized SDP demand response event dispatched on this day.

Figure 3: System Load Duration Curves

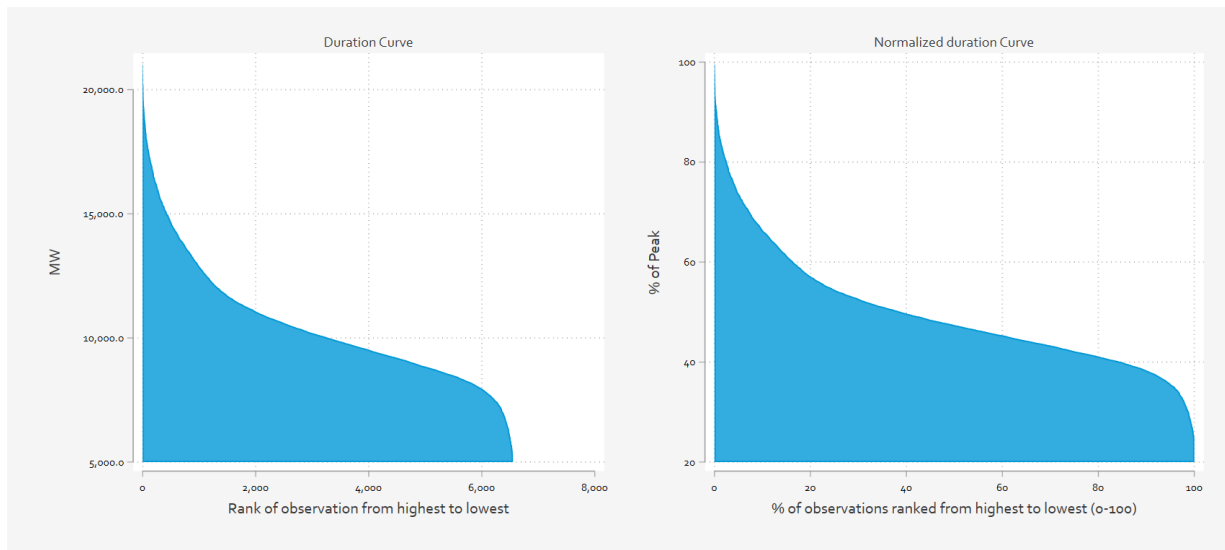


Figure 4: Top Ten System Load Days, 2025

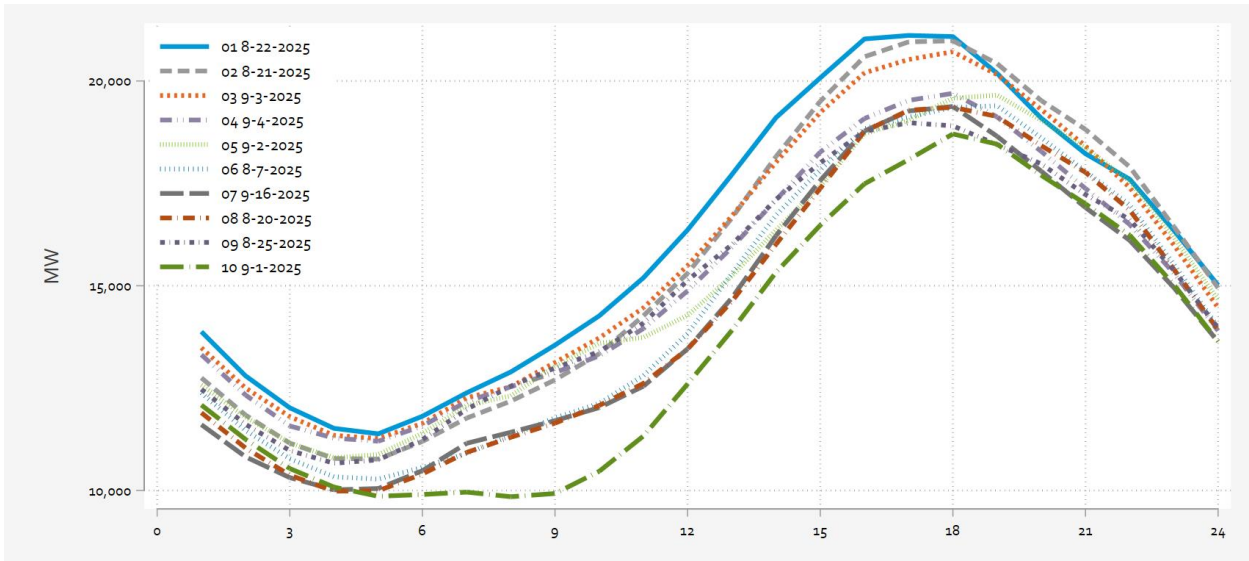
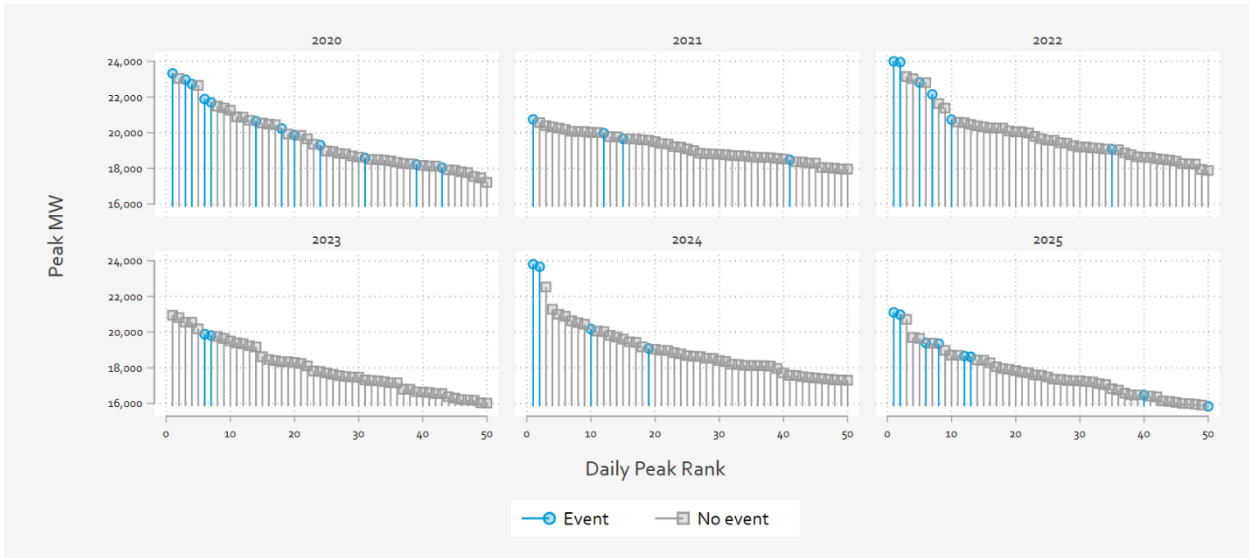


Figure 5 compares system-wide daily peaks over the past six years. System peaks in 2025 were lower than these historic years and comparable to those of 2023.

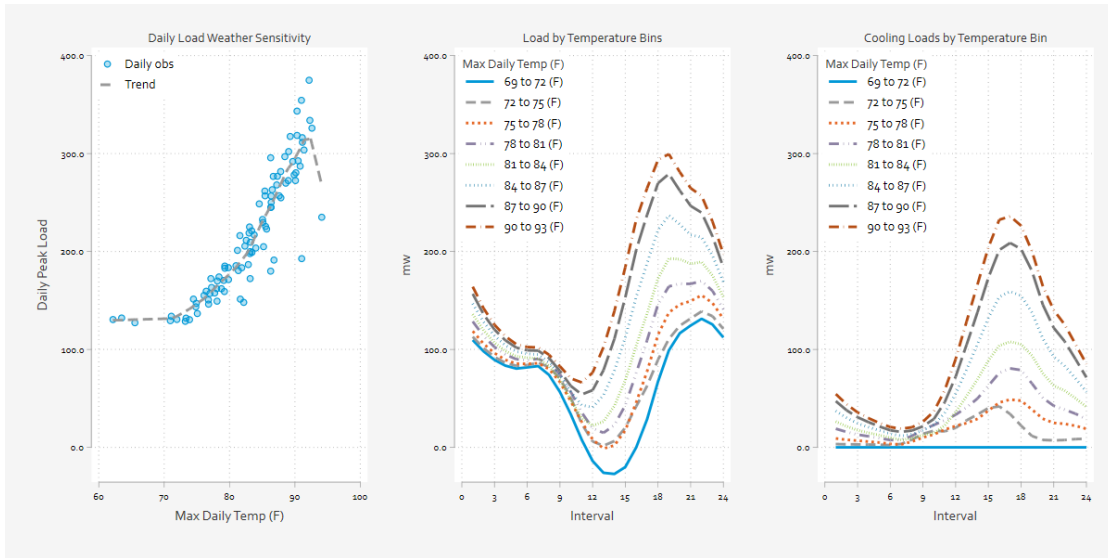
Figure 5: System Peaks by Year



2.4 RESIDENTIAL PARTICIPANT CHARACTERISTICS

A total of 145,924 SCE residential customers participated in at least one SDP demand response event during the 2025 summer. On aggregate, these 145,924 customers have over 200 MW of cooling load when temperatures were hot – 90°F or higher (right pane in Figure 6). At milder temperatures in the mid-to-high 80s, these customers had closer to 175 MW of cooling load.

Figure 6: SDP-R Participant Load Summary



SDP-R customers can enroll in one of two cycling strategies: 50% or 100%. For 100% cycling, participant AC units are shut off entirely during the DR event. For 50% cycling, participant AC units are shut off for fifteen minutes out of every half hour during the DR event. The large majority of homes – about 82% – are in the 100% cycling group. Participants can also sign up with an "Override" option that allows them to opt out of up to five events per year.

Table 5 Table 5 shows the distribution of SDP-R participants, devices, and air conditioner tonnage by cycling strategy and several other key customer segments. Some key highlights of the SDP-R resources include:

- The majority of SDP-R participants are on 100% cycling (82%).
- SCE historically dispatches SDP resources by geographically defined regional subgroups known as load control groups (LCGs). The Low Desert load control group has the smallest share of participants (0.1%), and the other nine load control groups have somewhere between roughly 4% and 20% of participants each.
- The majority of participants and controllable air conditioner tonnage (~77%) is in the LA Basin area, which encompasses the four SDP-Central load control groups as well as the two SDP-West load control groups.
- Approximately 31% of participants, representing 29% of the total tonnage, are enrolled in the California Alternate Rates for Energy (CARE) program or the Family Electric Rate Assistance (FERA) program. Low-income residential customers enrolled in these programs receive discounts on their electric bills.

Table 5: SDP-R Participation by Category

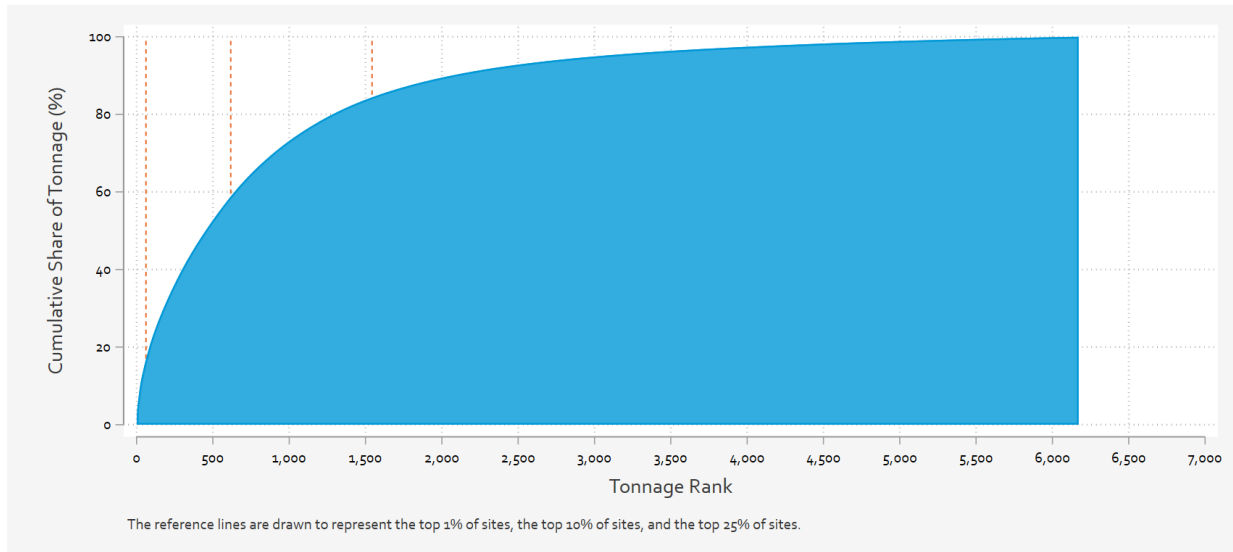
| Category | Subcategory | Number of Accounts | Share of Accounts | Number of Devices | Share of Devices | Total Tonnage | Share of Tonnage |
|----------------------|---------------------|--------------------|-------------------|-------------------|------------------|----------------|------------------|
| Cycling | 50% | 25,885 | 17.7% | 28,961 | 16.9% | 115,018 | 18.1% |
| | 100% | 120,652 | 82.3% | 142,014 | 83.1% | 519,257 | 81.9% |
| Load Control Group | SDP-Central-1 | 24,841 | 17.0% | 30,034 | 17.6% | 106,191 | 16.7% |
| | SDP-Central-2 | 16,069 | 11.0% | 17,944 | 10.5% | 75,773 | 11.9% |
| | SDP-Central-3 | 6,856 | 4.7% | 9,214 | 5.4% | 33,138 | 5.2% |
| | SDP-Central-4 | 28,069 | 19.2% | 32,931 | 19.3% | 117,651 | 18.5% |
| | SDP-High Desert | 8,921 | 6.1% | 10,027 | 5.9% | 35,138 | 5.5% |
| | SDP-Low Desert | 140 | 0.1% | 152 | 0.1% | 553 | 0.1% |
| | SDP-North | 18,499 | 12.6% | 21,693 | 12.7% | 75,084 | 11.8% |
| | SDP-Northwest | 6,701 | 4.6% | 8,323 | 4.9% | 30,752 | 4.8% |
| | SDP-West-1 | 18,658 | 12.7% | 21,326 | 12.5% | 89,741 | 14.1% |
| SDP-West-2 | 17,287 | 11.8% | 18,755 | 11.0% | 68,243 | 10.8% | |
| Local Capacity Area | Big Creek/Ventura | 25,361 | 17.3% | 30,200 | 17.7% | 106,502 | 16.8% |
| | LA Basin | 112,194 | 76.6% | 130,699 | 76.4% | 492,472 | 77.6% |
| | Outside LA Basin | 8,959 | 6.1% | 10,052 | 5.9% | 35,222 | 5.6% |
| CARE/FERA Status | Non-CARE/FERA | 101,079 | 69.0% | 120,912 | 70.7% | 452,210 | 71.3% |
| | CARE/FERA | 45,458 | 31.0% | 50,063 | 29.3% | 182,065 | 28.7% |
| Zone | South Orange County | 11,655 | 8.0% | 13,156 | 7.7% | 59,134 | 9.3% |
| | South of Lugo | 53,474 | 36.5% | 61,595 | 36.0% | 233,191 | 36.8% |
| | Remainder of System | 81,385 | 55.5% | 96,200 | 56.3% | 341,872 | 53.9% |
| NEM | Yes | 33,498 | 22.9% | 41,749 | 24.4% | 151,292 | 23.9% |
| | No | 113,039 | 77.1% | 129,226 | 75.6% | 482,984 | 76.1% |
| Overall Total | | 146,537 | 100% | 170,975 | 100% | 634,276 | 100% |

* Based on all participants that were enrolled in the program between the first event and last event of the 2025 season.

2.5 NON-RESIDENTIAL PARTICIPANT CHARACTERISTICS

A total of 6,172 SCE non-residential customers participated in at least one SDP demand response event during the 2025 summer. A defining characteristic of the SDP-C customer pool is its top-heaviness in terms of AC tonnage. Overall, 1% of the sites account for approximately 20% of the SDP-C tonnage, 10% of the sites account for nearly 60% of the tonnage, and 25% of the sites account for just over 83% of the tonnage (Figure 7). This means that a handful of customers drive the load reduction results.

Figure 7: Tonnage Ranks against Cumulative Tonnage Shares



On aggregate, the 6,172 SDP-C customers have approximately 140 MW of cooling load when temperatures are hot – 87°F or higher (right pane in Figure 8). At milder temperatures in the mid-to-high 80s, these customers have closer to 75 MW of cooling load. However, the non-residential air conditioner load peaks earlier in the day than SCE’s 4-9 pm peak hours. Cooling load drops substantially in evening hours. The overall load shape for the SDP-C customer pool is driven by schools and religious institutions (often private schools), which account for around 81% of the total SDP-C AC tonnage. Though there certainly is some correlation between the maximum daily temperature and the daily peak load (left pane in Figure 8), the relationship isn't nearly as strong as it is for the residential component of SDP (left pane in Figure 6). Because loads from schools dominate, the magnitude of loads is highly dependent on whether schools are in session or not.

Figure 8: SDP-C Participant Load Summary

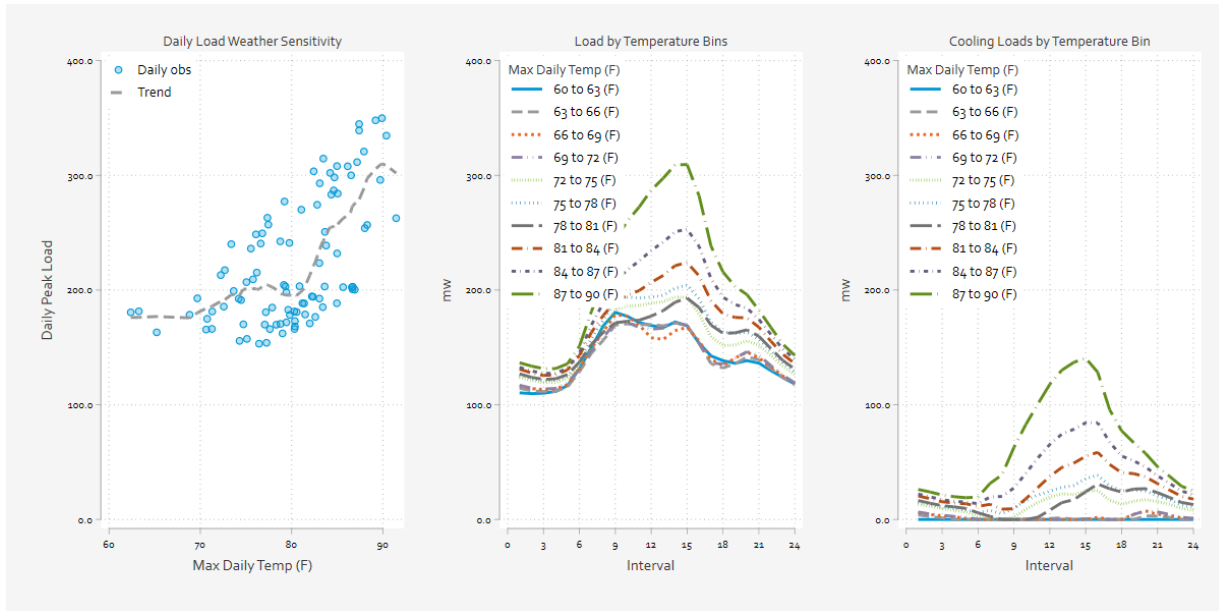


Table 6 shows the distribution of SDP-C participation, devices, and AC tonnage by several key categories and subcategories. Some key highlights of the SDP-C resources include:

- The majority of SDP-C tonnage is on 100% cycling (65%).
- The Low Desert region has the smallest share of tonnage (0.1%), while SDP-West-2 has the most (22%).
- Most SDP-C resources are in the LA Basin local capacity area
- Three key industry segments – Institutional/Government, Schools, and Religious Organizations – account for approximately 88% of the SDP-C tonnage. Schools alone account for 67% of the participant tonnage.

Our ex post methodology relied on matching participants to similar non-participants in a control pool. As noted earlier, some SDP-C participants are large and unique. We withheld some sites from the analysis due to the lack of viable control matches in the control pool. To account for this, ex post impacts were scaled based on tonnage. More details are presented in Appendix A. Specifically, Table 24 illustrates how the scaling was accomplished, and Table 6 shows the percentage of accounts, devices, and total tonnage that remained in the analysis file.

Table 6: SDP-C Participation by Category

| Category | Subcategory | Number of Accounts | Share of Accounts | Number of Devices | Share of Devices | Total Tonnage | Share of Tonnage |
|---------------------|------------------------------------|--------------------|-------------------|-------------------|------------------|---------------|------------------|
| Cycling | 30% | 458 | 7.4% | 3,093 | 5.3% | 18,251 | 6.2% |
| | 50% | 1,730 | 28.0% | 20,577 | 35.5% | 101,173 | 34.6% |
| | 100% | 4,001 | 64.6% | 34,361 | 59.2% | 172,774 | 59.1% |
| Load Control Group | SDP-Central-1 | 619 | 10.0% | 10728 | 18.5% | 56714.15 | 19.4% |
| | SDP-Central-2 | 719 | 11.6% | 4,165 | 7.2% | 19,978 | 6.8% |
| | SDP-Central-3 | 142 | 2.3% | 564 | 1.0% | 3,312 | 1.1% |
| | SDP-Central-4 | 842 | 13.6% | 6,060 | 10.4% | 30,505 | 10.4% |
| | SDP-High Desert | 267 | 4.3% | 3,666 | 6.3% | 21,596 | 7.4% |
| | SDP-Low Desert | 11 | 0.2% | 27 | 0.0% | 158 | 0.1% |
| | SDP-North | 683 | 11.0% | 6,919 | 11.9% | 34,570 | 11.8% |
| | SDP-Northwest | 427 | 6.9% | 3,860 | 6.7% | 19,495 | 6.7% |
| | SDP-West-1 | 860 | 13.9% | 6,918 | 11.9% | 35,261 | 12.1% |
| SDP-West-2 | 1,558 | 25.2% | 13,928 | 24.0% | 65,437 | 22.4% | |
| Local Capacity Area | Big Creek/Ventura | 1,112 | 18.0% | 10,791 | 18.6% | 54,099 | 18.5% |
| | LA Basin | 4,800 | 77.6% | 43,550 | 75.0% | 216,358 | 74.0% |
| | Outside LA Basin | 277 | 4.5% | 3,690 | 6.4% | 21,741 | 7.4% |
| Zone | South Orange County | 564 | 9.1% | 4,447 | 7.7% | 23,278 | 8.0% |
| | South of Lugo | 1,873 | 30.3% | 16,091 | 27.7% | 82,093 | 28.1% |
| | Remainder of System | 3,752 | 60.6% | 37,493 | 64.6% | 186,828 | 63.9% |
| Industry | Agriculture, Mining, Construction | 162 | 2.6% | 410 | 0.7% | 1,788 | 0.6% |
| | Institutional/Government | 565 | 9.1% | 3,295 | 5.7% | 18,821 | 6.4% |
| | Manufacturing | 374 | 6.0% | 1,125 | 1.9% | 6,394 | 2.2% |
| | Offices, Hotels, Finance, Services | 1,315 | 21.2% | 2,592 | 4.5% | 10,885 | 3.7% |

| Category | Subcategory | Number of Accounts | Share of Accounts | Number of Devices | Share of Devices | Total Tonnage | Share of Tonnage |
|----------------------|---------------------------------------|--------------------|-------------------|-------------------|------------------|----------------|------------------|
| | Religious organizations | 1,029 | 16.6% | 7,318 | 12.6% | 42,811 | 14.7% |
| | Retail Stores | 592 | 9.6% | 1,074 | 1.9% | 6,203 | 2.1% |
| | Schools | 1,326 | 21.4% | 40,036 | 69.0% | 195,171 | 66.8% |
| | Unknown/Other | 43 | 0.7% | 86 | 0.1% | 313 | 0.1% |
| | Wholesale, Transport, Other Utilities | 500 | 8.1% | 1,592 | 2.7% | 7,309 | 2.5% |
| Tonnage Bin | 3 or less | 826 | 13.3% | 830 | 1.4% | 2,054 | 0.7% |
| | 3 to 4 | 697 | 11.3% | 721 | 1.2% | 2,431 | 0.8% |
| | 4 to 5 | 484 | 7.8% | 548 | 0.9% | 2,192 | 0.8% |
| | 5 to 10 | 1,158 | 18.7% | 1,997 | 3.4% | 8,086 | 2.8% |
| | 10-100 | 2,139 | 34.6% | 15,997 | 27.6% | 75,907 | 26.0% |
| | 100-500 | 823 | 13.3% | 31,507 | 54.3% | 160,472 | 54.9% |
| | 500+ | 44 | 0.7% | 6,431 | 11.1% | 41,058 | 14.1% |
| All Customers | | 6,189 | 100% | 58,031 | 100.0% | 292,199 | 100% |

* Based on all participants that were enrolled in the program between the first event and last event of the 2025 season.

2.6 2025 EVENT CONDITIONS

Figure 9 visualizes the timing of the SDP events during the 2025 summer. Events varied in timing and length, and some events started or ended mid-hour. There was a territory wide event on July 1st and eleven localized events in August & September. The large event lasted for one hour, without overlapping hours.

Figure 9: Timing of SDP Summer Events, 2025

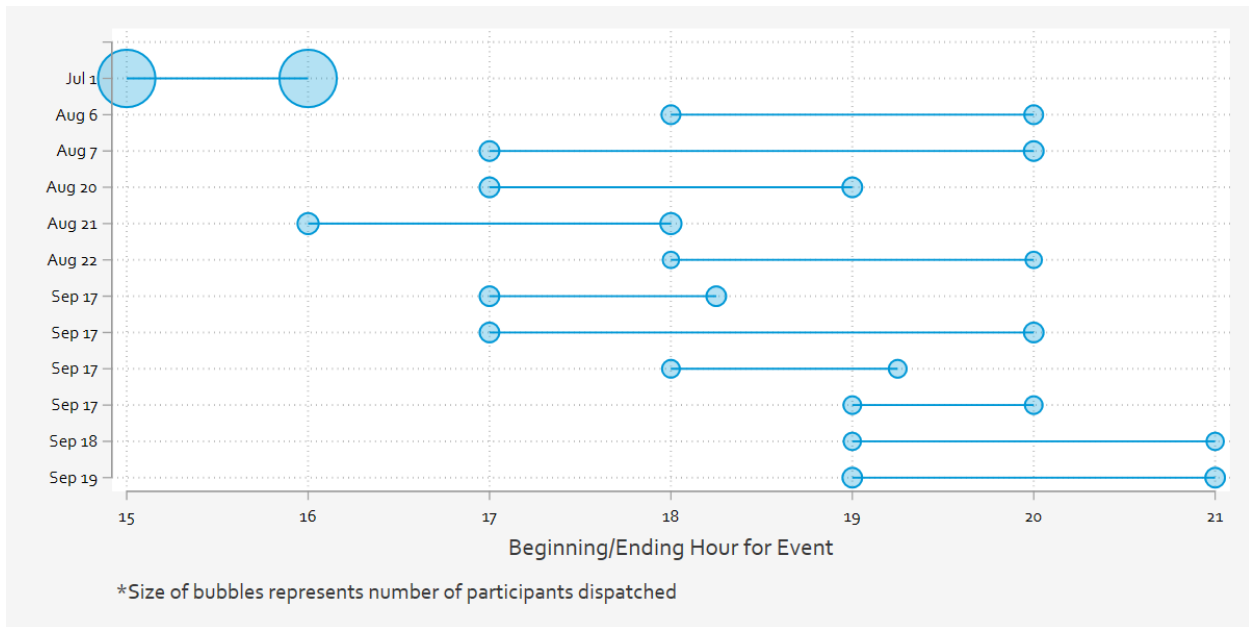


Table 7 shows the dispatched groups mapped to their respective A-bank for future reference in displays such as Table 8.

Table 7: Group Number to A-Bank Key

| Dispatch Group | A-Banks |
|----------------|--|
| 1 | VALLEY |
| 2 | ANTELOPE, EAGLE ROCK, ELLIS, EL NIDO, BIG CREEK 1, SANTIAGO |
| 3 | ALAMITOS, BAILEY, GOLETA, MESA, PADUA |
| 4 | MIRAGE, LA CIENEGA, MIRA LOMA, SPRINGVILLE, EL CASCO, DWP HESSION-85 |
| 5 | VIEJO, VILLA PARK, MOORPARK, VESTAL, INYO SCE |
| 6 | VISTA, ETIWANDA, KRAMER, EAGLE MOUNTAIN, BARRE |
| 7 | LAGUNA BELL, WALNUT, LA FRESA, SAN BERNARDINO, VISTA 115 |
| 8 | LIGHTHIPE, SANTA CLARA, SAUGUS, RIO HONDO, HINSON |
| 9 | OLINDA, JOHANNA, CHINO, RECTOR |
| 10 | WINDHUB, DEL AMO, GOULD, CENTER, VICTOR |

Table 8 shows the dates, start times, and end times for the SDP event days in 2025. It also shows the number of dispatched accounts, devices, and tonnage for the SDP-R and SDP-C segments. Some highlights from the table:

- There were just over 143,000 participants and approximately 622,000 total tons of AC load for the territory-wide SDP-R event.
- There were roughly 6,200 participants and approximately 292,000 total tons of AC load for the territory-wide SDP-C event.
- The average temperature for the territory-wide SDP-R event day was 84.6 F.

Table 8: Summary of SDP-R and SDP-C Events

| Date | Dispatched Groups | Event Start | Event End | SDP-Residential | | | | SDP-Commercial | | | |
|-----------|-------------------|-------------|-----------|-----------------|---------|---------|-------------------|----------------|---------|---------|-------------------|
| | | | | Accounts | Devices | Tonnage | Weighted Temp (F) | Accounts | Devices | Tonnage | Weighted Temp (F) |
| 7/1/2025 | All | 3:00 PM | 4:00 PM | 143,260 | 167,523 | 621,517 | 84.6 | 6,127 | 57,575 | 290,044 | 80.9 |
| 8/6/2025 | 10 | 6:00 PM | 8:00 PM | 14,270 | 15,838 | 56,313 | 88.9 | 654 | 7,623 | 36,315 | 85.6 |
| 8/7/2025 | 2 | 5:00 PM | 8:00 PM | 15,830 | 18,575 | 64,959 | 91.0 | 632 | 4,453 | 21,434 | 85.4 |
| 8/20/2025 | 9 | 5:00 PM | 7:00 PM | 15,724 | 18,114 | 76,872 | 92.3 | 724 | 5,405 | 28,866 | 91.3 |
| 8/21/2025 | 1 | 4:00 PM | 6:00 PM | 18,548 | 22,716 | 80,419 | 97.2 | 378 | 6,366 | 32,304 | 101.5 |
| 8/22/2025 | 3 | 6:00 PM | 8:00 PM | 10,650 | 11,822 | 42,836 | 87.1 | 556 | 3,403 | 15,378 | 88.7 |
| 9/17/2025 | 5 | 5:00 PM | 6:15 PM | 15,714 | 18,134 | 66,809 | 81.0 | 554 | 4,613 | 22,323 | 77.2 |
| 9/17/2025 | 6 | 6:00 PM | 7:15 PM | 15,677 | 17,384 | 61,513 | 84.3 | 596 | 5,969 | 32,727 | 78.2 |
| 9/17/2025 | 7 | 7:00 PM | 8:00 PM | 12,398 | 14,011 | 61,001 | 79.2 | 810 | 7,659 | 39,094 | 73.0 |
| 9/17/2025 | 8 | 5:00 PM | 8:00 PM | 12,196 | 14,067 | 50,415 | 79.4 | 883 | 8,332 | 40,382 | 75.0 |
| 9/18/2025 | 4 | 7:00 PM | 9:00 PM | 12,253 | 16,416 | 58,489 | 80.0 | 340 | 2,799 | 15,637 | 74.8 |
| 9/19/2025 | 5 | 7:00 PM | 9:00 PM | 15,714 | 18,134 | 66,809 | 76.7 | 554 | 4,613 | 22,323 | 74.4 |

3 RESIDENTIAL EX POST RESULTS

This section focuses on the magnitude of demand reductions delivered by SDP-R during 2025 event days. The magnitude of demand reductions is a function of several factors – temperature, time of day, and geo-targeted dispatch of resources.

3.1 INDIVIDUAL EVENT DAY REDUCTIONS

The 2025 SCE system peak was 21,112 MW and occurred on August 22nd. There was a localized SDP demand response event dispatched on this day. Table 9 lists reference loads, observed loads, impacts, and percent impacts for each of the SDP-R summer 2025 DR events.

Table 9: SDP-R Event Results, 2025

| Date | Dispatch Group | Event Start | Event End | Accts | Reference Load (MWh/hour) | Load with DR (MWh/hour) | Impact (MWh/hour) | Standard Error | % Impact | Impact per Acct (kW) | Average Temp (°F) |
|-----------|----------------|-------------|-----------|---------|---------------------------|-------------------------|-------------------|----------------|----------|----------------------|-------------------|
| 7/1/2025 | All | 3:00pm | 4:00pm | 143,260 | 143.16 | 99.71 | 43.45 | 0.66 | 30% | 0.30 | 84.6 |
| 8/6/2025 | 10 | 6:00pm | 8:00pm | 14,270 | 28.50 | 22.84 | 5.65 | 0.21 | 20% | 0.40 | 88.9 |
| 8/7/2025 | 2 | 5:00pm | 8:00pm | 15,830 | 35.39 | 26.68 | 8.71 | 0.39 | 25% | 0.55 | 91.0 |
| 8/20/2025 | 9 | 5:00pm | 7:00pm | 15,724 | 36.63 | 26.88 | 9.76 | 0.28 | 27% | 0.62 | 92.3 |
| 8/21/2025 | 1 | 4:00pm | 6:00pm | 18,548 | 54.59 | 38.51 | 16.08 | 0.33 | 29% | 0.87 | 97.2 |
| 8/22/2025 | 3 | 6:00pm | 8:00pm | 10,650 | 25.02 | 18.34 | 6.68 | 0.22 | 27% | 0.63 | 87.1 |
| 9/17/2025 | 5 | 5:00pm | 6:15pm | 15,714 | 25.33 | 20.74 | 4.59 | 0.30 | 18% | 0.29 | 81.0 |
| 9/17/2025 | 6 | 6:00pm | 7:15pm | 15,677 | 25.39 | 21.03 | 4.36 | 0.23 | 17% | 0.28 | 84.3 |
| 9/17/2025 | 7 | 7:00pm | 8:00pm | 12,398 | 18.29 | 15.18 | 3.11 | 0.19 | 17% | 0.25 | 79.2 |
| 9/17/2025 | 8 | 5:00pm | 8:00pm | 12,196 | 18.69 | 16.64 | 2.05 | 0.20 | 11% | 0.17 | 79.4 |
| 9/18/2025 | 4 | 7:00pm | 9:00pm | 12,253 | 17.82 | 15.07 | 2.75 | 0.19 | 15% | 0.22 | 80.0 |
| 9/19/2025 | 5 | 7:00pm | 9:00pm | 15,714 | 22.53 | 21.01 | 1.53 | 0.27 | 7% | 0.10 | 76.7 |

Figure 10 shows the one event that took place on August 21st of 2025, which was the second-highest SCE peak day. This event ran from 4:00 PM to 6:00 PM. During the event hour, load was reduced by 29% or 16.1 MW per hour on average.

Figure 10 : SDP-R Reductions on August 21st, 2025 Event Day

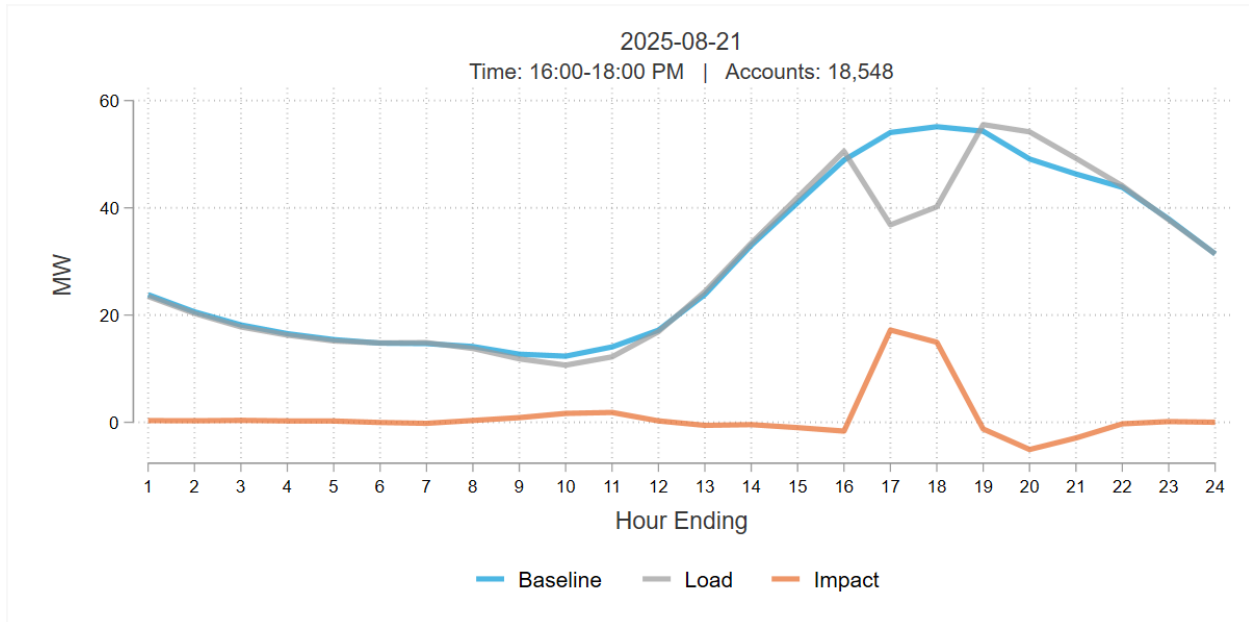


Figure 11 shows the remainder of the August events. The event dispatched on August 22nd, which corresponded with SCE's peak day, lasted from 6:00 PM to 8:00 PM. This event had an impact of 6.7 MW on average (representing a 27% decrease). August 6th achieved a reduction of 5.7 MW (20%), August 7th had an impact of 8.7 MW (25%), and August 20th had an impact of 9.8 MW (27%).

Figure 11: SDP-R Reductions on August 2025 Event Days (Excluding CAISO Peak Day)

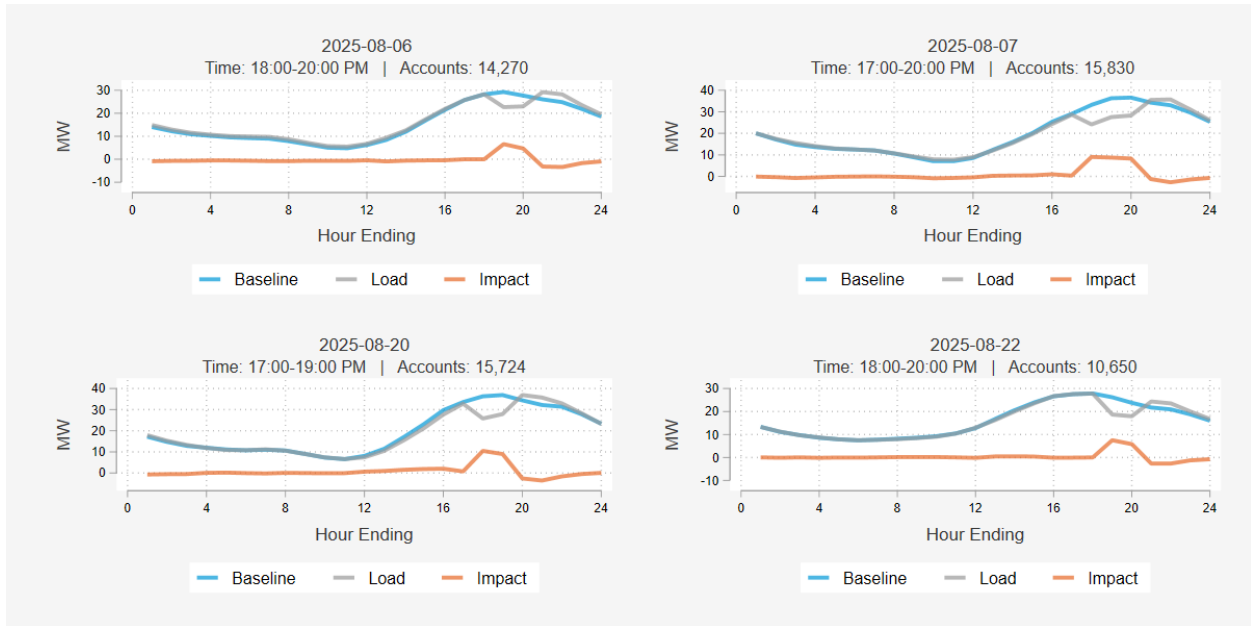


Figure 12 shows the September events. The events dispatched on September 18th & September 19th each lasted from 7:00 PM to 9:00 PM and had average impacts of 2.8 MW & 1.5 MW, respectively (representing a 15% and 7% decrease). The events on September 17th were dispatched during various timeframes which can be found in Table 9 and had impacts ranging from 2.1 – 4.6 MW (11%-18% decrease). It is worth noting that a cold front and storm conditions moved through during the September 17th event window, dampening air-conditioning load and reducing the signal-to-noise ratio.

Figure 12 : SDP-R Reductions on September 2025 Event Days

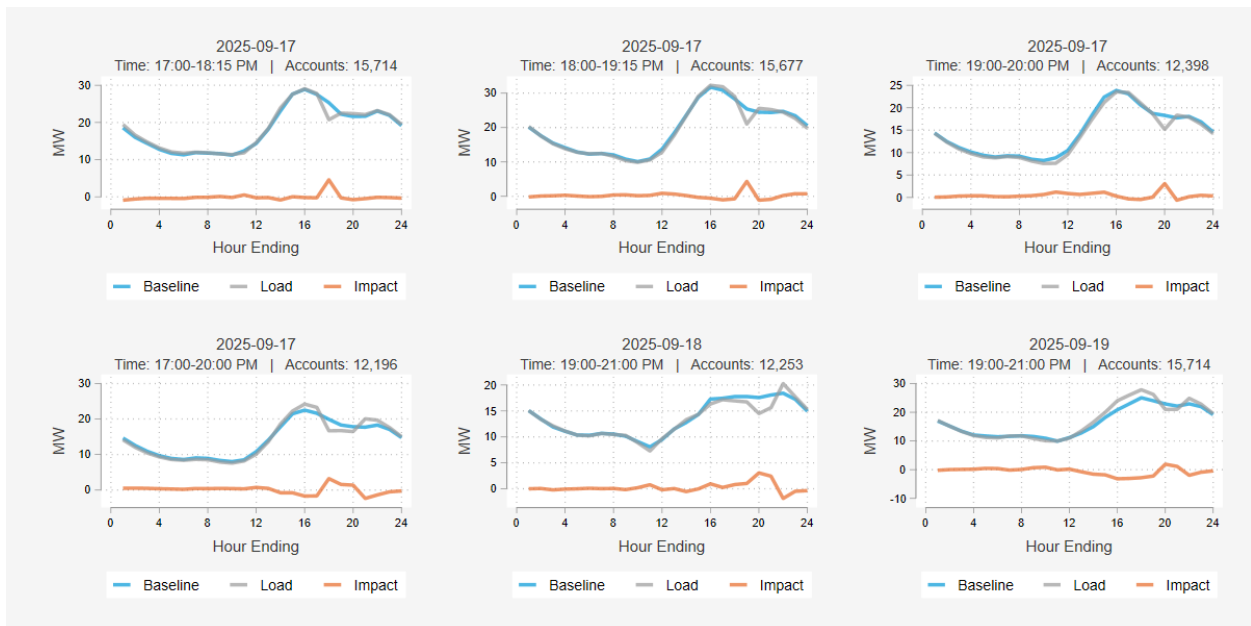
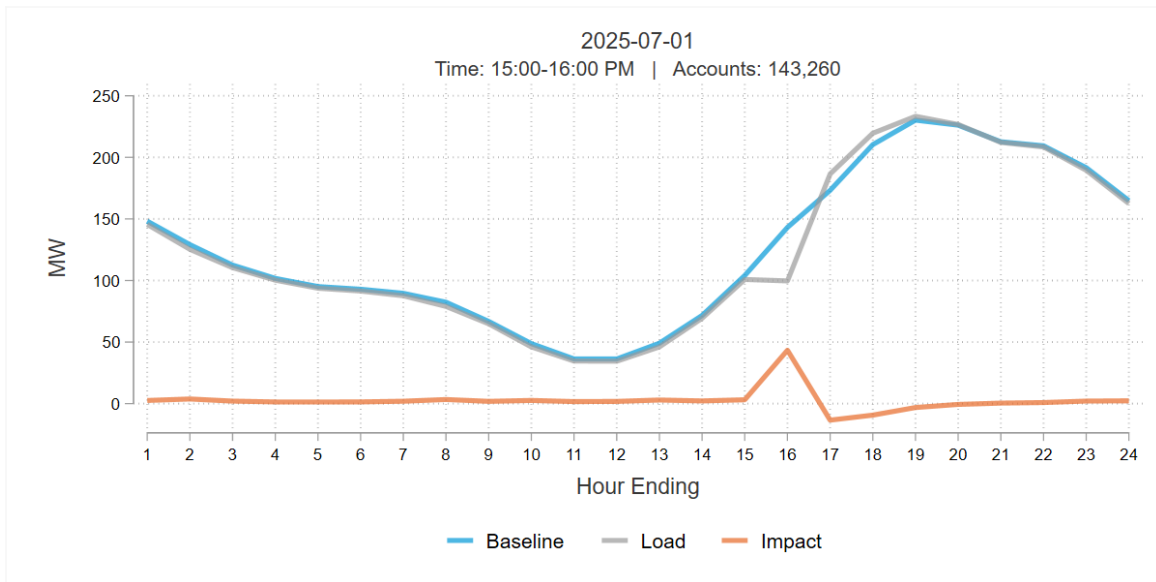


Figure 13 shows the impacts of the July 1st event, which was the only territory-wide event. This event lasted from 3:00 to 4:00 PM and had an overall impact of 43.5 MW, or 30% load reduction. The large number of customers dispatched (143,260) provided considerable impact to the distribution system. Load relief value can often vary considerably from location to location within the SCE system based on distribution circuit loading and local conditions. Program flexibility in dispatching large & small-scale events may be a source of future value for SDP.

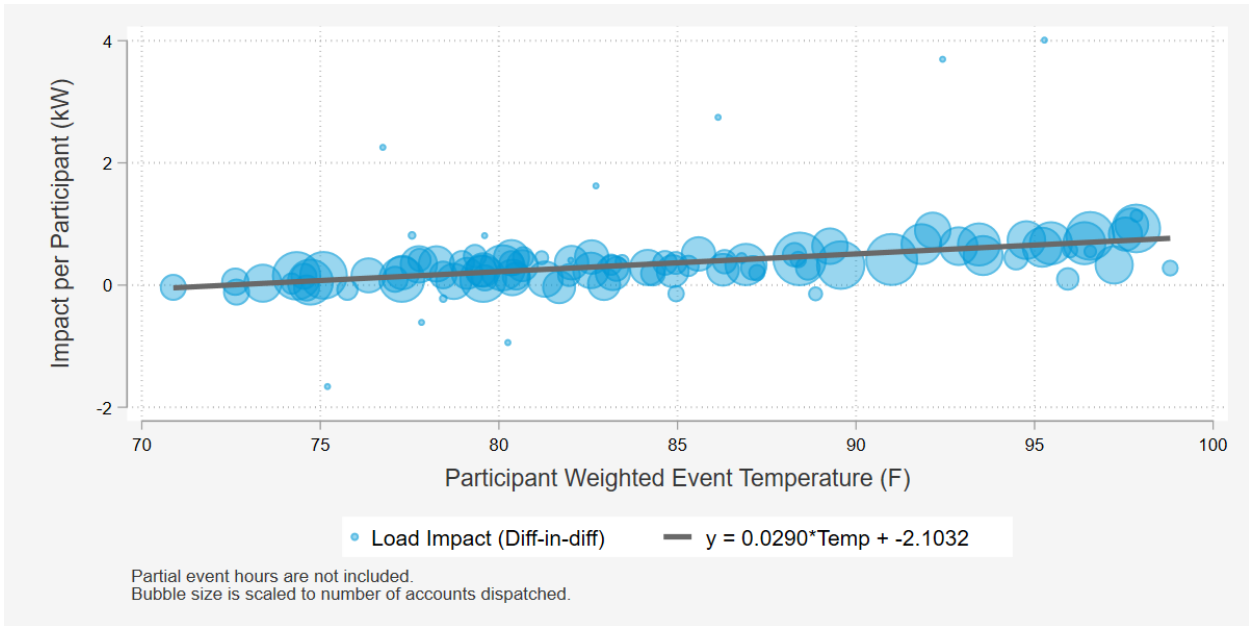
Figure 13: SDP-R Reductions on Territory-Wide Event Day



3.2 WEATHER SENSITIVITY OF LOAD IMPACTS

Residential SDP impacts tend to be larger when outdoor temperatures are higher since more controllable air conditioner load is available for reductions. Figure 14 shows this relationship by LCG for each event hour. The slope of the line in the figure is 0.03 which implies the average impact per participant increased by 0.03 kW for every one-degree increase in outdoor temperature.

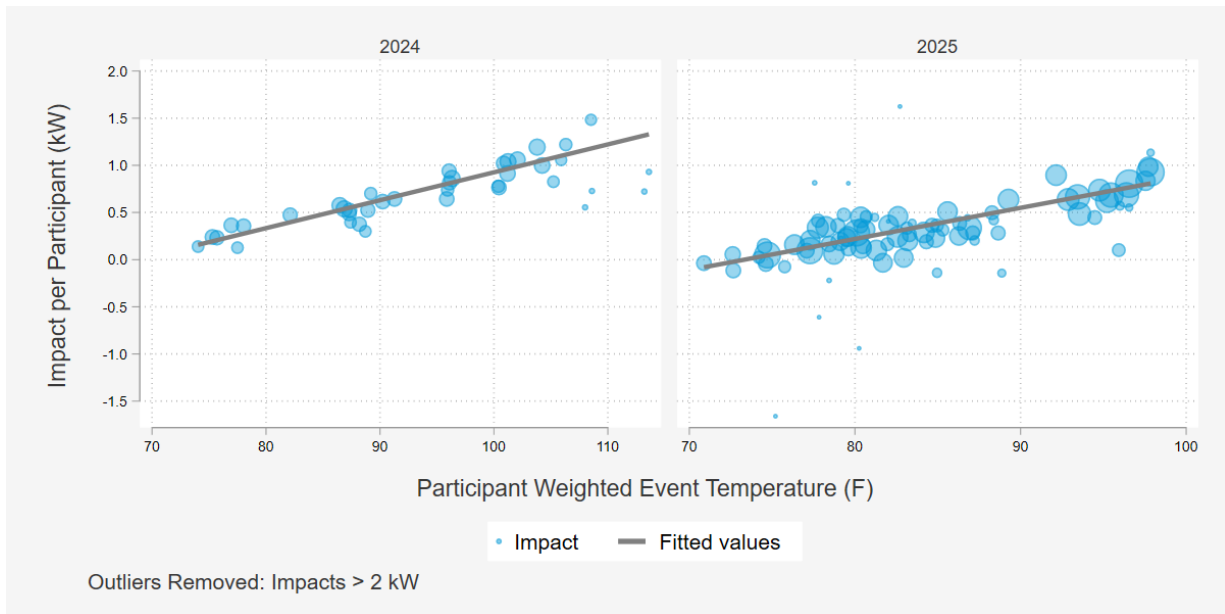
Figure 14: Relationship between SDP-R Demand Reductions and Weather by LCG



3.3 COMPARISON TO PRIOR YEARS

Figure 15 shows the relationship between SDP-R reductions and outdoor temperature with respect to the prior year. The individual trend lines by year are very similar. This implies a stable relationship between temperature and SDP-R impacts.

Figure 15: SDP-R Reductions and Temperature by Year, 2024-2025

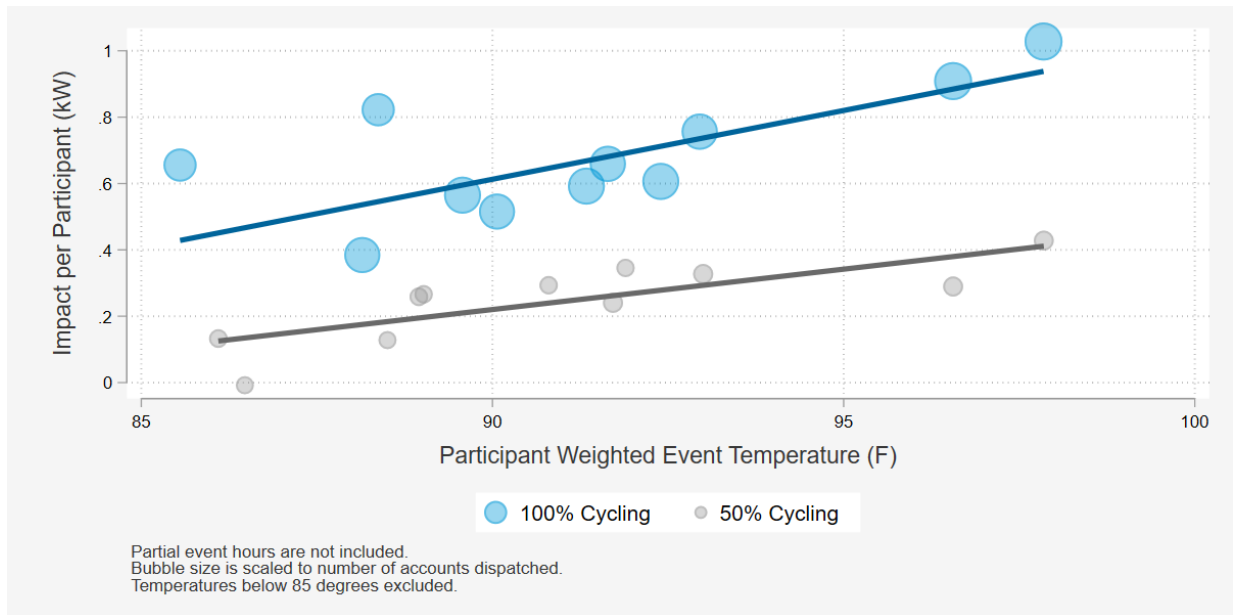


3.4 IMPACTS BY CYCLING STRATEGY

Figure 16 plots the load impacts against outdoor temperature for the two cycling strategy groups. As in past years, SDP-R impacts for participants in the 100% cycling group are more than double that of the 50% cycling group across the range of temperatures.

The relationship between load impacts and temperature is similar for the two groups, however, with impacts increasing as temperature increases. The steeper slope of the line for 100% cycling group implies slightly larger kW impacts per participant for each additional degree of outdoor temperature.

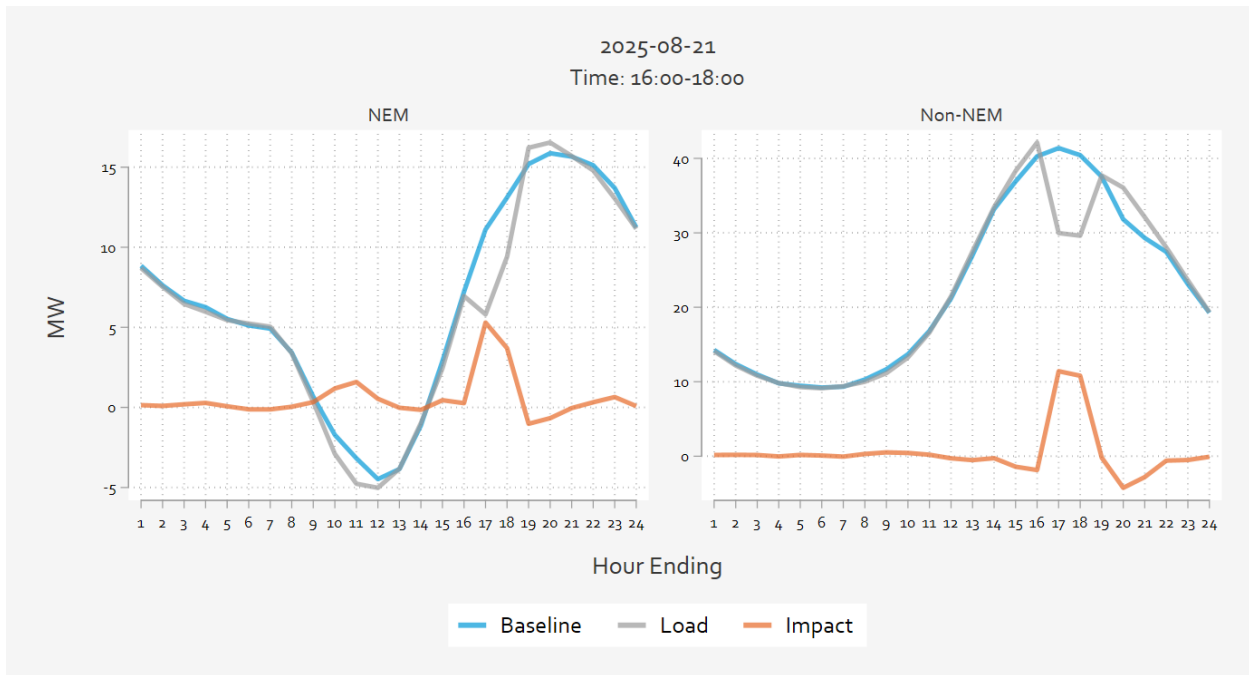
Figure 16: SDP-R Impacts by Cycling Strategy



3.5 IMPACTS BY NET ENERGY METERED CUSTOMERS

Figure 17 show the load shapes and reductions by net energy metered (NEM) status for the August 21st event. During this event, NEM participants produced a load reduction of 0.93 kW per-customer, while those without solar reduced load by 0.85 kW. This pattern of higher, per-customer reductions for NEM participants holds across all events dispatched during this program year. This is likely a result of NEM customers having larger loads in the afternoon and evening hours, which creates an increased opportunity to reduce energy usage. As a result, percent impacts are not always greater for NEM customers but are larger in absolute terms.

Figure 17: SDP-R Reductions by NEM Status on CAISO Peak Day



3.6 IMPACTS FOR KEY CUSTOMER SEGMENTS

This section examines how program impacts vary across key customer segments, drawing on event-level results from the 2025 season. Aggregate impacts differ meaningfully by location and event, with certain load control groups (particularly Central-1 and Central-4) consistently delivering larger contributions. Participant-level results further highlight variation across cycling strategies, geographic groups, and customer characteristics, underscoring the importance of segmentation when interpreting overall program performance.

Figure 18 shows average aggregate impacts across 2025 events, broken down by LCG. Central-1 and Central-4 tend to deliver the largest impacts, followed by North and Central-2.

Figure 18: Average Aggregate Impacts by Event and LCG, SDP-R



3.7 KEY FINDINGS

The SDP Residential (SDP-R) program has approximately 146,000 customers enrolled and includes nearly 171,000 control devices and 633,000 tons of air conditioner load. Approximately 82% of customers elect the higher incentive option, which allows SCE to fully curtail air conditioner demand (100% cycling) during DR events. Demand reductions grow larger in magnitude when temperatures are hotter, and resources are needed most. On a per customer basis, demand reductions increased by an average of 0.03 kW for each one-degree increase in outdoor temperature in 2025. Across 146,000 customers, this translates to 4.4 MW in incremental demand reductions for each one-degree increase in outdoor temperature.

A few other key findings are worth highlighting:

- The per-participant demand reductions for customers signed up for the 100% cycling are around three times larger than demand reductions for those on 50% cycling.
- Residential air conditioner loads are highly weather-sensitive. As a result, demand reductions are larger in magnitude when temperatures are hotter, and resources are needed most.

Granular dispatching allowed for a number of events to be called across various conditions, while individual participants only experienced a maximum of three event days.

4 RESIDENTIAL EX ANTE RESULTS

Ex ante impacts describe the magnitude of program resources available under planning conditions defined by weather. The ex ante estimates are developed for both SCE and California ISO conditions under normal weather (1-in-2). We estimate the ex ante impacts based on the relationship between demand reductions and weather using four years of historical performance data (2022-2025) and factor in projected changes in enrollment.

4.1 DEVELOPMENT OF EX ANTE IMPACTS

The ex ante impacts were developed by estimating the relationship between weather and demand reductions during 2022-2025 for customers currently enrolled in the program. Partial event hours were not used in the analysis. In total, we estimated the demand reductions for 20 distinct segments defined by load control group and cycling strategy, which ensures that impacts are only included when load control groups are dispatched. The granularity of the analysis was dictated by how SCE dispatches resources (at the load control group level), the geographic diversity of the SCE territory, and the fact that 100% and 50% cycling produce different magnitudes of demand reduction. Figure 19 shows the relationship between weather and demand reductions for each of the building blocks.

Figure 19: 2022-2025 Impacts as a Function of Weather by Load Control Group and Cycling



The pattern of reductions across events and segments was analyzed using a multi-variate regression model. The model accounts for the effects of the hour of day, day of week, period of summer, cycling strategy, and load control group. Appendix E includes the output from the model. The model also estimates “snapback” usage after events based on trends in data from 2022-2025. Estimates are based on the number of hours after the event and daily heat buildup.

4.2 OVERALL RESULTS

For the monthly worst day, Table 10 shows average participant-level ex ante impacts for May through September. Impacts are shown under two different scenarios – CAISO 1-in-2 weather conditions and SCE 1-in-2 weather conditions. For reference, on the CAISO Peak August event day in 2025, the average impact per participant was 0.87 kW.

Table 10: Per Participant Worst Day Ex Ante Impacts (kW)

| Month | SCE Weather | CAISO Weather |
|-----------|-------------|---------------|
| | 1-in-2 | 1-in-2 |
| May | 0.31 | 0.23 |
| June | 0.62 | 0.59 |
| July | 0.75 | 0.66 |
| August | 0.78 | 0.69 |
| September | 0.81 | 0.75 |

Table 11 shows aggregate ex ante demand reduction forecasts for an August worst event day. Forecasts are shown under the two scenarios identified above. Reductions in aggregate impacts over time are driven by the declining enrollment forecast. This is driven by rates of customer attrition from the program (customers moving and/or requesting to be removed from the program). Ex ante weather conditions are static through the forecast window. There is a small amount of variation in participant-level impacts through the forecast window (typically in the second or third decimal place).

Table 11: Aggregate August Worst Day Demand Reduction Forecast (MW)

| Forecast Year | Enrollment Forecast | SCE Weather 1-in-2 | CAISO Weather 1-in-2 |
|---------------|---------------------|--------------------|----------------------|
| 2026 | 137,212 | 107.4 | 95.0 |
| 2027 | 130,360 | 102.0 | 90.2 |
| 2028 | 124,147 | 97.2 | 85.9 |
| 2029 | 118,513 | 92.7 | 82.0 |
| 2030 | 113,405 | 88.8 | 78.5 |
| 2031 | 108,774 | 85.1 | 75.3 |
| 2032 | 104,574 | 81.8 | 72.4 |
| 2033 | 100,766 | 78.9 | 69.7 |
| 2034 | 97,313 | 76.2 | 67.3 |
| 2035 | 94,182 | 73.7 | 65.2 |
| 2036 | 91,343 | 71.5 | 63.2 |

Figure 20 show the estimated ex ante load profiles for the SDP-R customer pool. The figure shows the profile for the August worst day under 1-in-2 weather conditions and uses SCE weather conditions rather than CAISO conditions.

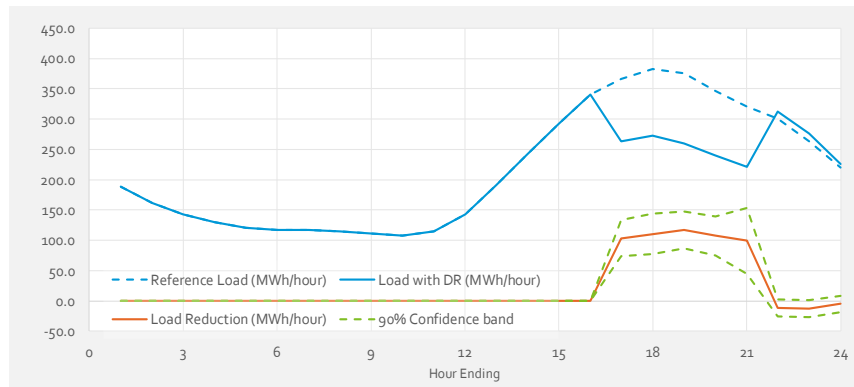
Figure 20: SDP-R Aggregate Ex Ante Impact for 1-in-2 Weather Conditions, August Worst Day 2026

Table 1: Menu options

| | |
|------------------|----------------------|
| Type of result | Aggregate |
| Category | All |
| Segment | All Customers |
| Weather Data | SCE |
| Weather Year | 1-in-2 |
| Day Type | August Worst Day |
| Forecast Year | 2026 |
| Portfolio Level | Program |
| Hour Ending View | HE (Prevailing Time) |

Table 2: Event day information

| | |
|--|---------|
| Event start | 4:00 PM |
| Event end | 9:00 PM |
| Total sites | 137,212 |
| Total devices | 160,768 |
| Total cooling tons | 577,444 |
| Event window temperature (F) | 91.2 |
| Event window load reduction (MWh/hour) | 107.38 |
| % Load reduction (Event window) | 30.0% |
| Redaction Information | Public |



| Hour Ending | Reference Load (MWh/hour) | Load with DR (MWh/hour) | Load Reduction (MWh/hour) | % Load Reduction | Avg Temp (°F, Site-Weighted) | Uncertainty-Adjusted Impact - Percentiles | | | Standard Error | T-Statistic |
|--------------------|---------------------------|-------------------------|---------------------------|------------------|------------------------------|---|--------|--------|----------------|-------------|
| | | | | | | 5th | 50th | 95th | | |
| 1 | 188.48 | 188.48 | 0.00 | 0.00% | 79.91 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2 | 161.98 | 161.98 | 0.00 | 0.00% | 78.53 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3 | 143.29 | 143.29 | 0.00 | 0.00% | 77.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4 | 129.92 | 129.92 | 0.00 | 0.00% | 76.46 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5 | 120.55 | 120.55 | 0.00 | 0.00% | 75.56 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6 | 116.96 | 116.96 | 0.00 | 0.00% | 74.93 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7 | 117.15 | 117.15 | 0.00 | 0.00% | 74.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8 | 114.68 | 114.68 | 0.00 | 0.00% | 74.17 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9 | 111.44 | 111.44 | 0.00 | 0.00% | 76.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10 | 107.41 | 107.41 | 0.00 | 0.00% | 80.95 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11 | 114.42 | 114.42 | 0.00 | 0.00% | 85.43 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12 | 142.62 | 142.62 | 0.00 | 0.00% | 89.09 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 13 | 190.15 | 190.15 | 0.00 | 0.00% | 91.59 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 14 | 241.96 | 241.96 | 0.00 | 0.00% | 93.78 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 15 | 292.37 | 292.37 | 0.00 | 0.00% | 95.24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 16 | 340.57 | 340.57 | 0.00 | 0.00% | 95.34 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 17 | 366.55 | 263.03 | 103.52 | 28.24% | 94.83 | 73.45 | 103.52 | 133.60 | 18.29 | 5.66 |
| 18 | 382.81 | 272.78 | 110.04 | 28.74% | 93.24 | 76.67 | 110.04 | 143.41 | 20.29 | 5.42 |
| 19 | 376.06 | 259.27 | 116.79 | 31.06% | 91.51 | 86.28 | 116.79 | 147.30 | 18.55 | 6.30 |
| 20 | 346.81 | 239.26 | 107.56 | 31.01% | 89.86 | 75.39 | 107.56 | 139.73 | 19.56 | 5.50 |
| 21 | 320.25 | 221.25 | 99.00 | 30.91% | 86.55 | 44.18 | 99.00 | 153.81 | 33.32 | 2.97 |
| 22 | 300.70 | 312.70 | -12.00 | -3.99% | 83.31 | -26.06 | -12.00 | 2.07 | 8.55 | -1.40 |
| 23 | 262.97 | 275.76 | -12.79 | -4.86% | 81.11 | -18.45 | -12.79 | 0.90 | 8.32 | -1.54 |
| 24 | 220.42 | 225.43 | -5.01 | -2.27% | 79.41 | -18.45 | -5.01 | 8.44 | 8.17 | -0.61 |
| Period | Reference Load (MWh/hour) | Load with DR (MWh/hour) | Energy Savings (MWh/hour) | % Change | Average Temperature (°F) | Uncertainty adjusted impact - Percentiles | | | Standard Error | T-statistic |
| | | | | | | 5th | 50th | 95th | | |
| Average Event Hour | 358.50 | 251.12 | 107.38 | 30.0% | 91.20 | 71.19 | 107.38 | 143.57 | 22.00 | 4.88 |
| Daily | 217.11 | 195.98 | 21.13 | 9.7% | 84.13 | 11.87 | 21.13 | 30.39 | 5.63 | 3.75 |

4.3 RESULTS BY CUSTOMER SEGMENT

The ex ante table generator, submitted in tandem with the report, allows users to review ex ante impact estimates across years, weather conditions, and several relevant customer segments. Table 12 shows ex ante impacts under SCE August weather conditions for two key groupings: cycling strategy and load control groups. Impacts are shown for 1-in-2 weather scenarios. Similar to the 2024 ex post results, ex ante estimates in the 50% cycling group are slightly less than half of those of the 100% cycling group. Trends by Load Control Groups similarly follow the ex post estimates. Impacts tend to be largest in the SDP-Central regions, both per-participant and aggregate. The lowest impacts are in the SDP-Northwest region, which is along the coast.

Table 12: Per Participant SDP-R Ex Ante Results by Customer Segment, SCE August Weather (kW)

| Load Control Group | 1-in-2 Weather Conditions | | Total |
|--------------------|---------------------------|--------------|-------------|
| | 50% Cycling | 100% Cycling | |
| SDP-Central-1 | 0.46 | 0.97 | 0.88 |
| SDP-Central-2 | 0.47 | 0.83 | 0.75 |
| SDP-Central-3 | 0.40 | 0.90 | 0.81 |
| SDP-Central-4 | 0.45 | 1.32 | 1.15 |
| SDP-High Desert | 0.23 | 0.66 | 0.62 |
| SDP-Low Desert | 0.50 | 0.66 | 0.63 |
| SDP-North | 0.44 | 0.81 | 0.75 |
| SDP-Northwest | 0.22 | 0.38 | 0.35 |
| SDP-West-1 | 0.38 | 0.68 | 0.62 |
| SDP-West-2 | 0.34 | 0.58 | 0.54 |
| Average | 0.41 | 0.87 | 0.78 |

4.4 COMPARISON TO PRIOR YEARS

Table 13 shows a comparison of year 2023, 2024, and 2025 ex ante impacts. All impacts represent monthly worst day impact estimates, and SCE weather conditions are used. Each vintage of predictions in the table reports forecasts for the next year: 2023 ex ante predictions are for 2024, 2024 predictions are for 2025, and 2025 predictions are for 2026.

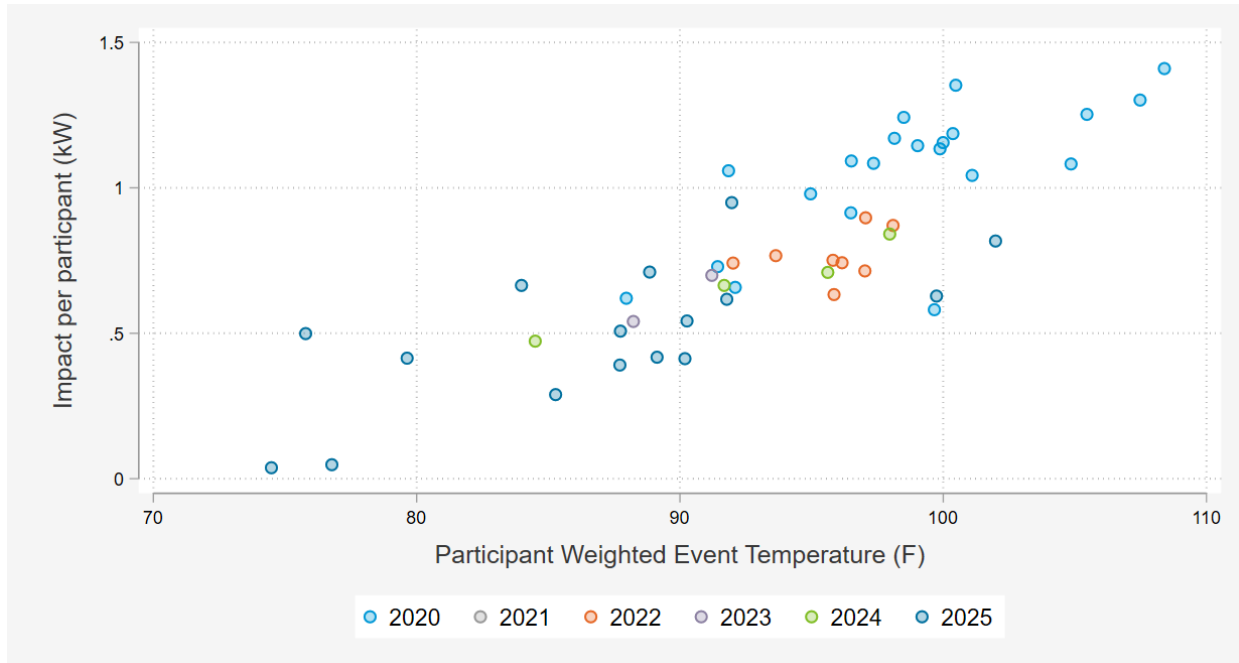
Table 13: Comparison of SDP-R Per Participant Ex Ante SCE Weather Impacts (kW), 2023-2025

| Month | Vintage Year 2023 | Vintage Year 2024 | Vintage Year 2025 |
|-----------|-------------------|-------------------|-------------------|
| | 1-in-2 | 1-in-2 | 1-in-2 |
| June | 0.82 | 0.66 | 0.62 |
| July | 0.89 | 0.70 | 0.75 |
| August | 0.92 | 0.70 | 0.78 |
| September | 0.93 | 0.73 | 0.81 |

The impacts in 2023 are high in magnitude and direction, while the 2024 & 2025 impacts are lower. The changes in ex ante impacts in the last two year are directly linked to the exclusion of 2020 ex post

impacts from the modeling of ex ante predictions (the analysis uses five years of historical performance). As Figure 21 shows, the 2020 impacts were significantly larger than those in other years, even at comparable temperatures. This discrepancy is likely due to the greater number of events, a wider temperature range, and the exceptionally high temperatures in 2020, which exceeded 100°F—something not observed in the subsequent years. Moreover, the higher impacts in 2020 are also likely driven by greater load reduction potential due to the extreme temperatures and the influence of COVID-19, which led to increased residential energy usage

Figure 21: SDP-R Ex Post Impact per Participant by Year



4.5 EX POST TO EX ANTE COMPARISON

Comparing ex ante to ex post estimates is a useful check on predicted demand reductions. When comparing these, however, it is important to keep the distinction between the two estimates in mind. Ex ante impacts are estimates of the future resources available under standardized planning conditions (defined by weather). Ex post impacts are estimates of what past impacts were given the weather, hours of dispatch, and resources dispatched. Because most events have historically been triggered by wholesale market price conditions in specific load pockets, the reductions do not always reflect the magnitude of resources available.

Table 14 compares the hour-by-hour ex post load impacts for the 2025 CAISO peak day to the ex ante 1-in-2 SCE monthly worst days for August under 1-in-2 and 1-in-10 weather conditions. In direction, the ex post load impacts are similar to the ex ante impact estimates shown in the table.

Table 14: SDP-R Ex Post to Ex Ante Comparison

| Units | Date | Accounts | Devices | Max Daily Temp (F) | Average Daily Temp (F) | 4:00-5:00 PM | 5:00-6:00 PM | 6:00-7:00 PM | 7:00-8:00 PM | 8:00-9:00 PM |
|--------------------------|--------------------------------------|----------|---------|--------------------|------------------------|--------------|--------------|--------------|--------------|--------------|
| Aggregate Impacts (MW) | 2025-08-21 | 18,548 | 22,716 | 98.0 | 84.1 | 17.22 | 14.94 | --- | --- | --- |
| | SCE Ex-ante 1-in-10 August Worst Day | 137,212 | 160,768 | 100.6 | 87.3 | 129.34 | 135.42 | 141.96 | 131.47 | 121.83 |
| | SCE Ex-ante 1-in-2 August Worst Day | 137,212 | 160,768 | 95.3 | 84.1 | 103.52 | 110.04 | 116.79 | 107.56 | 99.00 |
| Impacts per Account (kW) | 2025-08-21 | 18,548 | 22,716 | 98.0 | 84.1 | 0.93 | 0.81 | --- | --- | --- |
| | SCE Ex-ante 1-in-10 August Worst Day | 137,212 | 160,768 | 100.6 | 87.3 | 0.94 | 0.99 | 1.03 | 0.96 | 0.89 |
| | SCE Ex-ante 1-in-2 August Worst Day | 137,212 | 160,768 | 95.3 | 84.1 | 0.75 | 0.80 | 0.85 | 0.78 | 0.72 |
| Impacts per Device (kW) | 2025-08-21 | 18,548 | 22,716 | 98.0 | 84.1 | 0.76 | 0.66 | --- | --- | --- |
| | SCE Ex-ante 1-in-10 August Worst Day | 137,212 | 160,768 | 100.6 | 87.3 | 0.80 | 0.84 | 0.88 | 0.82 | 0.76 |
| | SCE Ex-ante 1-in-2 August Worst Day | 137,212 | 160,768 | 95.3 | 84.1 | 0.64 | 0.68 | 0.73 | 0.67 | 0.62 |

5 NON-RESIDENTIAL EX POST RESULTS

This section focuses on the magnitude of demand reductions delivered by SDP-C during 2025 event days and reflects the impacts delivered given the weather conditions, hours of dispatch, industry and participants mix, and amount of resources dispatched.

5.1 INDIVIDUAL EVENT DAY REDUCTIONS

Table 15 reference loads, observed loads, impacts, and percent impacts for each of the SDP-C summer 2025 DR events.

Table 15: Table 15: SDP-C Event Results, 2025

| Date | Dispatch Group | Event Start | Event End | Accts | Reference Load (MWh/hour) | Load with DR (MWh/hour) | Impact (MWh/hour) | Standard Error | % Impact | Impact per Acct (kW) | Average Temp (°F) |
|-----------|----------------|-------------|-----------|-------|---------------------------|-------------------------|-------------------|----------------|----------|----------------------|-------------------|
| 7/1/2025 | All | 3:00pm | 4:00pm | 6,127 | 96.95 | 88.52 | 8.43 | 2.09 | 9% | 1.38 | 80.9 |
| 8/6/2025 | 10 | 6:00pm | 8:00pm | 654 | | | | | | | |
| 8/7/2025 | 2 | 5:00pm | 8:00pm | 632 | | | | | | | |
| 8/20/2025 | 9 | 5:00pm | 7:00pm | 724 | | | | | | | |
| 8/21/2025 | 1 | 4:00pm | 6:00pm | 378 | | | | | | | |
| 8/22/2025 | 3 | 6:00pm | 8:00pm | 556 | | | | | | | |
| 9/17/2025 | 5 | 5:00pm | 6:15pm | 554 | | | | | | | |
| 9/17/2025 | 6 | 6:00pm | 7:15pm | 596 | | | | | | | |
| 9/17/2025 | 7 | 7:00pm | 8:00pm | 810 | | | | | | | |
| 9/17/2025 | 8 | 5:00pm | 8:00pm | 883 | | | | | | | |
| 9/18/2025 | 4 | 7:00pm | 9:00pm | 340 | | | | | | | |
| 9/19/2025 | 5 | 7:00pm | 9:00pm | 554 | | | | | | | |

Figure 22 visualizes impacts on August 21st. The impacts were around █ MW per hour on average, which accounts for a █% reduction in the reference load.

Figure 22: SDP-C Reductions on August 21st, 2025 Event Day



Figure 23 shows the remainder of the August events. The event dispatched on August 22nd, which corresponded with SCE's peak day, lasted from 6:00 PM to 8:00 PM. This event had an impact of █ MW on average (representing a █% decrease). August 6th achieved a reduction of █ MW (█%), August 7th had an impact of █ MW (█%), and August 20th had an impact of █ MW (█%).

These results reflect the participant composition in SDP-C. With schools comprising a significant portion of participants (67%), the program tends to achieve higher impacts when schools are in session and during their operating hours. Moreover, for commercial customers, AC usage represents a smaller share of load than for residential customers. Commercial AC loads and building occupancy tend to occur mid-day, with less load in the evening hours.

Figure 23: SDP-C Reductions on August 2025 Event Days (Excluding CAISO Peak Day)



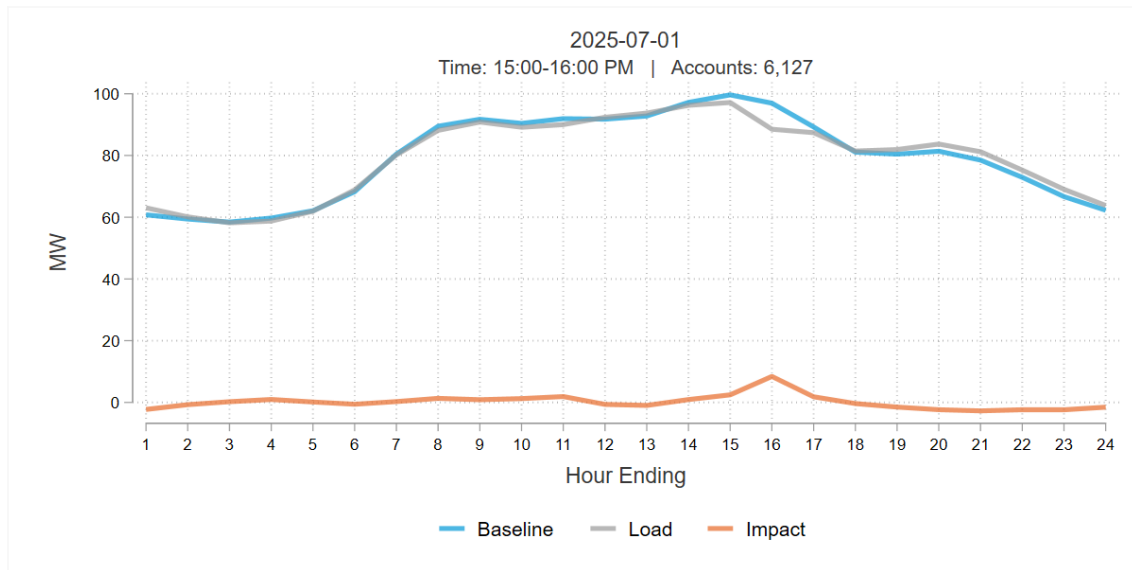
Figure 24 shows the September events. The events dispatched on September 18th & September 19th each lasted from 7:00 PM to 9:00 PM and had average impacts of ■ MW & ■ MW, respectively (representing a ■% & ■% decrease). The events on September 17th were dispatched during various timeframes and had impacts ranging from ■ – ■ MW (■%-■% decrease). It is worth noting that a cold front moved through during the September event window, dampening air-conditioning load and reducing the signal-to-noise ratio, so the September impact estimates should be interpreted with additional caution.

Figure 24 : SDP-C Reductions on September 2025 Event Days



Figure 25 shows the impacts of the July 1st event, which was the only territory-wide event. This event lasted from 3:00 to 4:00 PM and had an overall impact of 8.4 MW, or 9% load reduction. The large number of customers dispatched (6,127) provided considerable impact to the distribution system. Load relief value can often vary considerably from location to location within the SCE system based on distribution circuit loading and local conditions. Program flexibility in dispatching large & small-scale events may be a source of future value for SDP.

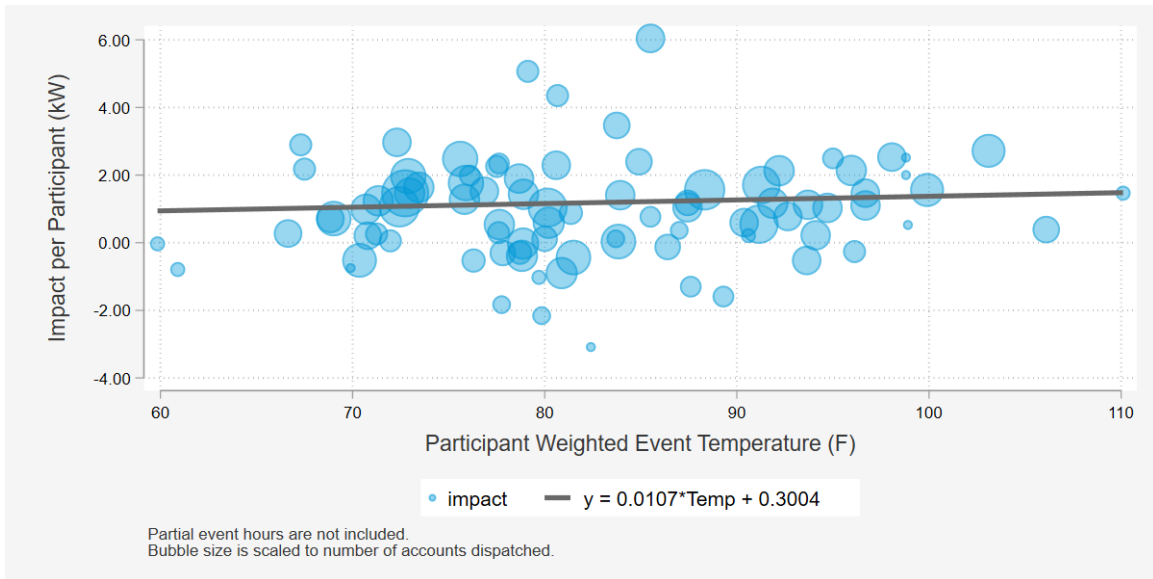
Figure 25: SDP-C Reductions on July 1st, 2025



5.2 WEATHER SENSITIVITY OF LOAD IMPACTS

The relationship between SDP-C per-participant demand reductions and outdoor air temperature is visualized in Figure 26 and includes all full event hours. As would be expected for a load control program, the magnitude of demand reductions is larger when temperatures are hotter. The slope of the trend line is 0.01 per degree. This implies that each one-degree increase in temperature is associated with a 0.01 kW increase in the per participant demand reduction.

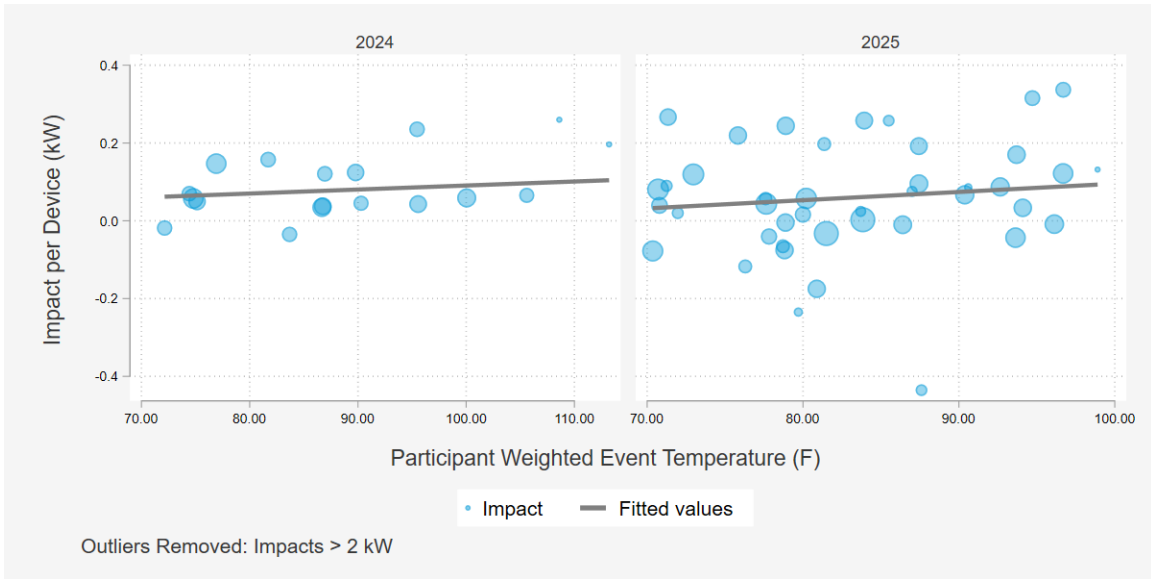
Figure 26: Relationship between SDP-C Demand Reductions and Weather



5.3 COMPARISON TO PRIOR YEAR

Figure 27 shows the relationship between SDP-C reductions and outdoor temperature with respect to the prior year. The individual trend lines by year are very similar. This implies a stable relationship between temperature and SDP-C impacts.

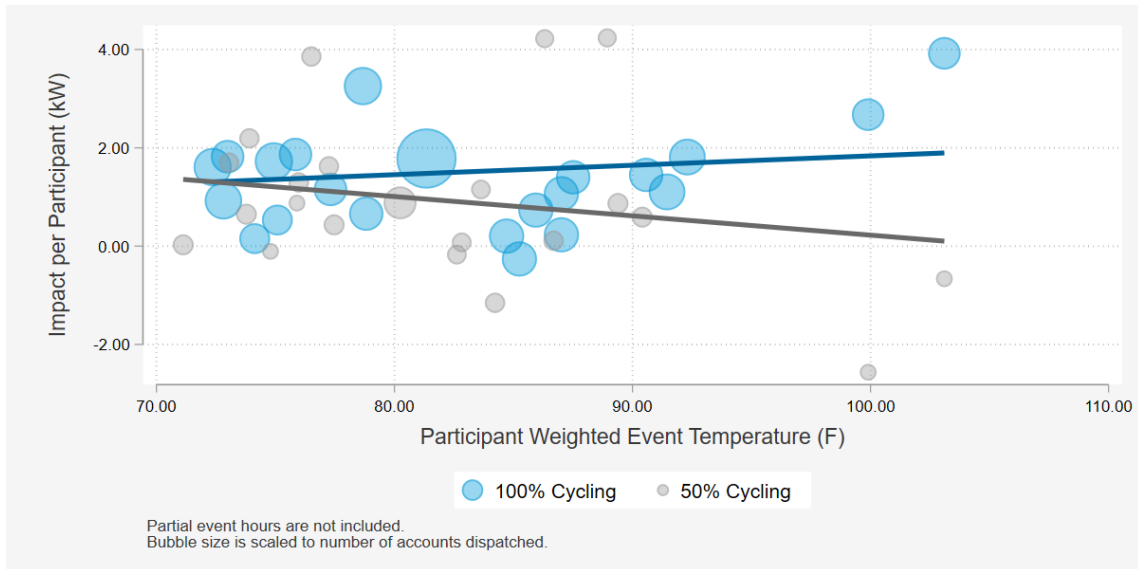
Figure 27: SDP-C Reductions and Temperature by Year, 2024-2025



5.4 IMPACTS BY CYCLING STRATEGY

Figure 28 plots the load impacts against outdoor temperature for the two of the three cycling strategy groups. Impacts for 30% cycling are excluded, as that group only includes 7.4% of devices. As expected, the magnitude of impacts for the 100% cycling group is larger than the impacts in the 50% cycling group. The slopes of the lines in the figure are 0.001 in the 100% cycling group and 0.000 in the 50% cycling group. Recall that these slopes represent the expected increase in the impact for every one degree increase in temperature.

Figure 28: SDP-C Impacts by Cycling Strategy



5.5 IMPACTS FOR KEY CUSTOMER SEGMENTS

This section examines how program impacts vary across key customer segments, drawing on event-level results from the 2025 season. Only a subset of load control groups (LCGs) is dispatched on any given event day, so the LCGs shown for an event reflect those that were actually called in that dispatch. As a result, cross-event differences in aggregate impacts partly capture which LCGs were selected for dispatch (and their available enrolled tonnage) in addition to underlying per-participant performance. By LCG, Figure 29 shows the average aggregate impact for each event. Note that all event hours were included.

Figure 29: Average Aggregate Impacts by Event and LCG, SDP-C



5.6 KEY FINDINGS

The SDP Commercial (SDP-C) program has approximately 6,200 customers enrolled and includes about 58,000 control devices and 292,000 tons of air conditioner load. Roughly 65% of customers elect the higher incentive option, which allows SCE to entirely curtail air conditioner demand (100% cycling) during SDP-C DR events.

A few other key findings are worth highlighting:

- SDP-C is a very top-heavy program, as 10% of the program participants account for more than 60% of the total AC tonnage. In other words, a small handful of customers account for a majority of the AC tonnage. Schools also account for a considerable share of the SDP-C AC tonnage, so demand reductions are tied to whether or not schools are in session. School whole building and air conditioner loads drop off considerably during peak hours.

- The relationship between per-device DR impacts and outdoor temperature is positive, meaning impacts tend to increase when temperatures are higher.

Granular dispatching allowed for a number of events to be called across various conditions, while individual participants only experienced a maximum of three event days.

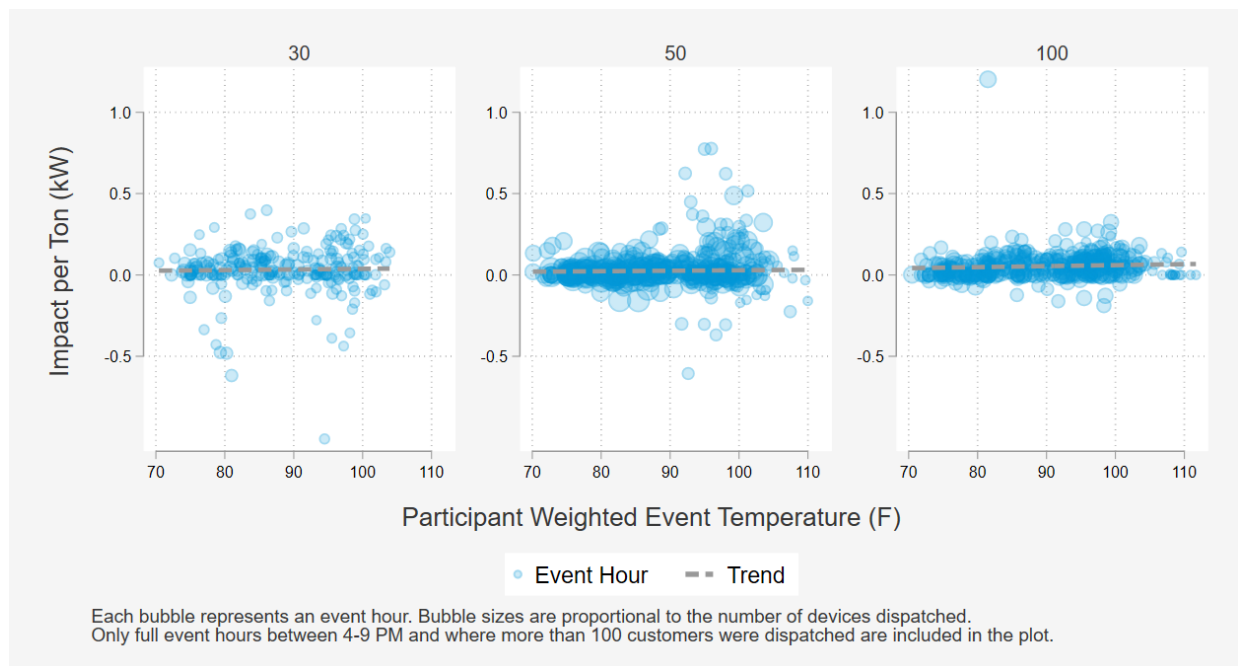
6 NON-RESIDENTIAL EX ANTE RESULTS

Ex ante impacts describe the magnitude of program resources available under standard planning conditions defined by weather. The ex ante estimates are developed for both SCE and California ISO conditions under normal weather (1-in-2). We estimate the ex ante impacts based on the relationship between demand reductions and weather using four years of historical performance data (2022-2025) and factor in projected changes in enrollment.

6.1 DEVELOPMENT OF EX ANTE IMPACTS

The ex ante impacts were developed by estimating the relationship between weather and demand reductions during 2022-2025 for customers currently enrolled in the program. Partial event hours were not used in the analysis, and neither were a handful of events from previous years due to discrepancies in the dispatch. In total, we estimated the relationship between demand reductions and impact by two key categories: the three cycling strategies and the ten load control groups. Figure 30 shows the relationship between outdoor temperature and demand reductions (per device) for the three cycling strategies across the three-year period. Note that only weekdays are included in the figure. Weekend impacts tend to be smaller due to the makeup of the program (predominantly schools).

Figure 30: Impacts against Temperature by Cycling Strategy



The pattern of reductions across events and segments was analyzed using a multivariate regression model. The model accounts for the effects of the hour of day, day of week, period of summer, cycling strategy, and load control group. Appendix E includes the output from the model. In addition, the

historical snapback was analyzed to produce estimates of the post-event increase in loads based on the number of hours since the event finished and the daily heat buildup.

The impact models were combined with reference load models that were developed using historical load data and historical weather for 2025. The relationship between historical loads and weather was cast across ex ante weather conditions to develop ex ante reference loads.

6.2 OVERALL RESULTS

For the monthly worst day, Table 16 shows average device-level ex ante impacts for each of the summer months (and also May). Impacts are shown under two different scenarios – CAISO 1-in-2 weather conditions and SCE 1-in-2 weather conditions. For reference, on the CAISO Peak August event day in 2025, the average impact per device was █ kW.

Table 16: Per Device Worst Day Ex Ante Impacts (kW)

| Month | SCE Weather | CAISO Weather |
|-----------|-------------|---------------|
| | 1-in-2 | 1-in-2 |
| May | 0.15 | 0.14 |
| June | 0.26 | 0.27 |
| July | 0.31 | 0.25 |
| August | 0.26 | 0.25 |
| September | 0.29 | 0.26 |

Table 17 shows aggregate ex ante demand reduction forecasts for an August worst event day. Forecasts are shown under the five scenarios identified above. The fact that the demand reductions decrease throughout the forecast window can be explained by the decline in the enrollment forecast, which itself can be explained general customer attrition (customers moving and/or requesting to be removed from the program). Ex ante weather conditions are static through the forecast window.

Table 17: Aggregate August Worst Day Demand Reduction Forecast – SDP-C (MW)

| Forecast Year | Enrollment Forecast | Total Devices | SCE Weather | CAISO Weather |
|---------------|---------------------|---------------|-------------|---------------|
| | | | 1-in-2 | 1-in-2 |
| 2026 | 5,769 | 51,286 | 13.6 | 12.6 |
| 2027 | 5,427 | 48,249 | 12.8 | 11.8 |
| 2028 | 5,107 | 45,403 | 12.0 | 11.1 |
| 2029 | 4,807 | 42,737 | 11.3 | 10.5 |
| 2030 | 4,526 | 40,238 | 10.7 | 9.9 |
| 2031 | 4,263 | 37,896 | 10.0 | 9.3 |
| 2032 | 4,016 | 35,702 | 9.5 | 8.8 |
| 2033 | 3,785 | 33,646 | 8.9 | 8.3 |
| 2034 | 3,568 | 31,719 | 8.4 | 7.8 |
| 2035 | 3,365 | 29,913 | 7.9 | 7.3 |
| 2036 | 3,175 | 28,221 | 7.5 | 6.9 |

Figure 31 shows the estimated ex ante load profiles for the SDP-C customer pool under 1-in-2 weather conditions. The figure show profiles for the August worst day and use SCE weather conditions rather than CAISO conditions. Note that the forecast year shown is 2026.

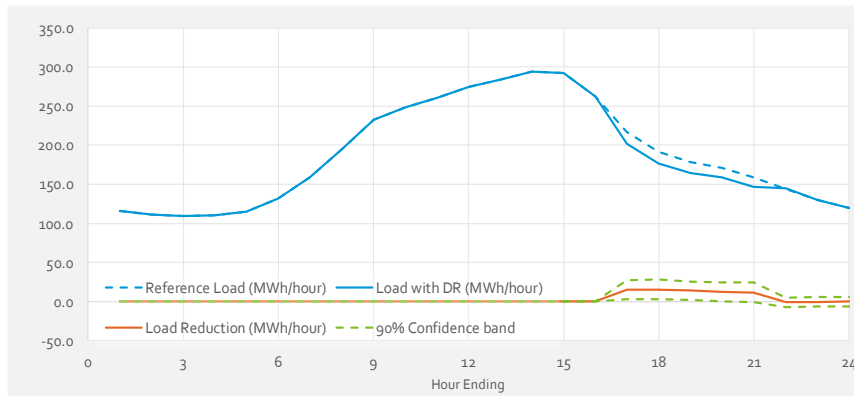
Figure 31: SDP-C Aggregate Ex Ante Impact for 1-in-2 Weather Conditions, August Worst Day 2026

Table 1: Menu options

| | |
|------------------|----------------------|
| Type of result | Aggregate |
| Category | All |
| Segment | All Customers |
| Weather Data | SCE |
| Weather Year | 1-in-2 |
| Day Type | August Worst Day |
| Forecast Year | 2026 |
| Portfolio Level | Portfolio |
| Hour Ending View | HE (Prevailing Time) |

Table 2: Event day information

| | |
|--|---------|
| Event start | 4:00 PM |
| Event end | 9:00 PM |
| Total sites | 5,769 |
| Total devices | 51,286 |
| Total cooling tons | 255,842 |
| Event window temperature (F) | 88.7 |
| Event window load reduction (MWh/hour) | 13.58 |
| % Load reduction (Event window) | 7.4% |
| Redaction Information | Public |



| Hour Ending | Reference Load (MWh/hour) | Load with DR (MWh/hour) | Load Reduction (MWh/hour) | % Load Reduction | Avg Temp (°F, Site-Weighted) | Uncertainty-Adjusted Impact | | | Standard Error | T-Statistic |
|--------------------|---------------------------|-------------------------|---------------------------|------------------|------------------------------|-----------------------------|-------|-------|----------------|-------------|
| | | | | | | 5th | 50th | 95th | | |
| 1 | 115.49 | 115.49 | 0.00 | 0.0% | 77.45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2 | 111.52 | 111.52 | 0.00 | 0.0% | 76.34 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3 | 109.61 | 109.61 | 0.00 | 0.0% | 75.43 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4 | 109.84 | 109.84 | 0.00 | 0.0% | 74.49 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5 | 114.60 | 114.60 | 0.00 | 0.0% | 73.78 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6 | 131.65 | 131.65 | 0.00 | 0.0% | 73.24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7 | 159.18 | 159.18 | 0.00 | 0.0% | 72.65 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8 | 194.26 | 194.26 | 0.00 | 0.0% | 72.68 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9 | 232.35 | 232.35 | 0.00 | 0.0% | 74.87 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10 | 248.45 | 248.45 | 0.00 | 0.0% | 78.95 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11 | 260.24 | 260.24 | 0.00 | 0.0% | 83.15 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12 | 274.96 | 274.96 | 0.00 | 0.0% | 86.65 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 13 | 284.07 | 284.07 | 0.00 | 0.0% | 89.09 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 14 | 294.32 | 294.32 | 0.00 | 0.0% | 91.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 15 | 292.88 | 292.88 | 0.00 | 0.0% | 92.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 16 | 262.96 | 262.96 | 0.00 | 0.0% | 92.51 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 17 | 216.73 | 201.56 | 15.17 | 7.0% | 91.96 | 2.79 | 15.17 | 27.54 | 7.52 | 2.02 |
| 18 | 191.55 | 176.24 | 15.31 | 8.0% | 90.71 | 2.94 | 15.31 | 27.68 | 7.52 | 2.04 |
| 19 | 178.09 | 164.45 | 13.64 | 7.7% | 89.34 | 1.63 | 13.64 | 25.65 | 7.30 | 1.87 |
| 20 | 171.29 | 159.03 | 12.26 | 7.2% | 87.53 | 0.01 | 12.26 | 24.51 | 7.45 | 1.65 |
| 21 | 158.63 | 147.14 | 11.50 | 7.2% | 84.19 | -1.02 | 11.50 | 24.02 | 7.61 | 1.51 |
| 22 | 143.87 | 144.92 | -1.05 | -0.7% | 80.89 | -7.27 | -1.05 | 5.16 | 3.78 | -0.28 |
| 23 | 129.57 | 130.10 | -0.53 | -0.4% | 78.81 | -6.55 | -0.53 | 5.50 | 3.66 | -0.14 |
| 24 | 119.80 | 120.09 | -0.29 | -0.2% | 77.22 | -6.16 | -0.29 | 5.58 | 3.57 | -0.08 |
| Period | Reference Load (MWh/hour) | Load with DR (MWh/hour) | Energy Savings (MWh/hour) | % Change | Average Temperature (°F) | Uncertainty-Adjusted Impact | | | Standard Error | T-statistic |
| | | | | | | 5th | 50th | 95th | | |
| Average Event Hour | 183.26 | 169.68 | 13.58 | 7.4% | 88.75 | 1.27 | 13.58 | 25.88 | 7.48 | 1.81 |
| Daily | 187.75 | 185.00 | 2.75 | 1.5% | 81.90 | -0.57 | 2.75 | 6.07 | 2.02 | 1.36 |

6.3 RESULTS BY CUSTOMER SEGMENT

The ex ante table generator, submitted in tandem with the report, allows users to review ex ante impact estimates across years, weather conditions, and several relevant customer segments. The number of possible combinations is quite large – too large for all combinations to be presented in this report. We believe two of the key grouping variables for SDP-C are cycling strategy and load control group (which bins participants into regional areas). Table 18 shows ex ante impact estimates (per device) for these key segments using SCE weather conditions for forecast year 2026. Impacts are shown for the 1-in-2 weather scenario. On the surface, one curious trend is the average impacts by cycling strategy – 30% cycling has the highest per-device impacts. This is simply because the participants in the 30% bin tend to have larger loads.

Regarding load control groups, trends in the ex ante estimates follow trends in the ex post estimates. Impacts tend to be larger in the SDP-Central region. For 100% cycling, impacts also look large in the Low Desert region, but the region only has only a handful of participants (meaning results for this region are not as reliable as results for the other regions).

Table 18: Per Device SDP-C Ex Ante Results by Customer Segment, SCE August Weather (kW)

| Load Control Group | 1-in-2 Weather Conditions | | | Total |
|--------------------|---------------------------|-------------|--------------|-------------|
| | 30% Cycling | 50% Cycling | 100% Cycling | |
| SDP -Central-1 | | | 0.37 | 0.32 |
| SDP-Central-2 | | | 0.34 | 0.32 |
| SDP-Central-3 | | | 0.39 | 0.56 |
| SDP-Central-4 | | | 0.37 | 0.37 |
| SDP-High Desert | | | | |
| SDP-Low Desert | | | | |
| SDP-North | | | 0.29 | 0.29 |
| SDP-Northwest | | | 0.15 | 0.15 |
| SDP-West-1 | | | 0.38 | 0.15 |
| SDP-West-2 | | | 0.19 | 0.17 |
| Average | | | 0.29 | 0.26 |

6.4 COMPARISON TO PRIOR YEAR

Table 19 shows a comparison of year 2023, 2024, and 2025 ex ante impacts for the 1-in-2 two weather scenario at the participant level. All impacts represent monthly worst day impact estimates, and SCE weather conditions are used. Each vintage of predictions in the table reports forecasts for the next year: 2023 ex ante predictions are for 2024, 2024 predictions are for 2025, and 2025 predictions are for 2026.

In magnitude and direction, the 2023-2025 impacts are similar. Still, differences do exist. The differences can be attributed to a few factors. Key differences include: differences in the customer mix,

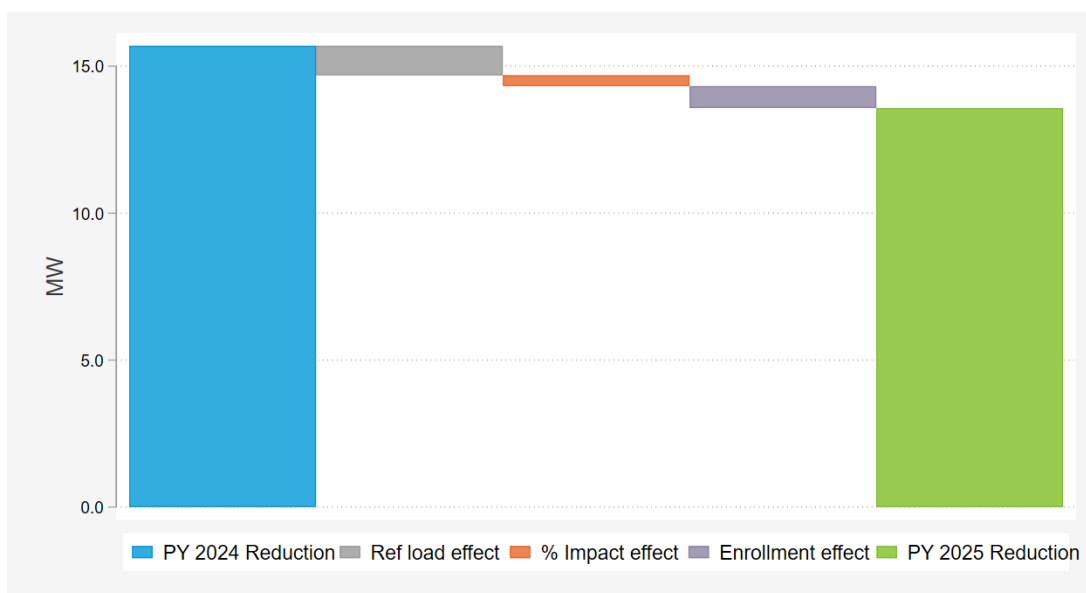
differences in which historical ex post impacts are used in developing the ex-ante impacts, and differences in ex ante regression model specifications.

Table 19: Comparison of SDP-C Per Participant Ex Ante SCE Weather Impacts (kW), 2023-2025

| Month | Vintage Year 2023 | Vintage Year 2024 | Vintage Year 2025 |
|-----------|-------------------|-------------------|-------------------|
| | 1-in-2 | 1-in-2 | 1-in-2 |
| June | 1.97 | 1.52 | 2.29 |
| July | 2.15 | 1.63 | 2.72 |
| August | 2.42 | 2.58 | 2.35 |
| September | 2.82 | 2.78 | 2.61 |

Figure 32 look at how the SCE August aggregate load reductions have changed since the 2024 evaluation. While results are similar between the years, the contributing factors vary. Both the reference load and impact increased the aggregate reduction, while the effect of the enrollment mix brought the estimate down and closer to the 2024 value.

Figure 32: Comparison of Ex Ante August Load Reductions and Contributing Factors



6.5 EX POST TO EX ANTE COMPARISON

When comparing ex post and ex ante, it is essential to keep the distinction between the two estimates in mind. Ex ante impacts are estimates of the future resources available under standardized planning conditions (defined by weather). Ex post impacts are estimates of what past impacts were given the weather, hours of dispatch, the magnitude of resources dispatched, and other dispatch conditions. Because most events have historically been triggered by wholesale market price conditions in specific load pockets, the reductions do not always reflect the magnitude of resources available.

Table 20 compares the hour-by-hour ex post load impacts for the 2025 CAISO peak day to the ex ante 1-in-2 SCE monthly worst days for August under 1-in-2 and 1-in-10 weather conditions. In magnitude,

the ex post load impacts are very similar to the ex ante impact estimates shown in the table. The 8/21 event had similar, but slightly lower impacts than what would be expected for a future August worst day.

Table 20: SDP-C Ex Post to Ex Ante Comparison

| Units | Date | Accounts | Devices | Max Daily Temp (F) | Average Daily Temp (F) | 4:00-5:00 PM | 5:00-6:00 PM | 6:00-7:00 PM | 7:00-8:00 PM | 8:00-9:00 PM |
|--------------------------|--------------------------------------|----------|---------|--------------------|------------------------|--------------|--------------|--------------|--------------|--------------|
| Aggregate Impacts (MW) | 2025-08-21 | 378 | 6,366 | 104.0 | 84.9 | | | --- | --- | --- |
| | SCE Ex-ante 1-in-10 August Worst Day | 5,769 | 51,286 | 97.4 | 84.7 | 18.61 | 18.40 | 16.27 | 14.54 | 13.49 |
| | SCE Ex-ante 1-in-2 August Worst Day | 5,769 | 51,286 | 92.5 | 82.0 | 15.17 | 15.31 | 13.64 | 12.26 | 11.50 |
| Impacts per Account (kW) | 2025-08-21 | 378 | 6,366 | 104.0 | 84.9 | | | --- | --- | --- |
| | SCE Ex-ante 1-in-10 August Worst Day | 5,769 | 51,286 | 97.4 | 84.7 | 3.23 | 3.19 | 2.82 | 2.52 | 2.34 |
| | SCE Ex-ante 1-in-2 August Worst Day | 5,769 | 51,286 | 92.5 | 82.0 | 2.63 | 2.65 | 2.36 | 2.13 | 1.99 |
| Impacts per Device (kW) | 2025-08-21 | 378 | 6,366 | 104.0 | 84.9 | | | --- | --- | --- |
| | SCE Ex-ante 1-in-10 August Worst Day | 5,769 | 51,286 | 97.4 | 84.7 | 0.36 | 0.36 | 0.32 | 0.28 | 0.26 |
| | SCE Ex-ante 1-in-2 August Worst Day | 5,769 | 51,286 | 92.5 | 82.0 | 0.30 | 0.30 | 0.27 | 0.24 | 0.22 |

7 RECOMMENDATIONS

The Summer Discount Program remains a significant component of the SCE Demand Response portfolio. It currently includes roughly 146,000 residential customers, 6,200 non-residential customers, approximately 229,000 air conditioner units, and 925,000 tons of air conditioning. It has the capability to deliver large magnitudes of flexible loads at very fast ramp rates, is available for a wide range of hours, and can target resources to specific geographic locations. Most importantly, the program delivers larger reductions when the weather is more extreme and resources are needed most. Table 21 summarizes our recommendations for the program. We recognize that our recommendations do not incorporate costs and may not be funded under current budgets.

Table 21: Evaluator Recommendations

| Recommendation | Explanation |
|--|--|
| <p>Focus on granular event dispatch, when applicable</p> | <p>In PY2025, SCE implemented DSA's recommended test event plan, dispatching customer groups at the A-bank/B-bank level across a range of temperature brackets throughout the summer season. This approach built on the September 6, 2024 localized emergency event in the Mira Loma A-Bank area, which demonstrated that granular geographic dispatch could provide valuable, targeted load relief to the distribution system. The PY2025 test season confirmed that SCE's systems can reliably dispatch specific participant groups at the A-bank/B-bank level, and the resulting data has strengthened the foundation for ex-ante load impact estimation. DSA recommends continuing to expand these granular dispatch capabilities to ensure that in future emergency conditions, the correct groups of participants can be dispatched with confidence. The ability to dispatch at increasingly granular geographic levels means SDP has the potential to play an important part in system reliability going forward.</p> |
| <p>Add weekend days to the load impact protocol ex-ante tables and include weekend test events, if needed</p> | <p>Historically, SCE and California as a whole has peaked on weekdays and planned resources to meet weekday demand. The emergency events in 2020 and the heatwave in 2022 highlighted the need to quantify the magnitude of resources available for weekend conditions. While those do not differ much for Residential programs, the weekend DR resources available for non-residential customers differ substantially from weekday resources. To the extent that weekend events are part of future program plans, consider calling more weekend events and developing a "weekend" set of ex ante impacts, particularly for SDP-C where reference loads are smaller on weekends. To allow for better ex ante impact estimation, the weekend events would ideally cover the entire RA window – though not necessarily all in one event.</p> |
| <p>Include "test" event operations to fully assess the load reduction capability</p> | <p>To facilitate comparisons between ex post and ex ante results, we recommend at least one territory-wide event, ideally on the SCE system peak day or another day with high system loads.</p> |

| | |
|---|---|
| | <p>We also recommend ensuring that the combination of territory-wide actual and test events include each of the peak hour from 4–9 PM, which was nearly achieved in this program year’s dispatch. To be clear, we are not recommending five-hour events (unless needed for reliability) but ensuring that at least one of each of the territory-wide events cover the 4–9 PM peak hours. To achieve this, it may be necessary to supplement events called by CAISO with Measurement and Evaluation events.</p> |
| <p>Make sure to dispatch "test" events that include enough variation to understand program performance</p> | <p>To understand how this program performs, it is imperative to acknowledge the various population groupings (LCG, LCA, etc). For evaluation, we recommend calling different types of events for different sub-populations to better understand performance. This includes variability on the event duration, event start time, and weather conditions. But it does not require calling many events for each customer, instead it encourages calling a couple events across smaller groupings of participants. 2025 consisted of cooler temperatures compared to prior years; having a full range of temperatures leads to better and more reliable capacity forecasting results.</p> |

APPENDIX A: EX POST METHODOLOGY

The below table summarizes the ex post evaluation approach. The ex post evaluation is direct and relies on simple, transparent methods.

Table 22: Summer Discount Plan Ex Post Evaluation Approach

| Methodology Component | Approach |
|-----------------------------------|--|
| 1. Population or sample analyzed | For both residential and commercial customers, analyze the full population of participants and a matched control group. |
| 2. Data included in the analysis | The analysis included nearly all PY2025 data. |
| 3. Use of control groups | A matched control group was employed for residential and commercial customers. Control customers were pulled from a stratified random sample. From the control sample, the control group is selected using non-event day load patterns, geographic location, and other customer characteristics (e.g., industry) to develop propensity scores within each stratum. For each participant, the nearest neighbor based on propensity scores is identified. Several different propensity score models were tested. For each model, we produce standard metrics for bias and goodness of fit – these metrics measure the error between "nearest neighbor" loads and treatment home loads. Of the three models that produce the lowest percent bias, the model that minimizes mean absolute prediction error is selected as the best model. The control group picked by the best model is used as the control group in the ex post analysis. |
| 4. Load impact Regression | Residential (SDP-R) impacts were estimated using a simple difference-in-differences approach with matched non-participant controls as well as with non dispatched customers acting as controls, comparing participant and control load during event hours relative to a corresponding proxy (hot non-event) day to net out underlying differences not attributable to dispatch. The matched control was used for the analysis. For SDP-C, the impact evaluation followed the same approach as in prior years due to the smaller and more geographically targeted dispatch groups, with event-level impacts estimated using matched controls and panel difference-in-differences at the event/LCG level. |
| 5. Segmentation of impact results | The results are segmented by: <ul style="list-style-type: none"> ▪ Customer class (residential/non-residential) and NAICS code for non-residential customers, ▪ Zone, LCA, and dispatch group ▪ Cycling strategy, and ▪ AC tonnage size. |

| Methodology Component | Approach |
|-----------------------|--|
| | The main segment categories are building blocks. They are designed to ensure segment-level results add up to the total, to enable production of ex ante impacts, and to allow for busbar level analysis. |

Because customers enrolled in SDP do not have a natural control group against which to compare loads on event days, one must be constructed. There are many ways to construct a control group, but the evaluation team suggests a blocked propensity score matching process. Propensity score matching is a data pre-processing technique that identifies statistically similar non-participants for each participating customer. It relies on a probit model that relates observed characteristics such as geography, load shapes, industry, and size to whether a given customer has enrolled in a given demand response program – in this case, SDP. The outcome of this model is a propensity score for each participant and non-participant that is the likelihood, given the customer's characteristics, that the customer enrolled in DR. Participants are then "matched" to non-participants with similar propensity scores. Effectively, propensity score matching produces a cohort of non-participants that have the same overall likelihood to have been treated as the participant group – the only customers that did in fact enroll in the program. A blocked propensity score matching process performs this regression and matching procedure for customers in each key strata separately, effectively ensuring that only participants in a given climate zone, for example, will be matched with non-participants in that same climate zone.

For SDP-R and SDP-C, the evaluation team, in conjunction with SCE, decided to proceed with a matched control group relying on a stratified random sample of subsets of non-participants to act as the control pool. This eliminates the need to develop a two-stage matched control group, streamlining analysis. Essentially, instead of relying on information from all possible non-participants, we instead construct a control group from a targeted subset of control candidates that have been pre-screened to belong to sampling cells of influential variables. By oversampling large and/or NEM customers, and by allowing non-participants to be matched multiple times to different participants, we can improve the quality of matching compared to a random sample, while also removing the need to do two-stage matching on all non-participants in SCE's territory. For reference, the sample cells are summarized in Table 23.

Table 23: Summer Discount Plan Non-Participant Sampling Plan

| Climate Zone | Customer Class | NEM Status | Annual kWh | Solar Capacity (kW) | Sample |
|---------------------------|----------------|------------|-------------|---------------------|--------|
| For each CEC Climate Zone | Residential | Non-NEM | 0-5000 | N/A | 1,000 |
| | | | 5k-10k | N/A | 1,000 |
| | | | 10k | N/A | 1,000 |
| | | NEM | N/A | 0-6 kW | 600 |
| | | | N/A | 6-10 kW | 600 |
| | | | N/A | >10 kW | 600 |
| Climate Zone | Customer Class | NEM Status | Peak Demand | Solar Capacity (kW) | Sample |
| For each CEC Climate Zone | Commercial | Non-NEM | <20kW | N/A | 300 |
| | | | 20-200kW | N/A | 300 |
| | | | 200kW-1MW | N/A | 300 |
| | | | >1MW | N/A | 300 |
| | | NEM | <20kW | 0-100kW | 100 |
| | | | | 100-500kW | 100 |
| | | | | >500kW | 100 |
| | | | 20-200kW | 0-100kW | 100 |
| | | | | 100-500kW | 100 |
| | | | | >500kW | 100 |
| | | | 200kW-1MW | 0-100kW | 100 |
| | | | | 100-500kW | 100 |
| | | | | >500kW | 100 |
| | | | >1MW | 0-100kW | 100 |
| | | | | 100-500kW | 100 |
| | | | | >500kW | 100 |

The matched control group for the residential component was successful, as our team found matches for each SDP participant. On the commercial side, however, some SDP participants have very large and unique loads and we were unable to find strong matches for these participants. Rather than leaving the candidates with poor matches in the ex post analysis data set, our team elected to remove them and simply scale the impacts based on the tonnage of the sites that were removed from the analysis. Table 24 lays out an example using a hypothetical event. In the example, the average tonnage per account for sites in the ex post sample is 35.12 tons, and the average tonnage per account for all sites that were curtailed is 45.07. The ratio between these numbers is 1.28. This ratio would be used to scale the estimated counterfactual and the demand reduction estimate (amongst other quantities) for this event. The implicit assumption is that percent impacts for the 400 curtailed sites that are not in the analysis will be similar to the percent impacts for the 7,900 sites that are in the analysis.

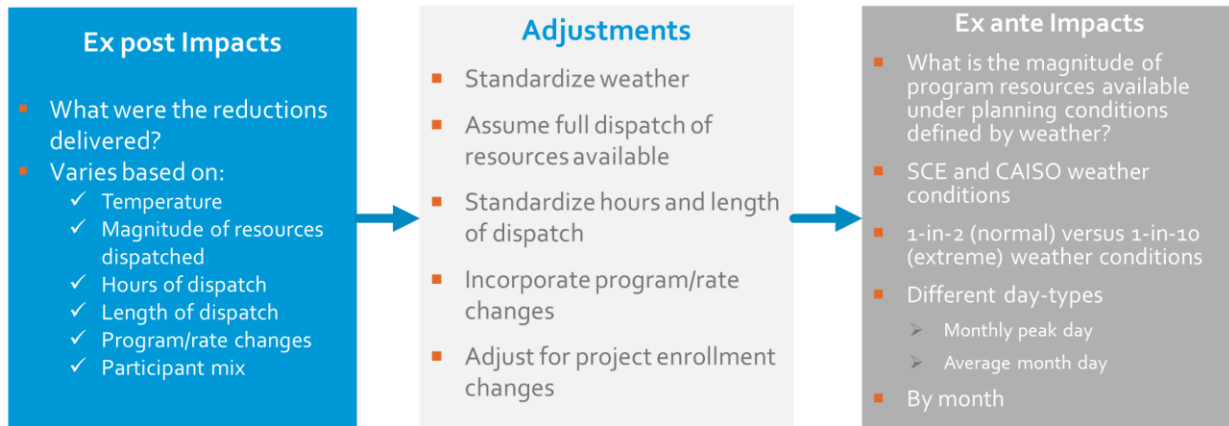
Table 24: Scaling Example

| Level | Accounts | Tonnage | Tonnage per Account | Scaling Ratio |
|--------------------------|----------|---------|---------------------|---------------|
| In Ex Post Analysis Data | 7,900 | 277,448 | 35.12 | 1.28 |
| Curtailed | 8,300 | 374,081 | 45.07 | |

APPENDIX B: EX ANTE METHODOLOGY

Figure 33 summarizes some of the key differences between ex post impact estimates and ex ante impact estimates. Perhaps the most important difference is related to weather – ex ante impacts are weather-normalized while ex post impacts reflect historical weather conditions.

Figure 33: Difference between Ex Post and Ex Ante



There are two key steps in developing ex ante impacts. First, historical participant loads are modeled as a function of key weather variables. Using ex ante weather forecasts provided by SCE for both 1-in-2 and 1-in-10 weather years, ex ante reference loads are predicted using the same regression function. Second, a similar process is followed for historical demand response impacts – the impacts are modeled as a function of key weather variables, then the estimated model is used to predict impacts under ex ante weather conditions. Other components of the ex ante methods are discussed in Table 25.

As with ex post impacts, ex ante estimates are produced for key sub-segments of the participant population so that they can be aggregated in different ways to account for changes in future enrollment or program design.

Table 25: Summer Discount Plan Ex Ante Evaluation Approach

| Methodology Component | Approach |
|--|--|
| 1. Years of historical performance | We used four years (2022-2025) of historical data to estimate how demand reductions vary based on dispatch hours and weather conditions and to estimate the reductions available under planning conditions. |
| 2. Process for producing ex ante impacts | <p>The key steps are:</p> <ul style="list-style-type: none"> Use four years of historical performance data for relevant customers. Decide on an adequate segmentation to reflect changes in the customer. Segments used were load control group and cycling strategy. These segments reflect that events are dispatched geographically and that impacts in the 100% cycling strategy group are |

| Methodology Component | Approach |
|---|--|
| | <p>known to be larger in magnitude than impacts in the 30% and 50% cycling strategy group.</p> <ul style="list-style-type: none"> ▪ Estimate the relationship between reference loads and weather using non-event days. This is done separately for each segment in both SDP-R and SDP-C. ▪ Use the models to predict reference loads for 1-in-2 and 1-in-10 weather year conditions. ▪ Estimate the relationship between weather and demand response impacts. Like the reference load estimation, this is done separately by segment. ▪ Estimate the relationship between weather and post-event snapback. ▪ Predict the reductions and snapback for 1-in-2 and 1-in-10 weather year conditions. ▪ Incorporate the enrollment forecast. |
| <p>3. Accounting for changes in the participant mix</p> | <p>Enrollment forecasts were provided by SCE.</p> |

APPENDIX C: PROXY EVENT DAYS

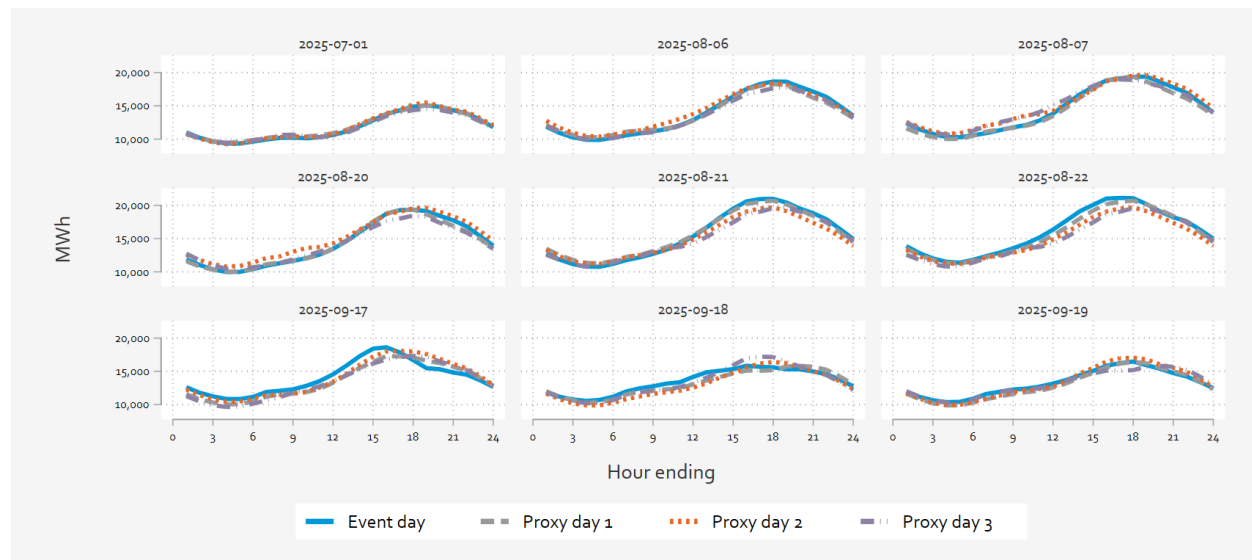
Proxy event days are event-like non-event days. In calculating event day demand reductions, proxy event days are used to net out differences between the treatment and control group that were not due to the intervention. Thus, selecting proxy event days that are similar to actual event days – in terms of total energy used and the hourly load profile – is crucial.

In this analysis, proxy days were selected separately for the residential and commercial customers. Residential proxy days were selected based on SCE loads, while commercial proxy days were selected based on aggregate participant loads.

More generally, proxy days were selected based on a matching algorithm that considers total energy used and how the energy consumption is distributed throughout the day. For the latter component, hourly differences between potential proxy event day loads and event day loads are calculated, then these differences are used to calculate bias and error metrics. For each event day, three proxy event days were selected. Out of all of the candidate days, the proxy event days were selected as follows: keep the nine days with the lowest absolute percent bias; out of those nine, keep the three days with the lowest sum of squared error.

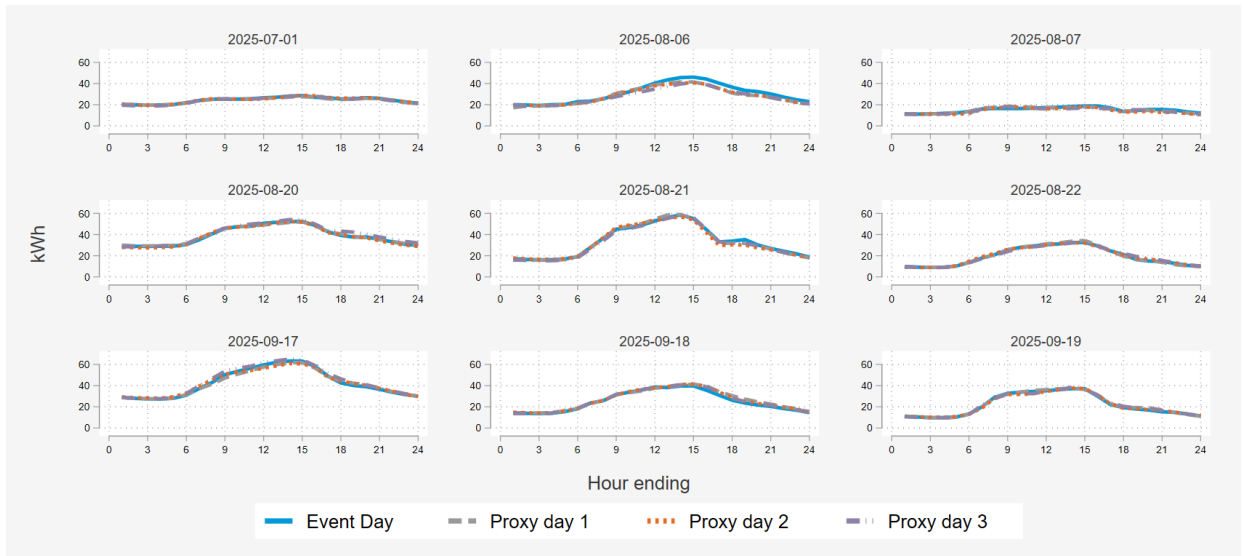
For each 2025 event day, Figure 34 shows system loads on event days and the residential proxy days.

Figure 34: System Load on Event Days and Residential Proxy Days



For each 2025 event day, Figure 35 shows aggregate participant loads on event days and the commercial proxy days.

Figure 35: Aggregate Participant Load on Event Days and Commercial Proxy Days



APPENDIX D: VALIDATION – COMPARISON OF MATCHED CONTROL AND PARTICIPANTS

Ideally, the load profile for a matched control group will mirror the load profile of a treatment group in all hours up until the demand response intervention. This was certainly the case for the 2025 SDP-R ex post evaluation. Figure 36 shows the average control group load and the average treatment group load for each 2025 summer event day.

Figure 36: Control Group and Treatment Group Event Day Loads, SDP-R

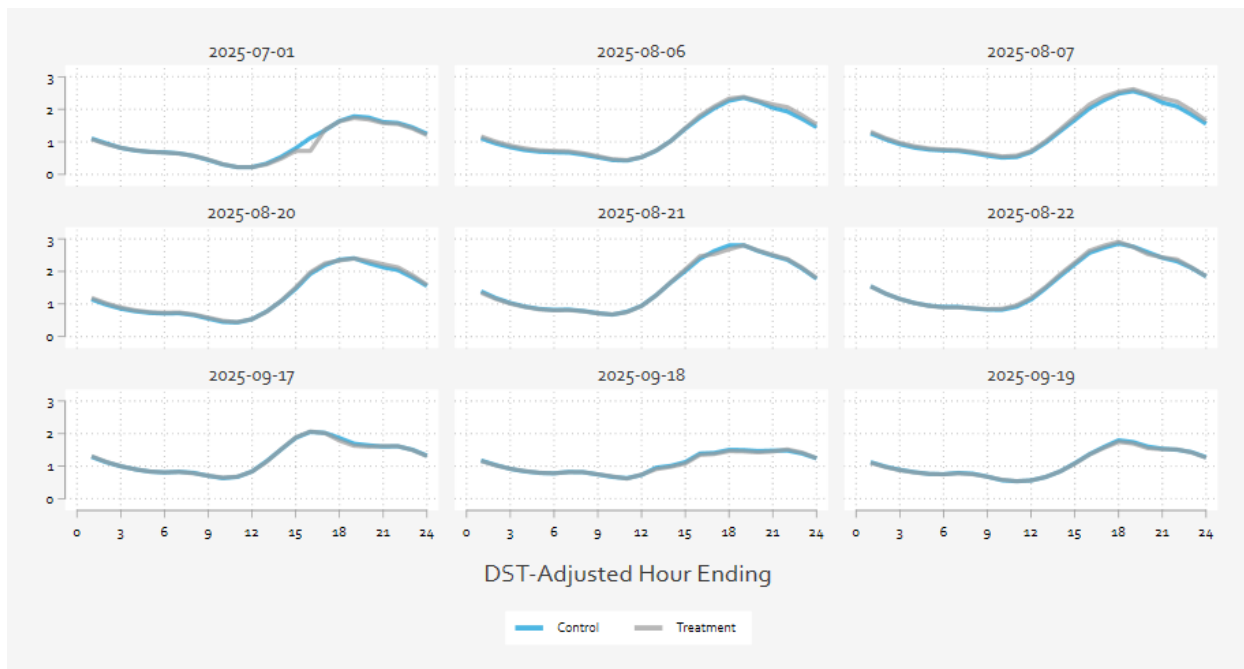
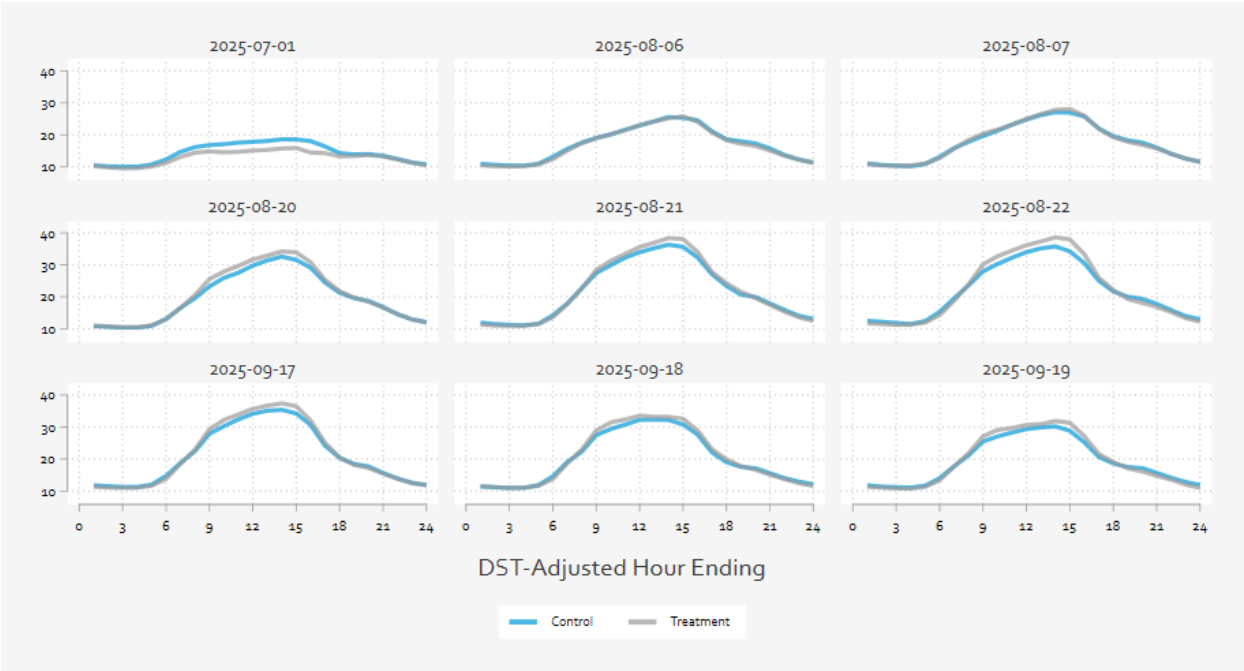


Figure 37 compares average control group load and average treatment group load for the summer 2025 SDP-C events. The control group load does not track the treatment group load as well as SDP-R, but the ex post analysis method (difference-in-differences) nets out any differences between the two groups.

Figure 37: Control Group and Treatment Group Event Day Loads, SDP-C



APPENDIX E: EX ANTE MODEL OUTPUT

SDP-R Impacts –100% Cycling Group

| Source | SS | df | MS | Number of obs | = | 313 |
|----------|------------|-----|------------|---------------|---|--------|
| Model | 1.56654719 | 21 | .074597485 | F(21, 291) | = | 9.12 |
| Residual | 2.37997188 | 291 | .008178598 | Prob > F | = | 0.0000 |
| | | | | R-squared | = | 0.3969 |
| | | | | Adj R-squared | = | 0.3534 |
| Total | 3.94651908 | 312 | .0126491 | Root MSE | = | .09044 |

| impact_perton | Coefficient | Std. err. | t | P> t | [95% conf. interval] | |
|-----------------------|-------------|-----------|-------|-------|----------------------|-----------|
| bins_60 | 0 | (omitted) | | | | |
| bins_65 | 0 | (omitted) | | | | |
| bins_70 | .0148281 | .026886 | 0.55 | 0.582 | -.0380876 | .0677437 |
| bins_75 | -.0123007 | .0029967 | -4.10 | 0.000 | -.0181986 | -.0064028 |
| lag3cdh | .0010944 | .0021327 | 0.51 | 0.608 | -.0031031 | .0052918 |
| hour#c.lag3cdh | | | | | | |
| 18 | -.0003415 | .0006765 | -0.50 | 0.614 | -.0016729 | .0009899 |
| 19 | -.0007665 | .0006057 | -1.27 | 0.207 | -.0019585 | .0004255 |
| 20 | -.0004337 | .0006618 | -0.66 | 0.513 | -.0017363 | .0008689 |
| 21 | .0002012 | .0016133 | 0.12 | 0.901 | -.0029741 | .0033765 |
| dow#c.lag3cdh | | | | | | |
| 2 | -.0018261 | .0010127 | -1.80 | 0.072 | -.0038193 | .000167 |
| 3 | .0008078 | .0008685 | 0.93 | 0.353 | -.0009016 | .0025172 |
| 4 | .0010711 | .000858 | 1.25 | 0.213 | -.0006175 | .0027598 |
| 5 | .0008945 | .0009805 | 0.91 | 0.362 | -.0010354 | .0028243 |
| outersummer#c.lag3cdh | | | | | | |
| 1 | -.0008937 | .0003586 | -2.49 | 0.013 | -.0015994 | -.000188 |
| lcnnum#c.lag3cdh | | | | | | |
| SDP-C-2 | -.0010718 | .0006897 | -1.55 | 0.121 | -.0024293 | .0002856 |
| SDP-C-3 | .0033493 | .0007358 | 4.55 | 0.000 | .0019011 | .0047974 |
| SDP-C-4 | -.0020242 | .0006077 | -3.33 | 0.001 | -.0032203 | -.0008282 |
| SDP-HD | .000798 | .0006508 | 1.23 | 0.221 | -.0004829 | .0020788 |
| SDP-LD | .0037941 | .0007424 | 5.11 | 0.000 | .002333 | .0052552 |
| SDP-N | .0001839 | .0006264 | 0.29 | 0.769 | -.0010489 | .0014167 |
| SDP-NW | -.00113 | .0009954 | -1.14 | 0.257 | -.0030891 | .000829 |
| SDP-W-1 | -.0019241 | .0008832 | -2.18 | 0.030 | -.0036624 | -.0001858 |
| SDP-W-2 | -.0014991 | .0008786 | -1.71 | 0.089 | -.0032283 | .0002301 |
| _cons | -.0488546 | .1364543 | -0.36 | 0.721 | -.3174171 | .2197078 |

SDP-R Impacts – 50% Cycling Group

| Source | SS | df | MS | Number of obs | = | 313 |
|----------|------------|-----|------------|---------------|---|--------|
| Model | .46073663 | 21 | .02193984 | F(21, 291) | = | 8.05 |
| Residual | .793457142 | 291 | .002726657 | Prob > F | = | 0.0000 |
| | | | | R-squared | = | 0.3674 |
| | | | | Adj R-squared | = | 0.3217 |
| Total | 1.25419377 | 312 | .004019852 | Root MSE | = | .05222 |

| impact_perton | Coefficient | Std. err. | t | P> t | [95% conf. interval] | |
|-----------------------|-------------|-----------|-------|-------|----------------------|-----------|
| bins_60 | 0 | (omitted) | | | | |
| bins_65 | 0 | (omitted) | | | | |
| bins_70 | .0025482 | .0254112 | 0.10 | 0.920 | -.047465 | .0525613 |
| bins_75 | -.0056138 | .001884 | -2.98 | 0.003 | -.0093217 | -.0019058 |
| lag3cdh | -.0014766 | .0012469 | -1.18 | 0.237 | -.0039307 | .0009774 |
| hour#c.lag3cdh | | | | | | |
| 18 | -.0001398 | .0004087 | -0.34 | 0.733 | -.0009441 | .0006646 |
| 19 | -.0003316 | .0003605 | -0.92 | 0.358 | -.0010411 | .0003778 |
| 20 | .0002813 | .0003942 | 0.71 | 0.476 | -.0004945 | .0010571 |
| 21 | -.0006832 | .0009728 | -0.70 | 0.483 | -.0025978 | .0012313 |
| dow#c.lag3cdh | | | | | | |
| 2 | -.0009596 | .0005631 | -1.70 | 0.089 | -.0020677 | .0001486 |
| 3 | .000682 | .0004671 | 1.46 | 0.145 | -.0002374 | .0016013 |
| 4 | .0008202 | .0004594 | 1.79 | 0.075 | -.0000839 | .0017244 |
| 5 | .0008593 | .000548 | 1.57 | 0.118 | -.0002192 | .0019378 |
| outersummer#c.lag3cdh | | | | | | |
| 1 | -.0003922 | .0002164 | -1.81 | 0.071 | -.0008181 | .0000336 |
| lcnnum#c.lag3cdh | | | | | | |
| SDP-C-2 | -.0011474 | .0003503 | -3.28 | 0.001 | -.0018368 | -.0004579 |
| SDP-C-3 | .0020378 | .0004656 | 4.38 | 0.000 | .0011214 | .0029541 |
| SDP-C-4 | .0002248 | .0002559 | 0.88 | 0.380 | -.0002788 | .0007284 |
| SDP-HD | .0008454 | .0004918 | 1.72 | 0.087 | -.0001226 | .0018133 |
| SDP-LD | .0008707 | .0023003 | 0.38 | 0.705 | -.0036568 | .0053981 |
| SDP-N | -.0002635 | .0003064 | -0.86 | 0.391 | -.0008666 | .0003396 |
| SDP-NW | -.0014899 | .0007181 | -2.07 | 0.039 | -.0029033 | -.0000765 |
| SDP-W-1 | -.0020348 | .00043 | -4.73 | 0.000 | -.0028812 | -.0011884 |
| SDP-W-2 | -.0018446 | .0004609 | -4.00 | 0.000 | -.0027517 | -.0009376 |
| _cons | .0668886 | .1279011 | 0.52 | 0.601 | -.1848399 | .318617 |

SDP-C Impacts – 100% Cycling Group

| Source | SS | df | MS | Number of obs | = | 429 |
|----------|------------|-----|------------|---------------|---|--------|
| Model | .182797071 | 19 | .009620898 | F(19, 409) | = | 1.11 |
| Residual | 3.55843587 | 409 | .008700332 | Prob > F | = | 0.3418 |
| | | | | R-squared | = | 0.0489 |
| | | | | Adj R-squared | = | 0.0047 |
| Total | 3.74123294 | 428 | .008741198 | Root MSE | = | .09328 |

| impact_perton | Coefficient | Std. err. | t | P> t | [95% conf. interval] | |
|---------------|-------------|-----------|-------|-------|----------------------|-----------|
| avgtemp_1 | .001302 | .0030805 | 0.42 | 0.673 | -.0047535 | .0073575 |
| avgtemp_2 | -.0066016 | .0075496 | -0.87 | 0.382 | -.0214424 | .0082391 |
| avgtemp_3 | .0349653 | .0473662 | 0.74 | 0.461 | -.0581463 | .1280768 |
| lag3cdh | -.0016922 | .0020149 | -0.84 | 0.401 | -.0056531 | .0022687 |
| hour_seg# | | | | | | |
| c.lag3cdh | | | | | | |
| 2 | .0002479 | .0003558 | 0.70 | 0.486 | -.0004516 | .0009473 |
| 3 | .0005125 | .0003936 | 1.30 | 0.194 | -.0002612 | .0012862 |
| dow#c.lag3cdh | | | | | | |
| 2 | -.0003111 | .0009811 | -0.32 | 0.751 | -.0022397 | .0016175 |
| 3 | -.0002872 | .0008738 | -0.33 | 0.743 | -.0020049 | .0014305 |
| 4 | -.0003172 | .0008734 | -0.36 | 0.717 | -.0020342 | .0013998 |
| 5 | .0001449 | .0009754 | 0.15 | 0.882 | -.0017724 | .0020623 |
| school# | | | | | | |
| c.lag3cdh | | | | | | |
| 1 | .0000646 | .0004658 | 0.14 | 0.890 | -.0008509 | .0009802 |
| lcgnum# | | | | | | |
| c.lag3cdh | | | | | | |
| SDP-C-2 | -.0003926 | .000625 | -0.63 | 0.530 | -.0016212 | .000836 |
| SDP-C-3 | .0002106 | .0011825 | 0.18 | 0.859 | -.002114 | .0025351 |
| SDP-C-4 | -.0000839 | .0004482 | -0.19 | 0.852 | -.0009649 | .0007971 |
| SDP-HD | -.0000629 | .0006527 | -0.10 | 0.923 | -.001346 | .0012202 |
| SDP-N | .0002318 | .0004156 | 0.56 | 0.577 | -.0005852 | .0010488 |
| SDP-NW | -.0000201 | .0009437 | -0.02 | 0.983 | -.0018751 | .001835 |
| SDP-W-1 | -.0016701 | .0008419 | -1.98 | 0.048 | -.003325 | -.0000152 |
| SDP-W-2 | -.0004696 | .0006877 | -0.68 | 0.495 | -.0018214 | .0008823 |
| _cons | -.0859124 | .2044134 | -0.42 | 0.674 | -.4877445 | .3159196 |

SDP-C Impacts – 50% Cycling Group

| Source | SS | df | MS | Number of obs | = | 410 |
|----------|------------|-----|------------|---------------|---|--------|
| Model | .297772069 | 19 | .015672214 | F(19, 390) | = | 3.44 |
| Residual | 1.77810652 | 390 | .004559247 | Prob > F | = | 0.0000 |
| | | | | R-squared | = | 0.1434 |
| | | | | Adj R-squared | = | 0.1017 |
| Total | 2.07587858 | 409 | .005075498 | Root MSE | = | .06752 |

| impact_perton | Coefficient | Std. err. | t | P> t | [95% conf. interval] | |
|---------------|-------------|-----------|-------|-------|----------------------|-----------|
| avgtemp_1 | .0030816 | .0021497 | 1.43 | 0.153 | -.0011448 | .0073081 |
| avgtemp_2 | -.0066656 | .0058899 | -1.13 | 0.258 | -.0182455 | .0049143 |
| avgtemp_3 | .0201664 | .037602 | 0.54 | 0.592 | -.0537615 | .0940943 |
| lag3cdh | -.0002457 | .0015438 | -0.16 | 0.874 | -.0032809 | .0027895 |
| hour_seg# | | | | | | |
| c.lag3cdh | | | | | | |
| 2 | .000102 | .0002836 | 0.36 | 0.719 | -.0004556 | .0006595 |
| 3 | -.0000795 | .0003136 | -0.25 | 0.800 | -.0006959 | .000537 |
| dow#c.lag3cdh | | | | | | |
| 2 | -.0013939 | .0007835 | -1.78 | 0.076 | -.0029343 | .0001465 |
| 3 | -.0011739 | .0006941 | -1.69 | 0.092 | -.0025386 | .0001908 |
| 4 | -.001001 | .0006856 | -1.46 | 0.145 | -.002349 | .000347 |
| 5 | -.0012938 | .0007731 | -1.67 | 0.095 | -.0028138 | .0002263 |
| school# | | | | | | |
| c.lag3cdh | | | | | | |
| 1 | .0006011 | .0003719 | 1.62 | 0.107 | -.0001301 | .0013323 |
| lcgnum# | | | | | | |
| c.lag3cdh | | | | | | |
| SDP-C-2 | -.0007931 | .0004346 | -1.82 | 0.069 | -.0016476 | .0000614 |
| SDP-C-3 | .0014261 | .0016797 | 0.85 | 0.396 | -.0018763 | .0047284 |
| SDP-C-4 | -.0010831 | .0003315 | -3.27 | 0.001 | -.0017348 | -.0004314 |
| SDP-HD | -.0029149 | .0007526 | -3.87 | 0.000 | -.0043947 | -.0014352 |
| SDP-N | -.0007321 | .0007304 | -1.00 | 0.317 | -.0021681 | .0007039 |
| SDP-NW | -.0007174 | .0007329 | -0.98 | 0.328 | -.0021583 | .0007235 |
| SDP-W-1 | .0002433 | .0004749 | 0.51 | 0.609 | -.0006904 | .001177 |
| SDP-W-2 | -.0009235 | .0004508 | -2.05 | 0.041 | -.0018099 | -.0000371 |
| _cons | -.2127915 | .1431185 | -1.49 | 0.138 | -.4941718 | .0685889 |

SDP-C Impacts – 30% Cycling Group

| Source | SS | df | MS | Number of obs | = | 247 |
|----------|------------|-----|------------|---------------|---|--------|
| Model | .488185855 | 15 | .032545724 | F(15, 231) | = | 1.69 |
| Residual | 4.45974494 | 231 | .019306255 | Prob > F | = | 0.0547 |
| | | | | R-squared | = | 0.0987 |
| | | | | Adj R-squared | = | 0.0401 |
| Total | 4.9479308 | 246 | .02011354 | Root MSE | = | .13895 |

| impact_perton | Coefficient | Std. err. | t | P> t | [95% conf. interval] | |
|---------------|-------------|-----------|-------|-------|----------------------|----------|
| avgtemp_1 | .0069643 | .0060237 | 1.16 | 0.249 | -.0049041 | .0188327 |
| avgtemp_2 | -.0247993 | .0158496 | -1.56 | 0.119 | -.0560275 | .0064289 |
| avgtemp_3 | .1291732 | .1009195 | 1.28 | 0.202 | -.0696671 | .3280134 |
| lag3cdh | -.0031212 | .004223 | -0.74 | 0.461 | -.0114418 | .0051994 |
| hour_seg# | | | | | | |
| c.lag3cdh | | | | | | |
| 2 | -.0003857 | .000766 | -0.50 | 0.615 | -.001895 | .0011236 |
| 3 | -.0005717 | .0008414 | -0.68 | 0.498 | -.0022296 | .0010861 |
| dow#c.lag3cdh | | | | | | |
| 2 | -.0039296 | .002102 | -1.87 | 0.063 | -.0080711 | .000212 |
| 3 | -.0018148 | .0018641 | -0.97 | 0.331 | -.0054877 | .0018581 |
| 4 | -.0006457 | .0018454 | -0.35 | 0.727 | -.0042816 | .0029902 |
| 5 | -.0027393 | .0021276 | -1.29 | 0.199 | -.0069313 | .0014527 |
| school# | | | | | | |
| c.lag3cdh | | | | | | |
| 1 | -.0012069 | .0009845 | -1.23 | 0.221 | -.0031466 | .0007328 |
| lcnnum# | | | | | | |
| c.lag3cdh | | | | | | |
| SDP-C-4 | .0027167 | .0009975 | 2.72 | 0.007 | .0007514 | .004682 |
| SDP-N | .0028875 | .0010247 | 2.82 | 0.005 | .0008686 | .0049064 |
| SDP-W-1 | -.0007175 | .0011915 | -0.60 | 0.548 | -.0030651 | .0016301 |
| SDP-W-2 | -.0003885 | .0010842 | -0.36 | 0.720 | -.0025247 | .0017478 |
| _cons | -.3821801 | .4002852 | -0.95 | 0.341 | -1.170857 | .4064966 |