DRIVING TRANSFORMATION

Behavior, Energy & Climate Change (BECC) / November 12-15, 2023 / Sacramento, CA

Co-Convened by

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Program Insights from Leveraging CPP & DR for Grid Flexibility

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Load Flexibility & SMUD's 2030 Zero Carbon Plan

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Critical Peak Pricing

Background

- History of testing similar rates
- Potential alternative to incentives
- Intended to be revenue neutral

Rate Design

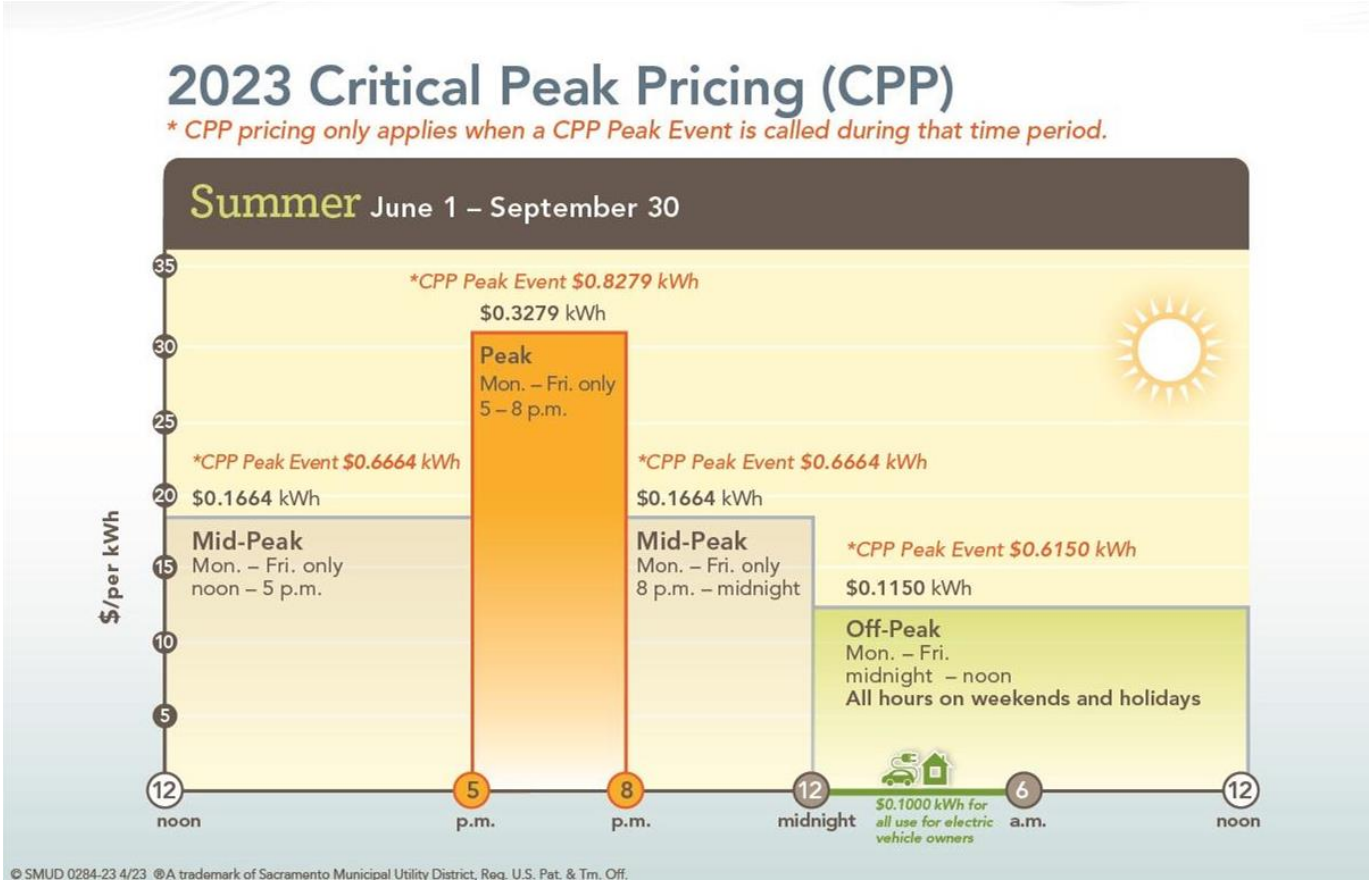
- Summer rate (Jun-Sep)
- Non-event discount
- Peak event charge
- Annual review

Original Intent

- Multiple devices and programs

First Year Implementation

- One program, one device (tstats)



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My Energy Optimizer

Program Overview	
DR Program Recruitment	• Nest, ecobee, and Sensi devices • OEM in-app, SMUD Energy Store, and direct customer emails • Enrollment rebate: $50 in 2022; decreased to $25 in Feb. 2023 • Annual end-of-season bonus: $25
Secondary CPP Recruitment	• By email invitation only, $25 additional sign-up bonus • Targeted to “structural winners” in 2022; expanded recruitment pool in 2023 • No end-of-season bonus
Peak Events	• Up to 15 events (50 hours max) from June 1 to September 30 • Event duration: 1-4 hours; no more than 3 event days per week
Peak Event Experience	• DR & CPP customers experience the same event • Pre-cool home prior to event & manage comfort through event
Communication	• Day-ahead email notifications (except for grid emergencies) • In-app notifications • A just-in-time text reminder (optional) • A post-event performance email • All communications can be managed by the customer

Overview of Summer 2022

Total Devices Enrolled

6,807 DR devices by Sep. 30th
38 DR+CPP devices by Sep. 30th
→Primary motivation for joining: Incentive (30%)

Events

15 Peak Events totaling 47 hours were delivered

Season

Mid-July through September 30th

Load Shift

3.71 MW of curtailment, averaged over event hours

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Comparison of the Groups

DR Only	VS	DR + CPP
• $25 per participant annual bonus • 4,356 devices studied • Participant – Non-Participant matching • 3.6% Unenrollment • 0.86 kW load reduction per participant • 0.223 kW increase four hours after event • Bill savings per customer $2.61		• Performance based rate • 38 devices studied • Pre-period – Period matching • 2.5% Unenrollment (only 1) • 0.99 kW load reduction per participant • 0.314 kW decrease four hours after event • Bill savings per customer $76.21

Other Key Learnings:

- **CPP is Complex for the Customer**
  - Understanding trade-offs between DR and DR + CPP is hard
  - Customer confusion around TOU vs CPP
  - Seasonality creates confusion
  - Annual discount changes are difficult for customers to track
- **CPP is Complex for the Utility**
  - CPP is not right for every customer - need to recruit responsibly
  - Recruitment decisions highlight tension between revenue neutrality and customer satisfaction
  - Is it fair to link a whole-house rate to automation of a single load (A/C)?
  - Still figuring out what CPP should look like after this initial test phase

Summer 2023 Overview & Preliminary Results

Key Changes

Recruitment - expanded the pool of eligible customers targeted for CPP
Lowering costs - Enrollment incentive decreased to $25 in Feb. 2023

Total Devices Enrolled

20,636 DR devices by Sep. 30th
787 DR+CPP devices by Sep. 30th

Events

11 Peak Events totaling 41 hours were delivered over 4 months

Prelim. Analysis

Load Shift: 11.7 MW of curtailment, averaged over event hours
Program CSAT: 81% of CPP respondents “satisfied or very satisfied” vs. 69% of DR-only respondents

More learnings to come!

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