



SOUTHERN CALIFORNIA
EDISON[®]

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Incorporating Existing Smart Thermostats into Demand Response

DISTRIBUTECH[®]
CONFERENCE & EXHIBITION



FEBRUARY 3-5, 2015

SAN DIEGO CONVENTION CENTER, HALLS B2-H
SAN DIEGO, CA, USA

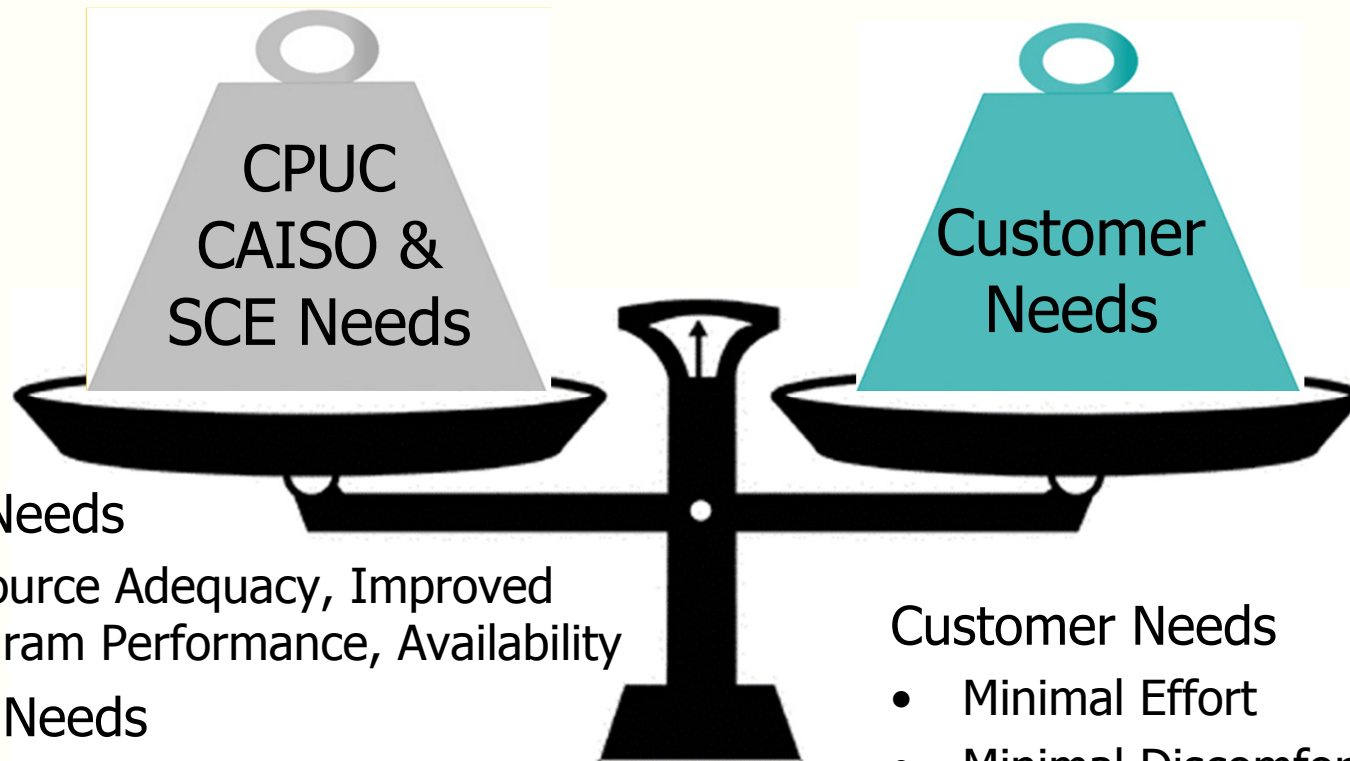
New Program Development & Launch

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3rd Party PCT Study

- Objective
 - Identify new DR resources to mitigate closure of SONGS
- Business Drivers
 - Technical and customer satisfaction issues with meter connected PCTs and load control platform
 - HAN retail market not developing as anticipated
 - Growing installed base of internet capable PCTs
- Benefits
 - More cost effective than other DR Programs
 - Utilized an existing control platform (OpenADR DRAS)
 - Balanced load drop with customer satisfaction

Balance Needs of Stakeholders



CPUC Needs

- Resource Adequacy, Improved Program Performance, Availability

CAISO Needs

- Market Integration, Fast/Flexible Dispatch, Short dispatch periods

SCE Needs

- Predictable, Cost Effective, Part of DR Portfolio, Locational Dispatch

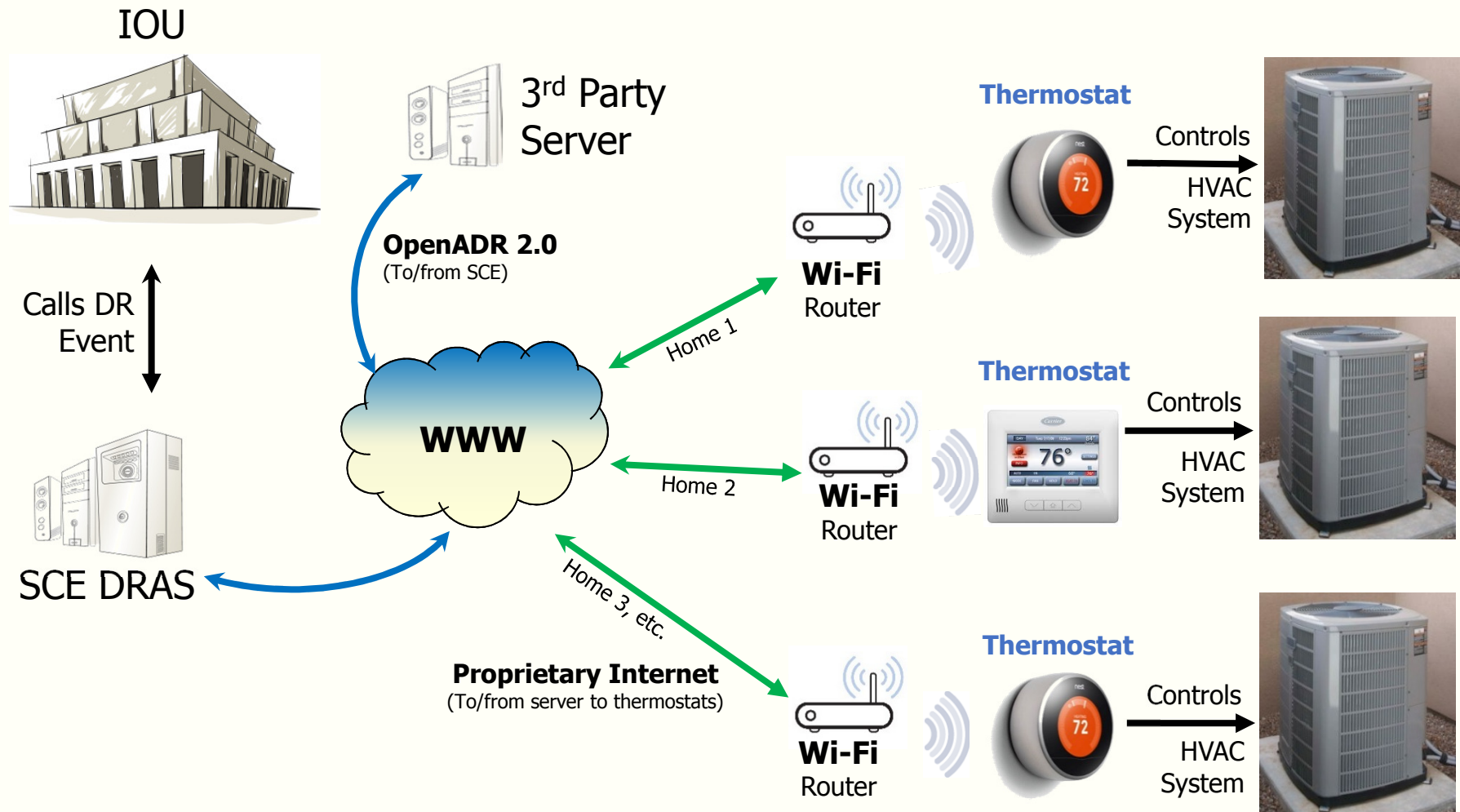
Customer Needs

- Minimal Effort
- Minimal Discomfort
- Event Notification
- Fair Compensation

3rd Party PCT Study

- The Solution
 - Signed contracts with Nest and Energyhub to participate in study
 - 3rd Parties provided marketing to recruit customers
 - Established single on-line application on 3rd Party websites with co-marketing for customer enrollment
 - Paid a management fee for each customer enrolled
 - Used existing residential Peak Time Rebate Program to incentivize customers
 - Set up internal processes to verify customer eligibility, notify 3rd Parties, and update customer records
 - Verified ability for 3rd Parties to receive OpenADR 2.0 event signals

3rd Party PCT Study - Architecture



3rd Party PCT Study

- Results
 - Enrolled approximately 2,800 customers during year 1 (2013) and 3,200 customers during year 2 (2014)
 - Due to customers signing single year contracts, customers had to be re-enrolled to participate for a second year
 - Approximately 50% of participants re-enrolled
 - Held 13 SCE Save Power Day events (2013=5, 2014=8)
 - Participating customers reduced load by an average of .75 kW per hour during events (2013 Load Impact Study)
 - SCE call center received less than 10 calls from program participants
 - Research conducted by 3rd Parties showed high customer satisfaction

3rd Party PCT Study

- Recommendation

“The third party PCT study that was evaluated in the ex post analysis produced substantial load impacts (0.75 kW per participant for the average event relative to 0.08 kW per participant among opt-in PTR customers). Therefore, Nexant recommends that SCE continue to conduct PCT studies and pilots with third parties, in order to develop a full-scale third party PCT program.”

-Recommendation from Nexant’s 2013
Load Impact Study of SCE’s PTR Programs

3rd Party PCT Study – Future

- Expansion
 - Transition from Pilot to Program
 - Sign up additional 3rd Parties to participate
 - Recruit more customers into program
 - Use a standard contract with 3rd Parties
 - Begin automating some of the current manual processes
 - Expand beyond PCTs to include other loads that are part of Home Automation Systems (3rd Party Load Control)
 - Quantify Energy Efficiency (EE) of Smart Thermostats
 - Potentially change/create DR programs to allow locational dispatch and shorter duration events

Q&A



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