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EE-DR Integration Energy Division Staff Proposal

2017 IEPR CEC Workshop on Demand Response

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Integration Background

- Longstanding CPUC policy;
- 2025 Demand Response Potential Study
 - Assumes automated controls & end uses
 - Co-benefits lower cost of DR
 - Strongly recommends integrating EE & DR
 - Importance of load shifting
- DR and EE program portfolios – January '18





Key Concepts

- EE programs are the vehicle
 - Embed DR controls/devices
 - *NOT* combining EE & DR programs
- Make buildings DR-ready
 - TOU, dynamic rates, event-based DR, supply-side dispatchable DR
- Limited integration: lighting & HVAC





Integration Element 1

Customer-friendly TOU Thermostat

- **Automate EE-TOU-DR** (residential & small commercial)
 - Optimize energy use overall
 - Two Thermostat Versions – Prepare for 2019 TOU Default (res)
 - Pre-programmed for TOU, *no internet*, moderate price
 - Full DR automation – TOU, dynamic pricing, load control signals, with internet
- **Proposal**
 - Coordinate TOU outreach efforts with EE, DR, and AB 793
 - IOUs post residential TOU rates so customers can automate
 - Develop user-friendly thermostats and EMTs; make them accessible to low-income homes
 - Standardize terms for peak, mid-peak, off-peak, shoulder, etc.





Integration Element 2

Non-residential HVAC, Lighting Controls

1. Automated DR-ready Energy Management Systems
 - EE programs provide incentives only for EMS that are OpenADR enabled
 - **Incremental incentive** to pay for DR enabling technology
2. Automated DR-ready air conditioners
 - Upstream EE incentive programs work w/manufacturers
 - Embed DR enabling controls in high-efficiency AC units
 - 4.5 ton residential, 5-6 ton commercial, ductless
3. New construction - Open-ADR ready
 - EMS, lighting controls per Title 24
 - Vendor and installer training





Integration Element 2 (continued)

Non-residential HVAC, Lighting Controls

1. DR-enabled ballasts, lighting control systems
 - Dim manually, via light sensor, or wireless
 - Replace T8 florescent lamps w/tubular LEDs at customer request
2. Efficient fan controls for DR- and web-enabled thermostats
 - Small package rooftop units w/stand-alone controls
 - Slow fan when ventilating; shut off when unoccupied
3. Variable frequency pumps and drives
 - Irrigation w/VFP + internet
 - Commercial HVAC VFD
 - Pilots needed





Integration Element 3

- Combine DR & EE potential studies
 - Synchronize future DR potential update into May 2019 EE potential study
 - Bring DR potential methods to EE
 - Jointly fund studies
 - Inform 2019 Integrated Resource Planning





Future of Staff Proposal

- DR party comment July 24, August 4
- Pending decisions in the DR and EE program portfolio proceedings:
 - 2018-2022 for DR programs
 - Application 17-01-012 et a.
 - 2018-2025 for EE programs
 - Application 17-01-013 et al.





Questions?

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Link to staff proposal:

<http://www.cpuc.ca.gov/General.aspx?id=7032>

