

## DOCKETED

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**SCE's Comments on the CEC Docket No. 15-IEPR-05: Staff Workshop on Plug Load Efficiency**

*Additional submitted attachment is included below.*

July 2, 2015

California Energy Commission  
Docket Office, MS-4  
Re: Docket No. 15-IEPR-05  
1516 Ninth Street  
Sacramento, CA 95814-5512  
docket@energy.ca.gov

Re: Southern California Edison Company's Comments on the California Energy Commission Docket No. 15-IEPR-05: Staff Workshop on Plug Load Efficiency

Dear Commissioner McAllister:

On June 18, 2015, the California Energy Commission (Energy Commission) held a Lead Commissioner Workshop on Plug Load Efficiency ("the Workshop") as part of the 2015 Integrated Energy Policy Report ("IEPR") Proceeding. Southern California Edison (SCE) participated in the Workshop and appreciates the opportunity to provide these written comments. In this letter, SCE responds to the four questions in the Energy Commission's Workshop Notice, and addresses the importance of plug loads in the context of California's ZNE goals.

**A. SCE's Responses to the Four Questions in the Notice**

***1. Response to Question 1: What should be the Energy Commission's focus when identifying, considering, and developing new appliance efficiency standards?***

The Energy Commission should focus on developing new plug load related standards that generate significant energy savings for computers, displays, servers, network equipment, game consoles, set-top boxes, and imaging equipment. In addition to specific devices, the Energy Commission should focus on cross-cutting horizontal standards for low-power modes and power factor.

The Energy Commission should also update the current standards for televisions, cordless phones, spa covers, and electric vehicle supply equipment. Such an effort could include advocating for more stringent ENERGY STAR<sup>®</sup> specifications, when applicable.

***2. Response to Question 2: How can Energy Commission / California move the plug-load market towards more energy efficient products?***

In addition to the updates and developments of appliance efficiency standards discussed above, SCE recommends continuing to encourage investor-owned utilities (IOUs) to develop

applicable incentives and rebate programs including those that spur code readiness for future standards, and enhance compliance for existing standards.

Current SCE plug-load related programs include: (1) refrigerator EE rebate and recycling programs, (2) the Energy Saving Assistance Program (ESAP), (3) Multi-family Energy Efficiency Rebates (MFEER), (4) Energy Update California, (5) energy efficient entertainment centers and office equipment technology research and testing (e.g., support for UC Irvine CalPlug); and (6) pilots to test new technologies and program strategies, for example, SCE's 2014 set top box early replacement pilot program.

***3. Response to Question 3: How can California influence more stringent federal efficiency standards and ENERGYSTAR specifications?***

To influence federal efficiency standards and ENERGYSTAR specifications, the Energy Commission and the IOUs should continue to actively participate in the Department of Energy (DOE) rulemakings for federally preempted products and ENERGY STAR<sup>®</sup> specification development processes. The Energy Commission and IOUs may wish to form a broad coalition within federal rulemakings and ENERGY STAR<sup>®</sup> specification development processes to promote and strengthen California's positions. The Energy Commission and IOUs may also wish to consider product databases between the Energy Commission, DOE, and ENERGY STAR<sup>®</sup> to further influence federal standards.

***4. Response to Question 4: How can the Energy Commission encourage demand response (DR) capability in plug loads?***

To encourage DR-capability in plug loads, the Energy Commission should engage in the following five activities.

1. Adopt Title 20 and Title 24 Standards to ensure buildings are equipped with the appropriate controls, facilitate customer sign-ups for utility DR programs, and to enable seamless communication / response between the plug load within a building and a DR signal.
2. Specify minimum DR requirements and communications protocols, such as: (1) dry cycle pause capability for washers and dryers, (2) Occupant Controlled Setback Thermostats (OCSTs) with WiFi or ZigBee capability, and (3) compliance with either OpenADR 2.0 or SEP 1.1 by requiring certification.
3. Test and list whether a product has DR capability, and require manufacturers to provide the Energy Commission with information about the default settings (i.e., how the product modifies energy use in response to a DR event) and the communications protocols. Collecting this information may help the Energy Commission establish appropriate plug load DR requirements in the future.

4. Revise Title 24 Standards to:
  - a. Improve acceptance tests for DR measures,
  - b. Require OCSTs to have third-party certification, and,
  - c. Make OCSTs mandatory for residential buildings.
5. Consider trade-off or compliance credit for the use of integrated demand side management strategies.

## **B. Plug-Loads and Zero Net Energy Goals**

Under the Energy Commission’s adopted definitions for 2016 Energy Efficiency (EE) standards, SCE understands that “plug load” means “the energy consumed by any appliance or electronic device that is plugged into a receptacle or receptacle outlet. Plug loads are not related to general lighting, heating, ventilation, cooling, and water heating, domestic and service water system, renewable power, information technology equipment, computer room electronic equipment, and electric vehicle charging.”

SCE believes plug loads will continue to comprise a significant fraction of total building energy use and, as such, will have important implications for California’s Zero Net Energy (ZNE) goals for residential and commercial buildings. Because California’s ZNE goals aim to offset *total* site energy use through the installation of renewable energy generation, it is necessary to estimate total site energy use as a function of the observable characteristics of a building, and to ensure that plug loads are incorporated into total energy use.

According to the 2009 California Residential Appliance Saturation Survey (RASS)<sup>1</sup>, and the 2006 California Commercial End-Use Survey (CEUS),<sup>2</sup> plug loads make up about 54% of total residential electricity use, and 26% of office building electricity use (in the form of “office equipment and miscellaneous loads”). Recent work by California’s IOUs produced similar results. These percentages are generally expected to increase over time as Title 24 building regulations and other efficiency standards become more stringent, and as new plug load products enter the market. The Natural Resources Defense Council estimates plug-in equipment and miscellaneous electric loads will be responsible for 77% of electricity demand growth from 2015 to 2024.<sup>3</sup>

Although the Energy Commission’s 2016 EE Standards clarify the scope and definition of “plug loads,” in the future, stakeholders may need to revisit the plug-load definition with respect to ZNE metrics and in accounting for loads that fall outside of the scope of Title 24 regulations. SCE recommends that in advance of adopting the 2019 EE Standards, the Energy Commission,

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<sup>1</sup> 2009 Residential Appliance Saturation Survey at: <http://www.energy.ca.gov/appliances/rass/>

<sup>2</sup> 2006 California Commercial End-Use Survey at: <http://energy.ca.gov/ceus/>

<sup>3</sup> NRDC Issue Brief, Plug-In Equipment Efficiency: A Key Strategy to Help Achieve California’s Carbon Reduction and Clean Energy Goals, April 2015.

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California Public Utilities Commission, and other state agencies make an informed policy-level decision about how electric vehicle battery charging and renewable energy systems will be accounted for in ZNE metrics, and whether these devices and systems may deserve their own category, distinct from “plug loads.”

In conclusion, SCE appreciates the Energy Commission’s consideration of these comments and looks forward to its continuing collaboration with the Energy Commission. Please do not hesitate to contact me at (916) 441-2369 with any questions or concerns you may have. I am available to discuss these matters further at your convenience.

Very truly yours,

*/s/ Manuel Alvarez*

Manuel Alvarez