



Verena Radulovic  
Climate Protection Partnerships Division  
U.S. Environmental Protection Agency  
Washington DC 20460

October 14, 2016

Subject: ENERGY STAR® EVSE Draft 2 Eligibility Criteria and Final Draft Test Method

Dear Ms. Radulovic:

The enclosed letter contains the California Investor Owned Utilities' (California IOUs) comments on the Draft 2 v1.0 Eligibility Criteria and Final Draft v1.0 Test Method for the upcoming ENERGY STAR Electric Vehicle Supply Equipment (EVSE) program. The California IOUs represent some of the largest utility companies in the western United States, serving a combined customer base of over 35 million people. The California IOUs include Pacific Gas and Electric Company (PG&E), Southern California Gas Company (SCGC), San Diego Gas and Electric (SDG&E), and Southern California Edison (SCE).

As progressive energy companies with an extensive portfolio of efficiency programs, we understand the potential for efficiency specifications and standards to cut costs and save energy while maintaining or increasing consumer satisfaction. We have a responsibility to our customers to advocate for sensible test procedures, specifications, and standards that accurately reflect the climate and conditions of our respective service areas, so as to maximize the positive effects of these efforts.

We believe that an ENERGY STAR EVSE specification can facilitate energy efficiency and demand response efforts by utility companies. We encourage efforts by the United States Environmental Protection Agency (U.S. EPA) to continue developing an ENERGY STAR EVSE test method and specification, and we are providing the following comments to support U.S. EPA's efforts. We appreciate the efforts that U.S. EPA has made to date in response to our prior comments, and we look forward to continuing our constructive dialogue with U.S. EPA.

### ***Comments on Draft 2 Eligibility Criteria v1.0***

#### **1) We recommend that U.S. EPA reduce the proposed 1 W allowances for WiFi and Ethernet capability.**

Table 2 in the ENERGY STAR Eligibility Criteria for Small Network Equipment describes wattage allowances of 0.1 – 0.3 W for Ethernet capability and 0.7 W for WiFi capability. The [DigiKey database](#) of transceiver modules cited on page 10 of U.S. EPA's EVSE Eligibility Criteria Draft 2 v1.0 indicates that a wide range of components are available that would meet the

energy use allowances described in the Small Network Equipment Eligibility Criteria. Utility testing data of lamps with communications capabilities also shows consumption levels lower than 1 W. Therefore, we recommend that US EPA reduce the proposed 1.0 W allowance in EVSE Eligibility Criteria sections 3.2 and 3.3 for Ethernet and WiFi capabilities to be consistent with Small Network Equipment.

**2) We recommend that U.S. EPA reconsider the optional "connected functionality" criteria.**

We agree with U.S. EPA that electric vehicles are an important demand response (DR) resource and that connected functionality can help enable that resource. On one hand, we appreciate US EPA's desire to promote DR and we support U.S. EPA's proposal to disseminate descriptive information about connected functionality and DR capabilities on the U.S. EPA website (Draft Eligibility Requirements section 3.4(iv)). On the other hand, we believe that U.S. EPA's proposal to establish criteria for certifying products as having "connected functionality" on the ENERGY STAR website is premature, resulting in unclear and contradictory criteria.

If US EPA wishes to create criteria for designating products with "connected functionality", we would recommend the following:

**"3.4 Connected Functionality**

This section presents criteria and specifies "connected" functionalities for ENERGY STAR certified EVSE capable of supporting demand response (DR). Compliance with this section is optional, but highly encouraged. ENERGY STAR certified EVSE that comply with all connected criteria will be identified on the ENERGY STAR website as having connected functionality.

EVSE shall have the two-way communication capability and control functions to receive demand response (DR) requests from the utility or other system operators, and ability to respond automatically by modifying its operations to reduce or shift energy demand from EVSE as specified under 1) and 2) below.

- 1) **Grid Communications:** The communications link shall be capable of:
  - a) Bi-directional communication with the DRMS
  - b) Accepting messages from the DRMS, including but not limited to messages requesting DR;
  - c) Transmitting information about the product's operation to the DRMS, including but not limited to the product's control strategy after receiving a request for DR; and;
  - d) Transmitting information to the DRMS when the product has transitioned back to normal operating mode after receiving a request for DR.
  
- 2) **Control Function:** The product shall be capable of:
  - a) Disengaging EVSE charging for a specific time period automatically after receiving a request for DR;
  - b) Returning to normal operation upon receipt of message from the DRMS to do so, or a predetermined time after receiving a request for DR; and

- c) Allowing the end-user to override (e.g., opt-out of) any control strategy that is automatically deployed after receiving a request for DR.
- 3) The ENERGY STAR partner will also state:
- a) Whether the device can accept open standard communication protocols (e.g., Open Automated Demand Response);
  - b) If the device can accept open standard communication protocols, the manufacturer shall list all open standards that are supported;
  - c) Any communications services that must be provided or purchased by the end user such as cellular, WiFi, Ethernet, and/or other; and
  - d) Whether the device can be directly accessed via an interface specification, application programming interface (API) or similar documentation that is intended to enable DR functionality.”

**3) We support U.S. EPA’s clarifications to the definitions of vehicle-EVSE interface states.**

We appreciate U.S. EPA’s improvements in response to our March 2016 comments. We recommend that U.S. EPA also define the term “S1.” Section 5.3(D) of the Final Draft Test Method requires that “S1” in the vehicle emulation module is either connected or open during testing in State C and B respectively.

**4) We support U.S. EPA’s efforts to determine an appropriate relay power allowance.**

We support U.S. EPA’s efforts to collect additional information and determine an appropriate relay power allowance that accommodates safety functions while encouraging energy efficiency, as stated during U.S. EPA’s September 15, 2016 webinar. We look forward to reviewing the proposed allowance resulting from this reassessment.

***Comments on Final Draft v1.0 Test Method***

**5) We support US EPA’s efforts to encourage a rapid transition to low power use.**

We agree with U.S. EPA’s revision to the Final Draft Test Method Section 5.3(D), which would provide an incentive to transition to low power use within two minutes of transitioning from “Idle Mode” to “Partial On Mode” rather than allowing a half hour transition period as proposed in the prior draft. We appreciate U. S. EPA’s response to our March 30, 2016 comment letter.

**6) We recommend that U.S. EPA ensure that network activity during testing is consistent with allowances claimed by manufacturers for this feature.**

We agree with U.S. EPA that products with network connection capabilities must be tested with Full Network Connectivity (section 5.5 of the Final Draft Test Method). As noted in our March 30, 2016 comments, we also recommend that U.S. EPA specifically require activation of all network connection technologies for which the manufacturer is claiming an energy allowance under the Draft 2 Eligibility Criteria sections 3.2 and 3.3. The Final Draft Test Method currently

states that only one connection shall be made, which is not consistent with providing multiple additive allowances for multiple network connection capabilities.<sup>1</sup>

In addition, we recommend requiring that the settings used to verify “Full Network Connectivity” for “Partial On Mode” are retained during “Idle Mode” because 1) allowances for these communication features also apply to “Idle Mode”, and 2) as noted on the September 15, 2016 webinar data transfer can occur during any operating state. The Final Draft test method requires verification of Full Network Connectivity only for “Partial On Mode.”

Furthermore, we recommend collecting information on the frequency of network data transfer events that could affect energy usage, such as user authentication, upgrades, network maintenance etc. While the current Draft Test Method does not appear to include any data transfer requirements for products with network connection capabilities, U.S. EPA should collect information to support future consideration of a requirement for data transfer rates during testing. We note that the Test Method for Small Network Equipment currently contains requirements for data transfer rates, for example.

#### **7) We recommend that U.S. EPA adopt standards for adjustable screen brightness test settings.**

We recommend that U.S. EPA add a requirement that screens are tested at 65 percent (or more) of maximum screen luminance for products with adjustable brightness settings as noted in our March 30, 2016 comments. This level is similar to the ENERGY STAR Eligibility Requirements for Displays section 6.3. Products may have easily accessible settings to verify this percentage, and alternatively the luminance testing described below should be sufficient to provide this information. Alternatively, products with manually adjustable settings could be tested at maximum brightness settings. The brightness setting of products in the field could be substantially different than the “as shipped” settings that would be used for testing under proposed section 4.1(A) of the Final Draft Test Method, especially if they are professionally installed.

We also suggest requiring a measurement of the maximum and test luminance values during testing of products with screens that include adjustable brightness levels without Automatic Brightness Control (section 4 of the Final Draft Test Method). This requirement is similar to ENERGY STAR Eligibility Requirements for Displays Version 7.0 (section 3.7). The test method could require testing at the maximum and minimum settings for the most common “Partial On Mode” (not connected to a vehicle) EVSE screen display and the most common “Idle Mode” (connected, but not charging) screen display. This information would help determine whether any significant variations occur across products based on intended use. For instance, if

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<sup>1</sup> The Final Draft Test Method also states that cellular capabilities shall not be connected if the unit has Wi-Fi or Ethernet capabilities. We note that U.S. EPA has found that cellular capability is expected to result in greater energy usage than Wi-Fi or Ethernet capabilities, meaning that a product with multiple network communication technologies would not necessarily even test the one technology with the highest energy use absent our recommended correction.

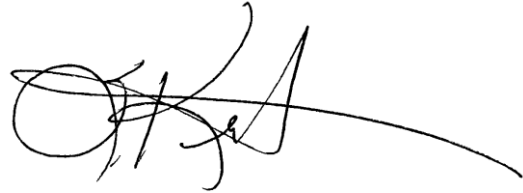
some products are intended specifically for outdoor use they may tend to have a higher brightness level and energy usage per unit of screen area.

In conclusion, we would like to reiterate our support to U.S. EPA for establishing ENERGY STAR test procedures and standards for EVSE and we encourage U.S. EPA to carefully consider our comments.

Sincerely,



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