

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460



OFFICE OF
AIR AND RADIATION

November 6, 2018

Dear ENERGY STAR® Electric Vehicle Supply Equipment (EVSE) Brand Owner or Other Interested Party:

The U.S. Environmental Protection Agency (EPA) welcomes your input on the ENERGY STAR EVSE Version 1.1 Draft 1 Test Method. This draft includes proposals in response to stakeholder feedback on the Discussion Guide that was released in May 2018 and two subsequent stakeholder working sessions. EPA will host a webinar to answer any questions on this Draft 1 Test Method on **Wednesday, November 14, 2018 from 3:00 PM – 5 PM Eastern Time. Please register [here](#) to attend.**

With Version 1.1, EPA is expanding the scope of the ENERGY STAR EVSE specification to include DC charging products. As such, this Draft 1 Test Method offers proposals for testing DC EVSE to be able to measure and compare products based on energy consumption in all modes. EPA has used the EVSE Version 1.0 Test Method for AC EVSE, as applicable, and included additional requirements that are applicable only to DC EVSE.

The Version 1.1 Draft 1 Test Method includes the following proposals:

- **Definitions** – In addition to the terms already defined in the Version 1.0, EPA has proposed a list of additional definitions for DC EVSE.
- **Test Setup** – For EVSE that have a Cabinet/Dispenser product configuration, EPA proposed connecting the two enclosures with the shortest cable possible to allow for fairest comparison between Cabinet/Dispenser and All-in-One products, where all components are directly connected in one enclosure.
- **Input Power** – EPA updated the input supply requirements to include instructions to test at the highest rated voltage and frequency for the intended market, and to account for three-phase DC EVSE and DC-input EVSE.
- **Temperature Testing** – EPA is requesting feedback from stakeholders on the proposed temperatures for test. Specifically, while heating and cooling in response to ambient temperature may have a significant impact in lower-power non-active modes, is it necessary to require operation mode testing at all three ambient temperature conditions in Table 2? To what extent will ambient temperature affect the EVSE when it is delivering current?
- **Illuminance Conditions** – In the Version 1.0 Test Method for AC EVSE, EPA required that products capable of automatic brightness control (ABC) be tested at two different illuminance conditions – light and dark – to determine the average power draw of an EVSE with this feature. DC EVSE are expected to draw more power in standby than AC EVSE, and they are also expected to have more components that can be controlled by ABC (e.g., larger displays, indicator lights, or ambient lighting). EPA believes that maintaining these ABC test requirements would ensure that this product is tested in a repeatable manner and receives credit for saving energy by dimming displays or lighting when not necessary.
- **Test Procedures**
 - **Integral Battery Banks** – EPA has proposed that for EVSE with an internal battery bank, the battery be disabled during testing, or if that is not possible, to charge the battery to full capacity before testing. EPA believes this to be the best option to easily compare products with or without an internal battery with the least test burden.

- **Connector Types** – If an EVSE has multiple connector types, EPA provided instructions to choose the one that has the highest power or current rating.
- **Operation Mode** – EPA expects the majority of DC EVSE to use active cooling, with more cooling (and additional losses due to cooling) expected at higher loads. Moreover, EPA expects there to be a “power overhang”; i.e., the EVSE will not immediately disable or turn down the cooling after the load is decreased. Therefore, to prevent the cooling losses at higher load from being reflected in the test results at lower loads (where they could have a bigger impact on efficiency), EPA proposes to reverse the test order relative to AC EVSE. Specifically, the DC test would begin at 10 kW, and increase up to the maximum output power of the EVSE.

EPA welcomes feedback on these proposals and any other input on how to best measure the energy efficiency of DC EVSE. Stakeholders are invited to submit written comments to evse@energystar.gov by **December 6, 2018**. All work on the test method and specification development effort will be posted to the [Version 1.1 EVSE specification development webpage](#). Stakeholder engagement is vital to the ENERGY STAR program, and EPA welcomes stakeholder suggestions regarding additional ways to enable participation in this process. EPA looks forward to further work with stakeholders to include DC-output EVSE in the ENERGY STAR program.

Please contact me at (202) 564-8538 or Kwon.James@epa.gov, or Emmy Feldman at (202) 862-1145 or Emmy.Feldman@icf.com, if you have any questions on EVSE or if you would be willing to share any feedback on the EVSE Version 1.1 Draft 1 Test Method.

Thank you for your continued support of ENERGY STAR.

Best Regards,



James Kwon, EPA Product Manager
ENERGY STAR for Consumer Electronics

Enclosures:
[ENERGY STAR Version 1.1 Draft 1 Test Method](#)