



July 04, 2019

Mr. James Kwon
U.S. Environmental Protection Agency
ENERGYSTAR Program
Washington, DC 20460

RE: Comments on ENERGY STAR Version 1.1 DC EVSE Draft 2 Test Method

Dear Mr. Kwon,

Delta Electronics appreciates the opportunity to provide comments and feedback on the proposed ENERGY STAR Version 1.1 DC EVSE Draft 2 Test Method. Please find the below feedback from us.

Line 47- scope

A 100kW DC EVSE would mostly use the similar technology to a 50kW one, therefore we also support to increase the lowest power from 50kW to 100kW.

Line 91- DC input power

The voltage specified on the nameplate could be a range or multiple values. If it is a range, the test should be at its nominal voltage. If multiple rated voltages are specified, we may consider to test at the highest rated voltage.

Line 502- 7.4.D Measurement

From the experience, a fan-cooled switched-mode power supply may take longer than 20 minutes to become a thermally stable operation. Although different power conversion technologies may take different time to get thermally stable, it seems 5 minutes is likely not long enough to get to a stable state in the products nowadays. IEC 62301 specifies when the input power difference per hour in a two consecutive 10-minute-minimum measurement is less than 1%, the stable measurement is established. We suggest to take the same to the requirement. Currently the spec says 0.2% in a 5-minute measurement. It equals to 2.4% per hour. We suggest to change the requirement to be 1% per hour and the minimum measurement period to be 10 minutes.

Line 556- Loading conditions for AC-input UUT

As we are to evaluate the overall power efficiency of the DC EVSE, we suggest to test at percentage full load conditions(for example 25%-50%-75%-100%) so that the overall



EVSE performance can be obtained and it will be independent of the power rating of the EVSE.

Regarding the test output voltage, as a small power rating EVSE can charge a large battery capacity vehicle and a small battery capacity vehicle can be charged by a large power rating EVSE, the output charging voltage is independent of the output power. We suggest to test at a same output voltage for all loading conditions. Besides, the output charging voltage is decided by the vehicle rather than the EVSE. The vehicle can be with a 400-volt charging system or with a 800-volt charging system. We need to specify the output voltage for testing each of the charging system. 400V and 800V would be good values to consider as it can avoid the situation that the EVSE is not able to supply full power due to its output power may be limited by its charging cable current rating(e.g. a 50kW/125Amax DC EVSE will not able to supply 50kW output at 350Vdc). If the EVSE covers both charging ranges(400V and 800V), it is suggested to test both conditions as the efficiency difference can be large and the two output voltage conditions.

Sincerely,

Tony Wu

Technical Manager/EVCS BU

Energy Infrastructure and Industrial Solutions Business Group

Delta Electronics, Inc.