

Version 1.1 EVSE Draft 2 Test Method Comment Response Document

Topic	Subtopic	Stakeholder Comment	Suggested EPA Response
General		A stakeholder requested that EPA participate in the SAE J2894 working group and harmonize the ENERGY STAR terminology and test setup with the SAE standard.	EPA has harmonized the DC EVSE Test Method terminology with relevant SAE standard definitions. The SAE J2894 standard contains definitions that are out of scope of the ENERGY STAR specification because they cover the entire EVSE/EV system, taking into account EV onboard charging efficiency. In contrast, this specification encompasses only the EVSE. EPA would be happy to participate in the working group to determine if there are any other areas for harmonization.
Definitions	EVSE	A stakeholder recommended that EPA remove the definition for wireless/inductive charging for simplicity as it is not used in the draft test.	EPA retained the definition for wireless/inductive charging because it is listed in the excluded products.
Definitions	Cabinet/Dispenser Configuration	A stakeholder suggested that the Cabinet/Dispenser definition include explicit definitions of the terms 'cabinet' and 'dispenser'.	EPA believes the definition already provides an appropriate level of detail to explain the terms 'cabinet' and 'dispenser'.
Test Setup	Cable Length	A stakeholder recommended establishing a minimum cable length for testing Cabinet/Dispenser configurations to best represent real world installations.	EPA will continue to require that Cabinet/Dispenser configurations be tested with the shortest cable length possible because of conversations during the second working session, in which stakeholders agreed that testing the Cabinet/Dispenser configuration with the shortest cable will allow for the fairest comparison between this configuration and the All-in-One configured products. EPA understands that this is not how Cabinet/Dispenser configured products will be installed in real world applications but it will allow for comparison of efficiency between the varying configurations. Also, cable losses can be calculated for specific installations and added to the total losses that will result from this test approach.
Test Setup	DC Input Power	A stakeholder recommended separate recordings of AC versus DC power instead of summing the AC and DC inputs for units that require both types of input since AC input will lead to greater losses because it will be converted to DC power.	In terms of products that require both DC and AC-input power, EPA believes that both will need to be enabled during testing for the product to operate as intended.
Test Setup	Temperature Testing	A stakeholder requested clarification on the selection of the ambient test temperature values, noting that DC EVSE can experience much lower temperatures than -7°C for long periods of time during winter months in some locations.	In choosing the cold, temperate, and hot temperature conditions in Table 3, EPA did not want to consider extreme temperature conditions but rather the goal was to select temperatures representative of typical climates across the US.
Test Conduct	Configuration	One stakeholder agreed that products are typically configured in the field. Another stakeholder recommended requiring products with a display to show the image that appears after the unit is configured for testing, instead of the as-shipped default image.	EPA believes that requiring products with a display to show the default image as-shipped during testing will provide comparable results.

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Test Conduct	Luminance Testing	<p>A stakeholder requested clarification on how to treat accessory 'ambient' lighting in the Test Method.</p> <p>Another stakeholder recommended testing all units with ABC under consistent (enabled) conditions in all modes of operation. They noted that if products are tested with ABC disabled in operation mode, the results may be inconsistent since EVSE with ABC disabled may result in higher screen energy use than those with ABC enabled but tested under dark conditions.</p>	<p>If an EVSE provides accessory or ambient lighting, the test method requires that it be configured in as-shipped conditions. As a result, if the lighting is enabled by default, it will be tested with the lighting on. If the lighting is controlled by Automatic Brightness Control (ABC), the product would be tested according to the conditions specified under Section 6.1E) Room Illuminance Conditions for Products with ABC Enabled by Default.</p> <p>Since DC EVSE are required to undergo testing in varying temperature conditions in Operation Mode, this requires testing in a temperature chamber. EPA heard feedback that temperature chambers may be small and unable to physically accommodate the test setup required for testing products with ABC enabled by default. As a result of these testing constraints and because EPA believes any power use due to lighting (accessory lighting or display lighting) will be insignificant compared to the power consumed during Operation Mode, EPA is requiring that ABC be disabled in Operation Mode. EPA hopes that most products will be capable of disabling ABC, but if not, EPA wants to ensure that products are tested in a repeatable way, so is requiring that they are tested in dark conditions.</p>
Test Conduct	Occupancy Sensors	<p>A stakeholder requested clarification regarding the necessity to interact with an occupancy sensor.</p>	<p>EPA is not aware of any DC EVSE products with occupancy sensors. However, EPA heard that products with occupancy sensing may be developed in the future. In the case that a product is developed with an occupancy sensor, EPA wants to ensure the product is tested in a repeatable way.</p>
Test Procedure	Unit Preparation	<p>A stakeholder suggested testing at the listed maximum available output power rather than using test equipment to determine the maximum available output.</p>	<p>EPA has retained the instructions to determine maximum available output power by using the vehicle emulator module to communicate with the unit. EPA believes that this will verify the claimed rated output power for testing.</p>
Test Procedure	State C Definition	<p>A stakeholder suggested clarifying which sub-state of SAE J1772 State C would apply: whether the vehicle is or is not drawing power.</p>	<p>EPA made this clarification.</p>
Test Procedure	Operation Mode Measurements	<p>A stakeholder recommended a longer testing period for actively cooled units to capture the power overhang until the unit returns to the power draw that occurred prior to the test initiation.</p> <p>Another stakeholder suggested that EPA require steady state conditions be reached between each Operation Mode Loading Condition test, rather than specifying 5 minutes.</p> <p>Lastly, a stakeholder noted that a product may require more than 20 minutes to become thermally stable. They noted that IEC 62301 specifies that when the input power difference per hour in a two consecutive 10 minute minimum measurement is less than 1%, then stability has been reached. As a result, they recommended a 1% drift per hour and the minimum measurement period be 10 minutes.</p>	<p>EPA appreciates this stakeholder input and understands the reasoning for achieving thermal stability between Operation Mode tests. However, EPA is concerned that waiting for complete stability or steady state conditions between tests for each loading condition will increase test duration by a significant amount of time. Also, EPA believes that as a result of ordering the loading condition tests from low to high power, any power overhang that would result from a cooling system being engaged from one test to the next would be acceptable because the next test would be at a higher power and would inevitably require the cooling system to engage.</p> <p>EPA specifies that the input current level must not drift by more than 0.2% over a 5 minute period but states that if it does, the technician is instructed to follow the guidance in the IEC 62301 standard for measuring stability.</p>

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Test Procedure	Integral Battery	<p>A stakeholder suggested substituting a DC voltage source for an integral battery since it will be easy to measure the power consumed and the unit will not attempt to charge the source if it's voltage is equivalent to a fully charged battery. They noted that they were unsure if this was possible but may be the simplest way to test these products.</p> <p>Another stakeholder agreed with measuring battery energy. They recommended that EPA educate companies that market EVSE with battery storage about the need to obtain interconnection permits from their local utility.</p>	<p>EPA will maintain the current procedure to test products with an integral battery, which is to disable the battery if possible and if it is not, EPA has included a note to measure power draw at the conclusion of Operation Mode testing until the product returns to Idle Mode power. EPA wants to ensure products with an integral battery can be easily compared to those without by eliminating the need to test and measure battery efficiency.</p> <p>EPA appreciates the request for education regarding pairing battery storage with EVSE and will pursue this suggestion after the Version 1.1 Specification is complete.</p>
Test Procedure	Loading Conditions: AC-Input	<p>A stakeholder suggested more stringent tolerances for allowable loading conditions. They recommended better control of the input power level based on the accuracy of the power meter.</p>	<p>These loading conditions are intended to measure unit performance across the loading profile of a given DC EVSE. As long as the tester can get within the tolerance of the loading conditions listed, EPA believes this will be an accurate representation of the charge profile. Any small difference in the loading condition achieved during testing won't result in variations in efficiency because the calculation of efficiency (output/input) will include the exact value of output power that was achieved during testing.</p>
Data Assembly		<p>A stakeholder expressed interest in participating in the data collection period.</p>	<p>With the release of the Final Draft Test Method, EPA is also announcing a call for data. The Agency has not proposed performance levels for EVSE at this time but is assembling data to inform the specification setting process. Using the posted data assembly form, manufacturers are invited to provide test data according to the Final Draft Test Method, for inclusion of their current models in the dataset that will be used to inform the Draft 1 Specification.</p>