Organization	Topic	Subtopic	Stakeholder Comment	EPA Response
Summary	Connected Functionality		One stakeholder commented that EPA should keep the same approach to connected functionality with DC EVSE as for AC EVSE: demand response (DR) capability supported but not required to be enabled. Not all DC EVSE's will participate in DR programs, so not requiring DR capability helps to ensure DC EVSE's can participate in ENERGY STAR.	EPA thanks the stakeholder for the comment and will address Connected Functionality in the specification, the development of which will begin after the test method.
Summary	DC EVSE	General	Two stakeholders did not support adding DC EVSE to the scope of the ENERGY STAR EVSE specification, noting the following: • The DC EVSE market is new and rapidly evolving so setting efficiency goals at this stage may suppress investment and innovation. This may unduly impact EV adoption. • DC EVSE are not sold to consumers, but are intended for commercial customers, so aren't appropriate for ENERGY STAR. • Performance of DC EVSE is specific to the location where it is installed because of local grid profiles, ambient temperature, and varying charging patterns. • DC EVSE are modular and heavily-customized based on intended application. • There is no industry standard test method. • DC EVSE have critical safety systems like lighting and cooled cables that impact energy use - a strict efficiency standard may disincentivize these features. In contrast, two stakeholders expressed support for an ENERGY STAR DC EVSE specification, with one noting it would inform the development of utility programs, while another cautioned that DC EVSE are different from AC and require their own specification.	Claimed efficiency for DC EVSE on the market appear to be between 92% and 97% at full output, indicating there is a potential to differentiate DC EVSE by efficiency. In addition, the lack of an industry standard test method is a further opportunity to promote comparability and educate users. EPA therefore believes that adding DC EVSE to the ENERGY STAR scope will bring additional value to stakeholders by differentiating the most efficient models. At the same time, EPA is sensitive to the early stage of the industry, the commercial consumers, modular products, evolving product features (e.g., communication and safety systems), and environmental conditions that may have an impact on product efficiency. EPA has accounted for these in the test method, while minimizing testing burden as much as possible. Finally, EPA has developed a separate test method for DC EVSE in to prevent confusion with any requirements relating to AC EVSE.
Summary	DC Market		One stakeholder noted that DC EVSE with an output power greater than 400 kW are expected to enter the market in 2018. These technological improvements along with new sources of public funding are expected to increase demand for DC EVSE in coming years.	EPA understands that the DC EVSE market will continue to evolve and is therefore including all DC EVSE within the scope of the draft test method.
Summary	DC-Input EVSE		A stakeholder requested that off-grid and renewable energy DC EVSE systems be provided an exemption from the ENERGY STAR testing procedures and automatically qualify as an ENERGY STAR certified product.	To ensure consumer confidence in the ENERGY STAR label and to protect the investment of ENERGY STAR partners, EPA requires all ENERGY STAR products to be third-party certified. EPA encourages all DC EVSE manufacturers to work with EPA to develop appropriate test procedures and criteria for DC-input EVSE.

Organization	Topic	Subtopic	Stakeholder Comment	EPA Response
Summary	Definitions	DC EVSE	Three stakeholders suggested the following definition for DC EVSE from Society of Automotive Engineers (SAE) J1772: "DC CHARGING: A method that uses dedicated direct current (DC) EV/PHEV supply equipment to provide energy from an appropriate off-board charger to the EV/PHEV in either private or public locations."	EPA has adopted this definition of DC Charging and has included it in the draft test method.
Summary	Definitions	Level 1 and Level 2 DC EVSE	Three stakeholders recommended harmonizing any definitions that are adopted for Level 1 DC EVSE and Level 2 DC EVSE with those in SAE J1772.	EPA has referenced all terminology from the ENERGY STAR Version 1.0 AC EVSE Program Requirements that are also relevant for DC EVSE in the Draft 1 DC EVSE Test Method, including definitions that reference the SAE J1772 standard.
Summary	Definitions	No Vehicle Mode	One stakeholder noted that current "No Vehicle Mode" definition is applicable to DC EVSEs.	EPA will maintain the test procedure for the mode in which there is no vehicle present at the DC EVSE.
Summary	Distribution Transformers	Buying Guidance	One stakeholders noted that primary purchasers of distribution transformers are electric companies, who are well informed of the transformer options available to them. "Should EPA choose to provide extra information, it should focus on providing information regarding dry-type transformers that are used to serve individual or multiple DC EVSE's for commercial customers." In contrast three stakeholders that commented believe that referencing the ENERGY STAR Distribution Transformers Buying Guide in future ENERGY STAR EVSE program promotional materials may be helpful since the consumer may also be purchasing a distribution transformer.	Since EPA has previously developed buying guidance resources for purchasers of distribution transformers, this guidance will be made readily available on the ENERGY STAR EVSE-related webpages. Since the distribution transformer buying guidance is intended for purchasers of liquid-immersed transformers, EPA can consider also including guidance on dry-type transformers.
Summary	Modular Products		Three stakeholders commented that EPA should defer treatment of modular EVSE products until a later draft. Depending on the testing, it is possible testing two configurations may not be representative of all possible configurations.	The Draft 1 Test Method does not specify how to test modular EVSE, the output power of which can be adjusted by adding/removing modules. Each combination of modules could be tested under this test method, potentially leading to different results. How to evaluate those results, or how to select more limited combination(s) of modules for test that can represent all the combinations can be specified later in the ENERGY STAR eligibility criteria (e.g., the highest-energy using combination, the typical combination, etc.). EPA welcomes stakeholder input on the testing of modular products.

Organization	Topic	Subtopic	Stakeholder Comment	EPA Response
Summary	Performance Criteria	Allowances	One stakeholder commented in favor of a base power allowance and additional allowances for: - Different (or multiple) communication systems used by the EVSE, to allow communication between DC EVSE's and connected entities. - lighting (for displays or night-time location visibility), - cooling systems (for EVSE and/or cables, the latter supported by three other stakeholders), - heating systems, and - battery banks (for backup power or kilowatt demand reduction or charging) In contrast, three stakeholders recommended excluding batteries from performance requirements.	EPA will propose appropriate allowances for features such as communication systems, lighting, and cooling/heating systems in the ENERGY STAR eligibility criteria, based on data produced from the ENERGY STAR finalized DC EVSE Test Method. In the Draft 1 Test Method, EPA proposed ways to verify power use of lighting systems and a method for testing EVSE with an integral battery bank to minimize impacts of efficiency of the battery in order to compare products with and without an integral battery.
Summary	Performance Criteria	Modes	One stakeholder commented that EPA should only create criteria for No Vehicle Mode, analogous to the criteria for Level 1 and Level 2 AC EVSE due to the wide variety of features and setup conditions of DC EVSE, the lack of industry test procedures, and variability in performance during Operation Mode.	Based on testing of DC EVSE products, it appears that there is significant differentiation between products in terms of power consumption during steady state charging, with efficiency results varying from 92% to 97%. There also appears to be differentiation in power consumption as the charge ramps down when the vehicle no longer accepts maximum current. As a result, EPA proposes to maintain testing during operation mode and can assess data resulting from this test procedure to determine appropriate energy efficiency criteria, if the data confirms that there is an opportunity to differentiate products based on energy efficiency during active charging.
Summary	Power Factor	Reporting	One stakeholder commented that EPA should require manufacturers to provide power factor information for DC EVSEs, as commercial or industrial facilities will likely be required to monitor overall power factor and maintain a minimum power factor.	EPA will propose to measure, collect, and report power factor information for DC EVSE.
Summary	Power Factor	Requirement	One stakeholder commented that if the EVSE's have a range of power factors, then there should be a minimum power factor required in any mode (e.g., greater than or equal to 90%), which will allow grid operators to manage the grid effectively.	EPA will set efficiency/power criteria in the ENERGY STAR specification as the test method is close to being finalized and would appreciate more information from stakeholders on the necessity and importance of power factor requirements.
Summary	Scope	Wireless Charging	Four stakeholders commented that EPA should avoid setting specifications for wireless EVSE at this time due to lack of available data and models, small number of compatible vehicles, and need for different testing.	EPA will not include wireless charging in the Version 1.1 EVSE Test Method or Specification and will revisit this product type in the future when there is more standardization and interoperability for these products.
Summary	Stakeholder Meetings		One stakeholder requested that instead of holding a stakeholder meeting after the release of a draft specification, EPA hold regular stakeholder meetings, biweekly or monthly, before finalizing a specification to increase stakeholder contributions.	EPA held two stakeholder working sessions in August and September, to collaborate with stakeholders on specific key topics related to testing DC EVSE. EPA is hoping to continue holding collaborative stakeholder meetings and is proposing the idea of holding the next meeting in-person.

Organization	Topic	Subtopic	Stakeholder Comment	EPA Response
Summary	Test Procedures	Liquid-cooled Cables	Three stakeholders recommended measuring the total energy used by DC EVSE, including liquid cooling for cables handled by customers, so that the test will capture total EVSE energy usage.	In the Draft 1 Test Method, the testing in Operation Mode is set up to include the energy used for liquid cooling for cables, as well as cooling of the system based on ambient temperatures. EPA would appreciate stakeholder feedback on if the proposed test procedure will best account for these functions of DC EVSE.
Summary	Test Procedures	Modes	Three stakeholders recommended additional testing in Partial On and Idle Mode for DC EVSE. The stakeholders recommended testing DC EVSE in Partial On, when a vehicle is connected and able to accept energy but the EVSE is not providing energy, because this mode may occur when a vehicle is in a demand response event.	EPA has proposed test procedures for measuring power consumption in Partial On and Idle Modes to determine if the Version 1.1 Specification should contain criteria specific to these modes. EPA will use data produced from this test method to inform the need for criteria in these modes.
Summary	Test Procedures	Loading Conditions	Three stakeholders agree that testing conditions should address the voltages and currents that are representative of charging rates for existing vehicles. They recommend revising Table 3 so that the voltage is consistent between models for a given test power output unless there is a specific technical reason to test them at different voltages.	The proposed output powers in the Draft 1 Test Method were based on levels that EPA has seen in the market or understands are under development (for higher power DC EVSE), while the voltages were based on popular EV battery pack voltages at full charge. For the maximum power, EPA had proposed a voltage that is calculated from the maximum power by dividing by 0.5 A and adding 300 V, to provide a voltage proportional to power.
Summary	Test Setup	Separate Cabinet/Dispenser	Three stakeholders commented that for representativeness, the test method should require testing the cabinet and dispenser connected by a cable that has a representative diameter and length unless EPA identifies a specific technical reason for testing the dispenser and cabinet separately. If EPA does require testing cabinets and dispensers separately, they recommended that: - The dispenser be tested during Active Mode to capture connector cable cooling; - The cabinets be tested under the same range of temperatures as other EVSE because the amount of energy needed to cool the cabinet may be affected by ambient temperature; and - Losses from the cable connecting the dispenser and cabinets be calculated based on a cable with representative length and diameter.	EPA is proposing to test both Cabinet/Dispenser and All-in-One systems in a comparable way, with the DC link between cabinet and dispenser as short as possible.
Summary	Test Setup	Input voltages	Three stakeholders recommended testing DC EVSE units with both three-phase and single-phase input voltages (if applicable) because the efficiency of the unit could vary based on the input voltage.	In the Draft 1 Test Method, EPA has accounted for three-phase voltages in the input supply requirements table and welcomes feedback on the approach to test at standardized input voltages to permit comparability of products with similar input voltage ranges.

Organization	Topic	Subtopic	Stakeholder Comment	EPA Response
Summary	Test Setup	Representative temperatures	Three stakeholders believed the test method should require testing DC output EVSE under representative conditions, and recommend evaluating any information that is available from manufacturers to ensure that cooling systems will be active during the proposed 95˚F test condition. The stakeholders were also in favor of the 40˚C condition discussed on the Discussion Guide webinar. Three stakeholders noted that although they do not have information about temperature controlled testing facilities, other standards require temperature controlled testing.	EPA is proposing to test all systems in all modes at 20° F or –7° C, 68° F or 20° C, and 104° F or 40° C to measure the effects of ambient temperature on charging efficiency.