Certification for ENERGY STAR® Electric Vehicle Supply Equipment

CALeVIP Requirement

Background

Together, since 1992, ENERGY STAR and its partners have helped save American families and businesses $430 billion on their energy bills*—while also achieving broad emissions reductions—all through voluntary action. Among the California Energy Commission's (CEC) core responsibilities are achieving energy efficiency and transforming transportation. The CEC is committed to ensuring that EV charging equipment installed under the CALeVIP program is energy efficient.

For a current list of certified EV chargers, see the ENERGY STAR product finder.

ENERGY STAR Certification Process Overview

Manufacturers pursuing product certification can follow the steps outlined on the Join ENERGY STAR website to become a partner with ENERGY STAR. These steps include completing a Partnership Application and Participation Form and sending the completed forms to join@energystar.gov.

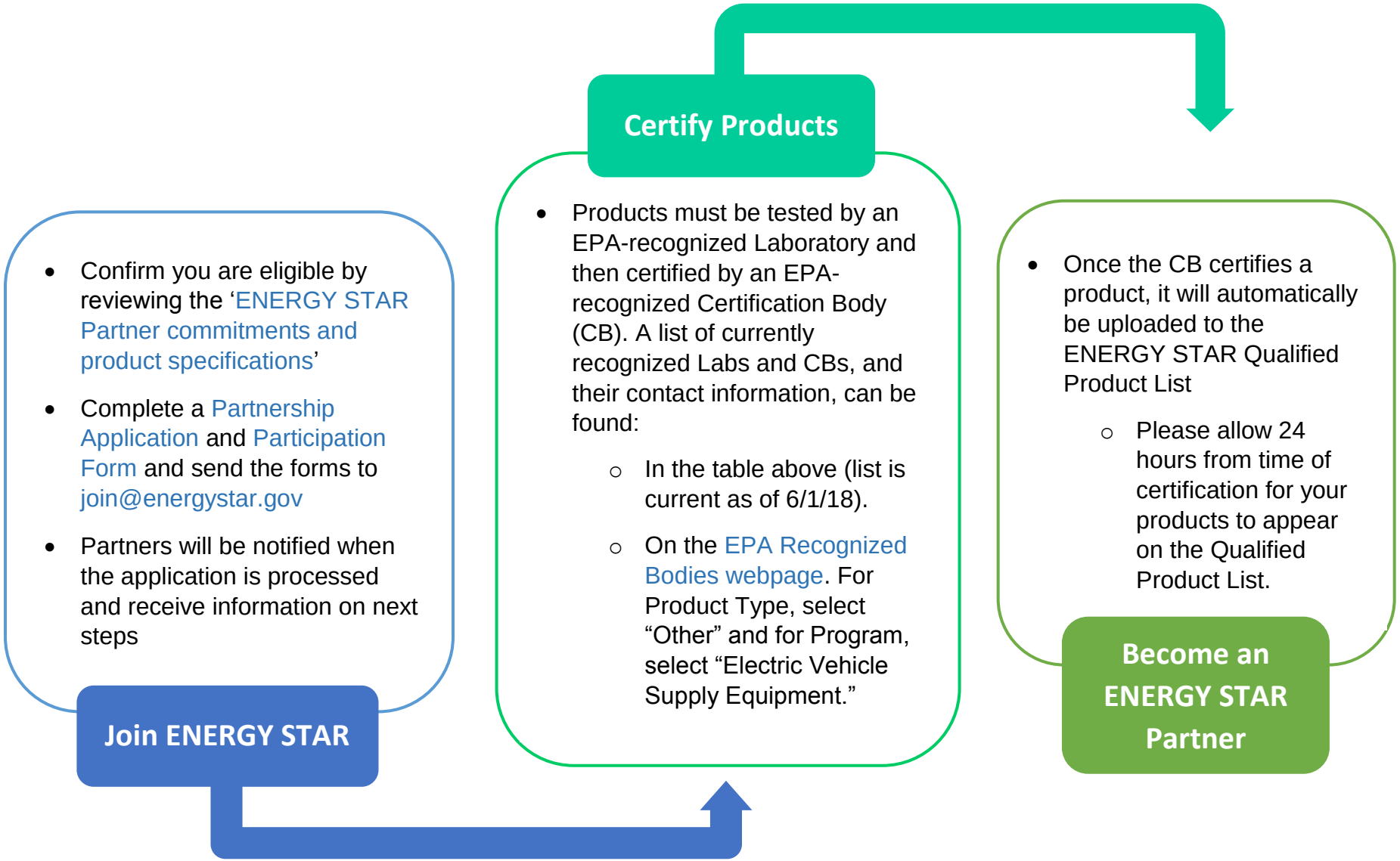
Partners will be notified when the application is processed and receive information on next steps. In the meantime, manufacturers can contact an EPA-recognized testing laboratory and certification body to begin the certification process. The list of all EPA-recognized laboratories and certification bodies associated with EV chargers can be found using this search tool. For Product Type, select "Other" and for Program, select "Electric Vehicle Supply Equipment." The current (as of June 1, 2018) recognized labs and certification bodies, along with their contact information, can be found in the following table. If manufacturers have any issues connecting with these organizations or have any general questions regarding the ENERGY STAR certification process, they can contact Emmy Feldman at Emmy.Feldman@icf.com.

Organization Name	Type of Recognized Body	Direct Contact Information	City	State
Curtis-Straus LLC, a Bureau Veritas Company **Website**	Certification Body	Scott Lambert scott.lambert@us.bureauveritas.com 978-486-8880	Littleton	MA
Intertek Testing Services NA, Inc. Plymouth Township **Website**	Accredited Laboratory	Nick Van Klompenberg nicholas.vanklompenberg@intertek.com 734-582-2900	Plymouth Township	MI
Intertek Testing Services NA **Website**	Certification Body	Nick Van Klompenberg nicholas.vanklompenberg@intertek.com 734-582-2900	Arlington Heights	IL
MET Laboratories, Inc. **Website**	Certification Body	Samuel Tetteh stetteh@metlabs.com 410-949-1850	Baltimore	MD
TUV SUD America, Inc. **Website**	Certification Body	Bryan Cubitt bcubitt@tuvam.com 678-341-5902	Peabody	MA
UL LLC. **Website**	Accredited Laboratory	David Piecuch david.piecuch@ul.com 847-664-3760	Fremont	CA
UL Verification Services Inc. **Website**	Certification Body	David Piecuch david.piecuch@ul.com 847-664-3760	Northbrook	IL

Once the certification body certifies a product, information will automatically be uploaded to the ENERGY STAR Qualified Product List and Product Finder tool online. The product certification timeline depends on the certification body review time. It may be completed within a few days if the certification body has all of the information needed from the manufacturer.

The manufacturer is responsible for any costs related to testing and certification. Certification costs will vary by certification body and are not dictated nor influenced by EPA. More information about third-party certification is available here.

An illustration of the certification process described above is shown here:



ENERGY STAR Version 1.0 EVSE Specification and Test Method Overview

General Requirements: EV chargers submitted for certification must be Listed by a Nationally Recognized Testing Laboratory (NRTL) for safety. Also, dual input Level 1/Level 2 EVSE must meet all requirements and report information in both configurations.

No Vehicle, Partial On, and Idle Mode Requirements: EV chargers must meet criteria for each of these modes. The base allowance for each mode is 2.6 watts and then there are additional allowances if a product has certain functions, as shown in the table to the right. These allowances are identical for all three modes.

Product Function	No Vehicle Mode Power Allowance (watts, rounded to the nearest 0.1 W for reporting)
In-use Wi-Fi or Ethernet Interface with Wake Capability (P_{WAKE})	$\frac{1.0}{n}$, *Where:* • n is the number of outputs.
In-use Cellular with Wake Capability (P_{WAKE})	$\frac{2.0}{n}$, *Where:* • n is the number of outputs.
Other In-use LAN (Local Area Network) Interface with Wake Capability (P_{WAKE})	$\frac{1.0}{n}$, *Where:* • n is the number of outputs.
In-use High Resolution Display ($P_{DISPLAY}$)	$\left[(4.0 \times 10^{-5} \times \ell \times A) + 119 \times \tanh(0.0008 \times [A - 200.0] + 0.11) + 6.0\right]/_n$ *Where:* • A is the Screen Area in square inches; • ℓ is the Maximum Measured Luminance of the Display in candelas per square meter, as measured in Section 4) C) of the ENERGY STAR Test Method for Determining Electric Vehicle Supply Equipment Energy; • *tanh* is the hyperbolic tangent function; and • n is the number of outputs. **Example**: For a single-output EVSE with a maximum measured luminance of 300 candelas/m^2 and a 5×5 inch screen, the allowance for the in-use display would be 2.7 watts.

There is one additional allowance for Idle Mode, for the power required to keep the relay closed. That equals the maximum nameplate current multiplied by 0.4.

Connected Functionality: There are optional criteria for a product to be considered connected. These criteria include:
1. **Grid Communications** capability
2. **Open Access** connection to enable Demand Response
3. **Consumer Override** capability

Testing: The test method is broken up into three key sections – *Test Setup, Test Conduct, and Test Procedures*. The Test Setup describes how the EV chargers and testing equipment are connected for testing as well as testing conditions (e.g., ambient temperature). The Test Conduct describes how the EV chargers should be configured for testing (e.g., equipment must be tested in its as-shipped condition). This section also describes how to configure network connections and a high-resolution display, if available.

The Test Procedure describes the actual testing process for measuring power in No Vehicle Mode, Partial On Mode, and Idle Mode. Although there is no requirement for Operation Mode, the EV chargers must be tested when actively charging and the resulting power losses are reported on the Qualified Product List to inform interested consumers.