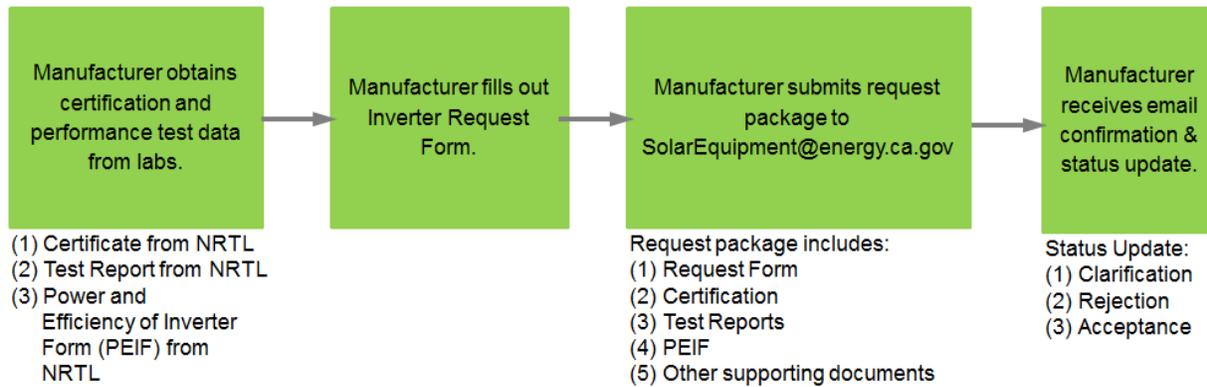


Inverter Listing Request Instructions



General Guidance for Inverter Listing Request:

- Requirements are detailed in the [Guidelines for California's Solar Electric Incentive Programs \(Senate Bill 1\), Seventh Edition](#)
- **Equipment manufacturer must submit the request.**
- Reports and documents must be written in English.
- Submit all the required documentation **in a single email**. Incomplete requests will be rejected and will lose their place in the review queue; a complete request must then be resubmitted.
- Requests containing falsified reports or altered forms will be rejected. The equipment may be permanently prohibited from inclusion on the list, and the manufacturer permanently prohibited from having equipment listed.
- Refer to the [Workshops, Notices and Training page](#) on the [GoSolarCalifornia website](#) for additional instructions, examples, and best practices to avoid common mistakes.
- **NOTE: Data and information submitted to the Energy Commission are public record. Do not submit any proprietary or confidential information. Proprietary or confidential information on required documents must be redacted or omitted prior to submission.**

Document Requirements for an Inverter Listing Request

1. Required Request Documents

The manufacturer submits the listing request in a single e-mail to SolarEquipment@energy.ca.gov. Include a subject line stating the purpose of the equipment request (new or revised), the equipment type (Inverter), and the manufacturer's name. Attach to the e-mail all required documentation:

- a) Inverter Listing Request Form.
- b) Nationally Recognized Testing Laboratory (NRTL) certification(s) to UL 1741 including Supplement SA from a NRTL whose OSHA Scope of Recognition includes UL 1741.¹
Please note that starting January 1, 2020, safety certification to UL 1741 including Supplement SA, or alternatively, safety certification to UL 1741 including IEEE 1547:2018, is required.
- c) UL 1741 Supplement SA test report or test summary.
- d) **Excel file(s)** of the Power and Efficiency of Inverter Form.
- e) Additional supporting documentation, as required by Energy Commission staff. Please note that submitted information is public record; **do not submit any proprietary or confidential information.**

2. Minimum Criteria for Safety Certification

The certification(s) and test report(s) must meet the requirements outlined below.

- a) The UL 1741 certification document.
 - Signed or stamped and dated by NRTL whose OSHA Scope of Recognition includes UL 1741.
 - Indicates the UL 1741 standard including Supplement SA, as well as Source Requirement Documents (SRDs) for the test.
 - Specifies the requested model number(s) certified.
 - Defines all the wildcards in model number(s).
 - Specifies inverter type is “Grid Support Utility Interactive”.
- b) UL 1741 Supplement SA test report or test summary.
 - Signed or stamped and dated by the NRTL.
 - Indicates testing completed according to UL 1741 including the Supplement SA sections (SA8-SA15).
 - Specifies the model number(s) tested.
 - Specifies the firmware version(s) tested for grid support functionality (SA8-SA15).

¹ A current list of NRTLs approved by OSHA, along with their recognized scopes, can be found on the OSHA website.

- To reflect **Reactive Power Priority (RPP)** information on the list, submit supporting language from the NRTL, either in the UL 1741 certificate, UL 1741 test report summary, or an additional document that meets the following minimum criteria:
 - Signed or stamped and dated by NRTL.
 - Specifies the model number(s) tested.
 - Verifies that the Volt/VAr test (UL 1741 SA13) has been completed with reactive power priority enabled.

Note: Separate documentation is not required if the certificate or test report meets the requirements.

c) The [Power and Efficiency of Inverter Form](#) in **Excel format**.

- The most current version of the form must be used or the request will be rejected².
- Data from a NRTL whose OSHA scope includes UL 1741.
- Form completed by NRTL.
- Performance test data obtained in accordance with “Performance Test Protocol for Evaluating Inverters Used in Grid-Connected Photovoltaic Systems”³.
- One form per model number and associated output voltage. At NRTL’s discretion, additional model numbers may be added if results can be applied.
- Maximum Continuous Output Power Data:
 - Minimum 180 minutes of data.
 - 5 minute (or smaller) sampling intervals.
 - Values in kilowatts (kW) at unity power factor.
- Weighted Inverter Efficiency Data:
 - Minimum of 5 test samples.
 - Each sample tested at V_{min} , V_{nom} , and V_{max} .
 - Tested at all required power levels.
- Night Tare Loss, reported in watts (W).

Note: For inverters capable of receiving DC input from PV and/or batteries, the NRTL must complete the output power and efficiency tests with the DC input power supply connected to the inverter’s PV input port.

² <http://www.gosolarcalifornia.ca.gov/equipment/inverters.php>

³ [Sandia Lab test protocol](#)

Instructions for Completing the Inverter Request Form

Download the latest version of the [Inverter Listing Request Form](#). Complete all boxes and fields or explain in the Request Form Notes why a field is not applicable.

- a) List the manufacturer's legal name (as listed on the certification). Any company name differences must be clarified through a signed letter submitted on company letterhead (see FAQ #1 below).
- b) In the "Safety Certification" section, complete the table correlating the inverter model numbers with the test report numbers and dates. These report numbers should match the submitted documents; mismatched information may require clarification which in turn would delay the review and processing of the request.
- c) For [Multiple Listing](#) requests and [ACPV](#) requests, refer to the respective instructions.
- d) Provide any additional information to further explain or clarify the request in the "Notes" section. Accurate and detailed notes will help prevent the need for clarification and ensure timely processing of the listing request without further delays.
- e) Enter all of the firmware version(s) that were tested for grid support functionality (SA8-SA15). This information must match the UL 1741 test report summary.
- f) In the "Safety Certification" section, fill in the document(s) name and the associated page number(s) for the reactive power priority information. For example, "Test Report number 12345" and "page 13 of 20".
- g) In the "Communications Conformance" section, if applicable enter the name of the entity that issued the certificate or compatibility report.

Instructions for Submitting Optional Documentation with an Inverter Listing Request

The manufacturer may submit, as a part of the listing request, extra document(s) to demonstrate additional functionality. If submitted, the information will be evaluated by Energy Commission staff. Upon approval of the listing request, Energy Commission staff will indicate that the model numbers have completed the optional certification or testing on the Energy Commission's Solar Equipment Lists. The documents that will be accepted are:

- a) Test report summary for UL 1741 including UL Certification Requirement Decision (CRD) (dated October 22, 2019).
- b) Certification of the inverter to the Common Smart Inverter Profile (CSIP).
- c) NRTL report for inverter compatibility with CSIP-certified gateway.
- d) Attestation for Scheduling and Monitor Key Data functions.

1. Minimum Criteria for Optional Document(s)

The entity issuing the document(s) must meet the following qualifications:

- a) Test report summary for **UL 1741 including UL Certification Requirement Decision (CRD)**.
 - The laboratory is recognized by the OSHA NRTL program.
 - The laboratory's OSHA Scope of Recognition includes UL 1741.
- b) Certification of the inverter to **Common Smart Inverter Profile (CSIP)** (One of the following):
 - A laboratory recognized by the OSHA NRTL program.
 - SunSpec Alliance.
 - A laboratory approved by SunSpec Alliance.
- c) NRTL report for inverter compatibility with CSIP-certified gateway:
 - A laboratory recognized by the OSHA NRTL program.
 - A laboratory approved by SunSpec Alliance.

Any document(s) provided to support the indication of optional functionality must include the following:

- a) Test report summary for **UL 1741 including UL Certification Requirement Decision (dated October 22, 2019)**.
 - Signed or stamped and dated by the NRTL.
 - Indicates testing completed according to UL 1741 Supplement SA and the CRD sections (SA8-SA18).
 - Specifies the model number(s) tested.
 - Specifies the firmware version(s) tested for grid support functionality (SA8-SA18).
- b) Certification of the inverter to the **CSIP**.
 - Signed or stamped and dated by the certifying entity.
 - Specifies the inverter model number(s) tested.
 - Indicates testing met the Common Smart Inverter Profile according to the *SunSpec Common Smart Inverter Profile (CSIP) Conformance Test Procedures*.
- c) NRTL report for inverter compatibility with CSIP-certified gateway.
 - Signed or stamped and dated by the NRTL.
 - Specifies the inverter(s) manufacturer name.
 - Specifies the inverter model number(s) tested with a CSIP-compliant gateway.
 - Specifies the inverter(s) were tested according to CPUC Resolution E-5000 approved testing pathway (as modified by Resolution E-5036).
- d) Attestation for Scheduling and Monitor Key Data functions.
 - Signed and dated by an authorized manufacturer representative.
 - Completed according to the approved template.
 - Specifies all the inverter model numbers.

FAQs

1. What if I want my equipment listed under a different manufacturer name than the name on my certification?

If a manufacturer wants equipment listed under a different manufacturer name, the manufacturer must submit a letter containing the information listed below:

- Submitted on company letterhead.
- Signed and dated by an authorized representative of the company.
- The legal name of the manufacturer (from the certification).
- The name that manufacturer wants to use for equipment listing purposes.
- The reasoning behind the request (for example, a manufacturer may want to list the brand name instead).
- An explanation of all manufacturer name variations found on the submitted documents and the relation between each manufacturer name and the manufacturer name reported on the certification (parent company, subsidiary, etc.).

2. What if my inverter requires an external transformer for grid interconnection?

The efficiency data for the external transformer must be provided. The final weighted inverter efficiency will include the efficiency of the external transformer. Contact the Energy Commission before submitting, as additional documentation may be required.

3. What if the inverter includes a built-in meter?

If the inverter has an approved built-in meter that meets the metering requirements, the meter must be listed prior to inverter listing. If the meter is not listed, the meter manufacturer must submit a separate meter listing request. See the [Meter Listing Instructions](#) for more details.

4. How can I add another firmware version to the equipment which are already on the list?

You must obtain a **new** test report for UL 1741 SA that includes the new firmware version tested. You also need to provide the currently active UL 1741 (including Supplement SA) certificate for the related model numbers if any revision to the certificate was needed based on NRTL's input.

5. How can I demonstrate that my equipment has completed the testing for reactive power priority?

You must send a listing request to revise the information on the list. The listing request must include a completed request form, the currently active UL 1741 certificate, and a document that meets the RPP requirements specified in Page 5 of this document.

6. How can I demonstrate that my equipment has completed the testing for CPUC Rule 21, Phase 2?

You must send a listing request to revise the information on the list. The listing request must include a completed request form, the currently active UL 1741 certificate including Supplement SA, and either 1) a certification of the inverter to the CSIP, or 2) a report demonstrating the inverter is compatible with a CSIP-compliant gateway in accordance with CPUC Resolution E-5000.

7. How can I demonstrate that my equipment has completed the testing for CPUC Rule 21, Phase 3, functions 1 & 8?

You must send a listing request to revise the information on the list. The listing request must include a completed request form, the currently active UL 1741 certificate including Supplement SA, and the completed attestation template, as instructed in this document.

8. How can I demonstrate that my equipment has completed the testing for CPUC Rule 21, Phase 3, functions 2 & 3?

You must send a listing request to revise the information on the list. The listing request must include a completed request form, the currently active UL 1741 certificate including Supplement SA, and a

UL 1741 test report summary that shows the equipment has passed sections SA17 and SA18 testing based on the UL CRD dated October 22, 2019.

9. How do I know my request has been received?

The Energy Commission sends a confirmation email upon receipt of an equipment listing request. A unique request ID number (“R number”) will be assigned to each request and will be included in the confirmation email.

10. What if I have questions or need updates on my request?

You can contact the Solar Equipment Call Center at (916) 654-4120 or SolarEquipment@energy.ca.gov for any equipment listing questions. Please reference your “R” number to help Energy Commission staff identify the specific request. Manufacturers also receive email notifications from the Energy Commission when the status of a request changes or decisions (acceptance, clarification needed, or rejection) are made.

11. How does the Energy Commission process my request?

Requests are processed on a first-in, first-out basis, and involve a 2-phased process: Phase 1 consists of an administrative screening, and Phase 2 consists of a technical evaluation. Only those requests that pass administrative screening will be reviewed for technical evaluation. Requests that are complete and accurate on their first submission take typically no more than 45 days to be approved from the date the request was received. If clarification or additional information is required, or the request is rejected because of omissions or deficiencies, the Energy Commission will typically notify the manufacturer within 30 days. Requests that require clarification will take longer to complete than complete and accurate requests, and may take significantly longer than the 45-day timeline to complete the review and posting of approved equipment on the Energy Commission’s Solar Equipment Lists. The Energy Commission updates the solar equipment lists three times a month, typically on the 1st, 11th, and 21st of the month, or the first business day thereafter.