

DOCKETED

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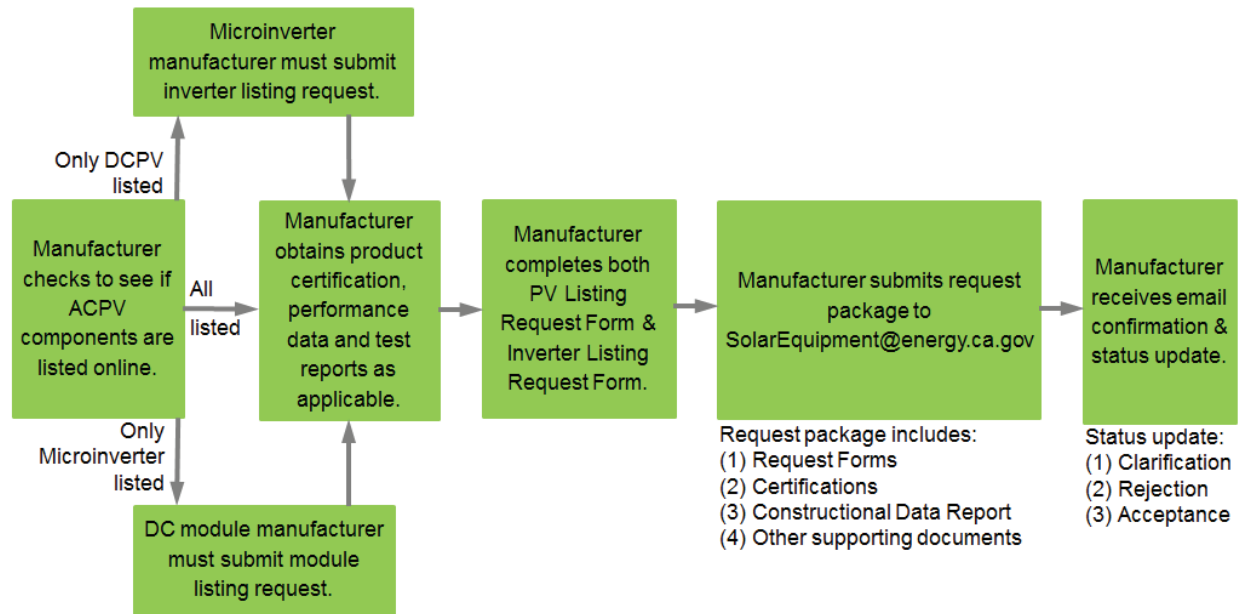
ACPV Module Listing Request Procedure Comments

Hello,


I have reattached UL's comments regarding the ACPV module Listing Request Procedure. All comments should be viewable. Note that if you click on the yellow "sticky note" it will display a box on the right hand side that will display the full comment in an easier format to read rather than just placing the mouse cursor over the sticky note icon. I believe not double click the sticky note icon is what caused the original submittal to be rejected.

Additional submitted attachment is included below.

ACPV¹ Module Listing Request Procedure



General Guidance for ACPV Module Listing Request:

- Requirements are detailed in the [Guidelines for California's Solar Electric Incentive Programs \(Senate Bill 1\), Sixth 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.
- **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.**

¹ Alternating-Current Photovoltaic (ACPV): An alternating-current (AC) photovoltaic (PV) module is defined in Section 690.2 of the 2005 National Electrical Code (NEC) as a “complete, environmentally protected unit consisting of solar cells, optics, inverter, and other components, exclusive of tracker, designed to generate AC power when exposed to sunlight.”

NOTE: All individual components of the ACPV module (DC module, micro-inverter, and built-in meter) must be listed prior to the listing of the ACPV module.


- **If a component is not listed, a complete request is required for each non-listed component, and may be submitted prior to or concurrently with the ACPV module request.**
- **The ACPV module request will be rejected if any component is either not listed or not concurrently requested and approved for listing.**
- **Refer to the [PV Module](#), [Inverter](#), and [Meter](#) procedures for instructions.**

Procedure for Submitting an ACPV Module 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 (ACPV Module), and the manufacturer's name. Attach to the e-mail all required documentation:

- a) PV Module Listing Request Form.
- b) Inverter Listing Request Form.
- c) Nationally Recognized Testing Laboratory (NRTL) certification(s) to UL 1741 from a NRTL whose OSHA Scope of Recognition includes UL 1741.²
- d) 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 Certification


The UL 1741 certification(s) must meet the requirements outlined below.

- a) Signed or stamped and dated by NRTL.
- b) Indicates the UL 1741 standard and Source Requirement Documents (SRDs) for the test.
 - Includes UL 1741 Supplement SA for [Grid Support Utility Interactive](#) ACPV module model numbers.
- c) Specifies the requested ACPV module model number(s) is certified.
- d) Specifies ACPV module type (based on micro-inverter component) is: “Utility Interactive” or “Grid Support Utility Interactive”.

² [The current list of NRTLs with OSHA scopes](#)


3. Minimum Criteria for Reports

The Construction Data Report must meet the requirements below: 

- a) Signed and dated by a NRTL.
- b) Specifies the model number(s) the report applies to.
- c) Indicates how the micro-inverter component is attached to the back of the DC module.
 - **If secured via adhesive:** include NRTL's test results for the humidity-freeze and temperature cycling tests with the micro-inverter secured to the module. 
 - **If secured mechanically:** no additional test results are required to be submitted.

4. Instructions for Completing the PV Module Request Form

Download the latest version of the [PV Module Listing Request Form](#). Complete all of the required sections and fields.

- a) List the ACPV module manufacturer's legal name (as listed on the certification). Any company name differences must be clarified through a signed letter submitted on the company's letterhead (see FAQs #1 below).
- b) Enter all Construction Data Report numbers corresponding to the ACPV module model numbers in the "ILAC-Accredited Laboratory Report Number(s)" request section. 
- c) Select the appropriate "Request Type". This selection applies to all model numbers in that request form. Use [separate request forms](#) for different request types (e.g. Addition, Revision, Multiple Listing, ACPV).
 - For a group consisting of [adding new](#) ACPV modules to the online list, choose the "Add ACPV Modules" option.
 - For a group consisting of [revisions to existing](#) ACPV modules on the online list, choose the "Revise DC or ACPV Modules" option.
- d) Grouping ACPV module model numbers is not applicable. In Table 1, ACPV model numbers may be entered into the same subgroup table even if they are not similar.
- e) Table 2 is not required for ACPV module requests, and should be left blank. The test data will be copied over from the DC module component.
- f) In Table 1, in the "Notes" field, enter the model names of the DC modules and micro-inverters used in the construction of the ACPV modules. Provide any additional information to further explain or clarify any details in the "Notes" section. Accurate and detailed notes will help prevent the need for clarification and ensure timely processing of the listing request.

- g) In Table 3, in the “Description” field, enter a description that meets the requirements below. This description will be posted on the Energy Commission’s PV Module List. Do not include any marketing or subjective statements.
- Power rating.
 - Module type (Monocrystalline, Polycrystalline, and Thin Film).
 - Backsheet color.
 - Definition of each wildcard. Wildcards in the model number are only acceptable for non-technical features that don't affect module performance such as frame type or connector type, but not power rating (see FAQs #4 below).
 - DC module component model number.
 - Micro-inverter component model/part number

For example: 300W Monocrystalline ACPV module, black backsheet, “y” is wildcard for frame color (W for white or B for black). DC Module: AS-M72-300B. Micro-inverter: JS265.

- h) In Table 3, in the “Notes” field, select “This component is specific to ACPV and is not available individually.”
- i) In Table 3, in the “Ac” field (module coverage area), enter the PV module area (in square meters, m²), excluding the frame. This value should match the Ac value of the listed DC module model number. For non-rectangular modules, please add a note at the bottom of Table 3 indicating the general shape of the module and attach supporting documentation, such as drawings with dimensions and calculations.
- j) Look at the notes in the cell headings for additional guidance.

5. Instructions for Completing the Inverter Request Form

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

- a) List the ACPV module manufacturer’s legal name (as listed on the certification). Any company name differences must be clarified through an official signed letter submitted on company letterhead (see FAQs #1 below).
- b) Enter the model numbers for the ACPV modules in the respective section.
- c) In the “Certification” section, complete the table correlating the ACPV module model numbers with the Construction Data Report numbers and dates. These report numbers should match the



submitted documents; mismatched information may require clarification and cause delays in the review and processing of the request.

- d) For “Description”, enter the same description used in the PV Module Listing Request Form.
- e) For “Inverter Type,” select all that apply.
- f) In the “Power and Efficiency of Inverter Form” section, select “N/A” if this form is not required.
- g) Complete the “ACPV Modules” section.
- h) In the “Notes” section, enter the model numbers of the DC modules and micro-inverters used in the construction of the ACPV modules. Provide any additional information to further explain or clarify any details 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.

6. Requirements if Micro-Inverter Cannot Be Sold Separately

If the micro-inverter cannot be sold separately, a separate request to list the micro-inverter is not required. Instead, submit the following:

- a) A [Power and Efficiency of Inverter Form](#) for each ACPV module model number and output voltage (Vac). For further instructions on completing the form, please refer to Section 2c of the [Inverter Listing Procedure](#).
- b) The UL 1741 test report (only required for Grid Support Utility Interactive [“Smart”] inverters).
 - Signed and dated by NRTL.
 - Indicates testing completed according to UL 1741 including the Supplement SA sections.
 - Specifies the model number(s) tested.
 - Indicates testing for UL 1741 Supplement SA Sections SA8-SA13 completed.
 - Specifies the firmware version(s) tested for grid support functionality.
- c) If a manufacturer wants to reflect Reactive Power Priority information on the list, they need to submit supporting language from their testing lab either in their certificate, test report summary, or additional document that meets the following minimum criteria (only required for Grid Support Utility Interactive [“Smart”] inverters).
 - Signed 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.
 - Separate documentation is not required if the certificate or test report meets the requirements.

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 are wildcards and how are they used?

A *wildcard* is a symbol used to replace or represent one or more characters. The use of wildcards for model numbers must be clearly defined. The use of wildcards in certification documents or test reports is at the discretion of the testing body, but may not necessarily be allowed for listing purposes. In general, for inclusion on the PV modules list, wildcards are limited to details that are non-technical (such as frame color) and do not affect performance.

3. 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”) is assigned and included in the confirmation email.

4. 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 (approval, clarification needed, or rejection) are made.

5. 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 Lists of

Eligible Equipment. The Energy Commission updates the solar equipment lists twice a month, typically on the 1st and the 15th business day of the month.