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SEIA Comments on Guidelines for Californiaâ€™s Solar Electric Incentive Programs (Senate Bill 1)

Additional submitted attachment is included below.

November 2, 2018

California Energy Commission
Docket Unit, MS-4
Re: Docket No. 07-SB-01
1516 Ninth Street
Sacramento, CA 95814-5512

Subject: Docket No. 07-SB-01: Eligibility Criteria and Conditions for Solar Energy System Incentives (SB1) Solar Equipment Lists Program Implementation

California Energy Commission staff:

The Solar Energy Industries Association (SEIA®) is the driving force behind solar energy and is building a strong solar industry to power America through advocacy and education. As the national trade association of the U.S. solar energy industry, which now employs more than 250,000 Americans, we represent all organizations that promote, manufacture, install and support the development of solar energy. SEIA works with its 1,000-member companies to build jobs and diversity, champion the use of cost-competitive solar in America, remove market barriers and educate the public on the benefits of solar energy.

On behalf of its members, SEIA submits the following comments and suggested revisions to the subject docket and related implementation guidelines. We appreciate the opportunity to continue to collaborate with the Commission on revising the guidelines.

At this time, the guidelines document has the challenge to address not only the existing requirements for inverters without advanced functionality (referred to as 'smart inverters') but also those that will eventually apply to inverters with advanced functionality as required by California's Rule 21 for Phases 1, 2 and 3. This situation is made more complex considering phases 2 and 3 are currently being discussed by the California Rule 21 Smart Inverter Working Group and that some relevant test procedures and standards are in development by third-parties and not yet released nor the certification schemes clear. With that in mind, we offer the following suggestions.

Chapter III, Solar Energy System Component Standards, Section C:

This section starts on page 12, we have identified our suggested deleted text in red as lined out, our suggested new text in red and underlined. We offer additional notes in brackets. Some of the red text (darker in color) as well as the blue text is carried over from the proposed guidelines.

General comments:

With respect to the Commission no longer accepting inverters that do not incorporate smart inverter functionality, the January 1, 2020 date may be too soon to assume that IEEE 1547.1 will be released, and manufacturers are afforded the ample time to design/re-design equipment and pursue the necessary testing. We suggest that twelve (12) months after the publication date of the updated IEEE 1547.1 procedure is needed for the appropriate testing to be conducted.

In addition to UL 1741, there is another applicable standard for inverters - UL 62109-1 (link: https://standardscatalog.ul.com/standards/en/standard_62109-1) - which includes all the requirements of UL 1741 and additional tests; therefore, we suggest referencing either standard.

"Smart inverter", while used as generally to refer to inverters with advanced functionality, is not a technically defined term. Standards for safety refer to inverters with the related functionality as 'grid support', 'grid interactive' or grid support utility interactive'. We recommend the use of the latter terms in the guidelines or a correlating definition or statement be included.

Specific suggested revisions:

C. Inverters

The document "Performance Test Protocol for Evaluating Inverters Used in Grid-Connected Photovoltaic Systems"[30] should be used by a NRTL to determine if the required inverter performance data. ~~are required i~~ In addition, the manufacturer ~~to~~ must provide product certification indicating compliance with UL 1741 from a~~n~~ NRTL. The inverter test protocol requires the reporting of efficiency data at the full range of operating conditions (power and efficiency at the full range of possible voltages), along with the nighttime "tare loss"[31] for each inverter, to provide full performance information and enable hourly estimates~~ing~~ of the overall performance of the system.

Eligible inverters are identified on the Energy Commission's eligible equipment list for inverters.[32]

The following are inverter eligibility requirements:

- Inverters shall have a product certification indicating compliance with UL 1741 from an NRTL.[33]
- Performance data (maximum continuous output power, conversion efficiency, and tare losses) tested in accordance with "Performance Test Protocol for Evaluating Inverters Used in Grid-Connected Photovoltaic Systems" by a~~n~~ NRTL shall be reported for each inverter.

Some inverters ~~may~~ interconnected with the Distribution Provider's Distribution System include advanced functionality and communication abilities[34], and are commonly known as "smart inverters". Smart inverters require additional testing and certification documentation to demonstrate the capability to perform the advanced functions. Inverters that have been properly documented as meeting each requirement, described herein following the Inverters Listing Request Procedures, shall be listed with additional information to reflect certain sets of functional capabilities on the eligible equipment list for inverters.

[This was originally the last paragraph in this section.]
Any additional smart inverter functions, requisite testing, or certification shall be determined in accordance with applicable CPUC rulemaking decisions or resolutions in reference to CPUC Electric Rule 21 smart inverter functions. The added functions shall be as defined in CPUC Decisions 14-12-035, 16-06-052, and subsequent modifying decisions, resolutions, CPUC approved or accepted advice letters, or guidance issued by a CPUC-established working group. All the testing protocols and certifications must be capable of verifying the capability of each inverter to perform the functions specified therein.

[Moved this statement to the end of the section.]
~~As of January 1, 2020, the Energy Commission will consider changes to discontinue accepting requests to list inverters that do not incorporate smart inverter functionality.~~

~~Currently t~~The applicable certifications for advanced functionalities include:

- Product certification from a NRTL to UL 1741, inclusive of Supplement SA ("UL 1741 SA"), with optional sections, and IEEE 1547-2003 / IEEE1547a-2014 from a NRTL. The NRTL test report or summary of test results for Supplement SA testing must also be provided showing compliance with California Rule 21 Smart Inverter Generating Facility Design and Operating Requirements.

- As of February 22, 2019 - Product certification from a NRTL (or a SunSpec Alliance designated/approved laboratory) that is verified by the SunSpec Alliance to the SunSpec Alliance ~~to~~ *Common Smart Inverter Profile* (CSIP) requirements, as defined in IEEE 2030.5:2018, and in accordance with the *SunSpec Common Smart Inverter Profile (CSIP) Conformance Test Procedures.*

[We suggest moving what is currently the last bullet to a new footnote as additional information regarding the IEEE standards in the first bullet]

Note: Twelve months after the revised IEEE 1547.1 test procedures are published, the IEEE standard used for product certifications from a NRTL will be

~~Product certification~~ to IEEE 1547:2018 (or later version) and associated conformance test procedures ~~from a NRTL~~.

[Note that the above bulleted list of standards and the new footnote should be added to APPENDIX B: Criteria for Testing and Certification Before Adding Equipment to the Energy Commission's Eligible Equipment Lists, Section B. Inverters. page B-8.]

Acceptance of any certification or testing, including possible alternatives to the above smart inverter requirements, is subject to Energy Commission review. The manufacturer or testing entity may be required to submit any new test protocol(s) or documentation of certification program(s) to the Energy Commission for review and acceptance. An application for listing will not be reviewed prior to approval of the test protocol or certification by the Energy Commission.

[Moved this statement to the end]
As of January 1, 2020, the Energy Commission will discontinue accepting requests to list inverters that do not incorporate smart inverter functionality.

[Moved this up above]
~~Any additional smart inverter functions, requisite testing, or certification shall be determined in accordance with applicable CPUC rulemaking decisions or resolutions in reference to CPUC Electric Rule 21~~ smart inverter functions. The added functions shall be as defined in CPUC Decisions 14-12-035, 16-06-052, and subsequent modifying decisions, resolutions, ~~CPUC approved or accepted~~ advice letters~~, or guidance issued by a CPUC-established working group~~. All the testing protocols and certifications must be capable of verifying the capability of each inverter to perform the functions specified ~~therein.~~

Chapter III Solar Energy System Component Standards, Section E: Battery Storage:

Without separating out dedicated battery inverters, it needs to be clear that dedicated battery inverters should not need to submit inverter data related to how it performs with solar. Currently the language states that all inverters need to submit "Performance data (maximum continuous output power, conversion efficiency, and tare losses) tested in accordance with "Performance Test Protocol for Evaluating Inverters Used in Grid-Connected Photovoltaic Systems" by an NRTL shall be reported for each inverter".

List of Acronyms:

The UL 1741 reference on page 37 currently reads as follows:

UL 1741 SA: UL 1741 safety standard, inclusive of Supplement SA testing

We recommend revising this to "UL 1741 Standard for Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources inclusive of UL 1741 Supplement A.

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Thank you for the opportunity to provide these comments. On behalf of our members, we look forward to working with the Commission to improve the guidelines and clarify the overall requirements.

Sincerely,

/s/
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