

#### PCS Information on CEC Solar Equipment Lists

California Energy Commission GUIDELINES

Guidelines for California's Solar Electric Incentive Programs (Senate Bill 1)

Seventh Edition



Renewable Energy Division October 14, 2020



#### **Agenda**

- 1. Background
- 2. PCS Information in Solar Equipment Lists
- 3. Required PCS Documents
- 4. PCS Supplemental List Template
- 5. Documents' Criteria
- 6. Q&A



#### **Background of Solar Equipment Lists**

SB1 Guidelines

<a href="https://www.energy.ca.gov/programs-and-topics/topics/renewable-energy/solar-equipment-lists">https://www.energy.ca.gov/programs-and-topics/topics/renewable-energy/solar-equipment-lists</a>

- Use of CEC lists for interconnection purposes
  - Continued streamlining of interconnection processes
  - Quick implementation to assist others in meeting short timelines

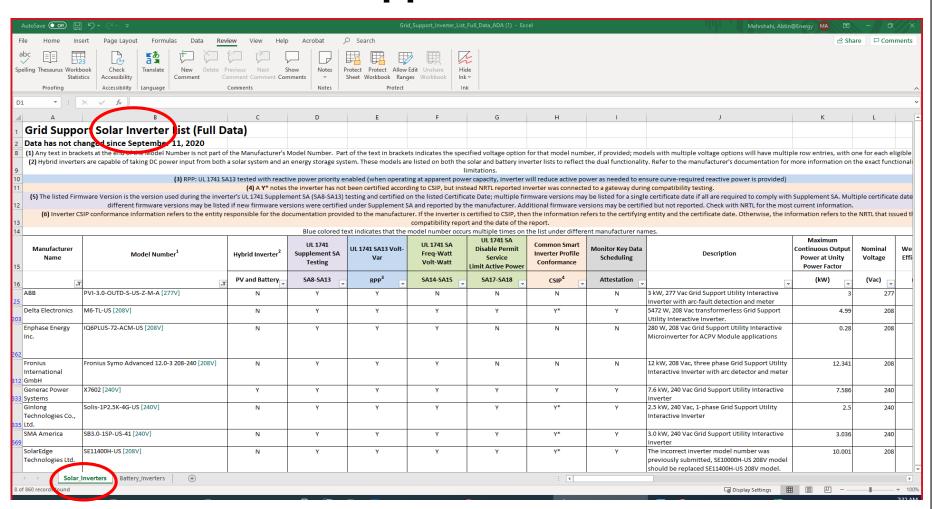


- CEC Existing Equipment Lists
- Grid Support Inverter List: solar and storage inverters
  - Includes "Smart Inverter Functionality"
- Energy Storage System List
  - Includes "Smart Inverter Functionality"
- Current implementation within existing equipment scope
- PCS integrated in inverter
- PCS as a component of an energy storage system

Note: The inverter or the energy storage system model numbers must be listed on the related Inverter or ESS lists, in order to reflect PCS information.

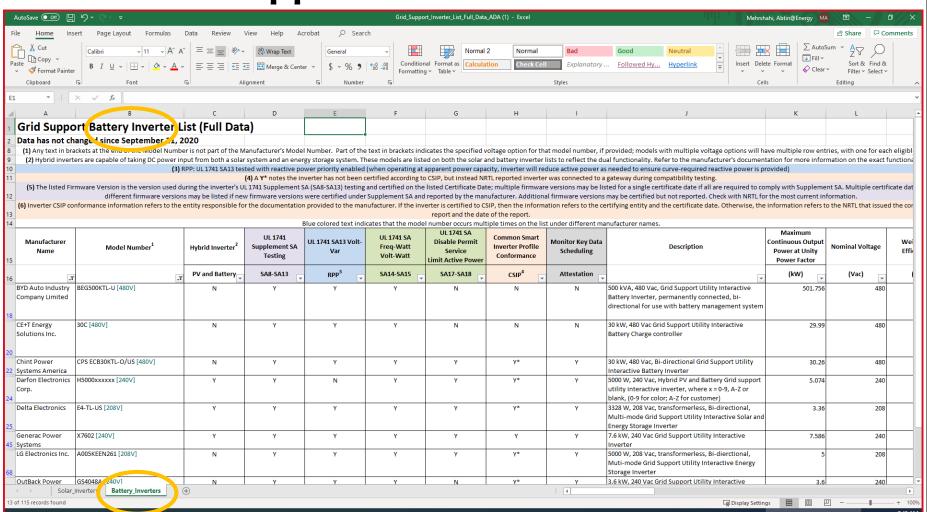


## **Grid Support Inverter List**



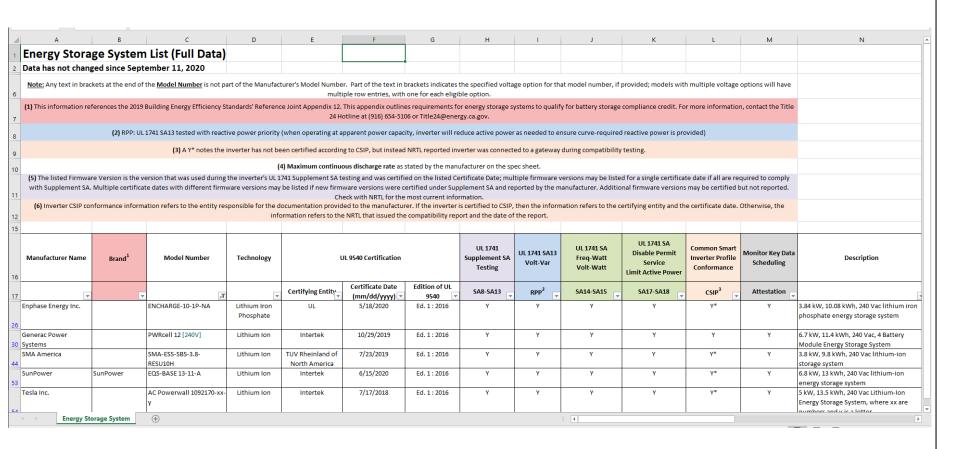


## **Grid Support Inverter List - Continued**





## **Energy Storage System List**





- The information and data collected and reflected on the online lists by the CEC were identified by the IOUs as necessary for completing the interconnection evaluation.
- All the data points reflected on the lists are obtained from the NRTL and manufacturer documentation submitted to the CEC.
- IOUs requested for all PCS information together (inverter and ESS)
- CEC created the supplemental PCS list complementing existing inverter and ESS lists
  - PCS info combined in one place
  - No changes to existing list formats

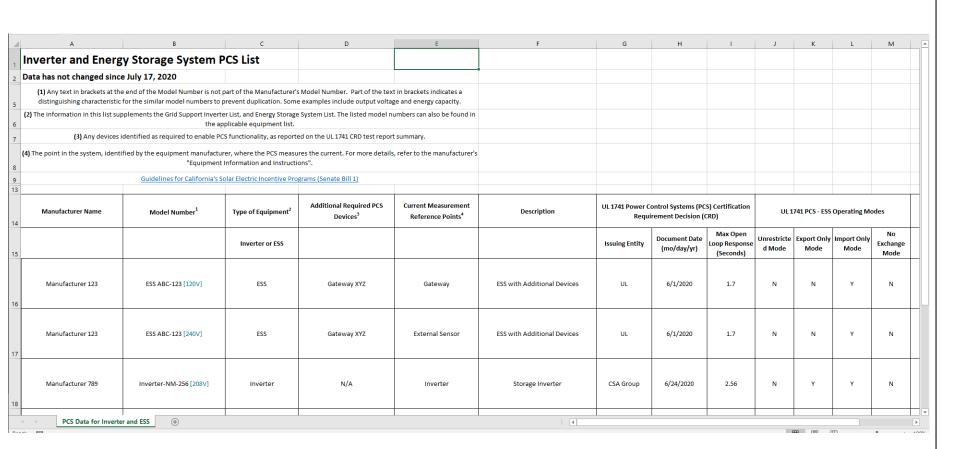


#### **Required PCS Documents**

- **Inverter** or **ESS** manufacturers to submit PCS related documents for their equipment:
  - UL 1741 CRD test report summary, issued by a NRTL
  - Manufacturer's equipment information and instructions document (as required by the UL 1741 CRD)
- CEC asks manufacturers and NRTLs to meet the required criteria in these documents. Ultimately, the NRTL is responsible for performing a sufficient level of testing to satisfy the CRD intentions.



### **PCS Supplemental List Template**





## Information Needed in the UL 1741 CRD Test Report

- Signed or stamped and dated by NRTL whose OSHA Scope of Recognition includes UL 1741.
- Indicates the UL 1741 CRD issued on March 8, 2019, for PCS functionality.
- Specifies the requested model number(s) it is applicable to.
- Defines all the wildcards in the requested model number(s).
- Specifies all the additional devices required and tested for PCS functionality.
- Defines all wildcards in the model number of any required additional devices
- Specifies all the ESS Operating Modes that were tested.
- Specifies the maximum open loop response time.

# Information Needed in the "Equipment Information and Instructions"

The CRD requires the PCS manufacturer to publish an "Equipment Information and Instructions" document, in addition to any other instructions required by UL 1741.

- Issued by the inverter or ESS manufacturer.
- Submitted on company letterhead.
- Includes all the requested model number(s).
- Identifies the equipment's "current measurement reference point".
- Includes all the required information specified in the UL 1741 CRD, Section 208.



## Q&A



Contact us via email at <a href="mailto:SolarEquipment@Energy.ca.gov">SolarEquipment@Energy.ca.gov</a>

Or call us at (916) 654-4120 for any further questions.