

DOCKETED

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Energy Commission's Solar Equipment Lists

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Agenda

- Background of Solar Equipment Lists
- Types of Solar Equipment Listed
- Energy Commission's Inverter List
- Smart Inverters
- Inverter Listing Requirements



Background of Solar Equipment Lists

- California Senate Bill 1 (SB1)
- Energy Commission's mandate (PRC 25782)
- SB1 Guidelines

<http://www.energy.ca.gov/sb1/documents/>



Types of Solar Equipment Listed

- **Photovoltaic Modules**

- 21,000+ PV Modules
- 470 Manufacturer



- **Inverters**

- 3,500+ Inverters
- 180 Manufacturer



- **Meters** (640 meters, 103 manufacturers)
- **Other Electric Generating Technologies**
- **PMRS**

: <http://www.gosolarcalifornia.ca.gov/use.php>



Energy Commission's Inverter List

	Grid Support Utility Interactive (Smart Inverters, listed since September 2017)	Utility Interactive (Traditional Inverters listed since 2007)
Total on the List	416	3000
% of Total Equipment on the List	12 %	88 %
Number of Manufacturers	28	170



Smart Inverters

- Impact of high penetration of Distributed-generation PV
- Smart Inverters enhance grid stability
- What is CPUC's Rule 21 tariff?
- Rule 21 Smart inverter requirements to interconnect in the California Investor Owned Utilities (IOUs) territories (PG&E, SCE, or SDG&E).



Listing Requirements

Inverter Procedure:

Manufacturer obtains certification and performance test data from labs

Manufacturer fills out Inverter Request Form

Manufacturer submits request package to SolarEquipment@energy.ca.gov

Manufacturer receives email confirmation & status update

- (1) Certificate
- (2) Test report
- (3) Weighted Inverter Efficiency Form (WIEF) from NRTL

Request package includes:

- (1) Request Form
- (2) Certification
- (3) Test Report
- (4) WIEF
- (5) Other supporting documents

Status update:

- (1) Clarification
- (2) Rejection
- (3) Acceptance



CALIFORNIA ENERGY COMMISSION

Manufacturer Name	Model Number**	Description	Maximum Continuous Output Power at Unity Power Factor	Nominal Voltage	Weighted Efficiency	UL 1741 Supplement SA Certification***	Certificate Date	Firmware
Enphase Energy Inc.	S230-60-LL-x [208V] [SI1]	230 W, 240 Vac, Grid Support Utility Interactive Microinverter, where x = 2, 3, 4, or 5 and may be followed by -US	0.22	208	97	[8/14/2017]	[v00.36.01]	
Enphase Energy Inc.	S230-60-LL-x [240V]	230 W, 240 Vac Microinverter, where x = 2, 3, 4, or 5 and may be followed by -US	0.22	240	97	Not Applicable	Not Applicable	
Enphase Energy Inc.	S230-60-LL-x [240V] [SI1]	230 W, 240 Vac, Grid Support Utility Interactive Microinverter, where x = 2, 3, 4, or 5 and may be followed by -US	0.22	240	97	[8/14/2017]	[v00.36.01]	
Enphase Energy Inc.	IQ6-60-ACM-US [208V]	230 W, 208 Vac Utility Interactive Microinverter for ACPV Module applications	0.23	208	97	Not Applicable	Not Applicable	
Enphase Energy Inc.		Interactive Microinverter for ACPV Module applications				7]	12.00]	
Enphase Energy Inc.	IQ6-60-ACM-US [240V]	230 W, 240 Vac Utility Interactive	0.23	240	97	Not Applicable	Not Applicable	



Thank you for your time.

Questions?

Energy Commission's Solar Equipment Lists

Contact information

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