

DOCKETED

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NREL SolarAPP+ Program

Additional submitted attachment is included below.

4-14-23

SUBJECT: Solar Equipment Lists Program Implementation

The National Renewable Energy Laboratory (NREL), managed and operated by the Alliance for Sustainable Energy, LLC, under U.S. Department of Energy M&O Contract No., DE-AC36-08GO28308, has developed the Solar Automated Permit Processing Plus (SolarAPP+) platform. This platform allows for instant, automated permitting of eligible solar and solar and storage systems. The system has already delivered over 18,000 permits and is in operation across more than 50 communities in California and nationwide. This program has eliminated over 150,000 days in permitting related delays resulting in solar systems being installed on average 12 business days faster than those projects permitted via traditional pathways. The solar and storage equipment lists are critical to our ability to provide this service. In this comment letter I will explain how we use the lists based on the questions provided.

1. What is your/your organization's primary use of the Solar Equipment Lists?
We use the equipment lists to verify specific parameters regarding inverter, solar, and battery equipment to allow our software system to conduct automated code compliance checks on the software. Without the equipment lists the SolarAPP+ product could not function.
2. How often do you download or reference the Solar Equipment Lists from the Solar Equipment Lists website at <https://solarequipment.energy.ca.gov/Home/Index?>
The equipment lists are used daily by our over 300 contractor users, and we expect annually to use the lists over 100,000 times. We download the newest versions of the CEC list 3 times per month. We also use over 40 variables from the lists, with the most critical variables summarized here.

PV:

- Manufacturer
- Model Number
- Safety Certification
- Nameplate Pmax
- A_c
- Nameplate Isc
- Nameplate Voc
- alpha_Isc
- beta_Voc
- CEC Listing Date

Inverter:

- Manufacturer
- Model Number
- Hybrid Inverter
- UL 1741 Supplement SA Testing
- Maximum Continuous Output Power at Unity Power Factor
- Nominal Voltage

- Microinverter

ESS:

- Manufacturer
- Model Number
- PV DC Input Capability
- Certificate Date (mm/dd/yyyy)
- UL 1741 Supplement SA Testing
- Nameplate Energy Capacity
- Nominal Voltage
- Maximum Continuous Discharge Rate

Batteries:

- Manufacturer
- Model Number
- Certificate Date (mm/dd/yyyy)
- Nameplate Energy Capacity

3. Please provide information on how the Solar Equipment Lists assist you/your organization with everyday business needs: i. How do they integrate with your operations? ii. How would you describe the value of the lists to your efforts?

The equipment lists are essential to the viability of the SolarAPP+ product. If the equipment list was not available, SolarAPP+ would have to overhaul our process and likely attempt to recreate the lists in our own software. This could result in doubling or potentially tripling the cost of SolarAPP+ to contractors and thereby increasing the costs of SolarAPP+ permitting and reducing the potential time benefits outlined above given delays we would face in adding equipment to the lists. If the lists were discontinued it would likely, severely limit the ability of over 400 communities in California to achieve compliance with SB 379 requiring the availability of automated permitting products for solar such as SolarAPP+.
4. Roughly how much time do you save on a weekly or monthly basis by using the data on the Solar Equipment Lists, as opposed to not having the lists as a reference?

It is very difficult to accurately quantify the benefit of this product to SolarAPP+, because the equipment lists are foundational to the entire automated permitting effort. Based on the more limited databases of equipment we manage, a conservative, reasonable estimate is to assume that the equipment lists eliminate the need for 4 or more full-time equivalent employees on an annual basis. It could be as many as 8 full-time or more employees, as we would need to work with the CEC team to determine the level of effort to manage the lists to develop a more clear estimate. Regardless, the SolarAPP+ team could not support these lists on our own, so the software would likely stop functioning with the elimination of the solar equipment lists.
5. Is there a format that would improve the effectiveness of the lists or ability to use them?

The format at current is suitable for what we need. However, the lists would be more valuable to us if all the data records were populated and the data was verified and not just

manufacturer provided. In addition, it would be beneficial to automated permitting systems like SolarAPP+ if the lists included short- and long-side length and maximum design load rating and fire classification of the module. If the lists could be expanded to include racking and attachments, rapid shutdown equipment and optimizers it would also be valuable to the SolarAPP+.

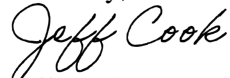
6. Can you substitute the data from the Solar Equipment Lists with another data source? How would your program(s) be impacted without this resource?

There is no data source that could replace the equipment list. In the situations where SolarAPP+ cannot reference variables in the solar equipment list, we are required to create our own databases of equipment, which take significant time, result in poorer user experience, and delays in permit issuance. If the equipment lists did not exist, it would likely eliminate virtually all SolarAPP+ benefits, we would no longer approve projects ~2 weeks faster, the system would be 3x or more costly to contractors reducing market interest in using the tool rendering the software insolvent, communities would likely not maintaining compliance with SB 379, and homeowners would not benefit from solar ~2 weeks faster.

7. Please share any other feedback you would like us to consider.

We very much appreciate the staff that put the equipment lists together. They are very responsive to our requests, and we are also supportive of their efforts to update the lists to remove old and add new equipment. This tool is truly invaluable to the SolarAPP+ and the vision of automated permitting. It would be valuable if the equipment lists were expanded, as opposed to eliminated or otherwise reduced at this time. If the lists were eliminated it would be catastrophic to SolarAPP+ and potentially the future of automated permitting. Please do reach out to me should you have any questions relative to this comment.

Sincerely,



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