

**DOCKETED**

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**Clifford Hansen comments - 18- SOLAR-01 Solar Equipment Lists  
RFI**

*Additional submitted attachment is included below.*

**1. What entity, if any, do you represent or are you affiliated with?**

I am affiliated with Sandia National Laboratories, but comment here as a private citizen on behalf of the maintainers of pvlib-python, which is open-source, freely available software for PV performance modeling. Pvlib-python is used worldwide by thousands in industry, academia and research laboratories and in particular serves those whose modeling needs are not met by the available commercial, closed-source applications.

**2. What is your/your organization's primary use of the Solar Equipment Lists?**

The module and inverter equipment lists comprise the data behind databases for modeling performance of these components of PV systems. The CEC list data is input into software which fits models to these data. Analysts at the National Renewable Energy Laboratory perform these calculations. The resulting model coefficients accurately represent the performance of modules and inverters over the range of input conditions.

**3. How often do you download or reference the Solar Equipment Lists from the Solar Equipment Lists website?**

For the purpose of fitting model coefficients, we download the lists less than 1 time per month. Personally, I access the lists more than 3 times per month, typically to aid in locating appropriate coefficients for a specific piece of equipment.

**5. 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?**

The CEC lists have become the de facto reference for PV system modeling, and support (in the manner described above) both pvlib-python and NREL's System Advisor Model (SAM). SAM is a desktop application used by tens of thousands for renewable energy modeling, including financial calculations.

It is no exaggeration to claim that the publicly available lists have saved hundreds of thousands of hours of labor within the PV modeling community. The public lists enable a central source for model coefficients that all may freely use. Without the lists, which otherwise would have been spent by many to determine model coefficients or to locate others who had already done that work.

**7. 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 another resource, [www.ensolar.com](http://www.ensolar.com), which provides an incomplete set of data for a broader range of products. ENFSolar serves primarily as a business-to-business marketplace. ENFSolar's data is not free, nor does the data support generation of performance model coefficients.