DOCKETED	
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Document Title:	System Advisor Model team comments on CEC RFI
Description:	System Advisor Model (SAM) team of National Lab of the Rockies (NLR) gives public comment on CEC Solar Equipment List RFI
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The System Advisor Model (SAM) team at National Laboratory of the Rockies (NLR) bases several of its PV module and inverter performance models on the data made available in the CEC Module list. The team generates post-processed equipment lists that are distributed as part of the free desktop software releases of SAM along with open-source distributions of the underlying source code made available on Github. These lists are accessed and referenced more broadly across the PV industry, including in NLR API's and websites such as the popular PVWatts website. The SAM team's responses to the RFI are found below

1) *Should the CEC continue making the calculated value for the PTC rating of a PV module available?*
   • If yes, how should the CEC balance or address the concerns of some manufacturers about the cost of continuing to provide the CEC with the laboratory tested value for NOCT used in the calculation of the PTC rating and the reduced availability of laboratory testing services to PV module manufacturers for measurement of NOCT?
   • If no, why not?
   • Are the suggested potential alternatives discussed above satisfactory for addressing the current use case for estimating the AC capacity of a PV array?
   • Are there other suggested alternatives or use cases to consider?

The SAM team has no issues with the removing the PTC rating from the submission form, as the models in SAM currently do not make use of it. For the proposed alternative to the PTC rating, the SAM team feels that a linear correction from the rated STC condition would be clearer to users than the proposed average PTC/STC ratio approach.

2) *When staff find equipment on the SEL that does not have a current certificate of compliance for the CEC required national safety standard, should the equipment be moved to an archive equipment list without notifying the manufacturer?*
   • If yes, why?
   • If yes, when should staff review equipment certification after publication of a new edition of a standard? For example, on the new edition's effective date, 12 months after the new edition's effective date, or an alternative timeframe, and why?
   • If no, equipment could remain in the SEL indefinitely regardless of whether it has certification in accordance with the current edition of the applicable national safety standard. In this case, why not?

The SAM team feels that an archive equipment list is a sufficient solution, and addresses a common concern of SAM users having the module used in their analyses disappear from the SAM equipment lists between different software versions.

Additional Items

Inverters

Reduce manufacturer performance testing burden where reasonable: a. Inverter power and efficiency testing required only at lowest inverter output voltage instead of all inverter output voltages.

b. Inverter power and efficiency testing required only at lowest power level for modular inverters.

c. External transformers must be included in inverter efficiency testing when required for interconnection with utility grid

This change would have an outsized impact on technoeconomic model results in SAM, and would lead to less accuracy in modeling overall. While the AC voltage is not used directly in SAM calculations, the calculated weighted efficiencies of the first listed inverter in the equipment list differ based on calculations using the Sandia inverter model:

Table 1. ABB: PVI-3.0-OUTD-S-US-A efficiencies at different output voltages

Output Voltage (Vac)	CEC weighted efficiency
208	95.8
240	96.2
277	96.4

The existing data requirements should be preserved to maintain data robustness and accurate modeling.

The SAM team values the CEC's role in maintaining comprehensive, transparent, and technically rigorous equipment lists and appreciates the opportunity to contribute to this update process. We remain available for further discussion on these topics.