Stakeholder Comments Template

Submitted by	Company	Date Submitted
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Thank you for the opportunity to comment on the Revised Energy Storage and Distributed Energy Resources (ESDER) Phase 3 Straw Proposal.[1]

We appreciate the CAISO's leadership position in enabling retail program participants, particularly those enrolled in net energy metering (NEM), to address current CAISO planning challenges.

As previously expressed in comments by Sunrun, hybrid DC coupled storage systems utilize an inverter with DC inputs for photovoltaic generation and energy storage, which poses a unique metering challenge during the load consumption period. For these hybrid DC coupled storage systems, the inverter output meter during the load consumption period would typically be measuring photovoltaic electricity exported from the inverter. Then, in response to the CAISO's load consumption dispatch, the previously exported electricity would be diverted to charge the DC battery. This response makes the AC output meter incapable of metering the diverted energy going to the battery for these hybrid dc coupled systems.

In order to address this issue for hybrid DC coupled systems, we propose to utilize a hybrid metering methodology. This will include the AC inverter output meter in conjunction with internal DC power flow metering of the battery.

Internal DC power flow and energy dispatched to the DC connected battery can be converted to an AC output using an interpolated value of the CEC approved inverter weighted efficiency listed in the California Energy Commission's eligible inverter list performance standards. This interpolation will use the third party approved efficiency values submitted from the manufacturer for inverter efficiency at percent of rated power output and the following linear interpolation formula for finding a value between two points $(x_1,y_1),(x_2,y_2)$:

[1] http://www.caiso.com/Pages/documentsbygroup.aspx?GroupID=263724F0-4524-4B2B-9497-1C56AA541F0D

$$y = y1 + (x - x1) \times \frac{y2 - y1}{x2 - x1}$$

This type of calculation allows for the use of CEC accepted calculation methodologies for inverter efficiencies and third party verified values.

Sunrun appreciates the opportunity to comment on the Revised Straw Proposal.