



Stakeholder Comments Template

Hybrid Resources

This template has been created for submission of stakeholder comments on the Hybrid Resources Issue Paper that was published on July 18, 2018. The paper, stakeholder meeting presentation, and other information related to this initiative may be found on the initiative webpage at:

<http://www.caiso.com/informed/Pages/StakeholderProcesses/HybridResources.aspx>

Upon completion of this template, please submit it to initiativecomments@caiso.com. Submissions are requested by close of business on **August 13, 2019**.

Submitted by	Organization	Date Submitted
Nancy Rader Dariush Shirmohammadi	California Wind Energy Association (CalWEA)	8/13/2019

Please provide your organization's comments on the following issues and questions. For all topics please explain your rationale and include examples if applicable.

1. Interconnection

Please provide your organization's feedback on the interconnection topic as described in section 3.2.

CalWEA broadly agrees with the premise of the CAISO's proposed approach for processing storage additions to existing interconnection applications and operating projects. However, we ask that CAISO elaborate in detail the charging study that it intends to conduct as part of its reliability assessment. Specifically, we wish for CAISO to articulate:

- What type of studies will be performed (power flow, transient stability, voltage stability, etc.)?
- What operating conditions (system and local load levels, contingency conditions, etc.) will be used to study the reliability aspects of charging?
- What will the results of the study be used for? Are the results intended to inform the Interconnecting Customer (IC) of potential charging restrictions or would they

be used to calibrate the Energy Management System (EMS) for the purpose of CAISO management of storage resources?

- If the charging study determines that no overload condition exists, does this mean the project can “charge at will?” And will the project maintain its “charge at will status,” if any, even after additional storage MWs are added in the area?

2. Forecasting and Operations

Please provide your organization’s feedback on the forecasting and operations topics as described in section 3.3.

CalWEA has no objections to the CAISO’s position on these issues at this time. We, however, reserve the right to offer other comments on this matter as the CAISO’s position evolves.

3. Markets and Systems

Please provide your organization’s feedback on the markets and systems topics as described in section 3.4.

CalWEA has no objection to the CAISO’s position on this matter at this time. We, however, reserve the right to offer other comments on this matter as the CAISO’s position evolves.

4. Ancillary Services

Please provide your organization’s feedback on the ancillary services topic as described in section 3.5.

CalWEA does not have objections with the CAISO’s position on this matter at this time. We, however, reserve the right to offer other comments on this matter as the CAISO’s position evolves.

5. Deliverability

Please provide your organization’s feedback on the deliverability topic as described in section 3.6.

CalWEA broadly agrees with the premise of the CAISO’s proposed approach for studying and granting deliverability status to a hybrid project. However, it is **CRITICAL** that only hybrid resources whose storage component is **fully dispatchable by the CAISO** are treated in the manner presented in the CAISO’s issue paper (as elucidated in the

examples provided in the paper), because the resource is certain to serve system needs only if it is dispatched by the CAISO.

It is common for hybrid VER resources to operate their storage in a manner dictated by their power purchase agreement (PPA) primarily in order to maximize their PPA revenue; this practice may or may not coincide with system RA needs. For example, paired storage facilities that benefit from federal tax credits must charge the storage facility from the co-located renewable energy project, rather than from the grid, which severely limits the operation of the storage and the potential benefits it may provide. Additionally, in a rapidly evolving and unpredictable market, time-of-delivery factors will not reflect grid needs over the lifetime of the PPA and therefore alignment of the seller's and the grid's benefits cannot be assured under typical intermittent renewable resource PPA terms. Under these circumstances, the deliverability of the the combined hybrid project (or storage part alone) should be calculated on a resource-by-resource basis and based on the specific performance of the specific hybrid resource over time (or that of the storage component). This would be similar to the treatment of a Gas QF facility whose NQC and FCDS are established based on its historical performance and not its nameplate capacity.

6. Resource Adequacy

Please provide your organization's feedback on the resource adequacy topic as described in section 3.7.

CalWEA reiterates the point made in response to question 5 on deliverability of a hybrid project for its NQC and RA capacity as well. Again, it is **CRITICAL** that only hybrid resources whose storage component is **fully dispatchable by the CAISO** be treated in the manner presented in the CAISO's issue paper.

7. Metering, Telemetry and Settlements

Please provide your organization's feedback on the metering, telemetry and settlements topics as described in section 3.8.

CalWEA broadly agrees with the CAISO's proposed approach for hybrid resources (and their storage component) with regard to metering, telemetry and settlements. However, we question the premise that CAISO will not be able to control charging and discharging of the storage component of hybrid resources that have a single Resource ID and a single revenue meter. For instance, CAISO could send a dispatch signal to the hybrid VER based its forecast of the VER component and monitor performance based on the total resource meter. Furthermore, a single meter could be added behind the main revenue meter to the VER component of the hybrid resource so that CAISO can continue to calibrate and use its forecasting tool for the VER component.

8. Additional comments

Please offer any other feedback your organization would like to provide on the Hybrid Resources Issue Paper.