Stakeholder Comments Template

Hybrid Resources Initiative: Straw Proposal

This template has been created for submission of stakeholder comments on the **Hybrid Resources Initiative, Revised Straw Proposal** that was held on December 17, 2019. The meeting material 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 January 14, 2019**.**

Submitted by	Organization	Date Submitted
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Please provide your organization's comments on the following topics and indicate your organization's position on the topics below (Support, Support with caveats, Oppose, or Oppose with caveats). Please provide examples and support for your positions in your responses as applicable.

PG&E appreciates the opportunity to engage the CAISO and provide comments on the Hybrid Resource Initiative Revised Straw Proposal. PG&E's comments can be summarized as follows:

- Given the complexities of the net-to-grid operational forecast, there is a clear advantage for scheduling coordinators to elect the co-located option for any mixed-fuel type projects in their portfolio; PG&E proposes an alternative approach for the hybrid resource forecasting requirement.
- The CAISO should develop rules for mixed-fuel type projects transitioning between hybrid and co-located resources, specifically focusing on deliverability and reliability implications.
- The CAISO should clarify how the must-offer obligation for hybrid resources discussed here will be affected by the Resource Adequacy Enhancements Initiative.

1. Terms and Definitions

Please provide your organization's feedback on the proposed terminology and definitions as described in the revised straw proposal.

No comments at this time.

2. Forecasting

Please provide your organization's feedback on the forecasting topic as described in the straw proposal.

(a) Complexities of the net-to-grid operational forecast loop

As currently proposed, the "net-to-grid operational forecast" imposes new informational and system requirements on both scheduling coordinators and the CAISO. The CAISO is required in the proposal to provide a real-time VER forecast to hybrid resource operators. In contrast to the VER forecast currently provided through CMRI, this forecast must be usable for future non-binding intervals and should apply to periods for which the hybrid resource operators are expected to provide the net-to-grid operational forecast.

Unlike the current CMRI real-time forecast, this forecast would be more comparable to the real-time forecast previously provided to PIRP resources (prior to 2014) on a rolling basis; however, this forecast is expected to be at fifteen-minute granularity rather than hourly. This would be difficult and potentially problematic for CAISO to perform.

After receiving the CAISO VER forecast, the hybrid resource operator must provide the CAISO with a net-to-grid operational forecast on the same timeline as the current real-time VER forecast used in the market systems by the CAISO. This would be difficult and potentially problematic for scheduling coordinators to perform.

(b) Proposal to simplify the net-to-grid operational forecast

If the hybrid model is required (i.e. due to a need to guarantee charging of the storage component by the VER component), PG&E proposes a simpler and more appropriate approach to addressing the forecast requirement in which the resource operator sends a forecast (equivalently, a self-schedule) of charging by the storage component, rather than a net forecast.

The charging forecast could be used by the CAISO to modify its VER forecast based on the existing mechanics of forecast generation and use in the market systems, yielding either a modified forecast schedule or modified maximum bid points on a fifteen and five-minute granularity, with no requirement that the CAISO provide any VER forecast on an operational timeline.

The CAISO can provide its VER forecast just as it does at present, through CMRI, for validation and analysis purposes. Although the storage charging forecast is a new system requirement, it does not have the time sensitivity the net forecast would have (i.e., it could be submitted hours in advance and not require modification), and the need for a new system for communicating the VER component forecast is eliminated in this approach.

(c) Transition from hybrid resources to co-located resources

PG&E believes the hybrid resource proposal should include a careful description of how resources utilizing the hybrid resource model would be able to transition to the co-located resources model if appropriate, and vice versa. Such a description should address deliverability, interconnection, RA planning, and qualification for ancillary services. For example, would a new deliverability study be required when a hybrid resource transitions to a co-located resource? Would resources be allowed to switch back and forth? What would the timeline be for switching RA counting methodologies when a hybrid resource transitions to a co-located resource? Would there be any grandfathering clauses allowed for certain treatment as either hybrid or co-located when a transition occurs?

3. Markets and Systems

Please provide your organization's feedback on the markets and systems topic as described in the revised straw proposal.

No comments at this time.

4. Ancillary Services

Please provide your organization's feedback on the ancillary services topic as described in the revised straw proposal.

PG&E views the 'high sustainable limit' concept as an additional burden placed on the resource owner and/or scheduling coordinator which would deter these projects from electing the hybrid option.

5. Metering and Telemetry

Please provide your organization's feedback on the metering and telemetry topic as described in the revised straw proposal.

No comments at this time

6. Resource Adequacy

Please provide your organization's position on the Resource Adequacy topic as described in the revised straw proposal.

For hybrid resources (single resource ID), PG&E supports the CPUC's interim counting methodology that takes the greater of the two RA values of the hybrid components and uses that value as the hybrid resources RA value, subject to deliverability and capped at their interconnection rights. Additionally, PG&E supports the CAISO working closely with the CPUC and stakeholders to develop a fully informed and more permanent QC methodology, however we think that this should come in a later phase of the RA OIR proceeding as operational data from hybrid resources may be needed to establish a more permanent methodology (where an ELCC methodology may be appropriate).

For co-located resources (two or more resource IDs), PG&E agrees with the CAISO that RA counting is relatively straightforward unless there is a transmission constraint and an overbuild of capacity behind a POI. When considering the interconnection rights constraint the CAISO is proposing in this initiative, co-located resources could have a combined Pmax that exceeds their total interconnection rights. This interconnection rights constraint is appropriate for dispatchability reasons, but poses an RA counting problem that the CAISO has identified. PG&E looks at this through two different scenarios: 1) when co-located resources have separate resource owners and 2) when co-located resources have the same owner. PG&E does not see co-located resources that have separate resource owners as a new issue. If a second resource is looking to build behind an existing interconnection, they would need to pay for a transmission upgrade to get full deliverability if their capacity combined with the existing resource exceeded the interconnection rights. This is not new and solves itself. This is an NQC and deliverability issue rather than a QC issue and should be resolved by the CAISO. If the co-located resources have the same owner, then the owner should be allowed to work with the CAISO during the interconnection process to decide how they want the deliverability to be divided between the two resources such that the combined NQC values do not exceed the interconnection rights.

Must-Offer Obligation

PG&E would like the CAISO to clarify how the must offer obligation for hybrid resources is affected by the RA Enhancements Initiative. What are the implications for the net-to-grid operational forecast in real-time for VER driven hybrids if the real-time must-offer obligation goes away?

Additional comments

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

None at this time.