



Stakeholder Comments Template

Hybrid Resources Initiative: Straw Proposal

This template has been created for submission of stakeholder comments on the **Hybrid Resources Initiative, Second Revised Straw Proposal** that was held on May 7, 2020. 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 May 28, 2020.

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.

1. Terms and Definitions

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

AWEA-California has no comments on the proposed terminology and definitions that were formally included in the Second Revised Straw Proposal.

However, additional definition and explanation of strategic forecasting and bidding behavior should be provided by the ISO in future versions of the proposal. By providing additional details, the ISO can help market participants better understand the behavior the ISO is seeking to avoid and will help participants avoid that behavior. Additional discussion on this topic is warranted, especially given that the proposed Dynamic Limit Tool, and potentially other aspects of the proposal, may tend to incent

certain bidding or forecasting tendencies¹ and the ISO should clarify if such behavior would be considered “strategic” or not.

2. Market Interaction for Hybrid Resources

Please provide your organization’s feedback on the market interaction for hybrid resources proposal, as described within the second revised straw proposal.

No comment at this time.

3. Point-of-Interconnection (POI) Constraint for Co-Located Resources

Please provide your organization’s feedback on the POI constraint for co-located resources proposal, as described within the second revised straw proposal.

AWEA-California thanks the ISO for the Addendum that was issued which will allow more than one Scheduling Coordinator for Co-Located resources. This is an important change to the proposal and AWEA appreciates CAISO’s willingness to make the modification after receiving stakeholder feedback.

In addition to the modifications that CAISO made for Scheduling Coordinator restrictions, AWEA-California believes additional modification is needed to ensure that Co-Located resources are able to adequately ensure they can prevent grid charging (in order to meet ITC-related charging restrictions). CAISO appears to have a preference for the flexibility and visibility offered to the market operator under the Co-Located resource construct (as opposed to the Hybrid structure), but failure to provide additional certainty that grid-charging can be prevented under the “Co-Located” resource configuration may tilt resources towards the Hybrid Resource model of market participation and discourage the use of the Co-Located construct. The Co-Located construct would be more attractive if a mechanism can be established to ensure grid-charging can be prevented (if desired) for roughly the first five years of operation in order to address ITC-related charging restrictions.

One avenue for addressing this may be to allow certain Co-Located resources an option to implement a POI constraint that includes a Pmin of “0.” This optional choice could be limited to approximately the first five-years of operation, consistent with the ITC grid-charging restriction timeline. For those that choose to utilize this constraint, it could ensure that the storage device behind the POI is not charging from the grid. Other options may be available to help ensure Co-Located storage devices are not charged from the grid and are discussed more under the “Additional Comments” section.

CAISO should note that, while economic bidding may allow Scheduling Coordinators to make tradeoffs between loss of ITC due to grid charging and energy prices, in some

¹ As AWEA-California understands the proposal, the Dynamic Limit Tool can only limit output from a previously submitted forecast level and cannot be used to demonstrate an increased ability to generate from a hybrid resource due to increased VER output. Given this, hybrid resources may tend to rely on the upper end of VER forecast expectations when submitting bids. CAISO should clarify if this type of practice would be deemed “strategic forecasting/bidding” and if CAISO sees such an approach as problematic.

cases the loss of ITC credits may be more (on a \$/MWh) basis than could be made up via market revenues. Thus, an option outside of economic bidding, such as a POI Pmin of 0 constraint for Co-Located resource, should be considered. If such an option is not available, it may create an incentive for resources to move to the Hybrid Resources market participation model.

4. Metering

Please provide your organization's feedback on the metering topic, as described within the second revised straw proposal.

No comments at this time.

5. Resource Adequacy

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

The interactions of the hybrid resources policies, policies being development under the Resource Adequacy Enhancement initiative, and the outcome of the CPUC's determination of Qualifying Capacity (QC) for Hybrid Resources must all be carefully considered in a holistic manner. The ISO should evaluate and consider future modifications to the Hybrid Resources proposal based on the outcome of the CPUC's Track 2 decision on QC of hybrid resources and subsequent activities in the RA Enhancements initiative.

Notably, care should be taken that the combination of these different proposals does not inappropriately limit the RA contribution of hybrid resources. This outcome could easily occur if there is not adequate consideration of the interaction of these different policies. For instance, the CPUC's QC methodology may "derate" (to some degree) the QC of hybrid resources due to concerns around ITC charging restrictions. Additionally, if these resources use outage cards to notify the CAISO of their limited operating range, that appears it may affect the calculation of the resource's unforced capacity (UCAP) as proposed in the RA Enhancements initiative. Additional discussion and consideration of the use of outage cards and their interaction with the resource's QC calculation, UCAP calculation, and penalties during Availability Assessment Hours and should be provided in a subsequent version of the proposal (hopefully at a time when there is additional certainty in these related initiatives/proceedings).

Additional comments

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

- **Co-Located Resources' Ability to Restrict Grid Charging**
 - As discussed above, it will be important for CAISO to provide a mechanism, in addition to economic bidding, for Co-Located resources that contain a storage component and need to meet ITC-related grid

charging restrictions to adequately ensure the storage device will not be charged from the grid.

- It appears that there are cases where economic bidding would not be sufficient to protect against the potential loss of ITC revenues due to grid-charging (in other words, there are cases where the loss of ITC revenues could be in excess of \$1,000/MWh).
- There are several options that might be considered to provide this protection and, if implemented, they could help reduce the incentives for resources to utilize the Hybrid Resource configuration in lieu of the Co-Located model. As discussed above, CAISO could consider augmenting the POI constraint to allow resources an option to include a Pmin of “0” for the time that the ITC-related charging restriction is in place.
- CAISO should also consider whether the storage component of the Co-Located resource could submit an outage card for the charging range of the resource for hours when the VER component is not expected to generate.
 - For solar + storage resources (which is likely to be the majority of these types of configurations in the coming years), these outage cards would typically be submitted during non-solar generating hours, which would only prevent the storage resource from charging at times when it is unlikely to charge anyway, but could still provide useful certainty for these resources.
 - CAISO should explain how/if this approach might impact a resource’s UCAP or if RAIM penalties would apply for outages on the charging side of a resource.
- **Maximizing VER output Under a Co-Located Structure**
 - AWEA-California supports comment made by CalCCA which requests implementation of a market rule that would allow co-located storage resources to deviate from a Dispatch Instruction to the extent that the associated VER resources that is generating “as-capable” has deviated from its Dispatch Instruction. Under the proposal put forward by CalCCA, the injection to the CAISO grid at the POI would remain the sum of the Dispatch Instructions to each component of the Co-Located Resource, but the ability for VERs to generate to their maximum potential would be increased. This rule would allow increased generation from VERs and support state clean energy policies.
- **Hybrid Resources: Dynamic Limit Tool and Ability to Generate as Capable**
 - The Second Revised Proposal includes use of a Dynamic Limit Tool for Hybrid Resources. This appears to take the place of the “net to grid forecast” in the prior proposal.

- The Dynamic Limit Tool would only allow resources to *limit* their real-time bids and would not provide an option for resources to communicate an *increase* in their ability to generate.
- AWEA-CA urges CAISO to evaluate whether there might be an option that would enable the VER component of the Hybrid Resource to “generate as capable” or otherwise communicate an increased ability to generate to the ISO.
- **Additional Definition of the High Sustainable Limit is Needed**
 - CAISO should provide additional detail on the “High-Sustainable Limit” required for Hybrid Resources. It is not clear exactly what equipment might be necessary to provide this data point to CAISO and clarification should be provided prior to inclusion of this element in the proposal.
- **Need for Future Rule Modification of Co-Located and Hybrid Resources**
 - AWEA-California greatly appreciates CAISO’s work to implement market participation options for Co-Located and Hybrid resources. This is groundbreaking work on new, advanced, clean-energy technology. As the hybrid and co-located resources come online and their penetration on the grid increases, valuable experience will be gained. CAISO should remain open to the possibility of making modifications to Hybrid and Co-Located market rules as operational experience increases and lessons are learned.