



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.

APS presently supports a single owner/operator and scheduling coordinator (SC) behind a single point of interconnection (“POI”); however, consideration in the future is needed to support multiple SCs. APS anticipates greater complexity in owner/operator and scheduling coordinator in future years.

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.

APS does not support the ISO inability to monitor the state of charge (SoC) of the Energy Storage Systems (ESS) for hybrids. APS believes the ISO should monitor Participants for unintentional/intentional infeasibilities to prevent adverse market prices. For future consideration, cycling of the resources to meet deficiencies in variable energy resource (VER) output may negatively impact overall energy throughput capacity of the storage components.

Industry experts infer that full control of SoC by the ISO would be the most economical solution. The second revised straw proposal states that the SC is fully responsible to optimize SoC and the ISO made this decision based on “feedback from developers” that stated “allowing hybrids to ‘self manage’ state of charge may be ideal.” APS believes the proposed hybrid construct allows for flexibility of SoC management, mainly for collection of ITC. However, it is a major change for the SC by removing the classification as VER. For example, an ESS could be limited by annual throughput and the renewable resource could be operating without its ESS to reduce variability. Without the dynamic limit tool fully developed, it is difficult to accept the removal of VER classification. Therefore, APS does not currently support the ISO complete removal of the variable energy resource (VER) component for hybrids and requires additional information on the dynamic tool.

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.

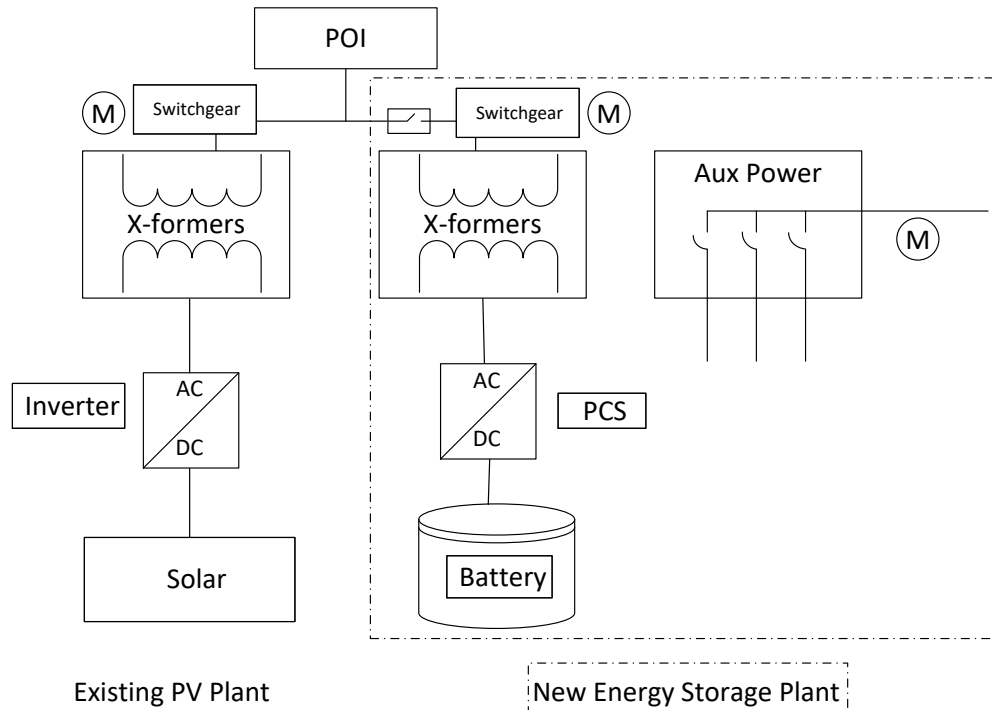
APS supports the POI constraint. Additionally, APS supports the ISO proposal to lift the virtual requirement that the combined Pmax must be equal or less than the sum to the interconnection rights of a co-located resource and impose a market constraint on the two resources to ensure that joint dispatch does not exceed the physical interconnection rights at the POI.

APS requests additional information pertaining to the ability to dynamically alter dispatch during market infeasibilities. During normal market conditions, the constraint shall ensure that joint dispatch does not exceed interconnection rights at the POI. A dynamic limit would assist with calculating the opportunity costs of a potential re-conductor/installing parallel conductors. A dynamic constraint limit may aid in maximizing flexibility and reliability of resources dispatched into the market during such outlying infeasibility conditions, yet will not resolve physical limitations at the POI.

4. Metering

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

APS noted that the ISO has adopted more accommodating/ambiguous language when referring to telemetry configuration for hybrid resources. The presentation from the August 27, 2019 Hybrid Resources Metering Working Group showed on slide 27 an AC telemetry configuration that is probable for existing PV sites with ESS added post construction. This slide noted this metering layout is an example for separate resource IDs. APS requests confirmation that this configuration (as shown below) could also be used for single resource ID. Conversion of existing sites for DC coupling or adding additional meters where both resources connect would require considerable redesign.



5. Resource Adequacy

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

APS has no comment at this time.

Additional comments

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

APS has no additional comments at this time.