Stakeholder Processes: Hybrid Resources Initiative
Co-Located Resource Components, for Fall 2020 Implementation

Summary of Submitted Comments

Stakeholders submitted five (5) rounds of written comments to the ISO on the following dates:

- Issue paper comments: August 13, 2019
- Working group comments: September 10, 2019
- Straw proposal comments: October 21, 2019
- Revised straw proposal comments: January 14, 2020
- Second revised straw proposal comments: May 21, 2020

This document summarizes the most recently submitted stakeholder comments on the second revised straw proposal, which served as the final proposal for the components of policy related to the co-located resources. This document summarizes the comments related to the co-located components of the policy, summarized by each proposal component.

Stakeholder comments are posted on the hybrid resources initiative website here:
http://www.caiso.com/StakeholderProcesses/Hybrid-resources.

Co-located resources will be subject to an aggregate capability constraint

APS - Supports the POI constraint.

PG&E - Requests clarifying language from the CAISO regarding how market awards are limited for co-located resources behind a POI constraint.

SDG&E - Requests the CAISO to clarify how it will limit the dispatch of co-located resources at the point of interconnection if the resources are unevenly sharing the interconnection

Wellhead - Supports the proposed POI constraint, as amended.

WPTF - This does not seem to enable clean contracting and easy market participation.

Management reply –
Management received a few written questions from stakeholders regarding how the Aggregate Capability Constraint (ACC) will work, and specifically how it will work based on interconnection agreements between multiple owners of co-located resources. The proposal notes that the ACC will be a new market constraint that will be imposed in the day-ahead and real-time markets. This constraint works identically to transmission constraints, in that if flow is below the limit, then no shadow prices are imposed; but if flow is above the limit, then a shadow price is applied and the market will limit the flow to the limits established by the interconnection rights. Deliverability status will not be considered by market solutions, only market bids from the resources behind the constraint.

The implementation in 2020 will include energy only and will include AS in 2021

CPUC - Staff support the concept and design of the interconnection rights constraint and advocate for implementation of the full constraint, including ancillary services (AS), as soon as possible... in contrast to the ISO's proposed phased schedule of implementation.

EDF - Does not believe that this rush is necessary to fix the Master File problem for those resources, and that the framework would be more coherent and rational by keeping the package together as a whole.

LSA-SEIA - Does not believe that this rush is necessary to fix the Master File problem for those resources, and that the framework would be more coherent and rational by keeping the package together as a whole.

Management reply –
Management received a number of requests from stakeholders to not rush this proposal, and implement the hybrid and co-located concept at one time. Management does not think this is prudent, as there are many storage resources that will likely be modelled as co-located scheduled to come on-line prior to the Fall 2021 implementation date. Management advocates that a model available for them as they come on-line is important, even if that model does not include ancillary services.

Pmax values for co-located resources will not be limited by the interconnection
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.

Management reply –
Management thanks APS for their comments.

Co-located resources will be priced at the point of interconnection
- **If co-located resources exceed POI limits the ISO may reduce resource Pmaxs**
- **ISO may re-open this component of proposal if there are reliability concerns**
  CPUC - Staff believes that the resources should be paid in a way that incorporates the constraints that limit dispatch of the resource. In this case, that means pricing the resources with the price that occurs at the resource side of the POI constraint and not the grid side of the constraint.

  DMM - Consider reflecting congestion cost from point of interconnection constraint in co-located resource pricing.

  SCE - Supports the ISO proposal to price CLRs at the POI and believes pricing behind the POI is unnecessary. Pricing should include information relevant to where a resource is interconnected rather than any information behind the POI.

  WPTF - Generally supports the co-located constraint, but also asks that the ISO consider the broader implications with stakeholders prior to taking this to the Board... It is unclear to WPTF whether behind the POI congestion should be included in the nodal LMP and even if the ISO will allow separate Pnodes by resource ID.

Management reply –
The ISO received stakeholder feedback supporting, opposing and questioning the proposed pricing paradigm. Management understands the viewpoint of the stakeholder comments, but continues to advocate for co-located resources to be priced at the point of interconnection. This is consistent with the ISO practice to not include congestion from elements that are not on the ISO-controlled grid, such as the point of interconnection. This also maintains parity for prices between hybrid and co-located resources.

Co-located resources may submit bids from multiple scheduling coordinators

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.

AWEA - 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

CalCCA - Supports the change made in the Second Revised Straw Proposal – Addendum, eliminating the single scheduling coordinator requirement for co-located resources.

CESA - A single SC requirement for all the assets would be overly restrictive and would hinder the economic viability of projects that have been meticulously brokered by several parties. CESA appreciates the ISO's swift response to this issue.

MRP - Supports the ISO's elimination of the single SC requirement for co-located resources in the May 13, 2020 Hybrid Resources Second Revised Straw Proposal – Addendum.

PG&E - Could the ISO confirm that market awards inconsistent with bids will be eligible for bid cost recovery, even while those market awards are spread across multiple resource owners/SCs?

SCE - Supports the ISO's Addendum published on May 13, 2020 that removes the previously-proposed Co-Located Resources (CLRs) one Scheduling Coordinator limit.

WPTF - Supports the ISO decision to remove the single SC rule behind a POI and appreciates the ISO's quick decision to publish an addendum.

Management reply –
Management received a number of concerns during the stakeholder meeting for the second revised straw proposal. Management supports allowing multiple scheduling coordinators, and feels the appropriate controls are in place to allow for this.

NGR resources with a VER component will be required to submit MET, forecast and HSL data to the ISO

8-Minute Solar - Suggests that ISO define high sustainable limit and dynamic limit in the definitions. Specifically add examples of how high sustainable limit is determined and how it is measured and communicated to the ISO.

SDG&E - Believes it is reasonable to require the resource owners or have the ISO provide forecast data for the variable energy resource portion of the hybrid resource.

Management reply -
ISO staff began reaching out to scheduling coordinators that will be operating co-located resources in the near future to discuss how this information will be reported and how to make an easier glide path for the ISO to receive this data. This information is collected in other ISOs and may be something that is already available through the variable energy resource electronic control software. Management is committed to ensuring an understanding from market participants for supplying this data.

Issues related to deviation in co-located storage
8-Minute Solar - Suggests that in the co-located resource case that the ISO permit PV generation to replace battery generation if irradiance unexpectedly increases and the combined net of PV generation potential + battery energy storage system dispatch exceeds the POI limit.

CalCCA - Encourages the ISO to implement a market rule that allows co-located storage resources to deviate from a Dispatch Instruction to the extent that the associated VER resource that is generating "as-capable" has deviated from its Dispatch Instruction.

EDF, LSA-SEIA and Six Cities- Adopt a stakeholder suggestion on the May 7th conference call to provide operating flexibility for the storage Resource ID in a Co-Located Resource configuration to accommodate Variable Energy Resource (VER) Resource ID production above real-time Dispatch Instructions.

Management reply –
A number of stakeholders requested additional authority and functionality to absorb the difference in generation between variable energy resource production and forecast values. Management seriously considered requests from stakeholders to implement such functionality. Although this functionality may be easy to conceptualize, implementation presents several challenges. These are outlined in further detail in the July 15, 2020 memorandum to the Board. At this time management is not prepared to include this functionality in the proposal. Market participants can elect to operate as a hybrid resource instead of a co-located resource, which allows for employment of their own on-site optimization between their hybridized VER and storage devices.

Issues related to investment tax credit (ITC)
8-Minute Solar - Allow the battery to only charge from its partner renewable resource for the ITC period. The ITC period can be captured in the LGIA and added to the master resource file.

AWEA - 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... allow certain Co-Located resources an option to implement a POI constraint that includes a Pmin of "0."

DMM - Bids should be used in lieu of outage cards to achieve economic objectives.

SCE - The ISO should consider additional tools, such as outage cards, to help mitigate the risk that ITC credits will be lost.

Management reply –

A number of market participants noted that investment tax credits could be essential to financial viability for some new storage projects. Tax credits are reduced when the resource charges from the grid, i.e. when on-site solar generation is not producing. The department of market monitoring suggests that this be managed via the market per bid-in price, instead of using an outage card or a blanket prohibition on the resource from charging. Management is inclined to follow this path forward, and notes that investment tax credits for solar resources are bid into the market today. To the extent that market prices are insufficient compensation for the loss of investment tax credit and this can be demonstrated, the ISO may consider alternatives, including limiting times when specific storage must offer charge capability into the market.