**Hybrid Resources - Phase 1**

**Response to Stakeholder Comments on Draft Tariff Language and**

**Explanation of Additional Revisions since July 17, 2020 Stakeholder Call**

| **Tariff Section** | **Stakeholder Comment** | **CAISO Response** |
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| 4.8.2 | **LSA/SEIA & EDF-R:** Modify third sentence of section 4.8.2 as follows:  Scheduling Coordinators for Hybrid Resources with a Hybrid Resource VER Component ~~Generating Facilities that include a Generating Unit that would be a Variable Energy Resource absent co-located Generating Units~~ must provide the CAISO the same meteorological and outage data ~~for the variable Generating Unit~~Hybrid Resource VER Component, ~~including the Generating Unit’s High Sustainable Limit, and~~ as specified in Appendix Q for Eligible Intermittent Resources. | The CAISO has removed draft tariff language related to the High Sustainable Limit. The CAISO has moved this proposal to phase 2 of its hybrid resource initiative. The CAISO has modified the language in section 4.8.2 to state  *Scheduling Coordinators for Hybrid Resources that include an individual component that is capable of being separately registered with the CAISO as an Eligible Intermittent Resource must provide the CAISO with the meteorological data for that component that would be required by Appendix Q, if it were registered with the CAISO as an Eligible Intermittent Resource.* |
| 4.8.2 | **LSA/SEIA & EDF-R:** Add the following sentence to section 4.8.2:  Hybrid Resources with a Hybrid Resource VER Component must also provide the High Sustainable limit for that capacity if the Scheduling Coordinator will be submitting Ancillary Services bids for the Hybrid Resource  Again, since HSL is only a Hybrid Resource element (and then only for Ancillary Services provision – see above), suggest deferral to Phase II. | The CAISO has removed draft tariff language related to the High Sustainable Limit. The CAISO has moved this proposal to phase 2 of its hybrid resource initiative. The CAISO has modified the language in section 4.8.2 to state  *Scheduling Coordinators for Hybrid Resources that include an individual component that is capable of being separately registered with the CAISO as an Eligible Intermittent Resource must provide the CAISO with the meteorological data for that component that would be required by Appendix Q, if it were registered with the CAISO as an Eligible Intermittent Resource.* |
| 4.8.2 | **LSA/SEIA & EDF-R:** Modify the last sentence of section 4.8.2:  ~~Where such~~ Scheduling Coordinators for Hybrid Energy Resources electing ~~elect~~ to use the forecast provided by the CAISO, would ~~they are~~ also be subject to the Forecast Fee. | The CAISO has incorporated this proposed change into its final draft tariff language. |
| 4.8.2 | **SVP:**  Can the CAISO clarify how referenced Appendix Q (Eligible Intermittent Resources Protocol) would apply to Hybrid Resources as referenced in proposed tariff § 4.8.2? Namely, will CAISO update Appendix Q to the tariff to specifically apply to Hybrid Resource requirements? Given the CAISO’s definition of “Hybrid Resources” proposed in the April 29 straw proposal stating such resources are ineligible to be VERs (though the proposed tariff definition does not include such restriction), it remains unclear how Appendix Q will apply to Hybrid Resources. | The CAISO has revised the tariff to clarify that the meteorological requirements in Appendix Q applicable to wind generation and solar generation of Eligible Intermittent Resources will apply to wind generation and solar generation components of Hybrid Resources, respectively, |
| 4.8.2 | **Additional revision since 07/17/2020 stakeholder call** | The CAISO has deleted the reference to outage information specified in Appendix Q in the second sentence of existing tariff section 4.8.2. Appendix Q addresses meteorological information. Section 9 of the tariff specifies outage requirements for all resources. |
| 27.13 | **LSA/SEIA & EDF-R:** Use of the term “Generating Unit” instead of Generating Facility in the first sentence of section 27.13 requires more discussion. For example:  -The term “Generating Facility,” not “Generating Unit,” is used in the ACC definition.  -The term “Generating Facility” would seem to apply to all the Resource IDs under a single GIA, both Hybrid and Co-located.  The term “Generating Unit” would seem to apply to each of the Resource IDs in each Generating Facility. Thus, each Hybrid Resource, and each Co-located Resource ID, would be a separate Generating Unit. | The CAISO has modified the draft tariff language in section 27.13 to reflect that the CAISO will apply the Aggregate Capability Constraint to a Generating Facility comprised of Generating Units with different Resource IDs and with a single Point of Interconnection. |
| 27.13 | **LSA/SEIA &EDF-R:** In the second sentence, the term “co-located” (not as a defined term) is confusing, since (based on the definition) it could apply to:  -Generating Units associated with different Generating Facilities (which is not the intent); and/or -Hybrid Resources that are part of a Generating facility with other Hybrid Resources and Co-located Resources (defined term). | The CAISO has modified the draft tariff language in section 27.13 to reflect that the CAISO will apply the Aggregate Capability Constraint to a Generating Facility comprised of Generating Units with different Resource IDs and with a single Point of Interconnection. |
| 27.13 | **LSA/SEIA & EDF-R:** In the third sentence, the use of the term “co-located” (non-capitalized) is confusing. | The CAISO has modified the draft tariff language in section 27.13 to reflect that the CAISO will apply the Aggregate Capability Constraint to a Generating Facility comprised of Generating Units with different Resource IDs and with a single Point of Interconnection. The CAISO has added a definition for Co-located Resource. |
| 27.13 | **LSA/SEIA & EDF-R:** In the fifth sentence, modify the reference to Interconnection customer to refer to Generating Facility instead. | The CAISO will apply the Aggregate Capability Constraint to Generating Units co-located at a Generating Facility with a single Point of Interconnection, if an Interconnection Customer elects for the CAISO to do so. |
| 27.13 | **LSA/SEIA & EDF-R:** In the sixth sentence, delete the word co-located. | The CAISO has modified the draft tariff language in section 27.13 to reflect that the CAISO will apply the Aggregate Capability Constraint to a Generating Facility comprised of Generating Units with different Resource IDs and with a single Point of Interconnection. The CAISO has added a definition for Co-located Resource. |
| 27.13 | **LSA/SEIA & EDF-R:** We understand the need for a “default” PMax allocation method. However, as noted above, the Master File problem does not apply to Hybrid Resources, only Co-located Resources, and there may be multiple Hybrid and Co-located Resources in the same Generating Facility. Thus, the IC needs a means of focusing the impact of this “punishment” on the offending Resource IDs and preserving the PMaxes of the other Resource IDs. Recommend adding the following sentence:  However, the Interconnection Customer may request a re-allocation of those PMaxes as long as the total does not exceed the Interconnection Service Capacity of the Generating Facility. | The CAISO has included changes consistent with this recommendation. |
| 27.13 | **LSA/SEIA & EDF-R:** Modify seventh sentence of section as follows:  Scheduling Coordinators may not offer or self-provide Ancillary Services into the CAISO’s Markets from Generating Units that are subject to Aggregate Capability Constraints before the CAISO provides notice that this restriction is removed.  This would allow removal of the restriction without another tariff filing. Also request that the CAISO commit in the cover note to FERC to implement this additional fix as soon as reasonably possible (e.g., before Fall 2021 if possible). | The CAISO has included changes consistent with this recommendation. |
| 27.13 | **Additional revision since 07/17/2020 stakeholder call** | The CAISO has made changes to this section to clarify that Scheduling Coordinators may not receive Uncertainty Awards from Generating Units that are subject to Aggregate Capability Constraints until the CAISO issues a market notice stating this restriction will no longer apply. The CAISO anticipate lifting this restriction in the Fall of 2021. |
| 27.13 | **SVP:** Where CAISO references “Business Practice Manuals” in proposed tariff § 27.13, can CAISO clarify the scope of issues that will be addressed in the BPMs? Does CAISO intend to publish new information in a BPM regarding how the Aggregate Capability Constraint is applied? Alternatively, is the reference to the BPM in proposed tariff § 27.13 intended to pertain to the existing BPM provisions regarding the Day-Ahead Market and Real-Time Market Awards and Real-Time Dispatch? | The CAISO has published a Business Requirements Specification (BRS) on its website that indeitifes an initial list of affected Business Practice Manuals. This list remains subject to change. Please see section 5.2 of the external BRS dated July 16, 2020. |
| Appendix A  Definition of Hybrid Resource | **Additional revision since 07/17/2020 stakeholder call.** | The CAISO has revised the definition of Hybrid Resource to read as follows:  A Generating Unit, with a unique Resource ID at a single Point of Interconnection, with components that use different fuel sources or technologies. |
| Appendix A  Definition of Hybrid Resource Dynamic Limit Tool | **LSA/SEIA & EDF-R:** Add definition of  Hybrid Resource Dynamic Limit Tool. This definition is needed if this is intended to be a comprehensive tariff amendment, including Hybrid Resource definitions.  Hybrid Resource Dynamic Limit Tool  The means by which the Hybrid Resource SC may provide an operational forecast of the overall capability of the Hybrid Resource, netting the operations of all Components, to the CAISO. This forecast should incorporate the following: Any VER Component Forecast, any storage Component State-of-Charge forecast, and the anticipated charging or discharging operation of any storage Component. This forecast will only be provided and utilized in CAISO Real-Time markets and is optional on the part of the Hybrid Resource SC**.** | The CAISO has removed draft tariff language related to the High Sustainable Limit. The CAISO has moved this proposal to phase 2 of its hybrid resource initiative. The CAISO will also address the need for a definition for Hybrid Resource Dynamic Limit Tool in phase 2 of its hybrid resource initiative. |
| Appendix A  Definition of Mixed Fuel Project | **LSA/SEIA & EDF-R:** Add definition of  Mixed Fuel Project. This definition is if this is needed whether this tariff filing is intended to cover definitions for both Co-located and Hybrid Resources, or just the former.  Mixed-Fuel Project  A project located behind a single POI with more than one different fuel type, which could be configured as either a Hybrid Resource (single Resource ID) or Co-located Resources (multiple Resource IDs, each with a different fuel type). | The CAISO has not included a definition and does not believe it is necessary to implement phase 1 of its hybrid resource initiative. |
| Appendix A  Definition of Point of Interconnection | **LSA/SEIA &EDF-R:** See comments related to applicability of Aggregate Capability Constraint to EIM. | In the real-time market, the CAISO can make the Aggregate Capability Constraint available to EIM Resources to manage the PMax limitation of co-located EIM Participating Resources and/or non-participating resources at their point of interconnection. EIM participants support extension of this functionality to the EIM participating resources and the EIM Governing Body has advised the CAISO Board of Governors that they support this functionality. |
| Appendix A  Definition of Point of Interconnection | **Additional revision since 07/17/2020 stakeholder call.** | The CAISO has made clarifying edits to this definition that complement changes made to the proposed definition of Aggregate Capability Constraint. |