



Stakeholder Comments Template

Hybrid Resources

This template has been created for submission of stakeholder comments on the Hybrid Resources Issue Paper that was published on July 18, 2018. The paper, stakeholder meeting presentation, 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 **August 13, 2019**.

Submitted by	Organization	Date Submitted
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CPUC staff commends the ISO for finding time to study the important question of hybrid resource implementation. As California moves toward higher levels of renewable integration, new types and configurations of resources will be necessary or helpful in that process. This initiative can be an important step in the direction of developing one new type of resource.

Staff requests that CAISO focus on addressing the long-term modeling needs for storage resources in the market and reconsider expectations for scheduling coordinators to respond to exceptional dispatch issues. Staff also has additional questions related to single resource ID modeling.

Addressing long-term goals and challenges

Staff is concerned that some of the potential issues that have been discussed are focused on short term convenience and minor cost savings for potential resources. While cost savings can be good, this is not the same as cost effectiveness. Cost effectiveness balances those savings against the impacts they may have on availability and quality of services. At this stage, Staff has seen that the single resource ID model may provide savings to some resource owners but may also decrease the level of service that a given set of resources can provide.

CPUC staff encourages the ISO to focus their resources first on the modeling decisions and challenges that can facilitate economically efficient outcomes. This includes ensuring full market participation of hybrid resources with multiple or component resource IDs, as these configurations of hybrid resources seem to represent the most advantageous and flexible options. After these

issues are resolved, it may be appropriate to continue to work on enabling single ID hybrid resources to participate in the market and interconnect to the grid.

Single resource ID modeling vs multiple or component ID modeling of hybrid resources

The ISO's presentation and paper focused on the differences between single resource ID modeling and multiple resource ID modeling of hybrid resources. The advantages to the ISO of having each component of the hybrid resource registered and metered are clear, as are potential advantages to the market in the form of additional flexibility. Currently, staff understands that the single resource ID modeling *may* make it easier for resource owners to claim tax credits for charging the storage portion of the resource from a renewable source. Additionally, the single resource ID modeling may allow for short term storage to be used to smooth output from a variable energy resource and increase the RA capacity that such a resource can provide. The benefits of component resource ID modeling include demonstrable operational benefits, while the benefits of the single resource ID modeling seem to be theoretical at this point. Given these differences, CPUC staff recommends that the ISO focus this initiative on the challenges that may be faced by component resource ID models.

CPUC staff asks that the CAISO address the following questions:

1. Given the apparent favorability of the component resource ID modeling, what advantages are seen by the ISO for the single resource ID modeling?
2. If the ISO moves forward with a single resource ID modeling option, will there be a process to convert these resources to component ID modeling in the future?
3. Has the ISO considered a new resource type that may combine some of the advantages of the two options into a single approach? This may introduce new possibilities such as scheduling the on site charging according to market prices among others.

Without more information on the benefits of the single resource ID modeling, staff does not understand how California or the market in general will benefit by allowing resources to be modeled or configured in a way that is designed primarily to simplify claiming a tax credit. CPUC staff are open to further consideration of this direction if potential benefits are clearly explained or demonstrated.

Exceptional dispatch issues with multiple resource IDs

On page 20 of the issue paper, the CAISO suggests that they have some concern about how component ID resource models would be impacted by an exceptional dispatch (ED). The paper suggests that it may be possible that a single component could receive an ED that would, given the output of other components, violate the combined resource's interconnection rights. In the paper, the ISO suggests that to deal with this another part of the resource would need to be backed down to avoid violating the interconnection rights. Staff believes that it should be CAISO's responsibility to ensure that it does not issue EDs that violate reliability constraints. Otherwise the CAISO may be asking SCs to take action to ensure they do not follow CAISO issued exceptional dispatches.

In the example of ED issues described in the Issue Paper, the ISO suggests that the intended outcome would be for an SC to provide less aggregate power than the CAISO operators were asking for. CPUC staff believes that the ISO should ensure that it can model the component ID resource in aggregate. CPUC staff believes that additional modeling may be necessary to represent any hybrid resource as a single resource, with multiple components and multiple meters. Staff recognizes that this is a significant change and may take time to develop. However, a new multiple component resource ID model may be able to avoid issues like the ED issue mentioned above, and may allow for clearer representation of on-site charging, price based scheduling of on site charging, and other advantages. For those reasons CPUC staff believe that studying a model that allows multiple component resources to participate as a single entity but register multiple IDs with CAISO master file would be worthwhile.