

CPUC Staff Comments on the Commitment Cost Enhancements (CCE 3) Workshop

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CPUC Staff appreciates that CAISO held this workshop on CCE 3 issues in response to the requests made by Commissioner Florio in his letter to CAISO management in March, and particularly appreciates the efforts made by CAISO to develop a robust workshop agenda focused on unresolved issues, as identified by stakeholders. CPUC Staff expect to continue to closely collaborate with CAISO on the issues raised in Commissioner Florio's letter.

We found the July 27th workshop to be very productive in helping stakeholders better understand CAISO's views on the procedures that use-limited resources (such a Proxy Demand Response and Storage) will need to follow after implementation of CCE 3. In particular, the discussion on applying for "use limited status" and what would constitute a "start-up" and "minimum-run" cost for proxy demand response (PDR) resources was a critical one. CPUC Staff also found the explanation of CAISO's opportunity cost model, and the discussion around how it could apply to PDR to be very worthwhile.

It is now clear that the challenges stakeholders have faced in understanding the effects of the CCE 3 initiative's proposal on RA rules stem from the fact that, in essence, the CCE 3 proposal modified significant parts of the Reliability Services Initiative (RSI) proposal, which the CAISO Board adopted in 2015, and for which implementation is still underway (and in fact tariff filings are incomplete). Because the CCE 3 initiative never made it clear that its intent was to modify many aspects of the RSI, and the initiative proposals did not demonstrate how CCE 3 implementation would affect the procedures laid out in RSI, these working groups meetings were necessary to sort out issues.

Additional complexity exists because some tariff amendments for RSI were approved by FERC, but not all, and those approved haven't been implemented yet through the BPM process. This workshop clarified that CCE 3 will require further changes to the same BPM provisions that are being modified for RSI implementation, for example, the new outage cards created by RSI. From a process standpoint, this is incredibly burdensome and confusing for stakeholders, and therefore CPUC Staff suggests that CAISO either revise the "final" CCE 3 stakeholder proposal and take it back to the Board, or consider making these changes through the ongoing RSI 2 initiative. Either way, a document should be produced for the CAISO board that shows (in redlines) how the RSI 1 proposal has essentially been superseded by the CCE 3 proposal.

Despite the productive workshop, which included CAISO presentations and stakeholder discussions, there are still many issues that are unresolved, or will require further diligent consideration,

either through carefully drafting tariff language, or through BPM changes. In some cases, it still is not apparent to CPUC Staff how clarity will be reached around procedures and documentation. Therefore, CPUC Staff offers these comments and makes requests for items to be laid out clearly in CAISO's post workshop "working action plan."

1) There are primary unresolved issues related to long-term Storage contracts, where Storage resources will participate as Proxy Demand Response

In the updated issues matrix at the end of the presentation slides from July 27th, CAISO indicates that the issue of "how to address RA replacement risk under CCE 3" is "resolved" because CAISO has created an "interim" implementation period for 2017 that CAISO thinks will allow PDR providers to "determine which party assumes risk." CPUC Staff notes that this issue is wholly unresolved, because it is unreasonable to expect the parties to long-term Storage contracts, which are already either approved or in the CPUC approval process, to be re-negotiated. To "resolve" this would mean that the parties to these 10 year storage contracts, which are based upon annual starts and run-hour limits, would essentially need to re-negotiate contract terms to take into account the potential need for a Scheduling Coordinator (in many cases, the storage provider) to *replace the full capacity provided for in the contract for any given month* if CAISO's new optimization doesn't leave them with any dispatches or run-hours after a certain point in the year. This is unrealistic. Replacement would be very costly, and, because this was not a known requirement at the time of contracting, the contracts do not account for this potential cost.

It may be that the testing period for the Opportunity Cost model (which CAISO says will be in 2018) may demonstrate that this model can be made to work well for Storage resources, and that these resources' replacement risk is actually quite low, but this is highly uncertain. There need to be provisions in place in case the opportunity cost model as developed today cannot be used for storage. CAISO should not automatically implement the opportunity cost model after 2018, and should plan for a contingency in case another model will need to be developed for storage resources.

2) Amendments to tariff section 40.6.4.1 will need to provide specifics on the documentation for use-limited applications and a BPM change process also seems necessary. Further discussions are needed on Masterfile inputs for DR and Storage.

Tariff section 40.6.4.1 specifies what type of documentation and data is required or relevant for a Use-Limited (ULR) Data Template. If CAISO intends to amend this tariff section to remove the default-use-limited status of DR and Storage, it should also amend the discussion of documentation for ULR filing and clarify what types of documents are acceptable. Before CAISO develops tariff language for this section, further discussions with DR and Storage stakeholders need to occur regarding what types of documentation they have, and what could be provided to the CAISO. This workshop did not go into that level of detail. Also, DR and Storage resources should not be required to show run hours or starts beyond what is provided for in their contract, nor should they be required to provide any technical documentation on the specific storage technology or resource or facility operations in the case of DR. The reasons for this are further explained below.

If FERC approves the tariff amendments when filed under CCE 3, then it will be necessary to have a BPM process around the use-limitation data submission template, to ensure that clear guidelines are developed for DR and Storage on how they complete the template, how often it is updated, etc.

An important issue was raised at the workshop about the CAISO Masterfile and what CAISO expects to be included in the Masterfile for a use-limited resource like DR or Storage. CAISO seemed to be drawing an analogy between what a traditional generator would be required to show in the Masterfile (the physical capabilities of the resource) and what a use-limited resource should be required to show. CPUC Staff does not think that the “physical capability” of a DR or Storage resource has any relevance in the Masterfile for various reasons. For DR, there is no equivalent to the “physical ability”—all that is relevant is what a DR provider has contracted with customers to do, ie, the number of events that they are contracted for and the number of hours contracted for.

For storage, stakeholders raised similar concerns in response to CAISO’s implication that these resources should show something in the Masterfile other than what is contracted. The physical abilities of a storage resource to charge/ discharge and cycling times are not what is relevant to CAISO’s use of the resource, because what matters for a storage resource and for the customer is the *frequency* of use and cycling, and that is what is provided for in the contract between a customer and storage provider, and between the storage provider and the LSE. In some cases, for existing contracts, the use-limitations are specified in the contract approved by the CPUC. This should clearly be sufficient to demonstrate ULR status. In other cases, the CPUC approved contract between the LSE and the storage provider is not specific with regards to use-limitations, and so CAISO would need to accept the limitations spelled out in a contract between the storage provider and the customer.

Overall, only the economic use of the resource is relevant to the resource’s participation in the CAISO market—not the resource’s *physical* capability over the lifetime of the resource. The expected lifetime is impossible for CAISO to judge from the “technical documentation” and therefore we do not think this should be required as part of the documentation for a ULR application.

3) CAISO needs to provide written clarification around outage cards that will change post-RSI implementation.

CAISO stated at the workshop that a “new” outage card will be created for proxy demand-response (PDR) resources to use post CCE 3 implementation that will *not* require that PDR resource to be designated as use-limited through the ULR registration process. In other words, CCE 3 will create a provision for a new outage card, other than those created by RSI, which only applies to PDR resources, and is separate from use-limited outage cards. Since this clarification does not appear in the CCE Draft Final proposal, approved by the CAISO board, we would like it to appear in some other written form such as an addendum to the Board approved document, or, clearly captured in the tariff amendments CAISO is developing for CCE 3.

Furthermore, it would be helpful for CAISO to clarify for the CCE 3 stakeholders which PRRs are creating the outage cards for fatigue breaks & monthly outages for ULRs. CCE 3 stakeholders are clearly very interested in these BPM change processes and would appreciate CAISO cross- referencing those

PRRs that we should be paying attention to, and which impact many of the topics discussed at this workshop.

3(a) Annual-use limited outage card does not provide availability (RAAIM) penalty exemption

CAISO clarified at the workshop that although use-limited resources will be able to submit an “annual” outage card when an annual limitation has been reached (on the number of starts or run hours), this card is not actually effective because the resources can still get penalized under RAAIM or required to be replaced, if they are shown as RA for a later month. Essentially, the only effect of the annual card is not needing to submit subsequent monthly outage cards.

4) CAISO needs to consider complementary tariff amendments and/or BPM changes to re-define “start-up costs” and “minimum-load costs” to be relevant to demand response and storage resource costs.

If DR and Storage resources are going to be optimized in CAISO markets, it is critical that they are able to reflect accurate actual or “proxy” start-up and minimum load costs. There was significant discussion at the recent workshop about how a “start-up cost” would be defined for a DR or Storage resource, and what kinds of costs CAISO would consider. Workshop participants seemed to agree that essentially, a start-up cost for DR is an “event cost” from the perspective of the DR participant that represents the minimum cost of being able to drop load. Workshop participants seemed to agree that for DR resources, these costs are highly variable, and aggregators would need the ability to update costs frequently as portfolios change. CAISO clarified that the minimum load cost for DR is a \$/hour cost of curtailing load at the minimum level. It seems that for DR, these two costs may often overlap and could be hard to separate. Further discussion may be needed before tariff or BPM language could be developed.

This was the first time start-up and minimum load cost equivalents for Storage has been discussed in the CCE 3 context. It was helpful that STEM offered that perhaps an equivalent to these costs is “deviation from a customer’s use plan.” In other words, a customer has planned to cycle their storage unit on-and-off as it makes best business sense to them, but, if they are going to be dispatched by CAISO, then the cost to change that use plan could be a type of “proxy” start-up or minimum load cost. Another type of cost related to minimum load for storage is the cost of fuel during the specific time period used to charge the resource, which is obviously highly variable. This also clearly needs further discussion before tariff or BPM language could be developed. For traditional generators, start-up and minimum load costs are static, and not highly variable, so the guidelines for those costs do not easily transfer.

5) Workshop Presentations around the Opportunity Cost model clarified important points regarding resource optimization vs. availability, and highlighted why it is important to have a robust testing period for the model before CAISO relies on it completely, and also to consider alternate cost calculations

CPUC Staff appreciated CAISO’s explanation of the opportunity cost model, its purpose, design, and how it would be used to optimize the dispatch for use-limited resources throughout a calendar year. The presentation and discussion leads CPUC Staff to continue to be concerned about the implications of

full implementation of the model, and specifically, whether resources will be penalized for being used in a manner the model determines to be “optimal.”

The example CPUC Staff provided at the workshop is: if a use-limited resource with 100 starts per year is optimized in the model, and the model determines that the best time for the resource to be dispatched are in the months of April-August, if the resource is actually used in this way (without intervention by the resource’s scheduling coordinator) then, the resource will have no starts left for the months of September- December. In theory, this is fine, because the system used the resource when it was most efficient, which is what the MSC said its goal was in recommending that the CAISO adopt an opportunity cost model. This also highlights why the opportunity cost model should be optimizing not necessarily across 12 months of the year, but should be able to optimize for a resource that is only contracted in certain months of the year (like spring and fall, or only summer).

The workshop clarified that if this use-limited resource runs out of starts, it will now be subject to either penalties for unavailability for three months, or will have to replace its capacity with another resource (at a potentially high cost). LSEs contract for a resource often for the entire year (or in the case of current DR contracts, only for half the year), but if the optimization of resources is up to the CAISO’s models, they could be used up in spite of contract provisions and LSE expectations. This risk was not anticipated at the time the CPUC supported the RSI 1 initiative and the new RAAIM structure. CPUC Staff does not think that it is logical or fair to penalize resources for being used in the most “efficient” way, as determined by CAISO’s model. MSC opinion is consistent with ours, stating that resources shouldn’t be penalized if the optimization model dispatches them in less than all of the months for which they would otherwise be expected to be available (based on their RA contracts. RAAIM penalties should not be applied if the “test period” for the model in 2018 is not successful and CAISO cannot demonstrate that they are justified. CAISO needs to consider how to realistically balance the goal of optimizing markets with maintaining reliability.

Stakeholders suggested that, possibly for the last 24 hours (or so) of availability of a resource, the opportunity cost should be based on the RAAIM penalty price, because essentially what is being avoided through dispatch is the RAAIM penalty. In other words, when a resource is nearing its annual limit, the model should switch to a different source of “data” for the opportunity cost of dispatch, so that it values the ability to “reserve” run hours or starts until the end of the year. CPUC Staff supports this concept.

CAISO clarified at the workshop that there will be an interim outage card available to all resources during the testing period for the Opportunity Cost model implementation (2018). It is critical that before the testing period ends, and the model is fully implemented, the rules around RAAIM penalties for resources “optimized” using the model are worked out.