

Stakeholder Comments Template

Submitted by	Company	Date Submitted
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Please use this template to provide your comments on the FRACMOO Phase 2 stakeholder initiative Supplemental Issue Paper posted on November 9.

Submit comments to InitiativeComments@CAISO.com

Comments are due January 6, 2017 by 5:00pm

The Supplemental Issue Paper posted on November 9 and the presentation discussed during the December 9 stakeholder web conference may be found on the [FRACMOO](#) webpage.

Please provide your comments on the Supplemental Issue Paper topics listed below and any additional comments you wish to provide using this template.

Identified opportunity for enhancing flexible capacity product

1. Ramping speed
 - a. Large single hour net load ramps

Comments:

CAISO indicates that it is becoming more concerned with single hour net load ramps. The Effective Flexible Capacity (EFC) is based upon the ability for resources to meet a 3-hour net load ramp. Figures 1 and 2, page 9, show the actual and projected 1- and 3-hour net load ramps. The highest net load ramp periods, 1- and 3-hours, occurs between November and

March. The largest actual 3-hour ramp occurred in December 2015, 10,684 MW, with a corresponding highest single hour net-load ramp of 4,753 MW.

CAISO is concerned that it may not have the ability to meet single-hour net load ramps or to adjust its flexible resource commitments to reflect changes in hourly net load ramps. This could be due to several factors: long-start resources that are not committed in the day-ahead, but are needed in real time, resources that are too slow in their ramping capability, or the fact that we have created a 3-hour net-load ramping need as the basis for determining EFC. (CAISO doesn't identify the last item as a cause of not being able to dynamically match flexible resources with load, but it does appear to be a factor.) In addition, CAISO may not be able to predict with the highest, single hour or three-hour ramp will occur or if it has the resources available to meet it.

The JDRPs accept that CAISO may be facing higher net-load ramps in a particular hour relative to other hours within the maximum 3-hour ramping period. In the actual experience in 2015, one hour represents 44% of the 3-hour ramp, meaning that the remaining 2 hours represent 66%, or, on average, 33%/hour. So, the question is, are the estimates of the three-hour net load ramp in adequate for meeting ramping needs? Do we need to examine some requirement around single highest hourly ramp? Would that address the concerns with long-start or slow ramping resources? Or is the estimation fine, but we need to have a different way of engaging resources? Even if we had a single hour net load ramping requirement, CAISO still has the problem of predicting when that highest single hourly ramp would occur and to be able to predict the variance in ramping needs on an hour-to-hour basis. Given all of that uncertainty, it is not easy to say how to address the concerns that CAISO is raising because it is not easy to understand the frequency with which the variance is occurring and why.

Before further action is taken, CAISO must provide more information to help stakeholders understand the extent of the problem. If CAISO has adequate resources available in most hours, but is having some difficulty with the maximum ramps, and the occurrence is infrequent, then it is not clear that any significant adjustments are necessary. Perhaps the estimates of ramping needs have been too conservative, but it is hard to tell from the information provided.

CAISO has 3 categories of flexible ramping resources: base, peak and super-peak. CAISO did not describe which of the three categories of resources is either not ramping quickly enough or is not being picked up in the day-ahead market, and therefore not available for real-time dispatch. It would be helpful to understand how the concerns with ramping and real-time availability match with the 3 categories of flexible ramping resources. It would also be helpful to understand how much, on a percentage basis, of each type of resource the CAISO is receiving.

Before any significant change to the EFC methodology occurs, stakeholders require CAISO to proceed through both a stakeholder process, to explore if tariff changes are required, and through a CPUC Resource Adequacy Process. In those processes, CAISO will have to provide more information as to the nature of the concern and allow parties to contribute toward solutions. The Joint DR Parties does not support making changes to EFC except as a result of a CAISO stakeholder and CPUC Resource Adequacy Process.

- b. The transition from low net loads to steep ramps

Comments:

The JDRPs do not have a comment; but, reserve the opportunity to submit supplemental comments in response to those of other parties.

- c. Intra-hour variability

Comments:

CAISO indicates that there is significant amount of intra-hour variability. The highest variability does not necessarily correspond with the highest net-load ramp. More information is needed to understand what is driving variability of that degree, 17,000 MW, before JDRPs can offer any practical comments or solutions.

2. Cycle time and flexible capacity qualifications

Comments:

CAISO states that it may look to the Commitment Cost Enhancement 3 (CCE 3), which includes the introduction of opportunity costs, as a basis for reviewing the number of starts per day and downtime required by resources after dispatch. In conversations with CAISO, the JDRPs were not considering using the use limitation designation within CCE 3, because of the opportunity cost and replacement requirements. However, the JDRPs had not considered the implications of CCE 3 on EFC. Therefore, the CAISO must be very clear as to how it intends to utilize CCE 3 for purposes of adjusting requirements for EFC.

3. High minimum operating levels from both RA and flexible RA

Comments:

CAISO states that it will examine the Pmin/Pmax ratios, in conjunction with number of starts, etc. High Pmin/Pmax ratios allow CAISO to bring resources on and off line more quickly to respond to load fluctuations. JDRPs offer no comments at this time; but, reserve the right to submit supplemental comments based on those of other parties.

4. Most significant net load ramps occur on weekends or holiday weekdays

Comments:

CAISO indicates that significant net load ramps occur on weekends or holiday weekdays. As such, CAISO has proposed to revise the availability requirements for Tier 3 resources, which are currently only required to be available during non-holiday weekdays. CAISO has produced no data as to the frequency with which the highest net load ramps occur on weekends or holiday weekdays. Nor, has CAISO produced any information as to the amount of Tier 3 EFC upon which they are relying. The JDRPs would be surprised if there is a significant amount of DR that is participating as a Tier 3 resource and therefore creating an availability problem for CAISO during weekends or holiday weekdays. Having some sense of scale of the problem created by Tier 3 resources necessitating a change in the availability requirements would be helpful.

Secondly, the CAISO's proposed change would result in a significant amount of commercial and industrial load being ineligible as a Tier 3 resource. CAISO acknowledges this fact by recognizing that the weekend and holiday weekday ramps are driven by residential load. Yet, the solution proposed by CAISO would make C&I customers ineligible for participating as a Tier 3 resource for the 5 days that the load is online, if CAISO requires the Tier 3 resource to have the same amount of capacity available on all 7 days. While, certainly, there are some C&I customers who have nearly 100% load factors, there are many that do not. If CAISO would allow parties to differentiate between 7-day and 5-day capabilities, that would provide a more accurate depiction of the Tier 3 EFC availability during those respective times and would allow C&I customers who are not available on weekends to be available on weekdays.

5. Significant quantities of long start resources may limit the ISO's ability to address real-time flexibility needs

Comments:

CAISO states that it has significant quantities of long-start resources. Figure 1, on page 7, shows that approximately 75% of the fleet has a ramp rate of 10-15 MW/min or less.¹ Figure 1 also shows that 64% of the resources providing EFC have a ramp rate of 10-15 MW/min or less. There is obviously a lot of long-start resources with lower ramp rates.

JDRPs are concerned that DR may be considered a long-start, or slow-start, resource and may be limited in participating as EFC, even though the majority of resources that currently comprise long or slow start resources are traditional generation resources. While this issue is still under examination by the CPUC and the CAISO, the JDRPs would recommend not pre-determining the outcome of that examination here.

In other words, the combination of reducing long-start resources and changing the availability hours of Tier 3 resources would go a long way to reducing the ability for DR to participate as a

¹ Note that the charts are not labeled as to the units associated with the various ramping categories.

Tier 3 resource. Again, the JDRPs would be very surprised if DR is driving this problem, assuming a small amount of Tier 3 resources are actually participating as EFC. Further, Tier 3 resources are limited to providing only 5% of the super-peak net-load ramping requirements. DR, by design, is limited to the amount it can contribute toward meeting these net-load ramps.

CAISO doesn't state where, in the spectrum of ramp rates, it would like for resources to be. Some DR resources can be flexible under specific conditions to be dispatched with less notice, keeping in mind that Tier 3 resources are there to meet super peaks, which shouldn't be a daily need. Examining whether resources have flexibility to be dispatched on shorter notice under certain conditions should be part of the long-start/slow-start process.

6. There is currently no means in place for the ISO to assess the likelihood that the flexible RA showings will adequately meet all ramping needs

Comments:

This statement by CAISO is perplexing to the JDRPs. CAISO cannot discern if the EFC that is available to it will be adequate to meet all ramping needs, and yet the EFC was developed with CAISO's input and analysis as to its need for resources to meet the three-hour net-load ramp. If that is no longer the appropriate marker for EFC, then it is incumbent upon CAISO to define what it needs. It is not appropriate to establish an EFC and then provide CAISO with unlimited and non-transparent flexibility to adjust those requirements as it sees fit. If the current requirements are inadequate, then we need to have substantially more information from CAISO about what it does need and work, through the resource adequacy process, to develop that requirement. The JDRPs do not feel comfortable giving CAISO unlimited discretion to make decisions on requirements without any parameters, outside of a formal process that is approved by the CPUC and without input from parties. Also, if CAISO wants to stray from the flexible resource proposal submitted to and approved by FERC, the JDRPs would not support moving in that direction without a filing to FERC seeking modifications to its tariff, pursuant to a stakeholder process.

CAISO must be vigilant in maintaining transparency to engender confidence in its processes and procedures and provide for informed exchanges with stakeholders and in CPUC processes that define resource adequacy. Having requirements and tariffs that can then be manipulated in ways that parties do not see or understand undermines the CAISO, FERC and CPUC processes.

Other comments

Please provide any additional comments not associated with the topics above.

Comments:

