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 Second Revised Draft Framework Proposal posted on April 27, 2018.

Submit comments to InitiativeComments@CAISO.com

Comments are due May 17, 2018 by 5:00pm

The Second Revised Draft Framework Proposal posted on April 27, 2018 and the presentation discussed during the May 3, 2018 stakeholder meeting may be found on the FRACMOO webpage.

Please provide your comments on the Second Revised Draft Framework Proposal topics listed below and any additional comments you wish to provide using this template.

Identification of ramping and uncertainty needs

The ISO has identified two drivers of flexible capacity needs: General ramping needs and uncertainty. The ISO also demonstrated how these drivers were related to operational needs.

Comments:

NRG has no comments on this topic.

Definition of products

The ISO has outlined the need for three different flexible RA products: Day-ahead load shaping, a 15-minute product, and a 5-minute product.

Comments:

NRG looks forward to a fuller explanation of how dispersing the fifteen-minute product will ensure that the five-minute flexibility needs are met.

Quantification of the flexible capacity needs

The ISO has provided data regarding observed levels of imbalances, in addition to previous discussion of net load ramps.

Comments:

NRG appreciates the CAISO's thorough investigation of the needs. NRG encourages the CAISO to make sure that "tail events" are appropriately included when setting flexible capacity requirements.

Eligibility criteria, counting rules, and must offer obligations

The ISO has identified a preliminary list of resource characteristics and attributes that could be considered for resource eligibility to provide each product. Additionally, the ISO has proposed new EFC counting rules for VERs and storage resources that are willing to provide flexible RA capacity.

Comments:

Eligibility Criteria

NRG strongly supports the CAISO's position to not establish maximum start-up time eligibility criteria.

Must-Offer Obligation

The CAISO proposes to impose a 24x7 must-offer obligation (MOO) on resources that are providing flexible capacity.[1] Recognizing that VERs cannot always produce power, the CAISO offers an accommodation: in any given hour, a resource is obligated to offer the lesser of its EFC or its forecast output.[2] Under these proposed rules, a solar resource would have to offer only up its EFC (see below for NRG's comments on assigning EFC to VERs) during daylight hours. Consequently, a conventional resource would have to offer at least its EFC in all 24 hours.

For several reasons, NRG does not support the proposal to extend the MOO to all 24 hours and condition the resource's offer obligation on the resource's forecast output. Taken in combination, this means that one resource (a conventional generating resource) providing flexible capacity would be evaluated in all 24 hours, while another resource (a solar resource) would only be evaluated in the daylight hours, which could be as few as ten hours in the winter. This effectively means that the solar resource is deemed to be performing perfectly in the hours

[1] Second Revised Flexible Capacity Framework at page 28.

[2] *Id.*

in which the sun in not shining – in other words, and somewhat ironically, the resource is at no danger of having its performance degraded in hours in which it cannot provide the desired product. Conversely, the conventional resource is evaluated in every hour, even though the CAISO's needs for flexible capacity are not evenly distributed across each hour – that is, the value of and need for flexible capacity is not the same in all 24 hours in which the resource is obligated to offer. Conversely, the CAISO evaluates the performance of resources providing generic RA across a subset of the most critical hours, even though such resources have an obligation to offer in all 24 hours.

The CAISO's proposal to extend the MOO for flexible capacity to 24 hours coupled with its rules that allow VERs to not even have to offer a product it may be being paid to provide in some hours is not equitable and is unduly discriminatory.

Counting Rules - Assigning EFC to VERs

On the topic of assigning EFC to VERs: the CAISO proposes to assign EFC to VERs by scaling an individual resource's contribution to three-hour net load ramp proportional to the same technology's contribution to the three-hour net load ramp. In so doing, the CAISO ends up with very high example EFC values for solar resources – 84% of nameplate capacity in January and 80% of nameplate capacity in July.[3]

Viewed another way, a resource's EFC could be determined by its ability to ***address*** the CAISO's three-hour net load ramp rather than by its ***contribution*** to that ramp. It is expected that solar resources will be producing, as permitted, at or near their full insolation-driven output across the middle of the day. It is perfectly reasonable to think that such resources are highly flexible in the ***downward*** direction in the middle of the day. Such resources, however, do not have much available ***upward*** flexibility at the time of day, unless their output has been intentionally curtailed. Even then, given that solar is a zero-marginal cost resource, it seems unlikely that solar would be curtailed while another resource with a non-zero variable cost would be generating in the solar resource's place. (That would seem likely only when the value of the flexibility exceeded the cost of producing the energy).

The three-hour net load ramp is driven by the ramp-out of solar resources due to the daily decline in sun angle. Under those circumstances, it seems unlikely that solar resources have much capability to ramp *up* to meet the need that is largely determined by solar resources ramping *down*. It is counter-intuitive to think that a solar resource would have an EFC of 84% of its nameplate capacity at a time when it is ramping down because of decreasing insolation.

For these reasons, while NRG supports VERs being able to provide the system with flexibility, the initial EFC values derived by the CAISO based on the resource's contribution to the three-

[3] Second Revised Flexible Capacity Framework at page 32.

hour net load ramp (instead of the resource's inherent ability to mitigate the three-hour net load ramp) are difficult to understand and seem exaggerated.

Equitable allocation of flexible capacity needs

The ISO has proposed a methodology for equitable allocation of flexible capacity requirements. The ISO seeks comments on this proposed methodology as well as any alternative methodologies.

Comments:

NRG has no comments on this topic.

Next Steps

The ISO is currently planning to issue a draft final framework on June 6, 2018. However, given the schedule change in the CPUC's RA proceeding, the ISO will not release a draft final framework until July 10, 2018. The ISO seeks stakeholder input regarding next steps that should be taken to further enhance the ISO's framework. Options include, but are not limited to, another full iteration or working groups.

Comments:

NRG again encourages the CAISO to clarify the nexus between (1) its proposed flexible capacity framework and (2) how entities will demonstrate through their RA showings that they have procured flexibility adequate to meet their assigned flexibility requirements – whether that will be through (1) an explicit enumeration of Day-Ahead Load Shaping, 15-minute and five-minute requirements by LSE, (2) by an evaluation of an LSE's shown portfolio, or (3) by some other means. Market participants will require a clear understanding of how they will be required to demonstrate they have procured and shown their assigned flexibility requirement, however that requirement may be defined.

Other

Please provide and comments not addressed above, including any comments on process or scope of the FRACMOO2 initiative, here.

Comments:

NRG encourages the CAISO to develop a short narrative that explicitly defines the nexus (or differences) between the FRACMOO2 and Day-Ahead Market Enhancements initiative. Both initiatives are designed to ensure the CAISO has adequate operating flexibility, but in different time frames and through different means (i.e., forward showings and spot markets). This same narrative could be included in subsequent proposals in both initiatives.