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 Draft Framework Proposal posted on May 1, 2017.

Submit comments to InitiativeComments@CAISO.com

Comments are due December 13, 2017 by 5:00pm

The Draft Framework Proposal posted on November 20, 2017 and the presentation discussed during the November 29, 2017 stakeholder web conference may be found on the FRACMOO webpage.

Please provide your comments on the 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 related to operational needs.

Comments:

BAMx and San Francisco appreciate the CAISO's focus on the factors that drive the need for flexible capacity resources, which are linked to CAISO's maximum net load ramp (where net

[1] BAMx consists of City of Palo Alto Utilities, and City of Santa Clara, Silicon Valley Power.

load is gross load less variable energy resources). The CAISO has shown that a portion of the ramping needs are predictable, whereas a portion is uncertain. Each of these components should be reflected in the CAISO's determination of the flexible capacity needs.

Quantification of the flexible capacity needs

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

Comments:

The data provided by CAISO is helpful for understanding and illustrating the CAISO's approach for determining the flexible capacity needs. BAMx and San Francisco believe, however, that more discussion is needed about the appropriate historical data to consider, and about how to incorporate expected changes to the flexible capacity needs based on changes to LSEs' loads and variable energy resources. For example, CAISO proposes to use the historical forecast error between the FMM and RT, with a growth factor, to determine the 5-minute flexible capacity need. Instead, CAISO should consider using historical data to determine the amount of forecast error that is attributable to each type of variable energy resource and to gross load, and then use that information along with projected variable energy resources and forecast load included in LSEs' IRPs to develop its projected 5-minute flexible capacity need. This approach could simplify the needs determination process, particularly as variable energy resources increase their level of participation with bids in the CAISO real-time markets.

Eligibility criteria and must offer obligations

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. Additionally, the ISO has identified a preliminary list of resources characteristics and attributes that could be considered for resource eligibility to provide each product. Additionally, the ISO is considering new counting rules for VERs that are willing to bid into the ISO markets.

Comments:

BAMx and San Francisco believe it is more appropriate to describe the three types of identified RA needs/requirements and the resource characteristics and attributes that meet the needs, rather than to describe these as "products." Whether the CAISO markets need to be modified or additional products are needed for the CAISO to efficiently commit and dispatch the available fleet of RA resources is a separate, though related issue that should be properly taken up in another initiative. For example, if the CAISO must create a new flexible capacity reserve product(s) to ensure it has sufficient resources to meet the FMM and RTD uncertainty, it can and should do so without creating new FMM and RTD RA products. Alternatively, the CAISO could create new constraints within its market models similar to the flexible capacity

constraints, to achieve the same ends. In either case, it can identify the amount of FMM and RTD flexibility it needs and, working with LRAs, the criteria for resources to meet the needs. Its markets will then efficiently commit and dispatch the flexible RA resources.

The distinction between the CAISO's flexible RA needs/requirements and separate market products is perhaps best understood when considering the CAISO's day-ahead shaping needs. BAMx and San Francisco do not see a need for a new day-ahead shaping product. Instead, CAISO has a need/requirement for a certain amount of resources that are capable of being committed and dispatched to meet the CAISO's forecast/predictable day-ahead net load. This need/requirement is not a product. LSEs should procure resources with attributes that are consistent with meeting the three types of needs.

The three types of identified RA needs (Day-ahead load shaping, 15-minute flexibility, and 5-minute flexibility) appear to be a reasonable approach for describing the CAISO's predictable/forecastable and unpredictable/uncertain net load ramping needs. BAMx and San Francisco agree with CAISO that uncertainty between the RTD and actual net metered load should be addressed with regulation resources. However, if CAISO might increase its regulation requirements as a result of increased uncertainty from variable energy resources, then CAISO should revisit its cost allocation for regulation from being based on metered load to also include allocation to LRAs based on their share of the variable energy resources that have created the increased need for regulation.

BAMx and San Francisco believe that more discussion is needed to determine if the required quantities of flexible resources or the must offer obligation associated with Day-ahead load shaping, 15-minute flexibility or 5-minute flexibility should vary in instances where there is a material difference in the quantity of flexible resources needed by the CAISO over the course of the day.

BAMx and San Francisco support continuing to allow use-limited resources to provide flexible capacity. There should be more discussion about potential replacement obligations for use-limited resources that have reached their use-limitation, and associated implications for resource counting rules.

San Francisco has an additional concern that CAISO's requirement that all flexible resources be bid in to the CAISO markets may be overly burdensome, particularly for meeting the Day-ahead load shaping needs. For example, in order to realize the benefits of its TOR resources, San Francisco is required to submit balanced Self-Schedules. In practice, San Francisco attempts to optimize its schedules taking into consideration CAISO market prices and follows a combination of its own net load and the CAISO's overall net load. It would be unreasonable to not recognize

the flexibility provided by ETC/TOR resources, simply because they are required to use Self-Schedules to obtain the benefits of the associated ETC/TOR.

Equitable allocation of flexible capacity needs

Equitable allocation of flexible capacity needs is a critical element of a new flexible RA framework. The ISO seeks comments on potential allocation methodologies.

Comments:

BAMx and San Francisco urge the CAISO to incorporate into the framework a proposal for equitably allocating the flexible capacity needs in a manner that is consistent with its determination of the overall flexible capacity needs and allocates the responsibility for meeting those needs to the LRAs whose LSEs' resources are driving the needs. BAMx and San Francisco believe the approach should be similar to the current flexible RA allocation methodology, wherein each LSE's contribution to the net load ramp are calculated using historical loads and existing and projected variable resources from LSE Integrated Resource Plans.

Other

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

Comments:

BAMx and San Francisco have no additional comments at this time.