Stakeholder Comments Template

Submitted by	Company	Date Submitted
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The Bonneville Power Administration (BPA) appreciates the opportunity to provide comments on the Flexible Resource Adequacy Criteria and Must Offer Obligations (FRAC MOO) Phase 2 November 29, 2017 meeting and draft flexible capacity framework. BPA is supportive of the California Independent System Operator (the ISO) changing its flexible capacity framework to address fundamental gaps between the ISO's markets and operations. BPA supports the ISO's use of general ramping needs and real-time uncertainty as drivers of the flexible capacity need as well as the identification of new flexible capacity products outside the 5-minute timeframe.

BPA would like to better understand how the ISO plans to capture uncertainty in its market co-optimization algorithm to ensure that the resources are being dispatched in the most efficient and effective manner. BPA also encourages the ISO to consider allocating costs to the parties who create uncertainty.

BPA Background

BPA is a federal power marketing administration within the U.S. Department of Energy that markets electric power from 31 federal hydroelectric projects and some non-federal projects in the Pacific Northwest, with a nameplate capacity of 22,500 MW. BPA currently supplies 30% of the power consumed in the Northwest. BPA also operates 15,000 miles of high voltage transmission that interconnects most of the other transmission systems in the Northwest with Canada and California. BPA is obligated by statute to serve Northwest municipalities, public utility districts, cooperatives and then other regional entities prior to selling power out of the region. Nearly all of the Federal Columbia River Power System (FCRPS) and other Pacific Northwest hydroelectric resources are part of an interdependent system of dams, whose operation is bound together by the physics of hydrology. In addition, there are several non-generation uses of these hydro-resources with priorities set higher than the production of electricity (flood control, navigation, fish and wildlife preservation, etc.).

The Pacific Northwest-Pacific Southwest Intertie was constructed in 1964 to provide the benefits of coordinated markets to the two regions. One of the products BPA is authorized to sell –

surplus peaking capacity – could potentially meet several of California's resource adequacy needs and help integrate renewables in the following ways:

- Provide energy to California during the daily peak hours of use;
- Provide a load to use surplus California renewable energy when the peaking energy is returned to the Pacific Northwest (PNW);
- Provide the above benefits without exacerbating California's net load ramping concerns through must run requirements in hours when not needed; and
- Meet those requirements with surplus capacity produced by primarily hydroelectric resources that have no or minimal carbon use.

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:

Accurate identification and quantification of the ISO's flexible capacity needs is an important step in ensuring FRAC MOO is a robust and reliable program. BPA remains supportive of the ISO breaking its flexible capacity needs into two categories, general ramping needs and uncertainty. This will more accurately capture the operational needs of the ISO as opposed to only using the 3-hour net ramp as a metric.

In addition to the identification of these needs, BPA encourages the ISO to create an obligation for uncertainty in its co-optimization algorithm to ensure that the resources can be dispatched in the most effective and efficient manner. This would address some of the questions in the November 29 meeting about dispatch of the flexible Resource Adequacy (RA) resources.

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:

Forecasting uncertainty

BPA's balancing reserve capacity requirements are used to provide within-hour balancing services for the BPA balancing authority area (BAA). Balancing reserve capacity refers to the generation capacity needed to respond to deviations (uncertainty) in forecasted loads and scheduled resource operation. BPA forecasts these amounts of uncertainty by creating methods for estimating regulation, following and imbalance components which measure changes between

expected and actual operation. To forecast the total balancing reserve capacity requirement, BPA uses historical data to create load net generation actual and load net generation schedule data sets. These data sets are used to forecast the overall balancing reserve capacity requirements as well as the individual components. This is then used to ensure that BPA meets a 99.7% planning standard for the BAA.

The data presented by the ISO represents a start at estimating the uncertainty that the ISO experiences in actual operation. BPA suggests the ISO develop a methodology that allows them to forecast the amount of uncertainty they would expect to see over a future RA period based on resources forecast to interconnect and operate during that period.

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:

BPA supports the ISO's development of flexible RA products in different timeframes to address the different flexible capacity needs. Developing separate products for the day-ahead market, the fifteen-minute market, and the five-minute market allows the ISO to design business rules measuring effective flexible capacity for each product that measures the actual capability of the resource to meet the CAISO's needs. Creating an uncertainty obligation for the fifteen-minute market and the five-minute market should allow the ISO to better commit resources to meet the forecasted ramps in the day-ahead market as well as have flexible RA resources available to meet real-time uncertainty.

BPA is supportive of the ISO's proposal to allow intertie resources to participate, including an electrically connected system of resources. BPA would like to reiterate its previous comments, that we support equal access for external and internal resources through a non-discriminatory and competitive process for the flexible RA products. . This will increase the efficacy of flexible RA resources offered into the day-ahead market and the real-time market.

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:

The CAISO should develop a methodology that identifies the sources of uncertainty created by loads and resources and a means for estimating the level of uncertainty for each group. Development of the methodology will raise a range of issues about the correct groups for

estimation purposes. Examples of groups include the net loads of an LSE, the RA resources selected by that LSE, non-RA resources interconnected in the ISO BAA, and imports into the ISO. The level of uncertainty will be different for dispatchable resources and variable resources. LSEs that include many distributed resources will have a different level of uncertainty from LSEs with few distributed resources. BPA addressed this issue by developing a methodology to calculate the total amount of uncertainty reserves and allocate the reserve obligations to the different groups. This is done by taking the uncertainty data for the groups and allocating portions of the diversity benefits from operating as a BAA back to the groups.

Other

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

Comments:

BPA suggests that the ISO select a single product for both the five-minute product and the fifteen-minute product. Both of these products should be 24 hour products. Keeping a single product will simplify the process and create a greater likelihood that the product will become a tradeable product in the bilateral markets.

Creation of a tradeable product will increase the availability of these products from external sources. A number of external resources could provide flexibility to the ISO but lack transmission access to the ISO market. Creating the opportunity to allow those products to be combined with transmission access owned by other entities will increase the supply of flexible capacity with access to California's markets.