Department of Energy

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CAISO Day-Ahead Market Enhancements Initiative
Bonneville Power Administration Comments on the Straw Proposal
March 26, 2020

Submitted by	Company	Date Submitted
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Bonneville Power Administration (Bonneville)[1] appreciates the opportunity to offer strong support of this Day Ahead Market Enhancements (DAME) Straw Proposal. Bonneville commends CAISO staff and the Department of Market Monitoring (DMM) for their extensive documentation of the uncertainty between day-ahead and real-time timeframes, the hour-to-hour ramp infeasibility and the out of market (OOM) actions taken by CAISO operators in Section 4 of this DAME Straw Proposal[2], the CAISO Energy Markets Price Performance Report[3] and the DMM's Q3 Report on Market Issues and Performance[4]. Bonneville believes these documents provide a good description of the reliability issues in the CAISO BAA and the need for enhancements to the existing day-ahead market that more effectively identify and procure the resource attributes needed to serve net load, thereby better positioning those resources and reducing out of market actions. When evaluating this proposal, Bonneville considers three criteria and this Straw Proposal satisfies all three:

[1] Bonneville 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. Bonneville currently supplies 30 percent of the power consumed in the Northwest. Bonneville also operates 15,000 miles of high voltage transmission that interconnects most of the other transmission systems in the Northwest with Canada and California. Bonneville 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.

[2] *Day-Ahead Market Enhancements – Straw Proposal*, CAISO, February 3, 2020, pages 41-48 (Section 4: Need for Day-Ahead Market Enhancements).

[3] *CAISO Energy Markets Price Performance Report*, CAISO, September 23, 2019.

[4] *Q3 Report on Market Issues and Performance*, CAISO Department of Market Monitoring, December 5, 2019, pages 26-28 (Section 1.9: Residual unit commitment), pages 45-46 (Section 1.14: Load Forecast adjustments, pages 92-100 (Section 3.4: Exceptional dispatch).

1) **Reliability** – the market solution should be reliable and CAISO operators should depend far less on the sequential Residual Unit Commitment (RUC) process and their own out of market actions to assure reliability than they do today;
2) **Efficiency** – the market solution should be efficient and reduce the extent of the documented use of RUC and OOM in the CAISO BAA, which are an indication that the market is less efficient than it can or should be; and
3) **Extensibility** – the market solution should be applicable to one or more BAAs; how does a multi-BAA market solution work when each BAA undertakes its own version of sequential RUC and OOM to its own confidence level after the market solution is run?

With these day-ahead enhancements, reliability will be sustained through the addition of Reliability Energy (REN), Reliability Capacity and the Imbalance Reserve Product (IRP). These new products will allow for both incremental and decremental requirements, they will be nodal and they will be co-optimized with energy and ancillary services thereby reducing the CAISO BAA operators' need to go outside the market to position physical resources temporally or geographically to meet net load. Procuring these products inside the market creates a more efficient and effective market solution for the CAISO BAA. Finally, when consistently applied, these IRP and REN products can extend the reliable and efficient solution in the CAISO BAA across multiple BAAs.

In addition, Bonneville generally supports the comments of the EIM Entities on this Straw Proposal and seeks to expand on them here in areas where Bonneville provides particular support for the Straw Proposal or encourages deeper exploration on a specific topic.

As this day-ahead enhancements process has progressed, Bonneville acknowledges some parties have asserted that there is either not an issue with RUC or that the costs associated with the RUC process are low. As a result, they may conclude that the benefits of integrating IFM and RUC don't outweigh documented costs. Bonneville disagrees with these perspectives which are captured in comments submitted by WPTF and encourages further dialogue on how DAME interrelates with CAISO's other ongoing policy initiatives (e.g. Resource Adequacy (RA) enhancements). RUC costs in the CAISO are low because of policy decisions that the CAISO has developed proposals to change. Specifically, RA resources are required to bid $0 into RUC today. This is both inefficient and ineffective because it creates a long, flat supply curve that the CAISO randomly dispatches from since there is no price differentiation. Furthermore, RUC is inferior to the proposed reliability capacity because the existing RUC only allows for incremental supply. Reliability capacity has been purposefully designed to be both incremental and decremental. In Bonneville's operational experience, it is equally important to have resources that can increase or decrease when needed as penetrations of VERs continue to rise.

Please provide your organization's overall position on the DAME straw proposal:

- ✓ Support
  Support w/ caveats
  Oppose
  Oppose w/ caveats
  No position

Please provide written comments on each of the straw proposal topics listed below:

1. New day-ahead market products, including reliability energy, reliability capacity, and imbalance reserves.

Bonneville strongly supports each of these new products and procurement of them through a co-optimized day-ahead market solution as proposed by the CAISO staff formerly known as Option 2. Bonneville believes these products will facilitate ensuring reliability of the Western grid by reducing need for the CAISO BAA to undertake significant out of market actions after the day-ahead market has already committed resources for energy and ancillary services. The reliability challenges of the CAISO BAA are increasing significantly with the growing penetration of variable energy resources (VERs) as evidenced in section 4 of the DAME proposal by the growing net load imbalance (Figure 16), growing operator adjustments (Figure 17), and high frequency of ramp infeasibility (Figure 18).

Similarly, other BAAs throughout the West have similar growing challenges due to complementary public policy objectives and declining costs that are increasing the presence of VERs throughout the West. Other entities are responding by procuring flexible capacity over longer term horizons, which we believe will reduce the pool of available import resources that the BAAs in the West can procure and call upon within shorter-term (ie. day-ahead and real-time) windows.

2. Settlement and cost allocations.

Bonneville believes that the settlement and cost allocations for these new products should follow cost causation. Bonneville understands that this is the CAISO staff proposal on Tier 1 in that reliability capacity and imbalance reserve costs are allocated first to net demand deviation and net virtuals. However, Bonneville would like to better understand the proportions between Tier 1 and Tier 2, since Tier 2 is uplifted to metered demand. In principle, Bonneville would encourage the CAISO to allocate as much as possible to Tier 1, as Bonneville believes this tier most closely follows cost causation. That said, additional work and discussion are needed in this area of the proposal for a better understanding of the settlement implications.

Bonneville supports the inclusion of the GMC in the reliability capacity, imbalance reserves and day-ahead corrective capacity since these products will all be co-optimized through the market like energy and ancillary services are today that similarly bear GMC, which suppliers typically incorporate into their bids.

3. Bidding rules and offer obligations.

Bonneville agrees that the reliability capacity and imbalance reserve awards in the day-ahead market will have must offer obligations into the real-time market requiring awardees to submit

economic bids for the amounts and the hour(s) in which they were awarded RCU/RCD and IRU/IRD.

4. Scheduling rules for variable energy resources.

Bonneville supports the CAISO staff proposals to base the reliability energy schedule for VERs on the system operator's day-ahead forecast of the resource and "to limit the upper economic limit of VER schedules to the system operator day-ahead forecast".[5] Bonneville agrees that scheduling coordinators with VERs could submit virtual bids to economically hedge the day-ahead price if their VER output forecast is different than the system operator's forecast. That said, the system operator's forecast for the VER resources must be known to the market participants in a timely manner ahead of the day-ahead bid submission deadline.

Bonneville agrees with the CAISO proposal to award RCD/RCU only to self-scheduled VERsand the related requirement for self-scheduled VERs to use the CAISO forecast. Doing so will reduce CAISO uncertainty and resolve imbalance. Bonneville also agrees with the proposal to withhold REN payment to VERs that do not submit bids. Doing so will encourage VERs to self-schedule or submit economic bids and thus contribute to market liquidity.

5. Deliverability approach for reliability capacity and imbalance reserves.

Bonneville agrees that the new reliability capacity and imbalance reserve products should be procured on a nodal basis. To achieve this, Bonneville supports the deployment scenario approach put forward by the CAISO since the market solution must have more than one deployment scenario to test in order to adhere to the security constraints in the model. This approach is also similar to the proposed approach to enhance the deliverability of the real-time flexible ramping product.

Similar to the CAISO BAA, the Bonneville BAA has multiple possible scenarios that can cause internal transmission congestion making a zonal solution to capacity procurement less desirable as capacity products could become undeliverable. Therefore, Bonneville believes falling back to zonal procurement of reliability capacity and imbalance reserves would be sub-optimal and encourages the CAISO staff to continue to evolve the nodal solution.

6. Approach for congestion revenue rights.

Bonneville agrees that by ensuring reliability capacity and imbalance reserves are deliverable, their possible flows need to be recognized in the market solution as they may contribute to congestion on the transmission system. As a result, Bonneville supports the CAISO staff approach for congestion revenue rights.

[5] *Day-Ahead Market Enhancements – Straw Proposal*, CAISO, February 3, 2020, page 25.

7. Approach for local market power mitigation.

Bonneville understands that there should be an approach for local market power mitigation that addresses the reliability and imbalance products in the Straw Proposal. However, Bonneville would like to explore options beyond the development of new default capacity bids to mitigate the capacity portion of the day-ahead bids. Bonneville believes that a new default capacity bid could be unproductive, inefficient and cumbersome, as capacity bids could be resource unique and inherently be difficult to predict. Bonneville anticipates that capacity bids may include, among other things, participants' expectations of:

- whether and how their transmission is utilized across each hourly interval or is an existing sunk cost (ie. some of the new products are bid hourly and cleared hourly, while others are bid hourly and cleared on a 15-minute basis),
- bidding that is unique to the type of resource (ie. different default capacity bid for different types of resources).
- what the marginal resource will be on other hours, and
- whether or not they expect day-ahead energy and real-time energy prices to converge over a time period.

To this end, Bonneville believes that revisiting the local market power mitigation approach put forward in the Straw Proposal is warranted. In doing so, the CAISO could explore with stakeholders whether mitigation should apply to either the individual products or the total delivered cost of the sum of all the products bid.

8. Regression approach to determine the imbalance reserve requirement.

Bonneville supports the regression approach. Bonneville commends the CAISO on the analysis prepared and finds Figure 14 particularly compelling in favor of the regression approach. Bonneville has used a similar regression approach in several rate cases for the calculation of its rate case values for within hour reserve requirements rather than a histogram.

In addition, Bonneville supports the CAISO staff proposal to institute a reliability safety net in the Imbalance Reserves Up Requirement (IRUR), which allows an adjustment to be made by CAISO operators and incorporated into the IRUR before the day-ahead market runs so that operators' requirement for more imbalances reserves can be procured through the market instead of an out of market action. Bonneville believes this is a superior proposal that contributes to reliability and market efficiency.

9. Additional comments: