



Stakeholder Comments Template

Day-Ahead Market Enhancements

This template has been created for submission of comments on proposed market design options discussed with stakeholders during the June 20, 2019 Day-Ahead Market Enhancements workshop. Information related to this initiative is available on the initiative webpage at: <http://www.caiso.com/informed/Pages/StakeholderProcesses/Day-AheadMarketEnhancements.aspx>.

Upon completion of this template, please submit it to initiativecomments@caiso.com. Submissions are requested by close of business on July 11, 2019.

Submitted by	Organization	Date Submitted
<i>Kelii Haraguchi Bulk Marketing, Market Analysis kharaguchi@bpa.gov</i>	<i>Bonneville Power Administration</i>	<i>July 11, 2019</i>

Please provide comments on the proposed formulation options described below. In your comments, please explain your rationale and include examples if applicable. Also, recommend any analysis and data that your organization believes would be helpful to review on these option. Include details and explain your reasoning for the type of analysis and data that you suggest.

Before engaging on the merits of either option, Bonneville Power Administration (Bonneville) would like to recognize the magnitude of the problem that the CAISO is trying to solve, acknowledge the solutions already brought to the table by CAISO staff and offer a possible path forward that would accelerate the policy development for the Imbalance Reserve Product while simultaneously pursuing Option 2.

First, the CAISO has offered anecdotes and analysis describing the problems CAISO is trying to solve in multiple disparate policy initiatives:

- In this day-ahead market enhancements initiative, CAISO staff has verbally described the problem of out of market actions stemming from residual unit commitment, manual dispatches, load biasing and other operator actions. In other initiatives, these anecdotes have been documented.
- In the Price Performance report and June 21, 2019, workshop, RUC load adjustments number in the thousands of MWs (page 15), “load conformance in real-time is frequently used” and amounts often exceed +1,000 MW (mostly positive in HASP and more balanced in RTD) (page 16); “uncertainty from day-ahead to real-time is significant” and Net Load

differences from IFM to FMM are often positive, are *growing* year-over-year, and in 2019 have exceeded 2,000 MW *on average* for *multiple* hours (page 19, BPA’s *emphasis* added); and, “All these trends show that there is a significant uncertainty in meeting the net load across the ISO markets; maximum values for these uncertainties can be as high as 9,000MW.” (Report page 41)

- In the RA Enhancements policy initiative July 9th workshop materials, CAISO staff showed that on recent peak days there were 8,454 MW of forced outages on resources that were shown for RA. Bonneville believes this exacerbates the problem that the market operator is addressing with the real-time markets and operator actions.¹ Bonneville recognizes that there are other tools to address RA issues, but also seeks to confirm that this type of supply uncertainty would also be addressed in the development of the IRP.

To Bonneville, these observations indicate that the problem CAISO is trying to address is large, it has grown, and is expected to grow further if not mitigated. Thus the problem demands both quick action and a simultaneous path for more intensive solutions.

Second, in its February 28, 2018 Day-Ahead Market Enhancements Issue Paper and Straw Proposal, the CAISO staff proposed “enhancements to change the day-ahead market from hourly to fifteen-minute granularity, combine the integrated forward market (IFM) and residual unit commitment (RUC) processes, and procure imbalance reserves that will have a must offer obligation to submit economic bids for the real-time market.” Over the nearly year and a half from that straw proposal to present, many have agreed that each of these options could favorably contribute to a comprehensive solution. However, 15-minute granularity has been evaluated and CAISO has discontinued work on it, in part “due to hourly unit commitment and uncertainty of scheduling 15-minute external resources”.²

Currently, options are being presented for reforming IFM and RUC. Parties at the June 20, 2019, workshop simultaneously indicated a preference for the principles espoused in Option 2 and lamented its anticipated complexity. The CAISO also resequenced its planned policy development schedule for this initiative to move draft tariff language and Business Requirements Specification development significantly ahead of its FERC filing. Bonneville supports this resequencing given the anticipated complexity of the IFM and RUC changes. Nonetheless, both parties’ comments and the CAISO’s planned schedule are indications that an already lengthy timeline for policy development and an implementation target in the fall of 2021 could grow still longer before a solution is adopted, approved and implemented.

Third, there was no dissent at the June 20, 2019, workshop that an Imbalance Reserve Product could help solve the problem and the CAISO indicated that it would move ahead with the product under either option. Bonneville also expects that the policy development and implementation for the IRP would be a comparatively less-complex effort than integrating the IFM and RUC.

For these reasons, Bonneville urges the CAISO to accelerate its policy development on the IRP while simultaneously continuing to pursue an integrated IFM and RUC that both values attributes needed for reliable operations and is extendable to a the broader EIM Area.

¹ The uncertainty that IRP is intending to address is that which occurs “between the physical and virtual supply that clears the DAME and the FMM demand forecast” as is the uncertainty described in the Draft Technical Description of IFM-FRP. (see page 8) Bonneville believes the supply-side uncertainty caused by forced outages on RA would be in addition to that.

² Day-Ahead Market Enhancements, Stakeholder Technical Workshop, June 20, 2019, page 4.

1. At this time, does your organization support moving forward with **Option 1: Sequential Integrated Forward Market followed by an after-market Reliability and Deliverability Assessment (Sequential IFM-RDA)**, **Option 2: Integrated IFM and Residual Unit Commitment (Integrated IFM-RUC)**, or undecided. Provide supportive comments (in favor of, or in opposition to) below.

<p><u>Option 1:</u></p> <p><input type="checkbox"/> Support</p> <p><input type="checkbox"/> Support with caveats</p> <p><input checked="" type="checkbox"/> Oppose</p> <p><input type="checkbox"/> Uncdecided</p>	<p><u>Option 2:</u></p> <p><input type="checkbox"/> Support</p> <p><input checked="" type="checkbox"/> Support with caveats</p> <p><input type="checkbox"/> Oppose</p> <p><input type="checkbox"/> Uncdecided</p>
--	--

Option 1: Sequential IFM-RDA

Please provide comments to explain your position on Option 1:

Bonneville opposes the sequential approach for day-ahead market enhancements. Bonneville appreciates the development of the Day-Ahead Imbalance Reserve Product (also known as the Day-Ahead Flexible Ramping Product) as a step forward in explicit pricing and valuation of dispatchable, flexible resources. However, Bonneville also believes continuing with a sequential approach will perpetuate the existing market’s inefficiencies in commitment and procurement of energy, capacity and flexibility in the day-ahead market that result in frequent out-of-market actions by the market operator. As noted by representatives of several entities in the technical workshop of 20 June 2019, the sequential approach has the potential to misallocate scarce generating resources to satisfy the competing energy and capacity constraints in the day-ahead market. As an operator of energy-limited generating resources each with different operational characteristics and limitations, Bonneville actively allocates its own generating resources to simultaneously meet its own energy and capacity needs reliably. As such, Bonneville is acutely aware of the inefficiencies that may arise when utilizing a sequential approach in this task. As a potential supplier of both energy and flexible capacity in the day-ahead market, Bonneville does not support embedding this inefficiency in the enhanced day-ahead market design.

Option 2: Integrated IFM-RUC

Please provide comments to explain your position on Option 2:

In principle, Bonneville supports a market design approach that embeds the procurement and pricing of all distinct products and services within a single, co-optimized market run. In the short term, such an approach allows the market engine to recognize the important trade-offs inherent in procuring energy, capacity, and flexibility, to produce a market solution that is

efficient and most importantly, promotes reliable outcomes. In the long term, the proposed explicit distinction – within the market’s price formation – of relevant attributes of supply resources will help to incent the development of resources with the desired attributes. Bonneville appreciates CAISO’s outline of the Integrated IFM and Residual Unit Commitment approach as a significant improvement over the current (sequential) market construct.

In summary, Bonneville supports moving forward with the Integrated IFM and Residual Unit Commitment approach, with the following caveats:

- It remains unclear to Bonneville which specific aspects of the proposed integrated option are necessarily immutable for the purposes of the stakeholder process (due to, for example, compute constraints, if any, or other unidentified limitations on feasibility) and which aspects are open to modification.
- It also remains unclear if there are pros and cons related to the deliverability constraints that parties did not discuss during the workshop. Bonneville notes that CAISO “may eventually investigate nodal pricing in lieu of a deliverability constraint.”³ Bonneville supports this nodal investigation in principle and asks CAISO whether implementation of nodal pricing would be foreclosed by Option 1?
- Bonneville notes that portions of the day-ahead market enhancements process may interface significantly with other ongoing stakeholder processes to address reliability and that the ultimate design of Option 2 will depend on the outcomes of these in-flight initiatives. Bonneville appreciates the CAISO’s concurrent movement on these related efforts and emphasizes the importance of deliberate coordination across initiatives where there is substantive overlap.

2. Please identify any specific data analysis that your organization recommends. Indicate the data request(s), the purpose of the request(s), and how the request(s) will advise the determination of the day-ahead market formulation, or will assist with determining the procurement target for the new day-ahead product.

Bonneville would appreciate production of and analysis on the following items:

- Means and distributional percentiles of IFM “market participant error”⁴ *conditional* on levels of cleared virtual supply. Bonneville would appreciate enumeration of the relationship between these two variables, since cleared virtual supply is directly related to IFM market participant error and has the potential, under the proposed integrated approach, to impact procurement of reliability capacity.
- Numeric distinction (means and distributional percentiles) of “uncertainty” and “granularity”⁵. The earlier “phased” version of the stakeholder initiative distinguished

³ Day-Ahead Market Enhancements, Stakeholder Technical Workshop, June 20, 2019, page 31.

⁴ Bonneville notes sensitivity in the technical workshop to the use of this term. For clarification, Bonneville uses “market participant error” here to refer to the difference between the cleared physical/virtual supply in the day-ahead market and the FMM demand forecast.

⁵ Bonneville understands these terms to mean 1) the difference between the (hourly) cleared physical/virtual supply in the day-ahead market and the *hourly average* of the FMM forecast; and 2) the (four) differences between the FMM forecasts from the *hourly average* of the FMM forecast.

these two concepts; it would be instructive to examine the relative magnitudes of these market challenges. Further, Bonneville notes the implied fungibility of *reliability capacity* and *flexibility* that is embedded in the initial proposal of the integrated market formulation, but believes the two products are intended to address fundamentally different issues.

- The technical workshop discussion touched on the magnitudes of operator actions and how these magnitudes might compare to hypothetical day-ahead flexibility procurement. Much of that discussion centered on reducing operator actions (and out-of-market compensation), so it would be informative to compare these items, recognizing the difficulty of this task in the absence of an established methodology for determining day-ahead flexible ramping product requirements.
3. Please offer any other feedback your organization would like to provide on presentation materials and discussion for the June 20, 2019 Day-Ahead Market Enhancements stakeholder workshop.

Bonneville greatly appreciates the extended timeline and additional opportunities for stakeholder input afforded to this initiative. While the DAME initiative is focused on enhancing market procurement and price formation in the CAISO, Bonneville recognizes the potential for the current effort to assume a seminal role in establishing market design conventions in a centrally-cleared day-ahead market across a broader footprint. Bonneville welcomes the continuation of the thoughtful, engaging, and open dialogue initiated at the stakeholder workshop.

Bonneville would also like to confirm that the CAISO is planning to schedule a conference call for this initiative prior to the Market Surveillance Committee meeting to better understand the pros and cons that CAISO staff plans to discuss. There was no opportunity to discuss these in the June 20, 2019, workshop.