Comments of Pacific Gas & Electric Company

Day Ahead Market Enhancements – Issue Paper/Straw Proposal

Submitted by	Company	Date Submitted
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Pacific Gas and Electric Company (PG&E) respectfully offers the following comments on the California Independent System Operator's (CAISO) Day Ahead Market Enhancements Issue Paper & Straw Proposal.

PG&E thanks the CAISO for beginning this important initiative. Since the original Flexible Ramping Product design in 2014, PG&E has been supportive of the procurement of ramping products in the Day Ahead Market to allow the CAISO to better account for projected ramping requirements, uncertainty in ramping needs, and the ramping capabilities of long-start units in making commitment and scheduling decisions. In addition to improving the ability of CAISO to operate reliably, modeling such requirements in the Day-Ahead Market should increase the compatibility of the Day-Ahead Market with the Real-Time Market where such requirements were implemented through the Flexible Ramping Product.

PG&E appreciates how the CAISO thoughtfully laid out the issues that support developing an imbalance reserve product and changing the interval granularity of the Day-Ahead Market (DAM). If designed properly, PG&E believes that these changes will have a significant effect on the CAISO's ability to procure reserves, schedule the system to meet grid needs, and to reflect grid needs in energy market prices. While these changes could have an important positive effect on CAISO's markets, their value depends on significant attention to detail. Therefore, it is extremely important for the CAISO to spend the time necessary to develop the details of the proposed changes to the Day-Ahead Market. The CAISO must also take the time to communicate the changes to stakeholders and give stakeholders the time to evaluate the proposals to ensure that the changes are designed correctly. As the significance of these changes is similar to, if not greater than the CAISO's implementation of FERC Order 764, market participants will also need time to ultimately implement these changes into their own systems.

1. <u>The CAISO should revisit lessons learned from the design of the Flexible Ramping Product to prepare for the development of the Imbalance Reserves Product.</u>

Developing the Flexible Ramping Product for the Real-Time Market took considerable time and effort. Problems were identified that required additional time to correct. The CAISO is continuing to identify changes to address implementation challenges.[1] From 2011 to 2016, the CAISO published 17 draft proposals to develop the Flexible Ramping Product. To ensure that the CAISO's Day Ahead Market Enhancements do not require the same amount of time and effort, PG&E recommends that the CAISO draw as much information as possible from this previous experience. In addition to design

[1] February 2nd, 2018 CAISO Presentation to Market Surveillance Committee on Flexible Ramping Product Performance http://www.caiso.com/Documents/Presentation-FlexibleRampingProductPerformanceDiscussionFeb22018.pdf

structure, the CAISO should account for the numerous implementation challenges that the CAISO had and continues to have with the existing real-time flexible ramping product. Some of the issues that occurred that PG&E asks the CAISO to consider include:

a. Clearly laying out the approach that CAISO will use to evaluate the uncertainty it faces in both upward and downward directions in the Day-Ahead Market and how that will be used to define the demand for upward and downward reserves that will be treated in the Day-Ahead market optimization.
b. Defining and considering the interactions between upward and downward reserves and the ramp required to meet changes in schedules when designing the market optimization formulation.
c. Providing numerous scenarios to ensure that the entire range of potential market outcomes are thoughtfully addressed. For example, the flexible ramping product required scenarios that considered the impact of self-schedules, imports, changes in commitment, and biddable variable energy resources (VER) to the product requirements.
d. Providing the market optimization formulation as early as possible and not proceeding to implementation until the formulation is fully fleshed out and evaluated.
e. Ensure sufficient implementation time to perform end-to-end testing of the market enhancements.

2. <u>The CAISO should provide details on how the Residual Unit Commitment process will be integrated with the Integrated Forward Market.</u>

PG&E understands that integrating the Integrated Forward Market (IFM) and the Residual Unit Commitment (RUC) process provides value to the market. While PG&E recognizes the logic of the proposal, the way in which IFM and RUC is combined in a single optimization will affect the value that the market could achieve. For example, different approaches could have different impacts on Day-Ahead prices, market efficiency, and stability. The CAISO should fully describe how it plans to integrate the markets and discuss the likely effects such as the expected effects on Day-Ahead Market prices. The DMM indicated that these effects could be more than expected. PG&E would like to see this issue be at the forefront of the next version of the CAISO proposal.

3. <u>The CAISO should provide more details on the proposal to allow hourly block scheduling for internal resources.</u>

In the Day-Ahead Fifteen-Minute Scheduling section of the CAISO proposal, the CAISO indicates that scheduling coordinators will have the option to select block scheduling for resources. This option will keep the schedule at the same megawatt value for the duration of the operating hour or multiple hours. The CAISO proposal also indicates that if the block scheduling is not selected, the resource schedule may change on a fifteen-minute basis. The CAISO is initially proposing to allow this option to internal and intertie resources. PG&E asks the CAISO to clarify how it is intending to allow this option in practice. PG&E has initial concerns related to allowing virtual bidding to provide hourly block bids. In addition, PG&E would appreciate if the CAISO could describe why introducing discrete variable will not have a significant impact on the time it takes the CAISO’s Day Ahead optimization to solve.

4. The CAISO should describe in more detail how resources can fulfill 15 minute awards using hourly bidding parameters.

In the CAISO's Day-Ahead Fifteen-Minute Scheduling proposal, the CAISO explains that the bids provided by scheduling coordinators will be submitted for an operating hour, which will be used for all four 15-minute intervals. This is similar to the current real-time market where the same hourly bids are used for both the fifteen-minute market and real-time dispatch. PG&E supports the CAISO's approach towards using hourly bids from scheduling coordinators, as modifying the Software Infrastructure Business Rules (SIBR) web user interface to support 15-minute bidding may be an expensive proposition. During the March 7th Stakeholder meeting, the CAISO indicated that this change would likely be a critical barrier to processing market results in a timely manner. However, PG&E does not clearly understand how resources will be expected to comply with imbalance reserve product awards through hourly bids if the imbalance reserve awards are dynamic between the four intervals within the hour. For example, would resources be required to bid in real-time, for each hour, the full range of the minimum 15-minute interval of scheduled imbalance reserves up to the maximum 15-minute interval of scheduled imbalance reserves within that hour? The CAISO should clarify the resource obligations associated with imbalance reserves in its next version of its proposal.

5. The CAISO should explain in more detail the provisions for non-performance and for cost allocation of imbalance reserves.

The CAISO proposes in Section 4.4 of its Straw Proposal to enforce no-pay provisions if a resource is awarded imbalance reserves but is unable to submit an economic bid in real time. The CAISO explains that the resource will also be charged for the costs associated with the uncertainty movement allocation of the resulting flexible reserve product. However, there will be no rescission of payments for imbalance reserve award related to the deliverability, undispatchability, or unavailability, in contrast to the current rules that apply to ancillary services. In its next proposal, the CAISO should better explain how deliverability, undispatchability, and unavailability could occur with the dispatch of imbalance reserve awards, and why rescission of payments is inappropriate. The CAISO should have more discussion on the potential options for penalties associated with non-performance of the imbalance reserve awards, drawing upon the CAISO's existing methods to ensure delivery and compliance. PG&E looks forward to the settlement formulas associated with the imbalance reserve product to better understand the interaction between upward and downward awards, the use of upper and lower economic and operating limits, as well as how the two-tier cost allocation proposed will function for this product. In addition to cost allocation of imbalance reserves, the CAISO should explain how exceptional dispatch costs that occur due insufficient imbalance reserves are allocated to scheduling coordinators, and if changes could be made to allocate exceptional dispatch costs to scheduling coordinators that do not perform consistent with their imbalance reserve awards, as well as any potential CPM costs associated with the exceptional dispatch.

6. The CAISO's Day Ahead Market Enhancement Revised Straw Proposal would benefit from a section that defines the new terms used in the 15-minute Day Ahead Market and the Imbalance Reserves Product.

To better understand the changes associated with 15-minute Day-Ahead awards, stakeholders, including PG&E, would benefit from a list of definitions of various concepts the CAISO is introducing through this initiative. A few terms that PG&E wishes to see better defined are upper and lower economic limits, upper and lower operating limits, as well as net imbalance reserve deviation.

7. <u>The CAISO should provide any initial findings related to its historical 15 min forecast error assessment as soon as practical.</u>

There was discussion during the Stakeholder meeting whether the CAISO had, or had the ability to obtain, Day-Ahead load and VER forecasts on a 15-minute basis. The CAISO indicated that they already had this data. PG&E is pleased with this development. The assessment described in the FRACMOO2 stakeholder process would be based on a linearized schedule of Day-Ahead hourly forecasts. PG&E supports the CAISO using the most accurate data to assess the imbalance reserve product, and would appreciate any initial findings the CAISO has from this assessment as soon as practical.

8. <u>The CAISO should include additional details related to expected changes to other market mechanisms in its next Proposal.</u>

While PG&E appreciates that the issue paper and straw proposal is meant to be a high-level document describing the initiative and initial outline of the CAISO's proposal, we ask the CAISO to begin addressing the important topics related to other potential market costs associated with the proposed changes. These topics include:

   a. The commitment process in IFM/RUC for a resource to provide imbalance reserves, including the characteristics the resource must have to be selected to provide imbalance reserves that would necessitate commitment in the IFM/RUC and the characteristics the resource must have to provide reserves without commitment in the IFM/RUC. Similarly, CAISO should clarify the conditions in which a resource that is on-line can be de-committed to provide downward imbalance reserves in the combined Day-Ahead IFM/RUC.
   b. The market where commitment cost recovery is assigned for start-up, transition, and minimum load costs for long start resources procured for imbalance reserves committed in the combined IFM/RUC, for short start resources procured in the combined IFM/RUC and committed in the RTM, and for short start resources procured in the combined IFM/RUC and not committed in the RTM.
   c. When the CAISO plans to provide market participants with 15-minute Day Ahead Load and VER forecasts to allow participants to properly evaluate the use of CAISO's forecast rather than other forecasts available. PG&E asks the CAISO to provide these forecasts at least six months prior to the implementation of the 15-minute day ahead market.
   d. The implementation timeline associated with this initiative. This timeline is important because significant IT planning and business process changes will be needed to adapt to these changes.
   e. Expected updates to Variable Energy Resource RA Must Offer Obligations to accommodate changes to RAAIM settlement to solely assess Day Ahead bidding performance.
   f. How the CAISO will incorporate or modify the existing Standard Ramping process to fit the new 15-minute award methodology if a resource uses the hourly block scheduling

process, awarded in 15-minute segments, and makes use of both methodologies during different, adjacent hours.

g. How a resource's Day Ahead energy will be assessed if the resource is unable to be dispatched in accordance with its hourly bids, due to resource ramp rate limitations, when moving between hourly bid segments (i.e. as is accounted for in the Real-Time markets using Residual Imbalance Energy)
h. How the 15-minute award values for generators would affect any associated physical inter-SC trades. If inter-SC trades will be subject to the conversion risk currently seen in the FMM market, where reductions in schedule below the physical trade quantity result in CPT adjustments.
i. Whether and how Bid Cost Recovery will be applied to resources that use the block scheduling option the CAISO is proposing will be available to all resources.