Comments of Pacific Gas & Electric Company

Day Ahead Market Enhancements – Revised 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 Revised Straw Proposal.

PG&E appreciates how responsive the CAISO has been to stakeholder feedback in this initiative including providing a settlements worksheet and technical appendix as well as the revision to the timeline to reflect the breadth of work remaining in this initiative. However, PG&E has concerns in the following areas:

1) The interplay of the Day Ahead Market Enhancement (DAME) with other initiatives (mainly related to Resource Adequacy and the Energy Imbalance Market / CAISO expansion),
2) The potential for unanticipated effects of this change on other market operations,
3) The need for specific examples to clearly identify the CAISO proposal and potential changes for stakeholder processes, and
4) The need to maintain principles of cost causation, particularly regarding commitment cost for virtual bids.

The CAISO committed to providing a full scope of work to allow market participants to ensure sufficient IT planning for implementation of the CAISO's proposed changes. PG&E appreciates this commitment. Having a dialog on these issues earlier rather than later will result in identification of challenges early enough in the process to address issues prior to implementation.

1.) The Interplay of DAME with Other Initiatives

A. <u>The CAISO should stagger implementation of FRACMOO2 until after the DAME initiative to allow for a clear demonstration that the systems designed to replace various aspects of the RA program are functioning as intended before RA changes are put into place.</u>

As described in detail below, the DAME initiative has significant implications for Resource Adequacy (RA) proceedings. In addition to the elimination of the Real Time Must Offer Obligation associated with all flavors of RA, the requirements for imbalance reserves are very closely linked to the flexible RA requirements proposed in FRACMOO2. PG&E supports those links, but asks the CAISO to proceed with caution when developing these products together. Recent implementation issues associated with both energy market products and RA modifications show the importance of constantly reviewing the impacts of proposed modifications before proceeding to Board approval. These concerns have led PG&E to advocate for a fully developed the Day Ahead Market Enhancements before modifying the Flexible RA rules. To address these concerns, PG&E

recommends staggering the implementation of FRACMOO2 until after the DAME initiative is in production to allow for a demonstration that the systems designed to replace various aspects of the RA program are functioning as intended before RA changes are put into place.

B. The CAISO should finalize the design changes that affect the ability of resources to bid across markets.

In the CAISO's DAME March 8th Stakeholder Meeting and the April 18th Stakeholder meeting, the CAISO presentations both referenced changes necessary to apply the Day Ahead Market Enhancements to market participants in the Energy Imbalance Market (EIM) that choose to join the proposed expanded Day Ahead Market.[1] [2] In the March 8th meeting, the CAISO described a primary reason for allowing resources to specify an Imbalance Reserve Price is due to the opportunity costs the resources could have associated with being able to trade the bid range of resources between EIM entities to pass resource sufficiency tests. The Revised Straw Proposal added three new modifications that relate to EIM participation in the Real-Time. While PG&E appreciates the importance of thinking ahead to an expanded Day Ahead Market, PG&E asks the CAISO to consider implications of the Imbalance Reserve Product for the scenario where EIM entities join the DAM, but to place the primary focus the fundamental price formation and links with the RA market that are essential to making the Imbalance Reserve Product successful.

C. The CAISO's current proposal for the performance evaluation of Imbalance Reserves is not sufficient.

The CAISO's Day Ahead Market Enhancements Revised Straw Proposal provides useful information regarding the disqualification approach if a resource does not have sufficient economic bids to cover its imbalance reserve award. The CAISO proposal to have a monthly performance threshold to allow resources to continue to be awarded imbalance reserves in future months has merit. The decision to take RA filing deadlines into account when disqualifying resources is appreciated. However, disqualification for offering imbalance reserves seems necessary but not sufficient. The CAISO discussed the potential need for further incentives when it discusses requiring a clawback of two times the day-ahead revenue received via Imbalance Reserves.

The incentive structure for Imbalance Reserves is extremely important. This is true particularly because the transition from a blanket Real-Time Must Offer Obligation for RA resources to a bidding obligation for Imbalance Reserves could lead to a reduced margin of error for CAISO to manage imbalances. This reduced margin of error is a result of the difference in how the procurement requirement is measured. The System RA procurement requirement is based on the monthly forecasted peak load. The Imbalance Reserves procurement requirement is based on imbalances expected. While the final Imbalance Reserves procurement requirement is still to be determined, it is unlikely that the requirement will be greater than the monthly RA requirement. The bidding obligation for Imbalance Reserves is for the resource to be dispatchable in both directions. This type of bidding flexibility is not required for System RA. Switching from a generic real-time must offer obligation to an imbalance reserve bidding obligation is a significant change to how the CAISO's real-time market ensures resource sufficiency of its own internal BAA. To better

[1] Pg. 46 – 49 http://www.caiso.com/Documents/Agenda-Presentation-DayAheadMarketEnhancements-Mar7_2018.pdf
[2] Pg. 54 – 58 http://www.caiso.com/Documents/AgendaandPresentation-DayAheadMarketEnhancements-April182018.pdf

ensure resource sufficiency, PG&E asks the CAISO to extend existing bid insertion rules to imbalance reserves. PG&E suggests that the CAISO build in room in the stakeholder process to determine the appropriate penalties for this product. As this initiative shows, the Resource Adequacy Availability Incentive Mechanism continues to evolve, even though its initial development as the Standard Capacity Product began in 2010.

PG&E asks the CAISO to consider measuring the performance of Imbalance Reserve Product, as it is takes the place of RA Real-Time Must Offer Obligations, as based on energy delivery instead of, or in addition to, bids. Energy delivery performance can be linked to disqualification or can lead to no pay provisions. The CAISO should outline the full spectrum of options for penalty structures in its next draft proposal.

D. PG&E supports the development of tiered penalty prices for the Imbalance Reserve Product.

In the Revised Straw Proposal, the CAISO describes two potential options for penalty prices when there are inadequate imbalance reserve bids. The two options are a single penalty price that is set at the real-time flexible reserve product penalty price and a tiered penalty price structure that is based on the deficient amount of imbalance reserve bids. Consistent with our request that the CAISO change its current penalty price structure to be tiered, PG&E believes that a tiered penalty price structure for the Imbalance Reserve Product would be appropriate. PG&E sees this approach as a reasonable middle ground between having a single penalty price and having a demand curve, which would represent an approach where all prices are based on administratively determined values. Tiered penalty prices for the Imbalance Reserve Product may impact the existing Flexible Ramping Product design as well as other existing capacity-based ancillary service products. PG&E asks the CAISO to discuss these potential impacts in future proposals.

2.) Potential for unanticipated effects due to DAME modifications

A. The CAISO should further clarify the settlement implications of how physical and virtual bids on the same node are modeled differently in the CAISO's DAME optimization.

Towards the end of the April 18th, 2018 CAISO stakeholder meeting, the CAISO indicated that one result of the changes caused by combining the Residual Unit Commitment process and the Integrated Forward Market in DAME would be that physical and virtual supply schedules would be settled differently. As PG&E understands the calculation of LMPs, physical and virtual supply schedules would be settled using different Locational Marginal Prices. These differences arise because the physical energy supply schedules appear in the power balance constraint as well as the imbalance reserve constraints while the virtual supply schedules only appear in the power balance constraint. Load schedules also only appear in the power balance constraint. Forecast demand is the only demand that appears in the imbalance reserve constraints.

There are several implications to the CAISO's proposed formulation. PG&E asks the CAISO to clarify whether the LMPs for physical supply, virtual supply, virtual demands, bid-in load, and CAISO forecast at the same location are the same or different. The CAISO should further explain if and how bid-in load is accounted for in the imbalance reserves requirements. PG&E would also benefit from seeing settlement examples where supply resources, either physical or virtual, bid a negative MW output. In addition to these clarifications, PG&E would appreciate an initial assessment of how these LMP differences may impact bidding behavior. The CAISO should also explain how the different prices would be addressed under the CAISO revenue neutrality requirements. The CAISO should also discuss the allocation of any uplifts resulting from revenue neutrality requirements.

Structural differences between the settlement of convergence bids have created gaming opportunities in the past leading to the suspension and ultimate elimination of convergence bidding at specific locations. PG&E urges caution and additional analysis from the CAISO on the impacts before proceeding with creating the potential for additional unintended consequences.

B. <u>PG&E asks the CAISO to demonstrate that using the existing ancillary services zones for Imbalance Reserve sub-regional procurement requirements will prevent stranded Imbalance Reserves due to limited transmission availability.</u>

During the April 18th stakeholder meeting, the CAISO expressed a preference for using the existing ancillary services sub-regional procurement zones for imbalance reserves. These zones would be used to attempt to ensure that transmission availability exists to allow imbalance reserves to be dispatched in the real-time. The frequently changing nature of imbalance reserve requirements leads PG&E to conclude that the definition of zones will have an important impact on the price formation of imbalance reserves.

While a locational requirements approach to Imbalance Reserves may be practical, PG&E asks the CAISO to investigate other options as well. Considering that imbalance reserves are designed to handle deviations in load and supply, it may not be best to restrict procurement of Imbalance Reserves procurement in any particular zone when an Imbalance Reserve Requirement exists in the same zone. As Load and Supply schedules are adjusted in DA, the available transmission capacity to move dispatched Imbalance Reserves to meet zonal Imbalance Reserve needs will change. PG&E suggests the CAISO explore incorporating the effects of deploying Imbalance Reserves and Day Ahead energy schedules on transmission usage within the DA optimization.

3.) The CAISO should provide additional, specific examples of bidding, scheduling, and settlement processes

A. <u>The CAISO should create examples of settlement of Imbalance Reserves to sufficiently describe the impact of real-time buy back of reserve awards.</u>

In the April 18th, 2018 CAISO stakeholder meeting, the CAISO indicated several areas where the CAISO is seeking stakeholder comments. One area where the CAISO asked for comments is the settlement between Imbalance Reserves and the Flexible Ramping Product. The process used to understand the settlement implications of the Flexible Ramping Product for the Real-Time Market is likely to be instructive. The Flexible Ramping Product required significant settlement examples. For instance, in the Addendum to the Flexible Ramping Product Draft Final Technical Appendix, five settlement examples are given.[3] While PG&E appreciates the CAISO's efforts towards

[3] Pg. 26, 31-34. http://www.caiso.com/Documents/Addendum-DraftFinalTechnicalAppendix-FlexibleRampingProduct.pdf

developing the settlement spreadsheet, this spreadsheet does not contemplate the buy-back provisions the CAISO is currently envisioning. The CAISO should provide numerous examples of how these provisions affect any potentially impacted revenues in the Integrated Forward Market or Real-Time Markets.

B. The CAISO should explain the process to allow 15-minute Interval load and variable energy resources (VERs) bidding in the Day Ahead Market.

In the CAISO's Day Ahead Market Enhancements Issue paper and Straw Proposal, the CAISO proposes to allow bid-in load and variable energy resources to shape their economic bids based upon the relative forecast. The CAISO proposed to allow scheduling coordinators for load and VER resources to provide a fifteen-minute forecast that would act as a fifteen-minute upper economic limit for their hourly bids. In the Revised Straw Proposal, the CAISO states that the IFM will use either the CAISO forecast or the scheduling coordinator submitted UEL as determined by the Scheduling Coordinator. The real-time market will use the CAISO forecast to clear the market, but the scheduling coordinator submitted UEL can be used for settlement. PG&E requires more information on this process to understand how it will work in practice. PG&E asks the CAISO to comprehensively explain these changes in the next draft proposal as they were not discussed during the April 18th stakeholder meeting.

4.) The CAISO must maintain the principles of cost allocation for cost causation

A. The CAISO should continue to allocate Bid Cost Recovery to virtual bids.

The CAISO proposes to allocate imbalance reserve bid cost and revenues to the Day Ahead Market. The intermingling of commitment costs between bid-in load, the CAISO's load forecast, and the CAISO's need for imbalance reserves has not yet been fully addressed in the stakeholder initiative. The CAISO also proposes to no longer allocate BCR to virtual bids because the costs will be allocated to imbalance reserves. This proposal re-enforces the need to understand how the intermingling of commitment costs can be fairly allocated. On the specific matter of virtual demand, commitment costs should still be allocated through Bid Cost Recovery.