Comments of Pacific Gas & Electric Company

Day Ahead Market Enhancements – Second 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 (DAM) Enhancements Second Revised Straw Proposal.

PG&E appreciates CAISO's receptiveness to stakeholder recommendations to split this initiative into two phases—with the first phase focused on changing the day-ahead scheduling granularity from hourly to four 15-minute intervals. With regards to the market design elements of increasing DAM interval to 15-minutes, PG&E appreciates the thoughtfulness of the policy leads in considering the different factors that affect such a change. PG&E offers the following requests and comments for CAISO to consider in order to ensure this initiative can be successfully implemented.

1. <u>PG&E requests the CAISO define the success of the increased granularity as one that provides incremental improvement to the current DA solution. This can be achieved either through confirmation that CAISO's optimization process is able run effectively with 15-minute intervals with just one additional hour or reducing the complexity of the solution in the initial phase.</u>

   PG&E agrees with the CAISO that moving to fifteen-minute bidding intervals (96 total over a 24-hour period) will require additional processing time. PG&E asks that CAISO demonstrate, prior to implementation, that CAISO's system is able to properly process the increased scheduling granularity within the additional hour without compromising the optimization solution quality. If the CAISO cannot demonstrate that the increased granularity solves with the additional time on a consistent basis, the CAISO should develop a less complex problem that provides an incremental improvement to the existing Day Ahead process (e.g. by reducing the commitment decisions to an hourly block but providing a dispatch signal in 15-minute increments, etc.)

2. <u>PG&E is concerned that shorter time intervals open the market to potentially exploitative Bid Cost Recovery behavior through a combination of changing bid curves and unit ramp changes and ramp rate limitations.</u>

   PG&E is requesting further details on how different market awards would be translated to expected energy and settled, both for energy and cost recovery charge codes. To that end, PG&E requests that the CAISO provide additional details to the following scenarios:

   - A Resource *r* with a Ramp Rate of 2 MW/minute is economically awarded at 100 MW in 15-minute interval *n*. Based on market conditions (i.e. LMP) and its corresponding bid stack, the unit is eligible for an award of up to 200 MW in 15-minute interval *n+1*. Based on this and the resource's ramp rate, what is the corresponding Day-Ahead award for Resource *r* in interval *n+1*?

- What is the Standard Ramping Energy (SRE) between the award positions for intervals *n* and *n+1*, above?
    - Does this change if Resource *r* decides not to submit any Real-Time bids for intervals *n* and *n+1*?
    - What Real-Time exposure does Resource *r* have if it bids economically in the Day-Ahead (scenario 1) but does not have Real-Time bids (scenario 2 a)?
- How is SRE calculated for a resource that is moving into or out of an hourly Self-Schedule?
    - How is SRE calculated for a resource that is moving between an hourly Self-Schedule and a 15-minute Self-Schedule?
- Does the CAISO envision any kind of "Residual Energy" equivalent Day-Ahead expected energy type to protect against possible Bid Cost Recovery (BCR) exploitation between intervals?
    - Does the CAISO envision changing the current Full Ramp-Down protection processes to expand beyond the existing Initial Conditions situation?

3. <u>PG&E requests some clarification on the impact of this initiative to NGR resources providing ancillary services.</u>

PG&E would like to better understand what the CAISO intends for NGR resources providing AS and what the changes are from the current paradigm. PG&E is unclear about the implications of a 15-minute interval to the Regulation Energy Management model and how the CAISO will model restrictions based on state of charge.

4. <u>PG&E requests CAISO properly prioritize the implementation work and give stakeholders the adequate details to work through the system/software upgrades necessary as soon as possible.</u>

As CAISO clarified in its stakeholder call on September 4th, all market participants must make the proper system upgrades to ensure all bids submitted are in 15-minute increments. Given these necessary changes, PG&E requests that CAISO provide stakeholder with the adequate time to roll out these changes during the implementation process.

5. <u>PG&E requests the CAISO to provide some quantitative analysis on the cost and benefits of implementing this initiative.</u>

While PG&E supports the overall objective of this initiative, we are cognizant of the enormous system and process changes necessary to implement this change—both by CAISO and by all the market participants. PG&E finds it prudent for CAISO to outline, in high-level quantitative terms, the costs and benefits of implementing this initiative.