Comments of Pacific Gas & Electric Company
Energy Imbalance Market 2nd Revised Straw Proposal

Submitted by	Company	Date Submitted
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Pacific Gas & Electric (PG&E) offers the following comments in the stakeholder process for the California Independent System Operator's (CAISO) Energy Imbalance Market (EIM) Initiative's July 2, 2013 2nd Revised Straw Proposal ("Proposal").

PG&E supports the CAISO's EIM stakeholder process to vet the benefits, costs, and design details of the CAISO-PacifiCorp EIM. PG&E's support of an EIM will depend on achieving a level of comfort that the benefits to customers will be commensurate with the costs and risks that will be incurred by customers. Overall, PG&E sees the potential opportunity for an EIM to benefit each region, but we will be seeking assurances that the benefits clearly outweigh the costs and the design results in fair treatment of both the EIM Entity and the CAISO in regards to cost allocation and market obligations.

PG&E appreciates the CAISO's evolution of the original EIM design, including:

- Revision of GHG Design (PG&E is evaluating the implications of the design and assessing the potential changes to PG&E's bidding, settlement and monitoring systems);
- Elimination of the Minimum Shift Optimization;
- Addition of a flexible ramping capacity sufficiency test for the EIM Entity; and
- Cost allocation of uplifts such as RTCO are based on cost causation (CAISO has introduced high-level allocation concepts, but the details have not yet been fleshed out).

CAISO staff and stakeholders working together to vet the complex EIM design takes time but the end result is worth the effort and cost in time. PG&E offers some specific recommendations below regarding the stakeholder process to ensure adequate time is available to develop a good design.

PG&E also appreciates the CAISO posting additional detail about the EIM Benefit Study including aggregated generation by technology type and by balancing area authority.[1] This information gives stakeholders a greater understanding of the implications of an EIM and shows a significant impact not only on the CAISO and PacifiCorp but other BAAs such as BPA. PG&E is still endeavoring to get a greater understanding of the benefits to CAISO of the EIM after implementation of FERC Order 764 changes (15-minute scheduling). This information will be used for PG&E's assessment of the proposal in total at the conclusion of the design process; today's comments do not address that ongoing effort.

PG&E comments are detailed below and focus on the following points:

1. CAISO should take the time necessary to have an effective EIM Design stakeholder process; the current pace is too fast;
2. CAISO should schedule and conduct EIM simulations and upon the successful completion of those simulations seek CAISO Board approval to go-live;
3. CAISO should address convergence bidding uplift allocation before EIM goes live;
4. More detail is needed about the neutrality and RTCO calculations;
5. CAISO should have authority to dispatch committed units and commit fast-start resources in the EIM Entity;
6. EIM Entities should not be able to opt out of commitment costs incurred by the CAISO;
7. PG&E supports the sufficiency test for flexible ramping capacity; a downward sufficiency test should also be examined; and
8. CAISO should consider the incentives for EIM over-scheduling and consider an over-scheduling penalty

The absence of comments on a particular element of the proposal should not be perceived as PG&E's endorsement. This is a sizeable and complex initiative, and PG&E has not been able to fully vet every aspect of the proposal in the time allotted in the stakeholder process. Instead, PG&E has focused on what we consider the most important issues. We may offer input on the other elements at a later date.

1. <u>CAISO Should Take The Time Necessary To Have An Effective EIM Design Stakeholder Process; The Current Pace Is Too Fast</u>

PG&E recommends that the CAISO reconsider the timing of this stakeholder process to provide adequate time for the CAISO to develop complete design proposals and for stakeholders to fully consider the design and develop alternatives. PG&E is not alone in its call to relax the current timeline. Seven other stakeholders supported a call to slow down in the last round of comments

[1] http://www.caiso.com/Documents/PacifiCorp-ISO_CaseResults-Benchmark-EnergyImbalanceMarketBenefits.xls

(SCE, Powerex, Portland General Electric, BPA, SMUD, Balancing Authority of Northern California, and Xcel Energy).[2]

The CAISO only had two weeks turn-around between receiving comments on the first revised straw proposal and the release of the second revised proposal. The short turn-around gets reflected back in the lack of detail in the subsequent CAISO's proposal (e.g., the proposed neutrality and Real Time Congestion Imbalance Offset (RTCIO) charge calculations) and is further compounded by questions then from stakeholders who seek further information and examples (which likely would have been provided in earlier drafts had sufficient time been allowed). PG&E is confident that CAISO produces the highest quality proposals its timeline allow, but we believe both the CAISO and stakeholders are unable to put forth their best efforts at each design iteration based on inadequate time.

Like the CAISO, stakeholders need time to think through the implications and develop alternative designs when appropriate. This takes time; more time than the CAISO has allotted. A complex element like the GHG design can take four to eight weeks to flesh out with examples and mathematical formulations to ensure understanding. There are numerous GHG-scale elements in the EIM design that need deep and critical thought by stakeholders.

PG&E understands the CAISO is planning additional touch points with stakeholders such as technical workshops; PG&E supports that action. But additional meetings or calls with the CAISO is not a substitute for more time. Time is needed independent of such meetings and calls for stakeholders to hold up their end of the stakeholder process to think critically about the design and bring well-considered alternatives to the table.

The time crunch will only get worse for the CAISO and stakeholders starting in August. The CAISO plans to overlap two other EIM stakeholder processes on top of the EIM design work: 1) a second stakeholder process focused on EIM governance issues, and 2) the start of EIM tariff development. This additional work will require time from the same people working on the design and allow for even less time to consider the design.

PG&E offers three specific modifications for the EIM timeline:

i. **Extend time for stakeholder comments** – PG&E appreciates the extended comment period for this set of comments, but notes that the CAISO has only scheduled two weeks for the remaining proposals. PG&E recommends a 3-4 week comment period instead of the usual two weeks for each of the remaining proposals.

ii. **Plan for three subsequent proposals -** CAISO anticipates two more proposals – a third revised and draft final. Given that much of the 2nd revised proposal is new (most

[2] http://www.caiso.com/informed/Pages/StakeholderProcesses/EnergyImbalanceMarket.aspx

substantive elements, other than the GHG design), the CAISO should plan for three subsequent proposals and not two.

iii. **Do not start tariff work until submission of stakeholder comments for the draft final proposal** – Given the complexity of the EIM design and the start of a second EIM stakeholder process on governance, the development of EIM tariff should be postponed to allow stakeholders and the CAISO to first focus on these two design initiatives.

Finally, PG&E notes that it is not opposed to a phased implementation approach for EIM to allow PacifiCorp to start recognizing the intraregional benefits noted by the CAISO's benefits study. In Phase One, the CAISO could provide real-time instructions through its security constrained economic dispatch for PacifiCorp independent of the CAISO operations. Doing so should allow PacifiCorp to capture and confirm the intra-regional benefits for PacifiCorp purported in the EIM Benefits Study. At the same time, CAISO and PacifiCorp could continue finalizing design and testing of a co-optimized EIM to ensure a robust process. Once the design is complete and the CAISO has demonstrated its ability to operate the two balancing area authorities as stand-alone entities, then the CAISO would transition to Phase Two of the implementation – operating a full EIM. This approach has added advantage of providing more time to address convergence bidding exploitation safeguards before the full EIM goes live.

2. <u>CAISO Should Conduct EIM Simulations And Seek CAISO Board Approval To Go-Live After Simulations</u>

As part of this design initiative, the CAISO should develop simulation tools and provide a timeline for EIM simulations. PG&E's preference is that the simulations occur prior to the CAISO seeking Board approval of the EIM design since the results could be used to improve the design. This type of proof of concept testing of design before committing to a design is a best-in-class RTO practice. However, if the CAISO is unable to complete the simulations before Board approval of the design, PG&E recommends that the CAISO seek Board approval to go-live after reporting out on the simulation results. This is an approach similar to that used for the go-live of Market Redesign and Technology Upgrade (MRTU).

Simulations will fill a critical need for stakeholders to better understand the EIM's effects and to guard against unintended outcomes or risks. For example, even the simplified EIM benefits study showed that schedules throughout the WECC will change due to the CAISO/PacifiCorp EIM, with potentially surprising shifts in generator dispatches. Simulations should also provide important feedback on how the EIM initiative is interacting with other new market enhancements, including FERC 764 related market changes, Contingency Modeling Enhancements (CME) and Full Network Model (FNM) Expansion.

3. <u>CAISO Should Address Convergence Bidding Uplift Allocation Before EIM Goes Live</u>

The Proposal only addresses the limited issue of convergence bidding profits that may result from congestion in the EIM Entity. However, the CAISO does not address concerns that the proposed EIM will introduce significant new structural differences between the day-ahead (DA) and real-time (RT) EIM markets and the possible exploitation of these differences by convergence bids within the CAISO.

The potential impact of convergence bidding related uplifts is large. The DMM paper focused on the issue of RTIO charges which amounted to $235 million in costs in 2012, out of which $70 million were paid out to virtual bidders during periods when the day-ahead flow exceeded the real-time flow on a binding constraint. PG&E understands the CAISO's position that the EIM along with the FNM Expansion will improve market convergence, but we believe it is prudent to protect California customers from excess uplifts resulting convergence bidding exploitation. If this protection is not put into place the level of costs/risks of implementing the EIM could outweigh the possible benefits for California customers.

In its June 21st comments, PG&E had made two recommendations addressing the larger convergence bidding issue.

> To help mitigate the risk associated with gaming of structural market differences introduced via the EIM, PG&E recommends that the CAISO address the issue of the allocation of uplifts related to convergence bidding as recommended by the DMM.[3] This needs to be done before the EIM goes live.
>
> Furthermore, PG&E recommends that convergence bidding at the interties should not be considered until the after EIM goes live and is operational long enough to show that the structural differences do not affect market outcomes in a way that increases risks if convergence bidding at the interties were allowed. At that point the CAISO should convene a second convergence bidding initiative to evaluate the potential risks and benefits that may arise from convergence bidding at the interties. This is similar to the prudent approach taken by the CAISO in its Order 764 market modifications.

PG&E encourages the CAISO to adopt these recommendations. The Proposal indicates a willingness to commence a CAISO stakeholder initiative to address the allocation of uplifts, including, we assume, those resulting from convergence bidding. However no commitment is made in the Proposal as to when the initiative would start or be implemented. PG&E appreciates the CAISO willingness to commence the initiative and asks that it start immediately. Addressing this issue before the start of the EIM should be a priority for the CAISO.

[3] See section 4.3 http://www.caiso.com/Documents/DiscussionPaper-Real-timeRevenueImbalance_CaliforniaISO_Markets.pdf

4. <u>More Detail Is Needed About The Neutrality And RTCO Calculations</u>

PG&E supports cost allocation of EIM uplifts based on cost causation. The Proposal allocates neutrality and RTCO charges by BAA. More detail is needed to fully understand the allocation methodology. Specifically, the CAISO's next proposal should include the mathematics underlying the calculations and examples so stakeholders can fully understand and evaluate the proposal.

In its examples and discussion PG&E would like the CAISO to include the following:

i. One or more examples on how costs would be allocated with respect to overscheduling on the PacifiCorp system which creates loop flows/infeasibilities in the CAISO;

ii. One or more examples on how costs would be allocated with respect to loop flows in the CAISO which create infeasibilities on the PacifiCorp system;

iii. One or more examples on how convergence bidders would be settled if their pricing nodes are affects by real-time congestion in PacifiCorp;

iv. A discussion on the merits of such a settlement of convergence bids versus allocating the infeasibilities to convergence bidders; and

v. One or more examples showing the calculation of the losses that are included as part of the neutrality charges.

PG&E also supports technical workshops to work through the formulations of specific uplift cost allocation. <u>Stakeholders should be given adequate time after these workshops to digest the discussion and submit comments (3-4 weeks).</u>

5. <u>CAISO Should Have Authority to Dispatch Committed Units And Commit Fast-Start Resources In The EIM Entity</u>

Availability of resources in the EIM Entity for dispatch or commitment is at the discretion of the EIM Participant. To maximize the inter-regional dispatch benefit as purported in the EIM Benefits Study, PG&E recommends that the CAISO develop simple Must Offer Obligation (MOO) rules for the EIM Entity to ensure units that are committed are available for dispatch by the CAISO through the EIM and fast-start units not committed are available for commitment in the EIM. PG&E suggests developing rules that result in a similar MOO as for CAISO resources; that is, resources that count for resource adequacy and are not out-of-service are generally available to the CAISO.

It is PG&E's understanding that the inter-regional dispatch benefit in the Benefits Study was based on modeling that did not artificially restrict resources in PacifiCorp from commitment or dispatch in the EIM. To restrict CAISO's access to PacifiCorp resources for commitment or dispatch in the EIM lessens the possible benefits as compared to the Benefits Study.

6. <u>EIM Entities Should Not Be Able to Opt Out Of Commitment Costs Incurred By The CAISO</u>

The Proposal allows an EIM Entity to opt out of any allocation of commitment costs from other BAAs, if that EIM Entity elects not to allow real-time unit commitment through the EIM.[4] However, the decision for an EIM Entity on whether to allow the CAISO to commit its resources has little bearing on the fair allocation of the commitment costs incurred by other BAAs. As discussed below this proposed rule can result in the misallocation of commitment costs and should not be included as an element of the design.

Bid Cost Recovery (BCR) charges for units committed in real-time should be allocated based on cost causation between CAISO and the EIM entities' market participants. The cost allocation should be done independent of whether the CAISO commits resources in the EIM Entity. Consider a logically extreme case in which California's net-load does not change and is forecasted to stay flat for hours, but the net-load in an EIM entity is ramping up more quickly than expected. The increase in the net load in the EIM Entity could result in the commitment of a unit in California to the benefit of the EIM Entity. These commitment costs caused by the EIM Entity should be fairly allocated to the EIM Entity and not California customers.

7. <u>PG&E Supports The Sufficiency Test For Flexible Ramping Capacity; A Downward Sufficiency Test Should Also Be Examined</u>

PG&E appreciates the newly proposed flexible ramping capacity (FRC) sufficiency test and believes the sufficiency test will reduce the likelihood of leaning between BAAs for flexible capacity.[5] The proposed mechanism to isolate any BAA that fails the FRC sufficiency test from the EIM seems appropriate and relatively simple to implement. The costs and reliability of one BAA should not be adversely impacted by the failing of another BAA to secure sufficient flexible capacity.

PG&E asks the CAISO to consider the need for a downward flexible ramping capacity sufficiency test as well as an upward test. It's not clear why upward ramping capacity should have a sufficiency test but downward ramping capacity would not. Ensuring adequate downward flexibility in each BAA would seem to be an important protection for a BAA from possible over-generation situations in neighboring BAAs.

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[4] CAISO 2nd Revised Straw Proposal, p. 57.

[5] PG&E seeks clarification on the calculation of the FRC requirement for the combined EIM footprint. This calculation should presumably consider the diversity in load and generation across the EIM footprint, likely reducing the overall need for FRC. Examples shown on p.41 and 42 of the proposal show the requirement for the combined footprint as the sum of the requirements for individual BAAs. The CAISO should confirm how it plans to calculate total EIM-wide FRC requirements.

8. <u>CAISO Should Consider The Incentives For EIM Over-Scheduling And Consider An Over-Scheduling Penalty</u>

The incentives of an EIM Entity to over-schedule should be examined and a penalty, similar to the under-scheduling penalty, should be considered. The current proposal indicates that such penalty may be unnecessary given the proposed RTCIO allocation method. PG&E believes this requires further evaluation. For example, what if over-scheduling in one BAA causes congestion in another BAA? Will the proposed RTCIO method alone be effective in deterring over-scheduling? The CAISO's analysis on the incentive to over-schedule during minimum load conditions should also inform discussions.[6]

[6] *"The ISO is evaluating if additional measures are needed during minimum load conditions to prevent BAAs from leaning on other BAAs to resolve over-generation."*(Page 28 of proposal)