Comments of Pacific Gas and Electric Company
EIM Year 1 Enhancements

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Pacific Gas and Electric Company (PG&E) offers the following comments on the California Independent System Operator's (CAISO) Energy Imbalance Market (EIM) Year 1 Enhancements Draft Final Proposal.

PG&E believes that some of the issues designed in Phase I of this initiative are sufficiently designed and ready for Board Approval but that other issues are not, including the proposed EIM transfer cost solutions. To this end, we recommend the CAISO transfer several matters to Phase 2 for further consideration.

PG&E's major comments on the EIM Year 1 Enhancements Draft Final Proposal are as follows:

1. The CAISO's proposal regarding EIM transfer schedules is not ready for Board Approval and the CAISO should allow for a robust stakeholder process that allows sufficient time to consider the CAISO's proposal and other stakeholders' proposals and to develop a long term solution.
2. PG&E supports the CAISO's updated greenhouse gas proposal that would allow an EIM participating resource to specify the MW limit of its total offered quantity to the market that EIM can deem to be delivered to the CAISO.
3. Non-participating resources in an EIM Entity should not be eligible for Bid Cost Recovery (BCR) and the CAISO should modify its systems to correct the error that results in the payment of BCR to self-scheduled resources in CAISO markets and non-participating resources in an EIM Entity.
4. PG&E believes that as the EIM market expands, it is important to ensure that resources used to meet reliability requirements in EIM Entities are made available for use in the EIM and is concerned that if the CAISO's proposed enhancement to the resource sufficiency evaluation is not correctly developed it could result in EIM imports/exports being frozen when not warranted or not providing sufficient flexible capacity to cover the likely need.
5. The CAISO's proposal to align the EIM administrative charge with the CAISO's grid management charge is reasonable.
6. The CAISO should provide more information on its proposal to reduce the number of enforced flexible ramping constraint combinations and address this issue either in the

next set of EIM enhancements scheduled for Phase II of this initiative or in a future EIM enhancements initiative.

7. The methodology by which an EIM Entity establishes its administrative price should be vetted and approved by the CAISO and included in the CAISO tariff.
8. PG&E appreciates the CAISO addressing allocation of real-time congestion offset among BAAs in Phase 2 and looks forward to further engaging the CAISO on potential solutions.

Phase 1 Issues

1. The CAISO should consider alternative solutions to its proposal to modify the EIM transfer limit constraints and to impose an EIM transfer cost.

   The CAISO proposes to include an EIM transfer cost in its RTM optimization to ensure that the optimal path or paths for an EIM transfer are used. The CAISO intends for the EIM transfer cost to reflect the relative priorities of various paths for scheduling EIM transfers and to be included in the market optimization for determining the schedule that will be tagged for EIM transfers. While PG&E appreciates the goals of this design, PG&E is not convinced that the CAISO has proposed a reasonable solution regarding EIM transfer schedules and does not believe that there has been sufficient time or opportunity in the stakeholder process to consider the potentially significant impacts of the CAISO's proposal. The CAISO also should provide examples of how the proposed transfers and relative priorities in the optimization will affect scheduling priorities, loop flows, and potential uplift costs to market participants in the CAISO market and EIM areas and how the tags would interact with the WECC's loop flow mitigation procedures.

   Additionally, the CAISO has not robustly demonstrated or discussed with stakeholders how its proposal will impact locational marginal prices (LMPs). For instance, the CAISO has not addressed how the LMP decomposition will change under a security-constrained economic dispatch (SCED) that includes a new set of scheduling constraints. Changing the LMPs could have system and settlement ramifications that have not been discussed and would require adequate time to consider and implement. Since LMPs are fundamental to the CAISO's market and to users' systems, PG&E believes more discussion and consideration of this matter is warranted.

   PG&E recommends that the CAISO explore a long term solution to this issue in Phase 2 of this initiative, where alternative approaches can be more fully considered. For instance, Xcel Energy proposes that the CAISO should seek a waiver from FERC of interchange scheduling eTag obligations for market dispatch that remains within the CAISO/EIM footprint. Xcel cites to practices used in two other regional markets including Southwest Power Pool (SPP) and Midcontinent Independent System Operator (MISO). The CAISO should allow for a robust stakeholder process that allows sufficient time to consider the CAISO's proposal and other stakeholders' proposals and to develop a long term solution.

2. PG&E supports the CAISO's updated greenhouse gas proposal that would allow an EIM participating resource to specify the MW limit of its total offered quantity to the market that EIM can deem to be delivered to the CAISO.

   As PG&E stated in its previous comments in the EIM Year 1 Enhancements initiative, PG&E supports developing ways for a participating resource in an EIM Entity to specify its willingness to allow the EIM to deem that its energy production is available for import into CAISO. PG&E previously recommended that the CAISO explore approaches that afford participants more flexibility than the binary "yes/no" flag proposed in the Straw Proposal and give resources the ability to limit the imports into the CAISO that EIM allocates to them without requiring an all-or-nothing decision. CAISO updated the GHG proposal in the Draft Final Proposal to provide more flexibility in this regard via the submittal of a MW quantity that can be deemed imported into CAISO and so be subject to GHG allowance costs. PG&E supports this proposal.

   Concerns over the CAISO's design should be addressed through monitoring by the CAISO's Department of Market Monitoring. The CAISO's updated GHG proposal allows resources to submit the MW quantity that can be deemed imported into CAISO on an hourly basis, and some stakeholders raised concerns at the January 8, 2015 Stakeholder Meeting about the potential for participants to engage in improper strategic behavior to affect market outcomes by giving participants the ability to adjust limits on an hourly basis. Given these concerns, DMM can watch for inappropriate strategic behavior by market participants.

3. PG&E does not support Bid Cost Recovery for non-participating resources.

   The CAISO has suggested that circumstances may exist where a non-participating resource in an EIM Entity (i.e. a resource that does not have an energy bid in the market and no corresponding real-time bid costs) is eligible for BCR payments. PG&E continues to see this possibility as unreasonable and does not support BCR payments to non-participating resources, no matter their geographic location. BCR ensures that resources *that provide economic bids* into the CAISO market do not incur a net overall loss in relation to their stated costs as a result of the market results. Non-participating resources do not offer the CAISO the market flexibility associated with the economic bid process, nor have they provided corresponding energy cost values for their output. To offer BCR protection to these resources would be inappropriate and would result in unjustly inflated Real-Time cost recovery uplifts to the market. The CAISO should examine any such circumstance that would provide such payments and reconcile them against existing Tariff section 11.8.4.1.5.

   The CAISO has indicated that this issue is not unique to the EIM and can occur more broadly from real-time self-schedules post FERC Order 764. The CAISO thus proposes to align the calculation of expected energy across the EIM area by including additional energy categories that apply to CAISO resources who self-schedule in the RTM to EIM non-participating resources.

PG&E believes that the payment of BCR to a self-scheduled resource in CAISO markets is a result of a mistake in the implementation of the market systems. In our understanding, CAISO inserts the LMP calculated for the resource as the bid cost of a self-scheduled resource. If the LMP is not re-calculated prior to settlements, there cannot be any BCR since the LMP equals the assumed "bid cost." However, if CAISO changes the LMP as a result of a correction, the old LMP is still used as the resource's bid cost leading to the possibility of BCR. When the LMP is recalculated, CAISO should change the assumed bid cost for the self-scheduled resource to the new LMP which would result in no BCR payment. Rather than perpetuate and expand the error to the non-participating resources in the EIM, the CAISO should modify its systems to correct the error. We do not think that the CAISO's review of BCR payments over three days across the EIM footprint is sufficient to demonstrate that this is problem will have negligible impact.

4. <u>PG&E believes that as the EIM market expands, it is important to ensure that resources used to meet reliability requirements in EIM Entities are made available for use in the EIM and is concerned that if the CAISO's proposed enhancement to the resource sufficiency evaluation is not correctly developed it could result in EIM imports/exports being frozen when not warranted or not providing sufficient flexible capacity to cover the likely need.</u>

    The current EIM does not include forward Resource Adequacy (RA) requirements or must-offer obligations (MOOs) for EIM Entities nor does it include a Resource Adequacy Commitment process prior to Real-Time to ensure that adequate capacity is committed to meet Real-Time needs. Load Serving Entities in BAAs joining the EIM may be required by state regulators to satisfy regional reliability requirements that they must meet by owning or contracting with resources that are available to the BAA to balance energy in Real-Time. For example, California has RA requirements that the IOUs must meet by contracting with resources. As the EIM market expands, it is important to ensure that resources used to meet such local reliability requirements in EIM Entities are not held back but are made available for use in the EIM. If an EIM Entity has robust state/regional reliability requirements, *e.g.* to meet loss of load probability (LOLP) and flexibility capacity needs, and the resources held to meet those requirements have offer obligations[1] into the EIM, the need for a separate ramping sufficiency test may be reduced or eliminated.

[1] Must-offer obligations serve as the CAISO's tool for ensuring adequate capacity participates in its markets. In California, must-offer obligations accompany the State's Resource Adequacy capacity construct. Must-offer obligations thus help ensure deeper and more liquid markets, likely resulting in reasonable and competitive energy and Ancillary Services. Must-offer obligations may vary based on resource type and/or other criteria. For example, intermittent resources such as wind and solar resources are not required to submit bids in the CAISO markets, while other resources such as gas-fired resources are required to bid in the CAISO markets.

Given that these provisions are not currently implemented in the EIM, PG&E understands the need for other measures to ensure that various EIM Entities have sufficient resources to meet their individual needs such as the flexible ramping sufficiency test. The flexible ramping sufficiency test is one method that can be useful to ensure this. A challenge with this test is how to account for untagged imports and exports that are included in the base schedule values.

While PG&E appreciates the CAISO's efforts in the Draft Final Proposal to revise the flexible ramping sufficiency test, it is not clear whether the proposed calculation of additional incremental/decremental requirements in the CAISO's proposal is accurate. It seems that the CAISO's proposal would not properly treat deviations in imports and deviations in exports as separate random variables whose joint deviations drive the need for upward or downward flexibility. It is not clear that adding requirements to cover a given percentile of historic deviations in imports and a given percentile of historic deviations in exports that are calculated separately would provide the desired coverage of joint deviations in imports and exports. If this enhancement is not correctly developed it could result in EIM imports/exports being frozen when not warranted or not providing sufficient flexible capacity to cover the likely need. PG&E also notes that the current proposal may essentially work to evaluate flexibility needs based on a worst case scenario based on tagging failures during a 30-day period.

5. <u>The CAISO's proposal to align the EIM administrative charge with the CAISO's grid management charge is reasonable.</u>

   PG&E supports the objective of the EIM administrative charge design to charge CAISO market participants and EIM market participants the same cost for similar real-time market services. The CAISO's proposal changes the current EIM administrative charge so that it is aligned with the market services rate and system operations rate charged to CAISO market participants. PG&E supports the CAISO's proposed redesign of the EIM administrative charge and supports updating the rate as needed on a quarterly basis so that the rates are aligned with the cost of service.

6. <u>The CAISO should provide more information on its proposal to reduce the number of enforced flexible ramping constraint combinations and address this issue either in the next set of EIM enhancements scheduled for Phase II of this initiative or in a future EIM enhancements initiative.</u>

   The CAISO currently enforces the flexible ramping constraint on all combinations of BAAs. With the two PacifiCorp BAAs and the CAISO BAA this results in seven combinations. Adding the NV Energy BAA will increase this to 15 combinations. If more entities join the EIM, the number of combinations increases significantly. Thus, in the Draft Final Proposal, the CAISO proposes to only enforce the flexible ramping constraint on each BAA individually and on all BAAs combined as a system wide constraint.

Given that there has been little time for stakeholder engagement on this issue, the CAISO should address this issue either in the next set of EIM enhancements scheduled for Phase II of this initiative or in a future EIM enhancements initiative. PG&E understands that NV Energy is the only expected entrant to join the EIM in 2015, and given this timeline for EIM growth this issue does not appear to be a high priority. CAISO's proposal should provide more information as to why it originally decided that it was necessary to enforce the flexible ramping constraint on all combinations of BAAs initially but not moving forward as the number of EIM Entities grows. In particular, PG&E would like an improved understanding of the consequences to the market of not imposing the constraint on all possible combinations of BAAs. Stakeholders should be given the chance to assess whether the approach is adequate to prevent leaning in the EIM BAAs. This proposal was initially brought up at the January 30, 2015 Stakeholder Call and there has not been sufficient time for stakeholders to review the proposed approach or consider alternate possible approaches to address growth in problem size (and solution times) as the number of EIM Entities grows.

7. <u>PG&E recommends that the methodology by which an EIM Entity establishes its administrative price be vetted and approved by the CAISO and included in the CAISO tariff.</u>

   To account for the fact that the EIM is a Real-Time market only and does not produce Day-Ahead prices, the CAISO is proposing an administrative pricing rule for the EIM. In the event of a market disruption that prevents CAISO from calculating prices in its real-time markets, the CAISO's administrative pricing rules (which are presently being revised as part of the Pricing Enhancements Stakeholder Initiative) would use CAISO's Day-Ahead prices to settle transactions in CAISO's real-time markets. In the event of a market disruption in real-time during which the CAISO would use its Day-Ahead price to settle its real-time transactions, the CAISO proposes to use the price that the EIM Entity establishes through its Open Access Transmission Tariff (OATT) for market suspension to settle transactions in the EIM in the EIM Entity. PG&E believes that the CAISO, and not each EIM Entity, should have the authority to establish the administrative price to be used in the event of an EIM market disruption or suspension. Consequently, CAISO should review and approve the price that an EIM Entity would use.

<u>Phase 2 Issues</u>

1. <u>PG&E appreciates the CAISO addressing allocation of real-time congestion offset among BAAs in Phase 2 and looks forward to further engaging the CAISO on potential solutions.</u>

   PG&E understands that in Phase 2 of this initiative the CAISO will look into how to allocate congestion rents arising in EIM when EIM transfer limits and scheduling limits between BAAs bind and create congestion rents. In addition, the CAISO will evaluate whether a portion of an EIM BAA's real-time congestion offset (RTCO) arising from managing flows on transmission constraints in the EIM Entity should be allocated to other EIM BAAs if the other EIM BAAs' base schedule flows on the transmission constraints exceed agreed upon flow entitlements.

PG&E is interested in a fair outcome to this issue but requests more information to further our understanding prior to approving a change. For example, with respect to allocating congestion rents on binding transfer limits and scheduling limits between BAAs, the CAISO should provide a clear definition of EIM transfer limit and intertie scheduling limit, as used on slides 42-46 of the February 18, 2015 EIM Year 1 Enhancements Stakeholder Meeting Presentation, and a clear set of after-the-fact data to evaluate the issue. PG&E would also appreciate examples that demonstrate how the formulation would work, how costs are allocated, and how the RTCO would be distributed. For allocating a share of an EIM BAA's RTCO arising from managing flows on transmission constraints in the EIM Entity to other EIM BAAs, the CAISO should specify how it plans to define an EIM Entity's firm flow entitlements on transmission constraints in another EIM Entity. The CAISO should also specify how it will determine the transmission constraints that will be subject to such sharing of RTCO across EIM Entities. PG&E appreciates the CAISO addressing these issues and looks forward to further engaging the CAISO on potential solutions.