

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 January 8, 2015 Stakeholder Meeting (Stakeholder Meeting).

1. PG&E supports the CAISO's updated greenhouse gas (GHG) 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 comments on the EIM Year 1 Enhancements November 10, 2014 Issue Paper and Straw Proposal (Straw Proposal), 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 indicated at the Stakeholder Meeting that it updated the GHG 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. In concept PG&E supports this proposal and looks forward to further details on the matter in the CAISO's next proposal to allow us to further evaluate the approach.

The CAISO's updated GHG proposal allows resources to submit the MW quantity that can be deemed imported into CAISO on an hourly basis. Some stakeholders raised concerns at the 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, PG&E recommends that the Department of Market Monitoring (DMM) monitor this issue initially to see if there are any indications of inappropriate strategic behavior by market participants.

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

In its proposal, the CAISO 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 Bid Cost Recovery (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 indicated at the Stakeholder Meeting 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.

During the Stakeholder Meeting the CAISO also proposed modifying the existing EIM Tariff language to eliminate any conflicts or discrepancies with these calculated BCR settlement results. PG&E does not support any such modification and believes that the current Tariff language regarding cost recovery to Non-Participating Resources is just and reasonable.

3. PG&E recommends that the CAISO and DMM continue to examine the impacts of using available transmission capacity (ATC) for EIM transfers.

Under the current EIM between CAISO and PacifiCorp, PacifiCorp uses firm intertie rights to facilitate EIM transfers among the PacifiCorp BAAs and CAISO. When NV Energy joins the EIM in October 2015, the CAISO proposes to use NV Energy's available transmission capacity (ATC) for EIM transfer amounts among the participating BAAs. The use of ATC raises some operational timing issues. Because the actual ATC is not known until T-20 and the EIM Entity base schedules are submitted at T-40, the first two intervals of the FMM market would use an estimate of the ATC. If the base schedules exceed the actual ATC that is available after all firm transmission use is tagged at T-20, the difference will be resolved by the EIM. The flows will be adjusted in the Real Time Market (RTM) for the first two intervals of the FMM. For later intervals of the FMM if base schedules are not adjusted, the difference will be resolved in the FMM. In resolving flows caused by the base schedules exceeding actual ATC, the EIM will adjust schedules of resources. It is possible that resources whose schedules are adjusted upwards may be paid more for increased energy than resources whose schedules are adjusted downwards pay for decreasing energy, leading to uplift. It is important that such uplifts resulting from base schedules exceeding ATC be allocated to appropriate parties based on cost causation. It is unclear from what has been outlined in the CAISO's proposal how this uplift will be allocated and this should be described in detail. In addition to the settlement issues that the CAISO has pointed out as well as the uplift issue, this situation could result in price volatility in the RTM if the estimated ATC differs significantly from the actual ATC. The CAISO should track the price volatility that results from differences in estimated ATC and actual ATC and propose alternate methods to address ATC if it is found to be excessive.

The CAISO has indicated that the timing issue resulting from using T-40 base schedules versus T-20 transmission tagging is not unique to the EIM and is a result of the CAISO's response to FERC Order 764. Multiple stakeholders have raised concerns and have asked for further clarity on the extent of this problem. The DMM has requested that the CAISO explicitly define EIM transfer constraints as they would be implemented using ATC. PG&E recommends that the CAISO and DMM continue to examine the issues associated with using ATC for EIM transfers. We look forward to discussing these issues further at the CAISO's technical workshop and understanding whether the EIM creates unique problems to consider.

4. The flexible ramping sufficiency evaluation is a valuable step to ensuring sufficient ramping capability in the EIM, but PG&E has questions regarding CAISO's proposed enhancement to address potential changes between imports and exports in the base schedule at T-40 and tags at T-20 resulting from use of ATC and scheduling times.

PG&E supports measures in EIM to ensure that the 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. CAISO

is proposing to expand the test to cover changes that may occur as a result of using ATC for flows in the EIM. PG&E believes that more information is needed to properly assess the proposed modification.

At the Stakeholder Meeting, the CAISO discussed the effects on the flexible ramping sufficiency evaluation for an EIM Entity of the potential for imports and exports assumed in T-40 base schedules not matching the T-20 transmission tagging. Because PacifiCorp tags its hourly base schedules at T-55 this doesn't become an issue until NV Energy joins the EIM and uses ATC to facilitate EIM transfers. The CAISO shows that if it knew that an import in a base schedule at T-40 would submit a tag with a lower level at T-20 than it specified in its base schedule at T-40, the CAISO may have determined that the EIM entity would have failed the flexible ramping sufficiency evaluation and the Entity's EIM transfers would have been frozen. However, the CAISO does not have the information on final tags for the flexible ramping sufficiency evaluation at T-40.

To address this shortcoming, the CAISO proposes to enhance the flexible ramping sufficiency test to cover potential changes between imports and exports in the base schedule at T-40 and tags at T-20. For each hour of the day over an historical period, the CAISO proposes to compare T-40 base schedules with T-20 tagged values for imports and exports in the EIM Entity without netting imports with exports. As we understand the proposal, for each hour, the CAISO proposes to calculate the historic average ratio of deviation of tagged schedule from base schedule in hour to base schedule in hour. The CAISO proposes to enhance the flexible ramping sufficiency test to ensure that it also covers the average percentage by which tagged imports and exports deviate from base schedule values.

While PG&E supports the flexible ramping sufficiency test, we request more information as to why the percentage calculated as monthly deviations divided by monthly base schedules is an appropriate and adequate amount to add for the resource sufficiency evaluation. Should the CAISO instead consider setting the requirement based on a percentile level, for example, the 95th-percentile or 90th-percentile, of the hourly deviation divided by hourly base schedule for each hour in the historic period?

Consider a historic period of one month and a given hour in each day such as hour ending (HE) 0700. Suppose that an EIM Entity has an import with a base schedule of 100 MW in HE0700 on each day. Further suppose that it could tag all 100 MW on 27 days but that on three days, tagged less than 100 MW. It could only tag 45 MW on one day, 50 MW on the next and 55 MW on the last. The average percentage reduction would be 5% over the month. However, carrying an additional 5 MW of flexible ramping capacity would have provided little benefit. On days where the EIM Entity can tag all 100 MW of import, the additional 5 MW of rampable capacity would not be needed. On days when it cannot tag all 100 MW, it would fall short of holding rampable capacity needed to cover the cut in import by 45 MW or more, so 5 MW is much less than the need. Requiring the EIM Entity to be able to cover the 95th percentile of percentage reduction would require the EIM Entity to have 50 MW of rampable capacity. The EIM Entity would have rampable capacity needed on all but one day.

The best way to expand the flexible ramping sufficiency test to cover potential changes to imports and exports in base schedules may require additional thought. If this enhancement is not fully thought out 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 believes that alternate methods of meeting capacity needs in EIM should be considered. 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 resource adequacy 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 obligations¹ into the EIM, their need for a separate ramping sufficiency test may be reduced.

5. PG&E recommends monitoring if the CAISO implements the graduated bid cap proposal during EIM transition periods and recommends delaying the reinstatement of virtual bidding at the interties for one year to avoid creating gaming opportunities.

The CAISO indicates that it is strongly considering making intertie bidding on EIM external interties mandatory. PG&E believes that an EIM Entity should be required to allow economic bidding on external interties as long as the neighboring BAA allows fifteen minute scheduling and thus there is no operational impediment to allowing economic bidding on the interties. This could allow the market to capture additional flexibility outside of the EIM footprint and could lower concern about market power due to increased competition to provide flexibility and balancing.

The CAISO explains that with mandatory intertie participation, measures would be needed to preserve the proposed pricing approach during EIM transition periods to price energy at the marginal economic bid when modeled constraints are relaxed rather than at a penalty parameter. Specifically, because import bids at EIM external intertie scheduling points are deemed competitive and not subject to market power mitigation, there are situations where an unmitigated bid placed at \$1,000/MWh could potentially be the marginal economic bid used to set the price during a constraint violation. Thus, the CAISO proposes to set the energy bid cap for EIM participating resources and imports/exports on EIM external intertie scheduling points at \$250/MWh for months 1-6 of an EIM Entity's Transition Period and gradually increase the bid so that the bid cap

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.

would be \$500/MWh in months 7-9, \$750/MWh in months 10-12, and \$1,000/MWh beyond the transition period.

PG&E is concerned about the potential for unintended consequences and manipulative bidding opportunities with asymmetric bid caps between the CAISO BAA and multiple EIM BAAs during transition periods. Because the CAISO proposal extends transition periods to all new EIM entrants, PG&E has heightened concerns about opportunities to manipulate the market that could arise as new EIM entrants create multiple bid caps across a wide geographic area. PG&E does not fully understand the implications of multiple bid caps across the CAISO and multiple EIM areas at this time and recommends that if graduated bid caps are put in place, the CAISO and the DMM institute monitoring of bidding behavior across both the CAISO and EIM areas during the transition period. If gaming opportunities are identified, the CAISO should immediately address them.

PG&E also recommends that CAISO consider a more flexible process for changing bid caps during the transition period than the firm schedule the CAISO proposes. The CAISO should analyze the progress made in resolving operational issues before proceeding with each increase in the bid cap. In the event analysis shows that the problems have been effectively resolved at any point during the transition period, the bid cap could be increased to the standard \$1,000/MWh level.

PG&E also believes that introducing virtual bidding at the interties would further complicate the transitional issues and could interact in unknown ways with multiple disparate bid caps in different areas of the EIM. PG&E recommends delaying the reinstatement of virtual bidding at the interties for one year so that it does not create gaming opportunities during PacifiCorp's EIM transition period or during the early stages of NV Energy's EIM participation.

6. 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.

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.