

Portland General Electric Comments
CAISO Extended Short-Term Unit Commitment Issue Paper and Straw Proposal

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Portland General Electric Company (“PGE”) appreciates the opportunity to provide comments on the California Independent System Operator’s (“ISO”) Extended Short-Term Unit Commitment (“STUC”) Issue Paper and Straw Proposal (“Proposal”).

Overview:

In its Proposal, the ISO states: “To better prepare for the upcoming summer and winter months, CAISO’s market and operators will need the ability (to) view daily load peaks and economically optimize resources to meet system needs. As such, CAISO management has prioritized this initiative to implement approved policy during the fall 2018 release.”¹

PGE respects the reliability challenges the ISO is facing as a result of the increased penetration of solar generation within their Balancing Authority Area (“ISO BAA”) and the persistence of legacy market design components and expectations that limit the market and operational flexibility of their system. PGE has supported and will continue to support the ISO’s multiple initiatives that are currently underway, planned, or recently completed aimed at improving its ability to meet these challenges for the ISO BAA.²

However, PGE is concerned that some of these changes, including aspects of the STUC Proposal, present implementation challenges specific to EIM Entities³ outside the ISO BAA and have the potential to alter the market fundamentals of the EIM. PGE is optimistic that solutions can be found to mitigate these concerns for the EIM areas without undermining the needs of the ISO for its BAA. PGE encourages the ISO to work with EIM stakeholders to better understand their unique concerns and seek mutually-beneficial solutions that do not diminish the efficiency of the ISO’s co-optimized real-time market.

PGE supports the ISO’s classification of this initiative as *hybrid non-EIM specific* at this time, but notes the concerns expressed below may necessitate solutions that could impact the classification decision.

Concerns Specific to the EIM:

PGE’s primary concern is that the extended STUC look-ahead will instruct market dispatch early in the operating day that is based on forecasted conditions later in the day that will by default be inaccurate.

¹ <http://www.caiso.com/Documents/IssuePaperandStrawProposal-ExtendedShortTermUnitCommitment.pdf> - p. 15

² In order to better understand the impact this Proposal will have on the ISO’s operations and markets, PGE requests the ISO identify which current or planned initiatives have dependent or overlapping attributes, objectives, or timelines, or overlapping IT systems implementation hurdles. For example, will decisions made in this Proposal impact the ISO’s Day-Ahead Market Enhancements initiative or implementation? PGE appreciates the ISO’s inclusion of information in its draft of details outlining which associated programs will not be revised alongside this proposal, and would appreciate the ISO’s expansion of that consideration of associated initiatives and policies.

³ For the purpose of these comments, “EIM Entity” includes the Balancing and Generation Optimization functions.

The extension of STUC to 18-hours, with a requirement to submit 20-hours of forward base-schedules, will inform unit-commitment decisions made by the ISO not only for its BAA, but also for the EIM BAAs.

Within the ISO BAA, it is fully appropriate and beneficial for the ISO to extend the look-ahead to consider market needs later in the day and to commit the resources it expects to have available for dispatch based on the ISO BAA's expected net-load profile. The ISO is able to accomplish this extended look-ahead without unintended consequences because it has full knowledge of what resources, including intertie resources, will be available to it in the future, and because it has largely predictable morning, afternoon, and evening net-load trends. This is not true for the EIM BAAs.

EIM Entities manage and economically optimize their intra-day net-load positions through commitment and decommitment of on-system resources (with attendant fuel procurement requirements) and bilateral purchases and sales of energy (generally sourced outside their EIM BAA and delivered to their intertie via point-to-point contract-path transmission). These actions are primarily driven by the fact that many EIM Entities have significant penetrations of variable wind-energy resources on their systems, which are not able to be forecasted with a high degree of accuracy until the hour-ahead horizon. However, even in the absence of wind-energy resource variability, EIM Entities have opportunities to transact around changing market fundamentals intra-day in adjacent bilateral markets, which could include changes in stream inflows, large weather patterns, or regional outages. As a result, a significant amount of intra-day supply and demand volatility exists for EIM Entities that is not experienced within the ISO BAA.

This volatility has both advantages and disadvantages for EIM Entities: it opens opportunities for bilateral market transactions to displace on-system generation when regional surplus or must-run generation becomes available at favorable prices; however, it can also cause unit commitment decisions made earlier in the day to prove themselves to have been uneconomic as forecasts shift a resource position from balanced on a forward basis to short or long in real-time. Currently, EIM Entities wear the risk associated with intra-day unit commitment, fuel procurement, and supply portfolio optimization, relying on various tools and trader expertise to make appropriate decisions in the best interest of their customers. To the extent the STUC look-ahead is unable to incorporate not only front-office transactions and intra-day optimization decisions, but also the volatility inherent in wind-energy forecasts, it has the potential to produce suboptimal results for EIM Entities.

The presence of voluntarily-committed EIM Transfer System Resources ("ETSR"), i.e. EIM Transmission, adds further complication. EIM Entities voluntarily commit EIM transfer capacity to support real-time ETSR activity. This transfer capacity is made available on a reciprocal basis where each Entity is presumed to benefit from the wide-area market optimization the transfers facilitate in real-time. There is no "must offer" requirement associated with the ETSRs, and therefore any EIM Entity can adjust its commitment up until the binding base-schedule submittal window closes. ETSR availability can also be impacted by Flex Reserve Sufficiency Test outcomes in prior market intervals. Therefore, to the extent the STUC look-ahead incorporates ETSR availability into its commitment decisions, potential sources of inaccuracy are introduced that could deliver suboptimal results for EIM Entities.

PGE is also concerned that the proposed changes to the STUC commits ETSR capacity to imports or exports on a forward basis, thereby pre-arranging transfers. For example, if the STUC look-ahead expects 200MW of export ETSR capacity will be available in a future hour, it will potentially commit units in one EIM BAA in excess of its own on-system demand to serve expected demand in another EIM (or the ISO's) BAA. While supply and demand will be re-optimized in real-time, the forward commitment

would put one EIM BAA in a “long” position relative to its own demand at that point, which creates both flex-reserve and price risk.

Under the current proposal, each EIM Entity’s non-binding forward resource plan and forecast accuracy will to some extent impact the unit commitment decisions made for another EIM Entity BAA. While these are issues inherent to the existing 4.5-hr look-ahead, their impact may be exacerbated significantly by the longer look-ahead proposed.

PGE is also concerned about the increased impact of chain-transitions under an extended STUC. Currently, STUC issues chain-transitions that create binding commitments for future hours. These chain-transitions can’t be overwritten by future Real Time Predictive Dispatch (“RTPD”) market runs. While this can be problematic for EIM Entities in the existing 4.5-hr look-ahead, the potential impact would be increased significantly with an 18-hr look-ahead. Without the ability to overwrite or modify these chain transitions, under certain operating conditions (e.g., high wind volatility) the ISO’s proposal could force an EIM Entity into a resource configuration that prevents the EIM Entity from passing resource sufficiency tests. Significant forecast error could drive sub-optimal forward commitment decisions for EIM Entities and the operational risk and opportunity costs associated with these sub-optimal commitments could be significant.

From a systems and business practice standpoint, PGE is concerned the ISO’s Fall 2018 release schedule for this initiative is potentially infeasible for EIM Entities. At this time, it is unclear what systems will be impacted by the Proposal and whether the software vendors on which EIM Entities rely will be able to update them in time for parallel testing. Further, to the extent EIM Entity business practices related to base-schedule submittal and internal business processes are affected, it will take time for the EIM Entities to work with their internal and third-party stakeholders, and for sufficient training on new EIM processes and procedures to be implemented. PGE believes more discussion is warranted in this area, and requests the ISO consider a technical workshop with vendors and EIM Entities if the Proposal moves forward on the timelines indicated.

Potential Solutions Specific to the EIM:

Notwithstanding concerns about implementation hurdles specific to EIM Entities, PGE believes a significant portion of the potential for unintended consequences to develop in the EIM as a result of the Proposal could be mitigated by setting ETSRs to zero when solving on a forward basis. PGE believes this would limit the impacts of inaccurate unit commitment to each EIM Entity’s BAA. Doing so would not have any impact on the incorporation of bilaterally executed import or export transactions; it would simply prevent a unit from being committed under the expectation that an EIM Entity will be importing or exporting *through the EIM* in a future operating hour. Further, it will limit the impact of any one EIM Entity’s decision to make its units available or unavailable on a forward commitment basis. PGE looks forward to discussing this proposal with the ISO and EIM Stakeholders.

PGE also requests the ISO explore whether changes could be made for the EIM areas related to the chain-transition issue highlighted above. At this time PGE does not have a solution to propose, but looks forward to discussing options with the ISO that may reduce the risk of sub-optimal forward unit commitment.

Again, PGE appreciates the opportunity to provide comments, and looks forward to working with the ISO and stakeholders to develop and implement efficient, effective solutions to the issues identified.