

Memorandum

To: ISO Board of Governors
From: Eric Hildebrandt, Director, Department of Market Monitoring
Date: October 31, 2013
Re: **Market Monitoring report**

This memorandum does not require Board action.

EXECUTIVE SUMMARY

This memo provides comments on Management's energy imbalance market (EIM) design proposal being presented to the Board for decision. The Department of Market Monitoring (DMM) has worked closely with the ISO and members of its Market Surveillance Committee (MSC) to ensure that this new market will offer benefits for current participants within the ISO, as well as entities outside the ISO that will be participating in this new market as sellers or relying on it to meet their imbalance energy needs. DMM supports the general design outline in Management's current proposal, which includes numerous features made to protect current ISO market participants from potential uplift costs associated with the EIM. We believe additional issues concerning the potential need for market power mitigation or other refinements can be addressed based on pre-implementation testing and actual market experience after the initial phase of implementation in the PacifiCorp balancing authority areas. DMM will continue to work closely with the ISO as the EIM design proceeds through the process of implementation and testing, and will closely monitor EIM performance following implementation in October 2014.

DISCUSSION AND ANALYSIS

The remainder of this memo provides discussion and recommendations on several key issues of concern to stakeholders, which DMM has worked closely with the ISO to address as part of the EIM design and plan for future implementation.

Market power mitigation

Under Management's proposal, local market power mitigation procedures would be applied when congestion is projected to occur on uncompetitive constraints within each EIM balancing area. In addition, as noted in Management's memo, prior to implementation of the EIM in October 2014, the ISO will perform market simulations and

extensive testing. During this time, the ISO and DMM will assess whether local market power mitigation needs to be expanded to be applied at the system level for each EIM balancing authority area. This approach reflects discussions between the ISO, DMM and members of the MSC. DMM supports this approach since the potential for market power in the EIM cannot be accurately assessed until additional information about the EIM becomes available.

DMM notes that this approach does not indicate an expectation that PacifiCorp or any other supplier would exercise market power within the EIM. However, DMM believes that it is important to approach the issue of market power mitigation in an objective manner consistent with currently available information on the structural competitiveness of these EIM balancing areas, and which ensures that other load serving entities and intermittent generators in the PacifiCorp balancing areas continue to have access to imbalance energy service at just and reasonable prices.

Prior to the establishment of any new market, the potential competitiveness of this market can only be assessed based on structural criteria, rather than market conduct or performance. The degree of structural market power in the two PacifiCorp EIM balancing authority areas will depend on a number of factors that are uncertain at this point. These include the following three major factors:

- **Ownership of generation participating in EIM.** Although there may be a substantial amount of generation within the PacifiCorp balancing authority areas owned by entities other than PacifiCorp, it is also uncertain how much, if any, of this generation will participate in the EIM, particularly in the initial phases. DMM understands that to some extent this may depend on requirements for participating in the EIM set by PacifiCorp, and that it is possible that most or all of the generation participating in the EIM may be owned or controlled by PacifiCorp.
- **Net demand for imbalance energy from other load serving entities and intermittent resources.** Most of the imbalance energy met in the EIM may be associated with PacifiCorp's own load and generation deviations. Structurally, the incentive for the exercise of market power in the EIM will also depend largely on the amount of net imbalance energy demand associated with load and generation deviations by entities other than PacifiCorp, such as other load serving entities and intermittent resources. However, the ISO does not have information on the demand for imbalance energy associated with these entities at this time.
- **Transfer capability between EIM balancing authority areas and the ISO.** The ability for any entity to exercise market power within the two PacifiCorp BAAs can be limited by competition from imports from the ISO. In addition, transfer capacity that can be used to export energy when low cost supplies are available can also deter the exercise of market power by creating an opportunity cost (from lost export sales) in the event market power is exercised within an EIM balancing authority area. However, the amount of transfer capacity available in the EIM between the ISO and the two PacifiCorp balancing authority areas also

remains uncertain at this time. It also appears the volume of this transfer capacity may be more limited initially and be somewhat dynamic from hour to hour.

In addition to these basic structural factors, the ability and incentive to exercise market power will depend on a variety of other market conditions which may be highly dynamic and difficult to assess in advance. These include the operating cost of available capacity in the EIM relative to ISO market prices, the level and predictability of ISO market prices, and the predictability of demand for imbalance energy by other non-PacifiCorp load serving entities and intermittent resources.

Given the lack of information on these factors at this point, DMM and the ISO are proposing the following approach to this issue.

- The ISO will also develop the software capability to apply market power mitigation on an EIM balancing authority area level. This would be done by extending the same local market power mitigation procedures that are applied to constraints within each EIM area to the interconnections between EIM areas and the ISO during hours when congestion is projected to occur in the import direction into any of the EIM areas.
- As information on the various structural factors described above becomes available, DMM and the ISO will continue to assess the potential for market power on an EIM BAA-wide basis. After the ISO's initial EIM tariff filing in November 2013, DMM and the ISO will continue to assess the potential for market power on an EIM BAA-wide basis as information becomes available. If this analysis determines market power mitigation is appropriate, DMM understands that the ISO would file a tariff amendment to add this provision to the EIM market design in mid-2014, so that this may be in place by the time EIM is implemented in October 2014.
- If this analysis indicates it may not be necessary to implement these EIM level market power mitigation provisions initially, this capability will be established in the EIM software so that these rules could be implemented to address any persistent uncompetitive behavior or performance observed once EIM is in operation.

Resource and Load Scheduling

As noted in Management's memo, the EIM does not include forward resource adequacy requirements or must offer obligations, but includes several elements to ensure each EIM balancing authority has sufficient resources on-line and available to serve its own load and ramping needs. This reflects the ISO's expectation that the EIM will serve to facilitate economic exchanges and re-dispatch of resources, rather than being a real-time market which participants should rely on to meet a significant portion of their projected load. DMM believes it is important that EIM functions in this manner to ensure

that it can provide reliability benefits and does not facilitate capacity leaning by any entity.

In response to concerns expressed by DMM on this issue, the ISO clarified that the resource sufficiency evaluation will include a test to determine that each EIM balancing authority has sufficient capacity bid into the EIM to meet the ISO's forecast of EIM demand plus the needed additional flexible ramping capacity. Thus, this evaluation will explicitly assess the degree to which an EIM balancing authority's supply resources are insufficient to meet its actual forecasted load.

Convergence Bidding

Management's proposal includes several features to ensure that the EIM does not exacerbate any congestion revenue imbalances (or uplifts) associated with convergence bids. First, all congestion uplift charges resulting from constraints in EIM balancing authority areas will be allocated to the balancing authority area in which the constraint is located. This ensures that no uplifts associated with convergence bids that might be profitable due to congestion on constraints within the EIM would be borne by ISO participants.

In addition, Management's proposal includes a second provision that allocates any congestion uplift due to convergence bidding that is associated with constraints within the EIM back to convergence bidders. This second provision ensures that EIM participants do not bear any of these congestion uplift costs. This provision is appropriate since constraints within the EIM are not enforced in the ISO's day-ahead market but are enforced in the real-time market. Without this provision, convergence bidders could profit when congestion occurs on these constraints in real-time, without providing any potential benefits in terms of converging day-ahead and real-time prices.

Greenhouse gas bidding

Preventing dispatch of EIM resources to serve load in California

Numerous stakeholders have expressed concern that choosing to participate in an EIM can ultimately subject them to compliance obligations in California's cap and trade program for greenhouse gases. The proposed EIM design allows EIM resources to submit very high bids for greenhouse gas emission costs as a way of avoiding being dispatched to serve load in California. Since this mechanism cannot guarantee that a resource will not be dispatched for import into the ISO when prices are very high, some stakeholders have requested the EIM design include a "flag" that could be used to ensure that specific resources would never be dispatched to serve load in California.

As noted in Management's memo, it appears that the primary participant in the initial EIM phases (PacifiCorp) would not utilize this feature, so this feature is unlikely to have any immediate impact in terms of deterring participation by more suppliers in the EIM.

The ISO has also indicated this market feature will be considered as part of the 2013 stakeholder initiatives catalog. DMM believes this could be an important mechanism to encourage participation by some suppliers in EIM, especially if EIM becomes a broader regional imbalance market. Thus, DMM supports consideration of this mechanism on a timeframe that corresponds with any expansion of the EIM to other balancing authority areas with suppliers whose participation may be increased by this market feature.

High greenhouse gas bids

Some other participants have voiced concerns that high priced greenhouse gas bids could somehow be used to game or manipulate the market. DMM believes these concerns are unfounded, since the ability for bids with high greenhouse gas adders to be dispatched for import into California will be limited by competition from the total supply of all resources within the ISO system. Unless the total bid price of these imports (for energy plus the greenhouse gas adder) is less than the marginal price of energy in the ISO system, these bids will not be dispatched for import into the ISO and will therefore not be eligible for payment of a greenhouse gas adder.

However, if rules are modified to include a flag that can be used to prevent EIM resources from being dispatched to serve load in California, DMM believes that stakeholder concerns about very high greenhouse gas bids could be addressed by placing a cap on this bid component. For instance, greenhouse gas bids could be limited to not more than 200 percent of the estimated cost of the emission obligation for each resource. Like the flag to prevent units from being dispatched to serve load in California, DMM believes this is a future refinement that could be made to address stakeholders' concerns without having any detrimental impacts on market performance.

Conclusions

DMM supports the general EIM design in Management's current proposal. As described above, the proposal includes numerous features made to protect current ISO market participants from potential uplift costs associated with the EIM. The proposal also includes provisions to ensure that EIM will benefit entities outside the ISO that will be participating in this new market or relying on it to meet their imbalance energy needs.

We believe additional issues concerning the potential need for market power mitigation or other refinements can be addressed based on pre-implementation testing that the ISO has committed to perform. DMM will work closely with the ISO prior to implementation to identify and develop appropriate solutions for any additional issues that may be identified. DMM will provide its findings and recommendations concerning this implementation and testing process to the Board.

DMM will also collaborate with the ISO to develop appropriate monitoring capabilities and identify action that may be taken to mitigate any issues that arise following implementation of the EIM in October 2014.