

Memorandum

To: ISO Board of Governors
From: Keith Casey, Vice President, Market & Infrastructure Development
Date: July 8, 2014
Re: Decision on EIM go-live enhancements

This memorandum requires Board action.

EXECUTIVE SUMMARY

The Board of Governors approved the energy imbalance market design in November 2013 which included applying local market power mitigation measures when congestion occurs on constraints within an EIM balancing authority area. However, Management stated that further information was required to determine whether the ISO should also apply its market power mitigation process to scheduling constraints limiting transfers of energy into EIM balancing authority areas. The Department of Market Monitoring has evaluated the structural competitiveness of the PacifiCorp balancing areas and recommends the ISO apply market power mitigation measures to EIM transfer scheduling limits into and between the PacifiCorp balancing authority areas. Management concurs with this recommendation.

A separate EIM implementation issue relates to using the ISO's multi-stage generation resource functionality for modeling non-gas fueled resources. During the EIM implementation process, Management has learned that certain EIM participants are planning to use the multi-stage generation functionality for modeling non-natural gas resources. A key element of the multi-stage generation functionality is the modeling of transition costs - the costs of transitioning from one generation configuration to another. The current tariff only contemplates transition costs for gas resources. Management recommends adding a tariff provision to allow for an EIM participant to negotiate with the ISO the transition costs to be calculated using a fuel source other than natural gas.

Moved, that the ISO Board of Governors approves Management's proposal to include energy imbalance market transfer limits into an energy imbalance market balancing authority area in the market power mitigation process, as described in the memorandum dated July 8, 2014; and

Moved, that the ISO Board of Governors approves Management's proposal regarding the establishment of transition costs for non-gas multi-stage

**generation resources, as described in the memorandum dated July 8, 2014;
and**

**Moved, that the ISO Board of Governors authorizes Management to make
all necessary and appropriate filings with the Federal Energy Regulatory
Commission to implement the proposed tariff change.**

DISCUSSION AND ANALYSIS

Including EIM transfer limits in market power mitigation process

The EIM design was approved by the Board in November 2013 and approved by FERC on June 19. Under the approved design, the ISO's current local market power tests and procedures will be applied to congested constraints within each individual balancing authority area participating in the EIM. When the EIM design was approved by the Board and filed with FERC, Management stated that further information was required to determine whether the market power mitigation process should also be applied to scheduling constraints limiting transfers of energy into and between PacifiCorp balancing authority areas. DMM has published an *Assessment of Potential Market Power in Energy Imbalance Market*¹ in which it recommends the ISO apply market power mitigation measures to EIM transfer scheduling limits into and between the PacifiCorp balancing authority areas.

Subjecting EIM transfer limits to the market power mitigation process does not automatically mitigate the bids of EIM participating resources. As with internal constraints within the ISO and within the EIM balancing authority area, EIM transfer scheduling limits will be tested for sufficient competition in the event the EIM transfer scheduling limits are constrained. Only in the event that the competitiveness test fails, will bids of EIM participating resources be mitigated in the EIM balancing authority area.

In its original filing with FERC, the ISO requested that the Board be given the authority to decide whether EIM transfers should be subject to the market power mitigation process. In FERC's June 19, 2014 order conditionally accepting proposed tariff revisions to implement the EIM, the Commission rejected the ISO's proposal to vest its Board with discretion as to whether market power mitigation would apply to EIM transfers into EIM balancing authority areas. The order states that "real-time local market power mitigation on EIM interties affects clearing prices in the EIM and whether or not such mitigation is implemented should be subject to Commission review and approval". FERC declined to require real-time local market power mitigation on EIM transfer scheduling limits at EIM start-up; however, it did not preclude the ISO from making a tariff filing requesting to do so.

FERC directed the ISO to perform the following:

¹ http://www.caiso.com/Documents/UpdatedAssessment-PotentialMarketPower-EnergyImbalanceMarket_corrected.pdf

- Make a compliance filing within 30 days after the date of issuance of the order that makes real-time local market power mitigation on EIM interties subject to filing with, and acceptance by, the Commission.
- Provide the Commission with informational status reports every six months for two years following the launch of the EIM on the presence of structural market power in PacifiCorp's balancing authority areas due to limits on transmission interties into and between these balancing authority areas under the EIM structure.

DMM published a final version of its *Assessment of Potential Market Power in Energy Imbalance Market* on June 9, 2014, which was reviewed with stakeholders on June 16, 2014. In the report, DMM recommends that EIM transfers into and between PacifiCorp balancing authority areas be included in the market power mitigation process because the PacifiCorp balancing authority areas are not structurally competitive.

The DMM market power analysis, findings and recommendations were also discussed by the ISO's Market Surveillance Committee in its meeting on May 19, 2014. The MSC supports the recommendation and has provided its opinion on the subject, which is attached to this memo for reference.

Management has reviewed DMM's structural competitiveness assessment of the EIM, as well as the MSC opinion, and agrees with the conclusions that potential structural market power may exist because:

- A single entity, PacifiCorp, will be a dominate supplier in the PacifiCorp balancing authority areas;
- Participation by resources in the EIM is voluntary with no must offer obligations and the depth of market bids is uncertain at the start of the EIM;
- Transmission capacity to support EIM transfer limits is voluntarily provided by PacifiCorp on an hourly basis; and
- Incremental EIM transfer limits into an EIM balancing authority area can be restricted when the EIM entity fails the flexible ramping test included in the hourly resources sufficiency evaluation.

Therefore, Management concurs with DMM that the market power mitigation process should be applied to EIM transfer scheduling limits into and between the PacifiCorp balancing authority areas at EIM start-up.

Longer-term, Management plans to consider a more dynamic approach to subjecting EIM transfer scheduling limits to the market power mitigation process. As highlighted by the third and fourth bullets above, the transfer capability between the ISO and PacifiCorp balancing authority areas is a key determinant as to whether an EIM

balancing authority is structurally competitive. Since the transmission capacity made available to support EIM transfers can change hourly, Management agrees that in the future a more dynamic approach may be preferred.

Management plans to complete this initiative in time for the market functionality to be implemented in Fall 2015 to align with NV Energy's planned go-live of the EIM.

Transition costs for non-gas multi-stage generation resources

Multi-stage generating units are characterized by multiple operating configurations. Typically, multi-stage generating units are comprised of two or more generating units that can be operated separately or in concert. A good example is combined-cycle units which have interconnected gas and steam turbines generating electricity. The gas turbines generate electricity and, in so doing, create heat which is used to create steam to run a steam turbine. These units can operate in several different configurations that consist of the various combinations of gas and steam turbines.

The ability to operate in multiple configurations can make multi-stage generating units more efficient than those with a single configuration. However, it also requires comprehensive modeling of the various configurations in order to take advantage of the resource's full operating capability, and to avoid the infeasible dispatch of the resources.

Transition costs occur when a multi-stage generation resource moves from one configuration to another. The current tariff only contemplates transition costs for gas fueled multi-stage generation resources. During implementation, Management has determined that EIM participants are planning to use multi-stage generation modeling for non-gas resources; therefore, the tariff must be modified to allow for transition costs to be calculated using a fuel source other than gas. For multi-stage resources that use a fuel source other than natural gas, Management proposes that the EIM participating resource scheduling coordinator must negotiate a transition cost with the ISO, in consultation with DMM.

POSITIONS OF THE PARTIES

Stakeholders generally support the proposed changes to apply the ISO's market power mitigation process to scheduling constraints limiting transfers of energy into EIM balancing authority areas. Stakeholders also support adding provisions for transition costs on non-gas multi-stage generation resources.

CONCLUSION

Management requests Board approval to include EIM transfer limits into and between PacifiCorp balancing authority areas in the market power mitigation process. This will address potential system wide market power with each of the PacifiCorp balancing authority areas. In addition Management requests Board approval to allow non-gas fueled multi-stage generation resources to negotiate transition costs with the ISO, in

consultation with the DMM. This will facilitate participation by multi-stage generation resources within the EIM footprint.