



# Memorandum

**To:** ISO Board of Governors

**From:** Keith Casey, Vice President, Market & Infrastructure Development

**Date:** May 9, 2018

**Re:** **Decision on imbalance conformance enhancements proposal**

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*This memorandum requires Board action.*

## EXECUTIVE SUMMARY

When ISO and EIM balancing area operators observe that the load forecast input into the market is not consistent with actual system conditions, they manually adjust the load forecast input into the market to align with system conditions. The ISO refers to these load forecast adjustments as “imbalance conformance.” Operators also use imbalance conformance for other reasons, such as supply deviations.

Because operator imbalance conformances are relatively imprecise, the ISO market includes an imbalance conformance limiter that limits the adjustments to what is actually available for dispatch in the real-time market. Doing so avoids having imbalance conformances that cause energy balance constraint violations that would trigger inappropriately extreme scarcity prices. Management proposes various enhancements to the imbalance conformance limiter to help ensure the market sets appropriate prices when balancing area operators make conformance adjustments.

In the interest of transparency, Management also proposes to revise the tariff to clarify ISO and EIM balancing area operators’ ability to make imbalance conformance adjustments. Similarly, Management proposes to make the rules for using the imbalance conformance limiter explicit in the tariff.

The tariff revisions clarifying EIM balancing area operators’ ability to make imbalance conformances, which fall within the primary approval authority of the EIM Governing Body, were approved by the Governing Body on April 24, 2018, and are on the Board’s consent agenda. Management also presented the remainder of this proposal to the EIM Governing Body, which is provided as advisory input to the Board regarding this proposal as Attachment A.

Management proposes the following motion:

***Moved, that the ISO Board of Governors approves the proposal to implement the imbalance conformance enhancements and the tariff clarifications authorizing imbalance conformance by ISO balancing area operators described in the memorandum dated May 9, 2018; 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 proposal described in this memorandum, including any filings that implement the overarching initiative policy but contain discrete revisions to incorporate Commission guidance in any initial ruling on the proposed tariff amendment.***

## **DISCUSSION AND ANALYSIS**

The following describes Management's proposal to enhance the imbalance conformance limiter and to clarify ISO and EIM balancing area operators' ability to make imbalance conformances.

### ***Imbalance Conformance***

The ISO real-time market dispatches supply to be in balance with the load forecast input into the market. Currently, ISO and EIM balancing area operators manually adjust the calculated load forecast when they observe it does not reflect actual system conditions. These manual adjustments are termed "imbalance conformance." Besides accounting for load forecast error, balancing area operators may also adjust the load forecast to account for factors such as generator deviations from dispatch, anticipated variable energy resource output changes, intertie schedule deviations, or supply outages. Imbalance conformance adjustments enable operators to dispatch a supply quantity that matches actual system needs.<sup>1</sup>

### ***Imbalance Conformance Limiter Enhancements***

The imbalance conformance limiter is a feature in the ISO market software designed to prevent unwarranted prices caused by imbalance conformance adjustments. The limiter helps ensure that operator conformance adjustments, which are typically coarse, conservative estimates, do not result in the market attempting to dispatch more supply than is available in a particular dispatch interval. The operators insert coarse adjustments because it is not practical for an operator to determine the ramping capacity available in each dispatch interval and make smaller adjustments in each market run, similar to what the market would do. Instead, the operator will make one large adjustment coinciding with one market run.

When there is insufficient upward ramping capability available to meet the forecast load for a particular interval, the market sets energy prices at a \$1,000/MWh pricing

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<sup>1</sup> The ISO also performs imbalance conformances in the day-ahead market's residual unit commitment process to more accurately reflect forecast system needs.

parameter, equal to the energy bid cap. Similarly, when there is insufficient downward ramping capability available to meet the forecast load, the market sets energy prices at a -\$150/MWh pricing parameter, equal to the energy bid floor. The imbalance conformance limiter works by limiting operator load forecast adjustments in the market's pricing run to the amount of available energy bids. This avoids triggering administratively set prices at the \$1,000/MWh or -\$150/MWh pricing parameters.

Management proposes to enhance the logic used to trigger the imbalance conformance limiter. The existing logic considers the current market interval in isolation and triggers the limiter whenever the imbalance conformance adjustment is greater than the amount of ramping capacity available through energy bids. This is inappropriate at times because it can trigger the limiter and limit prices when there is supply scarcity, or alternatively, over-supply, that persists for a number of intervals. This approach fails to reflect that the ISO's intent for the limiter is to avoid artificial scarcity pricing triggered by the coarseness of operator imbalance conformance adjustments.

Management's proposed enhancements to the limiter logic focus on addressing the coarseness of operator imbalance conformance adjustments. Under the proposed enhancements, the limiter will consider changes between intervals rather than only considering the current interval. The limiter will analyze the change in the imbalance conformance amount between multiple market intervals to determine when the imbalance conformance exceeds the available bid-in capacity. These enhancements increase the accuracy of the limiter and will decrease the frequency with which the limiter triggers.

### ***Tariff Clarifications Authorizing Imbalance Conformance***

Management proposes to make tariff revisions to clarify ISO and EIM balancing area operators' ability to make imbalance conformance adjustments. The tariff currently gives the ISO discretion to create a load forecast it deems appropriate to maintain grid reliability. However, Management believes the tariff language can be clarified to provide additional transparency. The tariff changes will specify the reasons for imbalance conformance adjustments, and explicitly authorize conformance by the balancing area operator.

Similarly, Management proposes to make the imbalance conformance limiter rules explicit in the tariff.

### **POSITIONS OF THE PARTIES**

Most stakeholders generally support the imbalance conformance limiter enhancements described above, agreeing the enhancements will more appropriately trigger the limiter. However, Southern California Edison and Powerex object to the proposed enhancements.

Southern California Edison believes the proposed limiter logic enhancements should be implemented in addition to old limiter logic, stating the limiter is necessary for price stability in the real-time market. Management believes the revised logic more appropriately addresses the coarse adjustments provided by operators. The previous logic would continue to suppress prices during imbalance conformances that do not change, but last over many intervals. In this case, sustained supply dispatch, for which economic bids are not available, likely reflects actual scarcity, making scarcity prices the correct economic signal.

Powerex maintains that the proposed imbalance conformance limiter logic enhancements may inappropriately suppress scarcity pricing when the coarseness of an operator adjustment is not a factor. They point out that not all imbalance conformance adjustments are coarse adjustments, and the limiter may limit prices when there is true energy scarcity. Powerex states the limiter should be removed from the real-time market immediately.

Management acknowledges that the limiter may occasionally suppress prices when there is actual scarcity, but believes the majority of time the limiter will work to limit artificial scarcity prices caused by operators' coarse adjustments. However, because it is important to not suppress legitimate price signals, Management has committed to removing the imbalance conformance limiter in two years after developing improved operational tools that will avoid the need for operators to make coarse adjustments.

All stakeholders support the proposed tariff clarifications as valuable measures to increase transparency.

Attachment B presents a summary of stakeholder comments.

## **CONCLUSION**

Management requests the Board of Governors approve this proposal. The proposal clarifies the ISO's authority to make imbalance conformance adjustments and provides enhancements to the imbalance conformance limiter. The enhancements to the limiter will help to align market prices with actual system conditions.