



Memorandum

To: ISO Board of Governors

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

Date: January 27, 2016

Re: **Decision on accounting of minimum load costs proposal**

This memorandum requires Board action.

EXECUTIVE SUMMARY

In April 2015, Management commenced the bidding rules enhancements initiative to consider enhanced ISO market bidding rules and to refine commitment cost calculations for generator minimum load costs. One issue identified in the initiative is how the ISO accounts for minimum load costs in the event a generator has to change its minimum operating level. Minimum load costs consist of the cost of operating a facility at or below its minimum operating level and are paid for through the bid cost recovery process to the extent energy revenues based on the locational marginal prices do not cover those costs. The market software also considers these costs in creating the optimal dispatch for the system. Currently, minimum load costs are not adjusted when a generator's minimum operating level changes, which can result in the inefficient dispatch of the generator.

One of the primary reasons a generator's minimum operating level changes is changing temperatures throughout the day. This is particularly problematic for generators located in areas that experience wide variations in temperature such as the desert southwest where morning temperatures can be 40 or more degrees cooler than when they peak in the late afternoon. NV Energy, which joined the western energy imbalance market in November, has generators located in these areas. Without new rules to address minimum load costs when ambient conditions result in a significant change to a generator's minimum operating level, there is a risk that the ISO market systems may dispatch these resources inefficiently. This risk is likely to be greatest during the summer months.

As a result, Management has separated this issue from the bidding rules initiative so that the Board can consider the issue earlier and the ISO may implement the proposed enhancements prior to summer 2016 operations. The remaining bidding rules proposal is scheduled to be presented to the Board later in 2016.

To address this risk, Management proposes to adjust a generator's minimum load costs in the event of a temporary increase in the generator's minimum operating level based on the generator's default energy bid cost. The proposed change will increase market efficiency by more accurately reflecting minimum load costs in the market optimization process and ensure generators are adequately compensated for their commitment costs.

Moved, that the ISO Board of Governors approves the improved accounting of minimum load cost proposal, as described in the memorandum dated January 27, 2016; 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

Issue

The ISO market commits generators based on their start-up, minimum load, and energy bids. Minimum load is the lowest energy output at which a generator is capable of operating. The market uses a single minimum load bid cost for each operating day.

Under the current market design, when a generator needs to temporarily increase its minimum load for operational reasons, including ambient temperature, outages of mechanical equipment, or managing environmental limitations, the market dispatches the generator based on the original minimum load costs. This results in the average cost of the generator's minimum load output appear less expensive than it actually is. This results in market inefficiencies because the minimum load energy may displace other less expensive energy. In addition, the market may not fully compensate a generator with a temporary minimum load increase for its costs.

Proposed change

Management proposes to address this market inefficiency by changing the calculation of minimum load costs for a generator whose minimum operating level is increased due to conditions that alter the resource's operational capabilities, such as ambient temperature, mechanical equipment failures, or environmental compliance. Management proposes to adjust the bid-in minimum load costs using the generator's default energy bid corresponding to the energy output above the generator's original minimum load. Because the ISO creates default energy bids based on each generator's actual estimated costs plus 10 percent, this adjustment will account for the generator's change in costs due to its increased minimum operating level.

POSITIONS OF THE PARTIES

Stakeholders support enhancing the ISO's market rules to better account for the costs associated with changes in a generator's minimum operating levels. However, some stakeholders prefer accounting for the costs by scaling the bid-in minimum load costs in proportion to the change in minimum load instead of using a generator's default energy bid. They contend that using the default energy bid reduces their flexibility for bidding minimum load costs and prevents generators from potentially bidding lower minimum load costs than costs resulting from using the default energy bid.

Management did not adopt this alternative because the default energy bid more accurately accounts for the incremental energy costs associated with an increased minimum operating level. Simply scaling bid-in minimum load costs could overstate costs because minimum load costs include certain fixed costs, such as major maintenance costs that are not affected by a change in a generator's minimum operating level.

The Department of Market Monitoring has provided comments on Management's proposal in their Market Monitoring Report to the Board.

CONCLUSION

Management requests Board approval of the proposal discussed above. The proposed change will increase market efficiency by more accurately reflecting minimum load costs in the ISO market and ensure generators are adequately compensated for their commitment costs.