

**UNITED STATES OF AMERICA BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

**Market-Based Rate Application for the  
Energy Imbalance Market**

**Arizona Public Service Company**

**Docket No. ER18-2000-000**

**COMMENTS OF THE DEPARTMENT OF MARKET MONITORING FOR THE  
CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION**

The Department of Market Monitoring (DMM) for the California Independent System Operator (CAISO) files comments in the above-captioned proceeding. In this proceeding, Arizona Public Service (APS) submits a market power analysis and requests an amendment to its market-based rate authority to eliminate the current requirement that APS limit all bids in the Energy Imbalance Market (EIM) using cost-based Default Energy Bids (DEBs) used in the CAISO's tariff-based mitigation. APS bids will continue to be subject to the CAISO tariff-based mitigation that applies to all current market participants.

As the independent market monitor for the CAISO, DMM supports the request of APS to remove the seller specific mitigation currently applicable to APS. DMM supports this request for the following reasons: (1) the EIM is now structurally competitive during almost all intervals; (2) any potential structural market power that may exist in some intervals would be mitigated by the CAISO's real-time bid mitigation procedures; and (3) it is beneficial for market efficiency to allow participants the flexibility to submit market bids in excess of these cost-based DEBs during intervals when the EIM is highly competitive due the availability of other sources of supply.

## **I. The EIM Market is Structurally Competitive**

DMM has performed a series of analyses of the structural competitiveness of the EIM. DMM's most recent report is focused on the structural competitiveness of the APS balancing authority areas (BAA) in the EIM.<sup>1</sup> The DMM APS Report assesses structural competitiveness by comparing the total demand for imbalance energy within the APS balancing area is compared to the total available supply from non-APS sources that could compete to meet this demand through the EIM. During intervals when the amount of available competitive supply exceeds the total demand for imbalance energy within the APS balancing area, APS is not *pivotal* since total demand can be met by other competitive supply. The analysis in the DMM APS report shows that APS is not pivotal and the EIM market in the APS balancing area is structurally competitive during almost all intervals, due to the large amount of competitive supply that could be transferred into the APS balancing areas through the EIM.<sup>2</sup> During most intervals, the potential amount of competitive supply is several times the total demand for imbalance energy in the APS balancing area.<sup>3</sup>

## **II. Congestion on EIM Transfer Constraints into the APS Balancing Areas Has Been Very Infrequent**

The DMM APS Report also provides analysis of historical congestion and price separation in the EIM, similar to the analysis in APS's filing. The DMM APS Report also shows that the frequency of intervals when the APS balancing area has been separated from the rest of the CAISO system by binding EIM scheduling constraints has been very

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<sup>1</sup> *Structural Competitiveness of the Energy Imbalance Market: Arizona Public Service Balancing Area*, April 10, 2018, (the "DMM APS Report"). Included in the APS filing as Exhibit 3. The DMM APS Report can also be found at: <http://www.caiso.com/Documents/StructuralCompetitivenessoftheEIM-APS.pdf>

<sup>2</sup> DMM APS Report, p.9..

<sup>3</sup> DMM APS Report, p.11.

infrequent.<sup>4</sup> This analysis of historical congestion of EIM transfer scheduling constraints further supports the conclusion that the APS balancing area is structurally competitive and should not be considered submarkets in the EIM.

### **III. CAISO's Current Market Rules Effectively Mitigate Market Power in the EIM**

During the relatively small number of intervals when APS may be pivotal and competitive supply from the rest of the EIM may be limited by congestion, this potential structural market power is mitigated by the CAISO's real-time bid mitigation procedures.

As noted in APS's filing, the Commission's November 19, 2015 order cited concerns regarding the ability of the CAISO's automated market power mitigation procedures to mitigate the APS's market power in the expanded EIM.<sup>5</sup> In prior orders, the Commission has specifically noted the concern raised by some parties about the potential for *under-mitigation* to occur when EIM transfer constraints were congested (or binding) in the market runs, but were not binding in the prior market runs used to trigger bid mitigation. This concern was based on prior annual and quarterly reports by DMM, in which DMM has highlighted this issue.

Since DMM identified this concern, DMM continued to monitor this issue and began to work with the ISO to develop software enhancements to effectively address the issue of potential under-mitigation in the real-time market. As a result of this effort, enhancements to address the issue of under-mitigation in the ISO's real-time energy market were implemented in the 15-minute market in fall 2016 and in the 5-minute software in spring 2017.

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<sup>4</sup> DMM APS Report page 12.

<sup>5</sup> *Nev. Power Co., et al.*, 153 FERC ¶ 61,206 (2015) ("BHE EIM MBR Order"),

Analysis by DMM indicates these enhancements have greatly improved the effectiveness of the CAISO's real-time market power migration procedures.<sup>6</sup> As indicated in the DMM APS report, potential under-mitigation in the 15-minute market, occurring during the small portion of intervals when EIM transfer constraints have been binding dropped from 26 percent to less than 3 percent of congested intervals. In the 5-minute market, potential under-mitigation during intervals when EIM transfer constraints have been binding have dropped from 41 percent to 13 percent of congested intervals.

The recent improvements to CAISO's real-time market power mitigation procedures have made dramatic reductions to the instances of potential under-mitigation during the relatively small portion of intervals when EIM transfer constraints have been binding. The increased accuracy ensures the effectiveness of these automated mitigation procedures and mitigates concern that an EIM entity would have the opportunity to exercise market power through economic withholding.

#### **IV. Additional Bidding Flexibility Will Be Beneficial in the EIM**

CAISO market rules are designed to allow the type of bidding flexibility sought by APS. The DEBs developed under the CAISO tariff are designed to serve as an estimate of each resource's marginal costs for use only during intervals when automated bid mitigation procedures are triggered. During these intervals, the CAISO's market power tests have indicated that a portion of the CAISO system is not structurally competitive. Therefore, resources within the area that is not structurally competitive may have their bids mitigated so they do not exceed levels expected in a competitive market. Moreover, when bid mitigation occurs, market bids are not automatically

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<sup>6</sup> DMM APS Report, p.13.

lowered to the DEBs. Instead, bids are mitigated based on the higher of the units DEB or a competitive market price, which the CAISO calculates each interval based on the system marginal energy price plus congestion on competitive constraints.

Current CAISO rules and software require that these DEBs be calculated the evening prior to each operation day. For gas-fired units participating in EIM, DEBs calculated under the Variable Cost Option are based on published price indices for natural gas in the next day market. These DEBs include a 10 percent adder which is applied to each resource's total estimated marginal costs, including fuel and variable operating and maintenance costs.

Under some conditions, however, EIM participants seeking to purchase gas after the close of the next day market may be exposed to market prices that exceed the price indices used by the CAISO. If these market conditions or price premiums in the same-day gas market were predictable or systematic, this could be incorporated in DEBs developed by DMM in consultation with participants under the Negotiated Rate Option in the CAISO tariff.<sup>7</sup> However, current market processes also require that DEBs under this Negotiated Rate Option be calculated the evening prior to each operating day. This prevents any DEBs under the Negotiated Rate Option from being adjusted for any significant increases in gas costs in the same-day market that may occur at the beginning of, or during, any operating day.<sup>8</sup>

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<sup>7</sup> Section 39.7.1.1

<sup>8</sup> DMM is recommending the ISO develop the ability for DEBs to be updated at the start of each operating day based on observed same day gas market prices and conditions. However, any such changes would not be implemented until at least fall 2019.

Under the Negotiated Rate Option, DEBs for hydro resources with limited amounts of dispatchable energy can be developed that reflect the opportunity costs of these energy limits.<sup>9</sup> However, these DEBs must be also calculated the evening prior to each operating day and require information on energy limits to be provided in advance by participants managing these resources. This can also result in cases when DEBs may not reflect the full opportunity cost of a hydro resource, given actual resource limits and real-time market conditions, which develop or unfold during an operating day.

DMM believes these cost-based DEBs reflect a very accurate estimate of each unit's marginal costs under most conditions, and are just and reasonable for the intended use in bid mitigation during intervals when structurally uncompetitive constraints are binding. During other intervals, DMM believes it is beneficial to allow participants the flexibility to bid in excess of DEBs. This allows participants to adjust bids to reflect actual real-time market conditions; account for changing resource limitations or constraints; and to help manage the overall merit-order of a resource portfolio. During these intervals, the potential incentive and impact of market power is effectively mitigated by potential competition from other sources of supply.

The increased bidding flexibility may also create an incentive for APS to offer additional capacity in the EIM under some conditions. Although EIM rules include a variety of resource sufficiency tests designed to ensure sufficient resources are scheduled and bid into the EIM within each EIM balancing area, there is no *must-offer* requirement for all available capacity in the EIM. Allowing APS to offer at prices based on their assessment of each resource's marginal or opportunity cost may in some cases provide additional

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<sup>9</sup> Section 39.7.1.3

incentive to offer capacity beyond what is needed to meet resource sufficiency tests that might not otherwise be offered. This additional capacity could be used to support transfers of supply out of the APS balancing areas into the rest of the EIM when this is economic based on system-wide market prices.

## **V. Conclusion**

Since the addition of NV Energy to the EIM in December 2015, all EIM BAAs have been highly structurally competitive during almost all intervals. This structural competitiveness effectively mitigates the potential for both physical and economic withholding in the APS Balancing Area. During the very small portion of intervals when APS may be pivotal and competitive supply into the APS BAA may be limited by binding EIM transfer constraints, this potential structural market power is mitigated by the CAISO's real-time bid mitigation procedures. Recent improvements to CAISO's real-time market power mitigation procedures ensure that instances of potential under-mitigation when EIM transfer constraints are binding are very infrequent. These enhancements ensure the effectiveness of these automated mitigation procedures, and mitigate concern that an EIM entity would have the opportunity to exercise market power through economic withholding.

The cost-based DEBs developed under the Variable Cost and Negotiated Rate Options are just and reasonable for their intended use in bid mitigation during intervals when structurally uncompetitive constraints are binding. However, when an EIM balancing area is structurally competitive, it is beneficial to allow participants the flexibility to submit market bids in excess of these DEBs. This allows participants to adjust bids to reflect actual real-time market conditions; account for changing resource limitations or constraints; and to help manage the overall merit order of their resource

portfolio. The additional bidding flexibility will ultimately increase market efficiency and competitiveness by encouraging maximum participation in the EIM.

Therefore, DMM supports the request of APS to participate in the EIM using market-based rates, subject to the market power mitigation provisions of the CAISO tariff, without the requirement that APS limit all bids in the EIM using cost-based DEBs.

Respectfully submitted,

**/s/ Eric Hildebrandt**

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## CERTIFICATE OF SERVICE

I hereby certify that I have served the foregoing document upon the parties listed on the official service lists in the above-referenced proceedings, in accordance with the requirements of Rule 2010 of the Commission's Rules of Practice and Procedure (18 C.F.R. § 385.2010).

Dated at Folsom, California this 1<sup>st</sup> day of August, 2018.

*Anna Pascuzzo*  
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