

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

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<b>Nevada Power Company</b>	)	<b>Docket No. ER17-2394-000</b>
	)	
<b>Sierra Pacific Power Company</b>	)	<b>Docket No. ER17-2395-000</b>
	)	
<b>PacifiCorp</b>	)	<b>Docket No. ER17-2392-000</b>

**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 Corporation (CAISO) files comments in the above-captioned proceedings. In these proceedings, the Nevada Power Company and Sierra Pacific Power Company (collectively, the NV Energy Companies) and PacifiCorp (together with the NV Energy Companies, the “BHE EIM Participants” propose revisions to their respective market-based rate tariffs to enable their participation in the Energy Imbalance Market (EIM) administered by the CAISO using market-based rates, subject to the market power mitigation provisions of the CAISO tariff, instead of current requirements to participate in the EIM using the cost-based Default Energy Bid (DEB) at all times.<sup>1</sup> As the independent market monitor for the CAISO, DMM supports the BHE EIM Participants’ filing to remove the current requirement that BHE EIM Participants limit all bids in the EIM using cost-based DEBs. DMM supports this request for the

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<sup>1</sup> *Amendments to Market-Based Rate Tariffs Regarding Market-Based Rate Authority for the Energy Imbalance Market*, Docket Nos. ER17-2394, ER17-2395, ER17-2392, August 31, 2017, filed by Nevada Power Company and Sierra Pacific Power Company (collectively, the NV Energy Companies) and PacifiCorp (together with the NV Energy Companies), referred to as the BHE EIM Participants. The BHE EIM Participants’ filing requests that the Commission treat these filings as a single proceeding and consolidate the dockets, if necessary.

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 effectively 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 to 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. The analysis in these reports indicates that since the addition of the NV Energy balancing authority area (BAA) in December 2015, all of the BAAs in the EIM have been structurally competitive – individually and collectively – during almost all intervals.<sup>2</sup>

DMM's most recent report focuses on the structural competitiveness of the combination of all the BHE EIM Participants' BAAs in the EIM.<sup>3</sup> The DMM BHE Report and the analysis in the BHE EIM Participants' filing both assess structural competitiveness using the same basic framework. With this approach, the total demand for imbalance energy within the combined BHE EIM Participants' BAAs is compared to the total available supply from non-BHE 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 BHE BAAs, the BHE

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<sup>2</sup> See *Report on Structural Competitiveness of Energy Imbalance Market*, December 6, 2016 Department of Market Monitoring, [http://www.caiso.com/Documents/Dec6\\_2016\\_Department\\_MarketMonitoring\\_EIM\\_StructuralMarketPowerInformationalReport\\_ER14-1386.pdf](http://www.caiso.com/Documents/Dec6_2016_Department_MarketMonitoring_EIM_StructuralMarketPowerInformationalReport_ER14-1386.pdf)

<sup>3</sup> *Structural Competitiveness of the Energy Imbalance Market: Analysis of Market Power of the Berkshire Hathaway Entities*, June 29, 2017, (the "DMM BHE Report"). Included in the BHE EIM Participants' filing as Exhibit 3. The DMM BHE Report can also be found at: <https://www.caiso.com/Documents/AnalysisofMarketPoweroftheBerkshireHathawayEntities.pdf>.

EIM Participants are not pivotal since total imbalance demand can be met by other competitive supply.

The DMM BHE report and the analysis of structural market power in the combined BHE BAAs provided in the BHE EIM Participants' filing are based on slightly different data, methodologies, and time periods. However, the conclusions and detailed results of both analyses are the same. Both analyses show that the BHE EIM Participants are not pivotal within the combined BHE BAAs and that the EIM market these BAAs is structurally competitive during almost all intervals due to the large amount of competitive supply that could be transferred into the BHE EIM BAAs through the EIM.<sup>4</sup> Both analyses show that during almost all intervals, the potential amount of competitive supply that can be transferred in through the EIM is several times the total demand for imbalance energy in the BHE EIM BAAs.<sup>5</sup>

The BHE EIM Participants' filing also provides analysis showing that the BHE EIM Participants' pass the Commission's market share screen and pivotal supplier screen for the overall combined EIM footprint (i.e. including the CAISO).<sup>6</sup>

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

The DMM BHE Report also provides analysis of historical congestion and price separation in the EIM, similar to the analysis in the BHE EIM Participants' filing.<sup>7</sup> The DMM BHE Report shows that the frequency of intervals when the BHE BAAs have been separated from the rest of the CAISO system by binding EIM scheduling constraints has

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<sup>4</sup> DMM BHE Report page 11 and BHE EIM Participants' filing page 21.

<sup>5</sup> DMM BHE Report pages 12-13 and BHE EIM Participants' filing page 21.

<sup>6</sup> BHE EIM Participants' filing page 22-25.

<sup>7</sup> BHE EIM Participants' Filing, pages 15-19.

been very low.<sup>8</sup> This analysis of historical congestion of EIM transfer scheduling constraints further supports the conclusion that the BHE balancing areas – individually and collectively – are 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 BHE EIM Participants may be pivotal and competitive supply from the rest of the EIM into any of the BHE BAAs may be limited by congestion, this potential structural market power is effectively mitigated by the CAISO’s real-time bid mitigation procedures.

As noted in the BHE EIM Participants’ 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 BHE EIM Participants’ market power in the expanded EIM.<sup>9</sup> 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.<sup>10</sup>

Since DMM identified this concern, DMM continued to monitor this issue and began to work with the CAISO to develop software enhancements to address effectively the issue of potential under-mitigation in the real-time market. As a result of this effort,

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<sup>8</sup> DMM BHE Report page 14.

<sup>9</sup> *Nev. Power Co., et al.*, 153 FERC ¶ 61,206 at P 47 (2015) (“BHE EIM MBR Order”),

<sup>10</sup> DMM has provided discussion and analysis of the issue of potential under-mitigation in its annual report dating back to DMM’s 2013 Annual Report. See *2013 Annual Report on Market Issues and Performance*, pp. 160-163, available at:

<http://www.caiso.com/Documents/2013AnnualReport-MarketIssue-Performance.pdf>

the CAISO implemented enhancements to address the issue of under-mitigation in the CAISO's real-time energy market in the 15-minute market in fall 2016 and in the 5-minute software in spring 2017.

As noted in the BHE EIM Participants' filing, analysis by DMM indicates these enhancements have greatly improved the effectiveness of the CAISO's real-time market power migration procedures. Shortly prior to the BHE EIM Participant's filing, DMM issued a more recent report that provides more detailed description and analysis of these enhancements.<sup>11</sup> This analysis is based on several months of data following implementation of these enhancements and confirms that these recent enhancements have greatly decreased the potential for any under-mitigation when EIM transfer constraints may be binding. In the 15-minute market, potential under-mitigation occurring during the small portion of intervals when EIM transfer constraints have been binding dropped from 25 percent to less than 3 percent of intervals. In the 5-minute market, potential under-mitigation during intervals when EIM transfer constraints have been binding dropped from 41 percent to less than 8 percent of intervals.<sup>12</sup>

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

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<sup>11</sup> *Impact of real-time market power mitigation enhancements in EIM areas*, August 28, 2017, Department of Market Monitoring, included in the BHE EIM Participants' filing as Exhibit 6. <http://www.caiso.com/Documents/ImpactofReal-timeMarketPowerMitigationEnhancementsinEIMAreas.pdf>

<sup>12</sup> The higher rate of potential under mitigation in the 5-minute market appears to be driven by special limitations placed on transfer constraints involving transmission through the BPA BAA.

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 the BHE EIM Participants. 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 lowered to the DEBs. Instead, bids are mitigated to 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.<sup>13</sup>

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

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<sup>13</sup> DMM is recommending the CAISO 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 2018.

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>14</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>15</sup>

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>16</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.<sup>17</sup> During other intervals, DMM believes it is beneficial to allow

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<sup>14</sup> Section 39.7.1.1

<sup>15</sup> DMM is recommending the CAISO 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 2018.

<sup>16</sup> Section 39.7.1.3

<sup>17</sup> DMM has performed extensive analysis of available data on prices of gas in the same day market in California showing that any premiums in same day gas prices rarely exceed the 10 percent adder that is

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 the BHE EIM Participants 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 BAA, there is no *must-offer* requirement for all available capacity in the EIM. Allowing BHE EIM Participants' to offer at prices based on their assessment of each resource's marginal or opportunity cost may in some cases provide additional 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 BHE BAAs into the rest of the EIM when this is economic based on system-wide market prices.

## **V. Conclusion**

Since the addition of the NV Energy BAA 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

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included in all DEBs. For DMM's most recent analysis, see DMM Memorandum to ISO Board of Governors, July 19, 2017, p. 3. [http://www.caiso.com/Documents/Department\\_MarketMonitoringUpdate-Memo-Jul2017.pdf](http://www.caiso.com/Documents/Department_MarketMonitoringUpdate-Memo-Jul2017.pdf)

In addition, the CAISO tariff allows EIM participants with DEBs calculated under the Variable Cost Option to file for approval from the Commission for recovery of any energy procurement costs that are not recovered as a result of the special energy bidding limits in effect on some EIM participants. (CAISO Tariff Section 39.7.1.1.3)

economic withholding in the BHE BAAs.

During the very small portion of intervals when BHE Participants may be pivotal and competitive supply into any of the BHE BAAs 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 BAA 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 BHE EIM Participants to participate in the EIM using market-based rates, subject to the market power mitigation provisions of the CAISO tariff, without the requirement that BHE EIM Participants limit all bids in the EIM using cost-based DEBs.

Respectfully submitted,

**/s/ Eric Hildebrandt**

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Independent Market Monitor for the California

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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 21<sup>st</sup> day of September, 2017.

*Anna Pascuzzo*  
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