

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

California Independent System  
Operator Corporation

Docket No. ER18-2341

**INFORMATIONAL REPORT OF THE CALIFORNIA INDEPENDENT SYSTEM  
OPERATOR CORPORATION**

The California Independent System Operator Corporation (CAISO) files this informational report in compliance with the Commission's order accepting tariff revisions to the CAISO's Energy Imbalance Market (EIM) bid adder rules.<sup>1</sup>

**I. Background**

EIM participating resource scheduling coordinators utilize the EIM bid adder to submit an hourly quantity of MW to express how much of an EIM participating resource's output may support a transfer to serve CAISO demand or demand within an EIM participating balancing authority area located within California. EIM participating resource scheduling coordinators also submit an hourly price in their bid adders for each participating resource at or below the resource's daily maximum greenhouse gas cost cap. This hourly price reflects the costs for the resource to comply with California's greenhouse gas regulations.

The Commission's *EIM Bid Adder Order* authorizes the CAISO to revise these rules to limit the hourly MW quantity of an EIM bid adder to the EIM participating resource's dispatchable bid range between the resource's base schedule and its

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<sup>1</sup> *Cal. Indep. Sys. Operator Corp.* 165 FERC ¶ 61,050 (2018) (*EIM Bid Adder Order*).

effective upper economic bid for the relevant operating hour. The CAISO implemented this revision in November 2018. The design more accurately attributes energy produced by EIM participating resources serving California demand because it recognizes the resource already has a base schedule to serve load outside of California.

The *EIM Bid Adder Order* acknowledges concerns raised by the CAISO's Department of Market Monitoring (DMM) that the CAISO's revised bid adder rules might sacrifice some level of market efficiency. DMM observed that when demand in an EIM Entity area is lower than forecast in that EIM Entity's base schedule, there could be additional undispached capacity on an EIM participating resource available to serve California demand beyond that reflected in the MW quantity identified by the EIM bid adder.<sup>2</sup>

Paragraph 18 of the Commission's *EIM Bid Adder Order* directs the CAISO to file an informational report on or before January 1, 2020 to describe the extent to which situations similar to the scenario described by DMM materialize during the 12 months after the implementation of the tariff revisions. The Commission provided the following additional direction with respect to the contents of this informational report:

We expect the informational report to include instances in which: (1) an EIM participating resource offered capacity as eligible to serve California load (i.e., included an EIM bid adder for those MWs), equal to the difference between the resource's base schedule and the resource's effective upper economic bid; (2) for a particular 15 minute market interval, the balancing authority area in which the EIM participating resource is located had a real-time load less than was forecasted in the EIM balancing authority area's base

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<sup>2</sup> *EIM Bid Adder Order* at PP 12, 18 and fn 17.

schedule; (3) the EIM participating resource was dispatched to serve native load at a lower level than what was anticipated in the base schedule; and (4) any remaining capacity from the EIM participating resource that otherwise could have been economically dispatched was not dispatched while a more expensive resource was dispatched instead, thereby reducing market efficiency.<sup>3</sup>

The CAISO addresses the Commission's guidance in Section II of this report.

The *EIM Bid Adder Order* also acknowledges the CAISO's commitment that the CAISO will monitor any changes to the formation of base schedules by market participants designed to maximize revenue from greenhouse gas payments as opposed to the most optimal operation of their resources. The CAISO includes information on the formation of base schedules in Section III of this report.<sup>4</sup>

## **II. The CAISO has not observed a material impact on market inefficiency resulting from implementing the revised EIM bid adder rules**

The CAISO's revised EIM bid adder rules have operated as designed. These rules have more accurately attributed energy produced by EIM participating resources serving demand within the CAISO or another EIM Entity balancing authority area located within California. Consistent with the guidance included in the *EIM Bid Adder Order*, the CAISO has assessed instances of potential market inefficiency resulting from the revised EIM bid adder rules. The analysis reviewed the following data:

- (1) 15 minute market intervals in which there were EIM transfers to serve demand within the CAISO or another EIM Entity balancing authority located in California;

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<sup>3</sup> *EIM Bid Adder Order* at fn. 24.

<sup>4</sup> The CAISO also provided such a report to its EIM Governing Body in June 2019. See slide 10 of June 28, 2019 *Briefing on Western Energy Imbalance Market and Benefits*: <https://www.westerneim.com/Documents/BriefingonWesternEnergyImbalanceMarketandBenefits-Presentation-Jun2019.pdf>

- (2) 15 minute market intervals in which the balancing authority area where the EIM participating resource was located had a real-time load less than was forecasted in the EIM balancing authority area's base schedule; and
- (3) Instances in which the CAISO dispatched the EIM participating resource at a lower level than reflected in the base schedule.<sup>5</sup>
- (4) Remaining capacity from the EIM participating resource that could have been economically dispatched and was not dispatched; while a more expensive resource was dispatched instead.

Figure 1 reflects the monthly average amount of undispached capacity from EIM participating resources with EIM bid adders that could have been available to serve California demand but for the CAISO's revised bid adder rule for each day during the months of November 2018 through October 2019. This capacity was available during 15-minute market intervals in which (1) EIM transfers served California demand; (2) an EIM participating resource's native balancing authority had a real-time load less than was forecasted in the base schedule; (3) the CAISO dispatched the EIM participating resource at a lower level than reflected in the base schedule; and (4) the EIM participating resource had an EIM bid adder lower than greenhouse gas marginal price

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<sup>5</sup> The dispatch of resources in the EIM does not attribute the output of participating resources to load within a specific EIM Entity outside of California. Instead, the CAISO dispatches participating resources to serve load throughout the EIM footprint. Only EIM participating resources that submit an EIM bid adder may receive an attribution of whether they served demand within the CAISO or another EIM entity balancing authority area located within California.

**Figure 1 – Average daily EIM participating resource undispached capacity available to serve California demand by month (November 2018 – October 2019)**

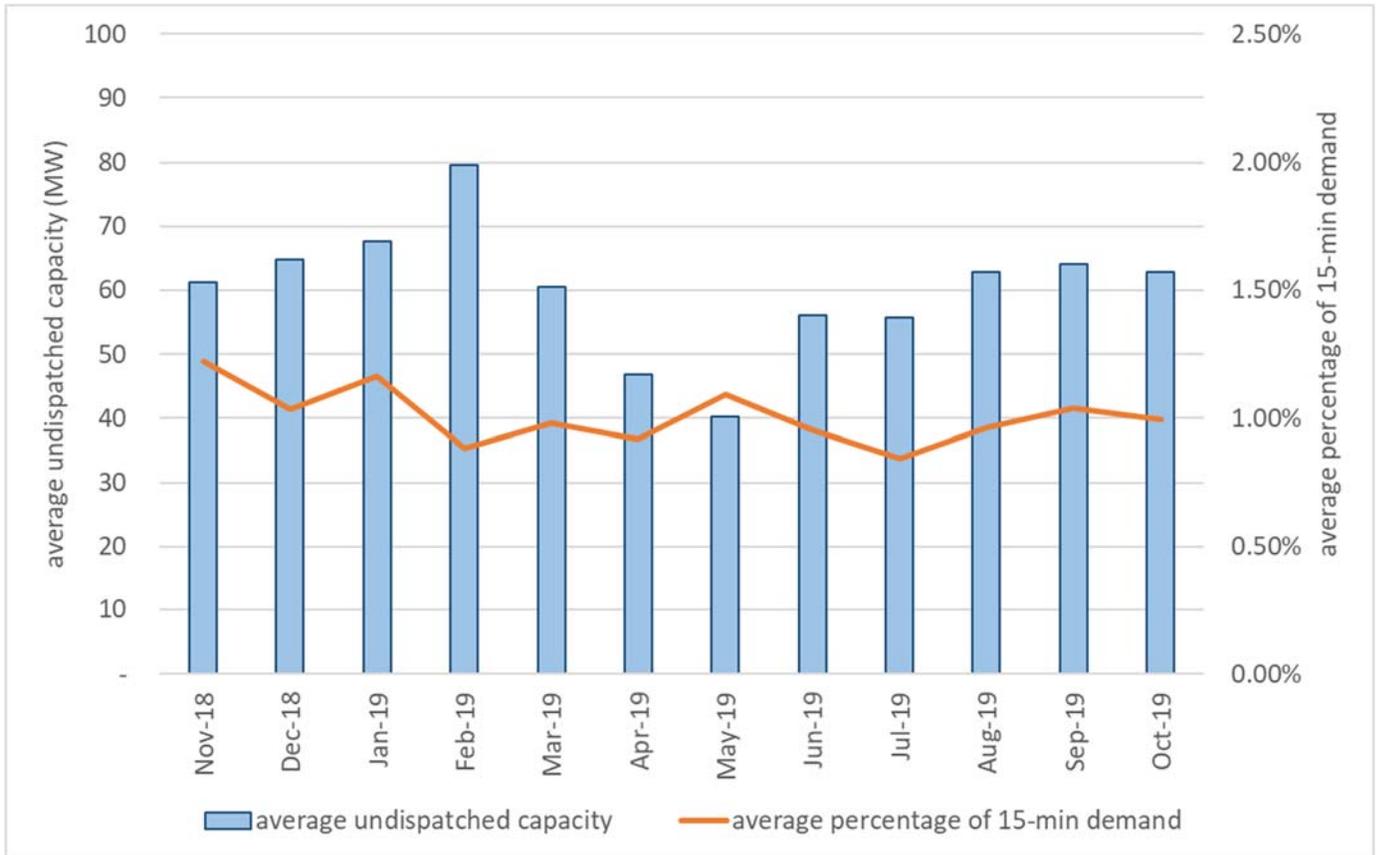
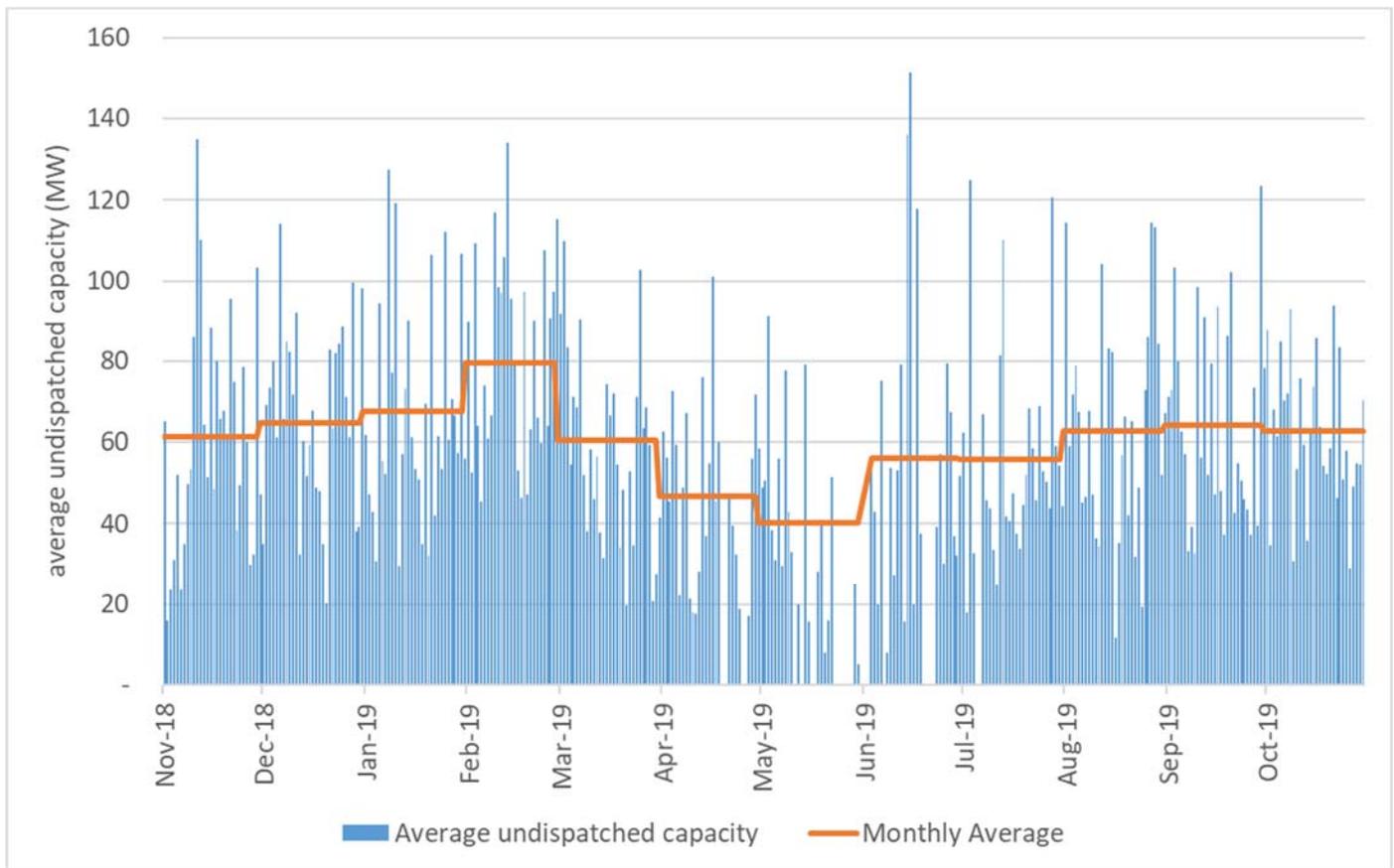


Figure 1 also reflects the ratio of the average undispached capacity compared to the 15-minute market demand within the balancing authority area in which the EIM participating resource was located. This ratio reflects the magnitude of available undispached capacity in intervals in which an EIM participating resource’s native balancing authority had a real-time load less than was forecasted in the base schedule. The average undispached capacity does not reflect a significant percentage of this demand.

Figure 2 reflects the undispached capacity from EIM participating resources with EIM bid adders that could have been available to serve California demand but for the

CAISO’s revised bid adder rules for each day during the months of November 2018 through October 2019. This capacity was available during 15-minute market intervals in which (1) EIM transfers served California demand; (2) an EIM participating resource’s native balancing authority had a real-time load less than was forecasted in the base schedule; (3) the CAISO dispatched the EIM participating resource at a lower level than reflected in the base schedule; and (4) the EIM participating resource had an EIM bid adder lower than greenhouse gas marginal price for that 15-minute interval.

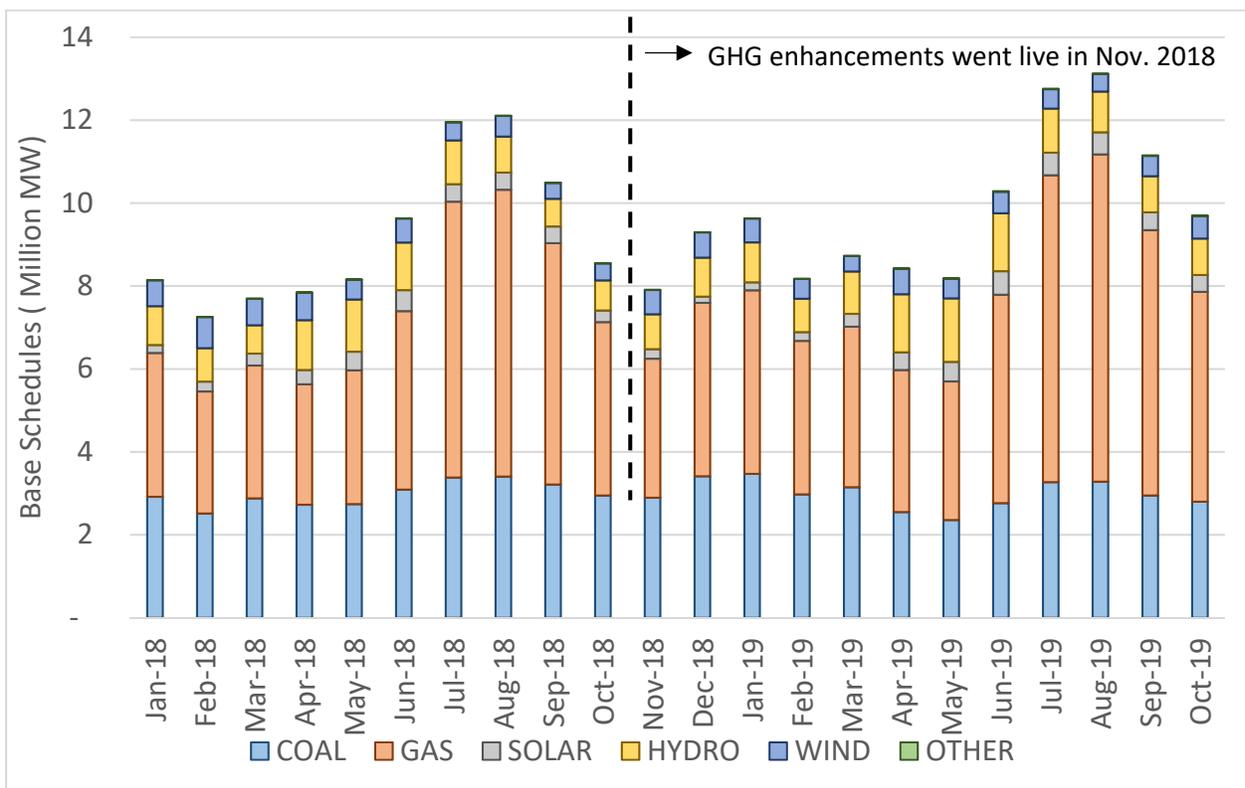
**Figure 2 - Daily EIM Participating Resource undispached capacity available to serve California demand (November 2018 – October 2019)**



### III. The CAISO has not observed material changes in base schedule formation since implementing its revised bid adder rules

The CAISO has monitored base schedules submitted by EIM participating resources and has not observed any material changes to the formation of these schedules. As reflected in Figure 3, base schedules submitted by EIM participating resource scheduling coordinators have generally followed seasonal patterns based on fuel type.

**Figure 3 – Monthly EIM Participating Resource Base Schedules by Fuel Type January 2018-October 2019**



### IV. Conclusion

The CAISO’s revised EIM bid adder rules have operated as designed since implementation in November 2018. Although the CAISO’s bid adder rules have limited the ability to dispatch some capacity to serve California demand, the CAISO has not

observed any material degradation of market efficiency. The CAISO has also not observed any material changes to the formation of base schedules in the EIM since it implemented its revised EIM bid adder rules. The CAISO appreciates the Commission's support of ongoing development of the EIM, which is creating economic and reliability benefits for participating entities.

Respectfully submitted,

**By: /s/ Andrew Ulmer**

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## CERTIFICATE OF SERVICE

I certify that I have served the foregoing document upon the parties listed on the official service list in the captioned 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 27<sup>th</sup> day of December 2019.

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