



November 28, 2022

The Honorable Kimberly D. Bose  
Secretary  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, DC 20426

**Re: California Independent System Operator Corporation  
Docket No. ER15-2565-\_\_\_\_  
October 2022 Informational Report  
Western Energy Imbalance Market – Transition Period Report –  
Bonneville Power Administration WEIM Entity**

Dear Secretary Bose:

The California Independent System Operator Corporation (CAISO) hereby submits its report on the transition period of Bonneville Power Administration WEIM Entity during its first six months of participation in the Western Energy Imbalance Market (WEIM) for October 1, 2022 through October 31, 2022. The Commission also directed the Department of Market Monitoring (DMM) to submit an independent assessment of the CAISO's report, which the CAISO's DMM will seek to file within approximately 15 business days.

Please contact the undersigned with any questions.

Respectfully submitted

**By: /s/ John Anders**

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# California ISO

## **Western Energy Imbalance Market**

**October 1 - October 31, 2022**

### **Transition Period Report**

**Bonneville Power Administration (BPA) WEIM Entity**

November 28, 2022

## I. Introduction and Background

On October 29, 2015, the Federal Energy Regulatory Commission (Commission) approved the California Independent System Operator Corporation's (CAISO) proposed tariff amendments to allow a transition period for new Western Energy Imbalance Market (WEIM) entities during the first six months of WEIM participation, effective November 1, 2015.<sup>1</sup> Bonneville Power Administration (BPA), the prospective WEIM Entity entered the WEIM on May 03, 2022, and the transition period will apply to the BPA balancing authority area (BAA) until October 31, 2022.<sup>2</sup>

During the six-month transition period, the price of energy in the new WEIM entity's BAA is not subject to the pricing parameters that normally apply when the market optimization relaxes a transmission constraint or the power balance constraint. Instead, during the six-month transition period, the CAISO will clear the market based on the marginal economic energy bid (referred to herein as "transition period pricing"). In addition, during the six-month transition period, the CAISO sets the flexible ramping constraint relaxation parameter for the new WEIM entity's BAA between \$0 and \$0.01, but only when the power balance or transmission constraints are relaxed in the relevant WEIM BAA. This is necessary to allow the market software to determine the marginal energy bid price.

Consistent with the Commission's October 29 Order, the CAISO and the Department of Market Monitoring (DMM) will file informational reports at 30-day intervals during the six-month transition period for any new WEIM entity. The CAISO provides this report for BPA to comply with the Commission's requirements in the October 29 Order. The CAISO anticipates filing these reports on a monthly basis. However, because the complete set of data is not available immediately at the end of the applicable month,<sup>3</sup> and depending on the market performance each month, along with the need to coordinate with the WEIM entity, the CAISO expects to continue to file the monthly reports approximately 25 days after the end of each month in order to provide the prior full month's data.

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<sup>1</sup> *California Indep. Sys. Operator Corp.*, 153 FERC ¶ 61,104 (2015) (October 29 Order).

<sup>2</sup> This follows from the application of CAISO Tariff section 27(b)(1), which refers to a number of months rather than a number of days.

<sup>3</sup> The earliest the CAISO can start gathering the data is 10 business days after the last day for the reporting month since this is when the price correction window expires.

## II. Highlights

Overall, BPA's transition into the WEIM was smooth and without significant issues. The market performance highlights for October are as follows:

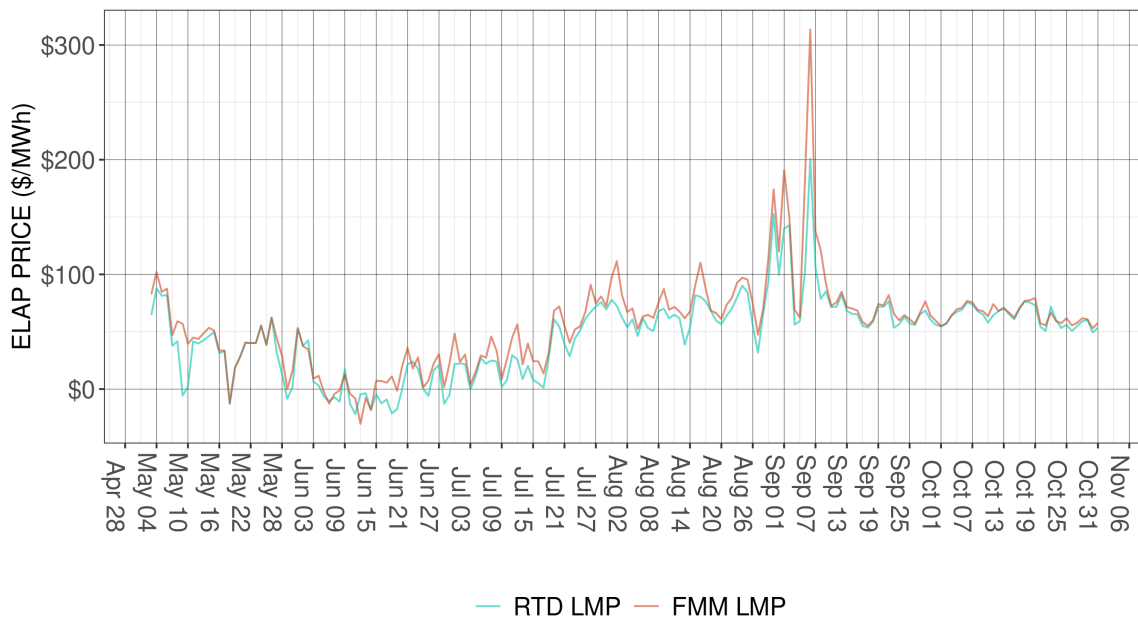
- Prices were stable and within reasonable ranges for BPA BAA, with a monthly average price of \$65.17/MWh in the fifteen-minute market (FMM) and \$62.9/MWh in the real-time dispatch (RTD).
- BPA BAA observed no infeasibility for undersupply in the fifteen-minute and five-minute market.
- As part of the resource sufficiency test performed for each WEIM entity prior to the real-time markets, BPA successfully passed over 82.93 percent of its balancing tests and 100 percent of its bid-range capacity tests.
- As part of the resource sufficiency test, BPA passed successfully 99.83 percent of its upward flexible ramping sufficiency tests.
- The price for upward flexible ramping capacity in the FMM for the BPA BAA averaged at \$0.16/MWh, while prices for the downward flexible ramping product averaged \$0.05/MWh.

### III. Market Performance Related to the Transitional Period

#### a. Prices

Figure 1 shows the daily average Fifteen-Minute Market (FMM) and Real-Time Dispatch (RTD) prices in the BPA WEIM Load Aggregation Point (ELAP) for May 03, 2022 to October 31, 2022. October’s monthly average price in the FMM was \$65.17/MWh and \$62.9/MWh in the RTD.

**Figure 1: Daily average prices for the BPA BAA**

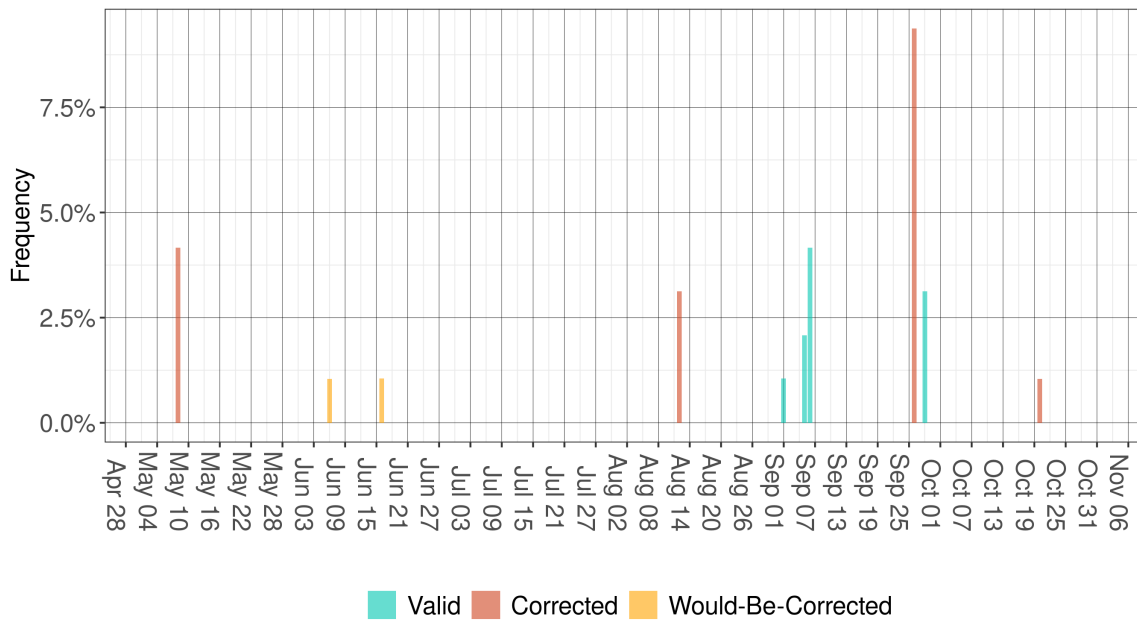


Under the CAISO’s price correction authority in Section 35 of the CAISO tariff, the CAISO may correct prices posted on its Open Access Same-Time Information System (OASIS) if it finds: (1) that the prices were the product of an invalid market solution; (2) the market solution produced an invalid price due to data input failures, hardware or software failures; or (3) a result that is inconsistent with the CAISO tariff. The prices presented in Figure 1 include all prices produced by the CAISO consistent with its tariff requirements. That is, the trends represent: (1) prices as produced in the market that the CAISO deemed valid; (2) prices that the CAISO could, and did, correct pursuant to Section 35 of the CAISO tariff; and (3) any prices the CAISO adjusted pursuant to the transition period pricing reflected in Section 29.27 of the CAISO tariff.

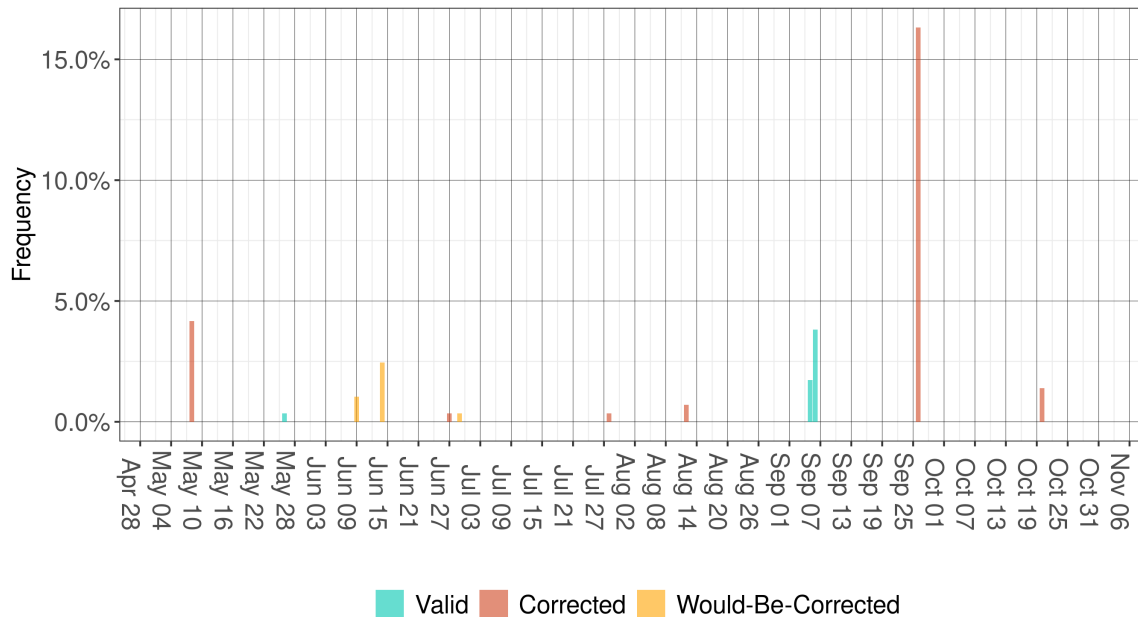
**b. Frequency of Power Balance Constraint Infeasibilities**

Figures 2 and 3 show the frequency of intervals in which the power balance constraint was relaxed for under-supply conditions in the BPA BAA for the FMM and RTD, respectively. The under-supply infeasibilities are classified into three categories: Valid, Corrected and Would-Be-Corrected. Those under-supply infeasibilities, which are impacted by either data input failures or software failures where the ISO performed price correction pursuant to Section 35 of the CAISO tariff, are classified as Corrected. There are other under-supply infeasibilities that were impacted by data input failures or software failures; and which would be subject to price correction, but were not corrected because the price after correction would be the same price as that obtained by the transition period pricing. These instances are classified as Would-Be-Corrected. All remaining under-supply infeasibilities, which were driven by system conditions, are classified as Valid.

**Figure 2: Frequency of FMM under-supply infeasibilities in the BPA BAA**



**Figure 3: Frequency of RTD under-supply infeasibilities in the BPA BAA**



Tables 1 and 2 list the valid FMM and RTD intervals with infeasibilities observed in October.

**Table 1: List of valid FMM under-supply infeasibilities in the BPA BAA**

Trade Date	Trade Hour	Trade Interval	MW Infeasibility

**Table 2: List of valid RTD under-supply infeasibilities in the BPA BAA**

Trade Date	Trade Hour	Trade Interval	MW Infeasibility

**c. Balancing and Sufficiency Test Failures**

The WEIM provides an opportunity for various BAAs to serve their load while realizing the benefits of increased resource diversity. Since the WEIM does not include resource adequacy requirements or obligations for resources to submit bids, the CAISO performs a series of resource sufficiency tests comprised of: (i) a balancing test; (ii) a capacity test; and (iii) a flexible ramping sufficiency test. These tests occur prior to the real-time market. Performance of a balancing test before each trading hour ensures that each participating BAA submits a balanced base schedule of generation and a net schedule interchange to meet its demand. In addition, the participating BAA is required to submit bids with

enough ramping capability to meet its net load forecast uncertainty and net load movement requirements. Figure 4 shows the trend of balancing test outcomes for the period of May 03, 2022, through October 31, 2022, and Figure 5 shows the pattern of bid-range capacity test outcomes for the same period.<sup>4</sup> If a balancing test or the bid-range capacity test is affected by data input failures or a software failures, those test results are shown as correctable events. The BPA BAA passed the balancing test in 82.93 percent of the intervals in October, which is lower than the previous months. While BPA has elected to use the CAISO's BPA BAA load forecast in both FMM and RTD, BPA's WEIM software implementation provides BPA's merchant (a.k.a. Power Services) the ability to choose either the CAISO BAA load forecast or an internally produced merchant load forecast to balance to. As of October 18, 2022, BPA had not tested this functionality since prior to Go Live. In settlements, BPA's merchant's scheduling behavior is measured against their metered actual load in the BAA. When the target load is not a forecast of the merchant's metered load, there may be potential settlement impacts to BPA's merchant for targeting one forecast vs. another. From October 18, 2022, through October 28, 2022, BPA performed a test designed to evaluate the performance of their implementation choices and to better understand the settlements implications of their merchant scheduling energy to balance the BAA to the CAISO BPA area load forecast rather than to the forecast of their merchant's load and obligations.

To avoid negative outcomes from not targeting the CAISO's BPA area load forecast during this period, BPA's merchant offered additional bid range capacity into the WEIM in order to facilitate passing the bid-range capacity and flexible ramping sufficiency tests each hour. While the BPA BAA failed the balancing test many hours between October 18, 2022 and October 28, 2022, the BPA BAA did not fail any of the bid-range capacity tests or flexible ramping sufficiency tests and did not experience any under-supply or over-supply infeasibilities.

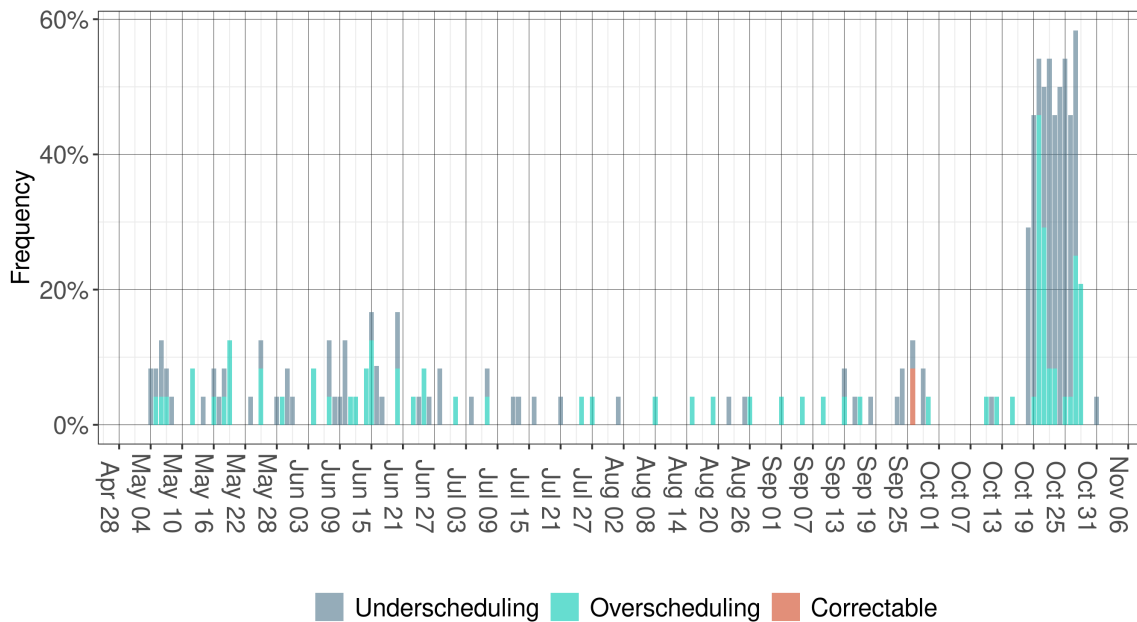
The BPA BAA passed the bid-range capacity test in 100 percent of intervals.

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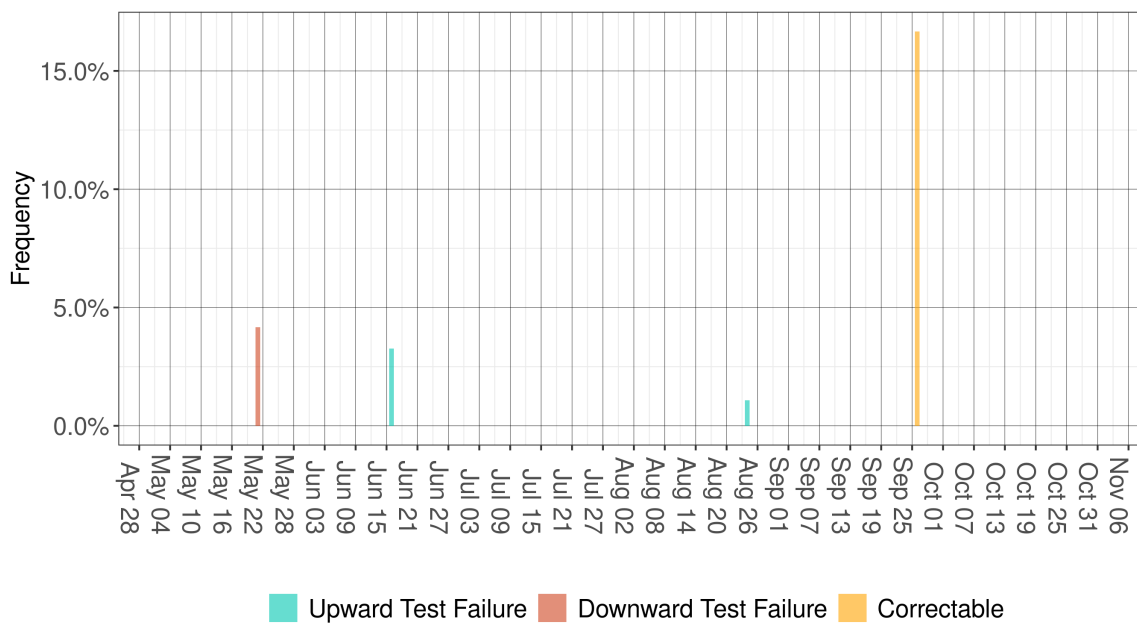
<sup>4</sup> The CAISO performs resource sufficiency tests pursuant to Section 29.34(k) of the CAISO tariff.



**Figure 4: Frequency of Balancing test failures in the BPA BAA**

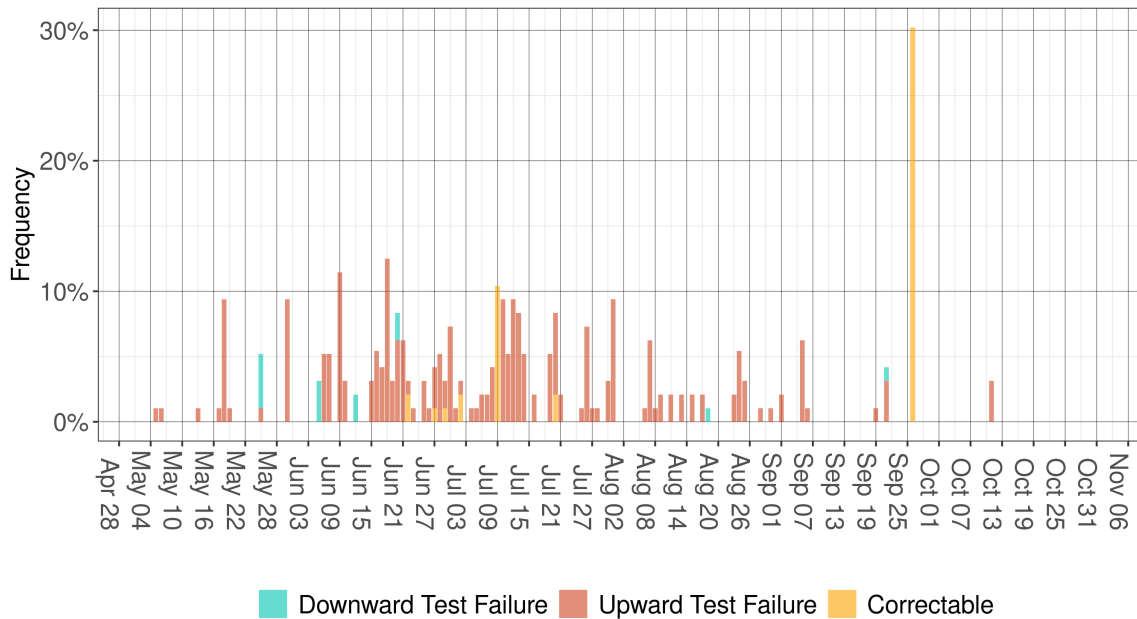


**Figure 5: Frequency of Bid Range Capacity test failures in the BPA BAA**



The CAISO also performs the flexible ramping sufficiency test as specified in Section 29.34(m) of the CAISO tariff. Figure 6 shows the trend of the test failures for flexible ramping for the period of May 03, 2022 through October 31, 2022. The BPA BAA passed the flexible ramp up and down tests in 99.83 percent of the intervals in October.

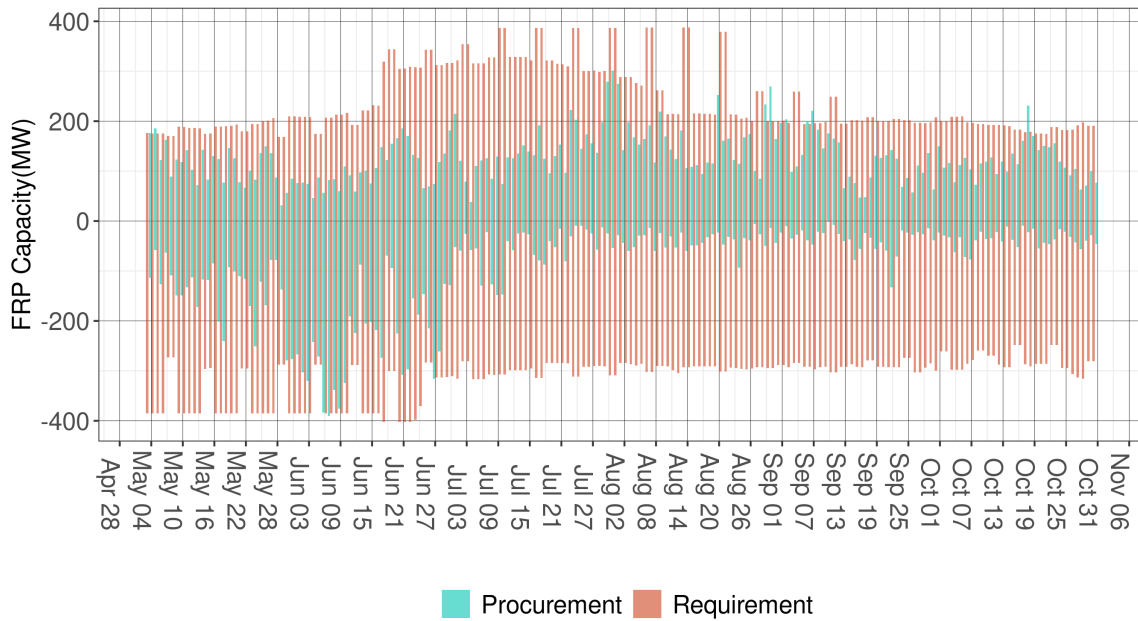
**Figure 6: Frequency of Flexible Ramping Sufficiency test failures in the BPA BAA**



**d. Flexible Ramping Product**

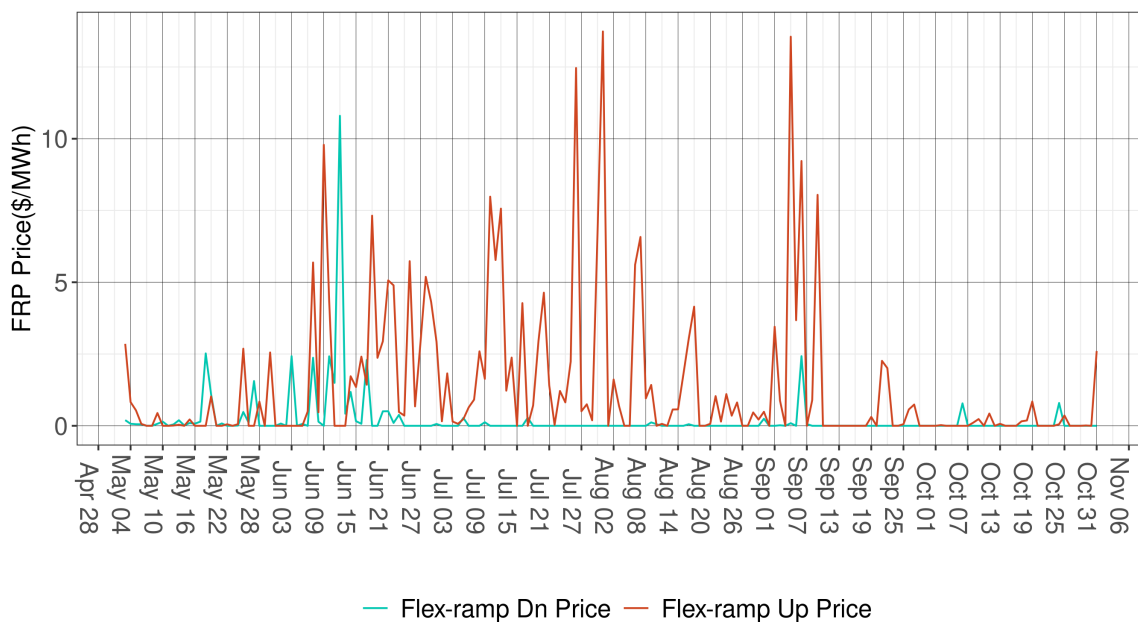
Figure 7 shows the daily average of the upward and downward flexible ramping constraint requirement and procurement in the FMM. Figure 8 shows the daily average of the upward and downward flexible ramping constraint prices in the FMM. With the implementation of the flexible ramping product on November 1, 2016, calculation of the requirements consists of historical data for uncertainty with any applicable net import/export capability or credit. This effectively reduces the amount of flexible ramping the BPA BAA has to procure and, generally, the WEIM system-wide area (which includes all the BAAs in the WEIM, including the CAISO BAA) will drive the requirements. The market clearing process may result in procuring the BPA BAA capacity towards meeting the overall WEIM-system-wide area requirement. This is the main reason why the individual BPA procurement may generally fall below or be above the individual BPA flex ramp requirement.

**Figure 7: Daily average requirement and procurement of upward and downward flexible ramping in FMM**



In addition, the price trend provided in Figure 8 is the nested price determined by the summation of the shadow price of the individual BPA BAA plus the shadow price of the WEIM system-wide area. In October, the average upward flexible ramping capacity price was \$0.16/MWh and the average downward flexible ramping capacity price was \$0.05/MWh.

**Figure 8: Daily average price for upward and downward flexible ramping in FMM**



## CERTIFICATE OF SERVICE

I hereby certify that I have served the foregoing document upon the parties listed on the official service list in the above-referenced proceeding, 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 28<sup>th</sup> day of November 2022.

*Ariana Rebanco*  
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