



May 2, 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-____
March 2022 Informational Report
Energy Imbalance Market – Transition Period Report –
Tacoma Power WEIM Entity**

Dear Secretary Bose:

The California Independent System Operator Corporation (CAISO) hereby submits its report on the transition period of Tacoma Power WEIM Entity during its first six months of participation in the Western Energy Imbalance Market (WEIM) for March 1, 2022 through March 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
March 2 – March 31, 2022**

**Transition Period Report
Tacoma Power (TPWR) WEIM Entity**

May 2, 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, 2015.¹ Tacoma Power (TPWR), the prospective WEIM Entity, entered the WEIM on March 2, 2022; and the transition period will apply to the TPWR balancing authority area (BAA) until August 31, 2022.²

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 TPWR 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,³ 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.

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

² 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.

³ 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, TPWR's transition into the WEIM was smooth and without significant issues. The first month's market performance highlights are as follows:

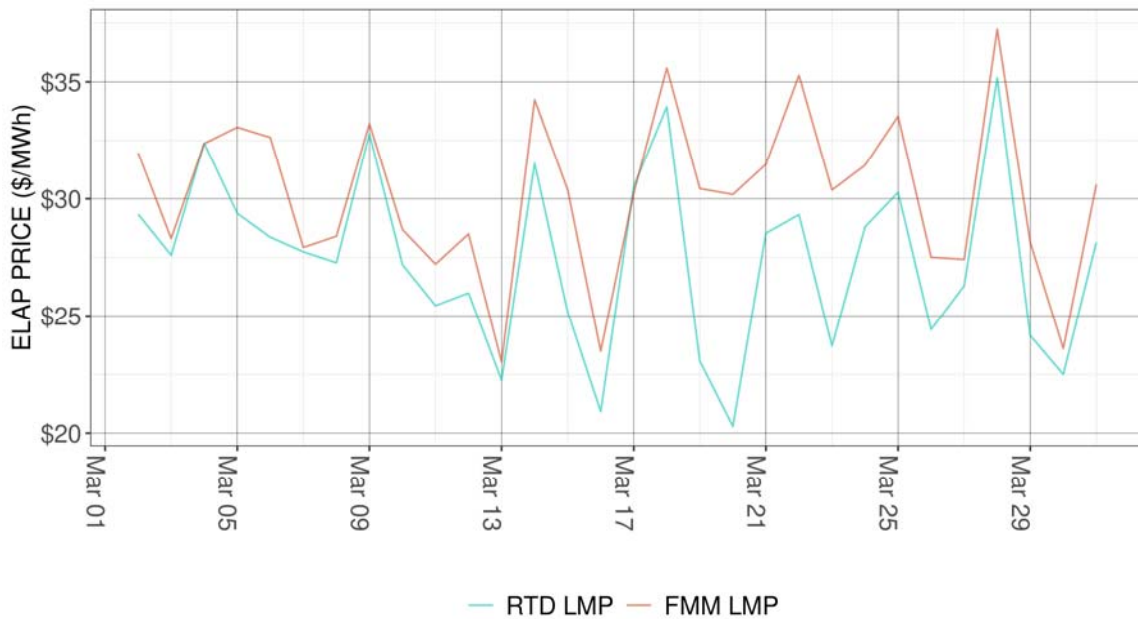
- As part of the resource sufficiency test performed for each WEIM entity prior to the real-time markets, TPWR passed 99.58 percent of its balancing tests and 100 percent of its bid-range capacity tests.
- TPWR passed 100 percent of its upward flexible ramping sufficiency tests.
- Prices were stable and within reasonable ranges, with the monthly average TPWR BAA price at \$30.22/MWh in the fifteen-minute market (FMM) and \$27.42/MWh in the real-time dispatch (RTD).
- Power balance constraint infeasibilities for the under-supply conditions were minimal for the TPWR BAA with 0.03 percent of the total intervals in the FMM, and 0.03 percent of the total intervals in the RTD.
- The upward flexible ramping capacity product in FMM for the TPWR BAA averaged at \$0.059/MWh in March, while the monthly average price for the downward flexible ramping product was \$0/MWh.

III. Market Performance during the Transitional Period

a. Prices

Figure 1 shows the daily average Fifteen-Minute Market (FMM) and Real-Time Dispatch (RTD) prices in the TPWR WEIM Load Aggregation Point (ELAP) for March 2, 2022 through March 31, 2022. The March’s monthly average price in FMM was \$30.22/MWh and \$27.42/MWh in the RTD.

Figure 1: Daily average prices for the TPWR 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 TPWR BAA for the FMM and RTD, respectively. The under-supply infeasibilities are classified into three categories: Valid, Corrected and Would-Be-Corrected. Some of the under-supply infeasibilities affected by either data input failures or software failures were corrected under the price correction authority in 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 TPWR BAA

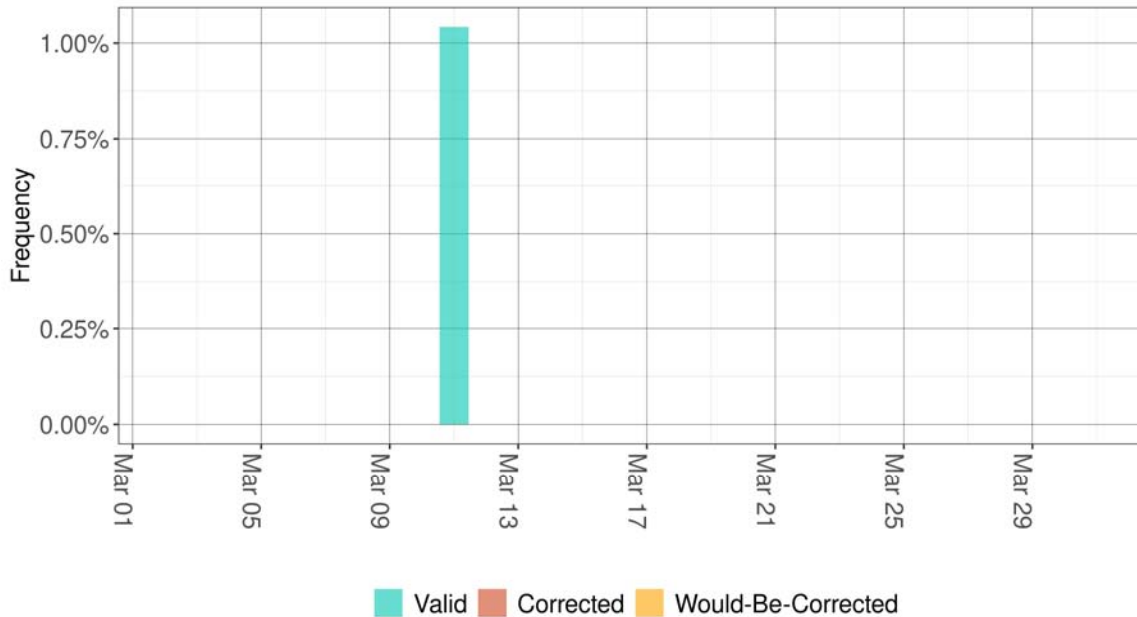
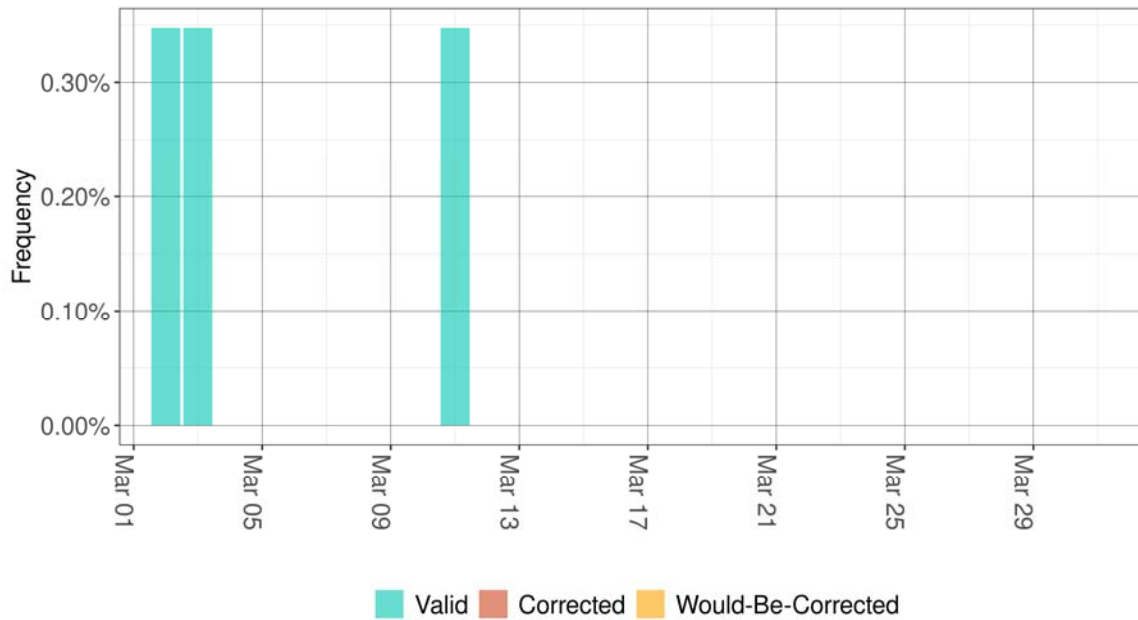


Figure 3: Frequency of RTD under-supply feasibilities in the TPWR BAA



Tables 1 and 2 list the FMM and RTD intervals with infeasibilities observed in March. There was one valid under-supply infeasibility in the FMM and three valid under-supply infeasibilities in the RTD. The FMM and RTD under-supply infeasibilities on March 11 were due to decrease of an import resource schedule. The RTD under-supply infeasibility on March 2 was because of limited resource ramping and WEIM transfer capabilities. The RTD under-supply infeasibility on March 3 was due to fixed manual dispatch of a resource.

Table 1: List of valid FMM under-supply infeasibilities in the TPWR BAA.

Trade Date	Trade Hour	Trade Interval	MW Infeasibility
11-March-22	17	3	60.81

Table 2: List of valid RTD under-supply infeasibilities in the TPWR BAA.

Trade Date	Trade Hour	Trade Interval	MW Infeasibility
2-March-22	1	1	12.5
3-March-22	1	1	1.68
11-March-22	16	12	56.94

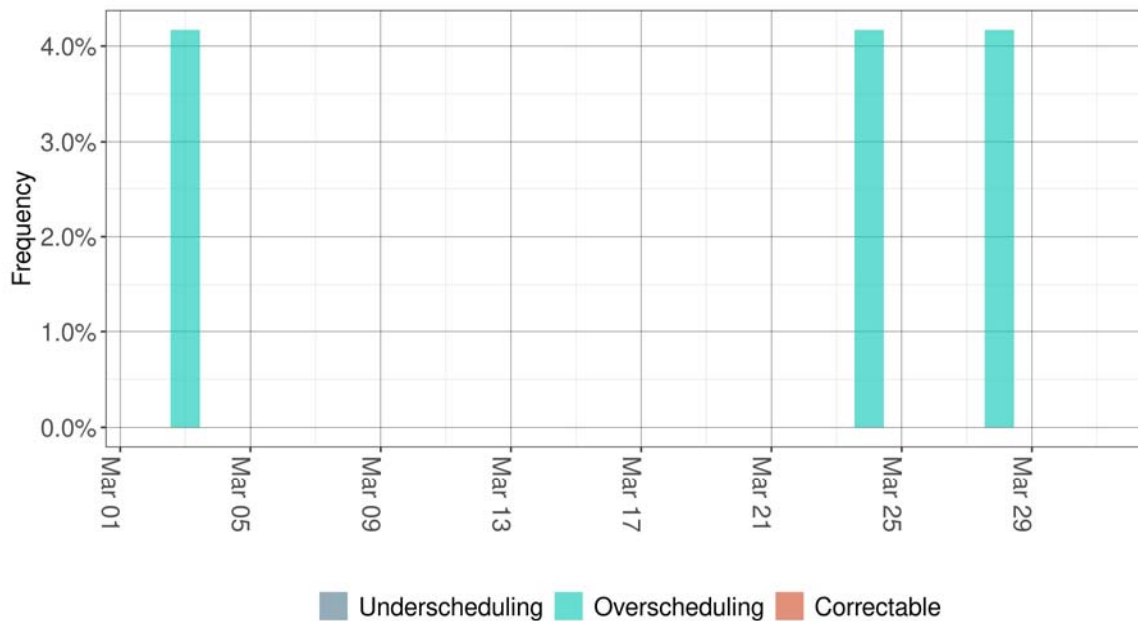
c. Balancing and Sufficiency Test Failures

The WEIM provides an opportunity to 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.

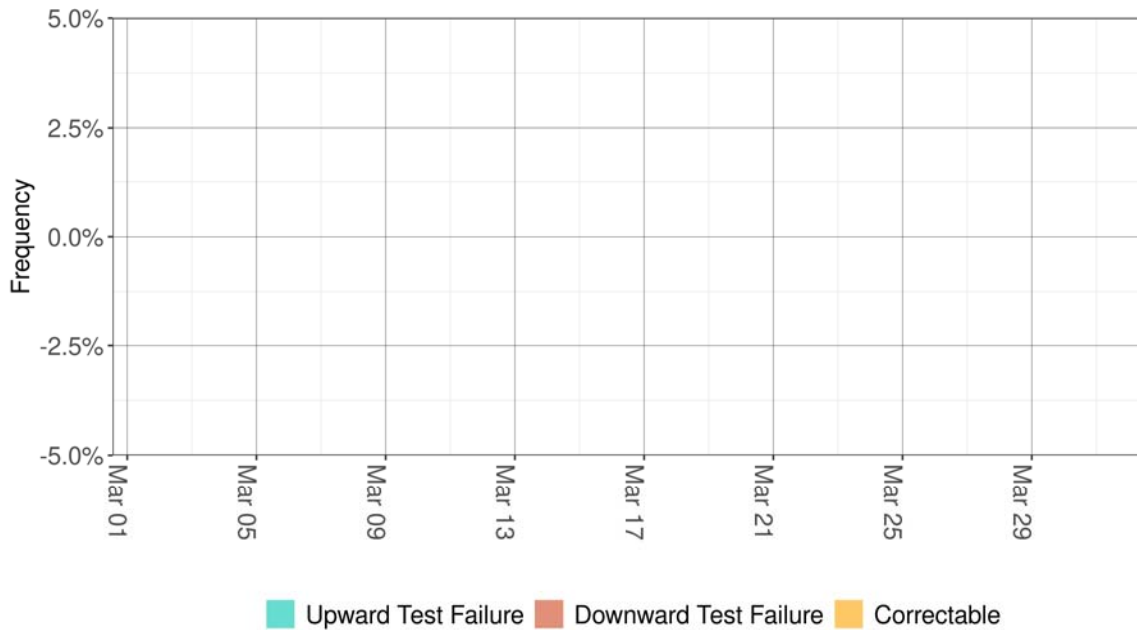
Performance of a balancing test before each trading hour ensures that each participating BAA submits a balanced base schedule of generation and a net schedule interchange to meet its demand with its own generating resources. In addition, the participating BAA is required to submit bids with enough ramping 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 March 2, 2022, through March 31, 2022, and Figure 5 shows the pattern of bid-range capacity test outcomes for the same period.⁴ If a balancing test or the bid-range capacity test is impacted by data input failures or software failures, those test results are shown as correctable events. The TPWR BAA passed the balancing test in 99.58 percent of the intervals in March, which is within the acceptable range of balancing test failures. The TPWR BAA passed the bid-range capacity test in all intervals.

Figure 4: Frequency of Balancing test failures in the TPWR BAA.



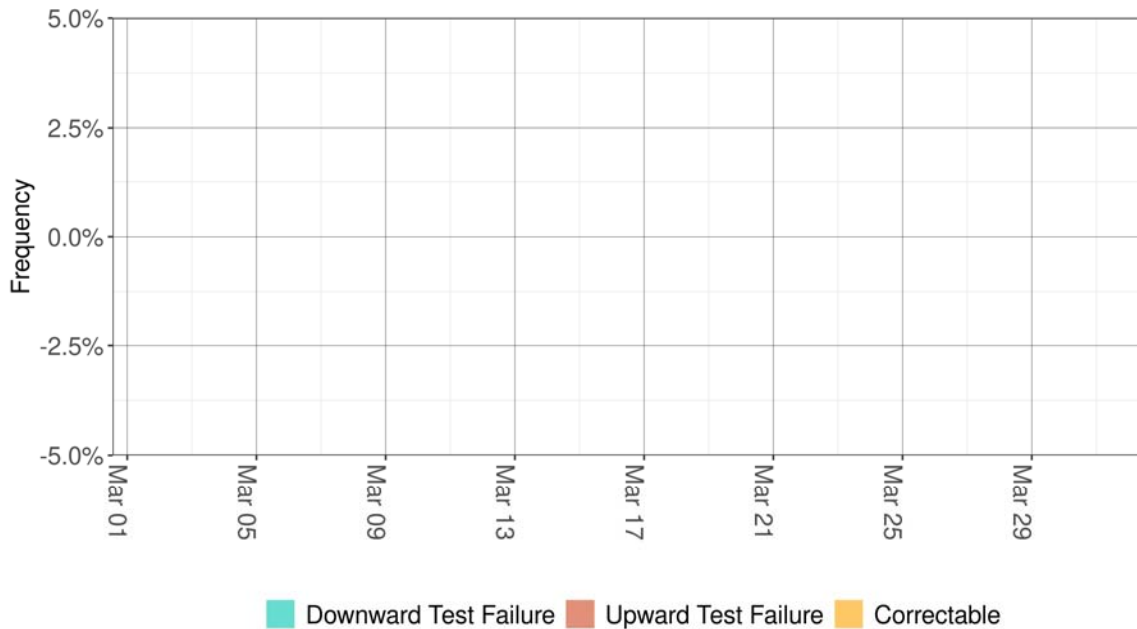
⁴ The CAISO performs resource sufficiency tests pursuant to Section 29.34(k) of the CAISO tariff.

Figure 5: Frequency of Bid Range Capacity test failures in the TPWR BAA.



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 March 2 through March 31. The TPWR BAA passed the flexible ramp down test in 100 percent of the intervals in March and passed the flexible ramp up test in 100 percent of the intervals.

Figure 6: Frequency of flexible ramping sufficiency test failures in the TPWR BAA.



d. Flexible Ramping Product

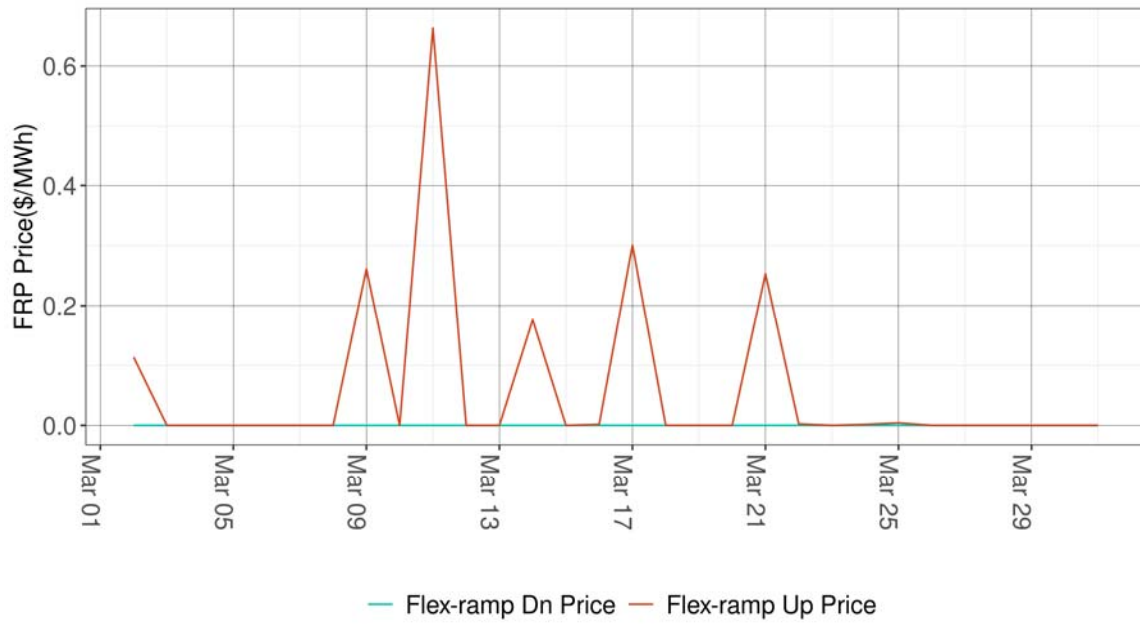
Figure 7 shows the daily average of the upward and downward flexible ramping constraint requirement and procurement in the FMM, the positive portion of a bar represents flexible ramp up and the negative portion of a bar represents flexible ramp down. Figure 8 shows the daily average of the upward and 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 TPWR 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 TPWR BAA capacity towards meeting the overall WEIM-system-wide area requirement. This is the main reason why the individual TPWR procurement may not match exactly the individual TPWR flex ramp requirement.

Figure 7: Daily Average flexible ramping Up and Down requirement and procurement in the FMM for the TPWR BAA.



In addition, the price trend provided in Figure 8 is the nested price determined by the summation of the shadow price of the individual TPWR BAA plus the shadow price of the WEIM system-wide area. In March, the average upward flexible ramping capacity price was \$0.059/MWh and the average downward flexible ramping capacity price was \$0/MWh.

Figure 8: Daily Average price of flexible ramping Up and Down in the FMM for TPWR BAA



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 2nd day of May 2022.

Is/ Anna Pascuzzo
Anna Pascuzzo