July 1, 2016

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-___
May 2016 Informational Report
Energy Imbalance Market – Transition Period Report – NV Energy

Dear Secretary Bose:

The California Independent System Operator Corporation (CAISO) hereby submits its report on the transition period of Nevada Energy during its first six months of participation in the Energy Imbalance Market (EIM) for April 2016. The Commission also directed the Department of Market Monitoring to submit an independent assessment, which the CAISO will file in approximately 8 days.

NV Energy entered the EIM on December 1, 2015 and completed the six month transition period on May 31, 2016. This report marks the end of the monthly reporting requirement set forth in the Commission's October 29 order.

Please contact the undersigned with any questions.

Respectfully submitted

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Energy Imbalance Market

May 1 – May 31, 2016

Transition Period Report - NV Energy

July 1, 2016

California ISO Department of Market Quality and Renewable Integration

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 Energy Imbalance Market (EIM) entities during the first six months of EIM participation.[1] The provisions were made effective November 1, 2015, as requested. NV Energy entered the EIM on December 1, 2015, and is the first EIM entity to whom the transition period will apply until June 1, 2016.

During the six-month transition period, the pricing of energy in the balancing authority area of a new EIM entity 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 EIM entity's balancing authority area between $0 and $0.01, but only when the power balance or transmission constraints are relaxed in the relevant EIM area. This is necessary to allow the market software to determine the marginal energy bid price.

In its application for a transition period, the CAISO committed to prepare and file with the Commission reports during the transition period on the types, frequency, and nature of the issues experienced by the EIM entity. In the October 29 order, the Commission directed the CAISO and the CAISO's Department of Market Monitoring (DMM) to file informational reports, consistent with its previous reporting requirements associated with the waiver of the pricing parameters, at 30-day intervals during the six-month transition period for any new EIM entity. The CAISO provides this report for NV Energy consistent with the Commission's requirements in the October 29 order. The Commission noted that it expected that the first report would be filed 30 days from the commencement of financially binding operations for any new EIM entity. Because of the interceding holiday period with the commencement of the new EIM entity, and because the complete set of data is not available so soon after the end of the applicable month, the CAISO could not submit the report at that time. The CAISO will continue to file the monthly reports but expects that it will do so approximately 15 days after the start of each month in order to provide the prior full month's data. In addition, because the DMM must review the ISO's report before completing its

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

own, the DMM will file its report approximately eight days after the ISO files its report.

II. Highlights

- In the month of May, prices in NV Energy were on an average of $19.75/MWh and $16.52/MWh, for the fifteen-minute market (FMM) and real-time dispatch (RTD), respectively.

- In its sixth month of EIM operations, NV Energy passed the 1) hourly balancing test more than 99 percent of the time and 2) the flexible ramping test 100 percent of the time.

- There were no intervals of the FMM for the NVE Energy BAA in which the power balance constraint was relaxed for which the CAISO applied the transition period pricing. In the RTD, there were 15 such intervals (or 0.16 percent of the time). Six out of these 15 intervals coincided with the use of load conformance, which means that outside of the transition period, in some or all of those intervals the load conformance limiter may have mitigated the effect of the load conformance. When the load conformance limiter applies, it may obviate relaxation of the power balance constraint, which in turn eliminates the occurrence of the parameter price.

III. Report

a. Prices

Figure 11 through 3 show that on average, prices in the NV Energy EIM Load Aggregation Point (NV ELAP)[2] were stable and on average $19.75/MWh and $16.52/MWh in the FMM and RTD markets, respectively. These represent modest variations with respect to the $18.35/MWh and $17.48/MWh averages observed in April.

Under the CAISO's price correction authority in section 35 of its tariff, the CAISO may correct prices posted on its OASIS if it finds (1) that the prices were the product of an invalid market solution; or (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 Figures 1 through 3 include all prices produced by the CAISO consistent with its tariff requirements. That is, the trends below represent: 1) prices as produced in the market for which the CAISO deemed valid; 2) prices that the CAISO could and

[2] The ELAP provides aggregate prices that are representative of pricing in the overall area of NV Energy.

did correct pursuant to section 35; and 3) any prices the CAISO adjusted pursuant to transition period pricing reflected in section 29.27. For the month of May, there were no instances of intervals with invalid power balance constraint relaxations that required price corrections in the fifteen-minute market, while there were 13 instances of invalid infeasibilities in the five-minute market, under the CAISO's price correction authority in Section 35 of the CAISO tariff. The CAISO did not apply the transition period pricing to these intervals because it applied its authority under Section 35 of the CAISO tariff instead.

Figure 1: Daily average price for NV Energy ELAP – Fifteen-minute market

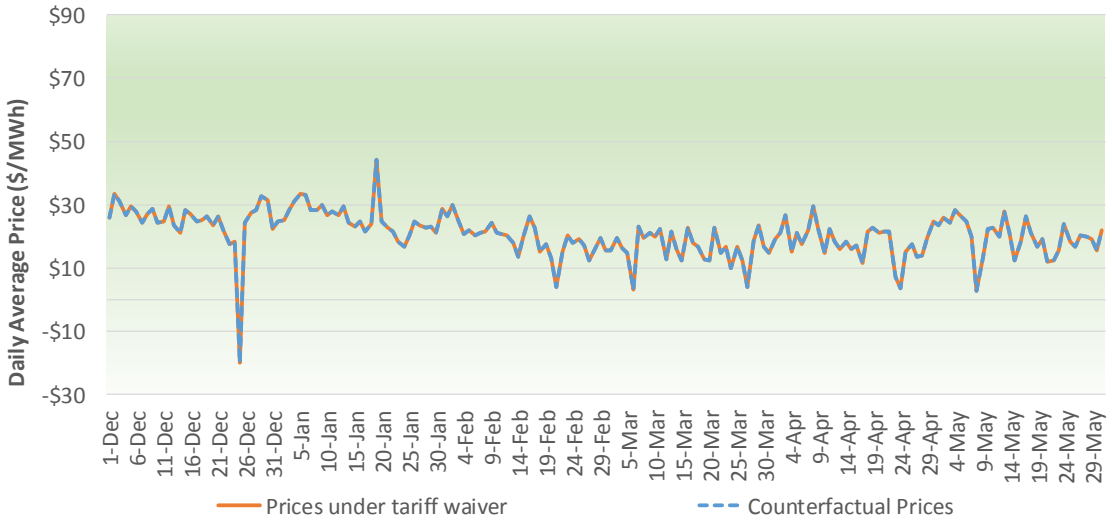
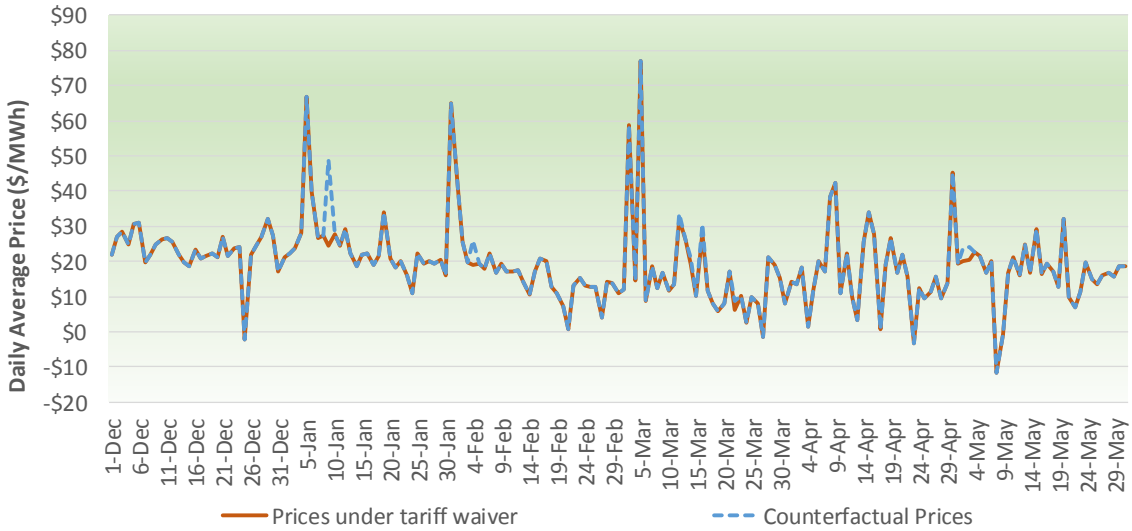


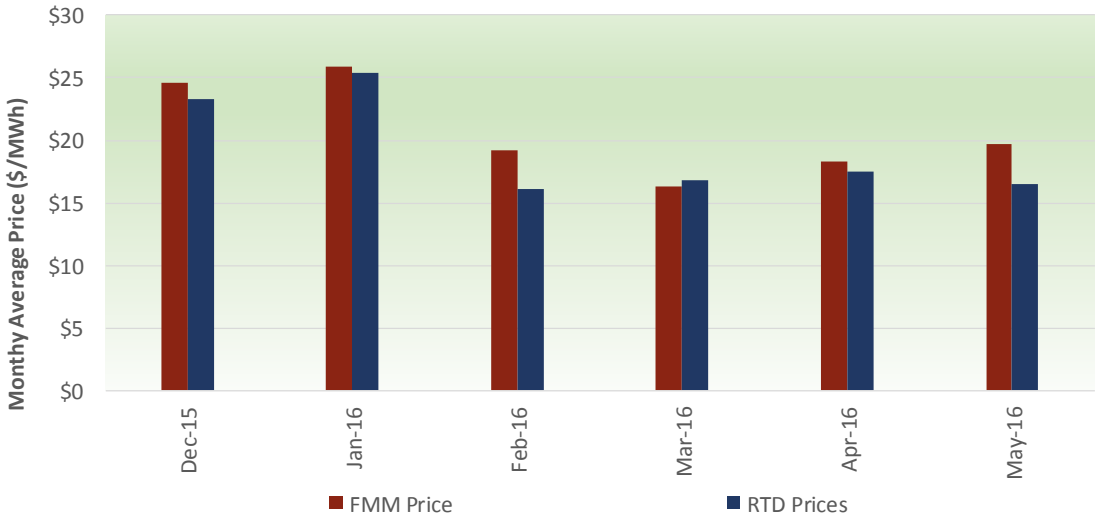
Figure 2: Daily average price for NV Energy ELAP – Five-minute market



The 5-minute prices obtained under transition period pricing are represented with lines in red while the prices the NV area would have experienced without the transition period pricing are represented with dotted lines in blue.[3]

In the month of May 2016, the power balance constraint was relaxed in 15 RTD intervals.

Figure 3: Monthly average prices for NV Energy ELAP

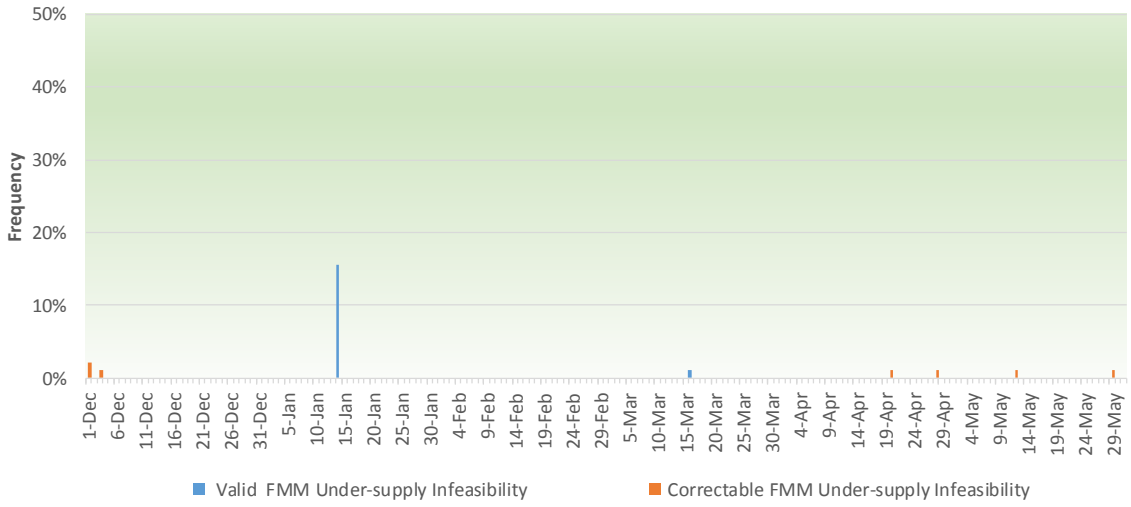


b. Frequency of Power Balance Constraint Infeasibilities

Figures 4 and 5 show the frequency of intervals in which the power balance constraint was relaxed for under-supply conditions in the NV Energy area for the FMM and RTD markets, respectively.

[3] In Docket ER15-402, the ISO reported on prices based on the price discovery mechanism in effect during the term of the Commission's waiver granted in that docket and the prices as they would be if the waiver was not in effect, i.e., what prices would have been had they been on the penalty prices in the ISO tariff. Because pricing under the waiver pricing is based on the last economic bid price signal, these prices are a proxy of what the prices would have been absent the seven category of learning curve type issues experience in that market. The difference between the counterfactual pricing and the price in effect during the term of the reports in that docket illustrated the market impact of the waiver pricing.

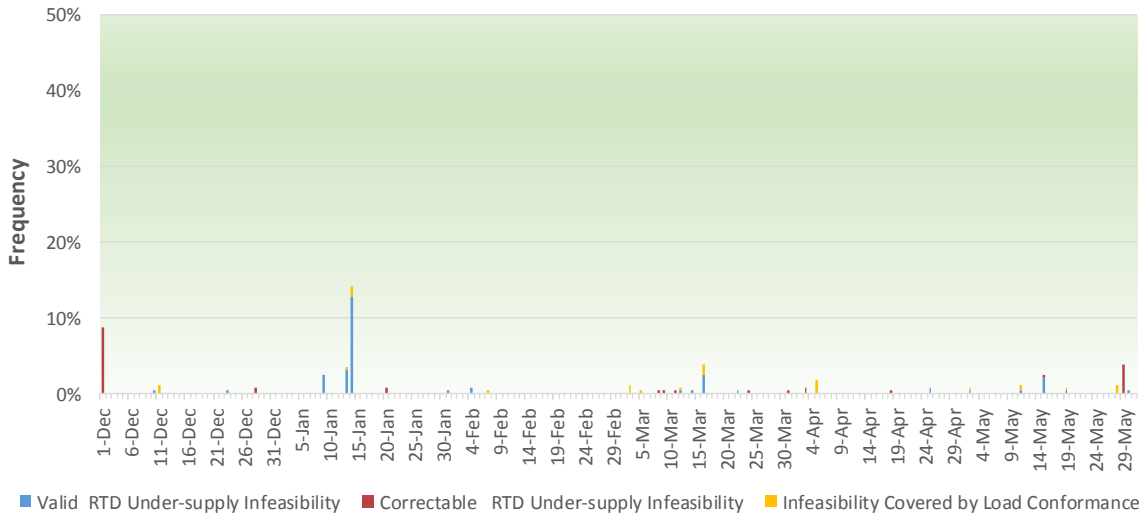
Figure 4: Frequency of fifteen-minute undersupply power balance in feasibilities.



In the month of May, there were no intervals in the FMM, which required relaxation of the power balance constraint, while 15 RTD intervals observed valid power balance constraint infeasibilities. These 15 intervals with infeasibilities were in addition to the 13 intervals with invalid infeasibilities grounded in error due to software or data issues, and they were therefore subject to price corrections under section 35 of the CAISO tariff. Out of the 15 valid RTD infeasibilities, six valid RTD infeasibilities coincided with the use of load conformance.

The CAISO uses a load conformance limiter in the CAISO balancing authority area to prevent over-adjustments through use of load conformance, and thus prevent an artificial infeasibility – that is, one that does not reflect actual scarcity. When the quantity of the infeasibility is less than the operator's adjustment, and the infeasibility is in the same direction as the adjustment, the load conformance limiter automatically limits the operator's adjustments to at or below feasibility. In the pricing run, the limiter will remove an infeasibility that is less than or equal to the operator's adjustment, i.e., the load conformance. The limiter will not apply to infeasibilities greater than or in the opposite direction of the load conformance. Use of the load conformance limiter in the CAISO balancing authority area has avoided invalid constraints that arise through operations rather than because of real supply issues. Infeasibilities that would not have occurred if the load conformance limiter was active in the NV Energy balancing authority area are shown in yellow in Figures 4 and 5.

Figure 5: Frequency of 5-minute undersupply power balance in feasibilities.



For the month of May, there were no valid under-supply power balance infeasibilities in the fifteen-minute market. Table 1 lists RTD intervals with infeasibilities observed for the month of May that invoked the transition period price discovery and adjustment to the last economic bid.

Table 1: List of valid five-minute interval infeasibilities

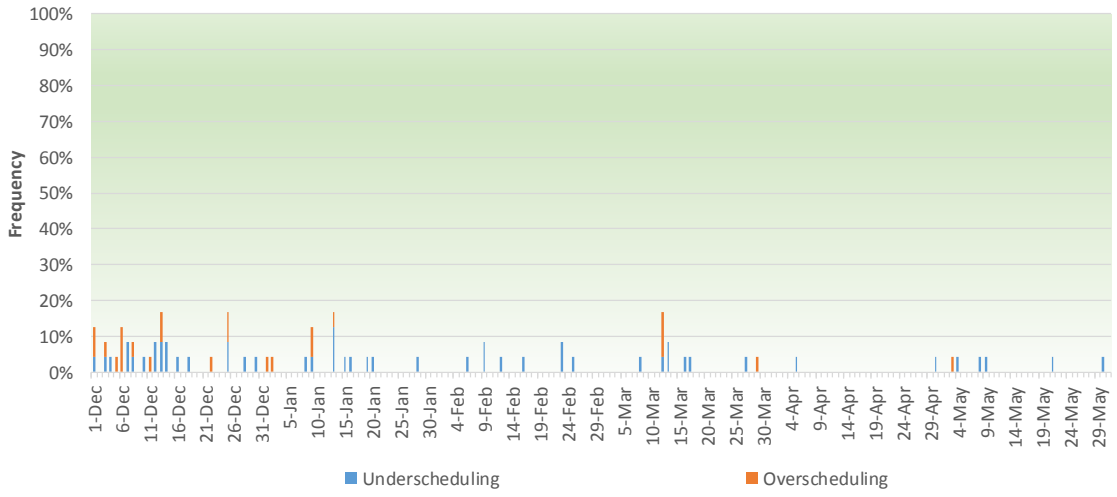
Trade date	Trade Hour	Trade Interval	MW Infeasibility	Load Conformance
2-May-16	10	9	16.38	25
2-May-16	10	10	113.63	75
11-May-16	18	11	2.58	50
11-May-16	19	11	58.46	50
11-May-16	19	12	8.03	50
15-May-16	20	6	200.72	0
15-May-16	20	7	87.52	0
15-May-16	20	8	104.89	0
15-May-16	20	9	116.33	0
15-May-16	20	10	78.96	0
15-May-16	20	11	41.8	0
28-May-16	16	12	137.2	150
28-May-16	17	1	78.18	150
28-May-16	17	2	97.69	150
30-May-16	19	8	124.53	75

The infeasibilities on May 15 and May 28 resulted from a contingency event in Nevada area. The other instances of infeasibilities were generally driven by load increases, including load conformance due to renewable deviations both in the Nevada area and system-wide as well. All of these 15 instances were valid infeasibilities that were subject to the transition period waiver to the extent they triggered relaxation of the power balance constraint.

c. Balancing and Sufficiency Test Failures

Figure 6 shows the trend of balancing test failures through the month of May, which the CAISO performs pursuant to Section 29.34 (k) of the CAISO Tariff. NV Energy passed the balancing test 99.2 percent of the time in April, a modest increase in failures with respect to the 99.72 percent of the hours in April. The instances in which it did not pass the balancing test -- 6 hours out of 720 total -- reflect under-scheduling (five hours) or over-scheduling (one hour), a normal incidence of the forecasting and balancing process that has occurred at a frequency that is well within expected performance tolerances.

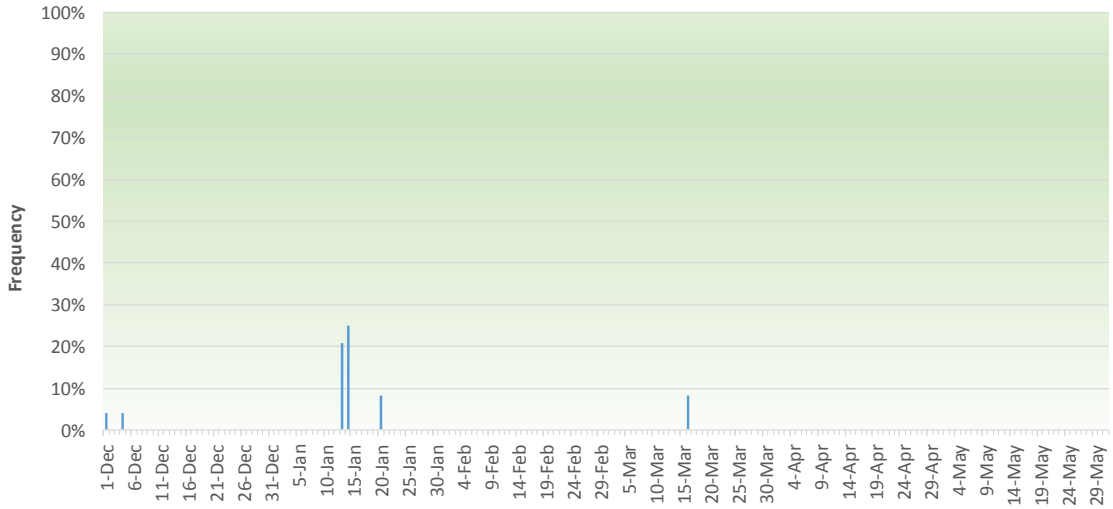
Figure 6: Frequency of Balancing test failures for NV Energy area.



The CAISO also performs the ramping sufficiency test as specified in section 29.34(m) of the CAISO tariff. NV Energy passed 100 percent of the intervals in May.

Figure 7 shows the trend of the test failures for flexible ramping for the first six months of operations.

Figure 7: Frequency of flexible ramping sufficiency test failures in NV Energy area.



d. Flexible Ramping Constraint Infeasibilities

In this section, the CAISO discusses the frequency with which and the reasons why the flexible ramping constraint was binding in the NV Energy balancing authority area during fifteen-minute and five-minute intervals.

During the month of May, the flexible ramping constraint in the NV Energy EIM area was infeasible, on a daily average, in 0.9 percent of the FMM intervals, a fair decrease from the 2.5 percent of April. As in prior months, these infeasibilities are mainly driven by the economics of flex ramp and its opportunity cost. Because the market co-optimizes the procurement of energy and flexible ramping capacity, resources in the NV Energy area may be incrementally dispatched to provide economic transfers to the CAISO area rather than to provide flexible ramping capacity for the NV Energy area. Consequently, these economics sometimes cause flexible ramping scarcity that causes the constraint to bind in the NV Energy BAA. This circumstance is not unusual. In addition to these valid flexible ramping infeasibilities, there were 114 FMM intervals with flexible ramping constraint infeasibilities that were subject to price corrections under section 35 of the CAISO Tariff. These corrections were made because there was a software defect experienced in the month of May that resulted in erroneous pricing. This software defect resulted in the market software incorrectly accounting for the transition cost of multi-stage generation units in NV Energy area and trying to dispatch units in a range where they have slow ramp, which in turn resulted in NV Energy erroneously not meeting the flexible ramping constraint requirement.

Figure 8: Frequency of flexible ramping constraint infeasibilities.

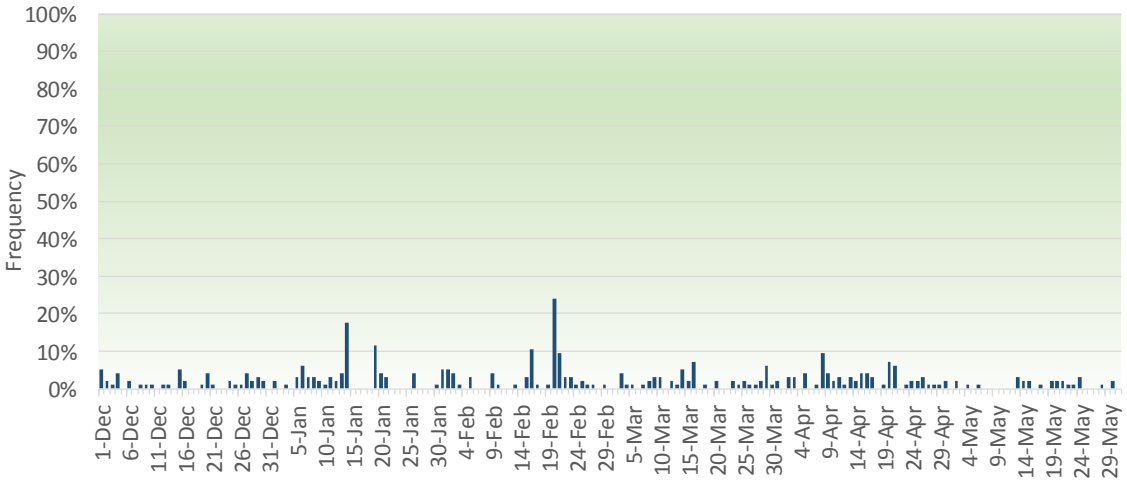
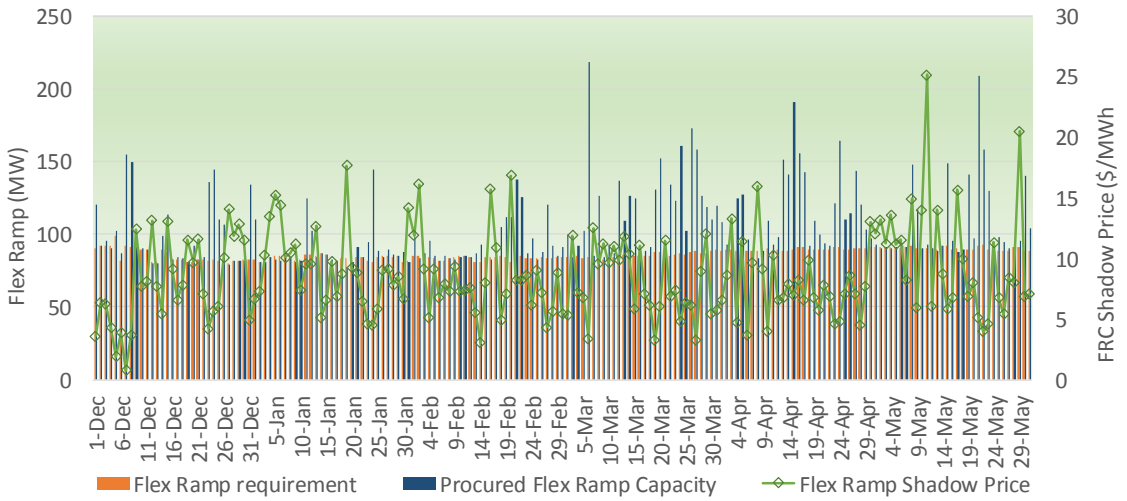


Figure 9 shows the daily average of the flexible ramping constraint requirement and procurement. In all hours, NV Energy passed the flexible ramping sufficiency test and could meet flexible ramping requirements with its own resources. In the vast majority of the hours, NV Energy is meeting its flexible ramping requirement because market economics are not dispatching those resources to satisfy other market needs. In addition, there is an excess of flexible ramping capacity in the NV Energy area during the midday hours. This plot also shows the daily average of the shadow price for the flexible ramping constraint in NV Energy area.

Figure 9: Average requirement and procurement of flexible ramping in the fifteen-minute market.



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 1st day of July 2016.

/s/ Anna Pascuzzo

Anna Pascuzzo