

July 25, 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. ER15-861-____
Western Energy Imbalance Market – Second Quarter 2022
Available Balancing Capacity Report**

Dear Secretary Bose:

The California Independent System Operator Corporation (CAISO) hereby submits its quarterly informational report for the second quarter of 2022 (April 1 to June 30, 2022) on the Available Balancing Capacity (ABC) enhancement for the Western Energy Imbalance Market (WEIM). The quarterly informational report is to provide the Commission with information on the performance of the ABC enhancement and to provide the same information the CAISO provides in its monthly informational reports submitted during a WEIM Entity's first six-month transition period.

Consistent with the Commission's directive in the December 17, 2015 order, the CAISO will continue to file such quarterly reports for at least the first year after implementation of the ABC enhancement, or until the Commission finds the quarterly informational reports are no longer needed.

Please contact the undersigned with any questions.

Respectfully submitted

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California ISO

Energy Imbalance Market

April 1 – June 30, 2022

Available Balancing Capacity Report

July 25, 2022

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I. Background

On December 17, 2015, the Federal Energy Regulatory Commission (Commission) approved the California Independent System Operator Corporation's (CAISO) proposed tariff revisions to comply with the Commission's July 20, 2015 order in FERC Docket No. ER15-861-006.¹ The CAISO's proposed tariff provisions enhanced the Western Energy Imbalance Market (WEIM) functionality so that the market systems automatically recognize and account for capacity a WEIM entity has available to maintain reliable operations in its own balancing authority area (BAA), but has not been bid into the WEIM.² This enhancement is referred to as the Available Balancing Capacity (ABC) enhancement. The CAISO implemented the ABC enhancement on March 23, 2016.

Consistent with the CAISO's commitments made in this proceeding, the Commission directed the CAISO to prepare and file with the Commission quarterly informational reports for at least the first year after implementation of the ABC enhancement, and until the Commission finds the quarterly informational reports are no longer needed.³ The quarterly informational reports are to provide information on the performance of the ABC enhancement and to include the same information the CAISO provides in its monthly informational reports submitted during a WEIM entity's first six-month transition period.⁴

¹ *Cal. Indep. Sys. Operator Corp.*, 152 FERC ¶ 61,060 (2015) (July 20 Order); and *Cal. Indep. Sys. Operator Corp.*, 153 FERC ¶ 61, 305 (2015) (December 17 Order).

² December 17 Order at P 1.

³ December 17 Order at P 99

⁴ December 17 Order at P 39.

II. Available Balancing Capacity

A. ABC Submitted to the Market

Each WEIM entity can identify and choose the amount of Available Balancing Capacity (ABC) they will make available to the CAISO and the resources supporting this capacity through its resource plan. The WEIM entity submits this capacity to the CAISO on an hourly basis, and it is available for both the Fifteen-Minute Market (FMM) and the five-minute Real-Time Dispatch (RTD). The data in this section shows the ABC bid into, and awarded by, the market in each of the WEIM BAAs for each month within the quarter.

On May 3, 2022, the Bonneville Power Administration (BPA) and Tucson Electric Power (TEP) joined the WEIM; data for April 2022 does not exist for these entities because they had not yet joined the WEIM.

The table below summarizes the percentage of hours in which each WEIM entity submitted upward and downward ABC bids to the WEIM for each month within the quarter. Many entities submitted ABC for nearly all intervals in each month. Idaho Power Company (IPCO) and Seattle City Light (SCL) did not submit any ABC to the WEIM during the quarter.

Table 1: Frequency of ABC Submitted to the WEIM

BAA	April 2022		May 2022		June 2022	
	Upward Capacity	Downward Capacity	Upward Capacity	Downward Capacity	Upward Capacity	Downward Capacity
AVA	99.86%	99.86%	99.46%	99.60%	99.72%	99.72%
AZPS	93.19%	92.64%	97.31%	95.03%	97.50%	95.83%
BANC	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
BCHA	98.89%	100.00%	99.87%	100.00%	99.86%	100.00%
BPA	--	--	100.00%	100.00%	100.00%	100.00%
IPCO	--	--	--	--	--	--
LADWP	40.14%	0.97%	42.88%	1.34%	40.83%	3.19%
NEVP	70.42%	60.14%	70.03%	56.45%	79.44%	72.08%
NWMT	99.44%	97.50%	99.19%	99.19%	96.39%	96.81%
PACE	33.06%	7.50%	68.55%	15.73%	48.06%	9.31%
PACW	4.72%	0.56%	--	0.94%	0.14%	1.25%
PGE	100.00%	--	99.87%	--	99.17%	--
PNM	92.22%	11.81%	7.80%	24.06%	75.69%	21.81%
PSEI	0.69%	--	--	--	--	8.89%
SCL	--	--	--	--	--	--
SRP	100.00%	99.03%	99.87%	98.39%	99.86%	99.44%
TEP	--	--	98.99%	98.42%	98.75%	98.06%
TIDC	100.00%	100.00%	100.00%	100.00%	100.00%	99.17%
TPWR	97.22%	98.75%	94.62%	99.73%	99.17%	99.86%

The table below shows the average ABC capacity, in MW, which each WEIM entity submitted to the WEIM for each month within the quarter. BCHA consistently submitted the highest average ABC capacity to the WEIM in both the upward and downward directions.

Table 2: Average ABC Capacity Submitted to the WEIM

BAA	April 2022		May 2022		June 2022	
	Upward Capacity (MW)	Downward Capacity (MW)	Upward Capacity (MW)	Downward Capacity (MW)	Upward Capacity (MW)	Downward Capacity (MW)
AVA	19.53	19.51	19.15	19.15	20	20
AZPS	20.04	20.01	20.01	20.06	19.99	20
BANC	12.89	20.26	14.87	22.2	13.59	18.96
BCHA	496.49	300.00	850.46	299.72	871.61	298.85
BPA	--	--	153.86	160.02	133.26	130.85
IPCO	--	--	--	--	--	--
LADWP	72.69	48.00	73.03	36.81	69.72	57.81
NEVP	17.07	28.80	19.56	33.46	26.68	38.94
NWMT	7.74	5.60	5	5	5.12	5.01
PACE	14.33	48.63	16.25	39.91	16.69	41.33
PACW	117.21	30.00	--	30	55	20
PGE	9.36	--	13.92	--	28.09	--
PNM	27.00	30.13	36.72	27.89	32.53	38.32
PSEI	4.00	--	--	--	--	35
SCL	--	--	--	--	--	--
SRP	34.00	25.67	27.93	24.91	28.1	19.84
TEP	--	--	24.54	22.32	21.67	23.61
TIDC	10.85	5.00	11.38	5	10.51	4.99
TPWR	2.67	2.85	2.91	4.67	3	9.58

The table below show the maximum ABC capacity, in MW, which each WEIM entity submitted to the WEIM for each month within the quarter. The highest ABC bid was submitted by BCHA in the upward direction for 1000 MW, which was consistent across all three months of the quarter.

Table 3: Maximum ABC Capacity Submitted to the WEIM

BAA	April 2022		May 2022		June 2022	
	Upward Capacity (MW)	Downward Capacity (MW)	Upward Capacity (MW)	Downward Capacity (MW)	Upward Capacity (MW)	Downward Capacity (MW)
AVA	30	20	20	20	20	20
AZPS	43	25	25	49	20	20
BANC	56	100	95	74	75	79
BCHA	1000	500	1000	500	1000	500

BAA	April 2022		May 2022		June 2022	
	Upward Capacity (MW)	Downward Capacity (MW)	Upward Capacity (MW)	Downward Capacity (MW)	Upward Capacity (MW)	Downward Capacity (MW)
BPA			308	319	308	435
IPCO	--	--	--	--	--	--
LADWP	100	50	150	46	150	75
NEVP	50	150	70	150	70	158
NWMT	25	15	5	5	10	10
PACE	100	100	60	100	60	125
PACW	150	30	--	30	55	20
PGE	33	--	38	--	38	--
PNM	27	60	120	70	125	75
PSEI	4	--	--	--	--	35
SCL	--	--	--	--	--	--
SRP	100	50	100	50	100	50
TEP			150	60	125	63
TIDC	15	5	15	5	15	5
TPWR	3	11	6	19	3	125

The table below shows the number of different resources supporting the ABC that the WEIM entities bid into the WEIM in both the upward and downward directions, for each month within the quarter. A maximum of 24 resources supported upward ABC capacity bids submitted by TEP. Some entities used as few as one resource to support their ABC bids.

Table 4: Number of Resources Supporting ABC

BAA	April 2022		May 2022		June 2022	
	Upward Capacity	Downward Capacity	Upward Capacity	Downward Capacity	Upward Capacity	Downward Capacity
AVA	9	8	9	9	5	5
AZPS	4	4	4	6	8	8
BANC	13	13	14	15	13	15
BCHA	2	2	2	2	2	2
BPA	--	--	5	5	3	3
IPCO	--	--	--	--	--	--
LADWP	5	5	3	2	4	9
NEVP	10	11	10	11	12	13
NWMT	3	3	3	3	2	2
PACE	7	3	7	3	5	3
PACW	1	1	--	1	1	1
PGE	6	--	7	--	4	--
PNM	1	5	5	5	3	5
PSEI	1	--	--	--	--	1
SCL	--	--	--	--	--	--

BAA	April 2022		May 2022		June 2022	
	Upward Capacity	Downward Capacity	Upward Capacity	Downward Capacity	Upward Capacity	Downward Capacity
SRP	18	15	22	15	19	15
TEP	--	--	24	13	20	14
TIDC	2	2	2	2	2	2
TPWR	5	5	5	5	5	5

B. ABC Awarded by the Market

The table below shows the frequency of each WEIM entities' dispatched ABC for the FMM market, when the WEIM entities made ABC available, for each month within the quarter. Overall, the market dispatched ABC quite infrequently throughout the quarter. The highest frequency of ABC dispatch in FMM occurred in June 2022 on NEVP's bid-in downward ABC capacity. Often, the market dispatched ABC less than 1 percent of the time during the month.

Table 5: Frequency of ABC Dispatched by WEIM in the FMM

BAA	April 2022		May 2022		June 2022	
	Upward Capacity	Downward Capacity	Upward Capacity	Downward Capacity	Upward Capacity	Downward Capacity
AVA	--	--	0.27%	--	0.14%	0.04%
AZPS	0.04%	--	0.03%	0.03%	0.10%	0.17%
BANC	--	0.04%	--	--	--	--
BCHA	0.07%	--	--	0.50%	--	0.21%
BPA	--	--	0.04%	1.26%	0.24%	1.88%
IPCO	--	--	--	--	--	--
LADWP	--	--	--	--	--	--
NEVP	0.56%	0.80%	3.19%	0.94%	3.58%	5.17%
NWMT	--	--	0.03%	--	--	0.07%
PACE	--	--	--	--	--	--
PACW	--	--	--	--	--	--
PGE	--	--	--	--	--	--
PNM	--	0.45%	0.13%	1.21%	0.04%	0.66%
PSEI	--	--	--	--	--	0.04%
SCL	--	--	--	--	--	--
SRP	2.26%	0.59%	2.96%	1.65%	4.90%	4.31%
TEP	--	--	--	--	--	--
TIDC	--	--	--	--	--	0.07%
TPWR	--	0.07%	--	0.50%	--	--

The table below shows the frequency of each WEIM entities' dispatched ABC for the RTD market, when the WEIM entities made ABC available, for each month within the quarter. Overall, the market dispatched ABC quite infrequently throughout the

quarter. The highest frequency of ABC dispatch in RTD occurred in June 2022 on SRP's bid-in upward ABC capacity. Often, the market dispatched ABC less than or around 1 percent of the time during the month.

Table 6: Frequency of ABC Dispatched by WEIM in the RTD

BAA	April 2022		May 2022		June 2022	
	Upward Capacity	Downward Capacity	Upward Capacity	Downward Capacity	Upward Capacity	Downward Capacity
AVA	--	--	0.41%	0.27%	0.15%	--
AZPS	0.01%	--	0.03%	0.17%	0.14%	0.10%
BANC	0.42%	0.41%	0.28%	0.07%	1.13%	0.10%
BCHA	0.01%	--	--	0.62%	--	0.56%
BPA	--	--	0.30%	0.93%	0.32%	0.52%
IPCO	--	--	--	--	--	--
LADWP	--	--	--	--	--	--
NEVP	0.79%	0.81%	3.70%	0.81%	2.88%	5.10%
NWMT	0.02%	--	--	--	0.08%	0.15%
PACE	--	--	--	--	0.07%	--
PACW	--	--	--	--	--	0.01%
PGE	0.01%	--	0.09%	--	--	--
PNM	0.01%	0.51%	0.07%	0.95%	0.06%	0.21%
PSEI	--	--	--	--	--	0.06%
SCL	--	--	--	--	--	--
SRP	1.67%	0.81%	6.53%	1.33%	7.40%	4.10%
TEP	--	--	--	--	--	--
TIDC	--	--	0.03%	--	--	0.09%
TPWR	--	0.15%	--	0.20%	0.02%	0.05%

C. ABC and Power Balance Constraint Infeasibilities

The purpose of the ABC enhancement is to make capacity available that otherwise would not be visible to the WEIM. The primary objective in making such capacity available is that the WEIM can recognize and access that capacity when the conditions warrant its use, namely when the WEIM is running out of capacity made available through economic bids. The ABC is capacity stacked above economic bids, but below the power balance constraint relaxation penalty price. When the market is tight in supply and it has exhausted all effective economic bids, the market clearing process will access the ABC. If there is sufficient ABC, the WEIM will relax the power balance constraint to clear the market. As such, the market clearing process uses the ABC to resolve the power balance infeasibility. If instead the ABC identified is not sufficient to cure the infeasibility, the ABC may be exhausted and there may still be the need to relax the power balance constraint in order to clear the WEIM.

The table below shows the frequency of intervals in which the WEIM entities did not make any ABC available to the WEIM, when there was a power balance infeasibility

for each month within the quarter, in the FMM. Specifically, the data in the table below provides the percentage amount of over-supply infeasibilities where downward ABC was needed, and under-supply infeasibilities where upward ABC was needed. No data indicates that there were no infeasibilities during the period. A metric of 0 percent indicates that in all intervals when there was an infeasibility observed, the WEIM entity did submit ABC to the WEIM. A metric of 100 percent indicates that in all intervals when there was an infeasibility observed, the WEIM entity did not submit any ABC to the WEIM. These instances occurred relatively infrequently throughout the quarter, indicating that the WEIM entities typically had submitted ABC bids during instances when infeasibilities were observed.

Table 7: Frequency of Power Balance Infeasibilities When no ABC was Available in FMM

BAA	April 2022		May 2022		June 2022	
	Over-supply	Under-supply	Over-supply	Under-supply	Over-supply	Under-supply
AVA	--	--	--	0.00%	--	--
AZPS	--	--	50.00%	0.00%	0.00%	--
BANC	--	--	--	--	--	--
BCHA	--	--	--	--	--	--
BPA	--	--	0.00%	0.00%	0.00%	0.00%
IPCO	--	--	--	--	--	--
LADWP	--	--	100.00%	--	--	--
NEVP	72.73%	25.00%	80.56%	23.68%	10.81%	7.09%
NWMT	--	--	--	0.00%	--	--
PACE	--	--	--	--	--	--
PACW	--	--	--	--	--	--
PGE	--	--	--	--	--	--
PNM	100.00%	--	73.33%	--	--	--
PSEI	--	--	--	100.00%	80.00%	100.00%
SCL	100.00%	--	--	--	100.00%	--
SRP	66.67%	0.00%	0.00%	0.00%	0.00%	0.00%
TEP	--	--	--	--	--	0.00%
TIDC	--	--	--	--	0.00%	0.00%
TPWR	0.00%	--	0.00%	--	--	0.00%

The table below shows the frequency of intervals in which the WEIM entities did not make any ABC available to the WEIM, when there was a power balance infeasibility for each month within the quarter, in the RTD. Instances of observed infeasibilities with no submitted ABC occurred more frequently in RTD than FMM.

Table 8: Frequency of Power Balance Infeasibilities When no ABC was Available in RTD

BAA	April 2022		May 2022		June 2022	
	Over-supply	Under-supply	Over-supply	Under-supply	Over-supply	Under-supply
AVA	--	--	--	0.00%	--	0.00%
AZPS	--	--	0.00%	0.00%	12.50%	0.00%
BANC	--	--	--	--	--	0.00%
BCHA	--	0.00%	--	--	--	--
BPA	--	--	0.00%	0.00%	0.00%	0.00%
IPCO	--	--	100.00%	--	--	--
LADWP	--	0.00%	100.00%	--	--	--
NEVP	81.82%	20.00%	68.15%	32.54%	10.17%	11.20%
NWMT	--	0.00%	--	--	0.00%	0.00%
PACE	--	--	100.00%	--	100.00%	0.00%
PACW	--	100.00%	--	100.00%	--	--
PGE	--	--	--	--	--	--
PNM	100.00%	100.00%	72.73%	--	100.00%	--
PSEI	--	100.00%	--	--	68.42%	100.00%
SCL	100.00%	--	--	--	100.00%	100.00%
SRP	40.00%	0.00%	0.00%	0.00%	0.00%	1.10%
TEP	--	--	0.00%	0.00%	--	3.57%
TIDC	0.00%	--	--	0.00%	0.00%	0.00%
TPWR	0.00%	--	0.00%	0.00%	--	0.00%

III. WEIM Performance

This section provides the information the CAISO previously provided in its monthly informational reports submitted during a WEIM entity's first six-month transition period.

A. ELAP Prices

The figures in this section show the WEIM load aggregation point (ELAP) prices⁵ for the FMM and RTD in each WEIM BAA. In prior reports, the CAISO provided these factual prices in comparison to counterfactual prices in order to show the effect of using the pricing waiver of the price discovery mechanism.⁶

The CAISO may correct prices posted on its Open Access Same-time Information System (OASIS) pursuant to the CAISO's price correction authority in section 35 of the CAISO tariff, 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 the figures below include all prices produced by the CAISO consistent with the CAISO 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 did correct pursuant to section 35; and (3) any prices the CAISO adjusted pursuant to transition period pricing reflected in section 29.27 of the CAISO tariff.

The table below shows the average ELAP prices for all WEIM entities for each month within the quarter. Prices were relatively consistent across April and May but dipped significantly lower in June for a handful of the WEIM BAAs due to system conditions.

Table 9: Average FMM and RTD ELAP Prices

BAA	April 2022		May 2022		June 2022	
	FMM (\$/MWh)	RTD (\$/MWh)	FMM (\$/MWh)	RTD (\$/MWh)	FMM (\$/MWh)	RTD (\$/MWh)
AVA	57.48	53.75	41.28	37.25	11.65	-1.44
AZPS	45.38	37.2	51.76	47.08	64	59.59
BANC	65.2	56.37	68.6	64.89	68.01	72.4

⁵ The ELAP provides aggregate prices that are representative of pricing in the overall BAA.

⁶ In Docket ER15-402, the CAISO 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 CAISO 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.

BAA	April 2022		May 2022		June 2022	
	FMM (\$/MWh)	RTD (\$/MWh)	FMM (\$/MWh)	RTD (\$/MWh)	FMM (\$/MWh)	RTD (\$/MWh)
BCHA	51.73	49.58	46.07	44.37	15.34	10.08
BPA	--	--	45.57	37.16	10.22	1.96
IPCO	56.8	52.78	47.14	42.9	31.96	18.06
LADWP	54.97	45.33	56.91	50.79	62.95	55.58
NEVP	48.66	41.88	53.16	48.28	54.55	49.74
NWMT	56.92	53.33	41.05	37.3	14.56	3.96
PACE	45.26	38.84	43.17	38.7	39.54	29.56
PACW	59.49	56.9	42.31	39.35	12.77	-1.5
PGE	59.44	56.65	42.65	38.13	15.54	0.02
PNM	42.58	34.99	46.92	41.87	49.42	44.61
PSEI	59.52	57.5	44.28	40.9	13.02	6.91
SCL	59.96	57.61	44.62	41.12	12.09	5.33
SRP	47.49	41.11	55.61	53.43	66.76	68.66
TEP	--	--	54.32	50.29	64.04	58.58
TIDC	68.68	60.04	76.17	73.33	68.04	72.28
TPWR	59.05	57.13	43.8	40.45	13.42	6.64

B. Balancing Test Failures

The CAISO performs the balancing test pursuant to Section 29.34(k) of the CAISO tariff. Powerex is not subject to the balancing test.

The table below shows the frequency that each WEIM entity passed the balancing test, as well as what percentage of balancing test failures were due to under-scheduling and over-scheduling, for each month within the quarter. Overall, the entities passed the balancing test at high frequencies throughout the quarter.

Table 10: Frequency of Passing Balancing Test

BAA	April 2022	May 2022	June 2022
AVA	99.31%	99.73%	99.17%
AZPS	99.17%	99.06%	99.86%
BANC	98.89%	98.92%	99.44%
BCHA	--	--	--
BPA	--	95.69%	95.42%
IPCO	99.58%	98.92%	99.17%
LADWP	99.17%	99.19%	98.75%
NEVP	96.39%	97.04%	97.08%
NWMT	99.58%	97.72%	96.53%
PACE	98.47%	98.52%	97.92%
PACW	98.61%	99.33%	98.33%
PGE	98.75%	99.06%	98.89%
PNM	98.06%	98.12%	97.08%

BAA	April 2022	May 2022	June 2022
PSEI	98.89%	98.52%	96.94%
SCL	99.72%	99.73%	99.58%
SRP	97.64%	97.04%	98.61%
TEP	--	97.13%	96.94%
TIDC	99.72%	99.60%	99.44%
TPWR	98.33%	99.60%	99.17%

The table below shows the frequency of balancing test failures due to over-scheduling and under-scheduling respectively, for each month of the quarter. Overall, balancing test failures were more due to over-scheduling than under-scheduling.

Table 11: Frequency of Balancing Test Failures due to Over-Scheduling and Under-Scheduling

BAA	April 2022		May 2022		June 2022	
	Over-scheduling	Under-Scheduling	Over-scheduling	Under-Scheduling	Over-scheduling	Under-Scheduling
AVA	25.00%	75.00%	50.00%	50.00%	20.00%	80.00%
AZPS	40.00%	60.00%	71.43%	28.57%	--	--
BANC	14.29%	85.71%	50.00%	50.00%	66.67%	33.33%
BCHA	--	--	--	--	--	--
BPA	--	--	43.33%	56.67%	46.88%	53.12%
IPCO	50.00%	50.00%	37.50%	62.50%	60.00%	40.00%
LADWP	80.00%	20.00%	66.67%	33.33%	87.50%	12.50%
NEVP	48.00%	52.00%	63.64%	36.36%	65.00%	35.00%
NWMT	--	100.00%	88.24%	11.76%	54.17%	45.83%
PACE	40.00%	60.00%	72.73%	27.27%	50.00%	50.00%
PACW	33.33%	66.67%	60.00%	40.00%	63.64%	36.36%
PGE	37.50%	62.50%	57.14%	42.86%	42.86%	57.14%
PNM	69.23%	30.77%	64.29%	35.71%	35.00%	65.00%
PSEI	28.57%	71.43%	54.55%	45.45%	23.81%	76.19%
SCL	100.00%	--	50.00%	50.00%	100.00%	--
SRP	31.25%	68.75%	27.27%	72.73%	22.22%	77.78%
TEP	--	--	55.00%	45.00%	52.38%	47.62%
TIDC	100.00%	--	33.33%	66.67%	66.67%	33.33%
TPWR	45.45%	54.55%	33.33%	66.67%	20.00%	80.00%

C. Flexible Ramp Sufficiency Test Failures

The table below shows the frequency that each WEIM entity passed the flexible ramping sufficiency test in the upward and downward directions, for each month within the quarter. Generally, the entities passed the flexible ramp sufficiency test very frequently throughout the months in the quarter with the exception of NVE in June.

Table 12: Frequency of Passing Flexible Ramping Sufficiency Test

BAA	April 2022		May 2022		June 2022	
	Upward Direction	Downward Direction	Upward Direction	Downward Direction	Upward Direction	Downward Direction
AVA	99.62%	99.86%	99.50%	100.00%	98.89%	99.79%
AZPS	99.86%	99.51%	100.00%	99.50%	99.86%	99.65%
BANC	99.86%	99.83%	100.00%	99.80%	99.86%	99.79%
BCHA	99.72%	99.83%	100.00%	99.70%	99.86%	99.65%
BPA	--	--	99.14%	99.86%	96.74%	99.62%
IPCO	99.86%	99.58%	100.00%	99.56%	99.86%	99.86%
LADWP	99.86%	99.86%	100.00%	100.00%	99.86%	99.86%
NEVP	98.89%	96.67%	98.35%	97.04%	91.01%	90.03%
NWMT	99.58%	99.86%	100.00%	99.46%	99.72%	97.92%
PACE	99.72%	99.86%	99.87%	100.00%	99.76%	99.86%
PACW	99.62%	99.83%	99.87%	99.90%	99.83%	99.48%
PGE	99.86%	99.86%	100.00%	100.00%	99.83%	99.62%
PNM	99.83%	99.51%	99.87%	98.22%	99.86%	99.20%
PSEI	99.79%	99.86%	100.00%	99.80%	99.79%	97.57%
SCL	99.86%	99.72%	100.00%	99.87%	99.86%	99.55%
SRP	99.38%	99.65%	99.83%	99.63%	99.41%	99.38%
TEP	--	--	99.93%	100.00%	99.86%	99.86%
TIDC	99.86%	99.31%	100.00%	99.73%	99.86%	99.41%
TPWR	99.86%	99.48%	99.87%	99.73%	99.76%	99.86%

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 25th day of July 2022.

Is/ Anna Pascuzzo

Anna Pascuzzo