



California ISO

Market Update

EDAM performance

Market Performance and Advanced Analytics

May 14, 2026

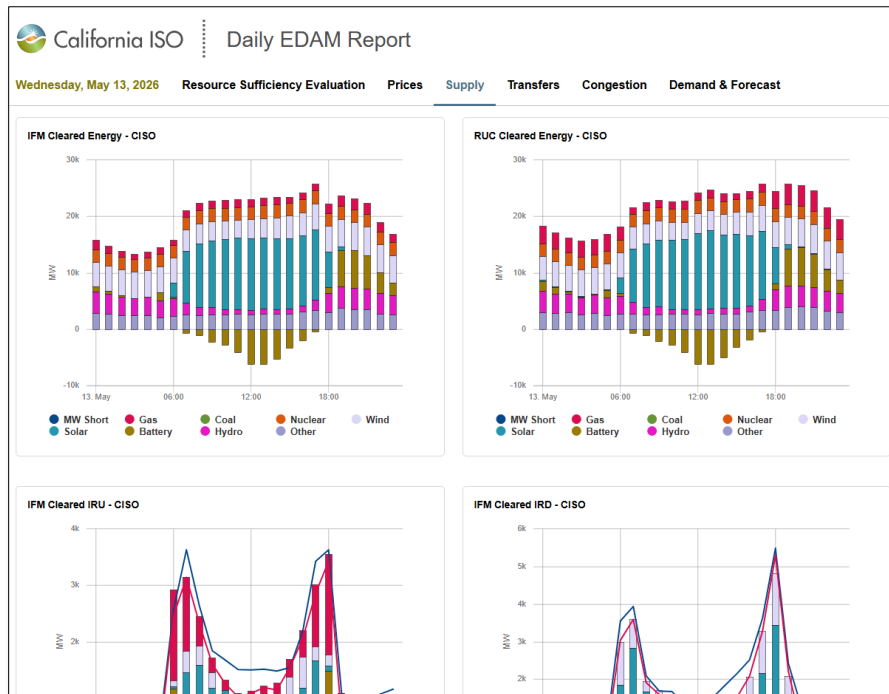
CAISO PUBLIC

Agenda

- EDAM daily report
- EDAM performance
- Questions on EDAM market results
- Price corrections
- Next steps

EDAM daily report

The ISO posts a daily EDAM performance report on the CAISO website



- It summarizes key metrics of the EDAM for all three balancing areas
- The report includes metrics on
 - RSE results
 - Prices
 - Supply
 - Transfers
 - Congestion
 - Demand

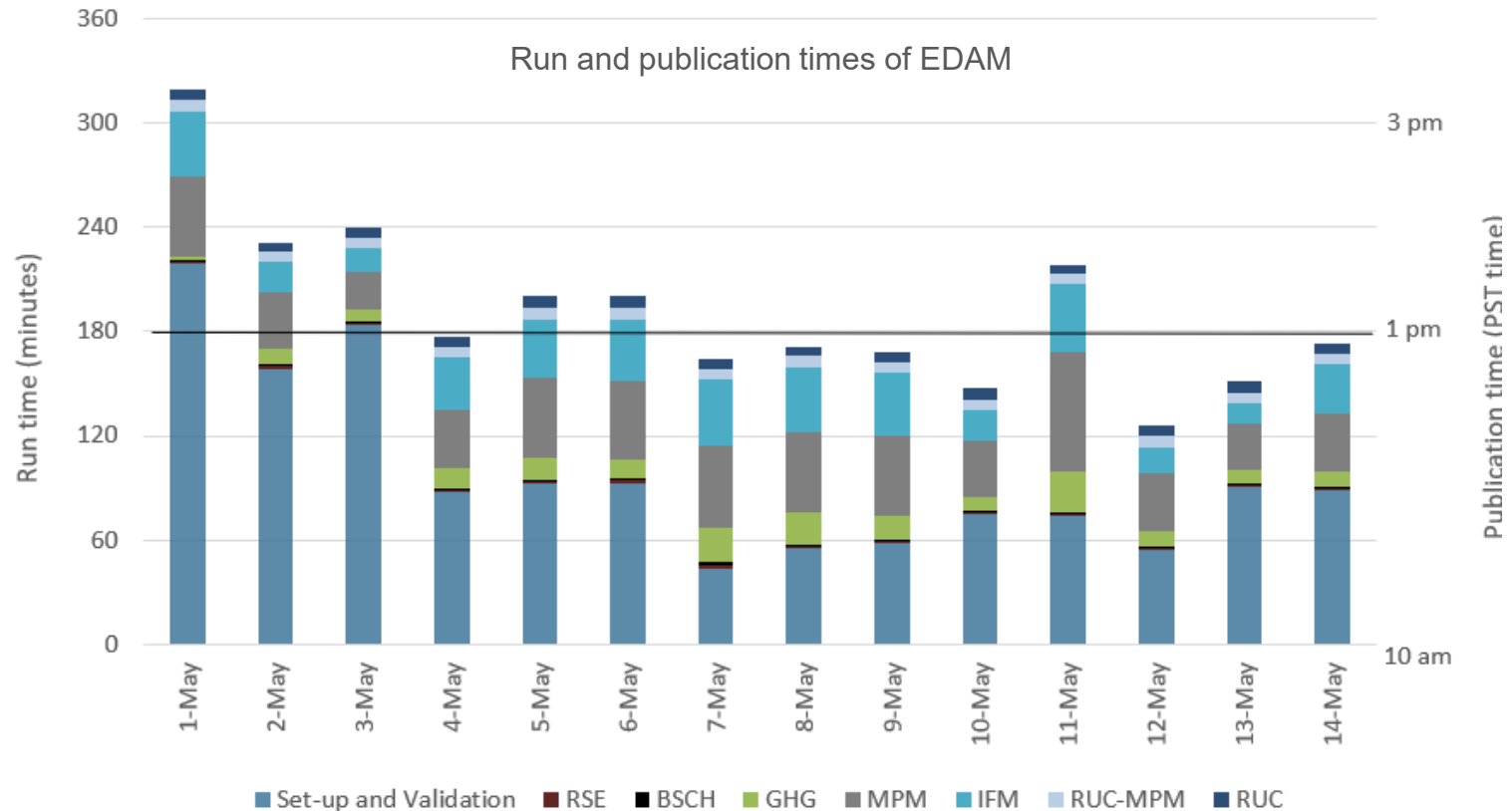
Daily report for EDAM is available at caiso.com

[Library | Daily Extended Day-Ahead Market \(EDAM\) reports | California ISO](#)

Walkthrough of the EDAM daily report

EDAM performance

Proactive review and validation of the day-ahead market have produced robust results



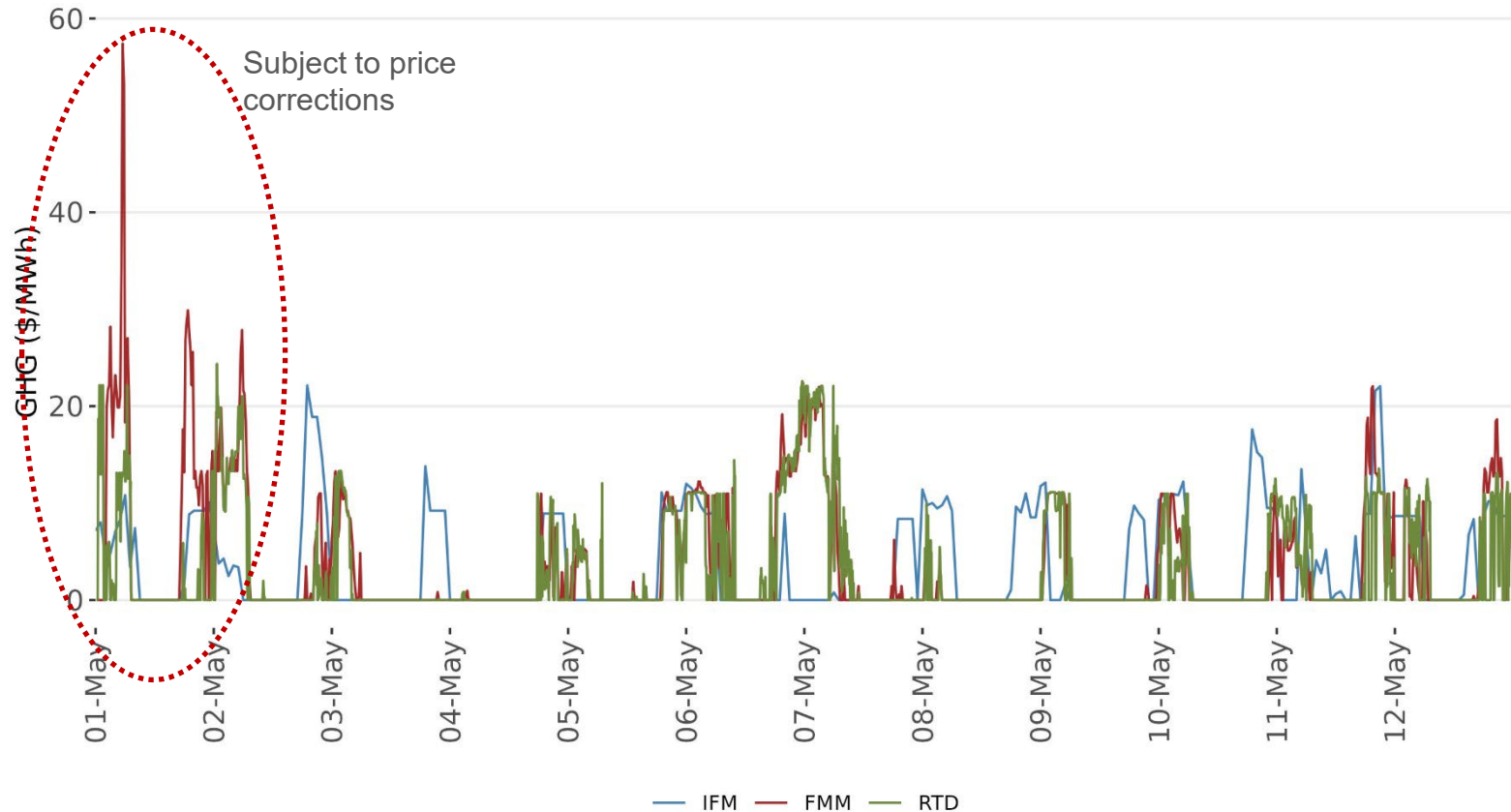
The ISO will continue to closely reviewing and validating results with the goal to publish by the 1pm deadline

All three balancing areas have passed Resource Sufficiency Evaluation at a high rate

	01-May	02-May	03-May	04-May	05-May	06-May	07-May	08-May	09-May	10-May	11-May	12-May
BAA and Commodity	PACW-lu	100	100	100	66.67	100	100	100	100	100	100	100
	PACW-ld	100	100	100	95.83	100	100	100	100	100	100	100
	PACE-lu	100	100	100	100	100	100	100	100	100	100	100
	PACE-ld	100	100	100	100	100	100	100	100	100	100	100
	CISO-lu	100	100	100	100	100	100	100	100	100	100	100
	CISO-ld	100	100	100	100	100	100	100	100	100	100	100

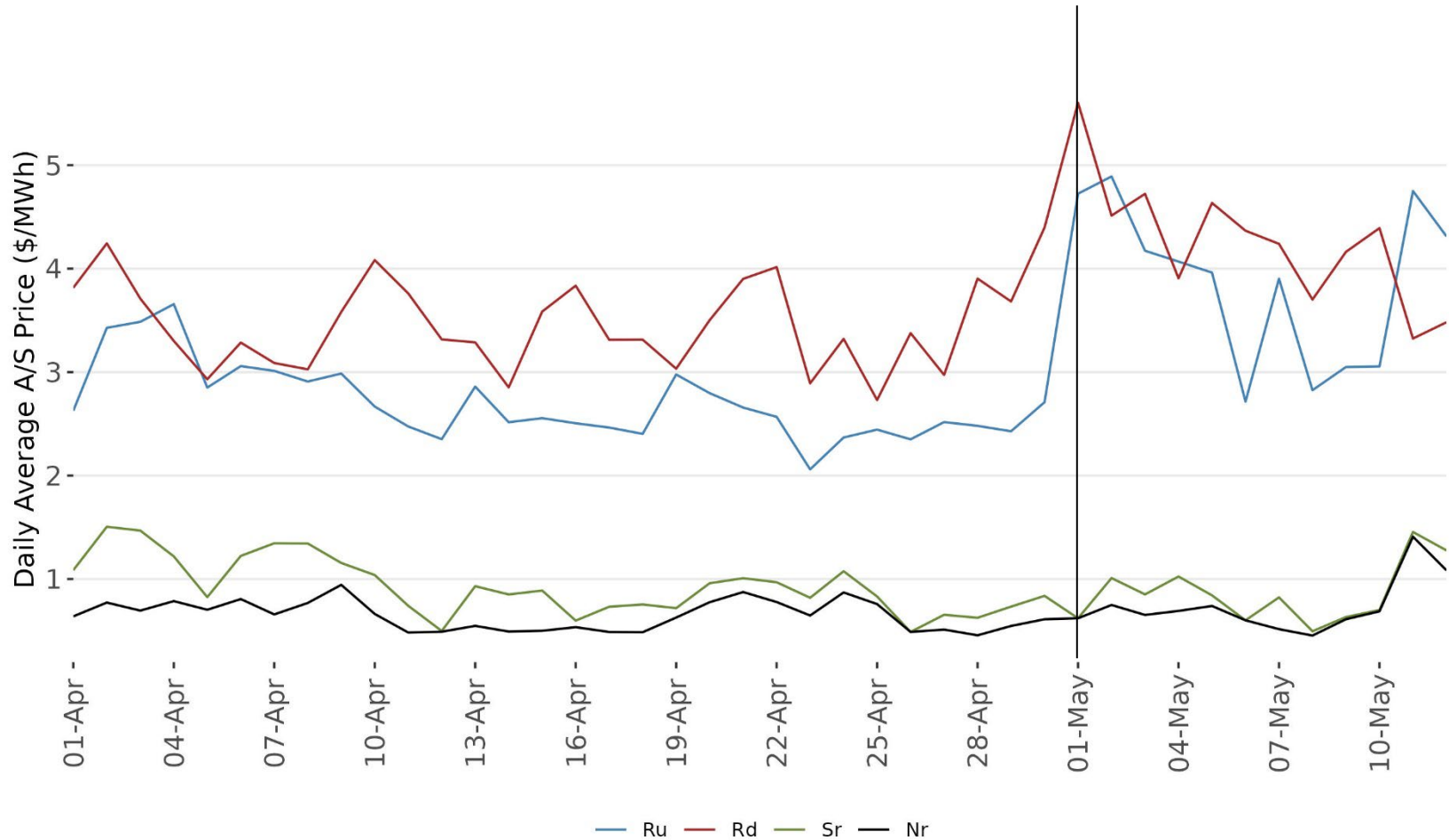


GHG prices have been stable in the range of \$10-20/MWh across all the markets

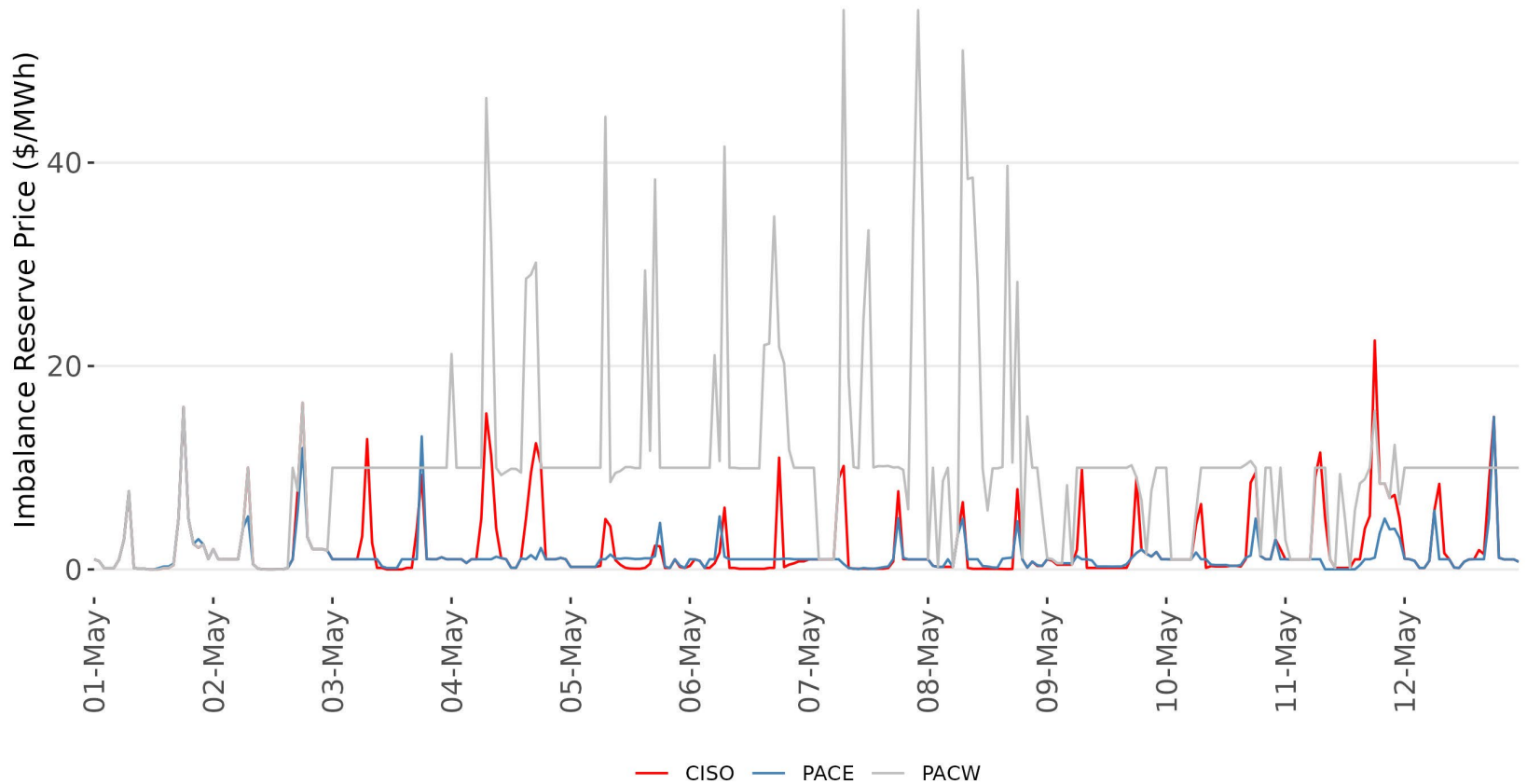


There are GHG price corrections for various intervals of May 1 and 2

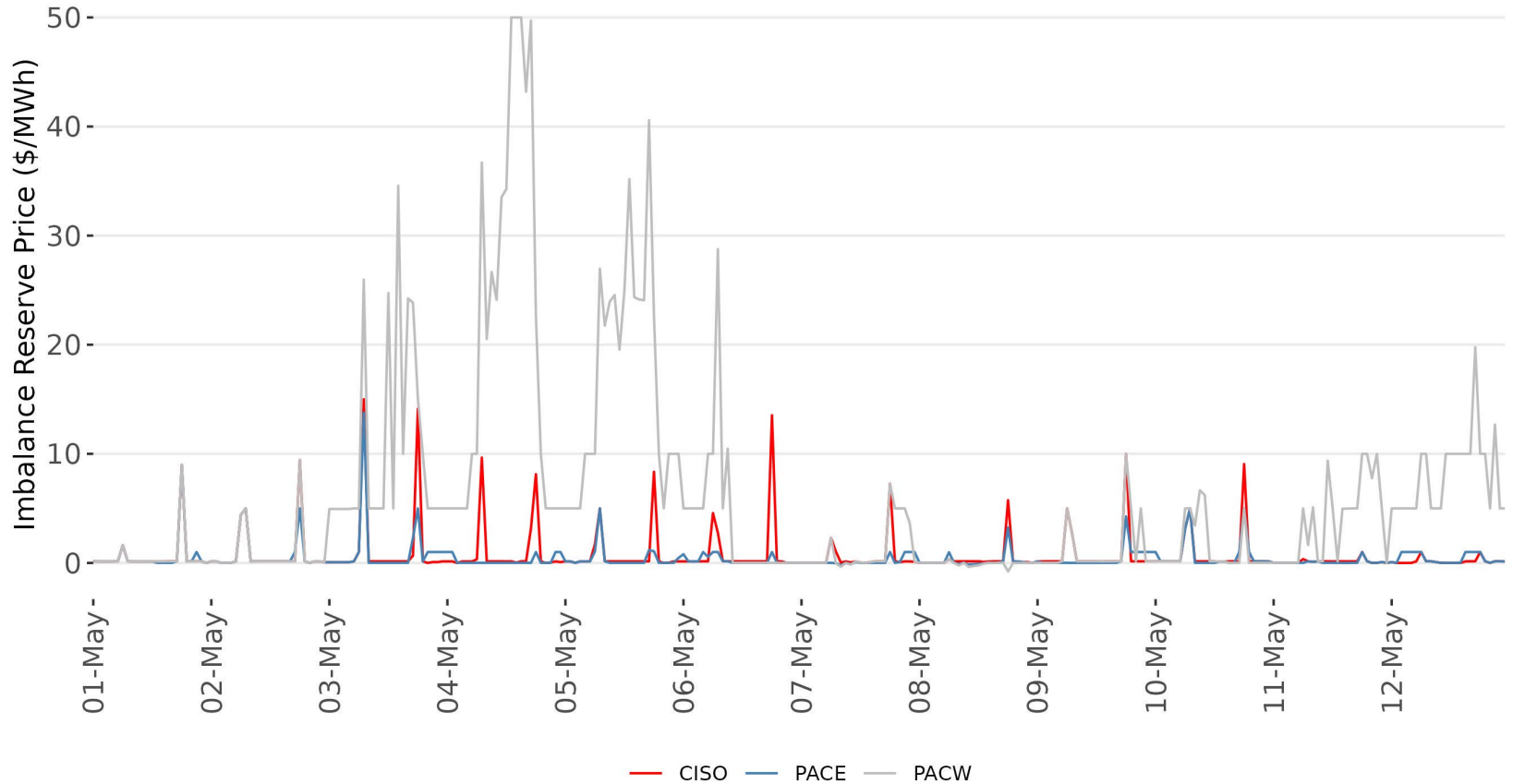
For CAISO, average daily ancillary service (A/S) prices followed similar trends after EDAM launch



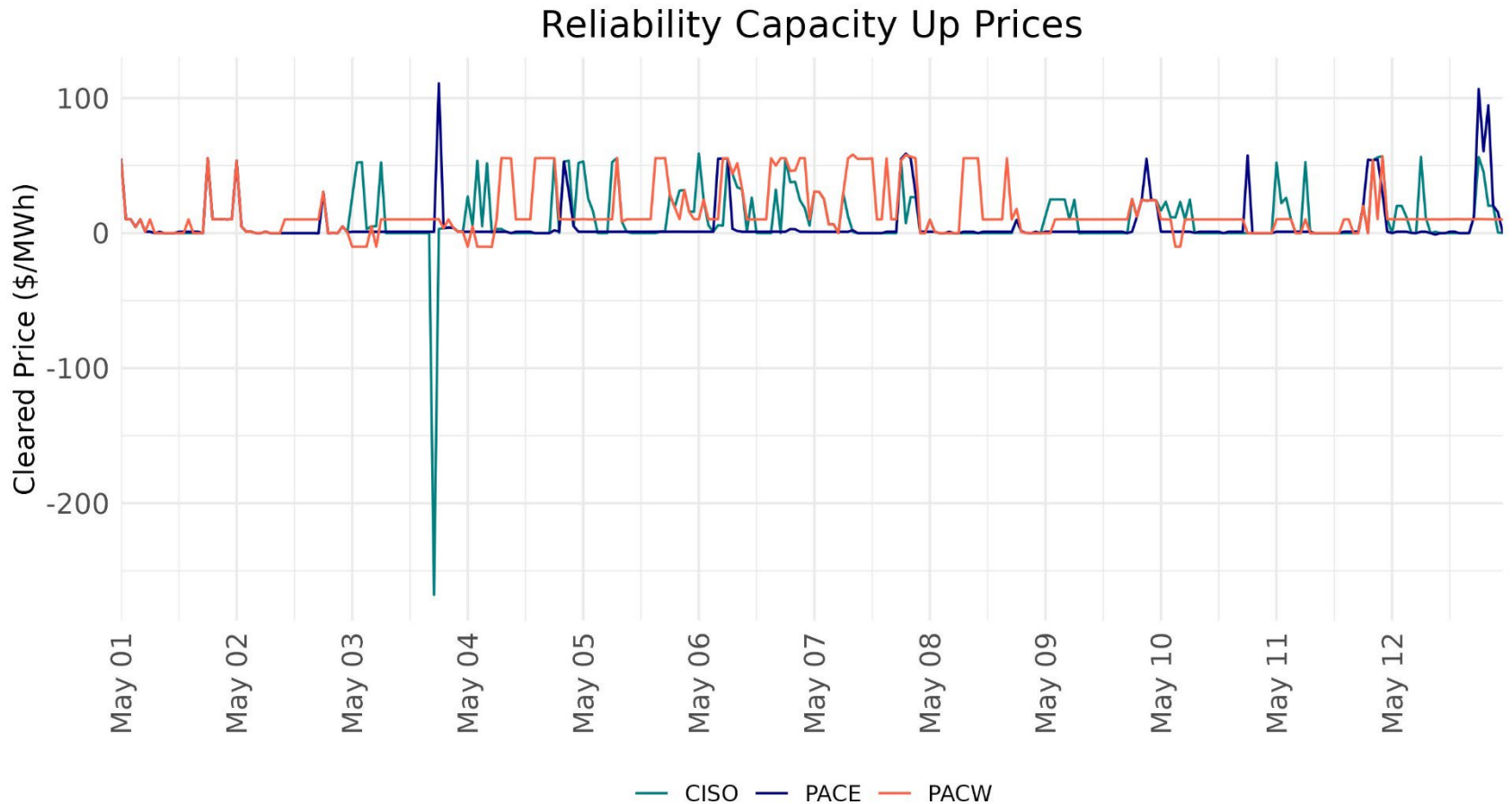
Imbalance Reserve Up (IRU) prices show separation among areas, reflecting the economics of the market footprint



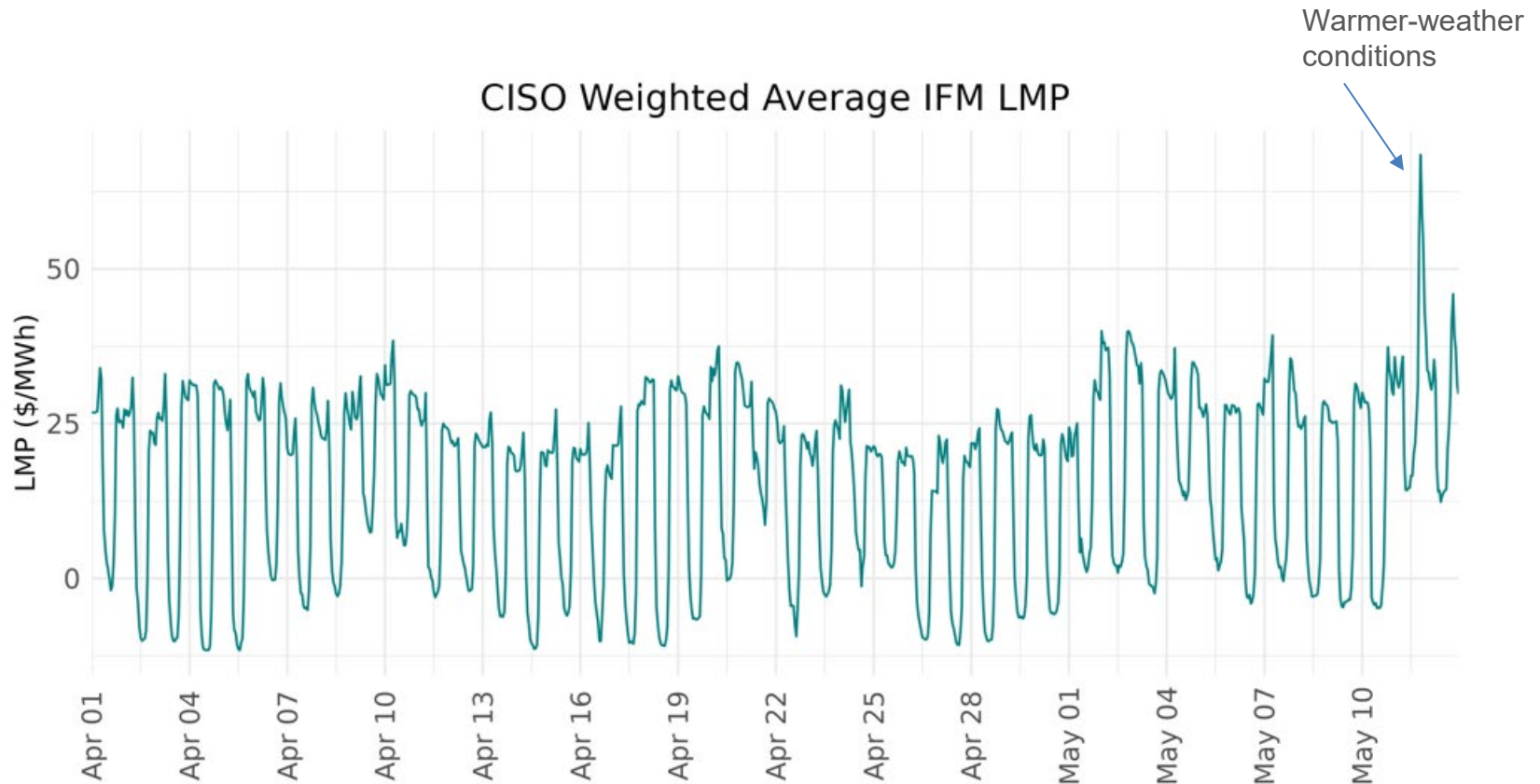
Imbalance Reserve Down (IRD) prices have been relatively lower than IRU prices



Reliability Capacity Prices have been generally under \$55

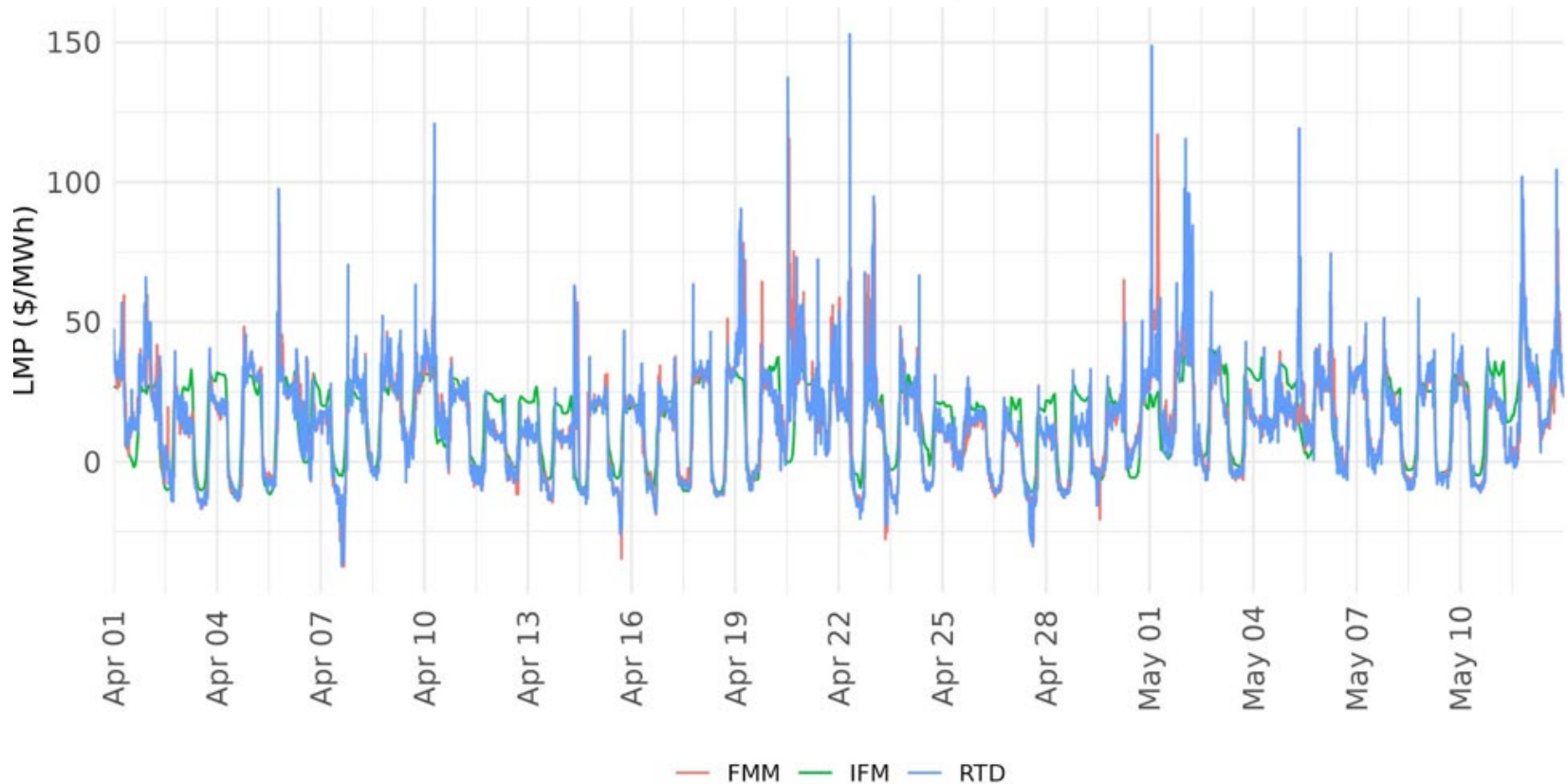


Energy prices are within typical economic range for the season of the year

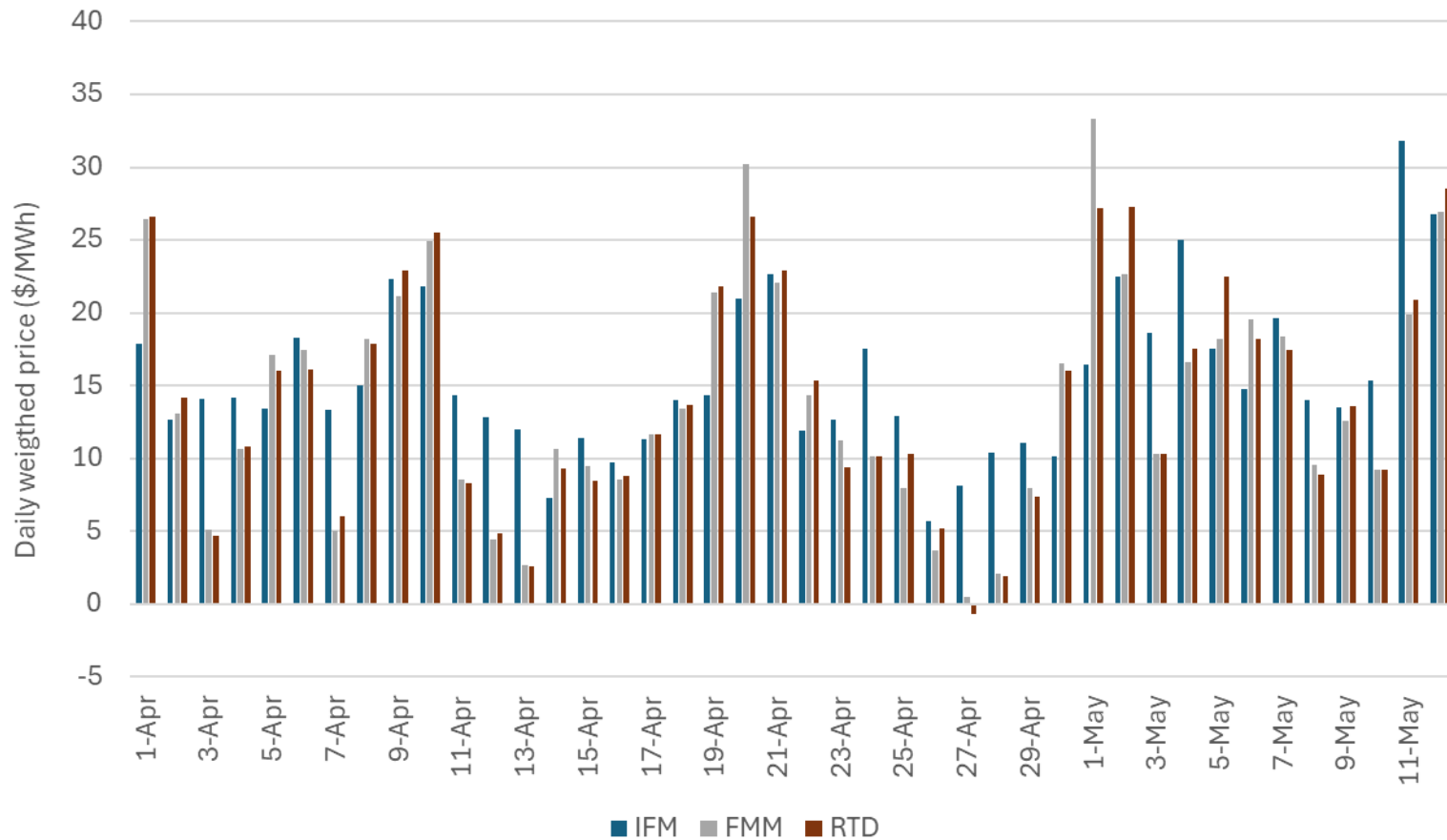


Lower prices in midday hours and higher prices in morning and evening peaks

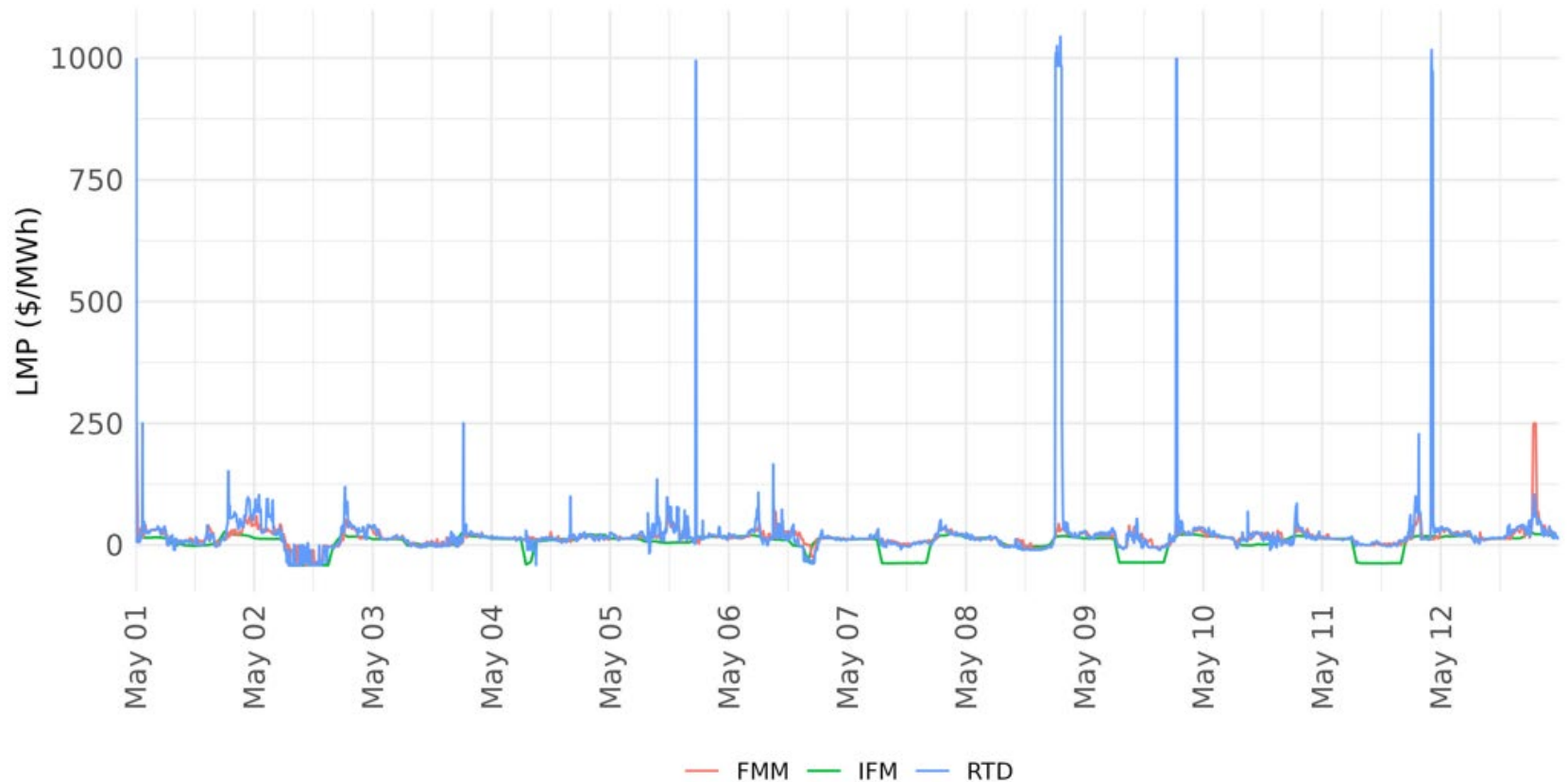
CAISO prices across markets show similar trends, with more volatile RTD prices



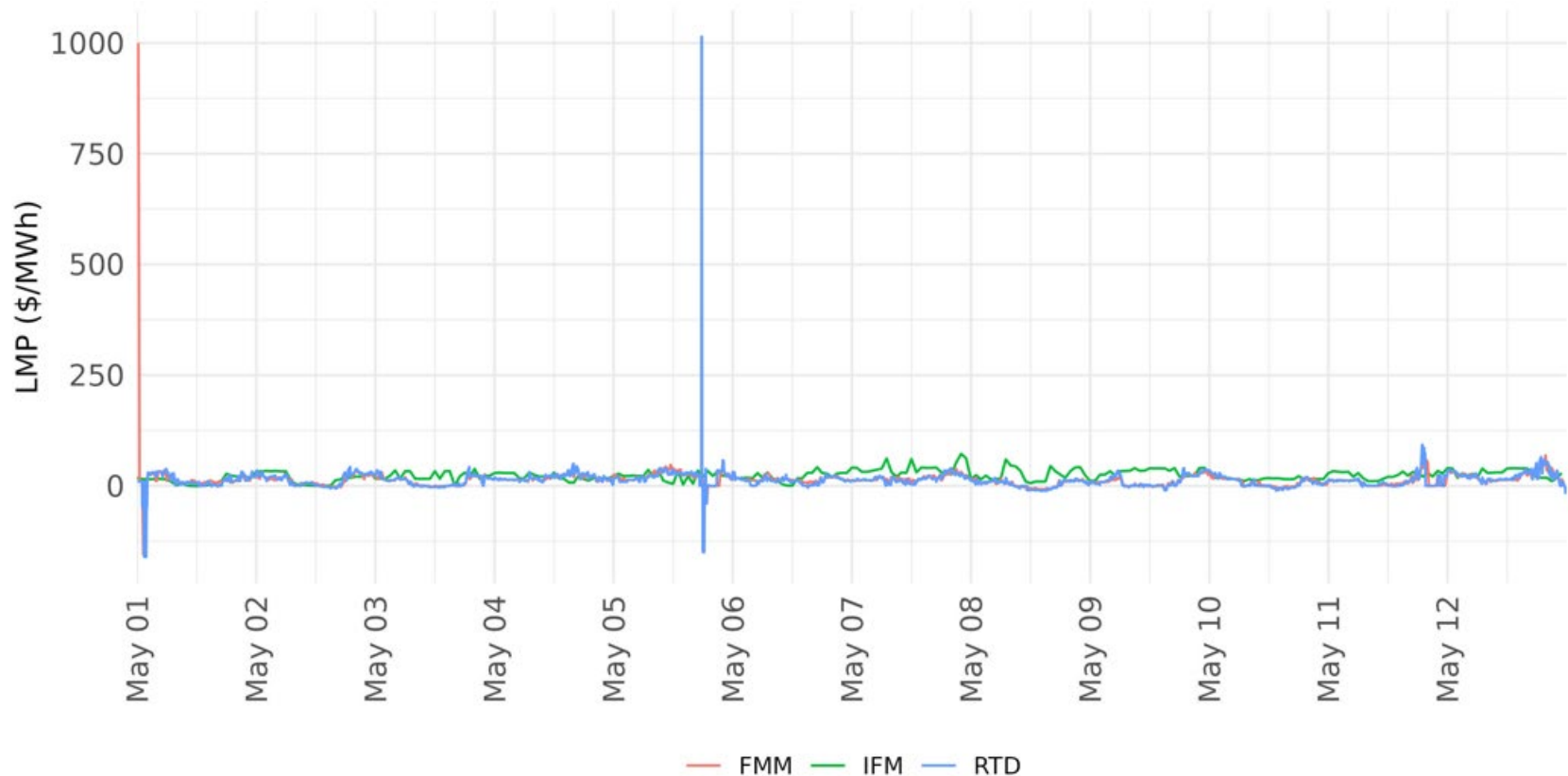
Daily price convergence for CAISO area still premature to see trends



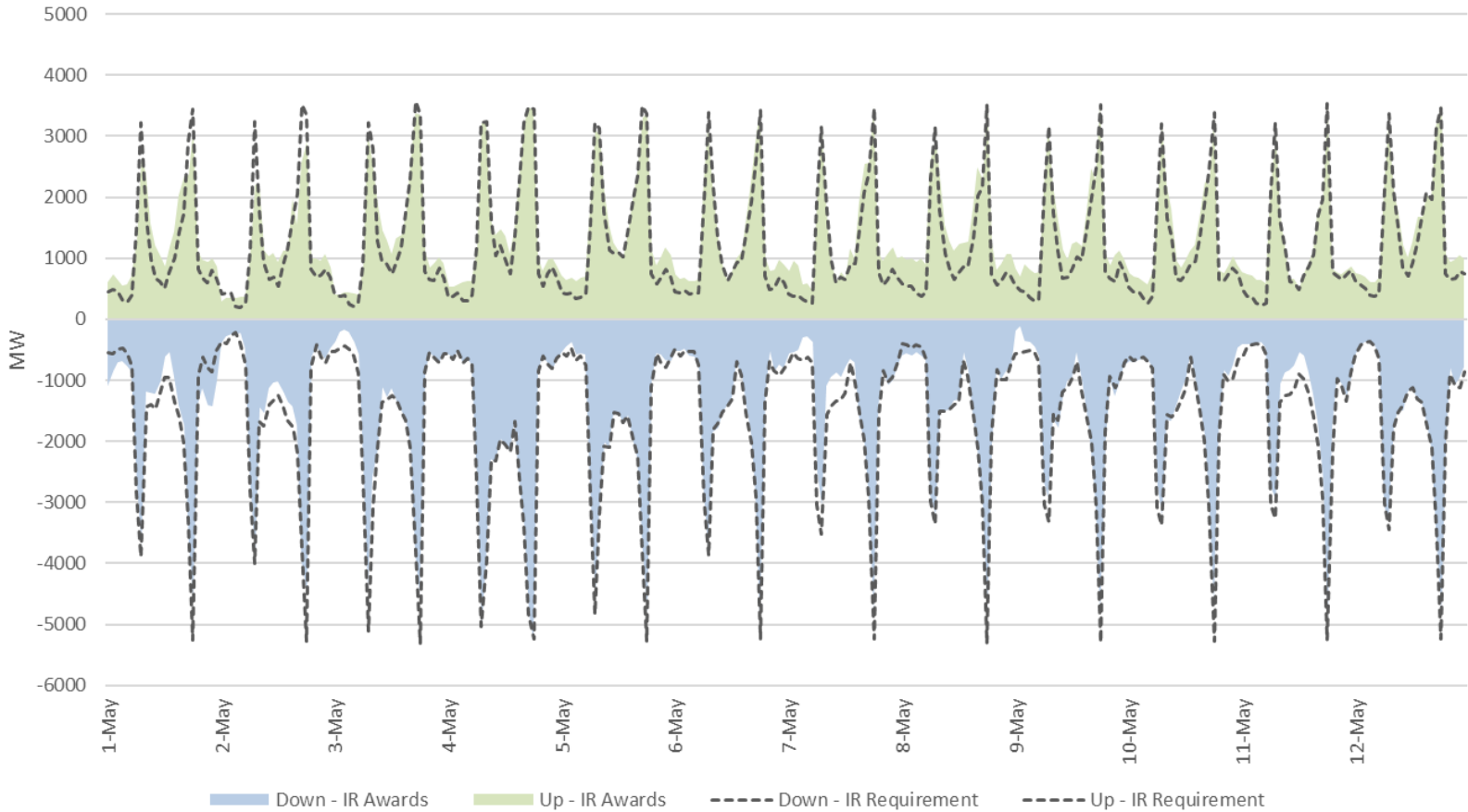
PACE prices in real time tend to be more volatile than day-ahead prices



PACW real-time prices tend to be lower than day-ahead energy prices

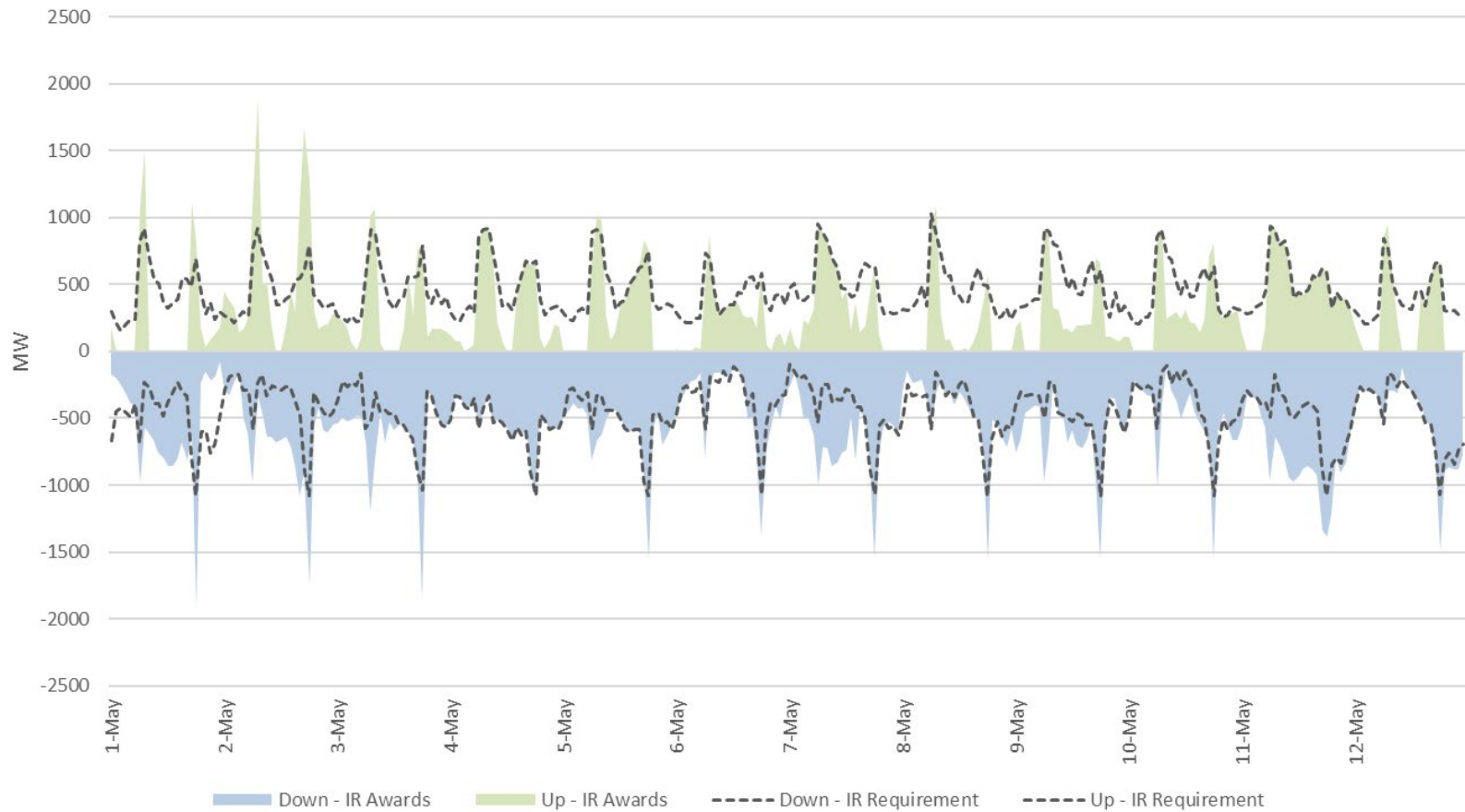


CISO BAA Imbalance reserve procurement has been stable since go-live; highest volumes have occurred during the morning and evening ramping periods



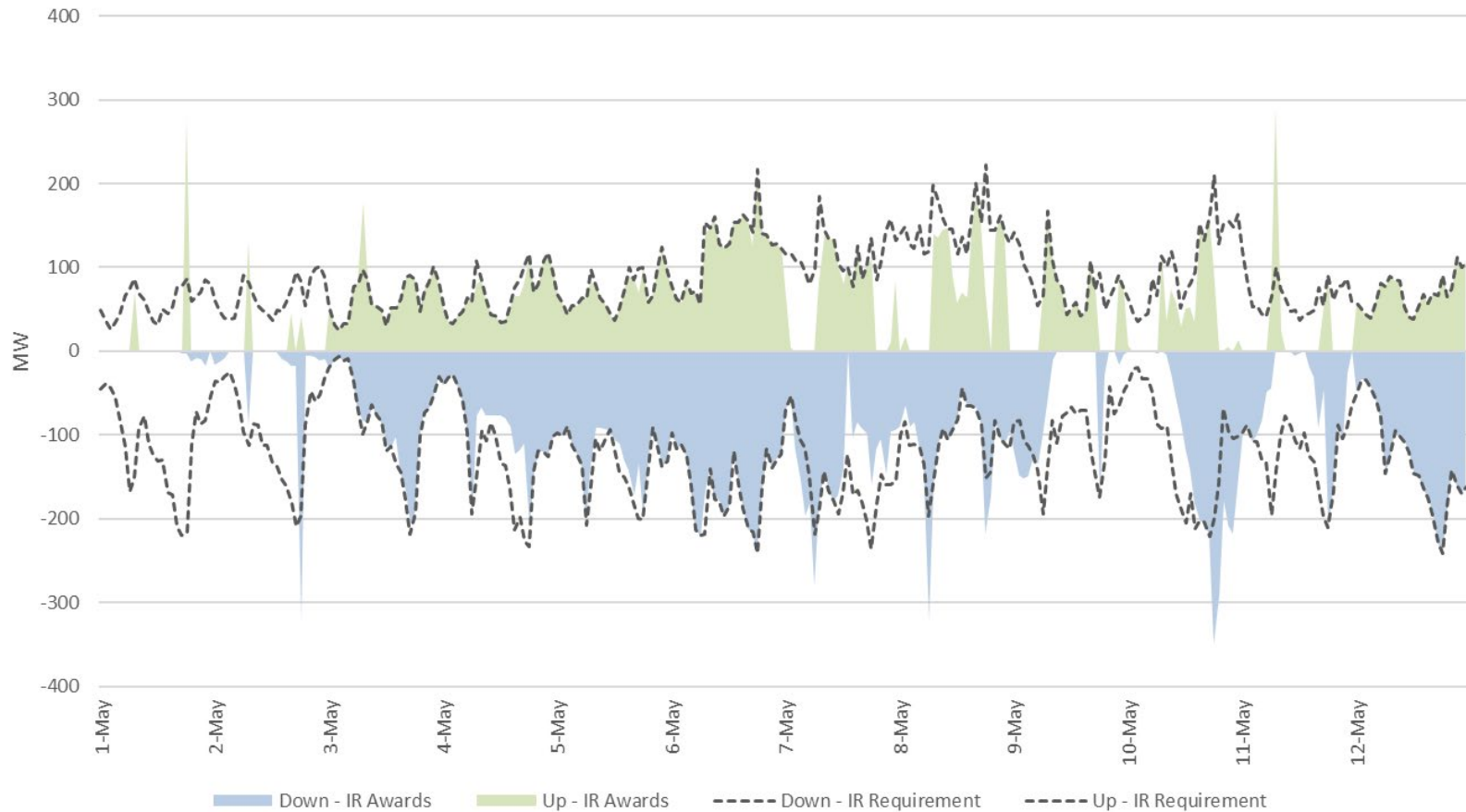
*Difference of requirement and awards total is balanced through transfers or use of demand curve

Trend of PACE BAA IR procurement has also been consistent; Leveraging transfers during solar hours to meet IRU requirements



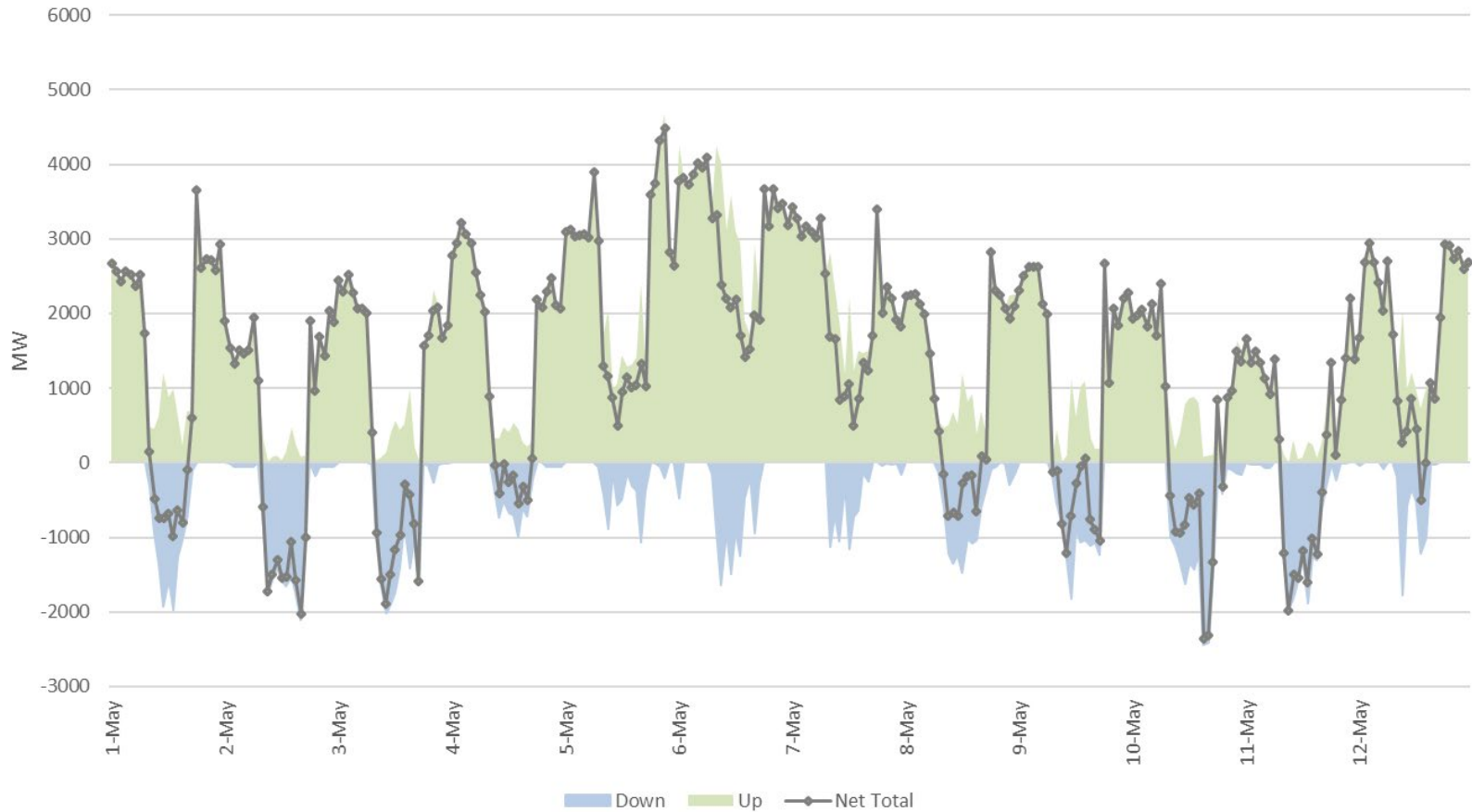
*Difference of requirement and awards total is balanced through transfers or use of demand curve

PACW BAA IR requirements have been primarily met both internally and through transfers

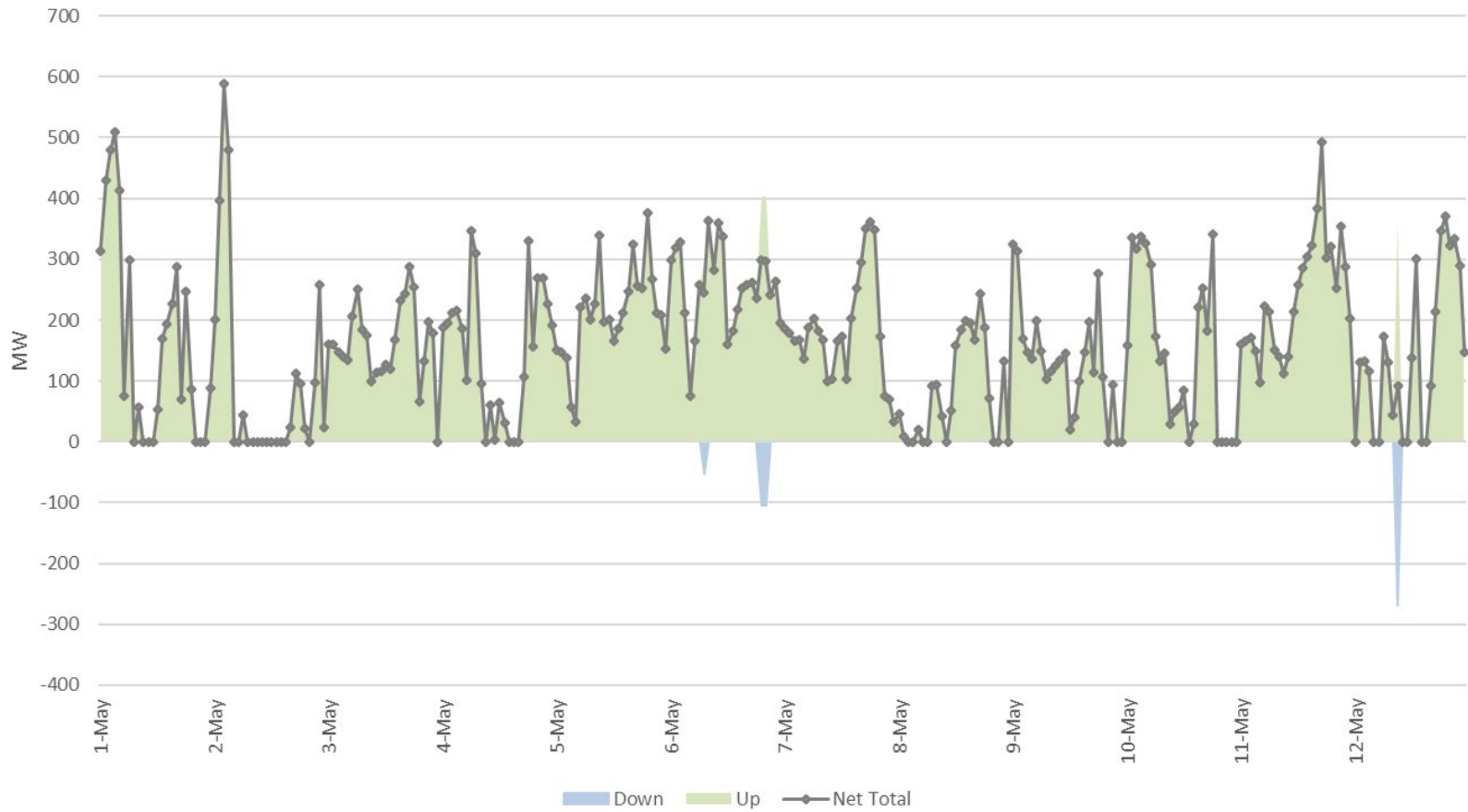


*Difference of requirement and awards total is balanced through transfers or use of demand curve

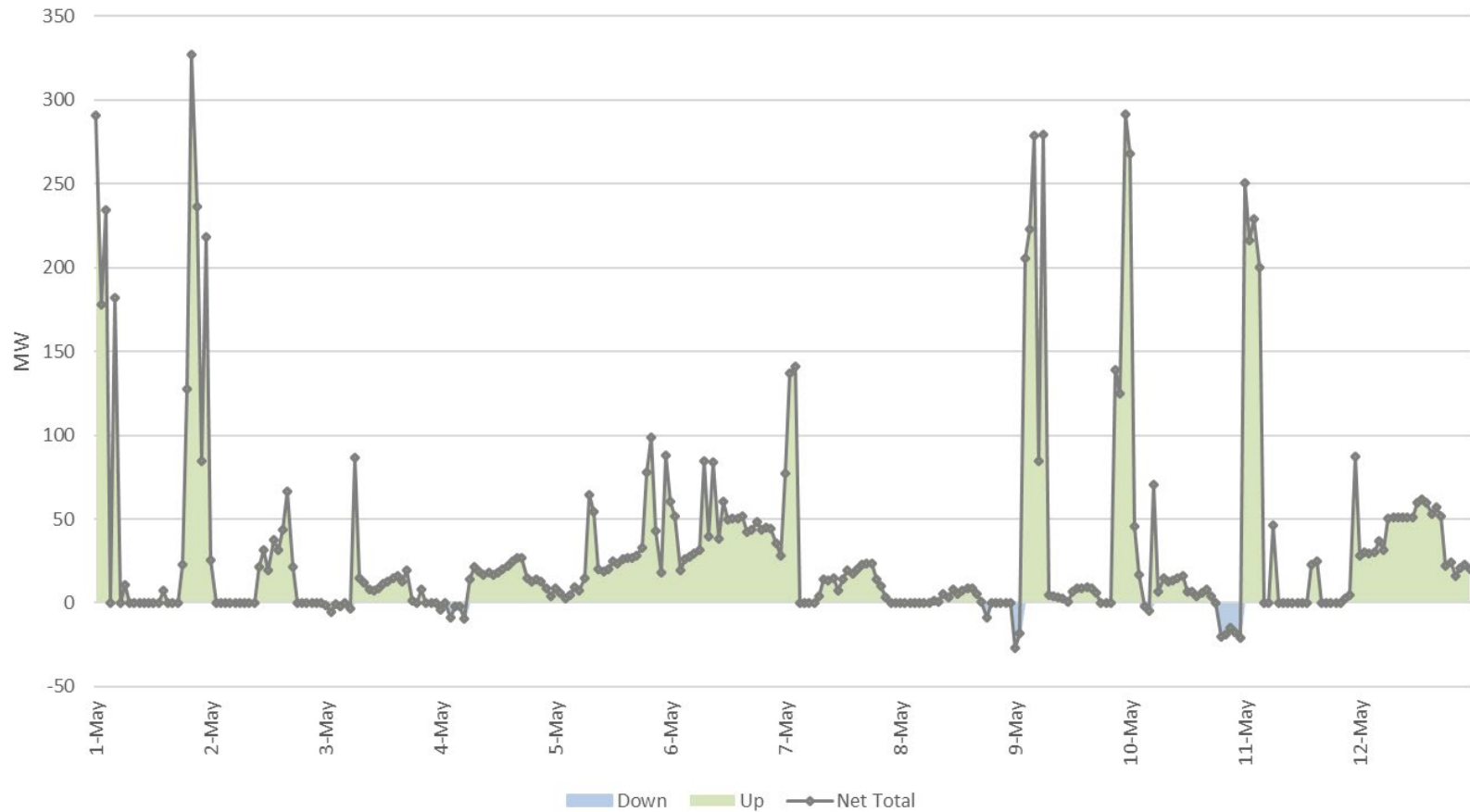
CISO BAA Reliability Capacity are mainly in the upward direction



Reliability Capacity for PACE has primarily been awarded in the upward direction



Reliability Capacity for PACW is also awarded primarily in the upward direction with higher values occurring during off-peak hours



Questions on EDAM results

Q: How is the reliability margin calculated for the net export constraint?
Will it always be 1500 MW?

A:

- As explained in Appendix 1 of the EDAM BPM, the CISO will enable the net export constraint in all hours, with an additional reliability margin during stressed hours that is set to, at a minimum, the maximum of:
 - (1) replacement reserves based on forecasted most severe single contingency
 - (2) protection for a non-credible contingency (*e.g.*, extreme weather, fires, gas operational flow order)
- Stressed Hours are currently defined as HE 17 through HE 21 on all days, with additional criteria that may trigger a stressed hour declaration in other hours under tight system conditions

Q: How is the reliability margin calculated for the net export constraint?
Will it always be 1500? (continued)

- The 1500 MW value that has been in place for the reliability margin in most of the stressed hours so far reflects the prevailing most severe single contingency value
- This value may change, such as those observed on May 10th, when the reliability margin was up to 1791 MW in HE 19. These changes were due to changing inputs into the most severe single contingency calculation
- The export constraint has not been binding

Q: Why is an ITC binding with a shadow price when the Transmission Interface Usage report in OASIS indicates that the ITC still has available capacity?

A: The Transmission Interface Usage report in OASIS does not show TSR schedules now.

CAISO is working to address the missing TSR schedules.

When considering both SR and TSR schedules, the ITC can indeed be confirmed to be binding without remaining available capacity.

Q: Does a resource with Startup Cost and Minimum Load Costs need to be on-line for energy to receive an RCU or RCD award?

A: Yes, if a resource is not committed for energy in IFM, it needs to be economic/committed in RUC to receive RCU and RCD.

Q: Why are RCU and RCD prices the same magnitude and opposite signs?

A: The formulation of RC in the RUC process uses one power balance

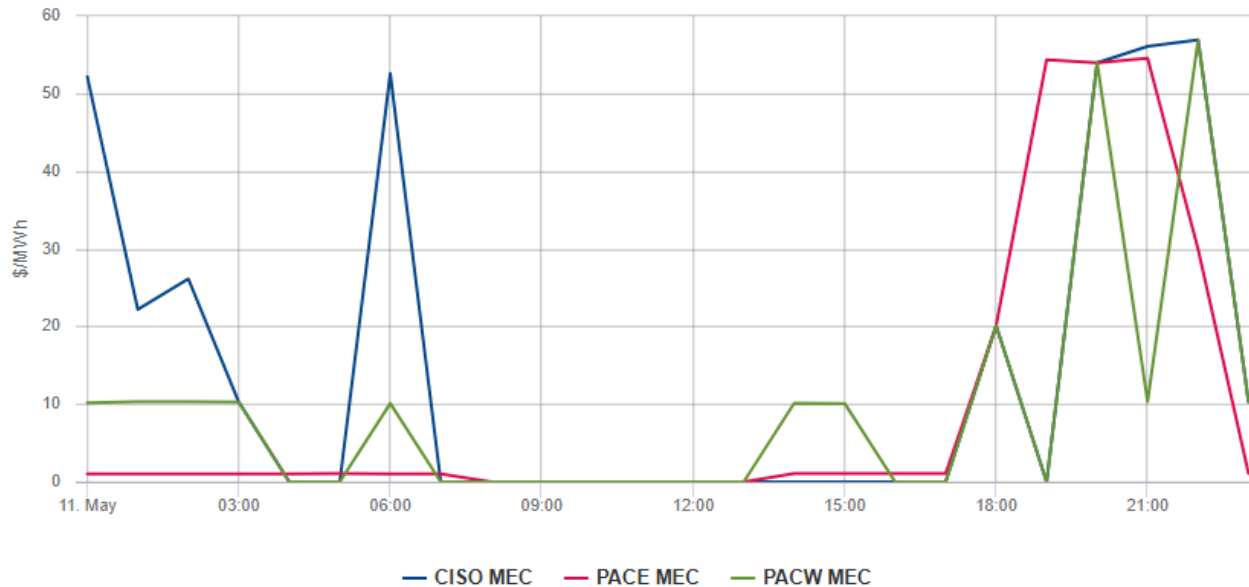
$$REN_{i,t} \equiv EN_{i,t} + RCU_{i,t} - RCD_{i,t}$$

$$\sum_i REN_{i,t} = D_t$$

- REN is another alternative terminology of RUC schedule
- RC Awards can be either RCU or RCD but not both for a given resource and hour.
- For a trading hour:
 - If CAISO forecast of BAA Demand > IFM Cleared Physical Supply, then RCU Target = Mismatch quantity and RCD Target = 0.
 - Else If CAISO forecast of BAA Demand < IFM Cleared Physical Supply, then RCU Target = 0 and RCD Target = Mismatch quantity.

RCU/RCD price formation (Daily EDAM report)

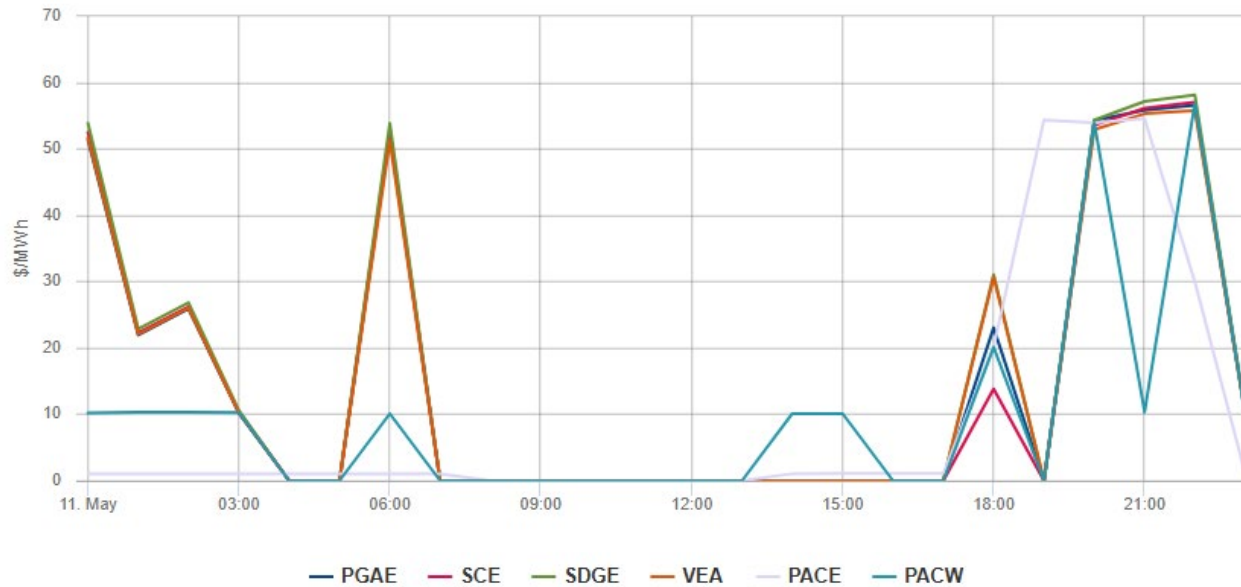
RUC Marginal Energy Prices (MEC)



- RUC MEC is the shadow price of the REN balance constraint
- RCU MEC is RUC MEC
- RCD MEC is negative of RUC MEC

RCU/RCD price formation (Daily EDAM report)

RUC LAP LMPs



- Congestion and loss components are included in the LMP chart

RCU/RCD prices and their components are available in OASIS

Imbalance Reserve/Reliability Capacity Prices																														
Market	↑	↑	↑	↑	↑	HE01	HE02	HE03	HE04	HE05	HE06	HE07	HE08	HE09	HE10	HE11	HE12	HE13	HE14	HE15	HE16	HE17	HE18	HE19	HE20	HE21	HE22	HE23	HE24	HE25
DAM	05/05/2026	DLAP_PGAE-APND	RCU	RCUMP	Loss	53.89498	26.20230	16.67614	0.01026	0.01031	0.01030	53.88153	85.05683	16.19490	2.13174	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	2.36886	3.01823	31.46165	23.08577	37.86380	38.54977	16.44933	16.14333	
DAM	05/05/2026	DLAP_PGAE-APND	RCU	RCUMP	Congestion	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	
DAM	05/05/2026	DLAP_PGAE-APND	RCU	RCUMP	Capacity	53.10373	25.82525	16.39416	0.01011	0.01012	0.01011	52.57248	55.55094	8.58040	1.07504	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.08980	1.36527	28.30510	19.21201	31.43278	31.84560	15.90445	15.79428	

Imbalance Reserve/Reliability Capacity Prices																														
Market	↑	↑	↑	↑	↑	HE01	HE02	HE03	HE04	HE05	HE06	HE07	HE08	HE09	HE10	HE11	HE12	HE13	HE14	HE15	HE16	HE17	HE18	HE19	HE20	HE21	HE22	HE23	HE24	HE25
DAM	05/05/2026	DLAP_PGAE-APND	RCD	RCDMP	Loss	-53.89498	-26.20230	-16.67614	-0.01026	-0.01031	-0.01030	-53.88153	-85.05683	-16.19490	-2.13174	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-2.36886	-3.01823	-31.46165	-23.08577	-37.86380	-38.54977	-16.44933	-16.14333	
DAM	05/05/2026	DLAP_PGAE-APND	RCD	RCDMP	Congestion	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	
DAM	05/05/2026	DLAP_PGAE-APND	RCD	RCDMP	Capacity	-53.10373	-25.82525	-16.39416	-0.01011	-0.01012	-0.01011	-52.57248	-55.55094	-8.58040	-1.07504	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-1.08980	-1.36527	-28.30510	-19.21201	-31.43278	-31.84560	-15.90445	-15.79428

$RCUMP = RCU\ MEC + RCU\ MCC + RCU\ MCL$
 $RCDMP = RCD\ MEC + RCD\ MCC + RCD\ MCL$

$RCD\ MEC = -RCU\ MEC$
 $RCD\ MCC = -RCU\ MCC$
 $RCD\ MCL = -RCU\ MCL$

Price Corrections

The price correction time horizon has been extended

- For 180 days from May 1, the day-ahead correction time horizon is extended from 3 BD to 10 BD
- For 180 days from May 6, the real-time correction time horizon is extended from 5 BD to 10 BD
- Price Correction Messages are available on OASIS

OASIS **ATLAS REFERENCE** REPORT DEFINITION PRICES TRANSMISSION SYSTEM DEMAND ENERGY ANCILLARY SERVICES CONGEST

Date From: To: Market/Process: [ALL]

Price Correction Messages

21 - 23 of 23

Message Time	Market	Message Text
05/08/2026 16:10	RTPD	Trade Date: 5/2/2026 Market: FMM Hour(s): 6-8 Interval(s): various Constraint: n/a Commodity: Energy and GHG Method: Selective recalculation Reason: Invalid Greenhouse Gas shadow prices and MEC due to a software defect impacting the power balance constraint.
05/08/2026 14:43	RTD	Due to a business processing issue, various intervals of price correction for trade days 05/01/26 & 05/03/26 were not processed. CAISO plans to have the corrections published by COB Friday, 05/15/2026.
05/08/2026 14:43	RTPD	Due to a business processing issue, various intervals of price correction for trade days 05/01/26 & 05/03/26 were not processed. CAISO plans to have the corrections published by COB Friday, 05/15/2026.

Real-Time Market Price Corrections

- Apr 30 HE 24 – May 1 HE 4: Invalid ELAPs due to a data input error impacting WEIM transfer limits
- May 1-2: Invalid Greenhouse Gas shadow prices and MEC due to a software defect impacting the power balance constraint
- May 1-3: Invalid Flex Ramp Product prices due to a software defect impacting the FRP requirement
- May 1-5: Invalid ITC congestion due a data input error impacting the limit of the ITC

Day-Ahead Market Price Corrections

- All trade dates for EDAM since May 1 are still under review within the extended window for price corrections
- Any applicable correction for day-ahead prices will be discussed in the next market update call

Next Steps

- Participants can submit inquiries through the CIDI system or using the comments template
<https://stakeholdercenter.caiso.com/Comments/MyComments/513b3e11-fa24-4577-a9f5-dfac8512cf60>
- The ISO continues to perform price validation and correction within the extended 10 business days
- The ISO will continue to report on EDAM performance in the market update call of May 28
- The ISO will provide monthly performance reports on EDAM performance followed by a public meeting
 - May results will be reported and discussed in the second half of June