



DMM 2017 Q4 Report Highlights

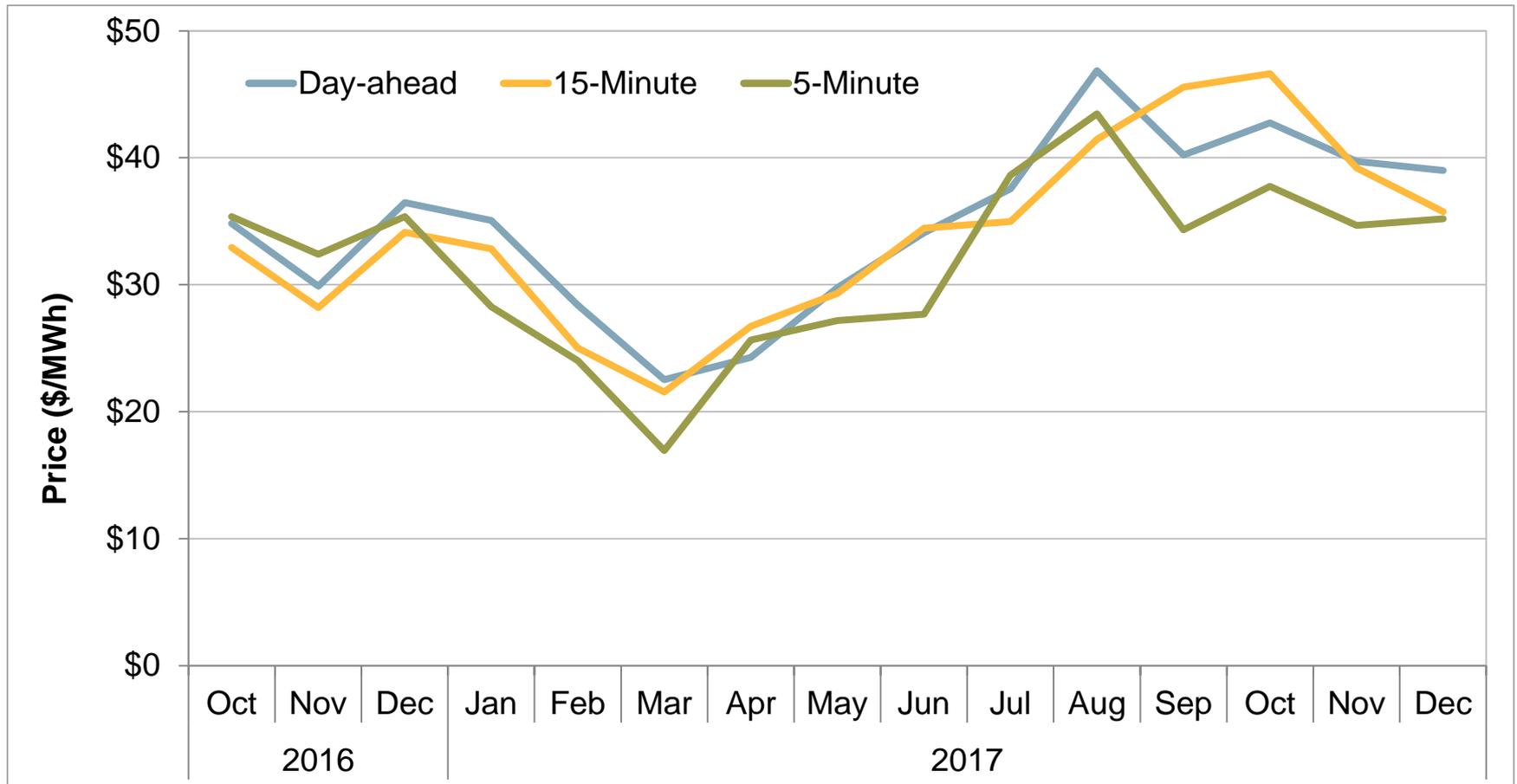
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Conference Call
February 21, 2018

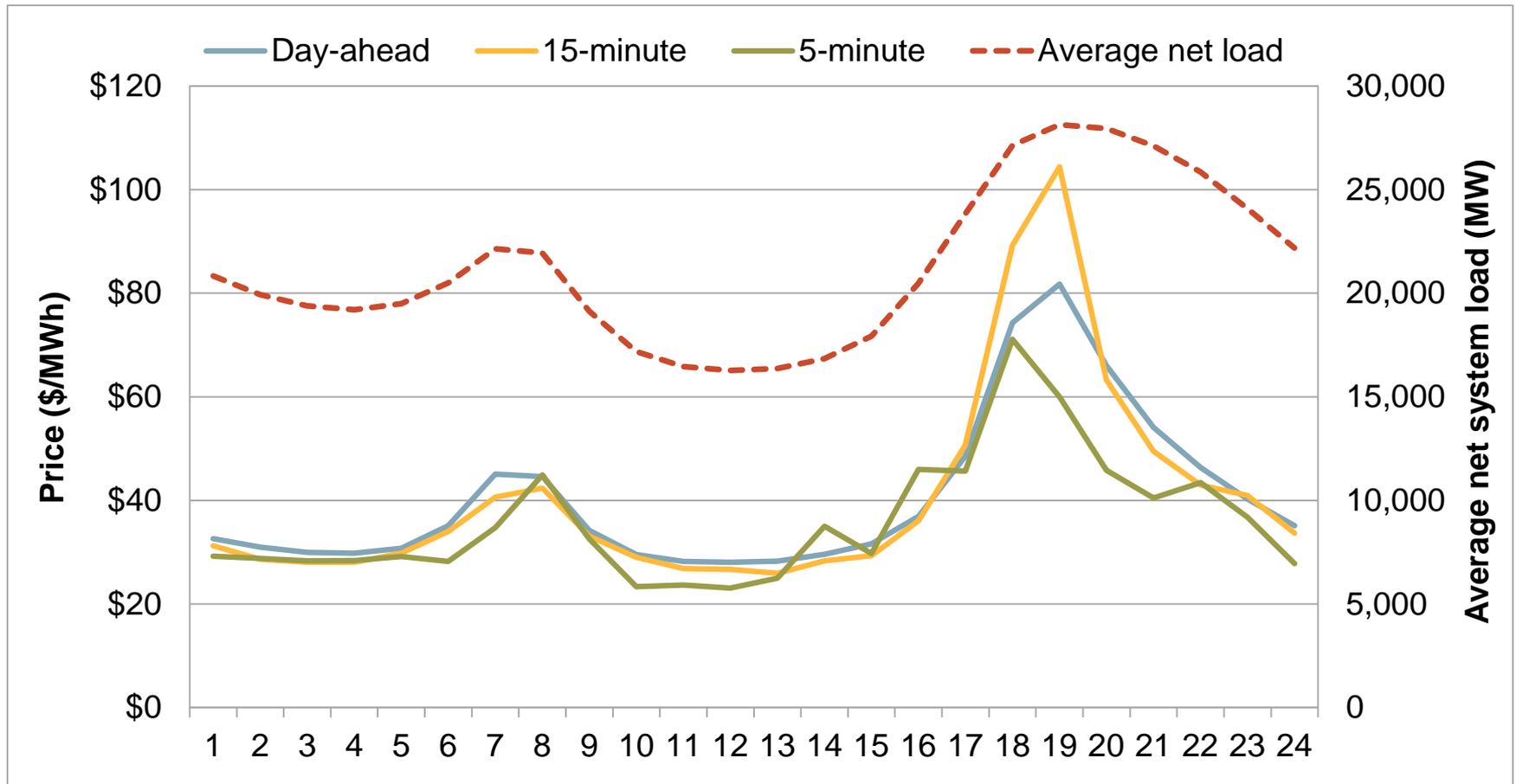
Outline

- Real-time market performance
 - Higher prices in the 15-minute market
 - Large congestion revenue rights losses
- EIM market performance
- Special issues and recommendations
 - Wind and solar downward dispatch
 - Use of Aliso Canyon measures
 - Capacity procurement

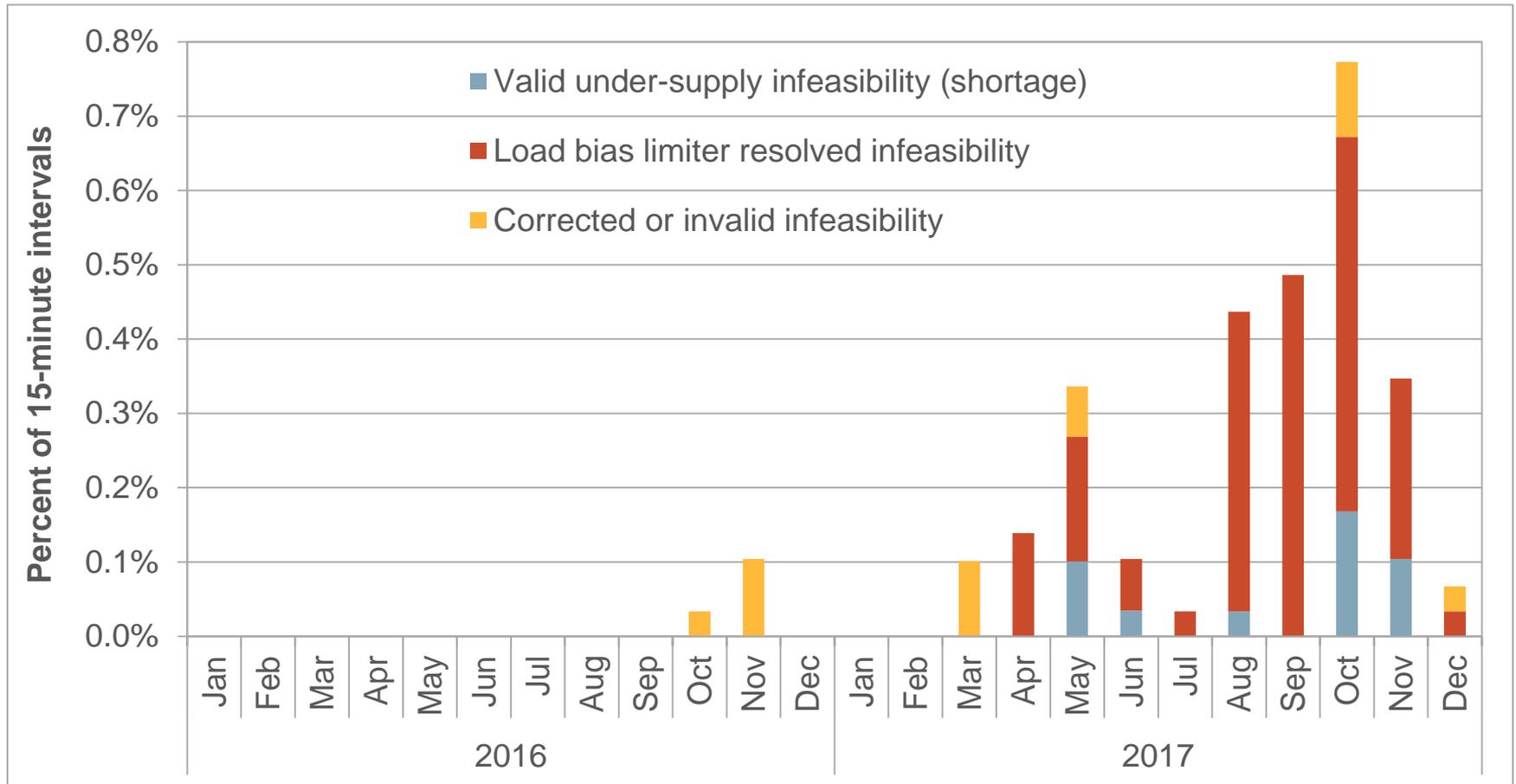
Prices in the 15-minute market were higher than prices in the real-time and day-ahead markets in October.



ISO prices continue to follow the net-load pattern. Net loads were lowest during the middle of the day.



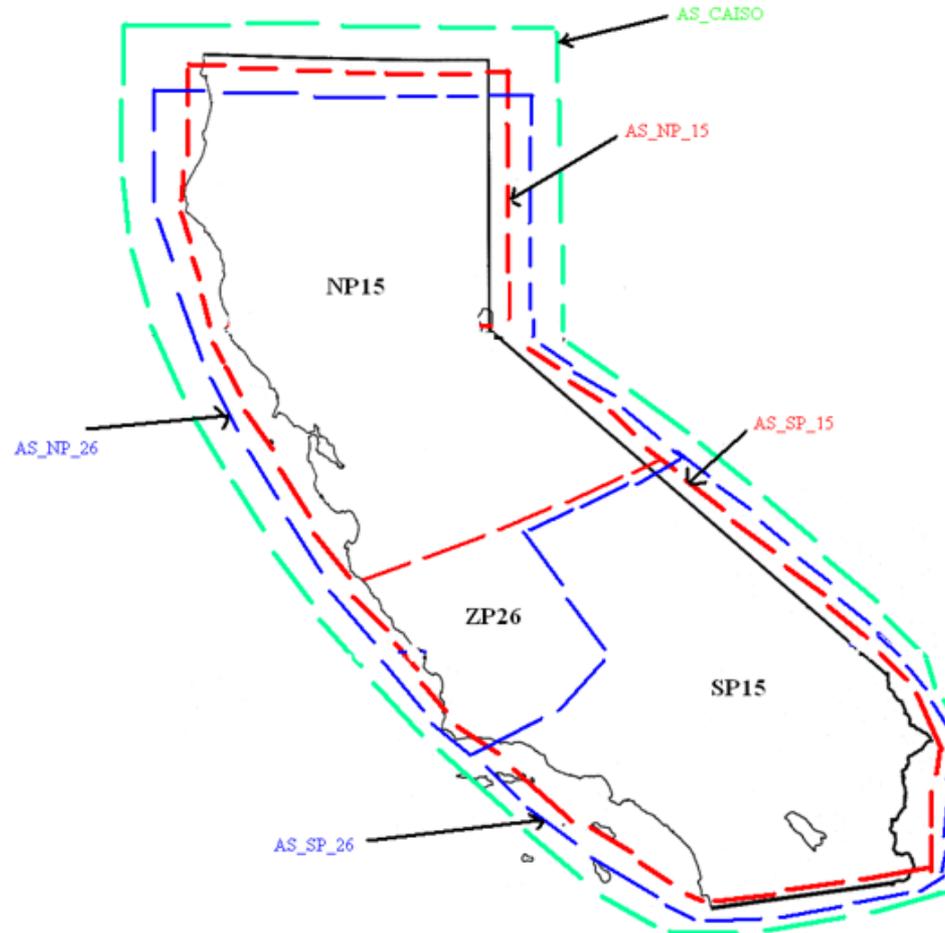
The power balance constraint was triggered more frequently in the 15-minute market this quarter.



The ISO began setting operating reserve requirements in the North of Path 26 area to meet BAL-002-2.

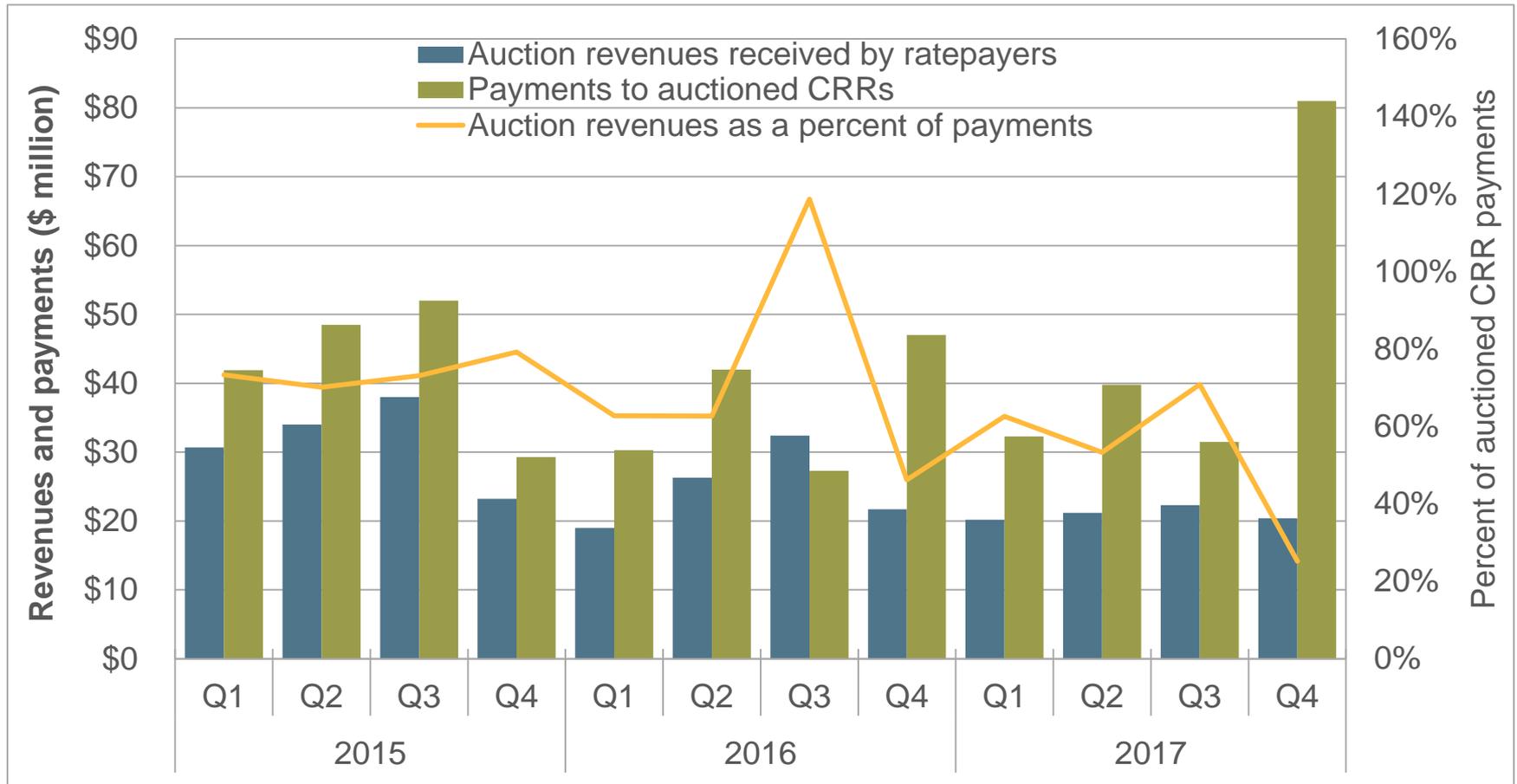
AS Region Map (Inside ISO AS Region)

Note: the data of the AS region information of following map is provided in the AS sheet.

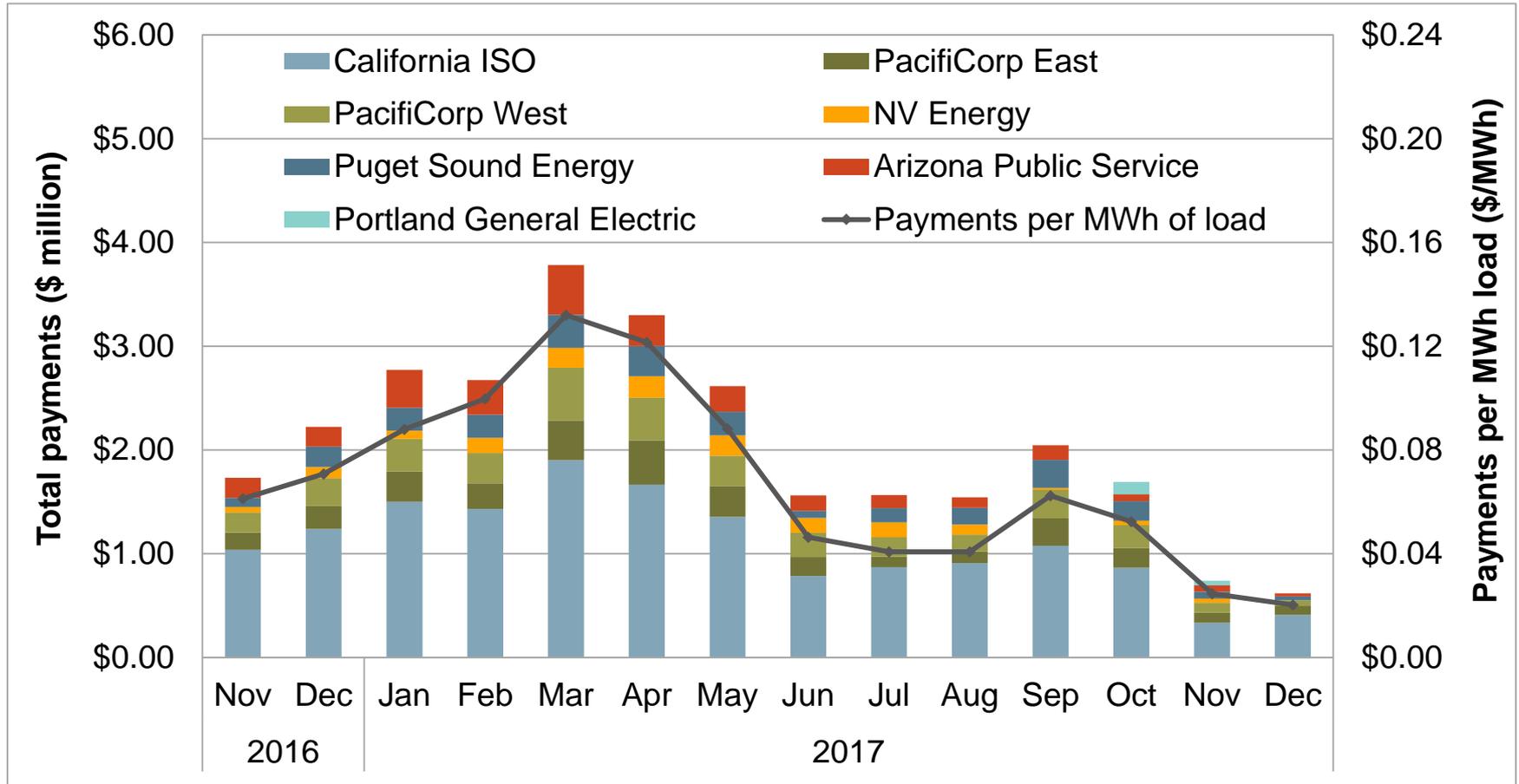


*ISO Full Network Model

Auction revenues were significantly lower than payments made to congestion revenue rights holders.

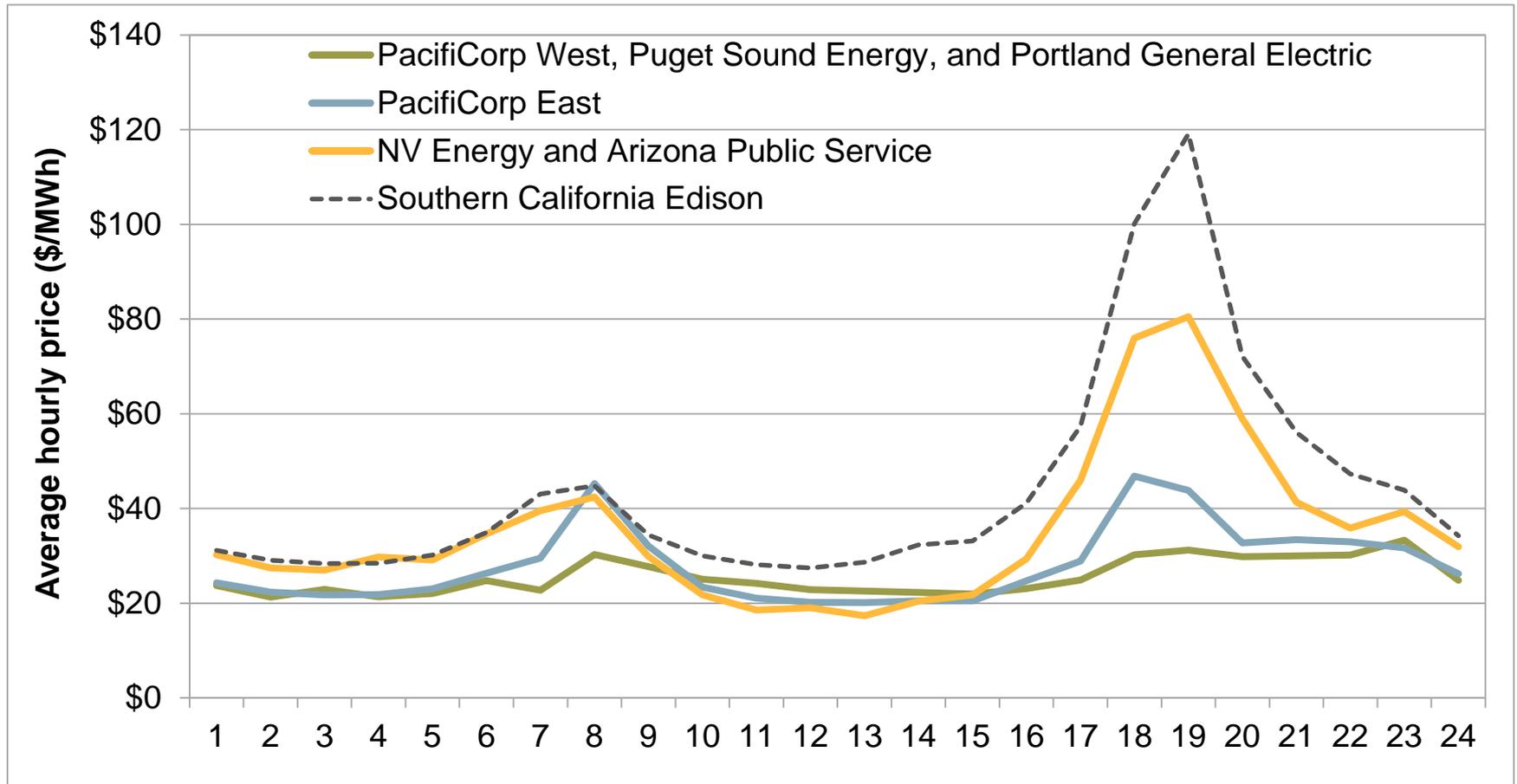


Payments for the flexible ramping capacity product were low in the fourth quarter.

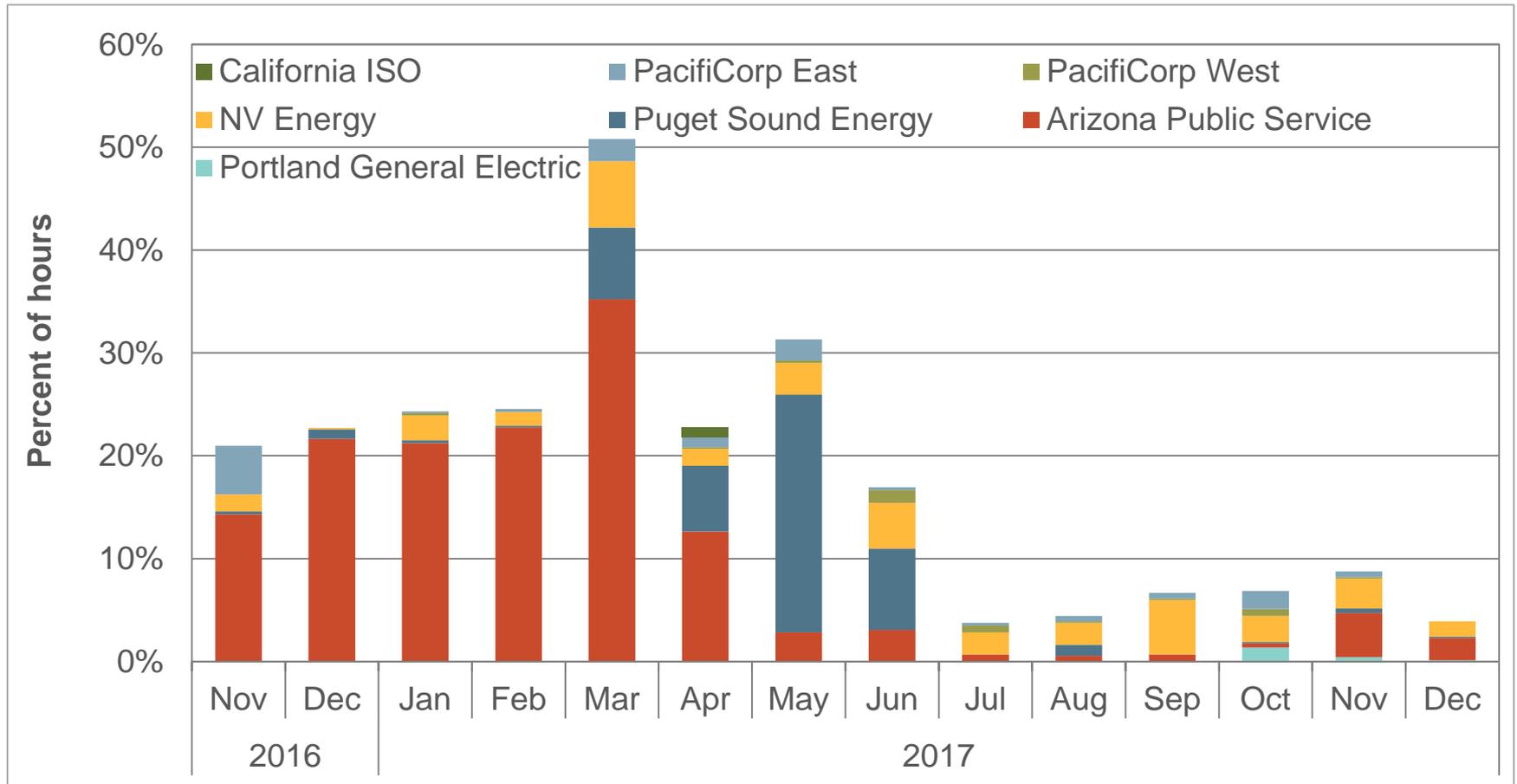


The ISO discussed issues with the flexible ramping capacity with the Market Planning and Performance meeting on Feb 20:
<http://www.pub.oa.caiso.com:21083/Documents/AgendaandPresentation-MarketPerformanceandPlanningForum-Feb202018.pdf>

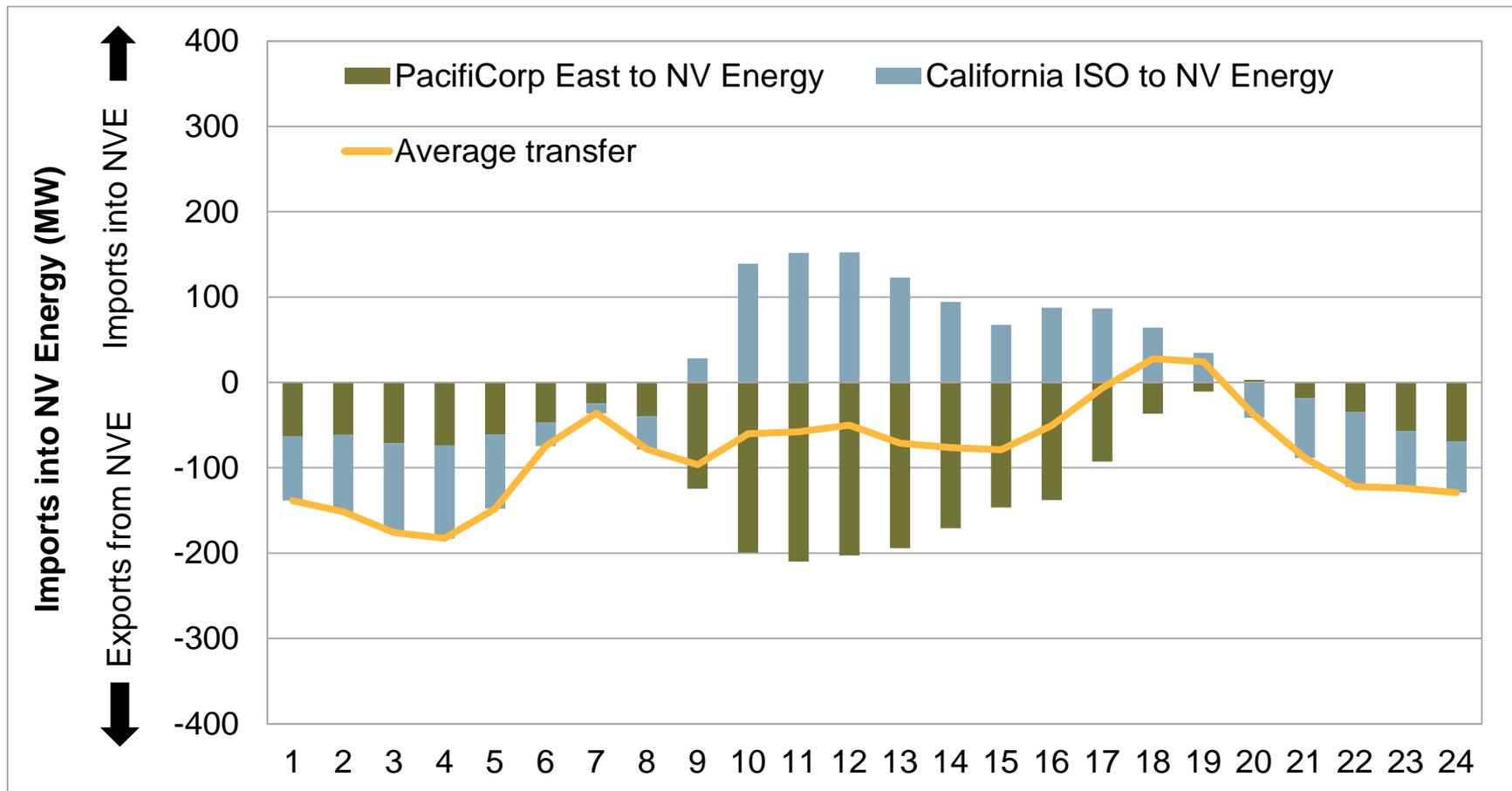
Prices in all energy imbalance markets continue to mirror patterns in the ISO.



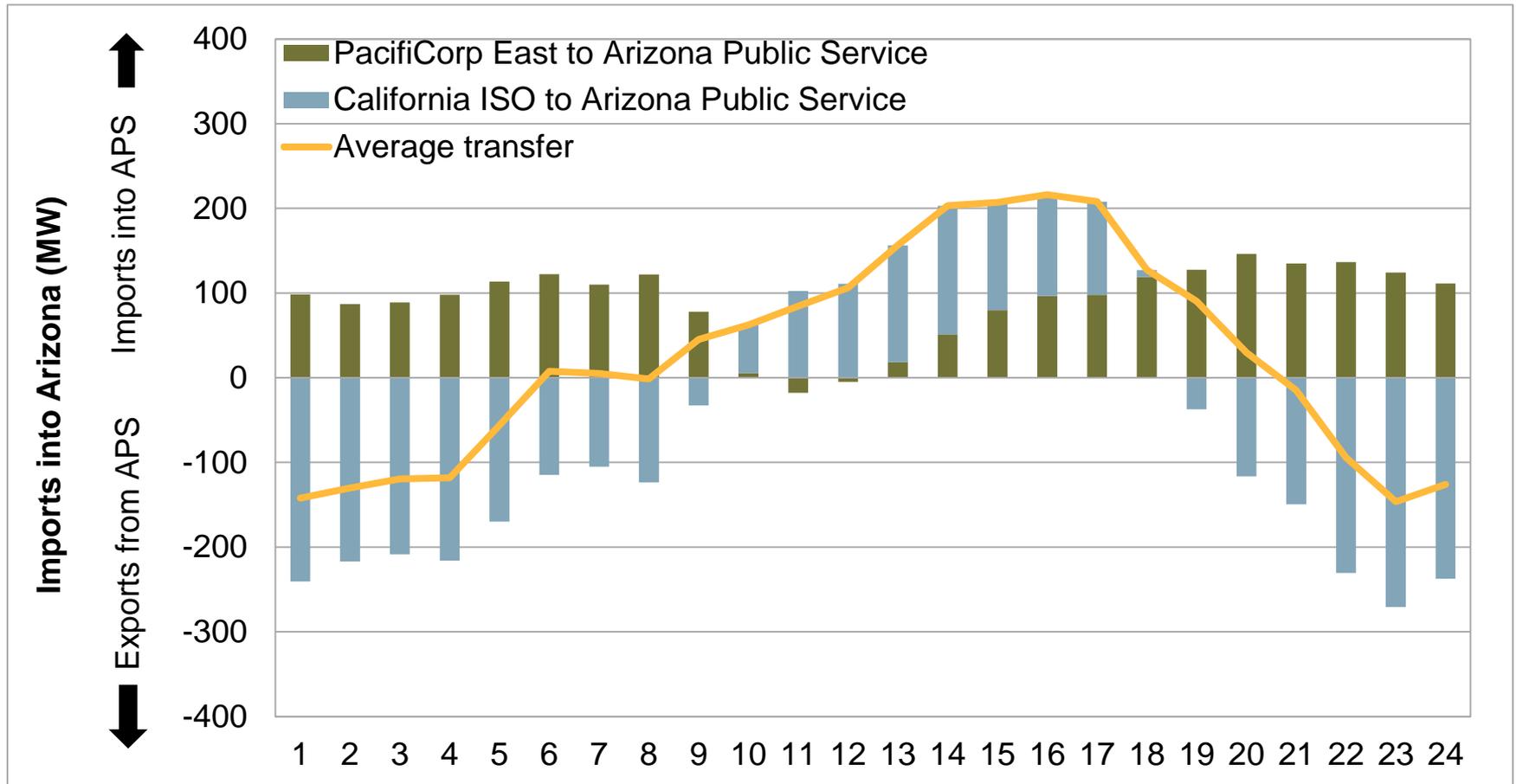
Energy imbalance market participants are failing the sufficiency test less often than last year.



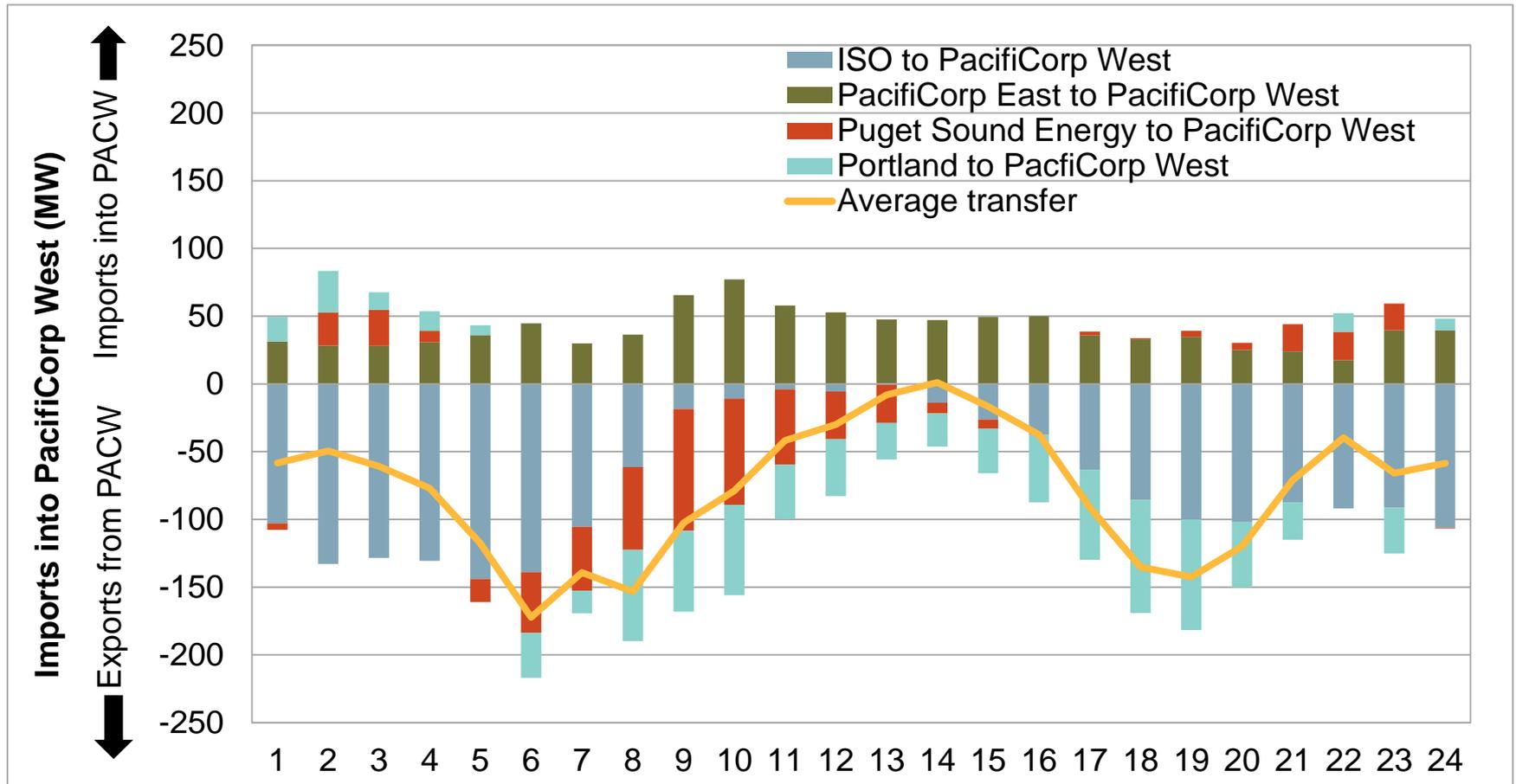
NV Energy exports during most hours of the day.



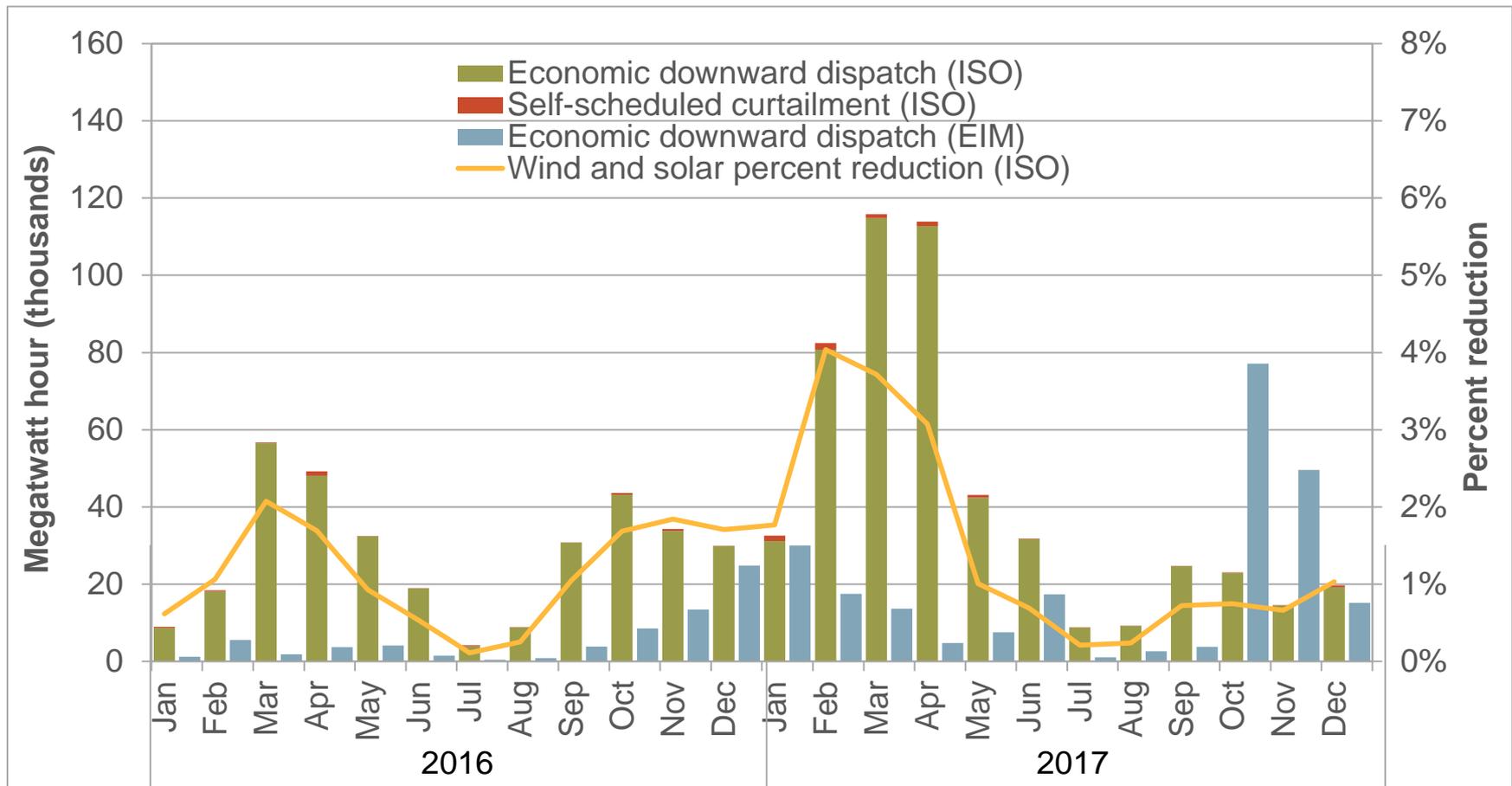
Arizona Public Service imports during the peak solar hours, and exports during other hours of the day.



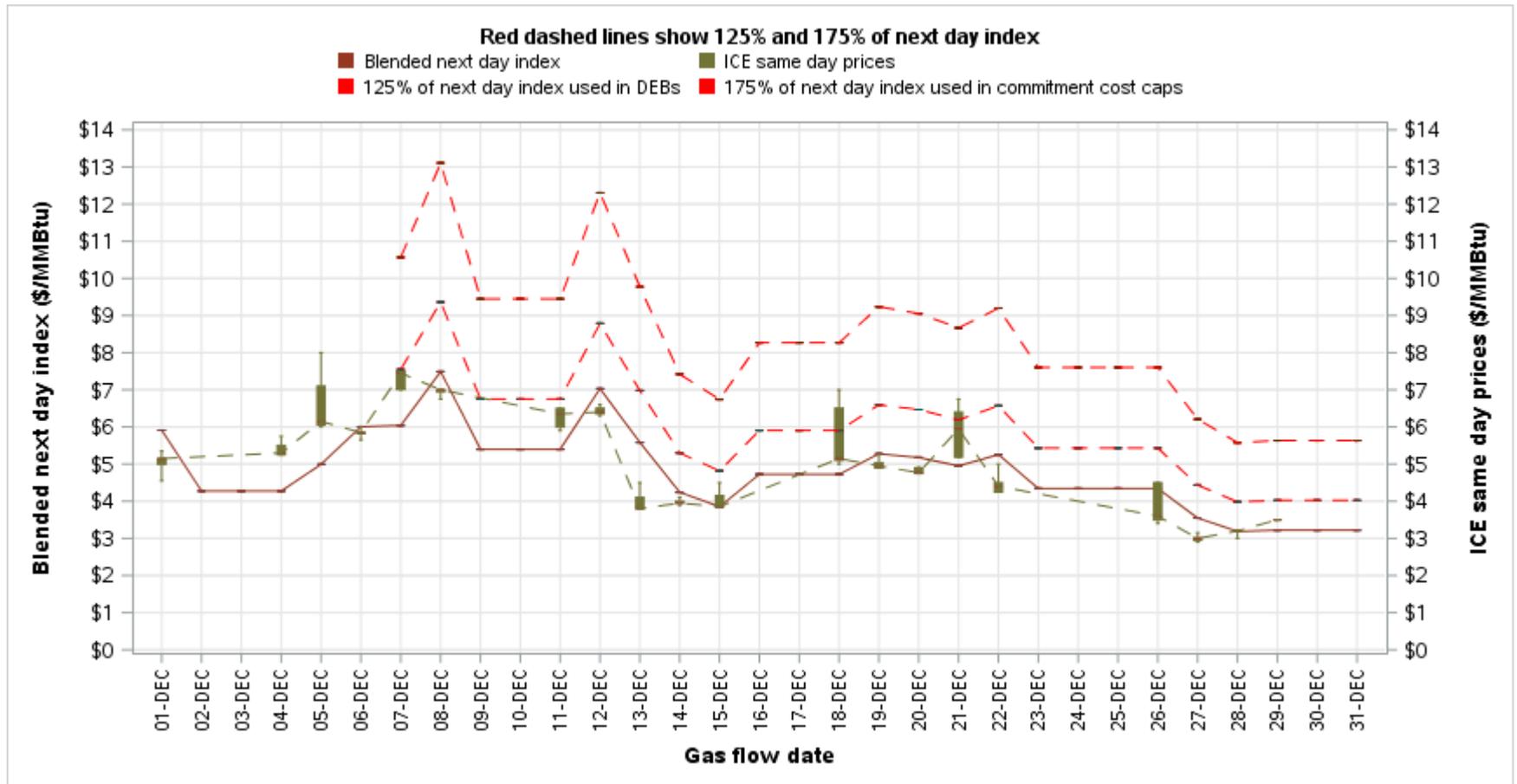
PacifiCorp West exports during most hours of the day.



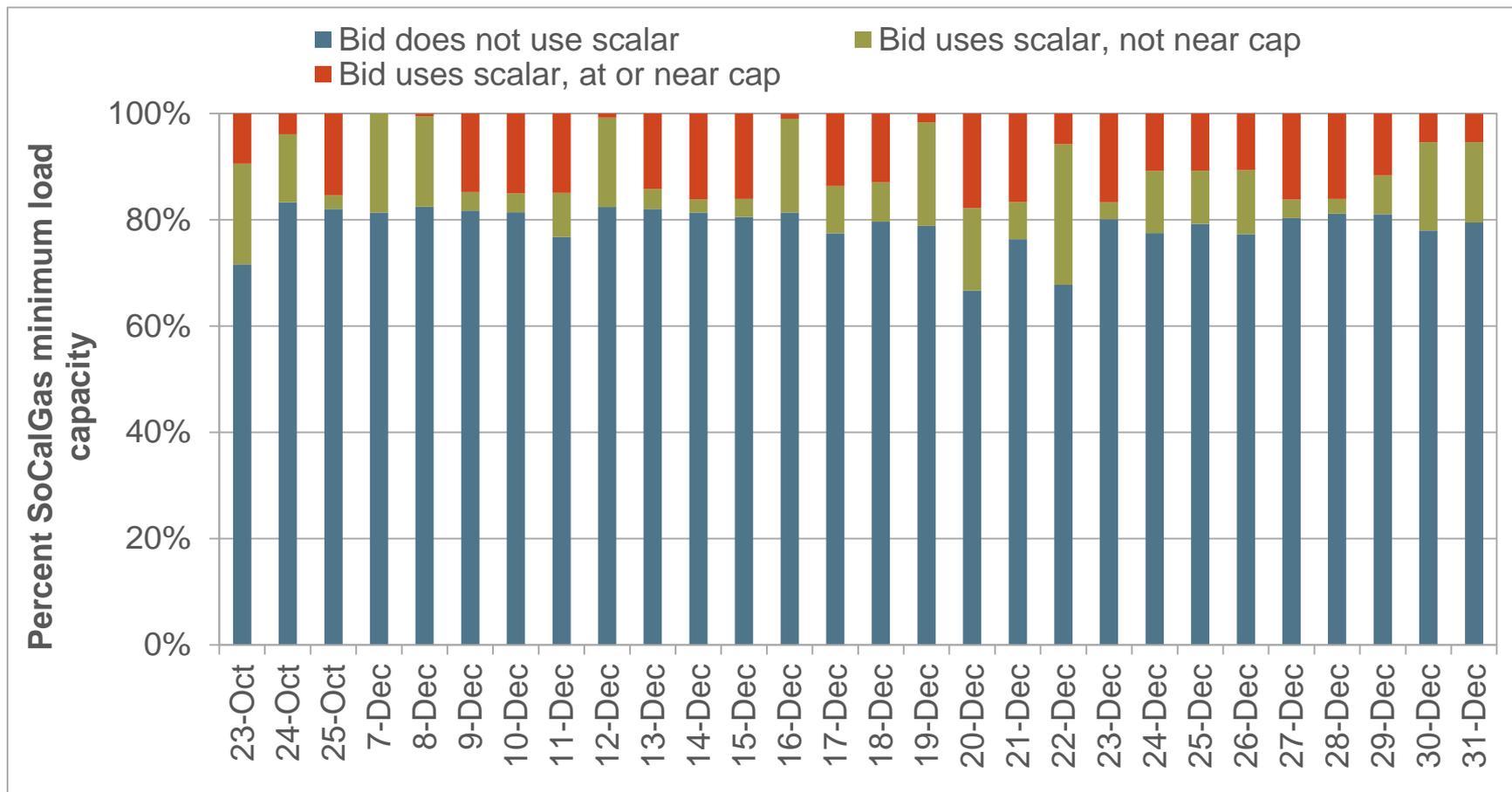
Renewable downward dispatch increased from 2016, while curtailments continued to be very small.



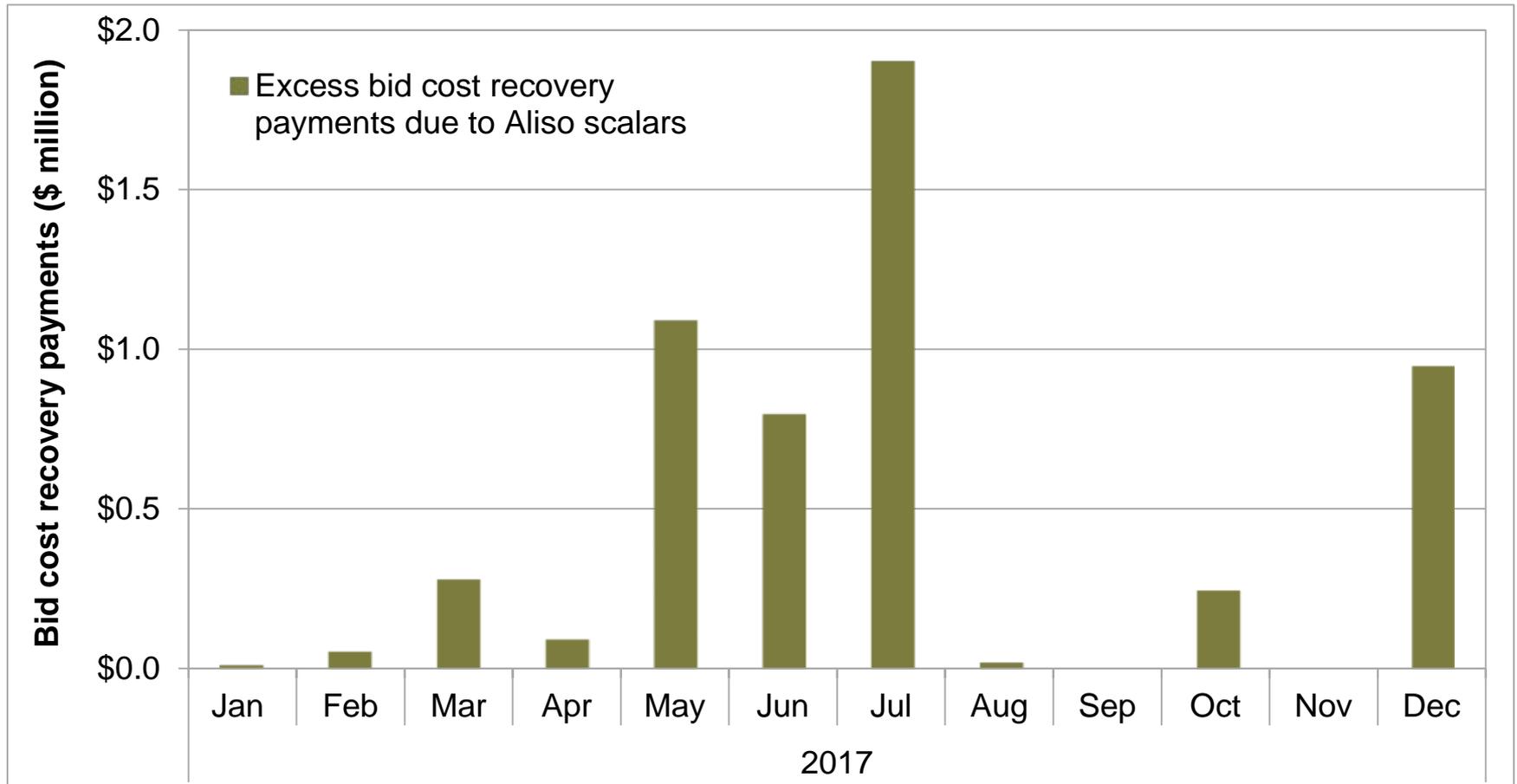
Aliso adders were in place for a large number of days during the quarter.



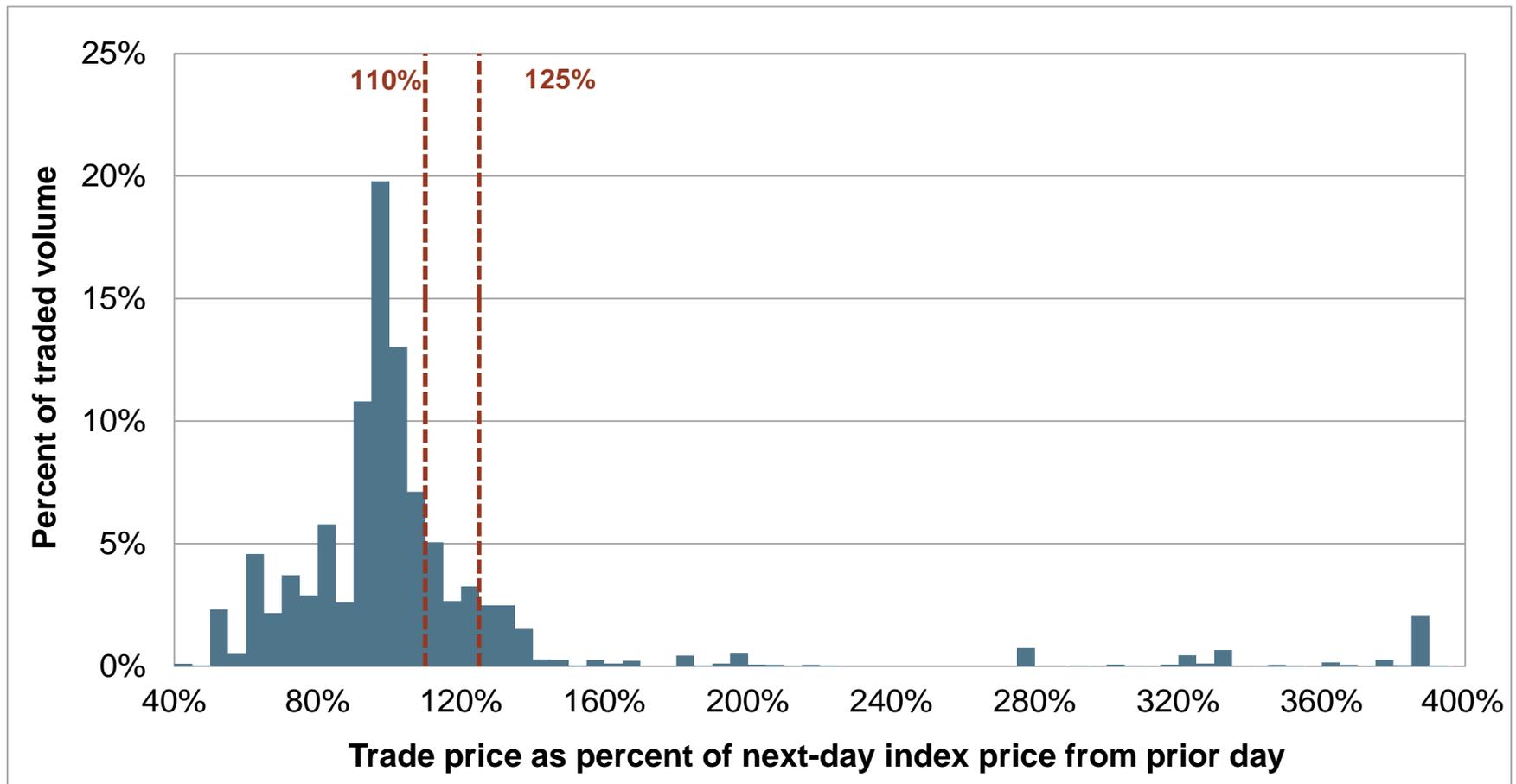
Many of the resources eligible for the Aliso adders did not include them in bids.



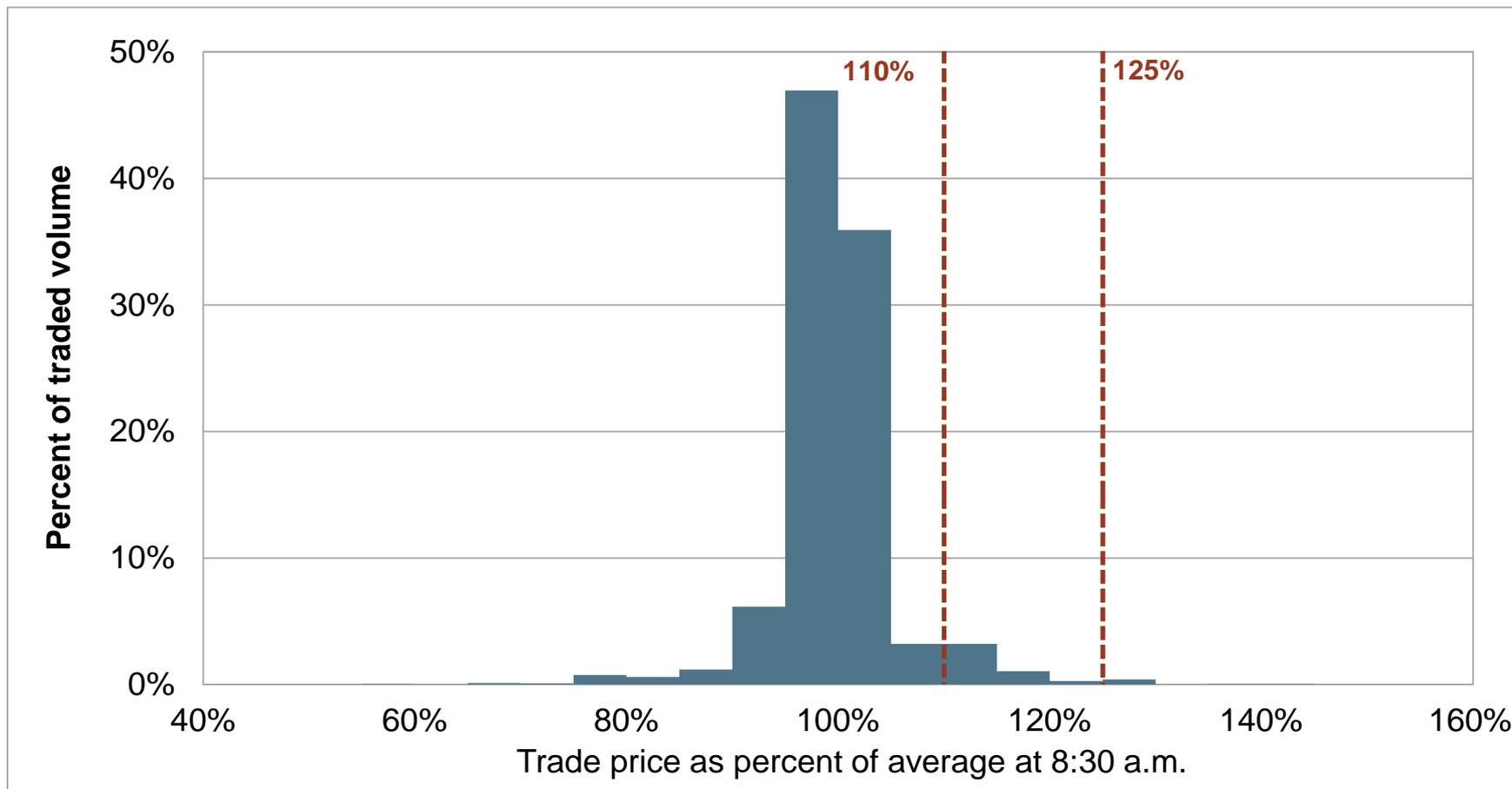
Aliso Canyon adders resulted in about \$5 million of DMM estimated additional payments during 2017.



Natural gas prices from the prior day tended to differ from next-day indices.



Average natural gas prices at 8:30 tended to reflect next-day indices.



Several procurements were made for capacity in the fourth quarter and for 2018.

Resource	CPM designation (MW)	CPM designation dates	Price (\$/kW-mon)	Estimated cost (\$ million)	Local capacity area	Exceptional dispatch CPM trigger
MANDALAY GEN STA. UNIT 3	119.4	10/24-11/22	\$6.31	\$0.73	System	Higher loads in real-time
MANDALAY GEN STA. UNIT 2	215	12/05-2/02	\$6.31	\$2.67	SCE	Local availability for wildfire
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MANDALAY GEN STA. UNIT 3	130	12/05-2/02	\$6.31	\$1.61	SCE	Local availability for wildfire

Resource	CPM designation (MW)	Price (\$/kW-mon)	Estimated cost (\$ million)	Local capacity area	Exceptional dispatch CPM trigger
MOSS LANDING POWER BLOCK 1	510	\$6.19	\$38.4	PG&E	Material sub-area deficiency
ENCINA UNIT 4	272	\$6.31	\$20.9	SDG&E	Material sub-area deficiency
ENCINA UNIT 5	273	\$6.31	\$21.0	SDG&E	Material sub-area deficiency

- Metcalf received a designation for reliability must-run.