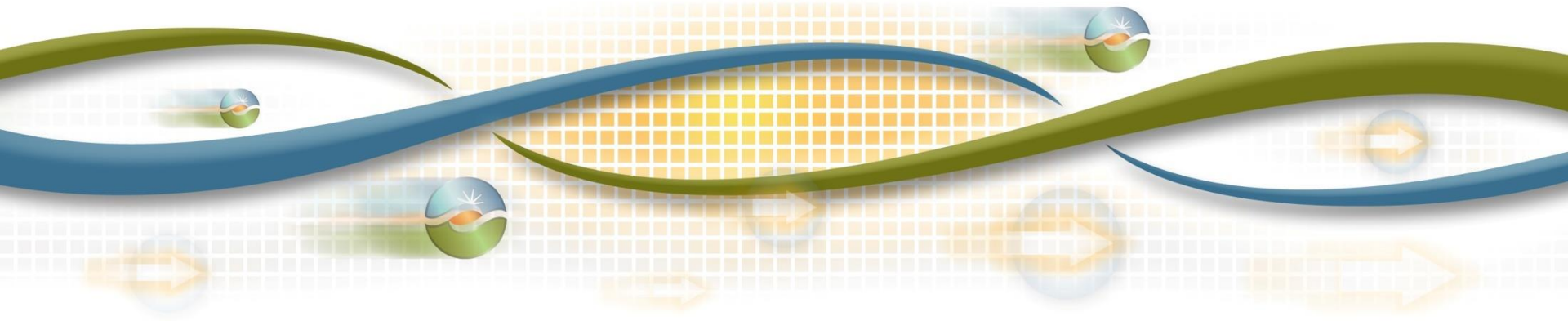




2016 Third Quarter Report on Market Issues and Performance

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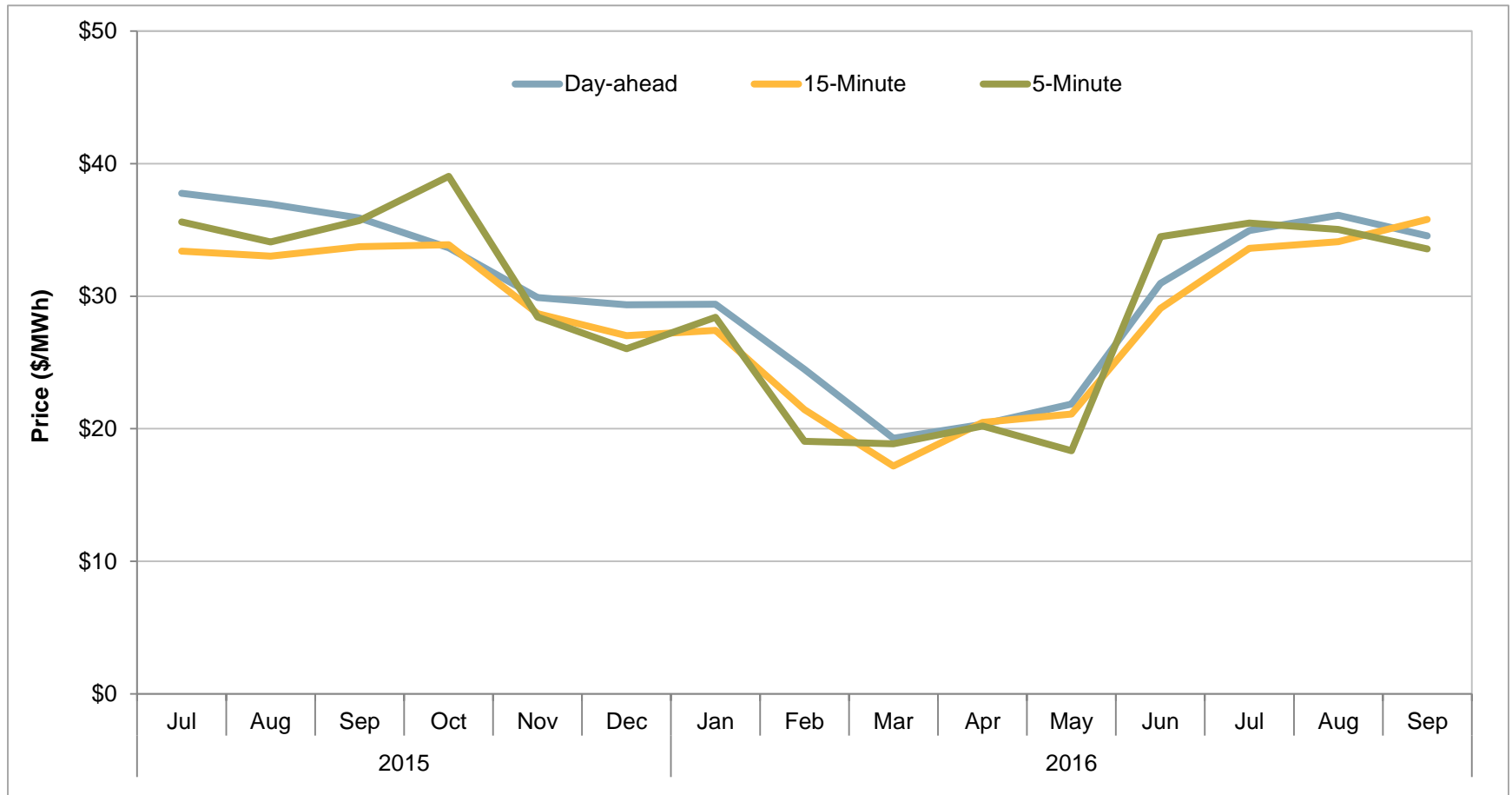
Web Conference
November 17, 2016



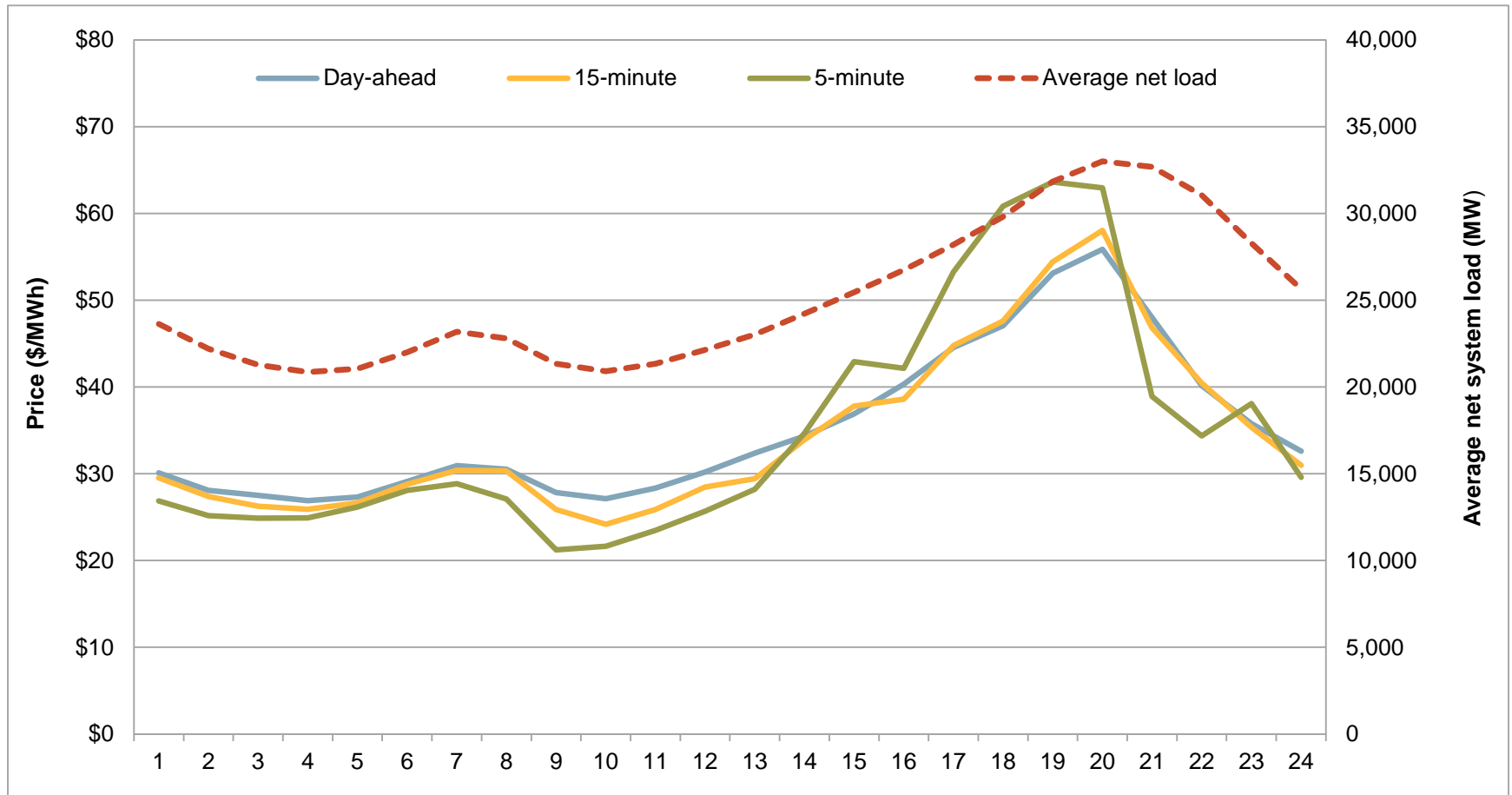
Presentation outline

- Quarterly report highlights
 - Wholesale market performance
 - Energy imbalance market performance
 - Operator load forecast adjustments
 - Recommendations

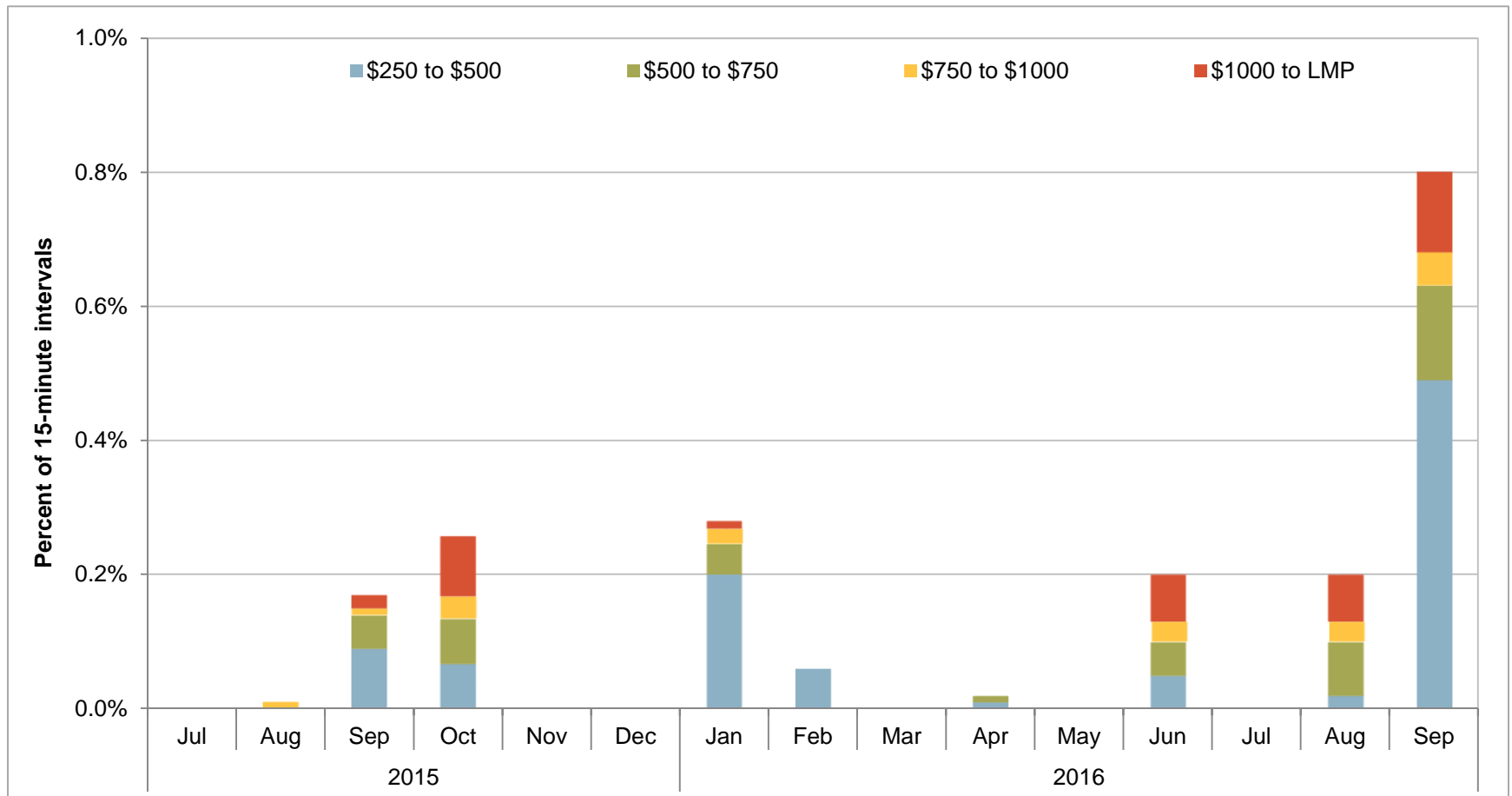
Prices increased in June and remained higher because of higher summer loads.



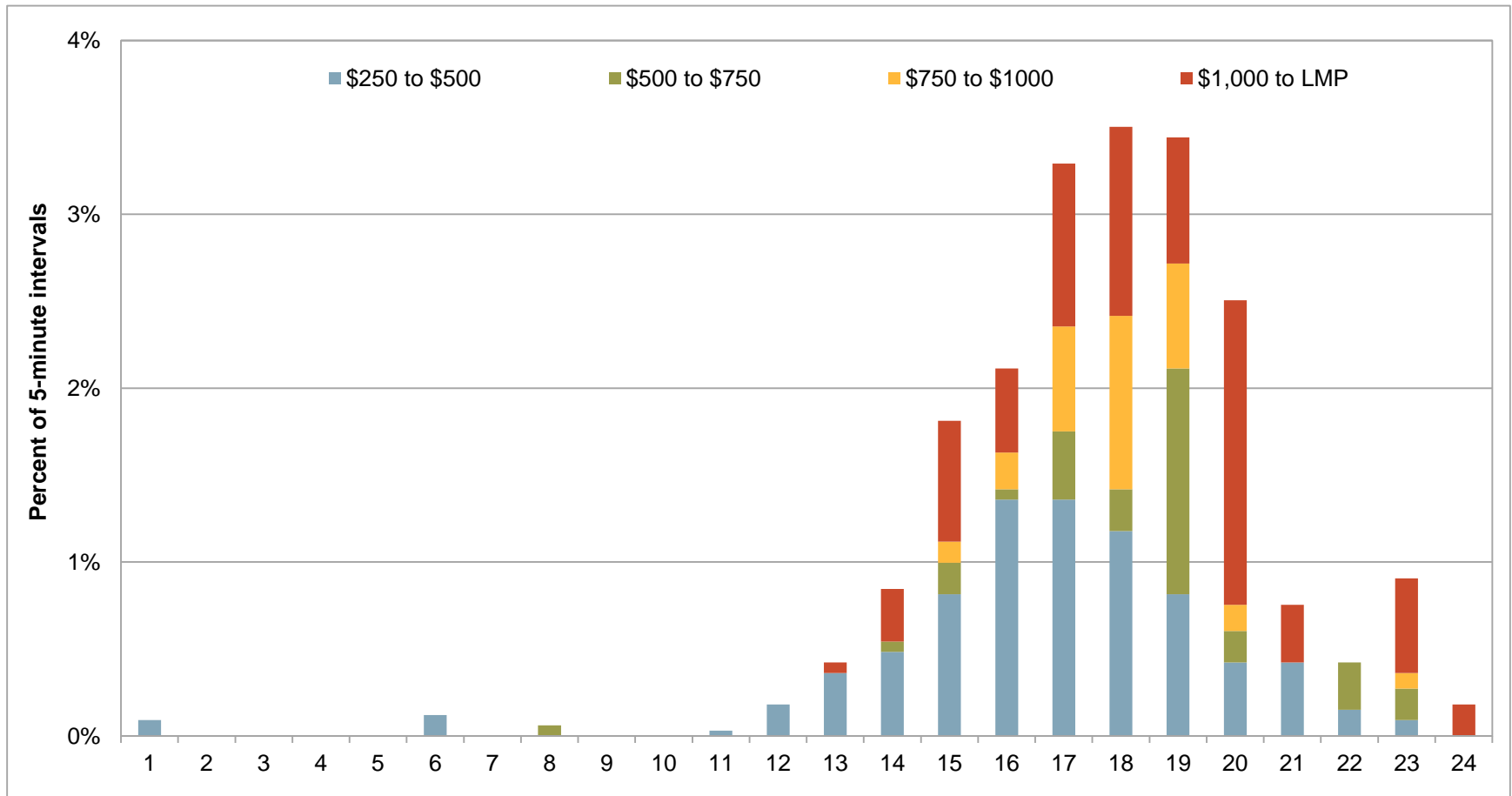
Prices followed a net load pattern with low prices during mid-day hours and higher prices during the late morning and evening peak hours.



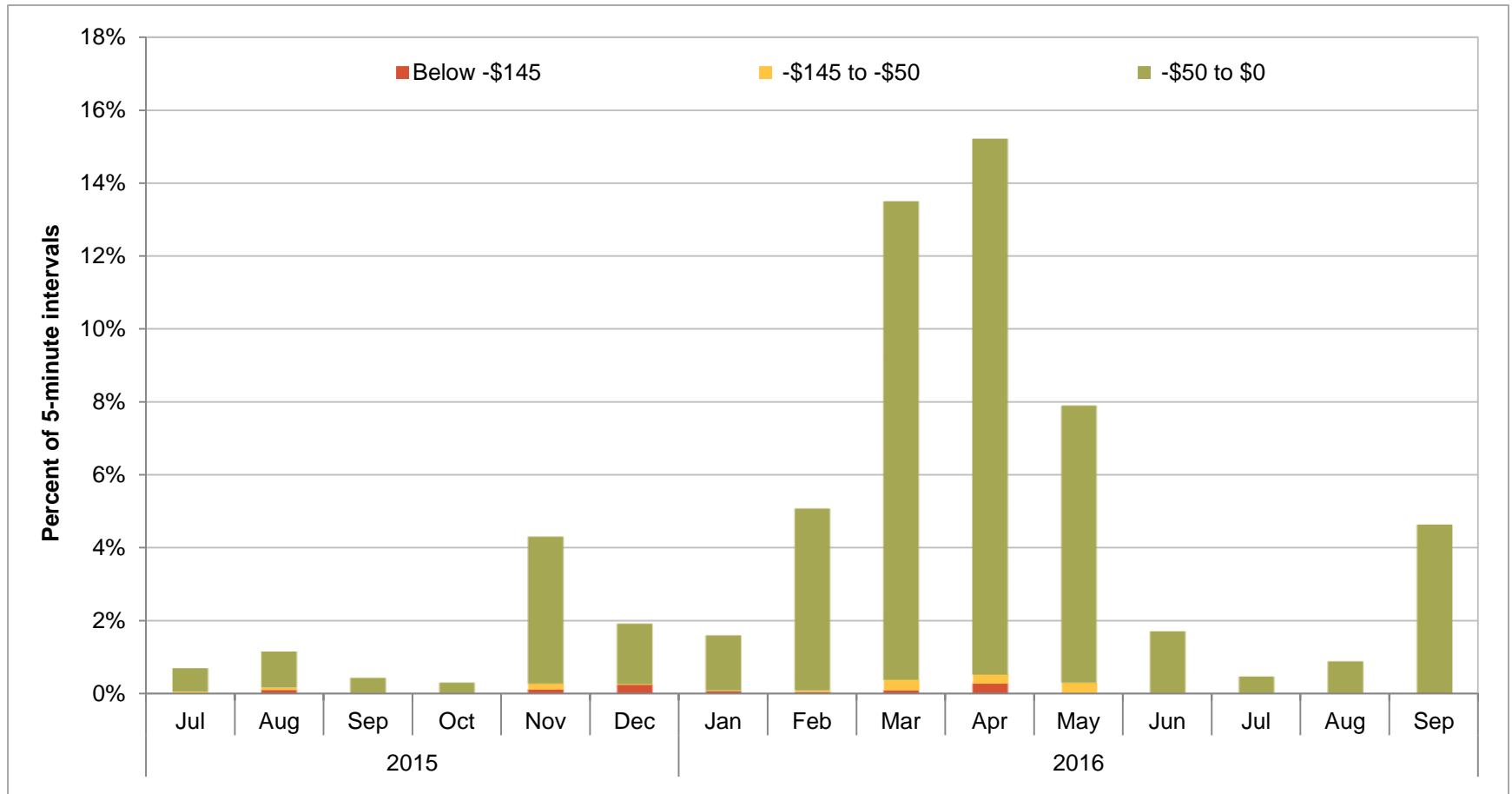
Prices in the 15-minute market exceeded \$250/MWh more frequently than in previous months because of congestion in Southern California.



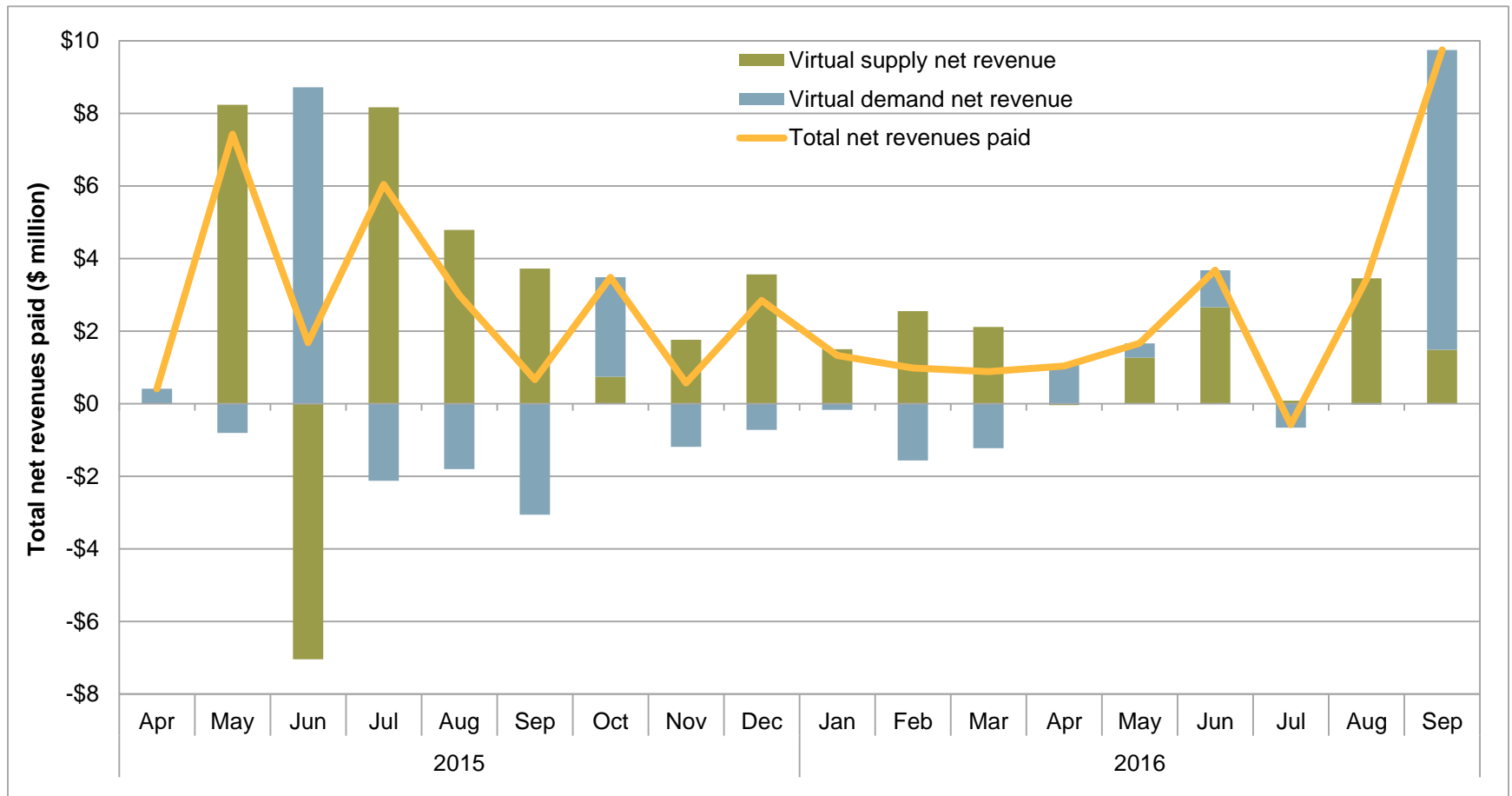
High prices in the 5-minute market were concentrated around hours with the greatest ramping need.



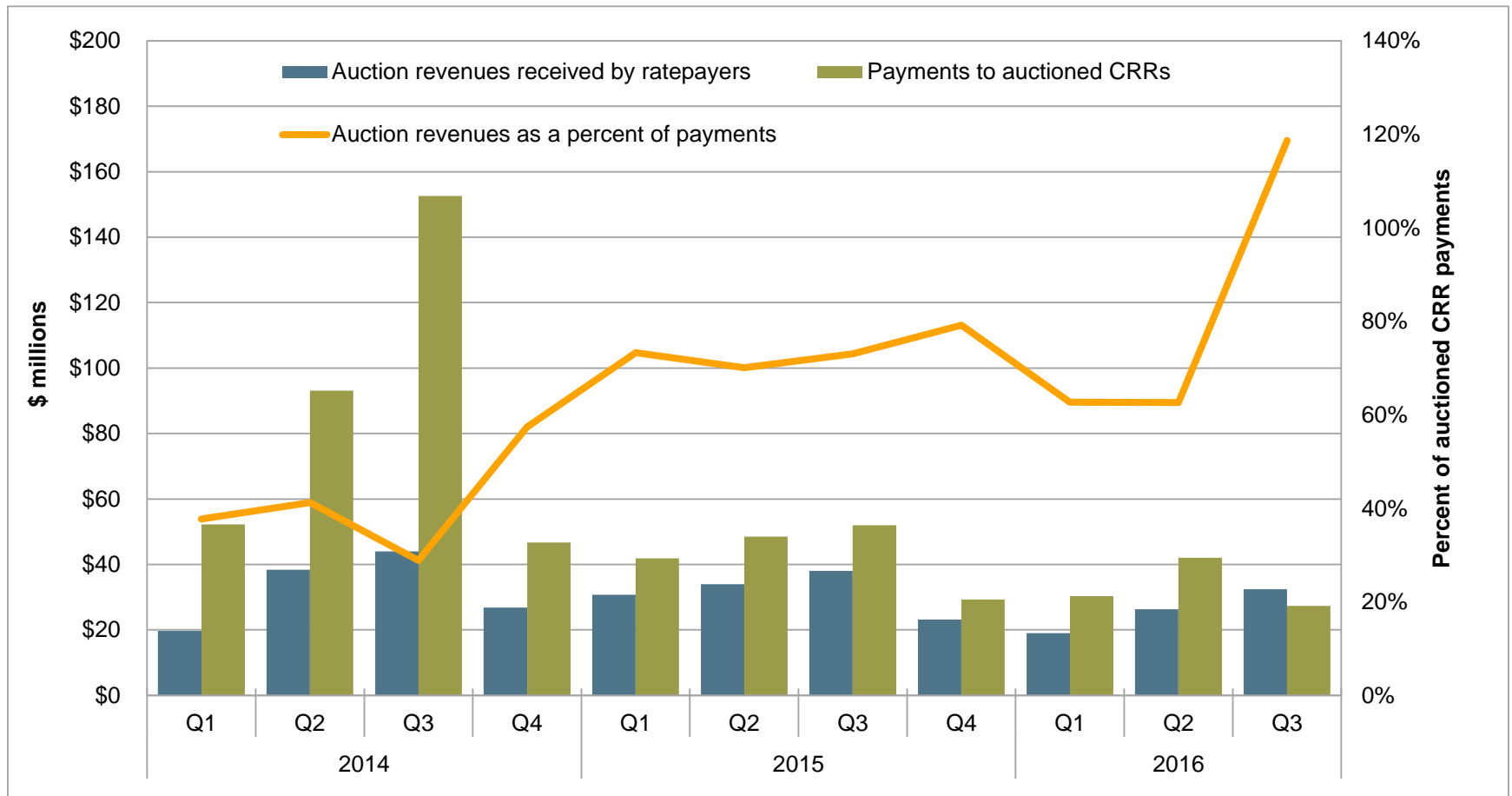
Negative prices occurred in the third quarter much less frequently than in the second quarter.



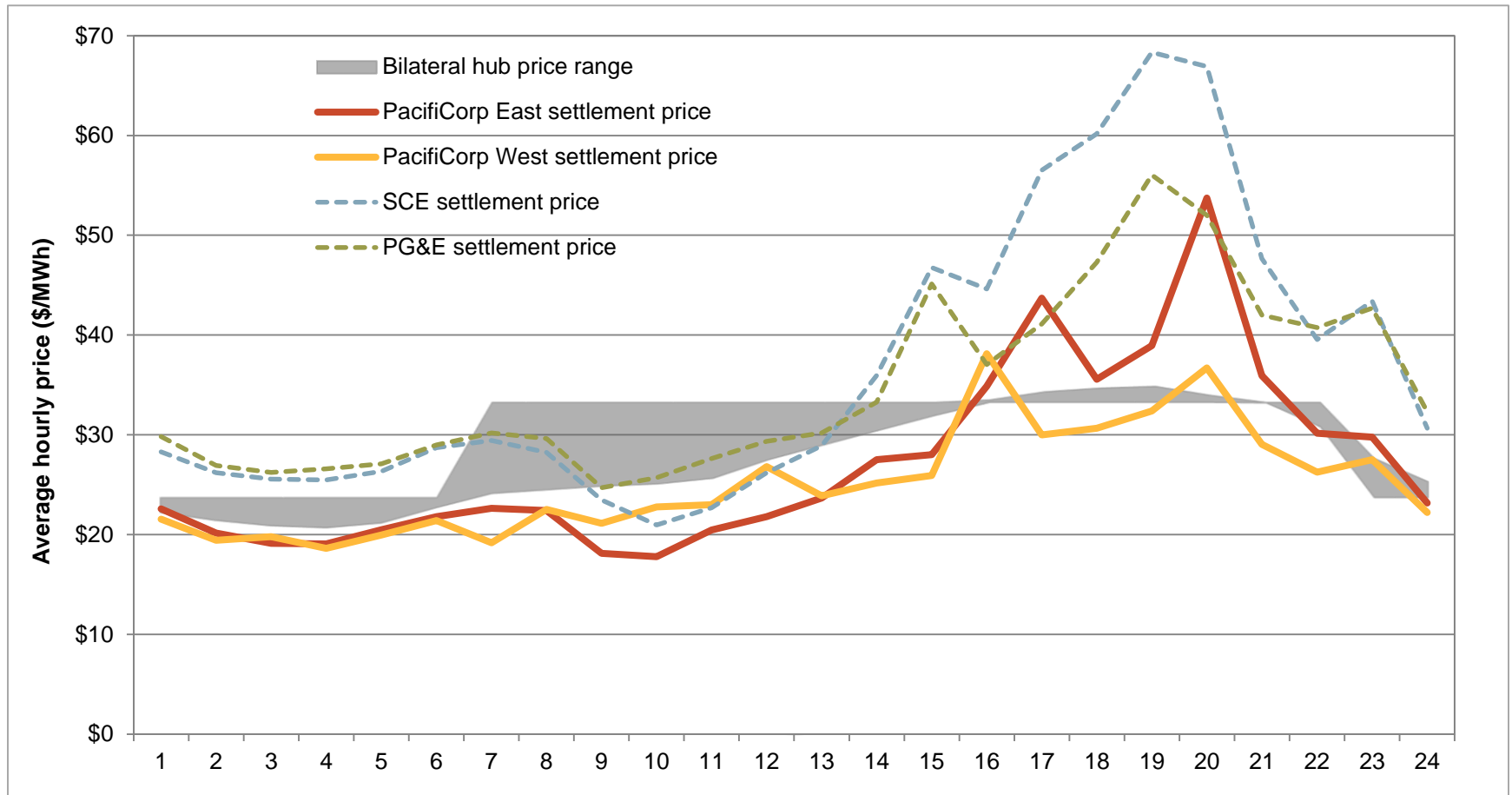
Virtual demand was profitable in the third quarter, and received \$7.6 million in revenue due to high prices in the 15-minute market during some hours.



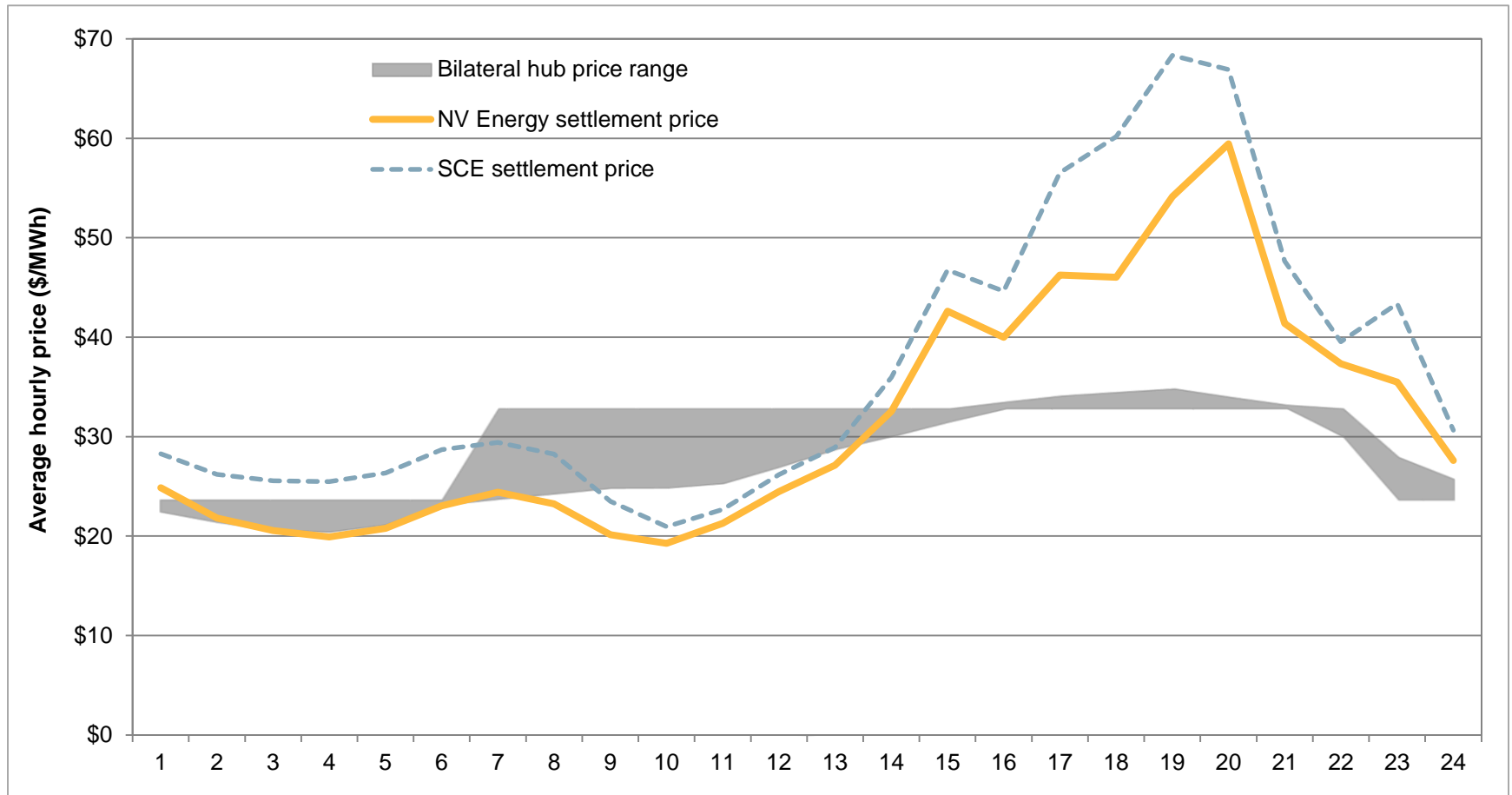
CRR auction revenues year-to-date in 2016 were \$22 million less than payments to non-load serving entities purchasing CRR's.



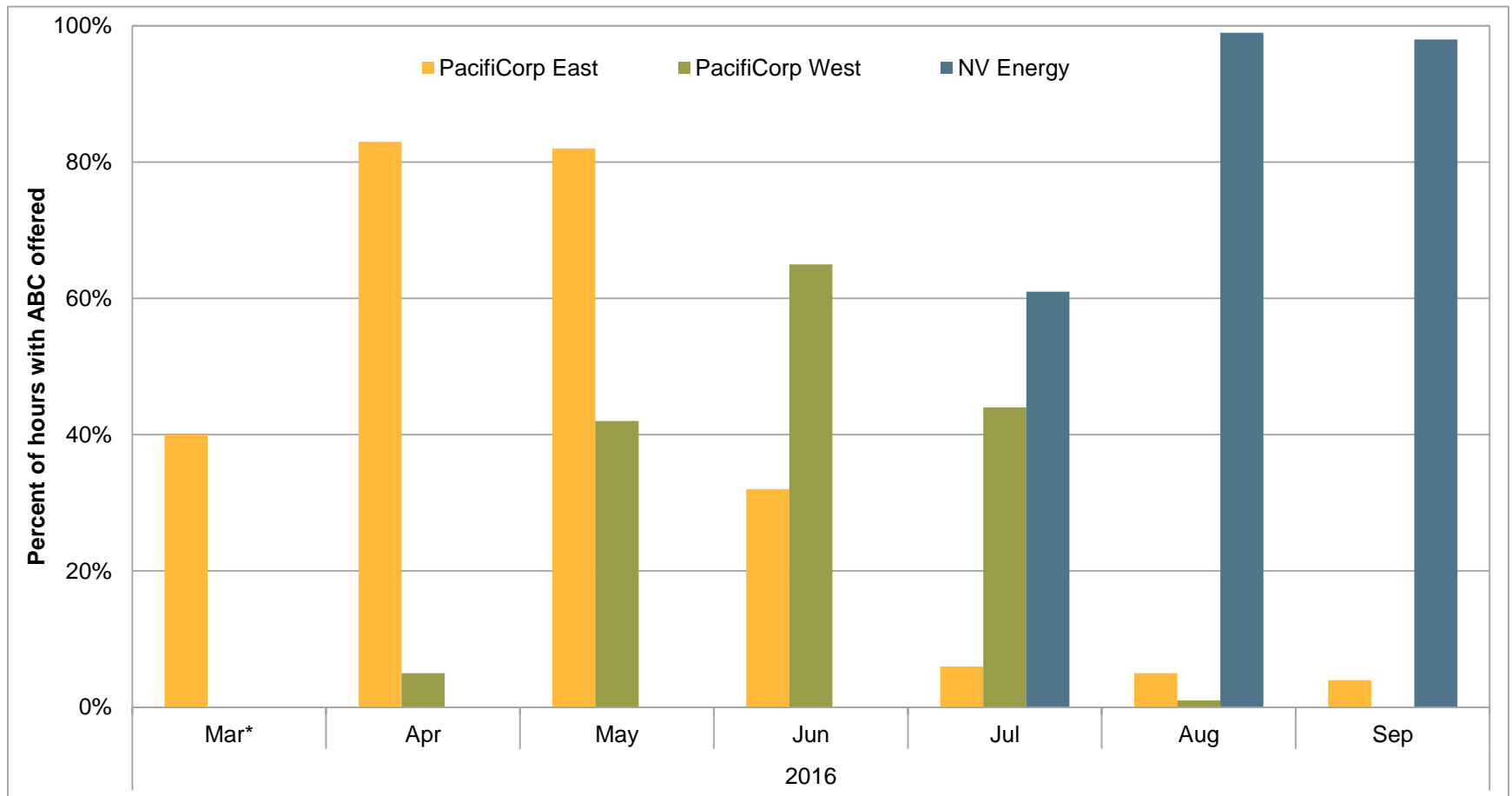
Prices in PacifiCorp followed patterns similar to prices in the ISO, with differences due to green house gas costs and congestion.



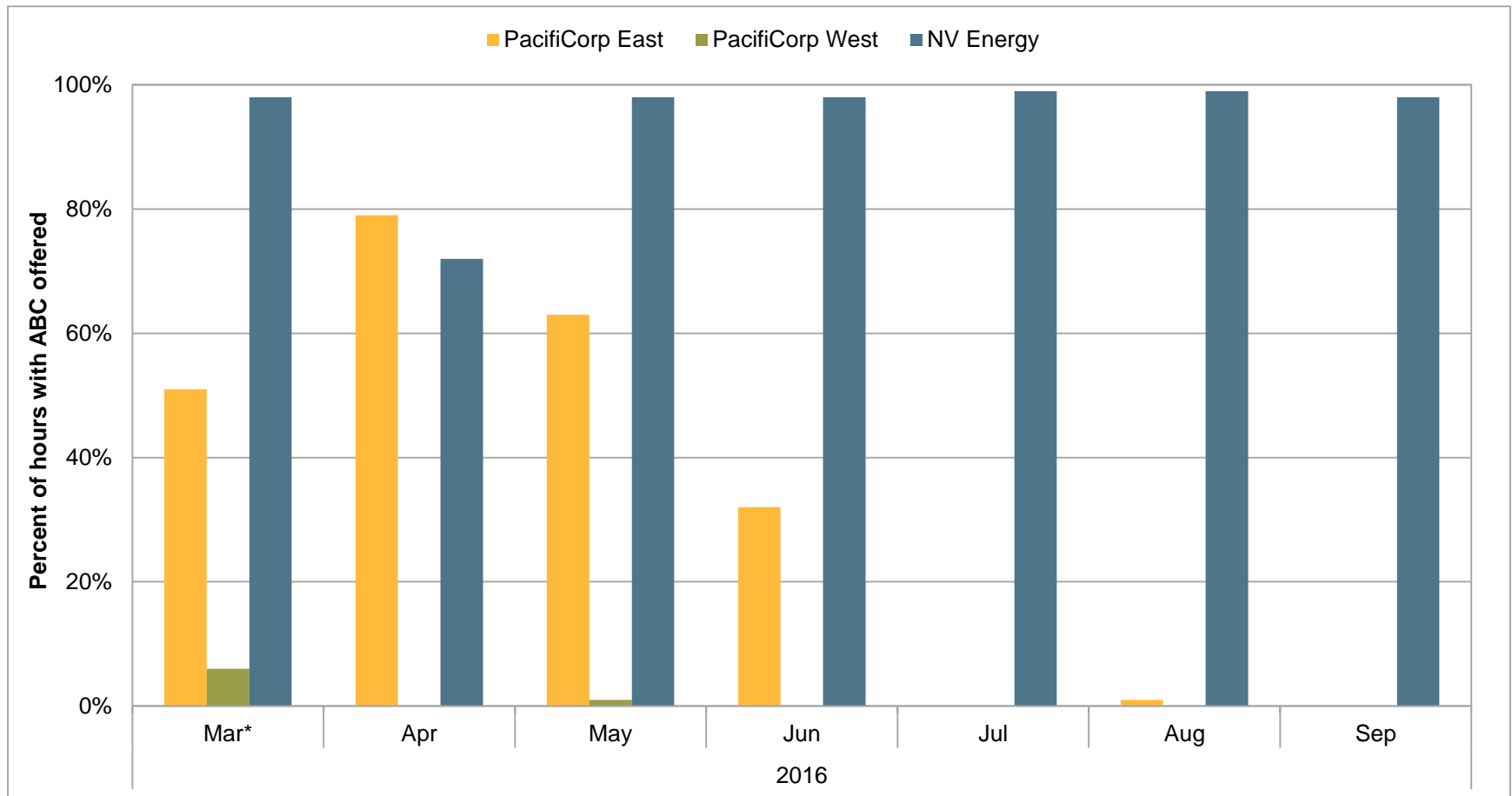
Prices in NV Energy tracked just below prices in the ISO, with differences driven mainly by green house gas costs.



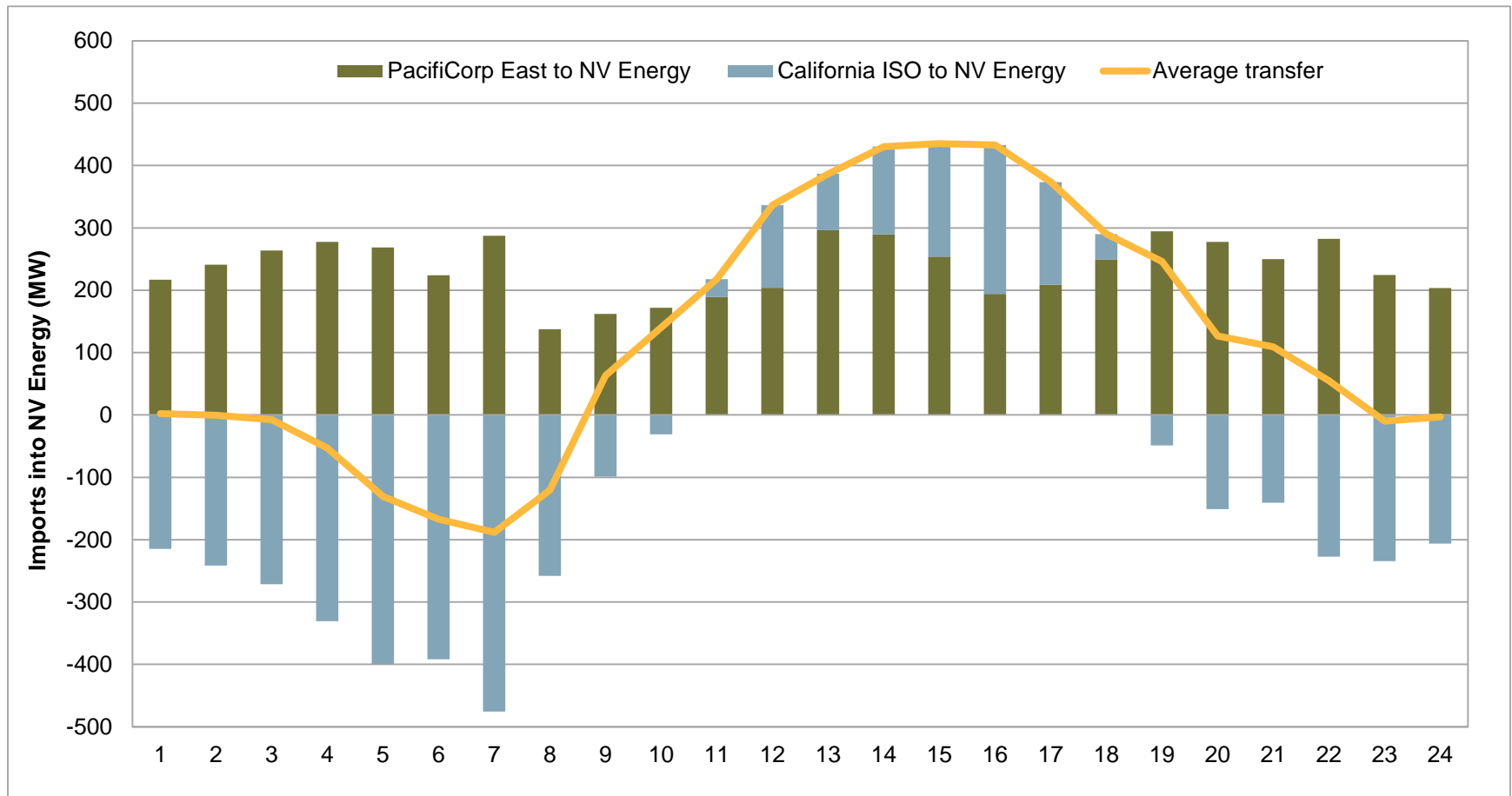
Upward available balancing capacity was offered infrequently by PacifiCorp East and less frequently by PacifiCorp West in the third quarter.



Downward available balancing was offered very infrequently by PacifiCorp during the quarter, while it was offered during almost all intervals by NV Energy.



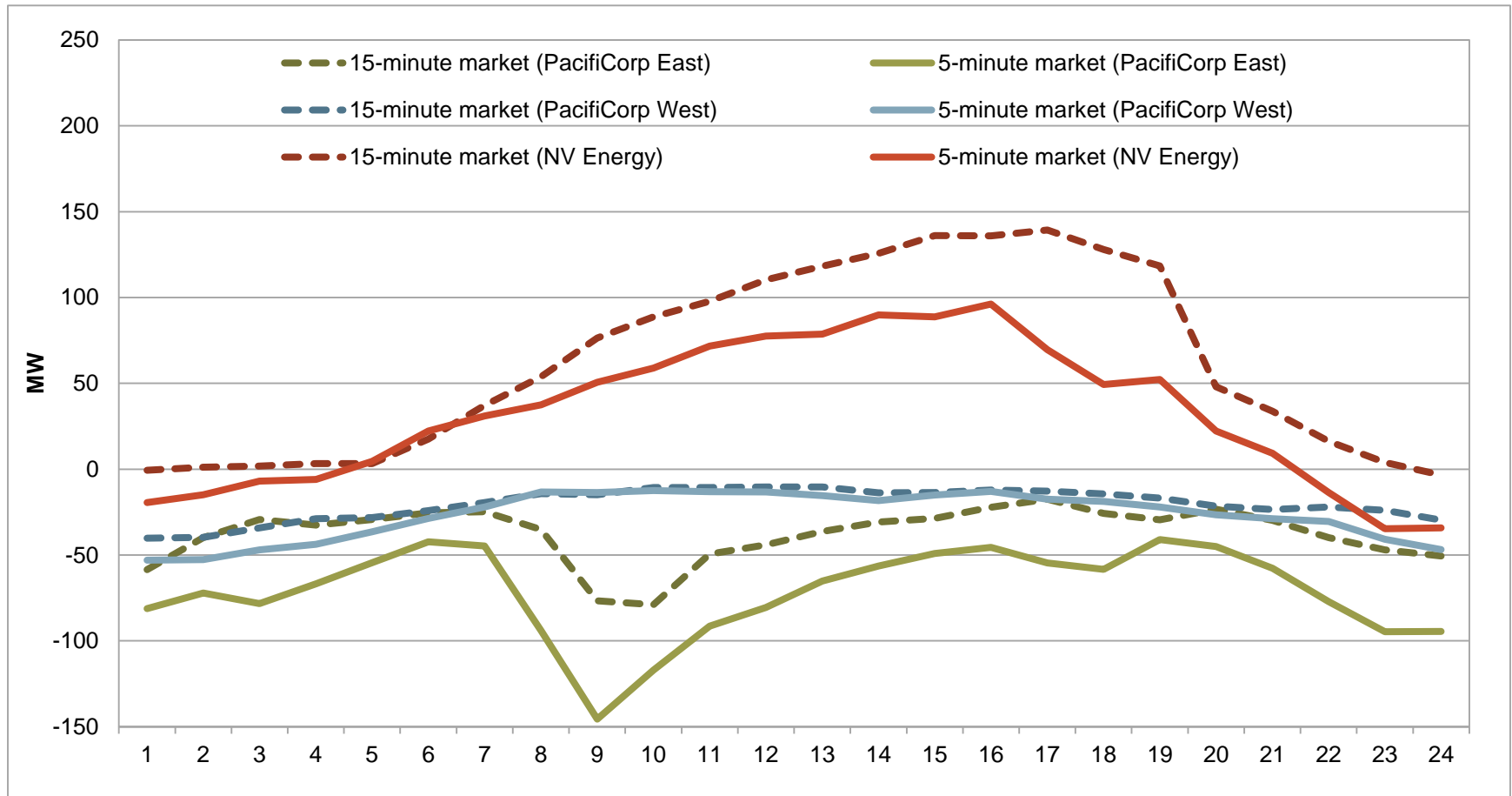
Energy was exported on average from PacifiCorp East to NV Energy during all hours, while the ISO imported from and exported to NV Energy during the day.



Positive load adjustments were more frequent in NV Energy and the ISO, while negative load adjustments were more frequent in the PacifiCorp areas.

	Positive load adjustments			Negative load adjustments			Average hourly bias MW
	Percent of intervals	Average MW	Percent of total load	Percent of intervals	Average MW	Percent of total load	
California ISO							
15-minute market	44%	471	1.4%	14%	-274	1.1%	169
5-minute market	56%	438	1.4%	27%	-300	1.1%	162
PacifiCorp East							
15-minute market	5%	91	1.6%	42%	-101	1.9%	-38
5-minute market	9%	88	1.5%	63%	-125	2.4%	-71
PacifiCorp West							
15-minute market	3%	38	1.5%	43%	-49	2.2%	-20
5-minute market	4%	42	1.7%	49%	-58	2.6%	-27
NV Energy							
15-minute market	48%	132	2.3%	1%	-171	3.6%	62
5-minute market	44%	95	1.7%	11%	-83	1.7%	32

Load adjustments in NV Energy tended to be greatest in the late afternoon, while PacifiCorp East tended to adjust by the greatest quantity in the morning.



Updates on key recommendations

- Congestion revenue rights
- Operator load adjustments
- Enhanced market power mitigation procedures
- Enforcement of internal constraints in EIM
- Enhanced outage reporting