

WESTERN ENERGY IMBALANCE MARKET

Briefing on western energy imbalance market and benefits

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\$132.7 million gross economic benefits in Q2, 2021

New entities joined the EIM:

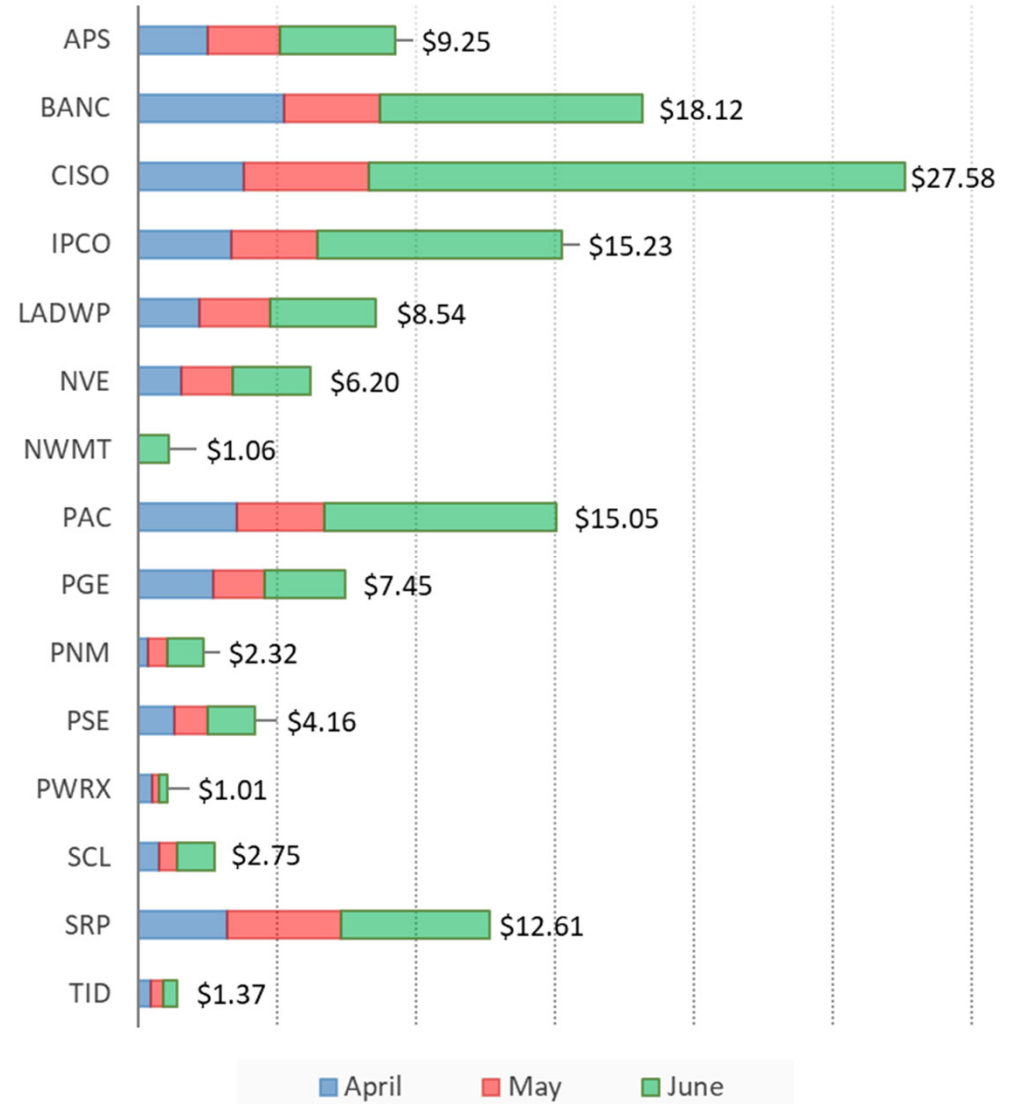
Turlock Irrigation District (TID) in March

Second phase of BANC in March

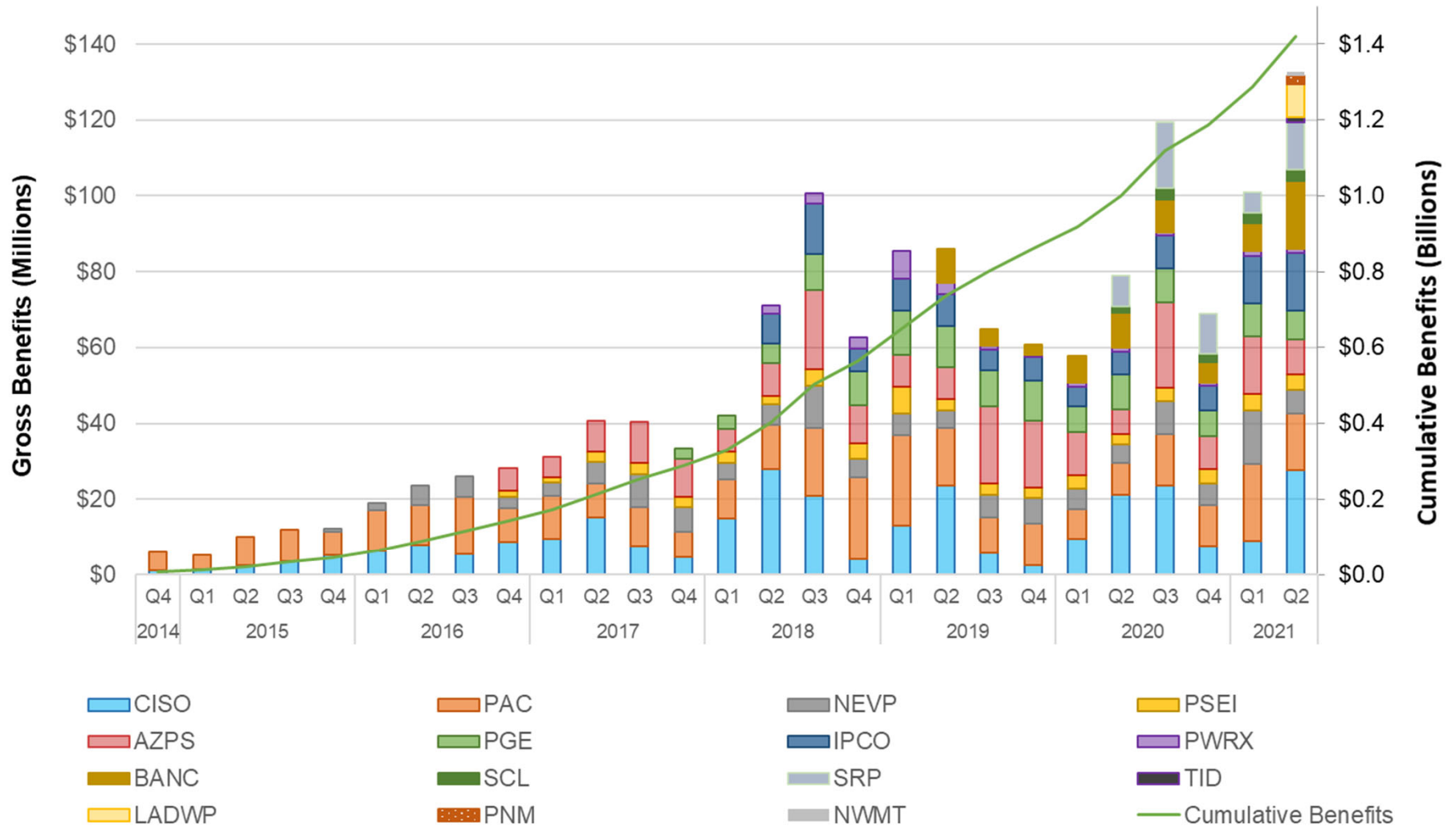
Los Angeles Department of Water and Power (LADWP) in April

Public Service Company of New Mexico (PNM) in April

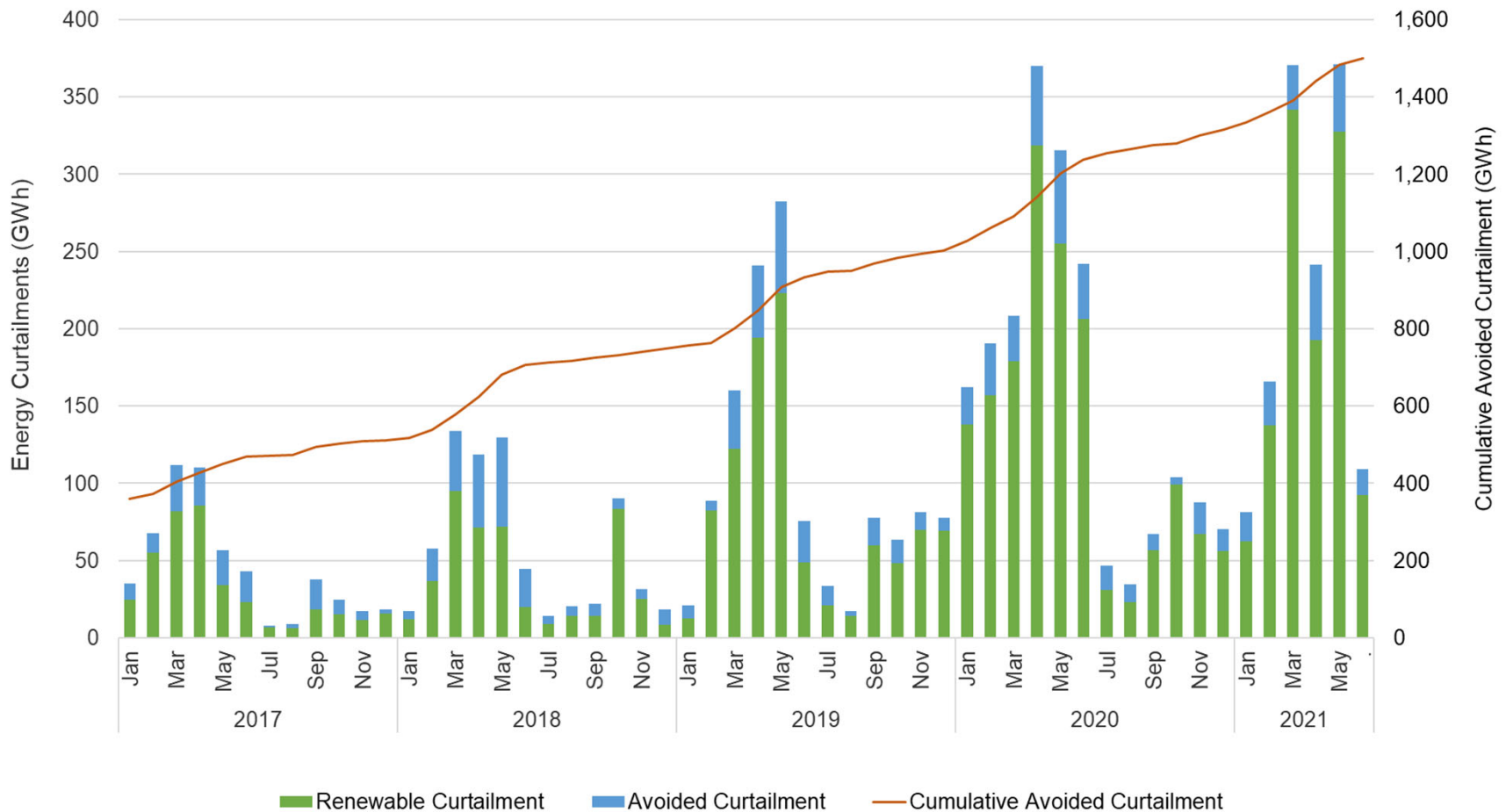
NorthWestern Energy (NWMT) in June



Cumulative benefits through Q2 2021 reached \$1.42 billion

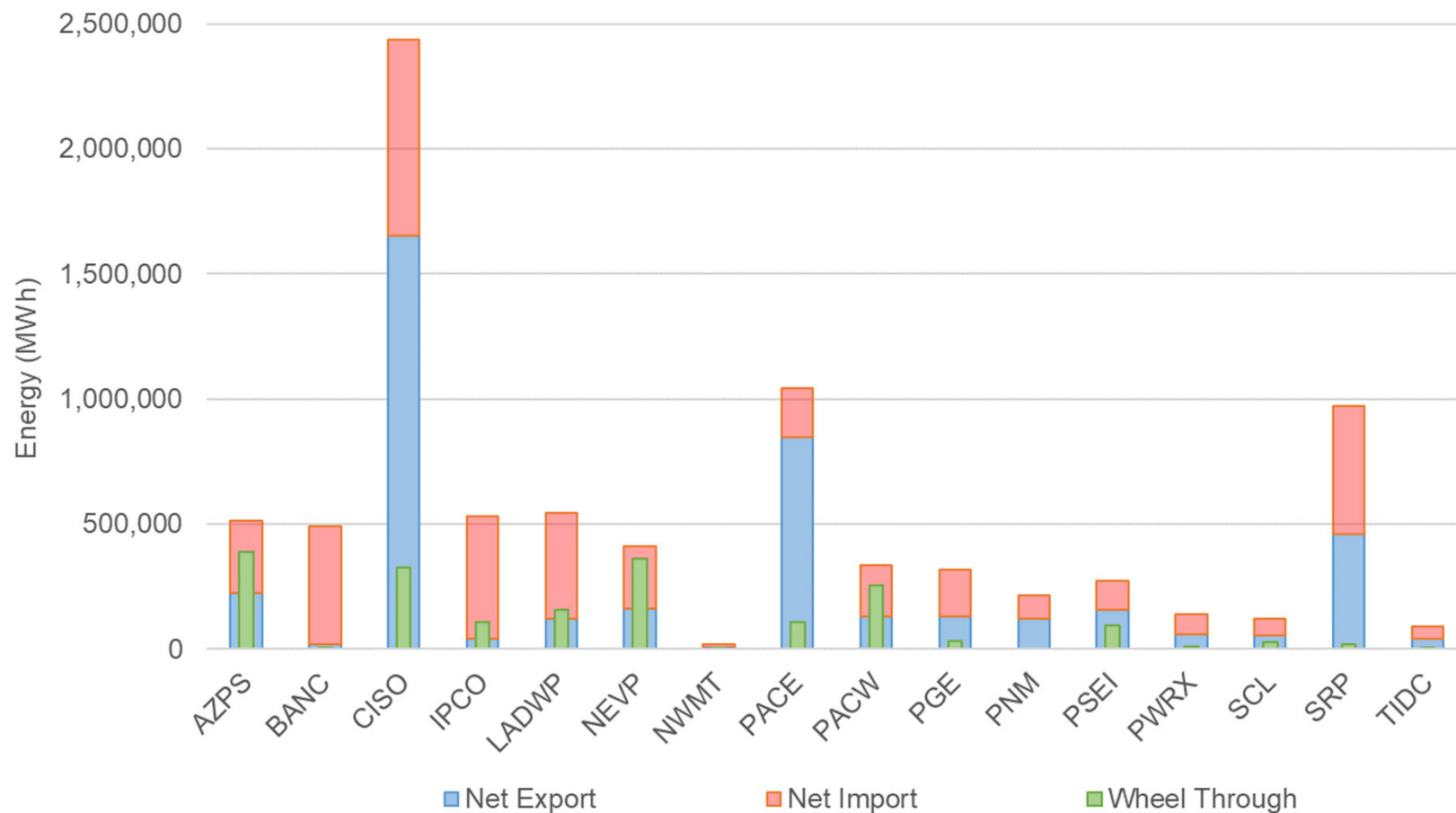


Energy imbalance market helps reduce curtailments

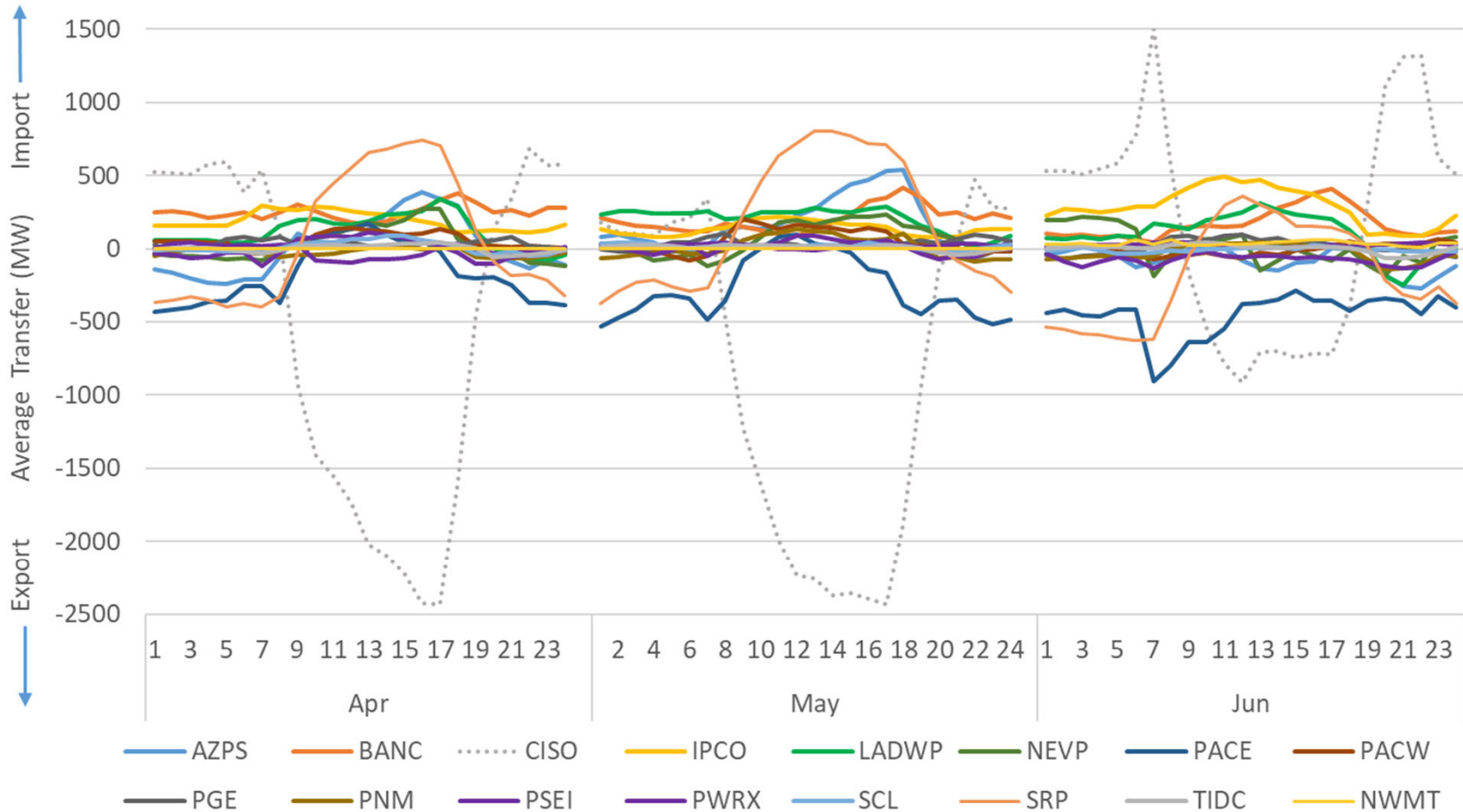


Avoided curtailments since 2015 represent a reduction of 645 equivalent Tons CO₂

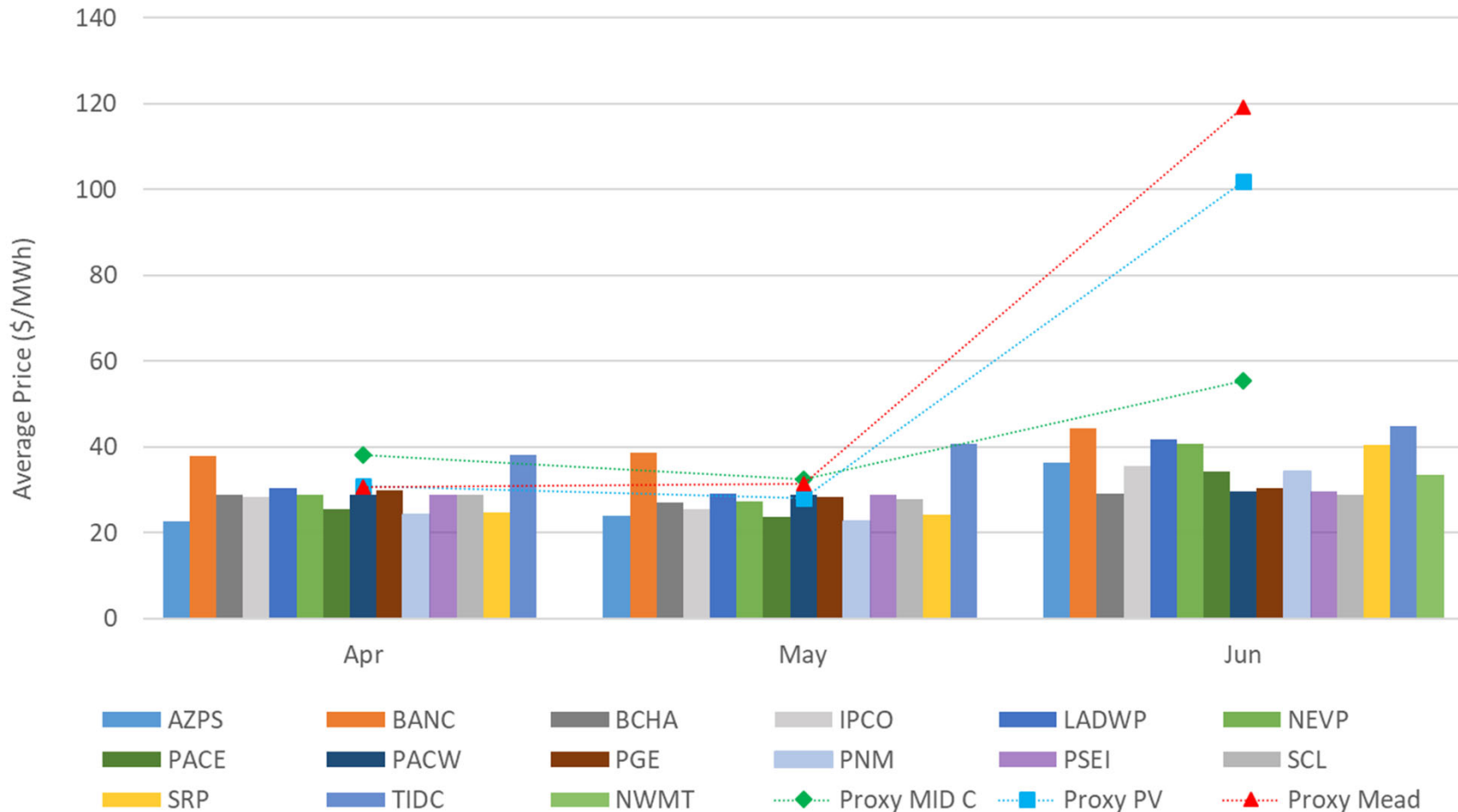
Volumes of wheel-through transfers in Q2, 2021 were generally lower than imports/export volumes



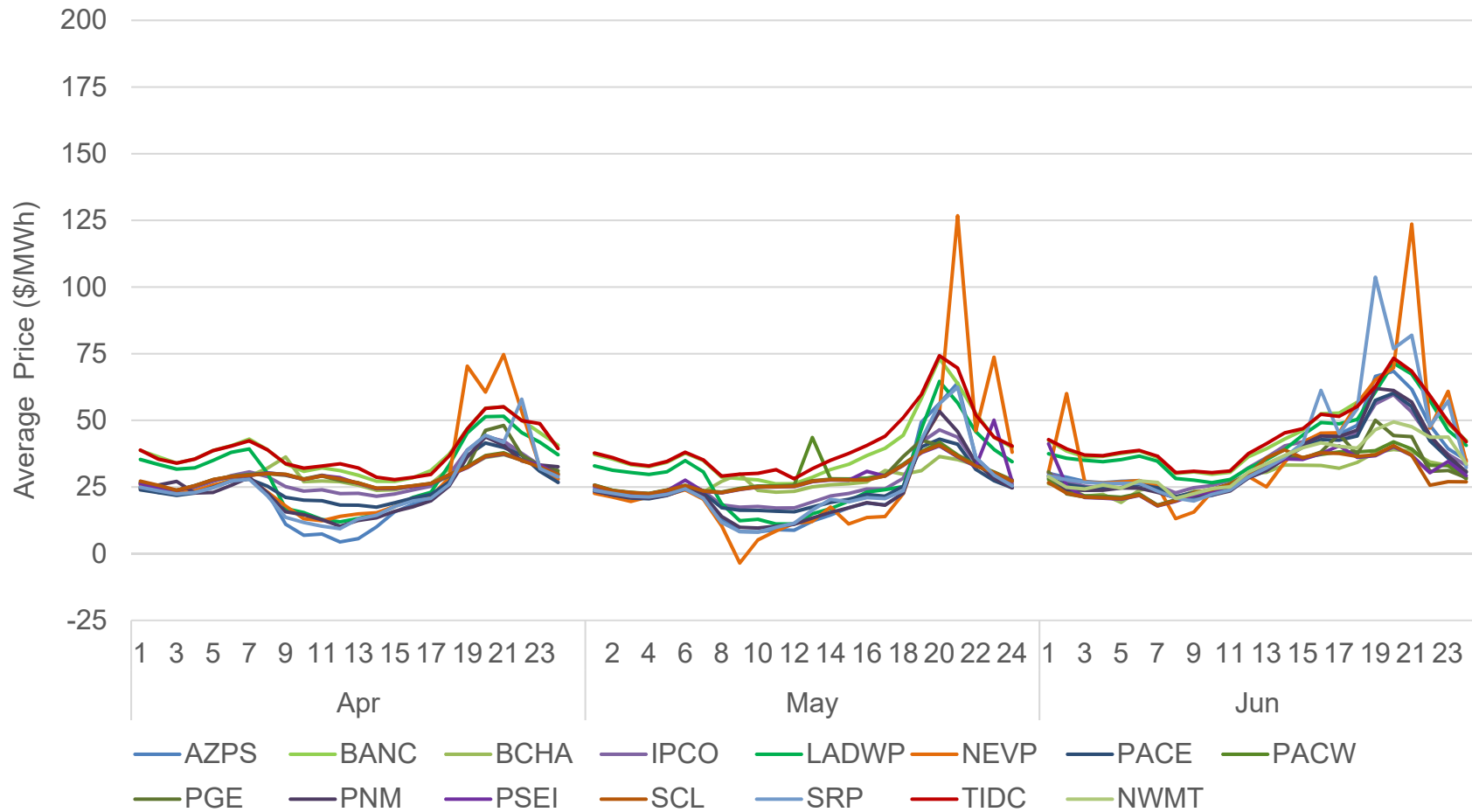
Robust energy transfers in Q2, 2021 with changing patterns in June



Monthly average prices were stable through the quarter with increasing prices in June



Hourly average prices started to show a trend of summer conditions





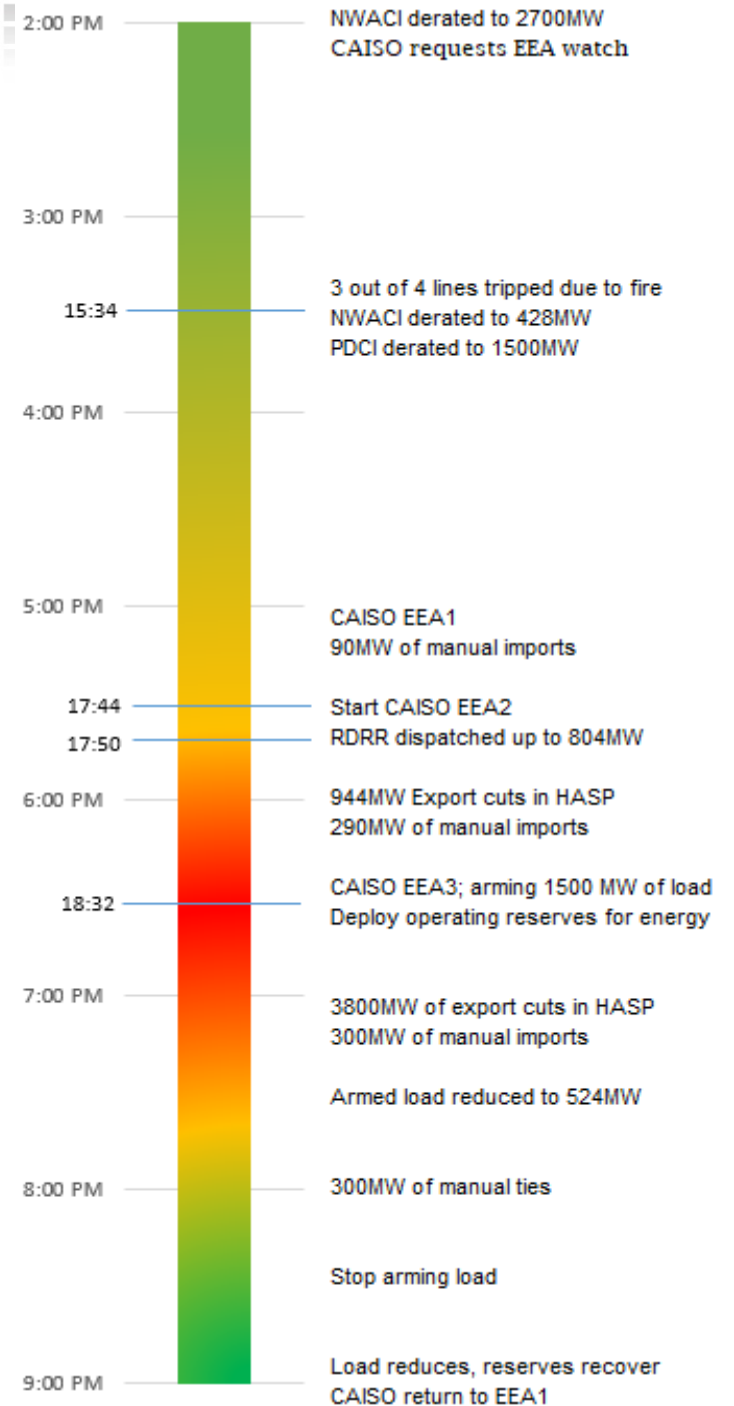
Summer Conditions Update

All summer readiness enhancements have been implemented by early August

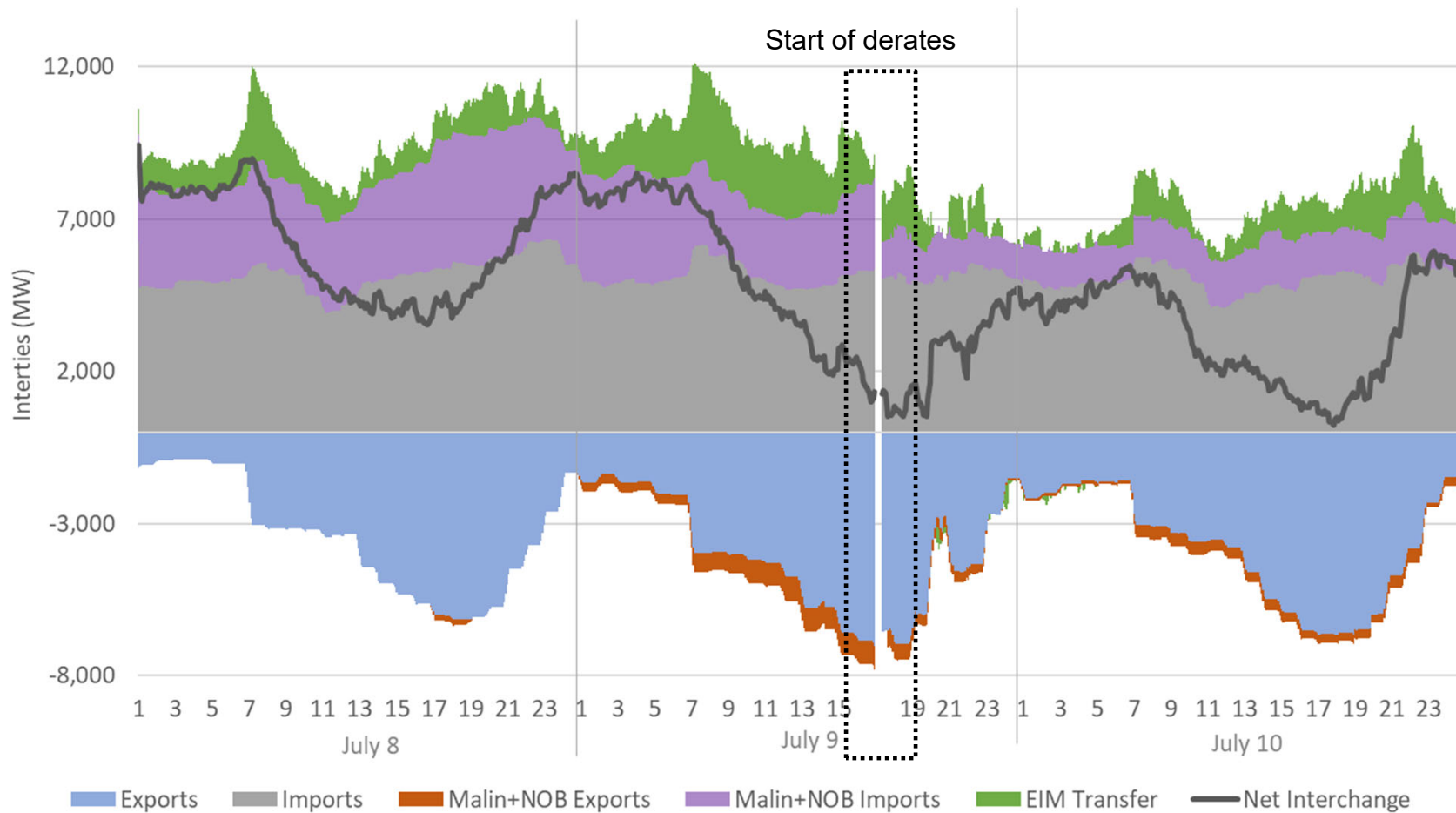
Summer enhancement	Date Implemented	Trigger	Dates
1. EIM resource capacity sufficiency test	15-Jun	Permanent feature	All the time
2. Import market incentives during tight system conditions	15-Jun	Warning or Emergency	July 9 and 10, 5-9pm
3. Intertie schedules information on OASIS	26-Jul	Permanent feature	All the time
4. Enhanced real-time pricing signals during tight supply conditions	15-Jun	Warning or Emergency	July 9, 5-9pm
5. Management of storage resources during tight system conditions	30-Jun	RUC undersupply	July 9, 28 and 29
6. Reliability demand response dispatch and real-time price impacts	4-Aug	Activation of RDRR	Not active in July
Load, export and wheeling priorities*	4-Aug	Permanent feature	Not active in July
Interconnection process enhancements	25-May	Permanent feature	Not used yet
ISO's public communication protocols	29-May	System Event driven	July 9, 10, 12 and 28
Today's Outlook displays	Aug 18	Permanent feature	Not active in July

* The wheeling through priorities the ISO placed into effect are interim only and will sunset after May 31, 2022.

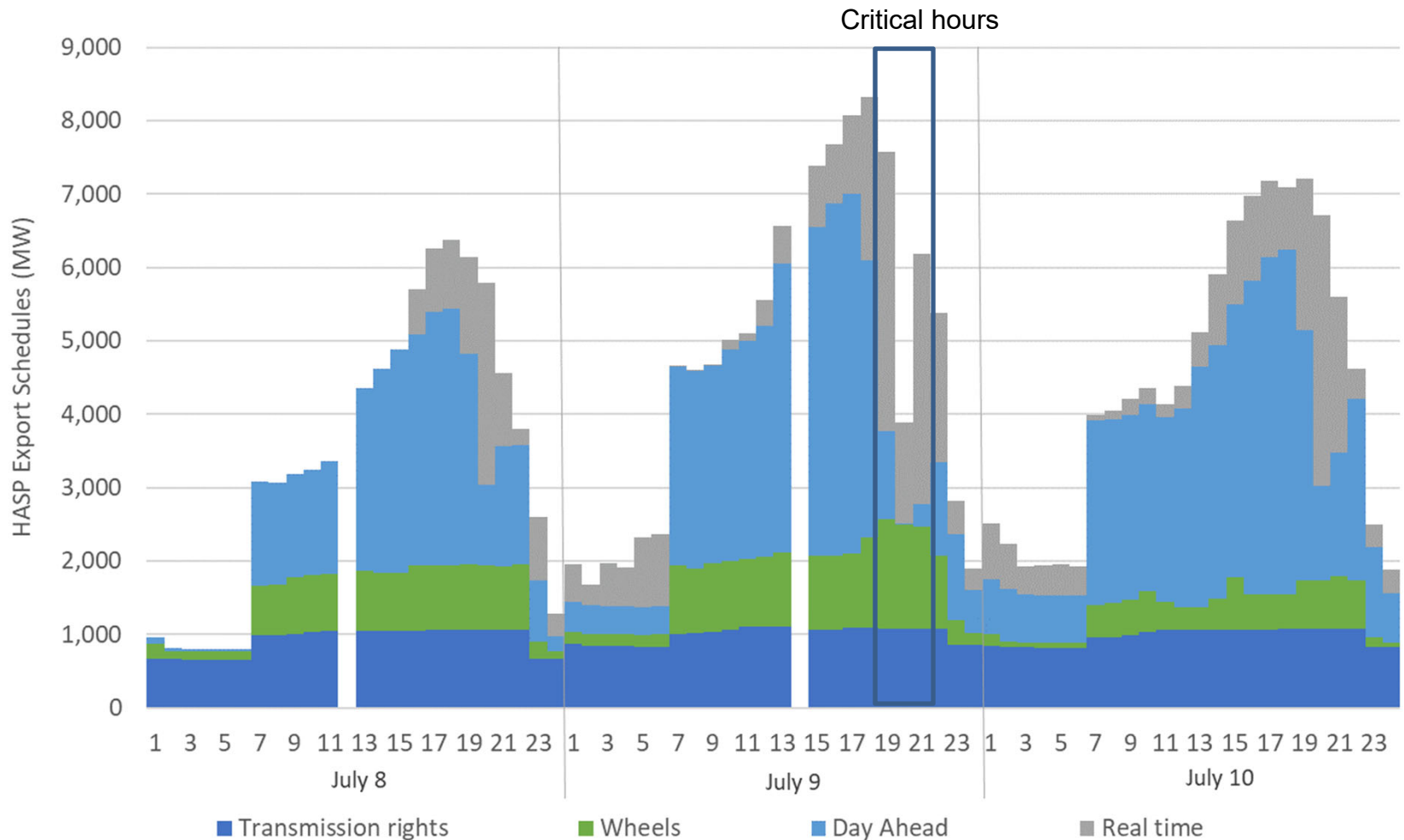
On July 9, 2021 ISO's area experienced the load peak and challenging supply conditions



Derates on Malin and NOB on July 9 prior to peak led to loss of at least 1,500 MW imports

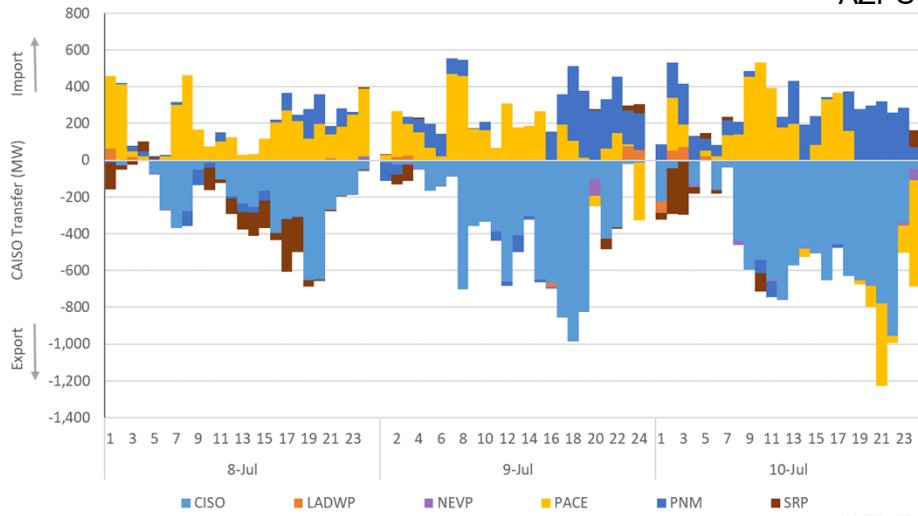


Over 80% of exports in this three –day window were highly protected (day ahead priority, TORs or wheels)

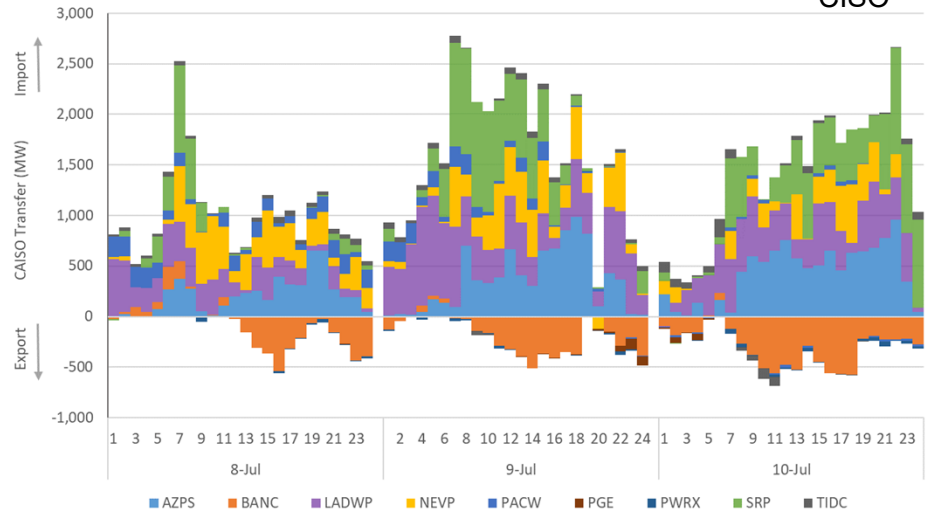


EIM transfers leverages on diversity of generation and system conditions

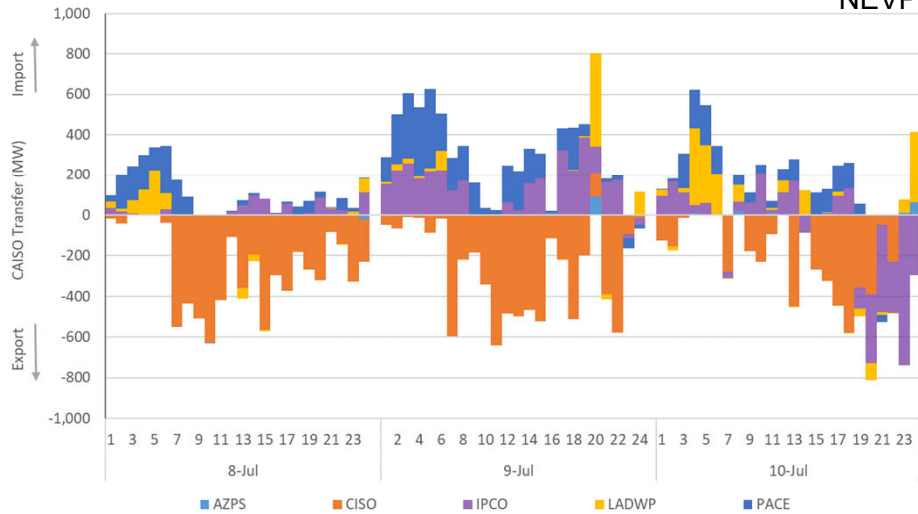
AZPS



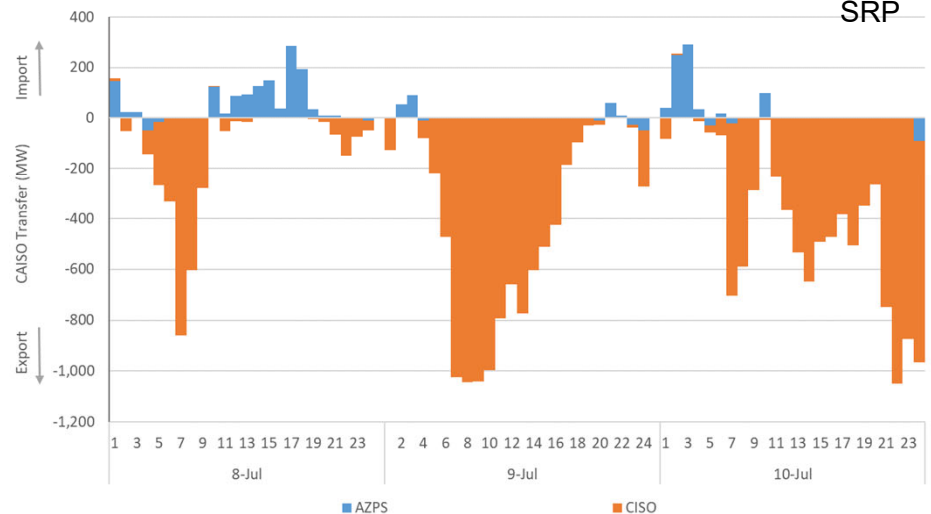
CISO



NEVP



SRP

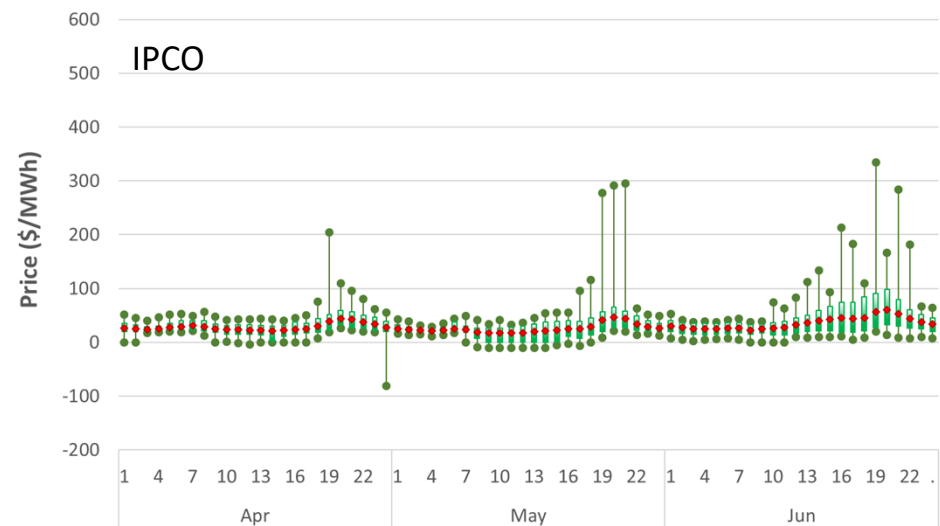
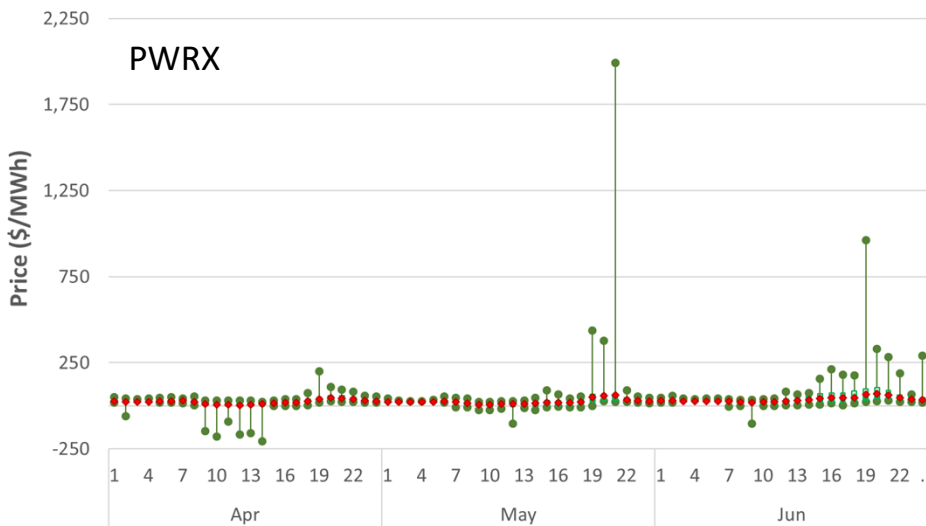
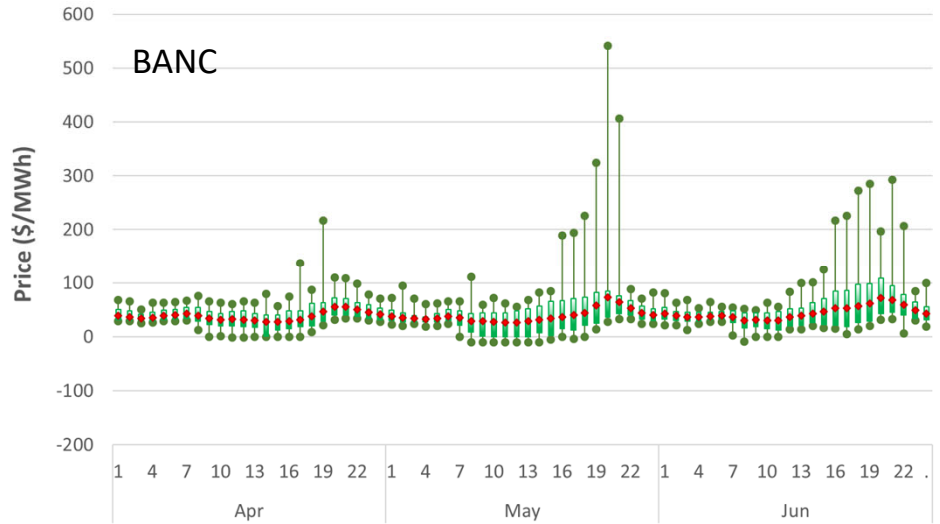
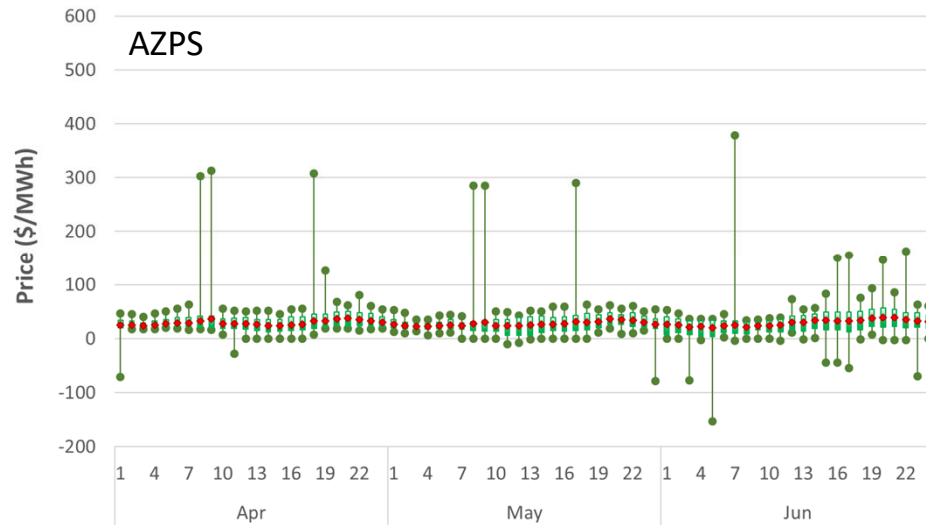




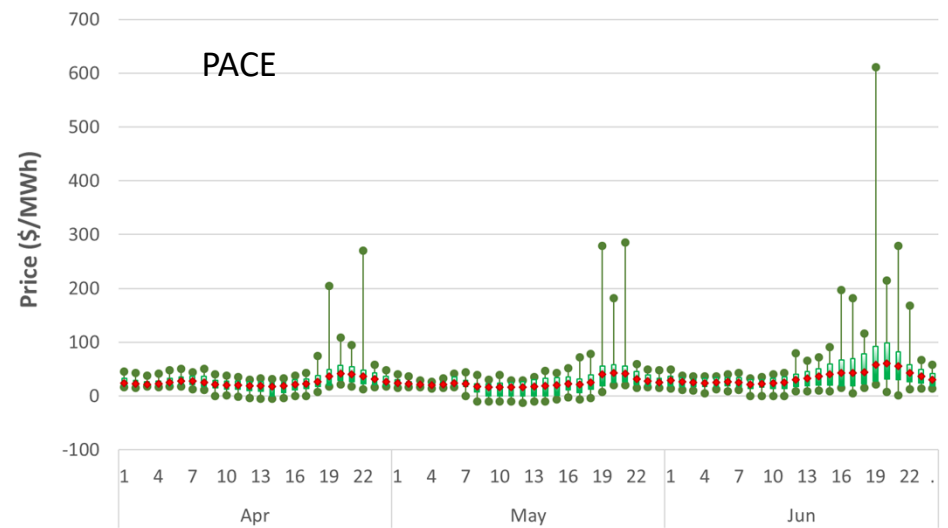
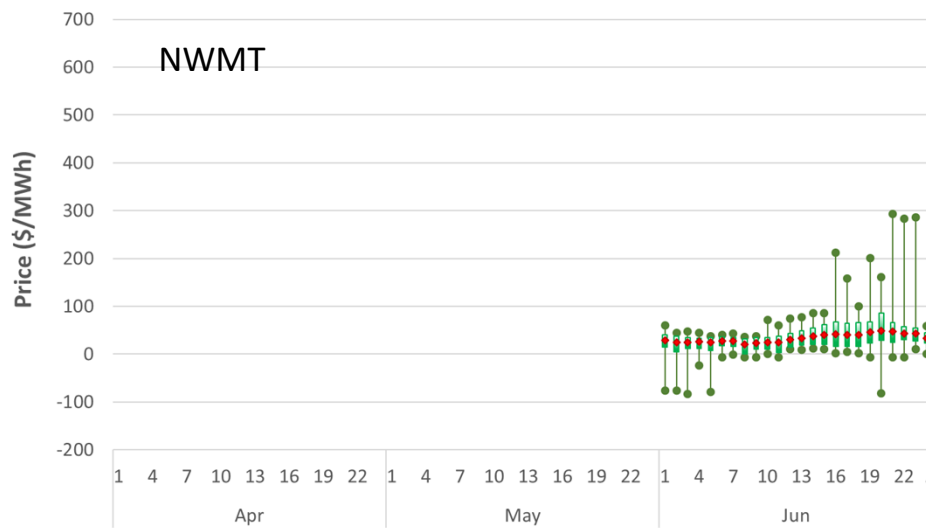
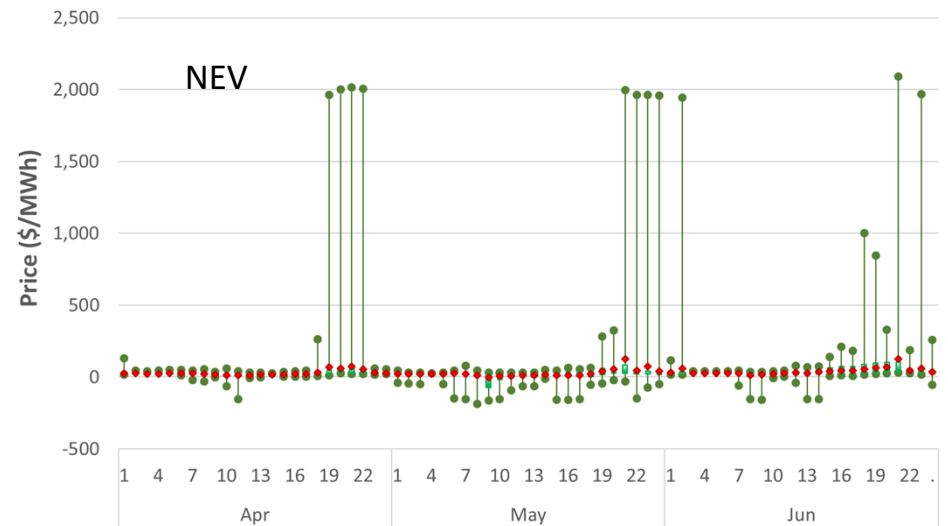
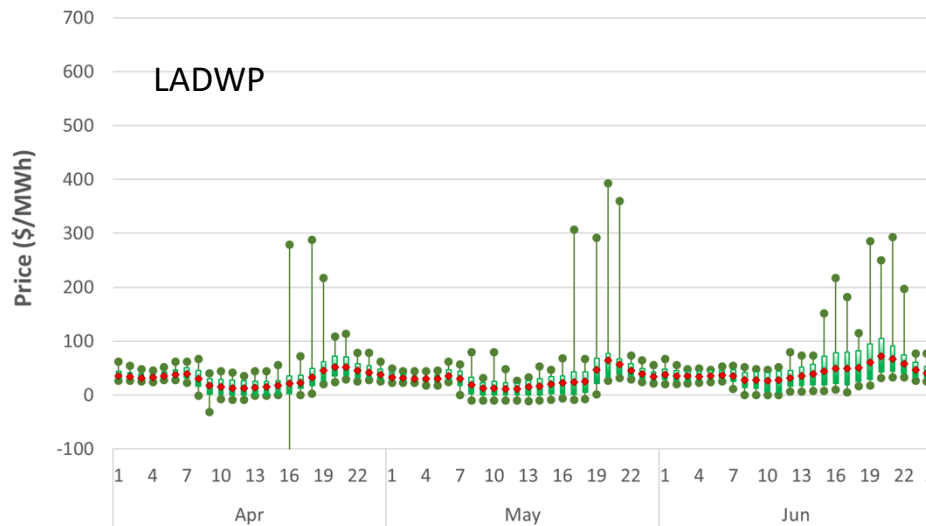
Appendix

EIM Pricing Information

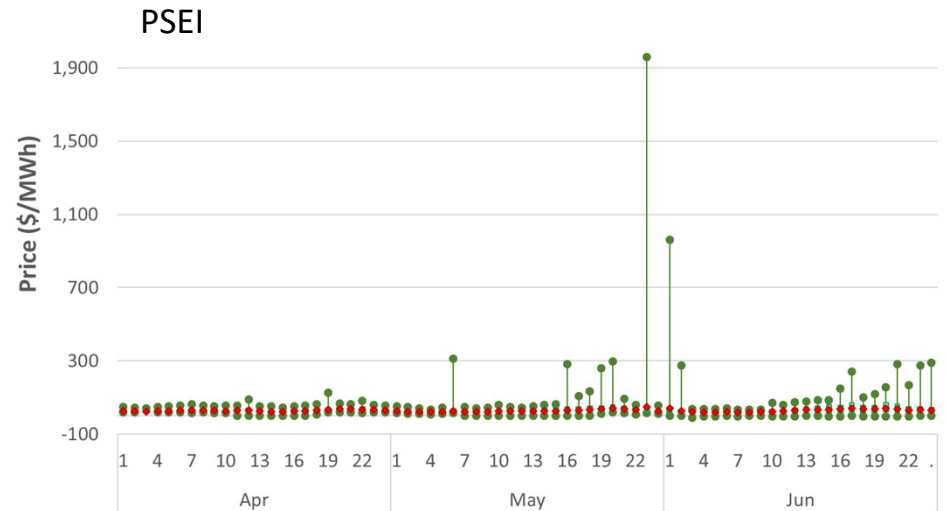
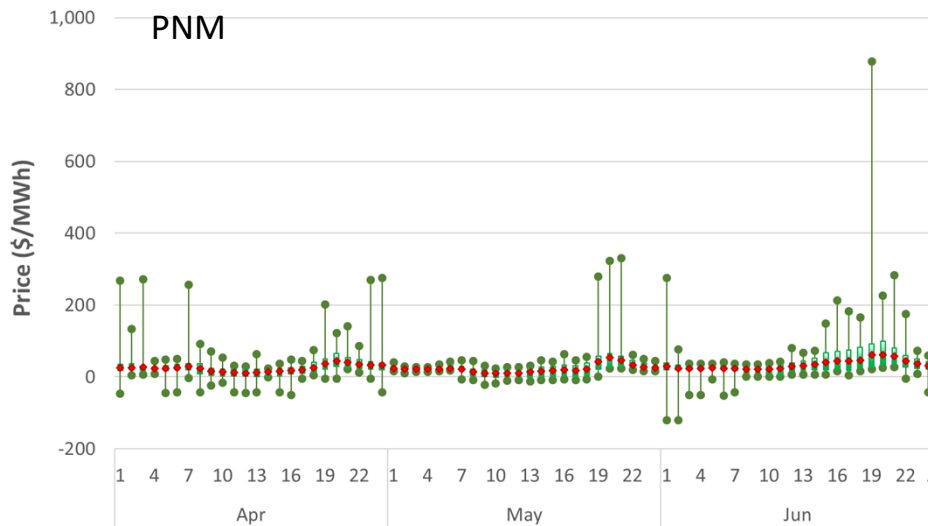
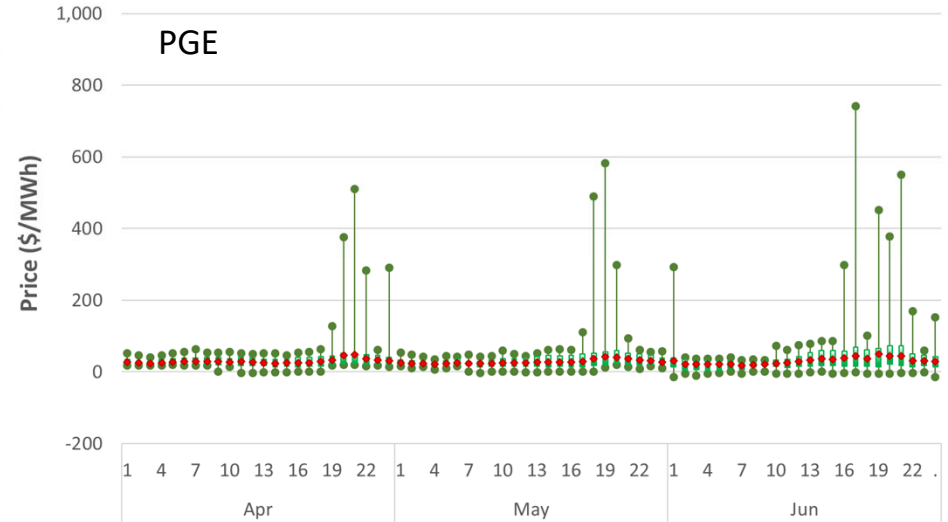
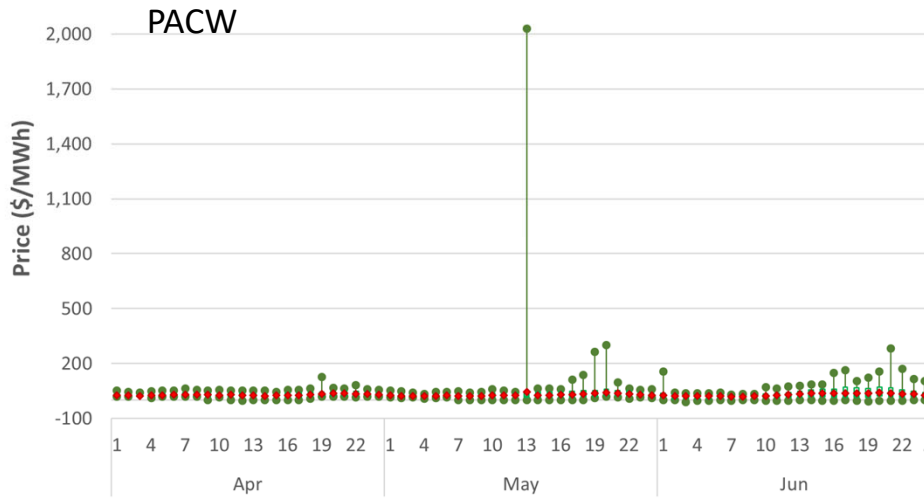
Fifteen-minute prices in Q2 2021



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