

WESTERN ENERGY IMBALANCE MARKET

Briefing on western energy imbalance market and benefits

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Vice President, Market Quality & Renewable Integration

EIM Governing Body Meeting

General Session

October 31, 2018



EIM Update

Future implementations:

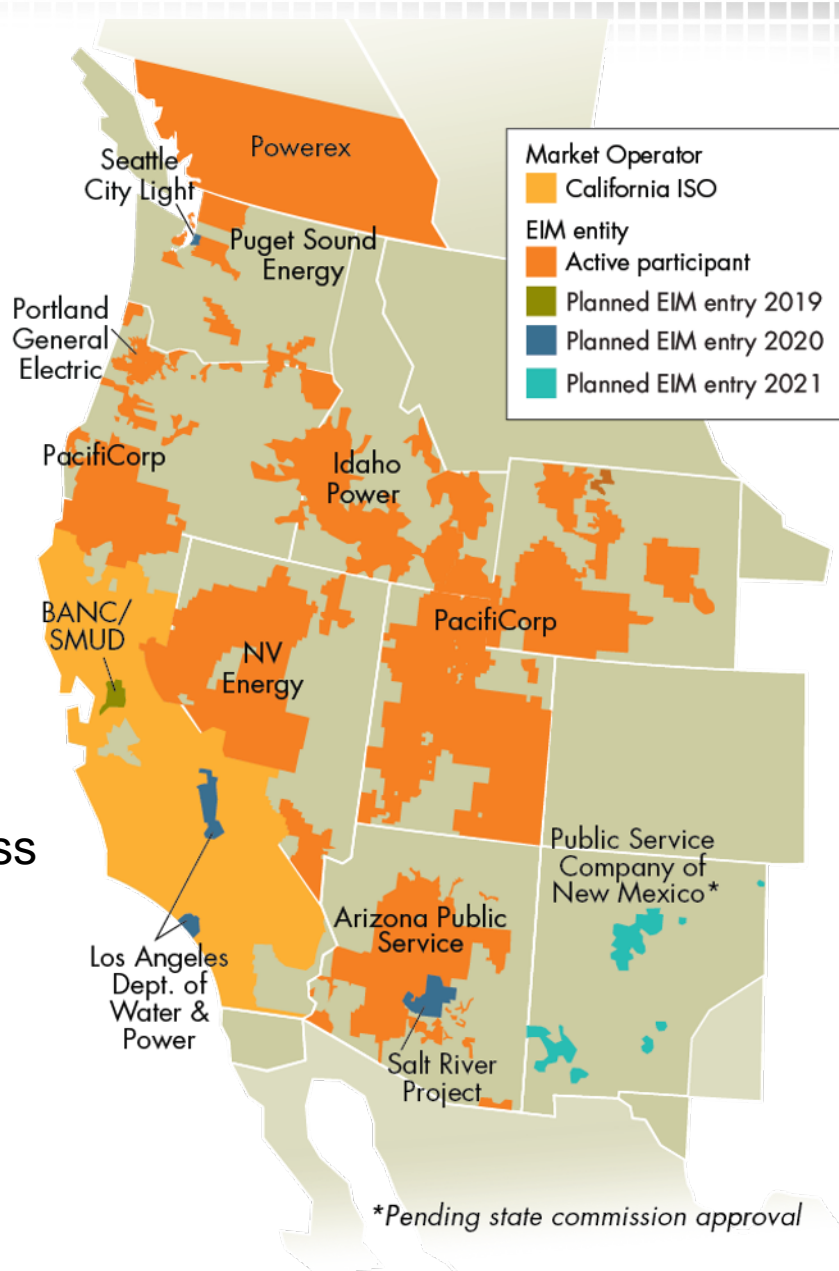
- April 2019 – BANC/SMUD
- April 2020 – LADWP, Seattle City Light, and Salt River Project
- April 2021 – Public New Mexico

Bonneville Power Administration:

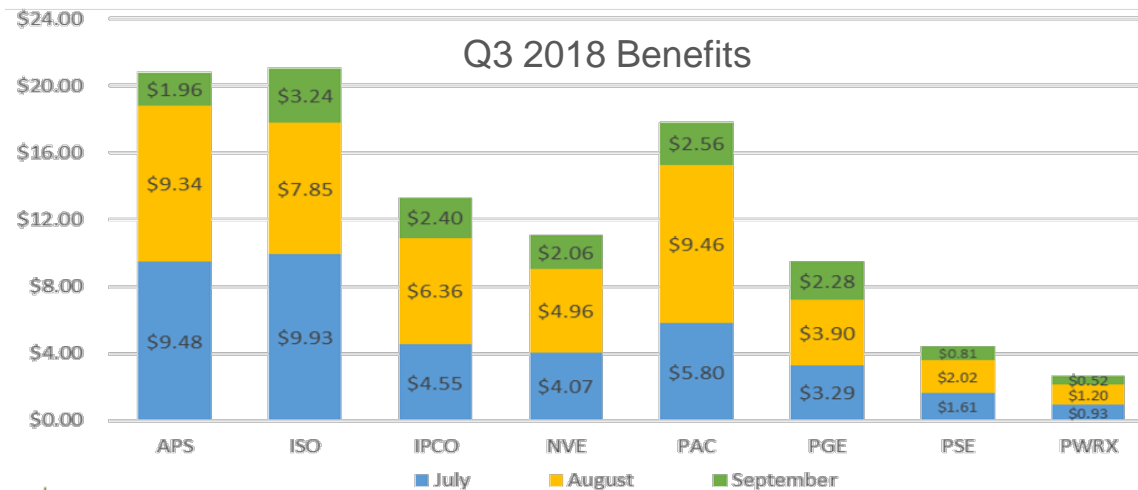
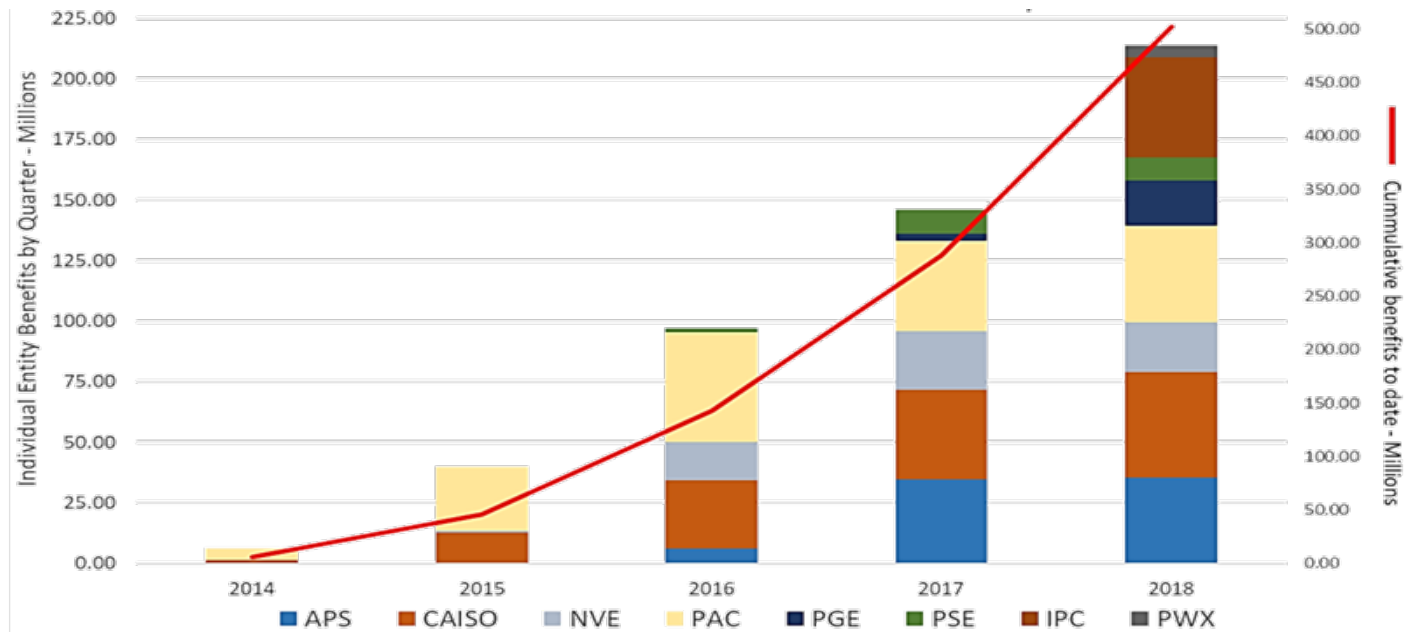
- MOU signed to continue consideration of EIM participation
- BPA stakeholder process in progress
- Expected entry 2022

FERC:

- GHG enhancement approved for implementation on November 1



Gross economic benefits since start of EIM = \$502.31M

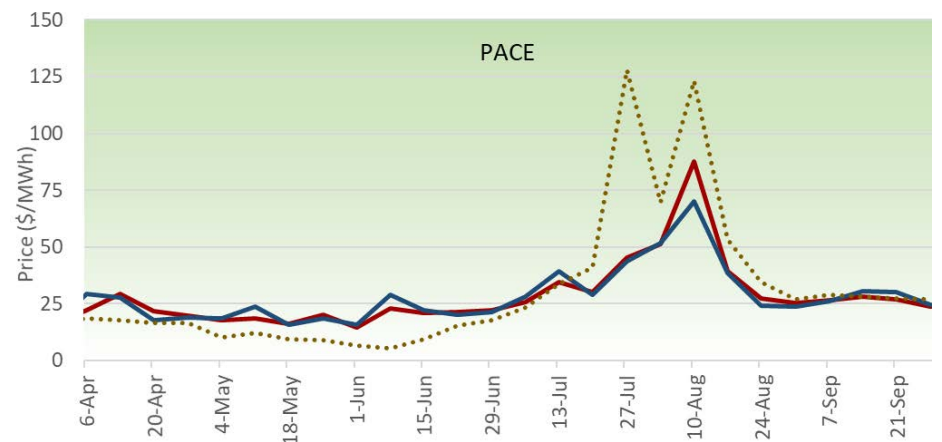
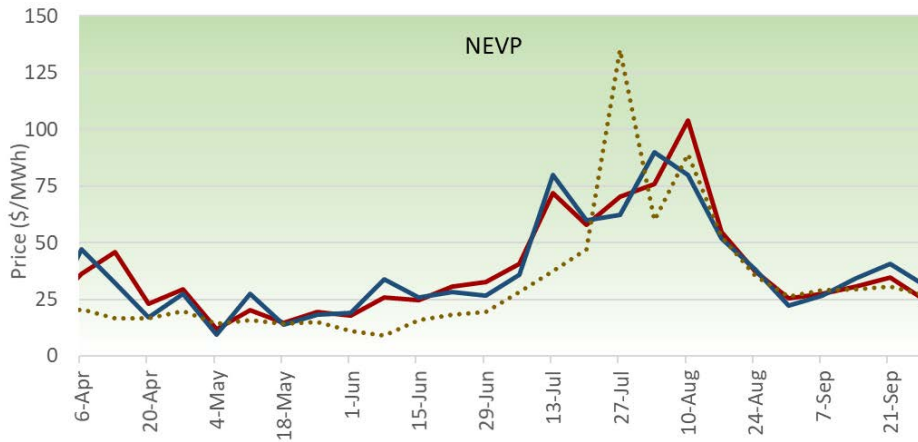
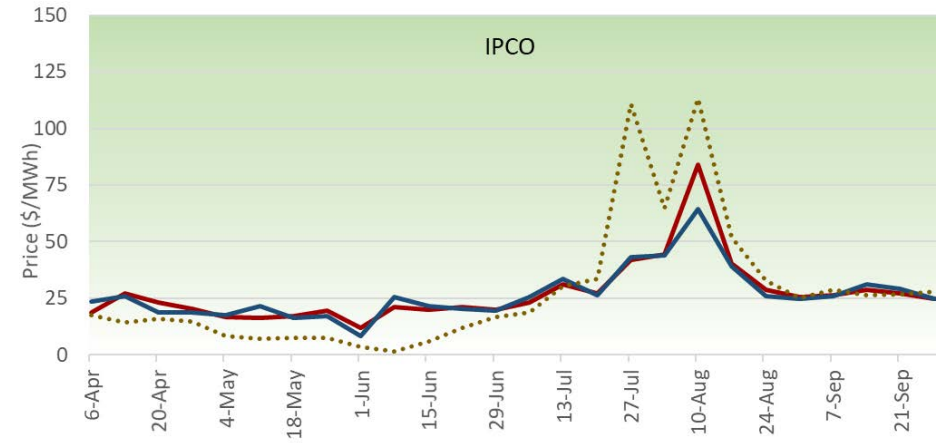
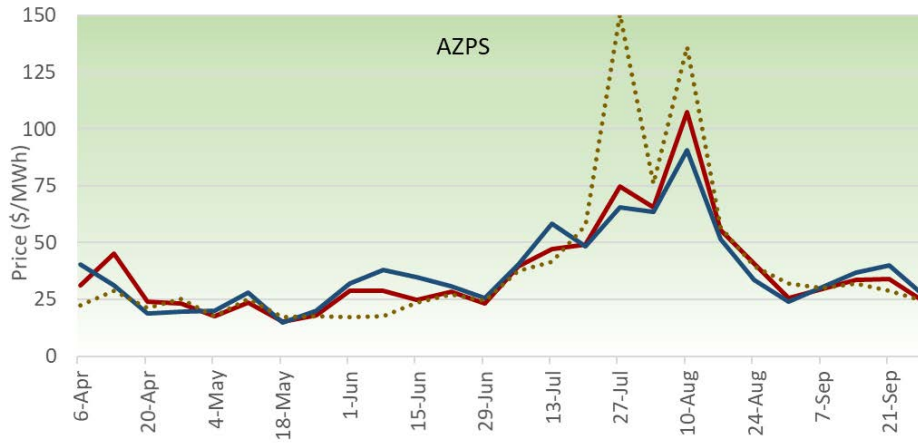


Flexible ramping procurement diversity savings for 3rd quarter, 2018

	July		August		September	
Direction	Up	Down	Up	Down	Up	Down
Average MW saving	864	877	807	845	741	798
Estimated savings	\$196,410	\$0	\$479,924	\$0	\$109,523	\$0
Sum of BAA requirements	1,757	1,754	1,722	1,758	1,652	1,714
Diversity Benefit	49%	50%	47%	48%	45%	47%

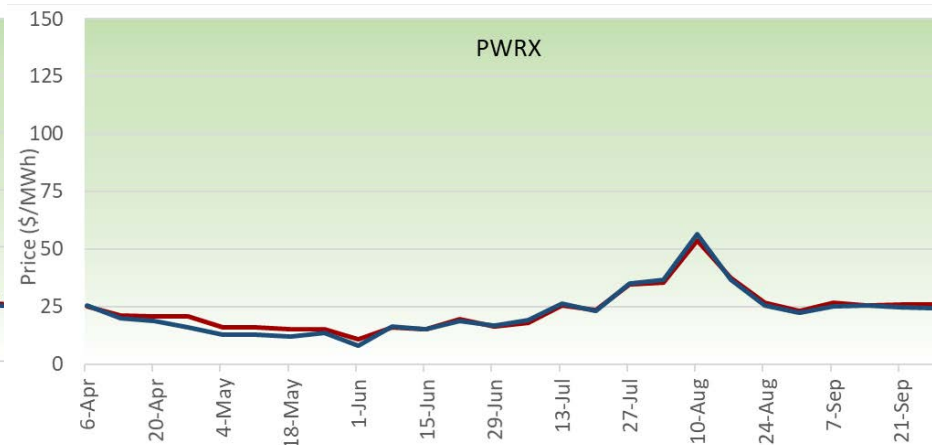
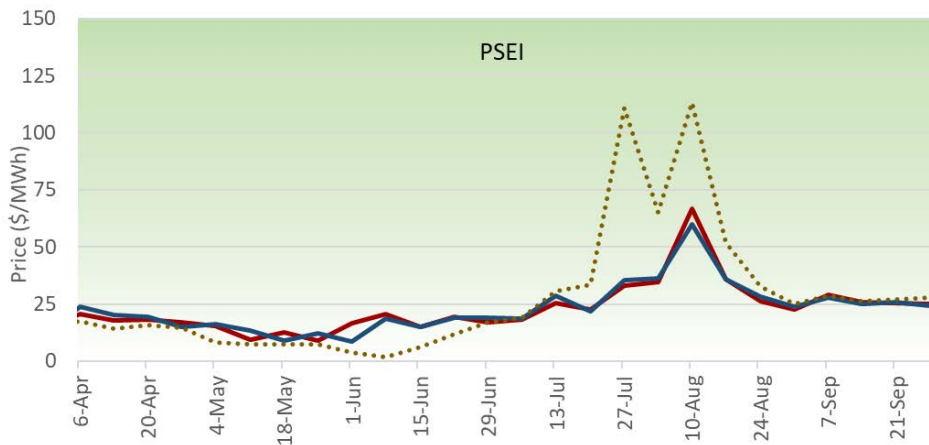
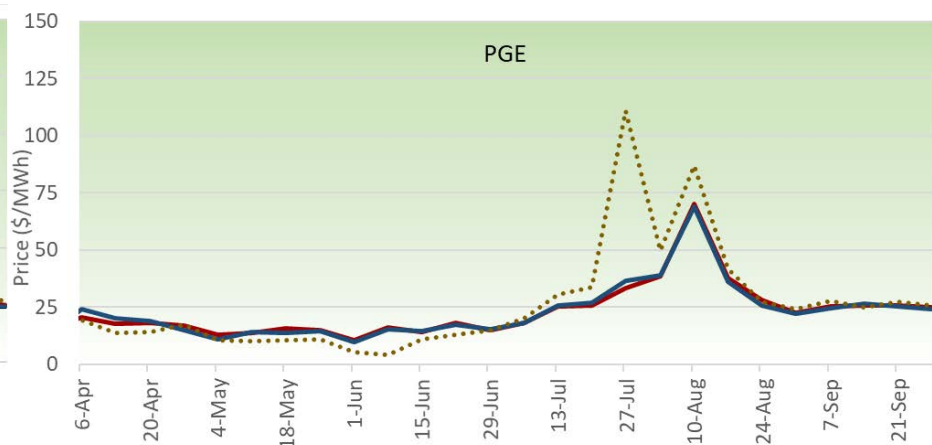
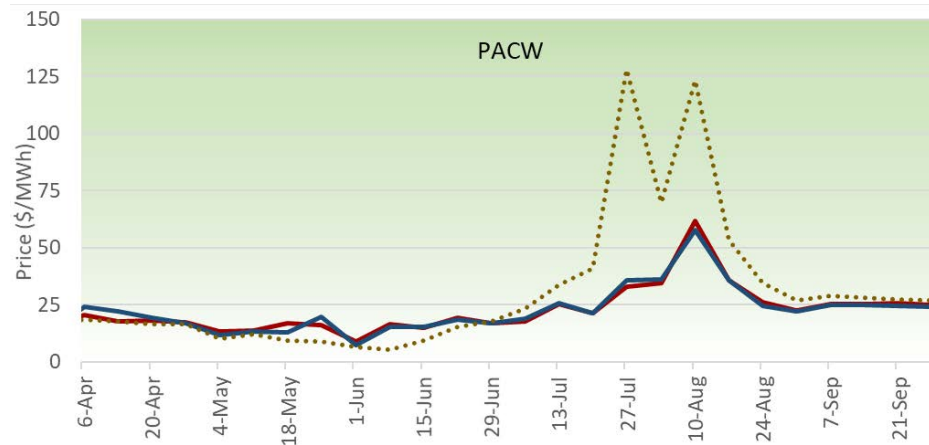
The percentage of savings is the average MW savings divided by the sum of the four individual BAA requirements.

Weekly average prices in EIM areas



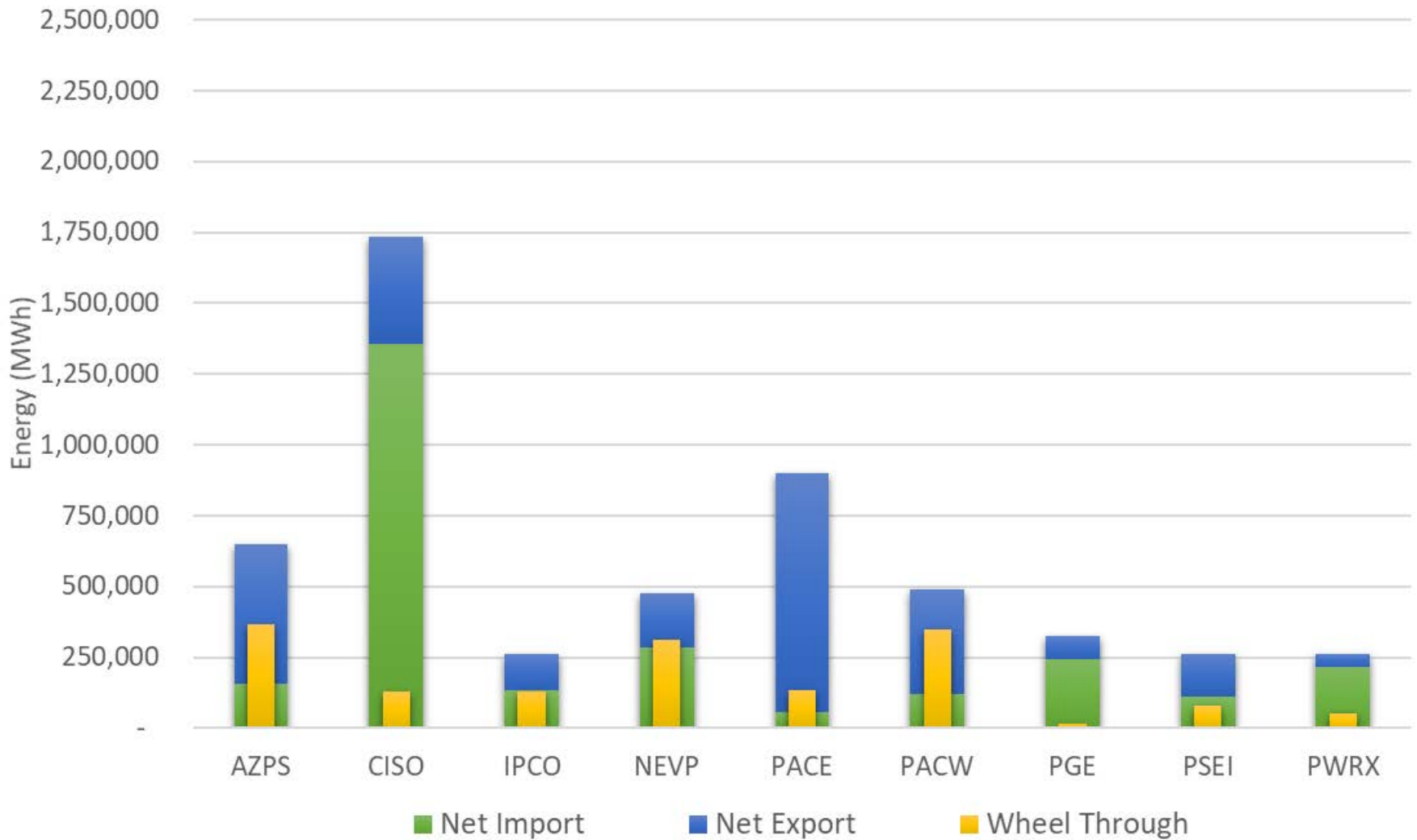
..... Estimated Proxy — RTD ELAP — FMM ELAP

Weekly average prices in EIM areas

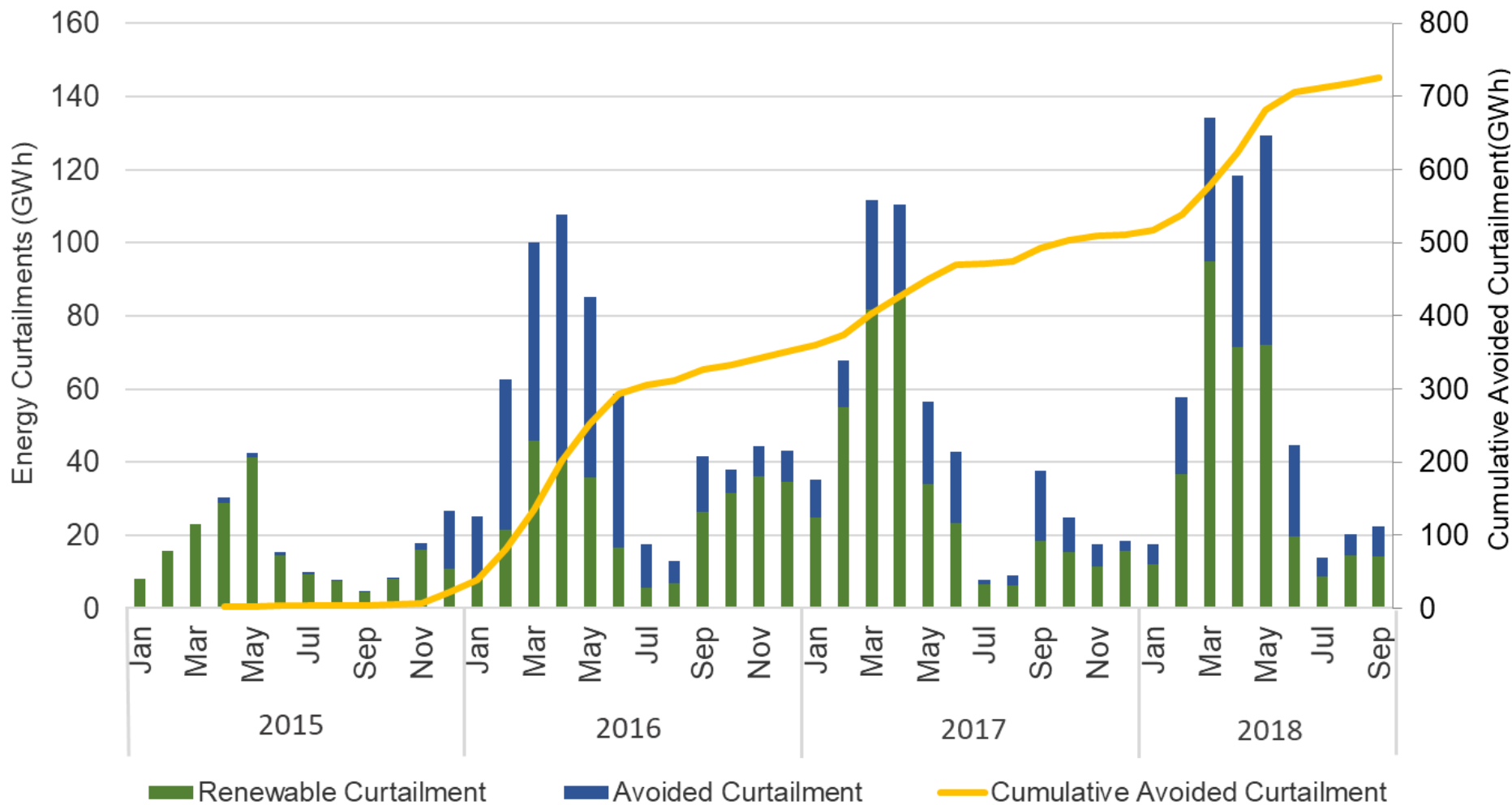


Estimated Proxy RTD ELAP FMM ELAP

Estimated wheel through transfers in Q3, 2018



Energy imbalance market helps avoid curtailment



Robust energy transfers in 3rd quarter, 2018

