

# WESTERN ENERGY IMBALANCE MARKET

## Briefing on western energy imbalance market and benefits

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Vice President

Market Quality & California Regulatory Affairs

EIM Governing Body Meeting

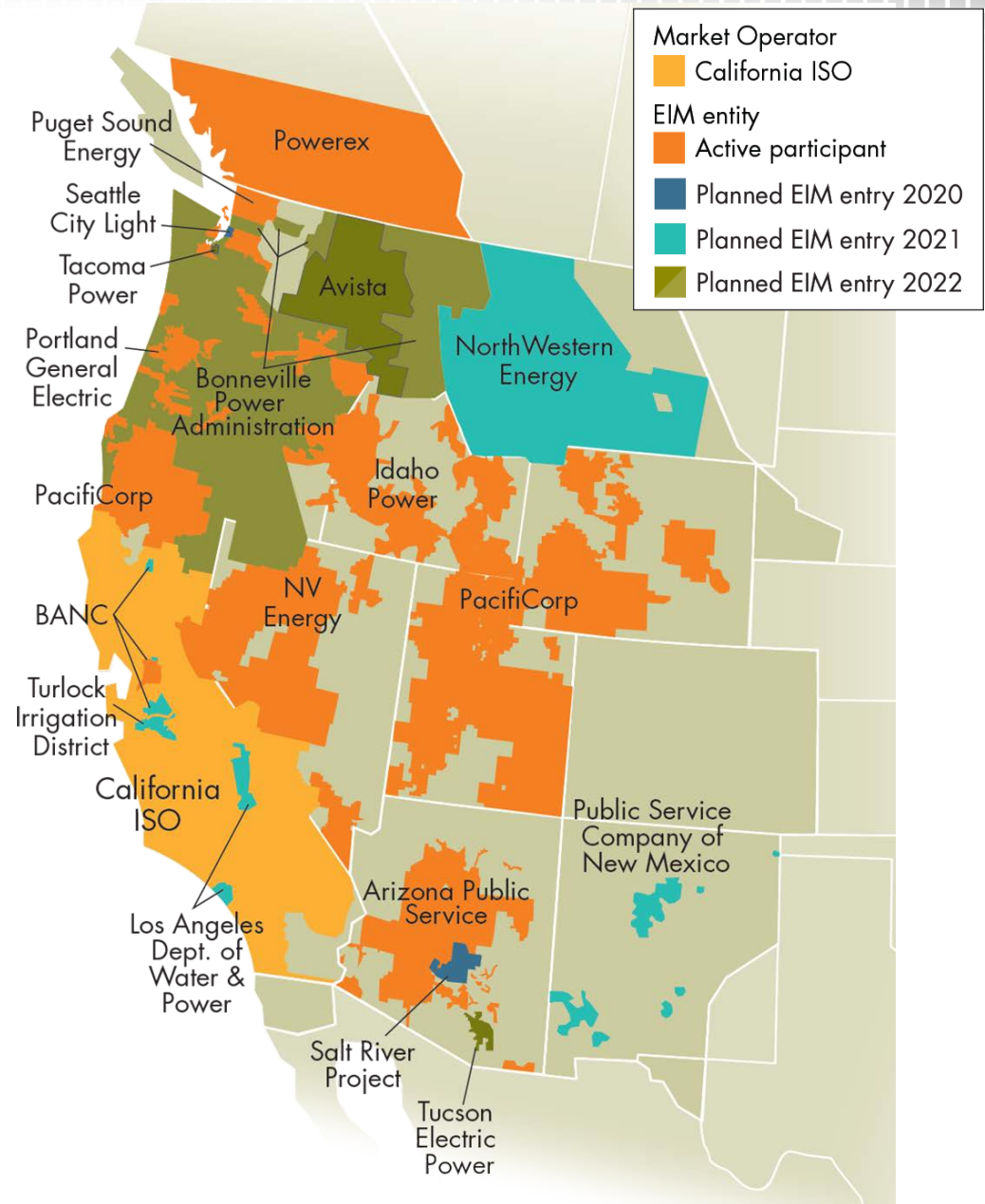
General Session

October 30, 2019

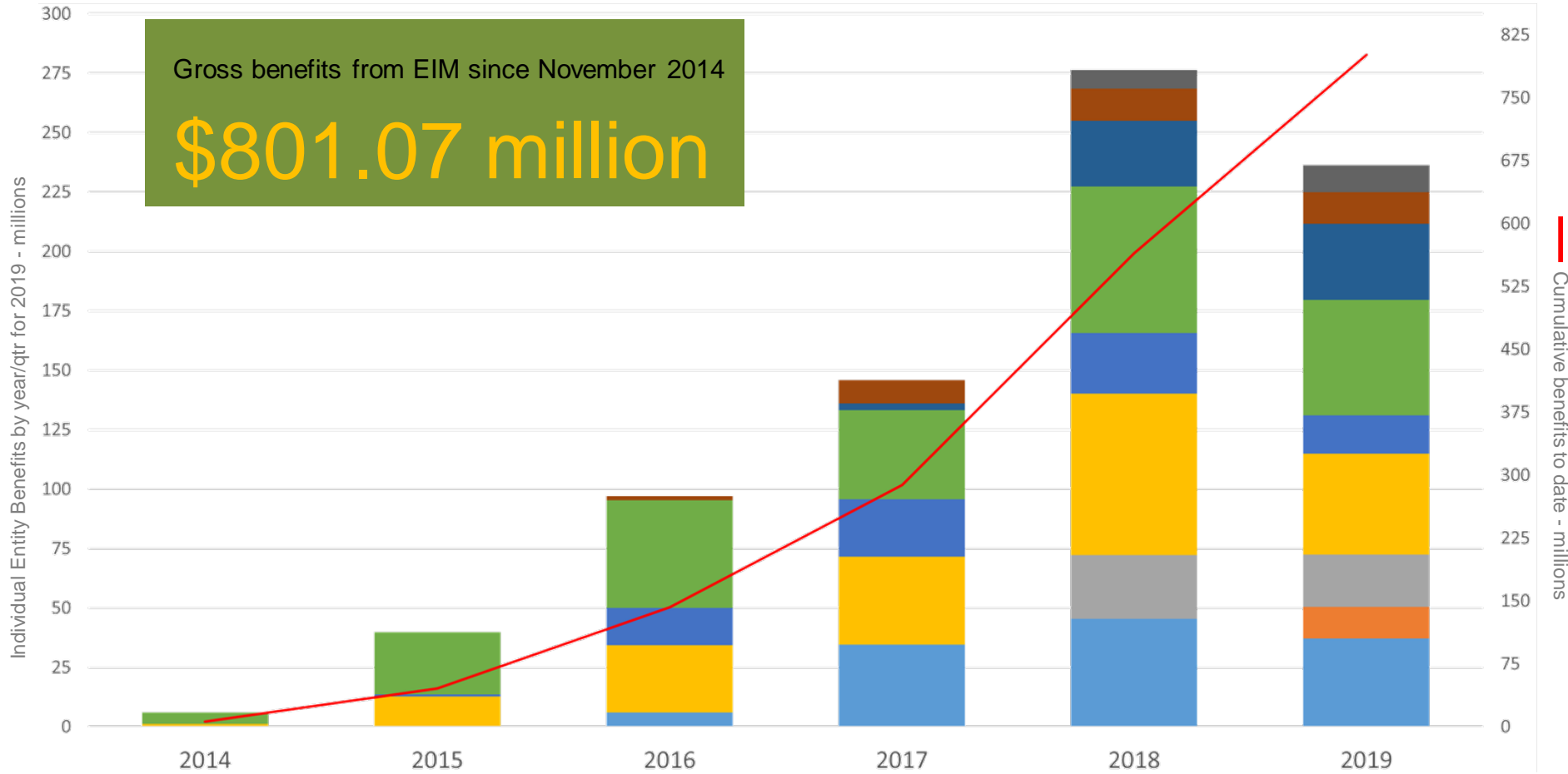


# EIM Update

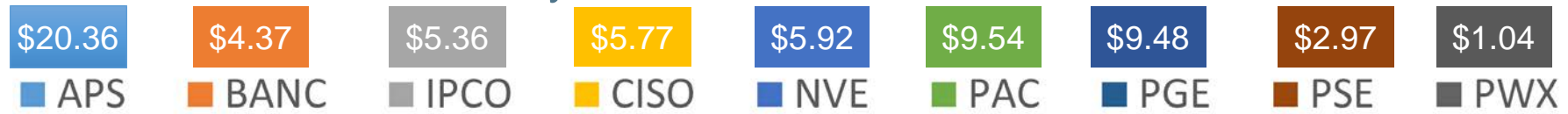
- Bonneville Power Administration has signed an implementation agreement with planned start date of 2022.
  - 2020: Salt River Project & Seattle City Light
  - 2021: BANC-Phase 2, LADWP, NorthWestern Energy, Public Service Company of New Mexico & Turlock Irrigation District
  - 2022: Avista, Bonneville Power Administration, Tacoma Power & Tucson Electric Power



# \$64.81 million gross economic benefits – 2019 3<sup>rd</sup> Qtr



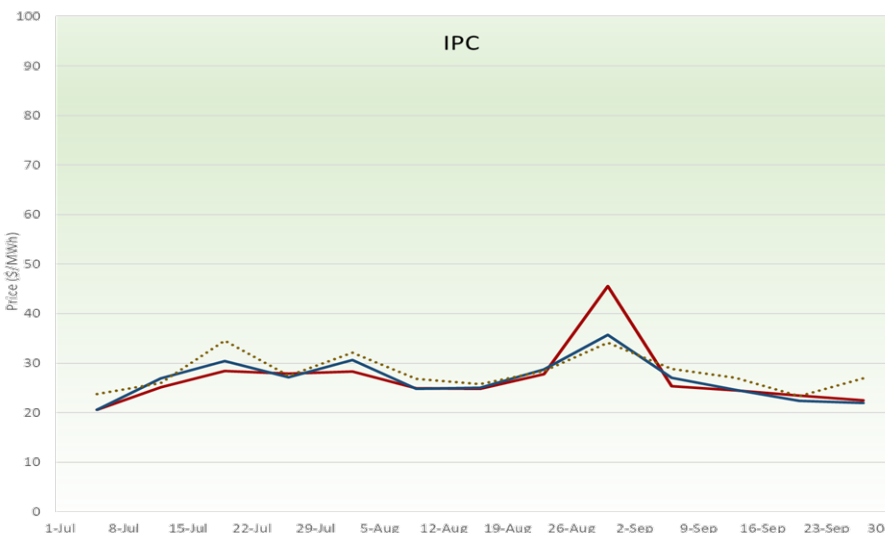
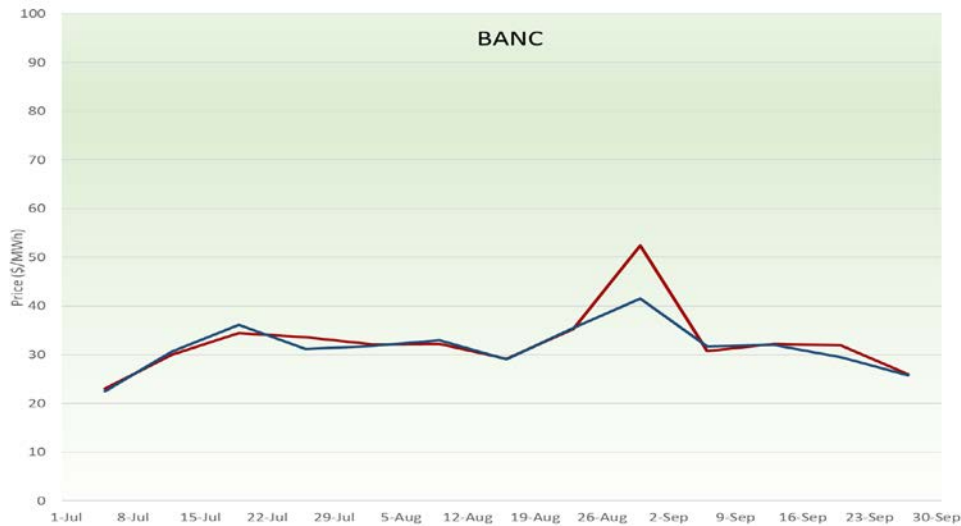
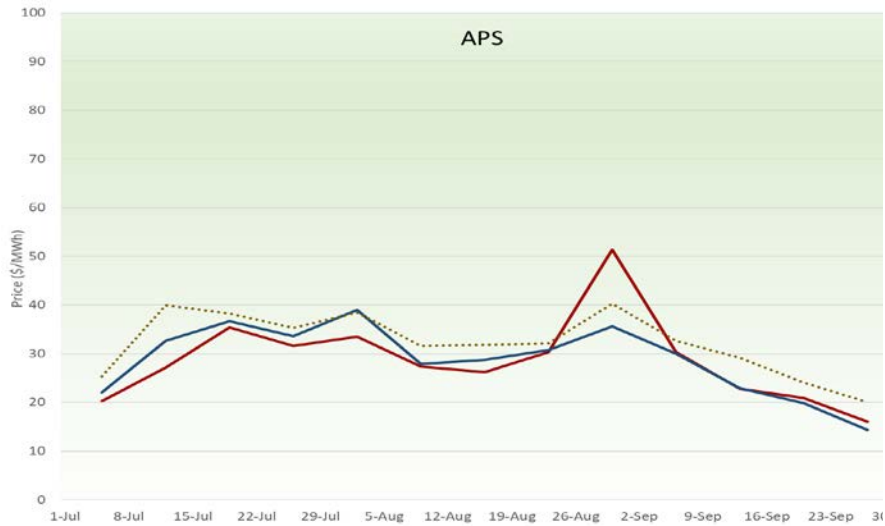
## Individual Entity Benefits for 3rd Quarter - millions



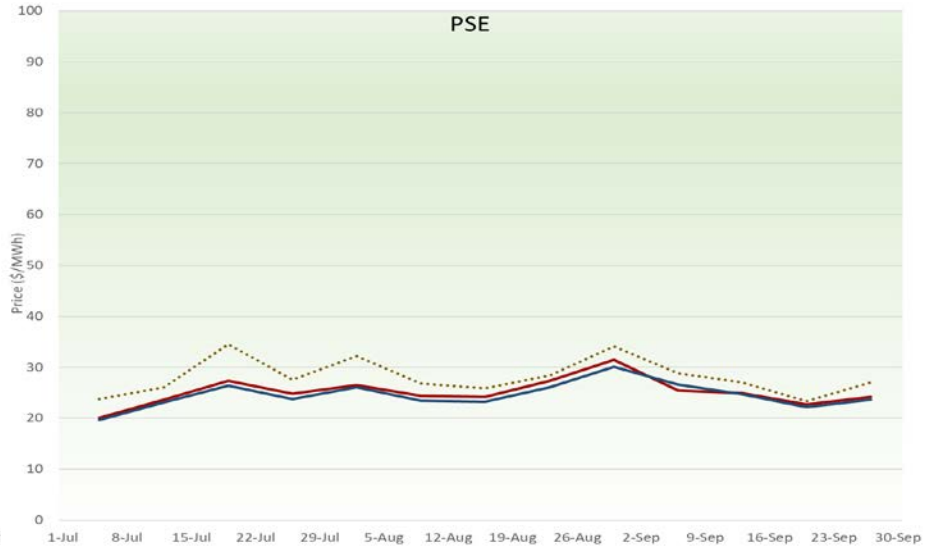
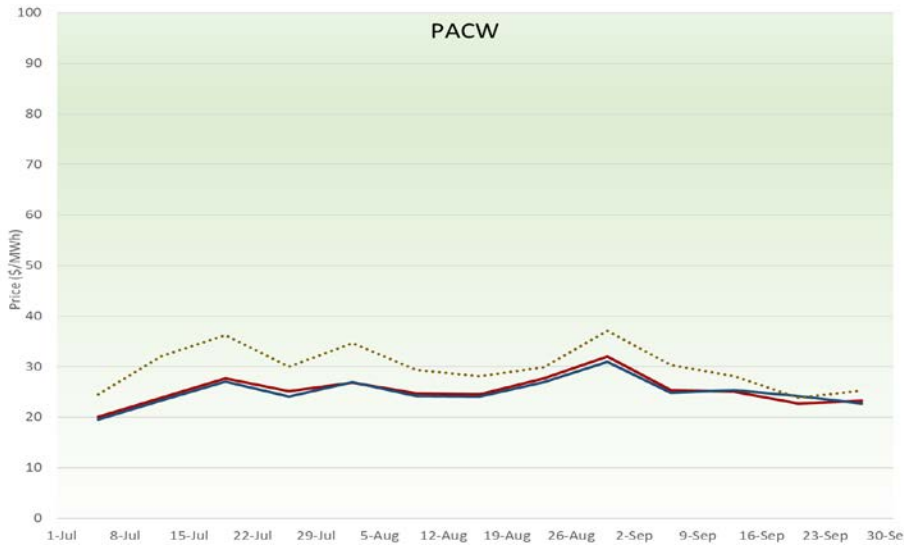
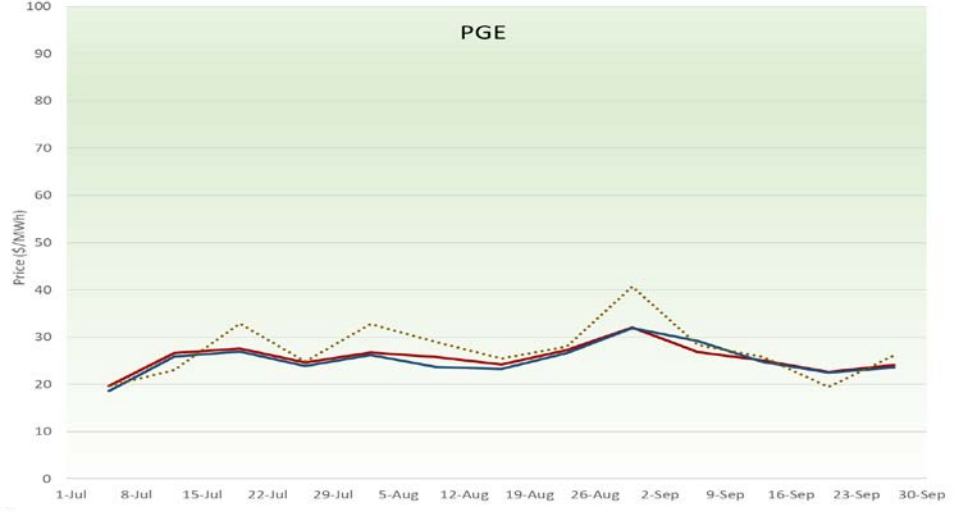
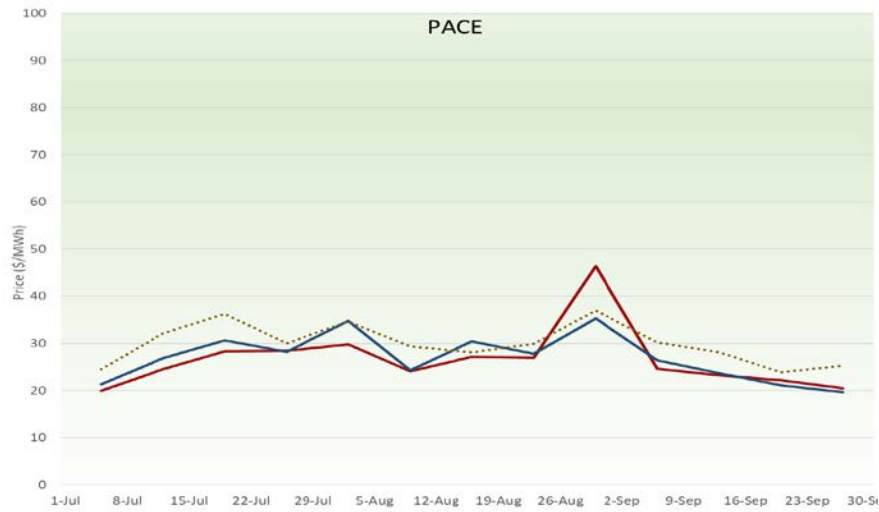
# Flexible ramping procurement diversity savings for 2019, 3<sup>rd</sup> Qtr.

	July		August		September	
Direction	Up	Down	Up	Down	Up	Down
Average MW saving	807	827	798	841	797	846
Sum of BAA requirements	1,750	1,690	1,630	1,679	1,701	1,675
Diversity Benefit	46%	49%	49%	50%	47%	51%
Estimated Savings	\$75,995	\$0	\$177,083	\$0	\$194,219	\$0

# Weekly average prices in EIM areas

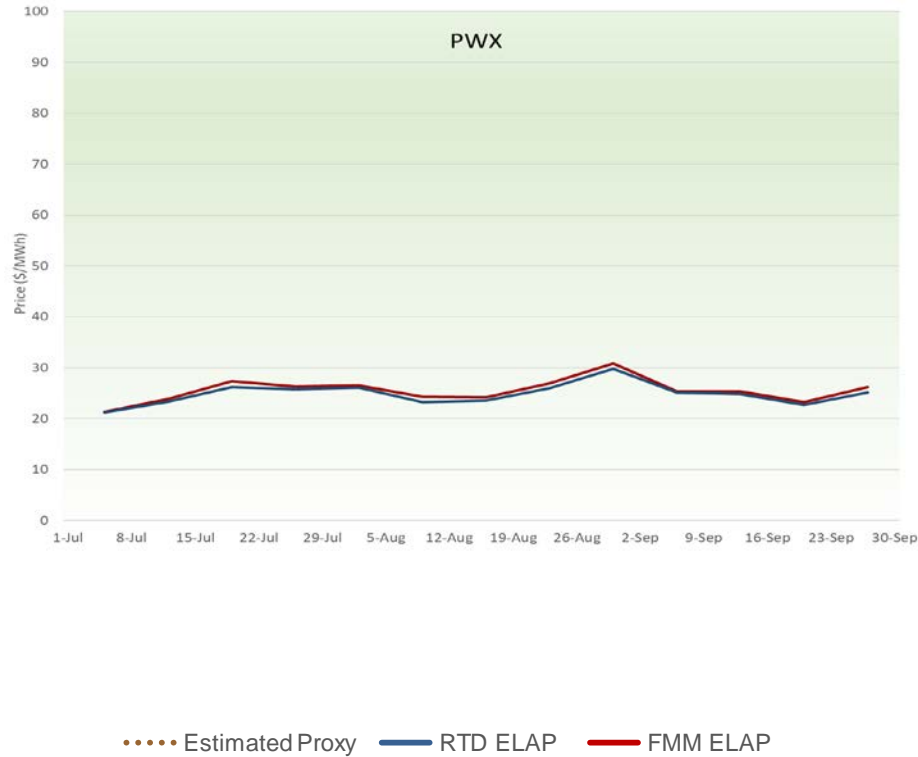


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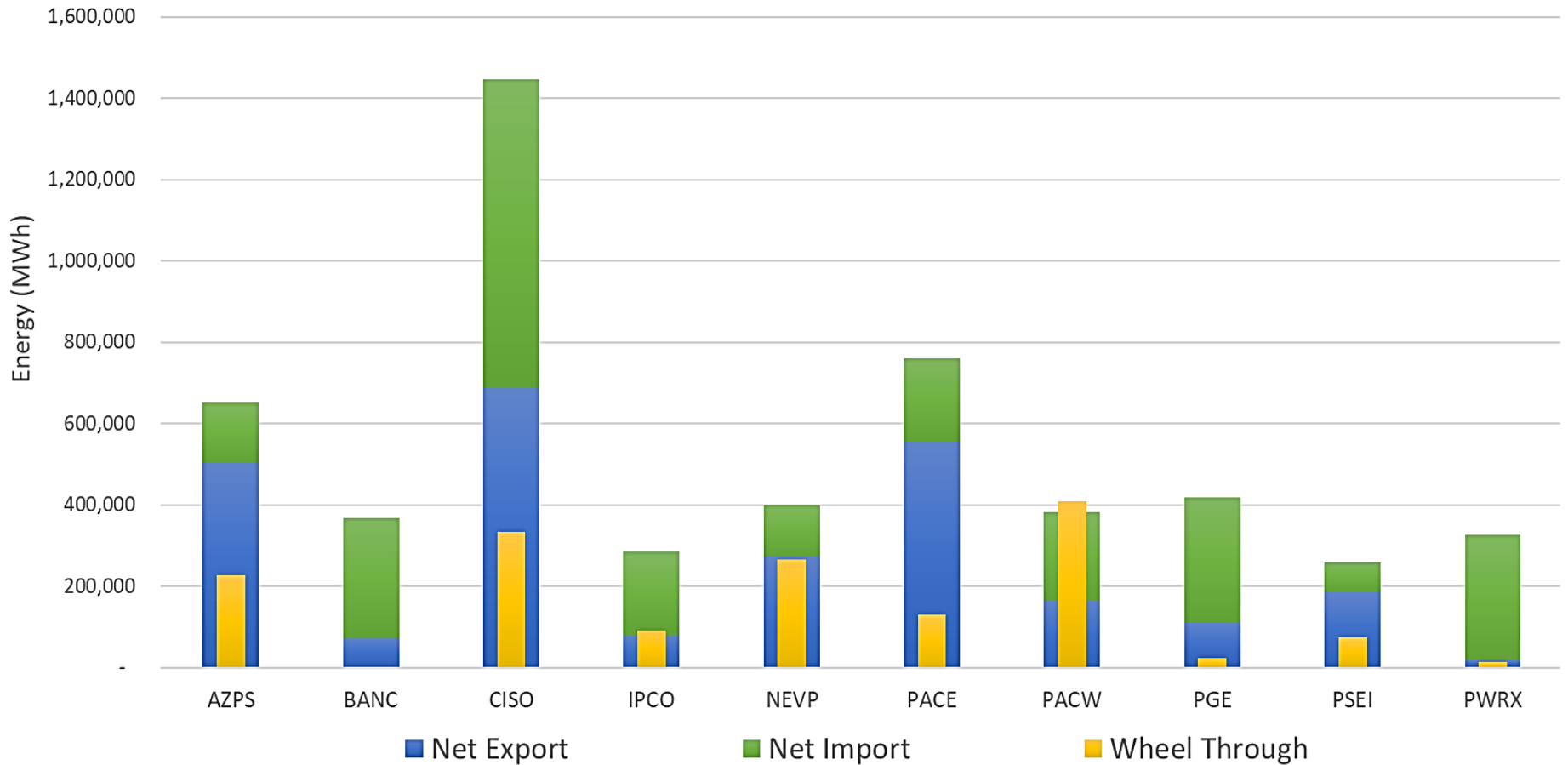
..... Estimated Proxy    — RTD ELAP    — FMM ELAP

# Weekly average prices in EIM areas



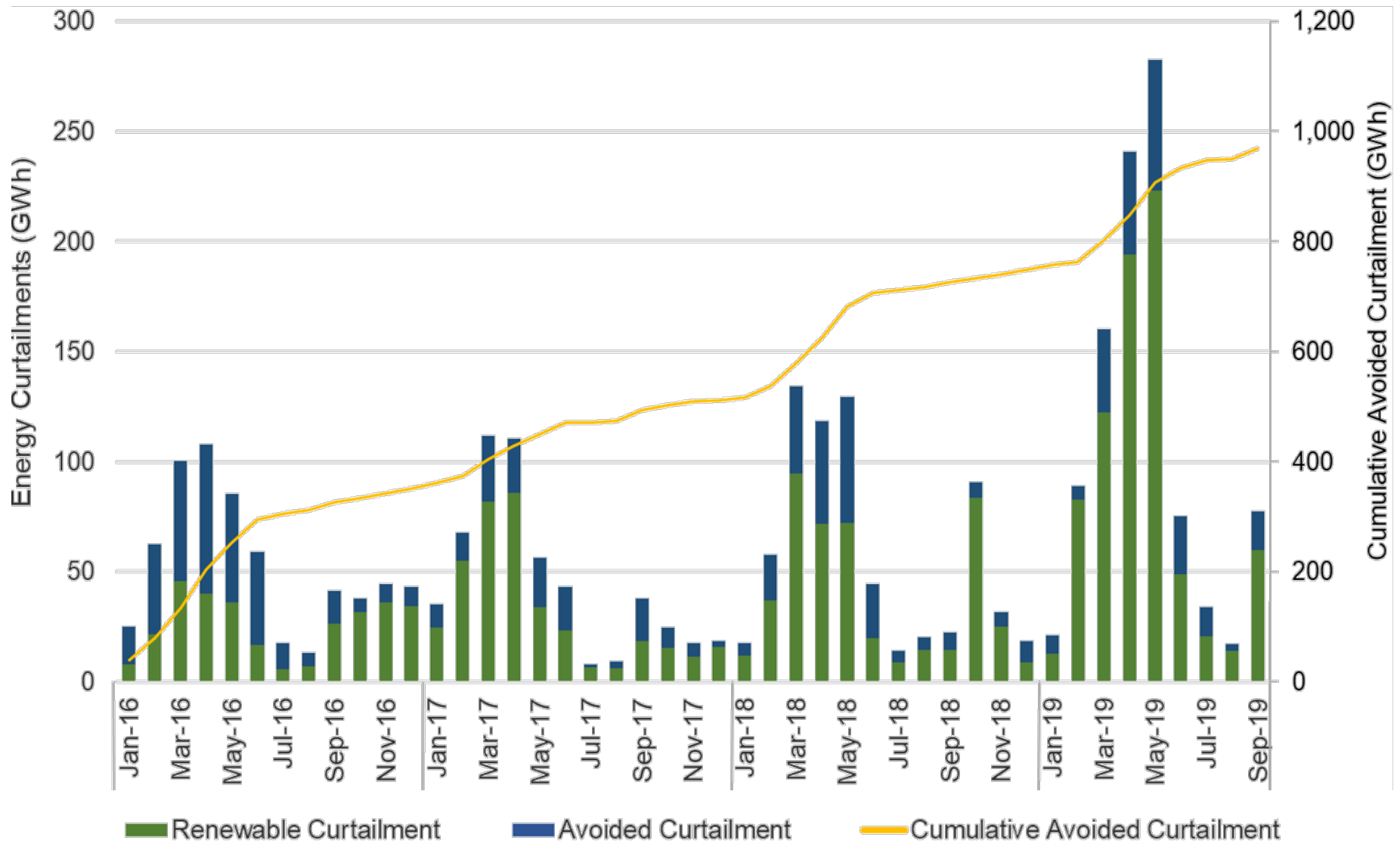


# Estimated wheel through transfers in 2019, 3<sup>rd</sup> Qtr.

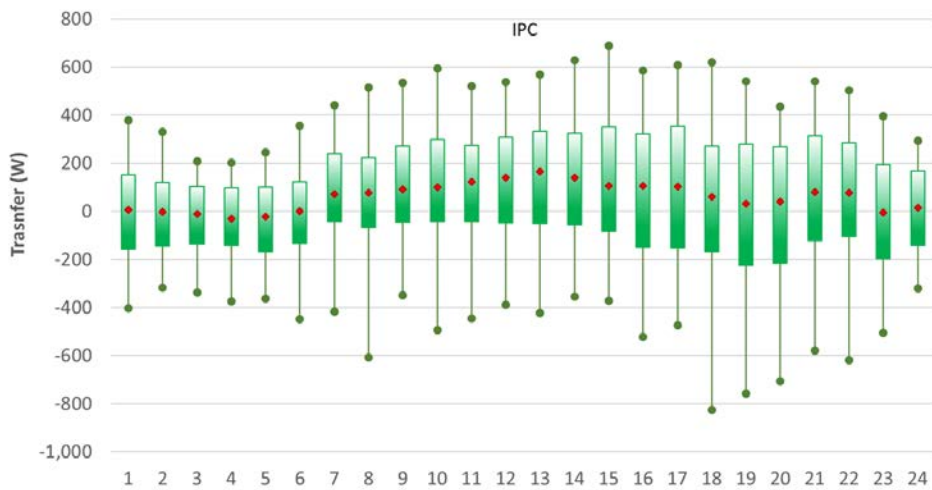
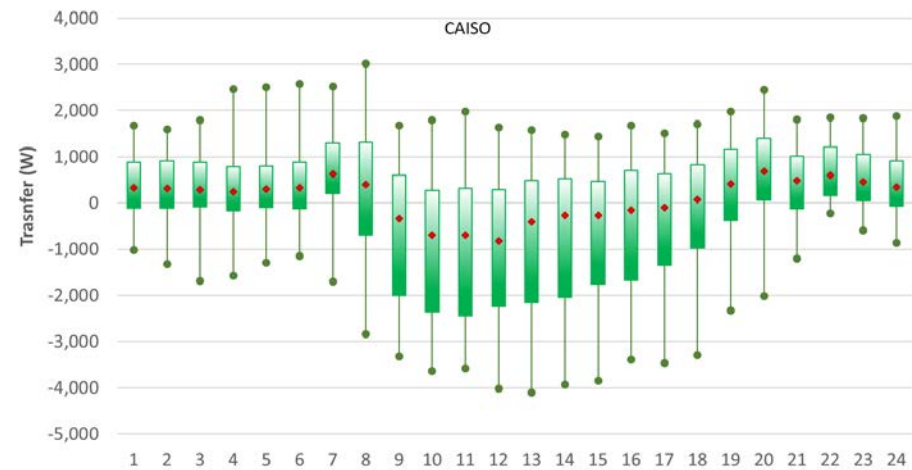
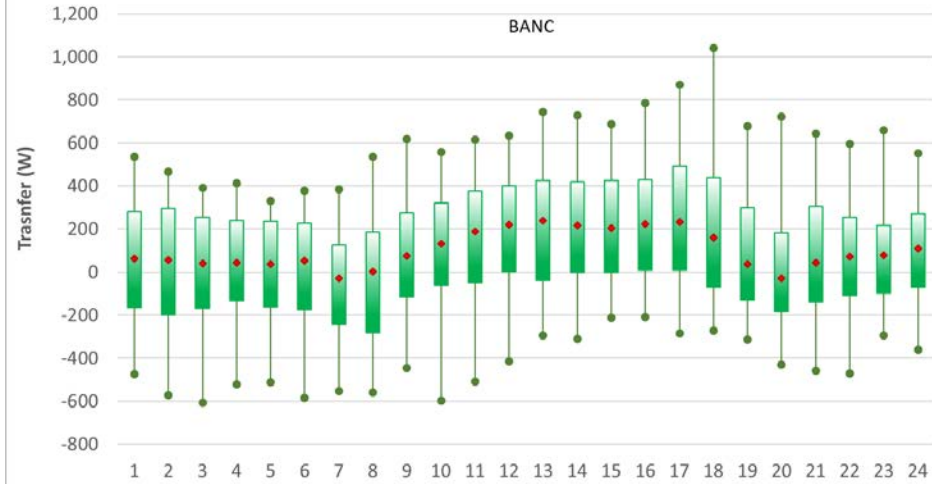
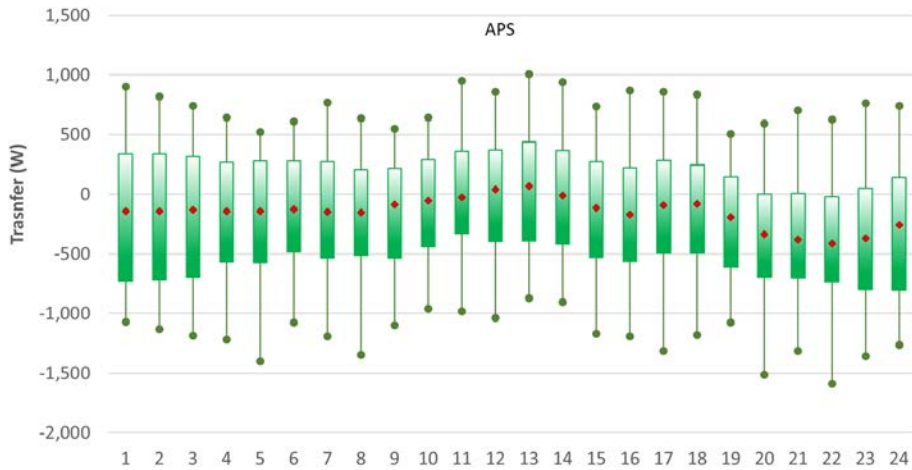






# Energy imbalance market helps avoid curtailment




# Robust energy transfers in 2019, 3<sup>rd</sup> Qtr.

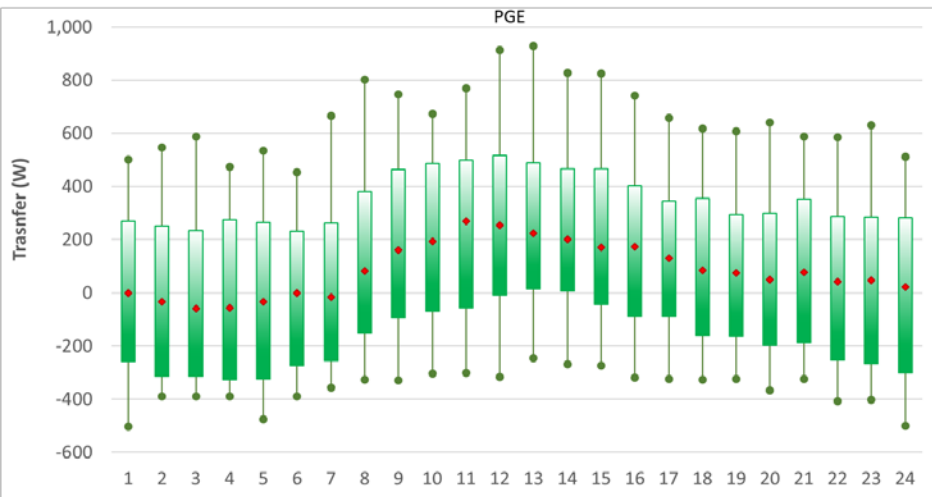
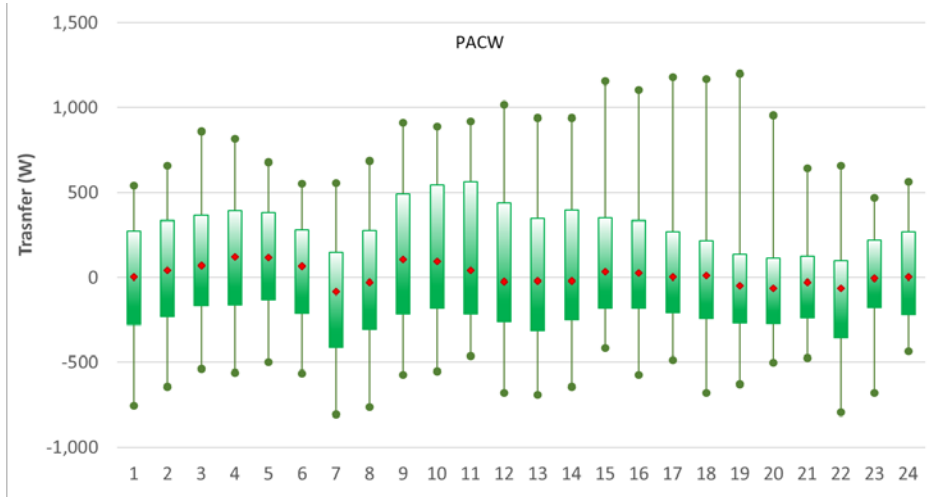
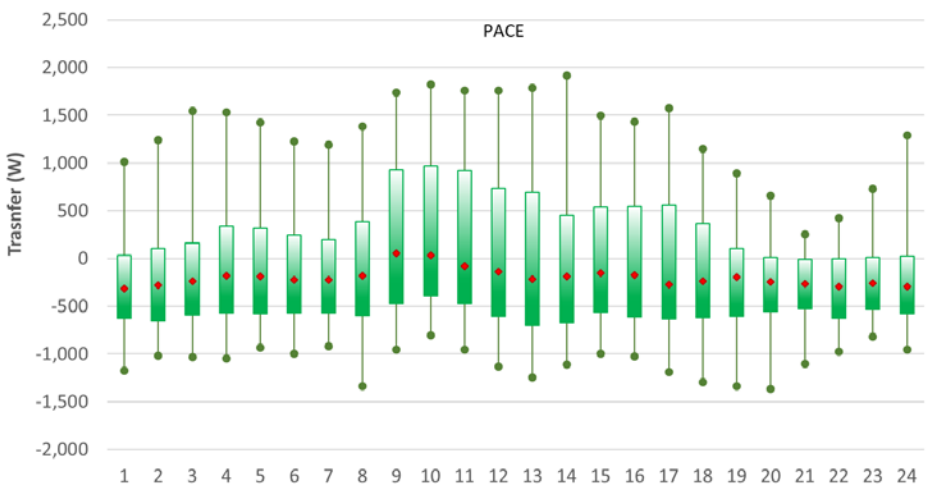
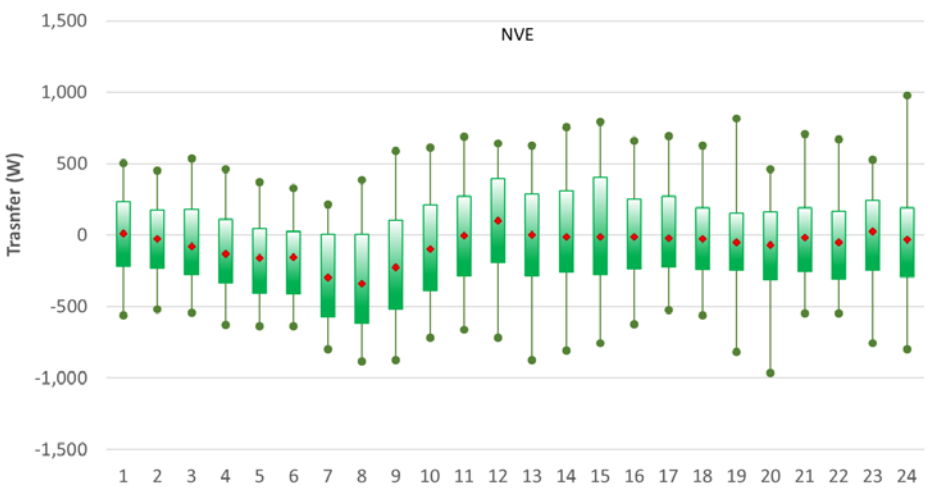



 10<sup>th</sup> to 90<sup>th</sup> percentile


 Tails are max and min


 Simple averages

# Robust energy transfers in 2019, 3<sup>rd</sup> Qtr.

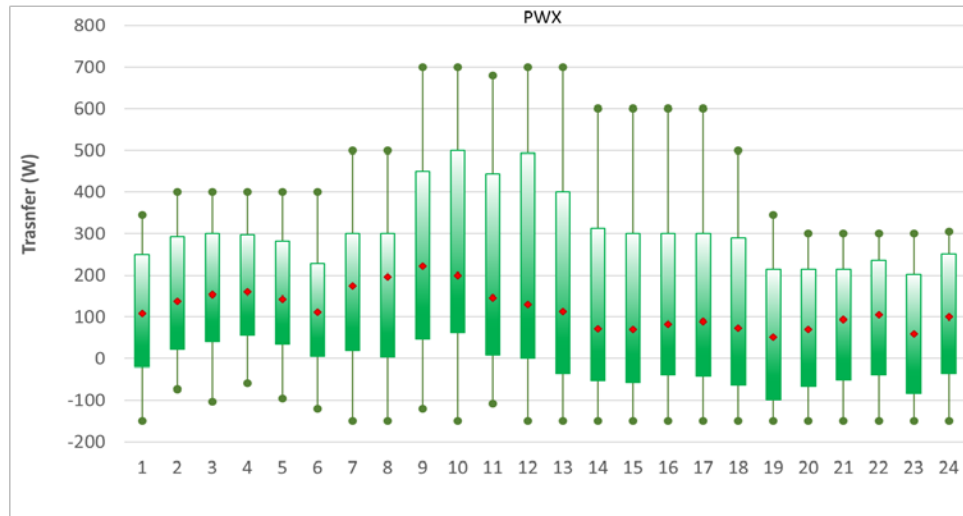
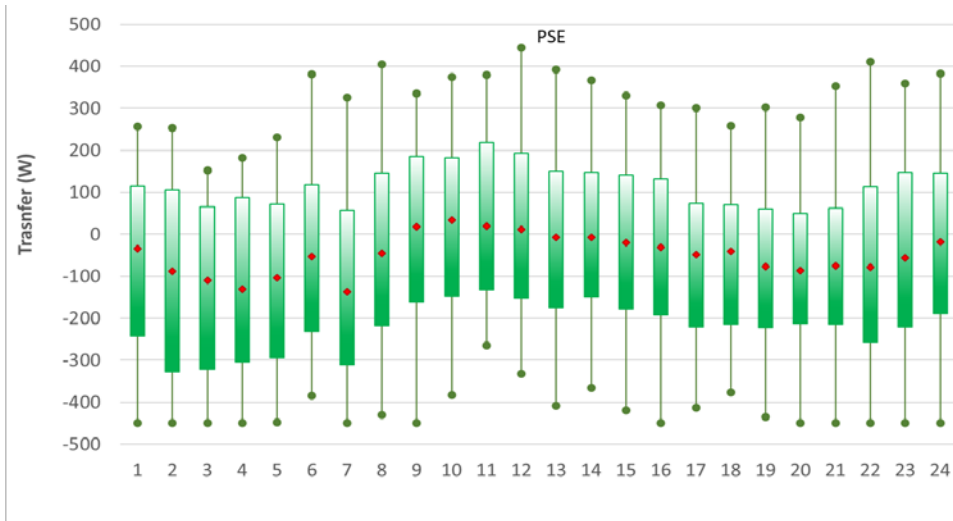



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