



Western energy imbalance market and benefits report

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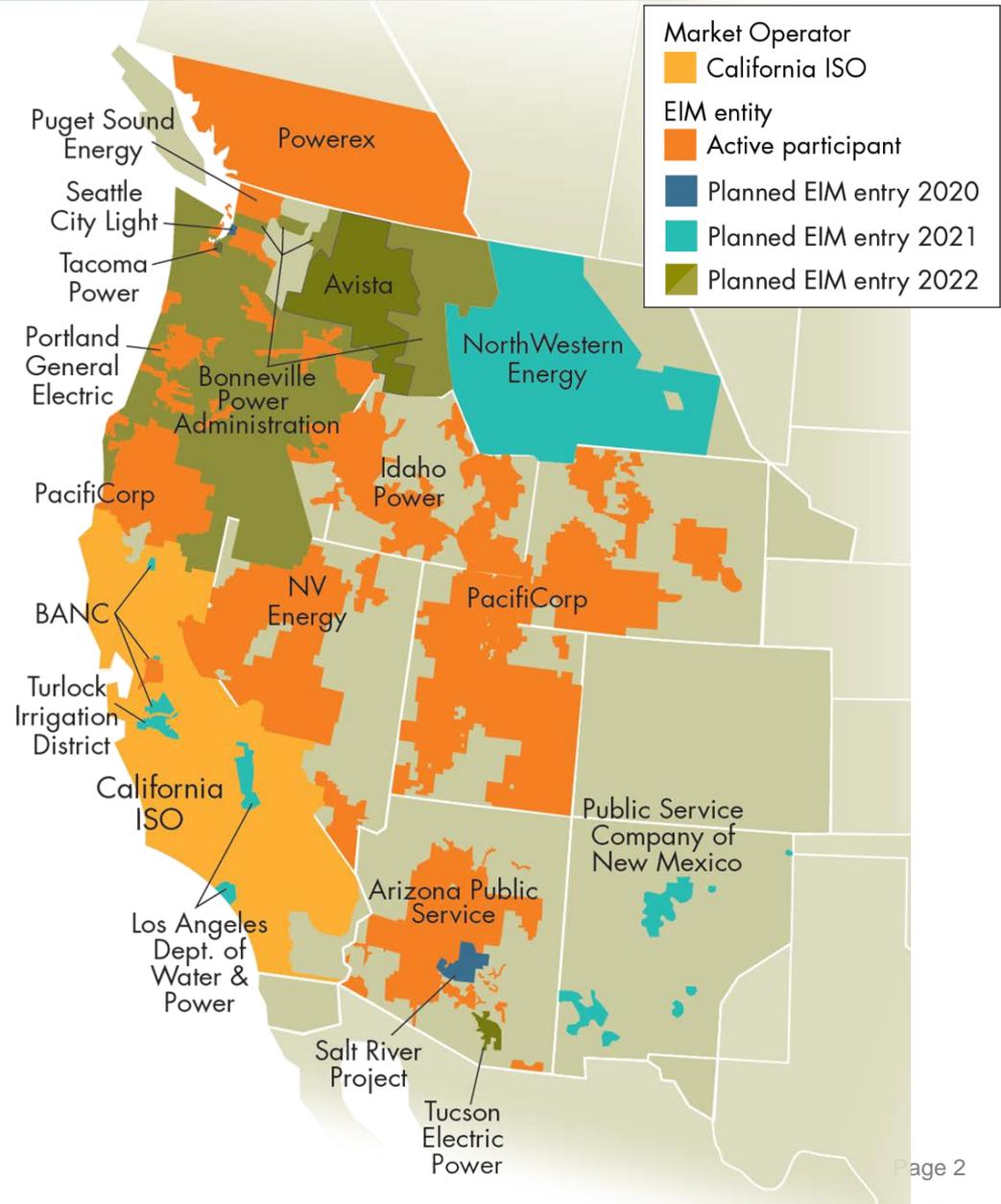
Board of Governors Meeting

General Session

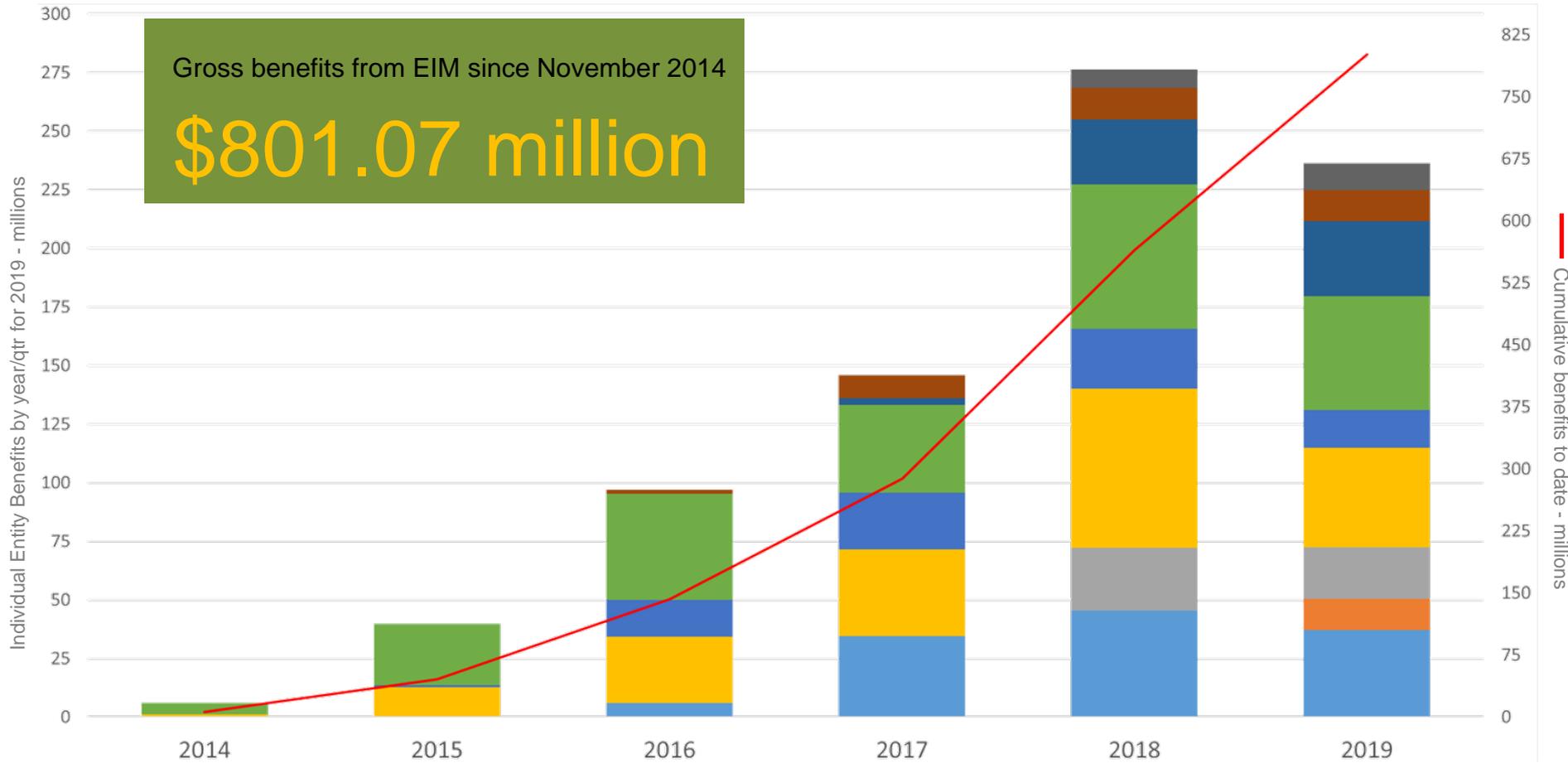
November 13, 2019

EIM Update

- Bonneville Power Administrator 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 3rd Qtr



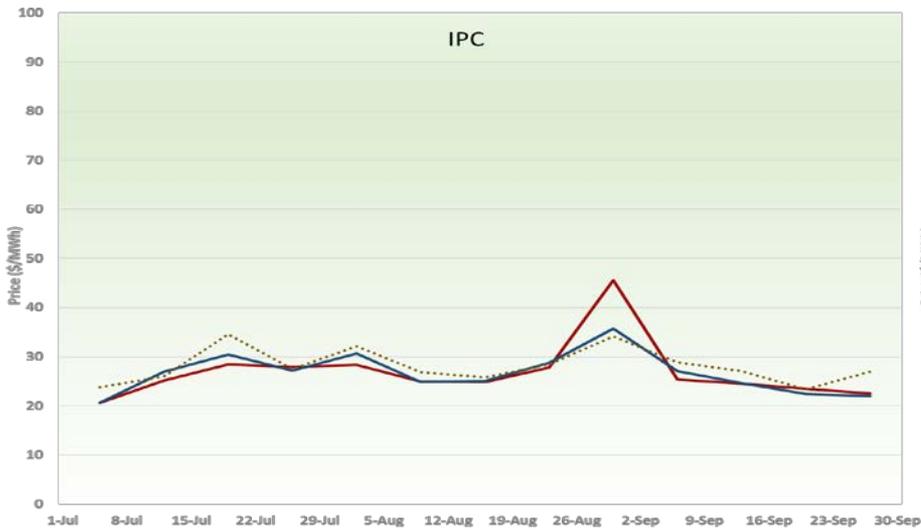
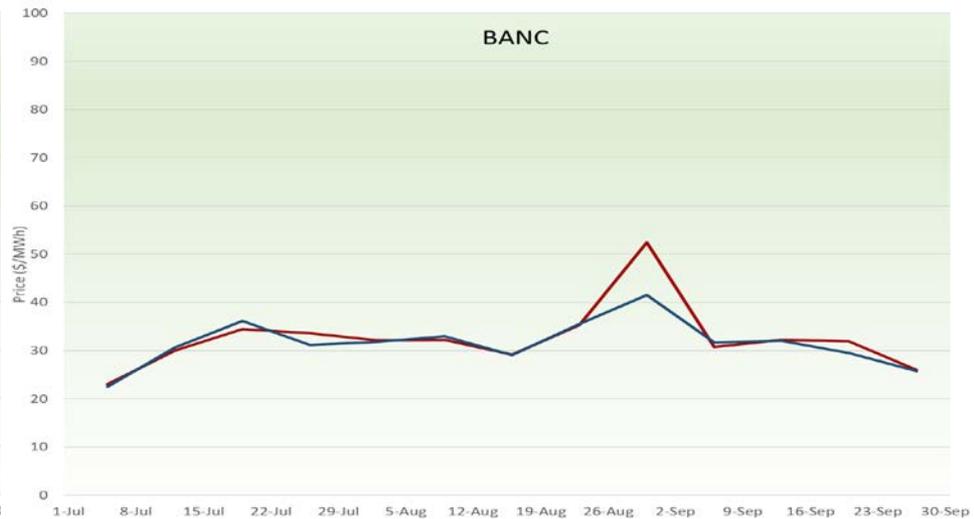
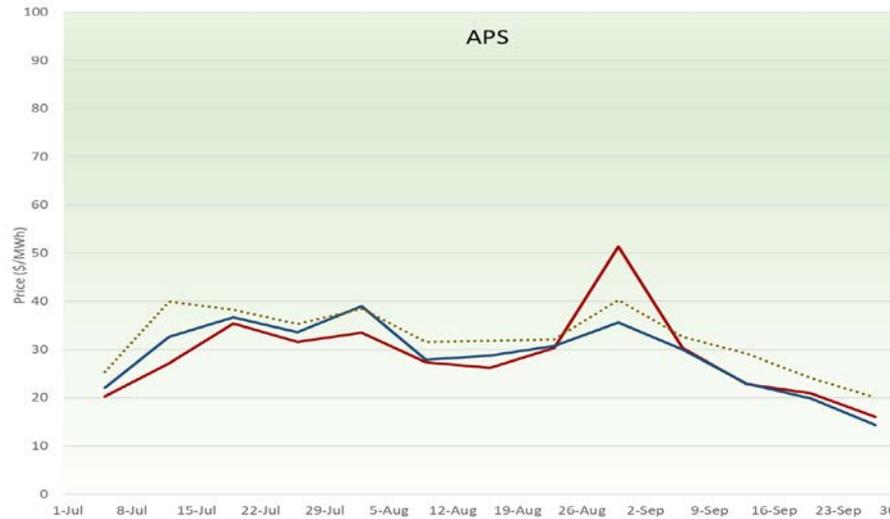
Individual Entity Benefits for 3rd Quarter - millions



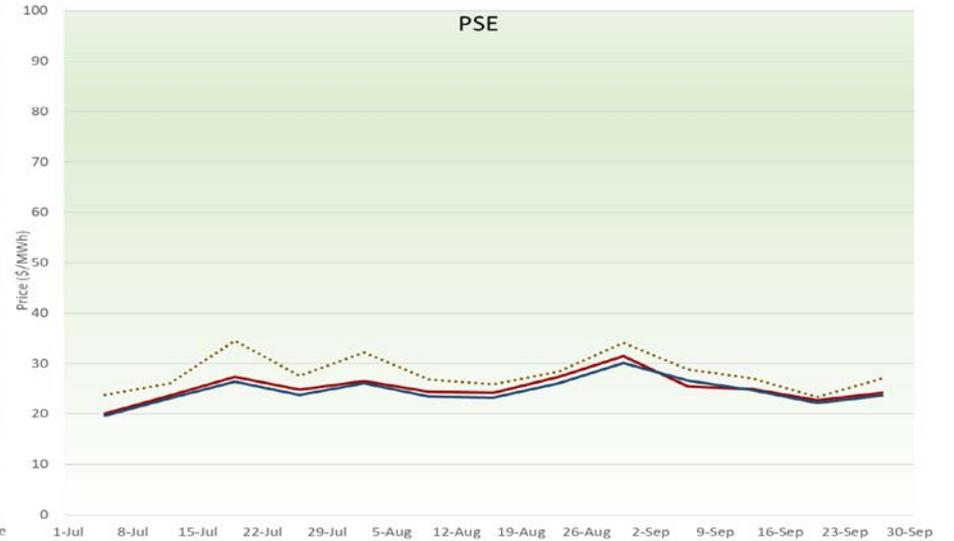
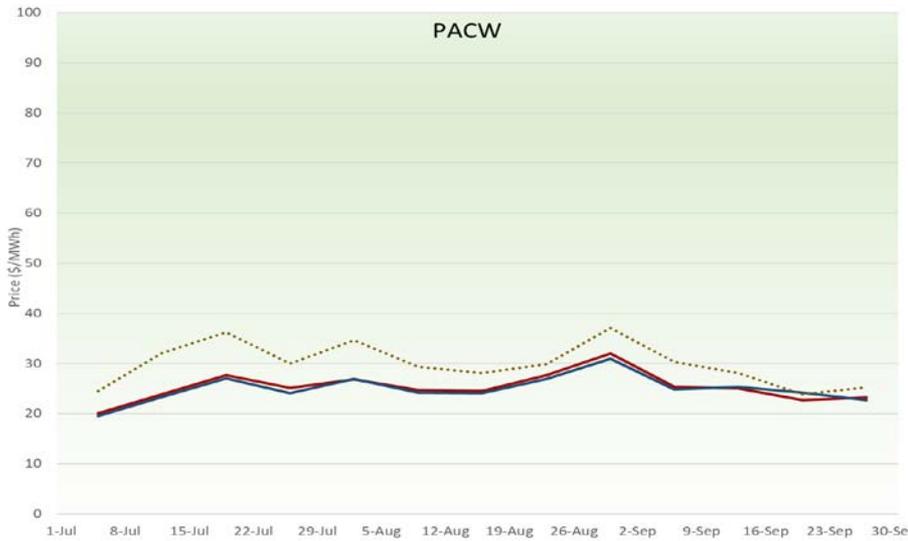
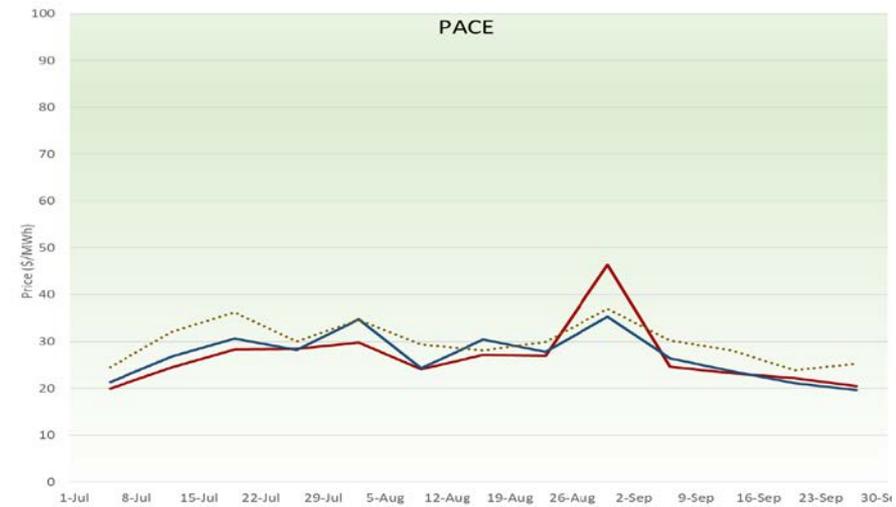
Flexible ramping procurement diversity savings for 2019, 3rd Qtr.

	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

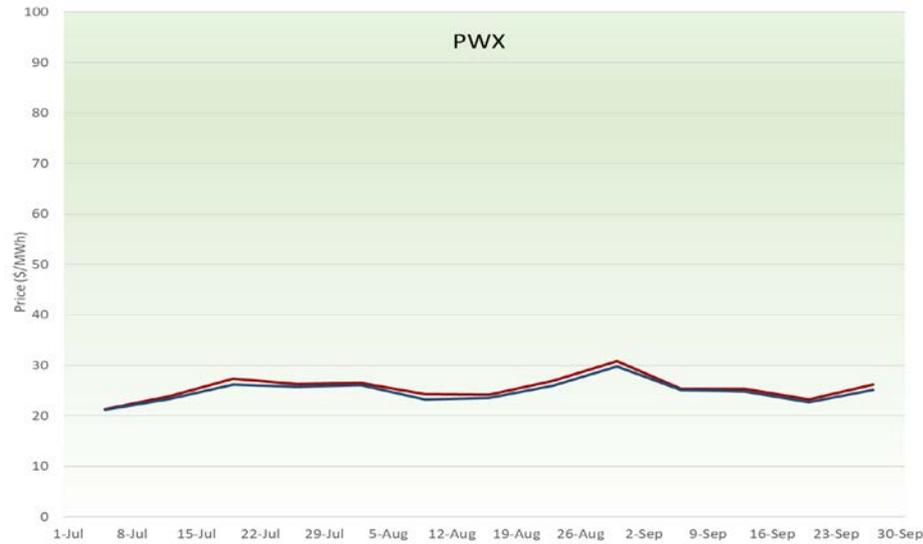
Weekly average prices in EIM areas



Weekly average prices in EIM areas

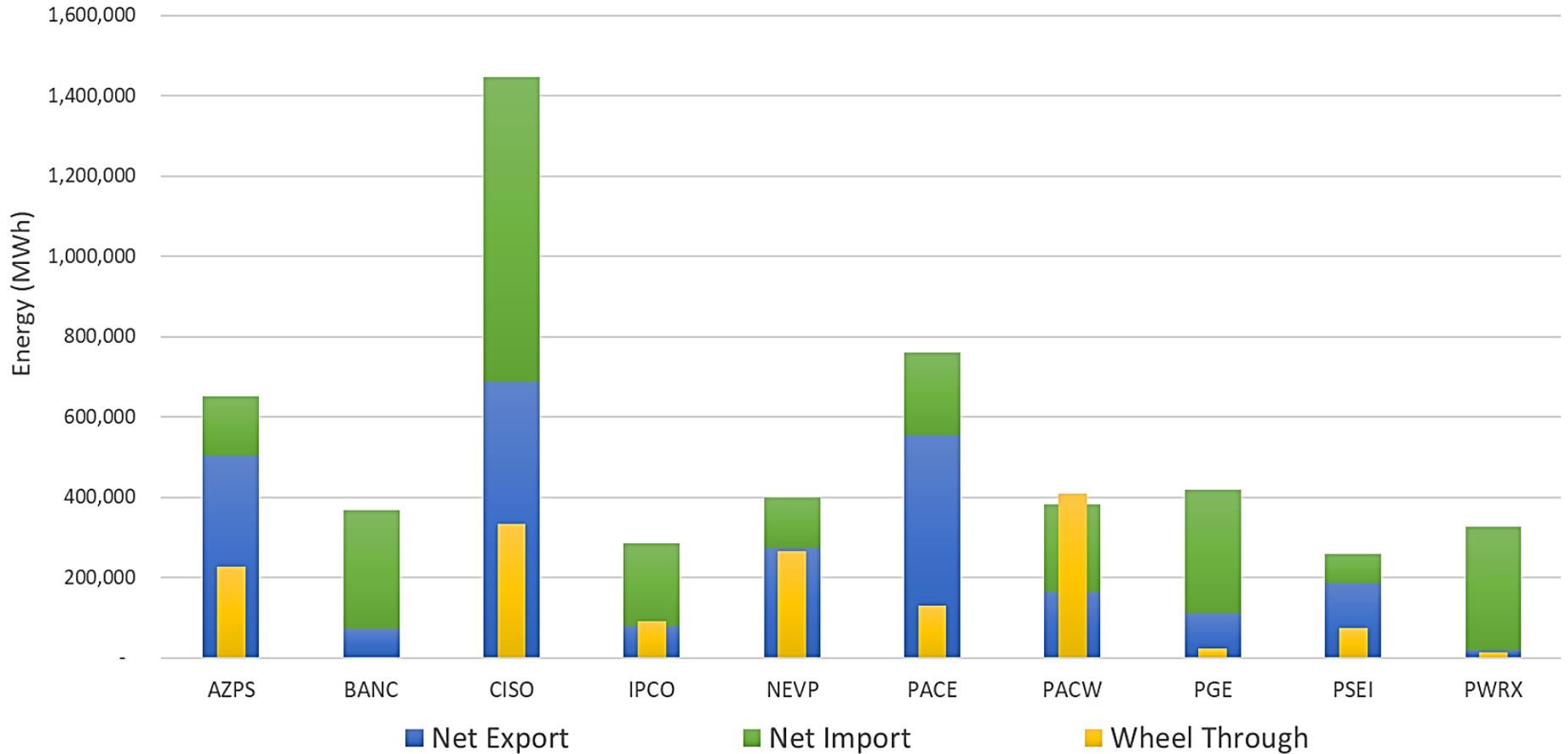


Weekly average prices in EIM areas

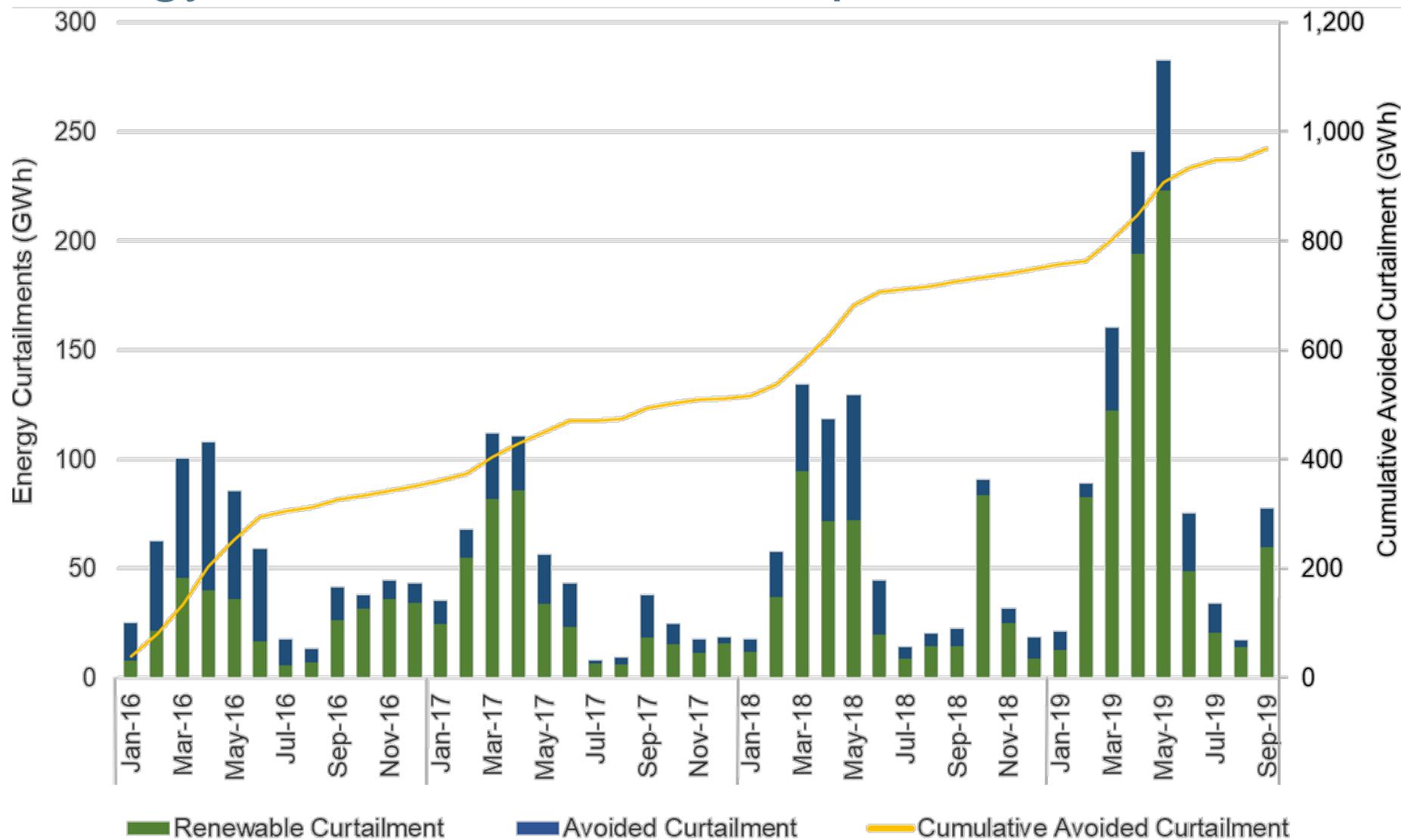


..... Estimated Proxy — RTD ELAP — FMM ELAP

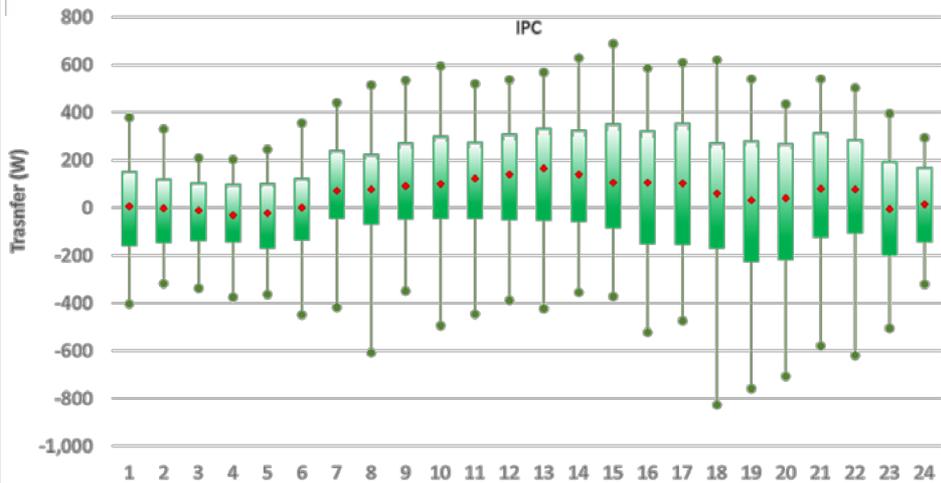
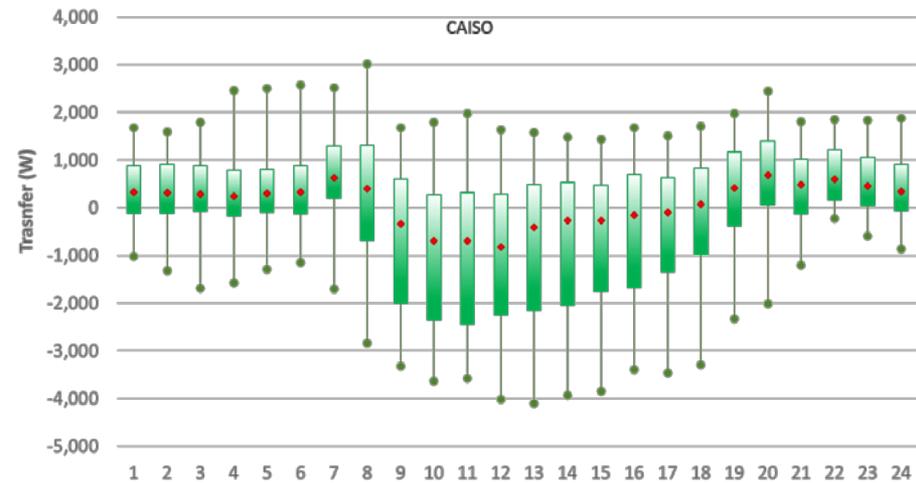
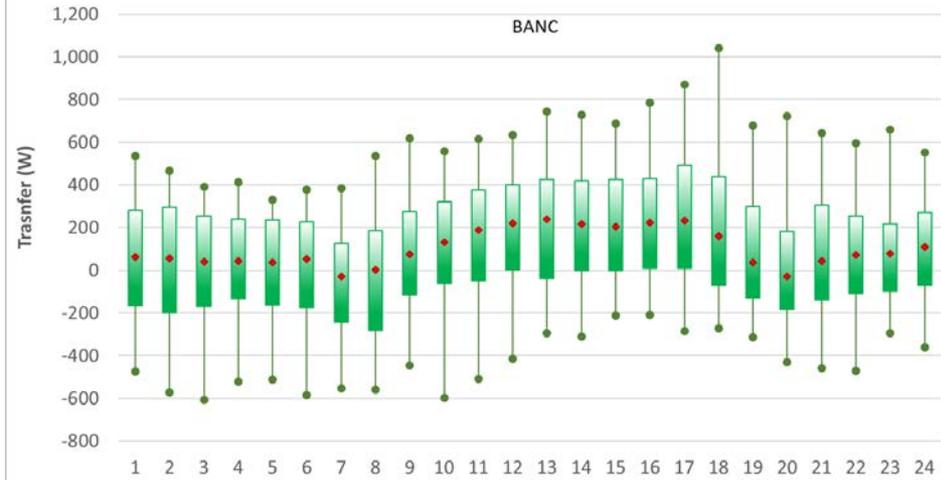
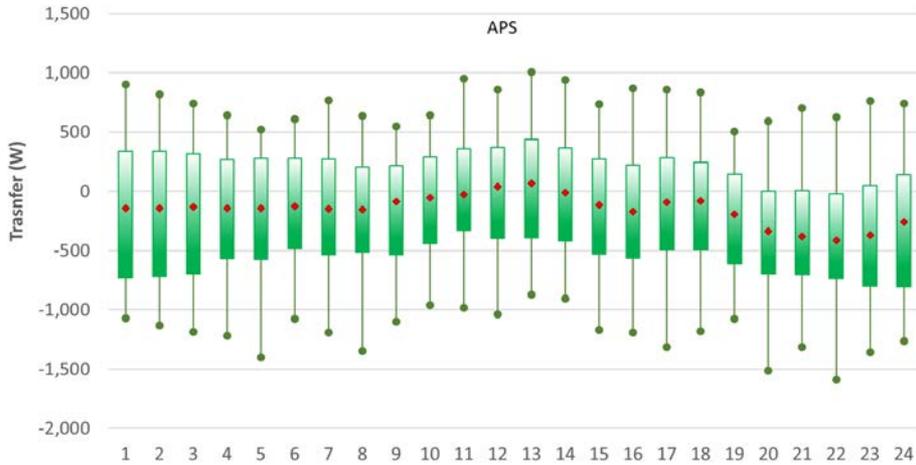
Estimated wheel through transfers in 2019, 3rd Qtr.



Energy imbalance market helps avoid curtailment

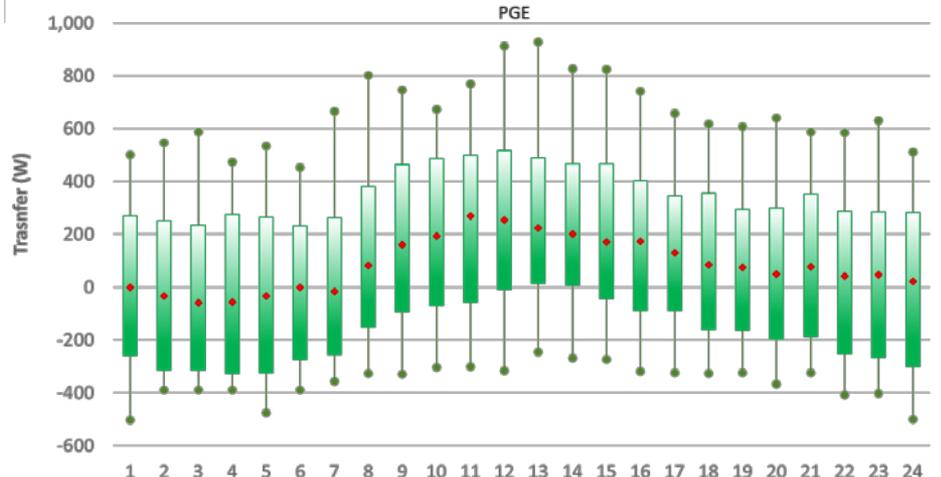
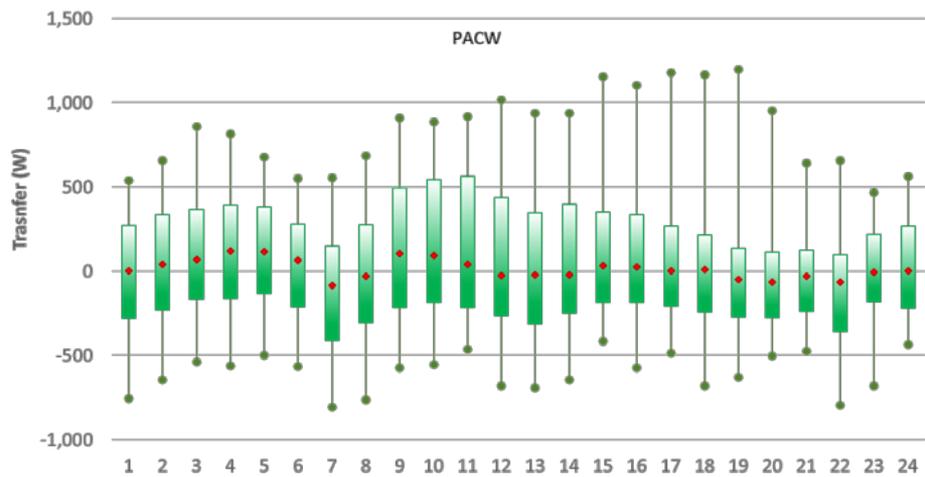
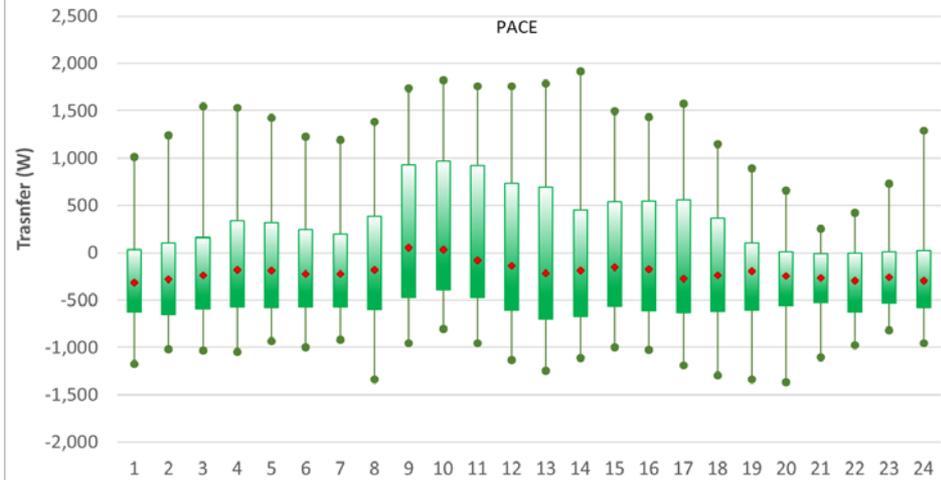
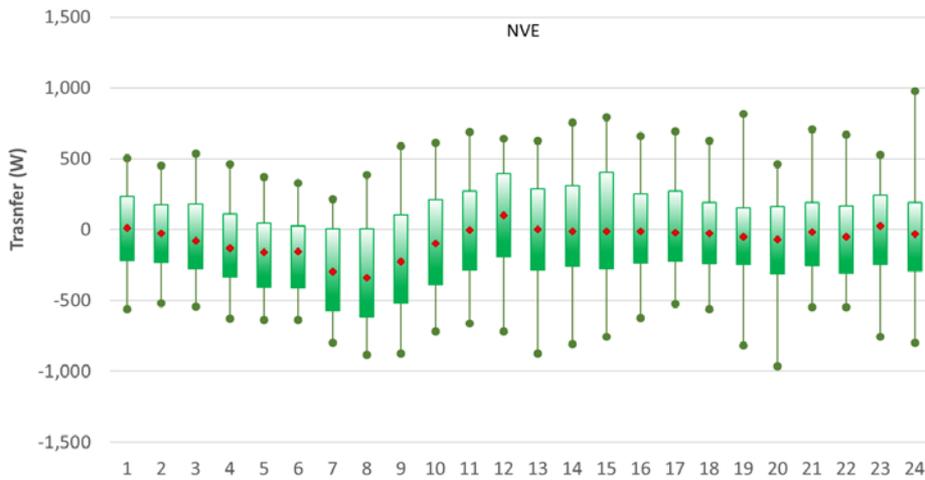


Robust energy transfers in 2019, 3rd Qtr.



10th to 90th percentile
 Tails are max and min
 Simple averages

Robust energy transfers in 2019, 3rd Qtr.

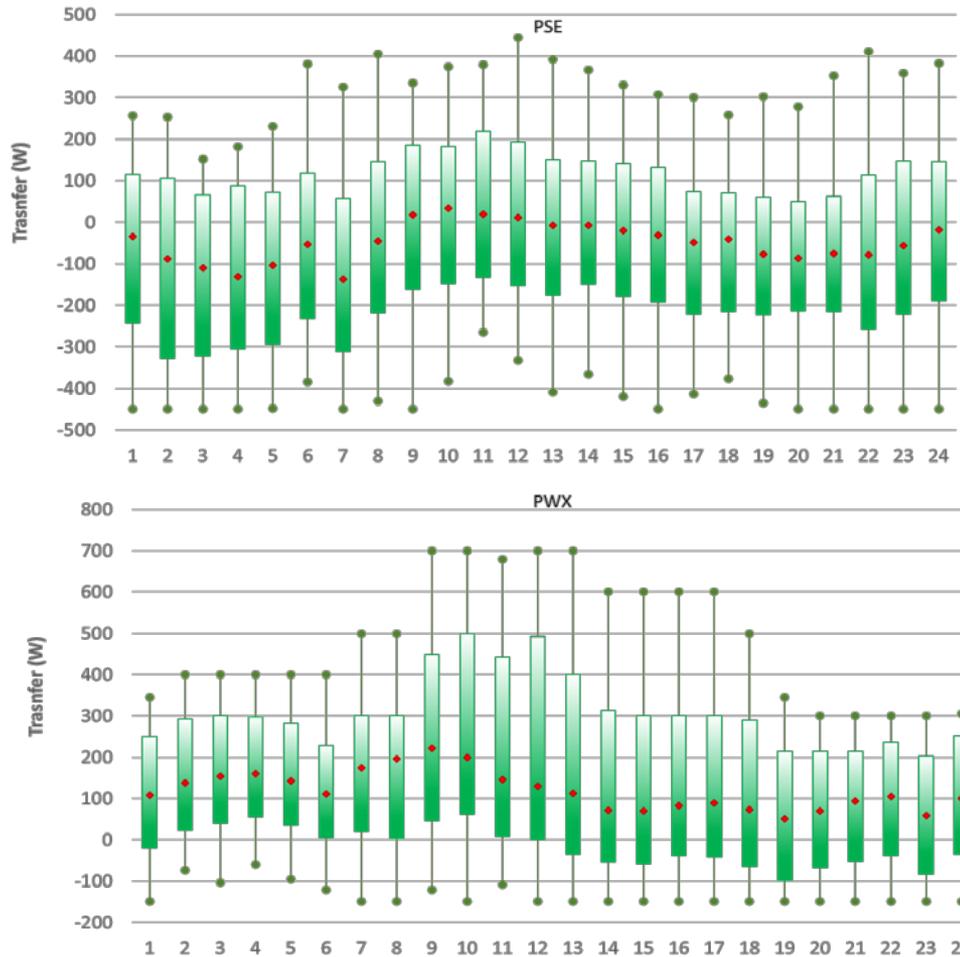


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