

# WESTERN ENERGY IMBALANCE MARKET

## Briefing on western energy imbalance market and benefits

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# Gross economic benefits since start of EIM = \$288.44M

BAA	2014	2015	2016	1st Qtr 2017	2nd Qtr 2017	3rd Qtr 2017	4th Qtr 2017	2017	Total
APS			5.98	5.23	8.25	11.08	10.00	34.56	40.54
CAISO	1.23	12.66	28.34	9.50	15.31	7.63	4.52	36.96	79.19
NVE		0.84	15.57	3.50	5.70	8.55	6.45	24.20	40.61
PAC	4.73	26.23	45.47	11.47	8.80	10.31	6.83	37.41	113.84
PGE							2.83	2.83	2.83
PSE			1.56	1.40	2.65	2.98	2.83	9.86	11.42
<b>Total</b>	<b>5.96</b>	<b>39.73</b>	<b>96.92</b>	<b>31.10</b>	<b>40.71</b>	<b>40.55</b>	<b>33.46</b>	<b>144.96</b>	<b>\$ 288.44</b>

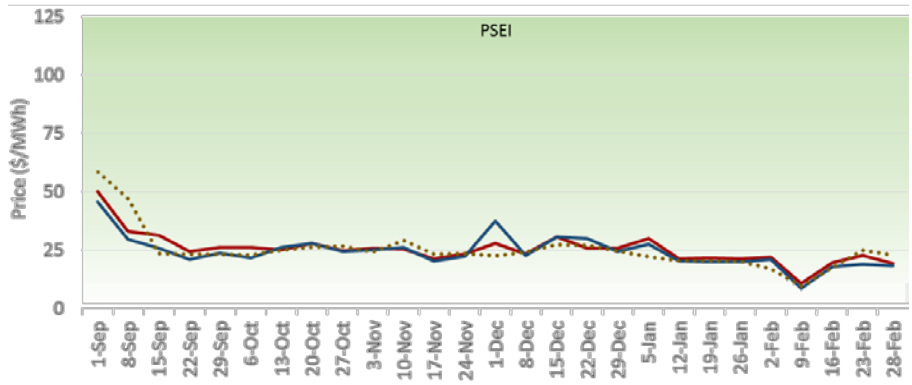
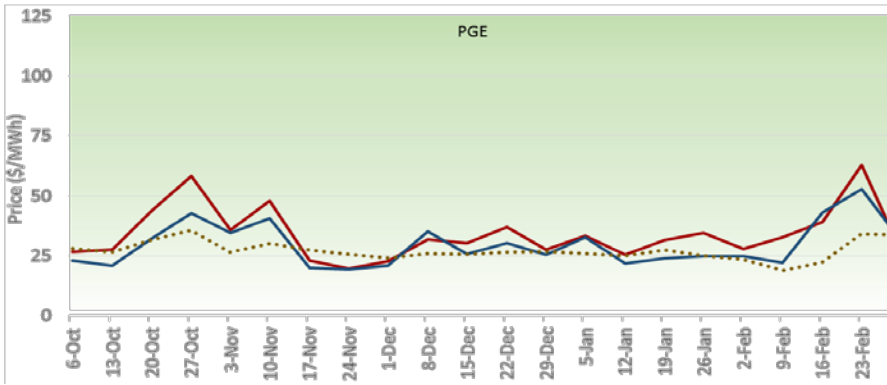
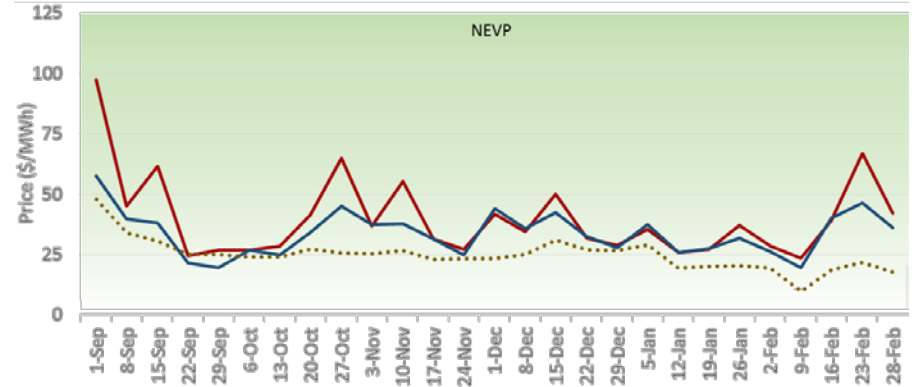
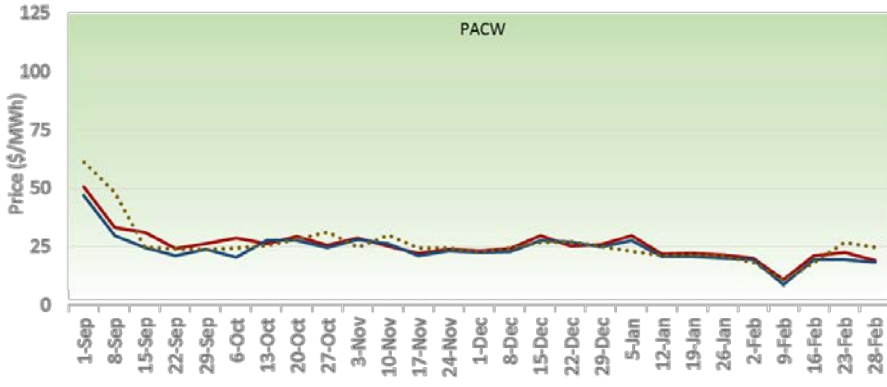
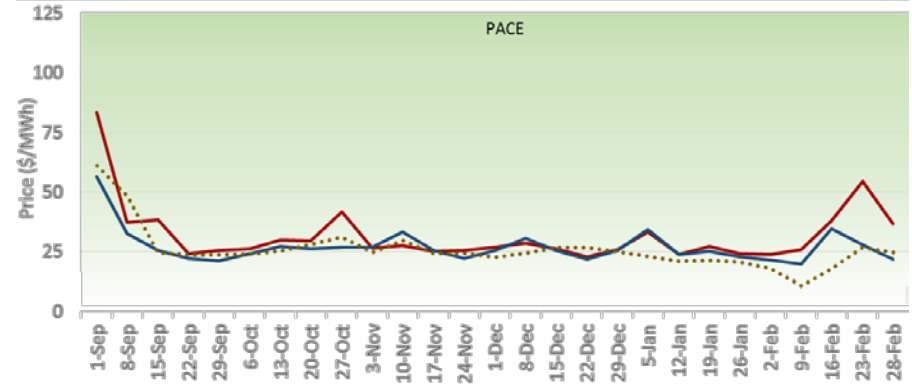
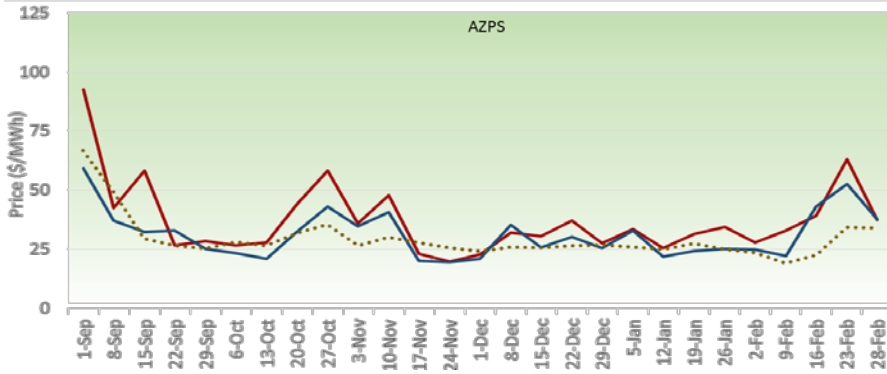
Region	October	November	December	Total
APS	\$3.72	\$3.60	\$2.68	\$10.00
ISO	\$2.35	\$1.56	\$0.61	\$4.52
NV Energy	\$2.63	\$2.96	\$0.86	\$6.45
PacifiCorp	\$1.71	\$2.43	\$2.69	\$6.83
PGE	\$0.99	\$0.85	\$0.99	\$2.83
PSE	\$0.99	\$0.95	\$0.89	\$2.83
<b>Total</b>	<b>\$12.39</b>	<b>\$12.35</b>	<b>\$8.72</b>	<b>\$33.46</b>

# Flexible ramping procurement diversity savings for 4<sup>th</sup> quarter, 2017

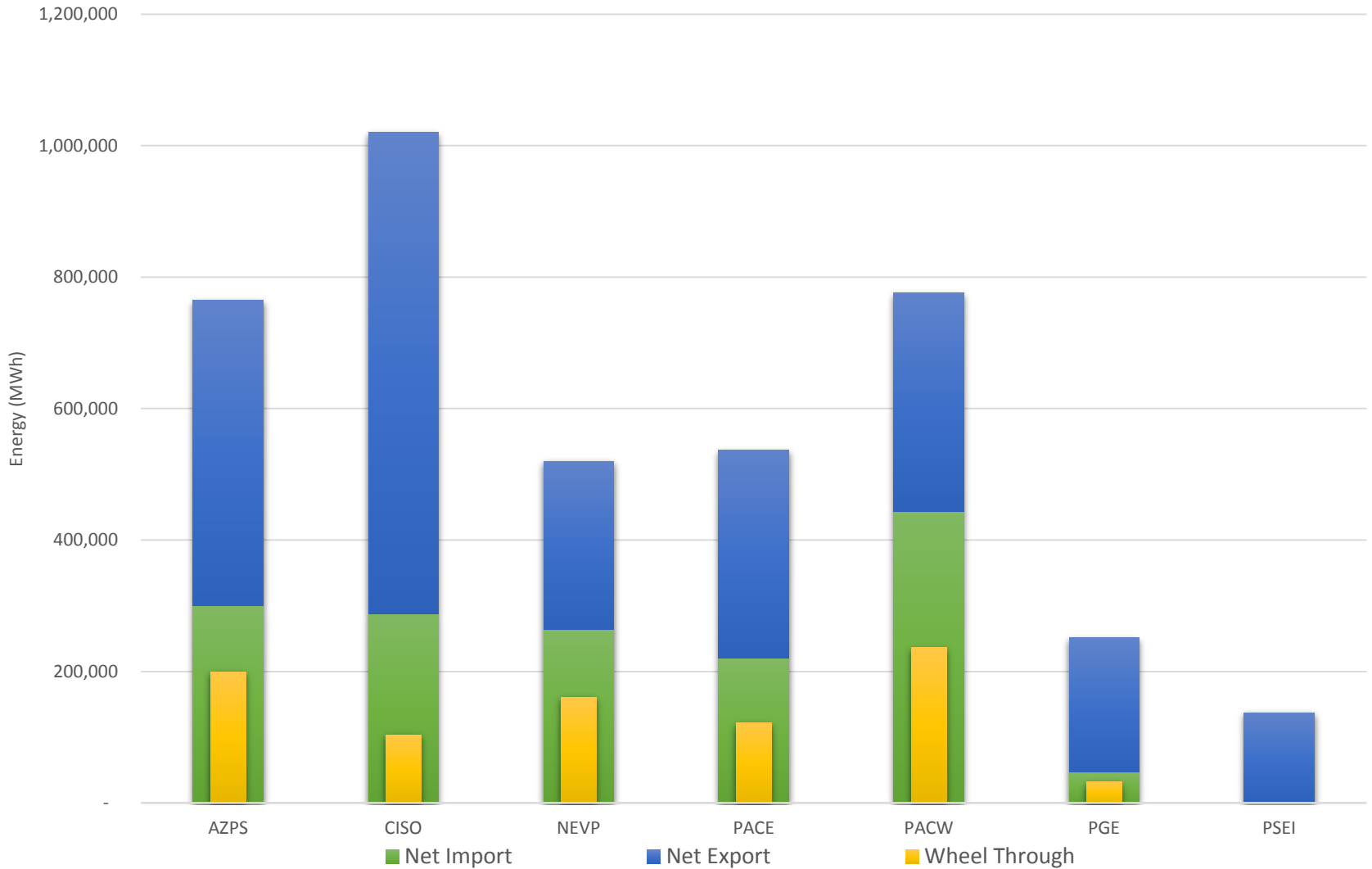
	October		November		December	
Direction	Up	Down	Up	Down	Up	Down
Average MW saving	418	543	426	504	432	512
Sum of BAA requirements	1,247	1,323	1,169	1,232	1,151	1,196
<b>Diversity Benefit</b>	33%	41%	36%	41%	38%	43%

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 wheel through transfers in Q4, 2017



# Robust energy transfers observed in 4<sup>th</sup> quarter

