

# WESTERN ENERGY IMBALANCE MARKET

## Briefing on Western Energy Imbalance Market and Benefits

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EIM Governing Body Meeting

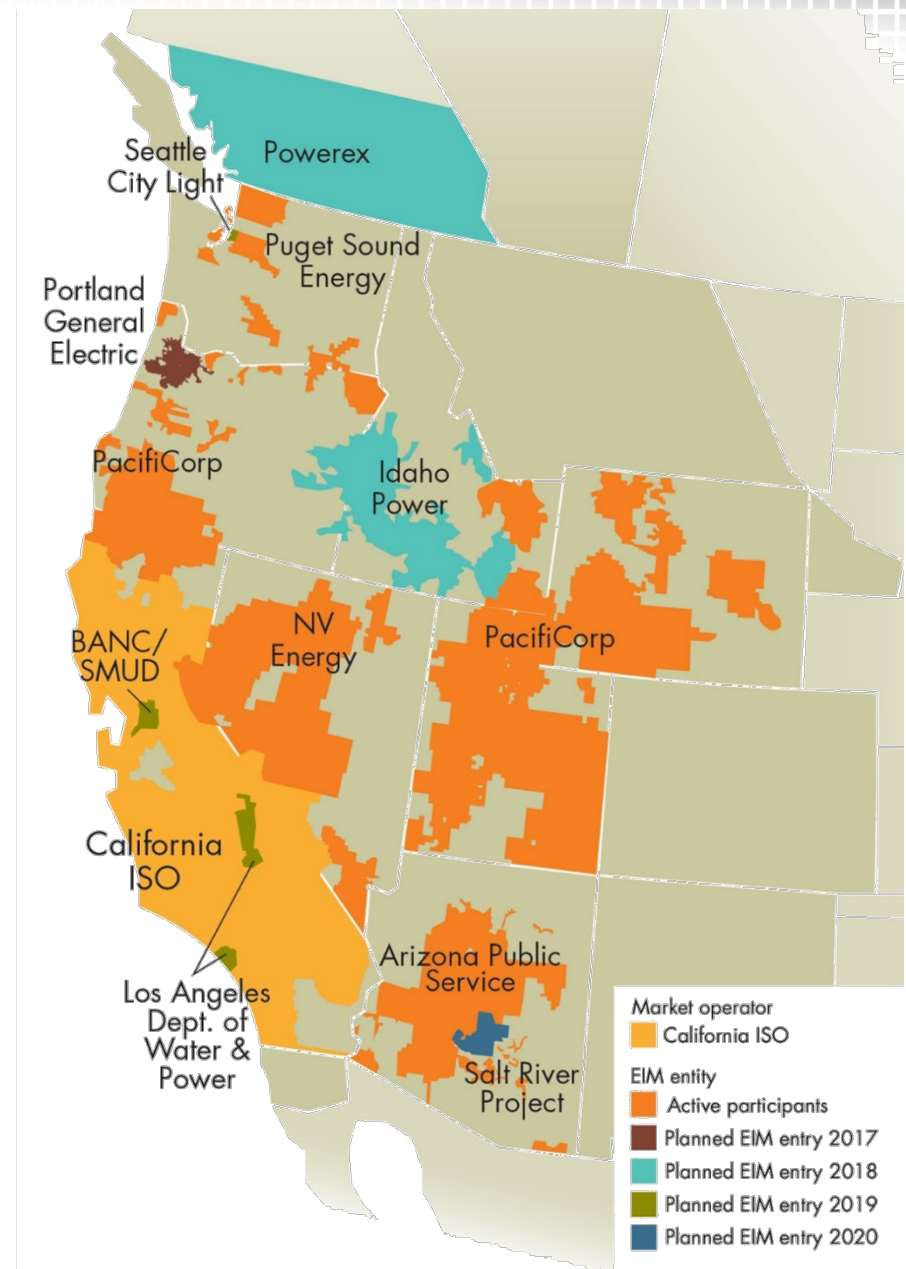
General Session

September 6, 2017



# Implementation update

- Portland General's readiness criteria has been filed with FERC. PGE is ready for Go-Live on October 1<sup>st</sup>.
- Idaho and Powerex begin market simulation in December.



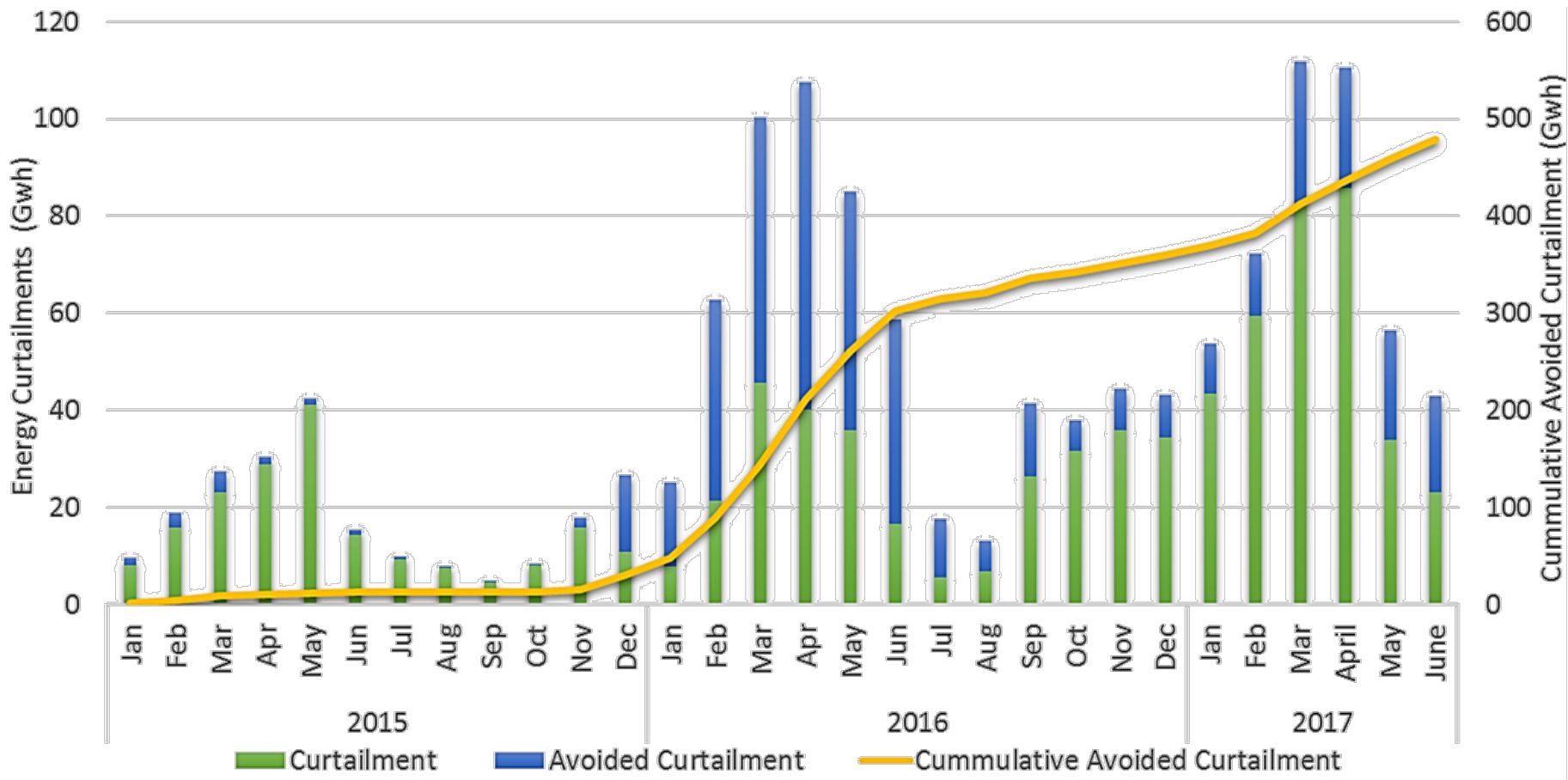
# Gross economic benefits since start of EIM = \$213.24M

BAA	2014	2015	1st Qtr 2016	2nd Qtr 2016	3rd Qtr 2016	4th Qtr 2016	1st Qtr 2017	2nd Qtr 2017	Total
APS						5.98	5.23	8.13	19.34
CAISO	1.23	12.66	6.35	7.89	5.44	8.67	9.5	15.49	67.23
NVE		0.84	1.7	5.2	5.6	3.07	3.5	4.62	24.53
PAC	4.73	26.23	10.85	10.51	15.12	8.99	11.47	8.81	96.71
PSE						1.56	1.4	2.47	5.43
<b>Total</b>	<b>5.96</b>	<b>39.73</b>	<b>18.9</b>	<b>23.6</b>	<b>26.16</b>	<b>28.27</b>	<b>31.1</b>	<b>39.52</b>	<b>213.24</b>

BAA	April	May	June	Q2 – 2017 Total
APS	2.87	2.54	2.72	8.13
CAISO	3.42	5.23	6.84	15.49
NVE	2.37	2.25	*	4.62
PAC	3.94	2.97	1.90	8.81
PSE	1.13	0.72	0.62	2.47
<b>Total</b>	<b>13.73</b>	<b>13.71</b>	<b>12.08</b>	<b>39.52</b>

\*Due to special circumstances, the benefits for NV Energy for June are not included at this time, pending further data verification.

# Energy imbalance market helps avoid curtailment



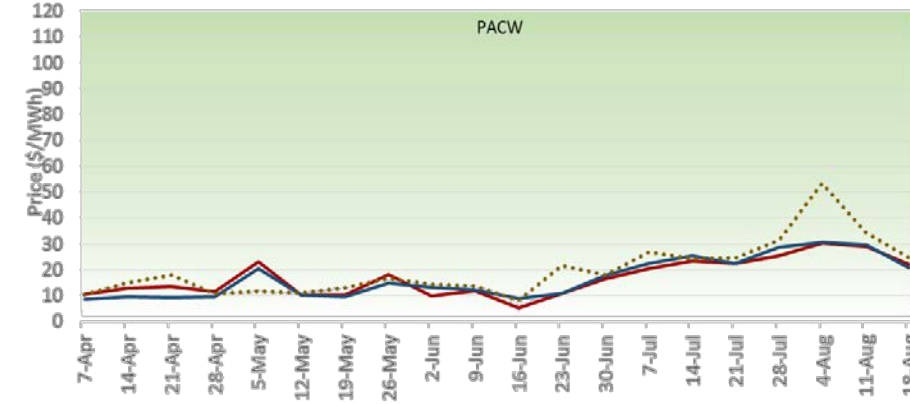
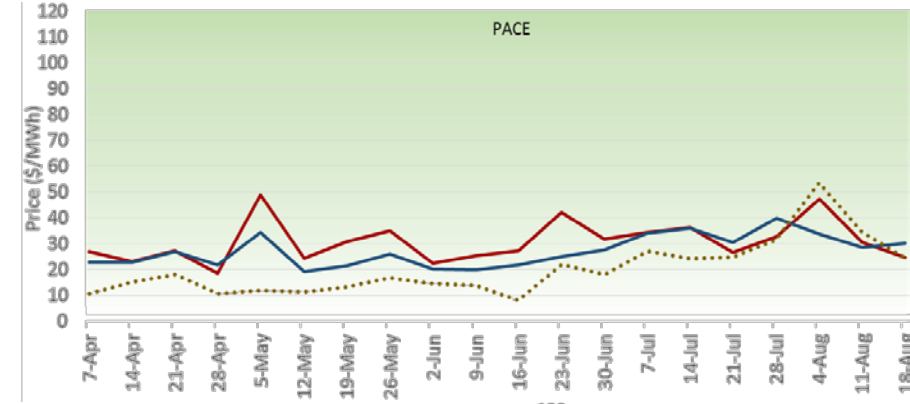
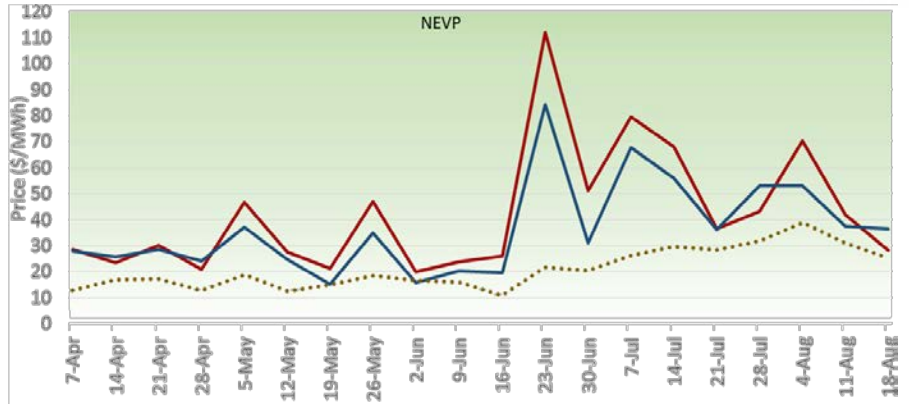
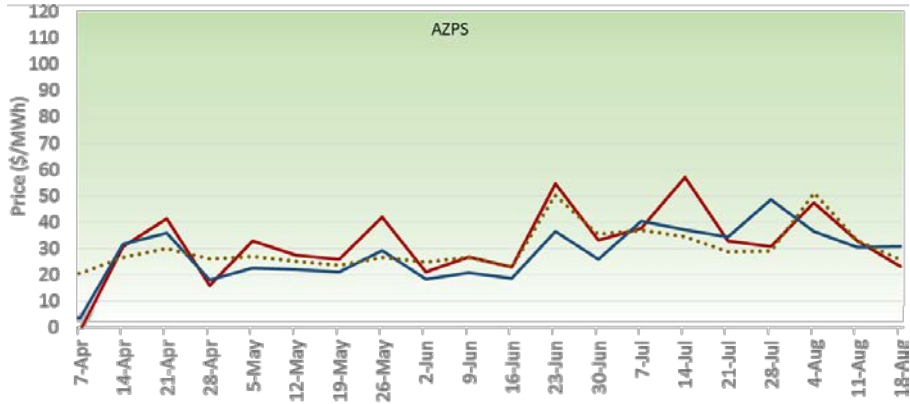
Year-to-date estimated metric tons of CO2 displaced = 52,235

# Flexible ramping procurement diversity savings for 2<sup>nd</sup> quarter, 2017

	April		May		June	
Direction	Up	Down	Up	Down	Up	Down
Average MW saving	426	509	469	521	482	504
Sum of BAA requirements	1,210	1,303	1,242	1,319	1,245	1,275
<b>Diversity Benefit</b>	<b>35%</b>	<b>39%</b>	<b>38%</b>	<b>39%</b>	<b>39%</b>	<b>39%</b>

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



- FMM ELAP
- RTD ELAP
- ⋯ Estimated Proxy



# Robust energy transfers observed in 3<sup>rd</sup> quarter

