



California ISO

Cross-border Energy and Capacity Trading

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August 20, 2018

What is EIM

The Energy Imbalance Market (EIM) is a Real time wholesale energy trading market that enables participants anywhere in the West to buy and sell energy when needed.

NOTE: all the information presented is public information and could be found at:

www.caiso.com
www.westerneim.com

Where is the CAISO EIM today

Eight Western states:

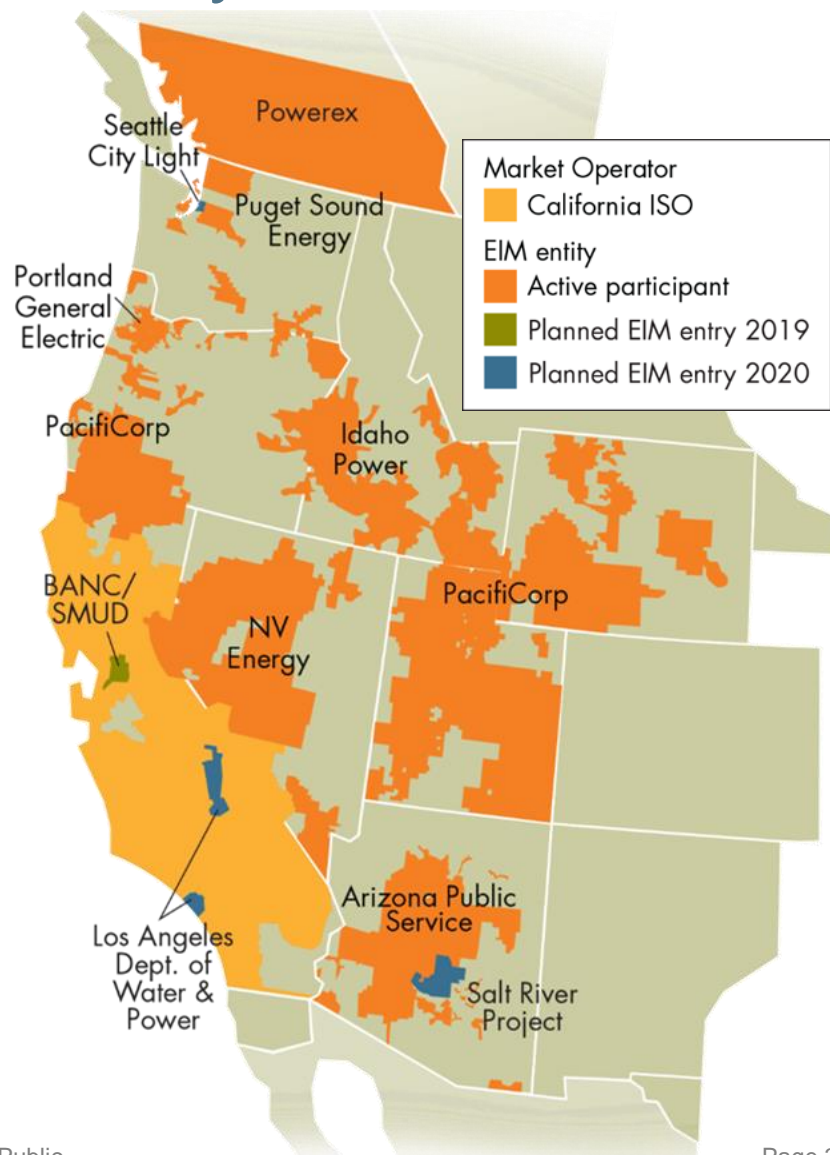
- California
- Oregon
- Washington
- Arizona
- Idaho
- Nevada
- Wyoming
- Utah

Canada

- British Columbia

Mexico (under consideration)

- Baja California



EIM – in general

- EIM's advanced market systems automatically find low-cost energy to serve real-time consumer demand across a wide geographic area.
- EIM has enhanced grid reliability and generated cost savings for its participants.
- EIM improves the integration of renewable energy, which leads to a cleaner, greener grid.

EIM – How does it work

- The EIM allows participants to buy and sell power close to the time electricity is consumed, and gives system operators real-time visibility across neighboring grids
- Improves the balancing of supply and demand at a lower cost
- Balances fluctuations in supply and demand by finding lower-cost resources across the region
- Manages congestion on transmission lines
- Makes excess renewable energy available to participating utilities at low cost

EIM – Benefits

- Reduced costs for market participants
- Reduced carbon emissions and more efficient use and integration of renewable energy
- Enhanced reliability

\$401.73 million in gross benefits since inception

(millions \$)

EIM PARTICIPANTS	2014	2015	2016	2017	2018		TOTAL
					Q1	Q2	
Arizona Public Service Entered 10/2016			\$5.98	\$34.56	\$5.90	\$8.59	\$55.03
California ISO Entered 11/2014	\$1.24	\$12.66	\$28.34	\$36.96	\$14.85	\$27.93	\$121.98
Idaho Power Company Entered 04/2018						\$7.75	\$7.75
NV Energy Entered 12/2015		\$0.84	\$15.57	\$24.20	\$4.17	\$5.34	\$50.12
PacifiCorp Entered 11/2014	\$4.73	\$26.23	\$45.47	\$37.41	\$10.51	\$11.67	\$136.02
Portland General Electric Entered 10/2017				\$2.83	\$3.64	\$5.34	\$11.81
Powerex Entered 04/2018						\$2.27	\$2.27
Puget Sound Energy Entered 10/2016			\$1.56	\$9.86	\$3.01	\$2.32	\$16.75
TOTAL	\$5.97	\$39.73	\$96.92	\$145.82	\$42.08	\$71.21	\$401.73

EIM Benefits in mTCO2*



YTD (January - June) million mTCO2	2015	2016	2017	2018
GHG Emission to serve ISO load	30.06	26.40	22.50	22.55

*Metric tons of carbon dioxide equivalent (MTCO2 Eq.)

