



MARIN COUNTY | NAPA COUNTY | UNINCORPORATED CONTRA COSTA COUNTY
BENICIA | CONCORD | DANVILLE | EL CERRITO | LAFAYETTE | MARTINEZ | MORAGA
OAKLEY | PINOLE | PITTSBURG | RICHMOND | SAN PABLO | SAN RAMON | WALNUT CREEK

MCE SPECIAL MEETING
Friday, September 28, 2018
9:00 A.M.

City of Richmond Memorial Auditorium
403 Civic Center Plaza, Richmond, CA

Agenda Page 1 of 2

New Board Member Meet and Greet *(8:30-9:00)*

Swearing in of New Board Member

1. Roll Call/Quorum *9:00*
2. Public Open Time (Discussion) *9:05*
3. Strategic Plan Update, Accomplishments and Goals (Discussion) *9:15*
4. FY 2017/18 Financial Statement Presentation (Discussion) *10:15*
5. Positioning MCE for the Future (Discussion) *10:30*

Break: *11:00-11:10*

6. Addressing External Challenges and Opportunities (Discussion) *11:10*
Emily Pappas, Niemela Pappas & Associates, Partner



Agenda material can be inspected at 1125 Tamalpais Avenue, San Rafael, CA 94901 on the Mission Avenue side of the building and at One Concord Center, 2300 Clayton Road, Concord, CA 94520 at the Clayton Road entrance. The meeting facilities are in accessible locations. If you are a person with a disability and require this document in an alternate format (example: Braille, Large Print, Audiotape, CD-ROM), you may request it by using the contact information below. If you require accommodation (example: ASL Interpreter, reader, note taker) to participate in any MCE program, service or activity, you may request an accommodation by calling (415) 464-6032 (voice) or 711 for the California Relay Service or by e-mail at djackson@mceCleanEnergy.org not less than **four work days** in advance of the event.



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Lunch: 12:00-1:15

7. Board Meeting Logistics (Discussion) 1:15

8. CCA Across the State: Challenges and Opportunities (Discussion) 1:30
Beth Vaughan, California Community Choice Association, Executive Director

9. Regionalization of the Electric Grid CAISO (Discussion) 2:10
Mark Rothleder, California Independent System Operator, Vice President, Market Quality & Renewable Integration

10. Board Member & Staff Matters (Discussion) 3:00

11. Adjourn



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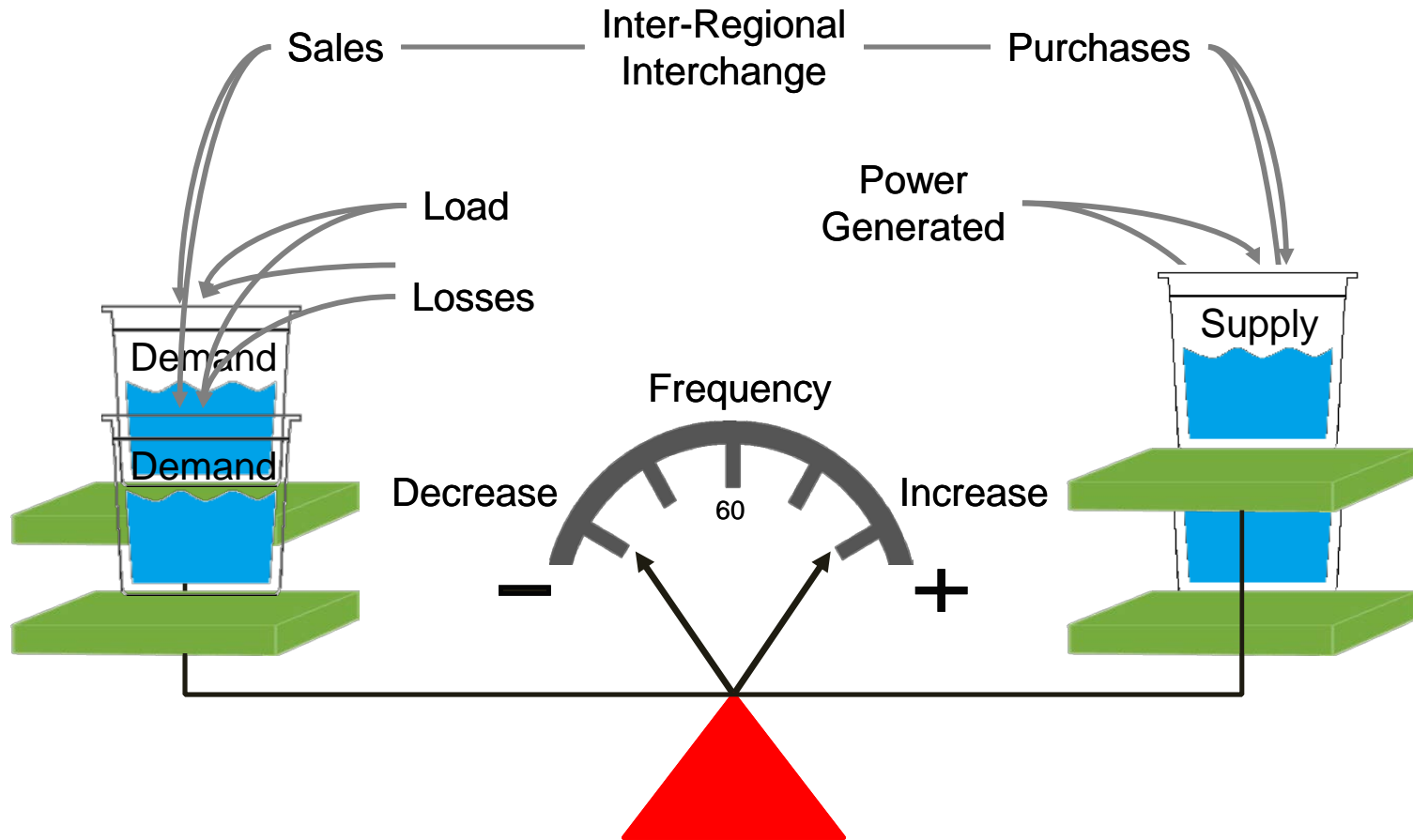


MCE Board Retreat

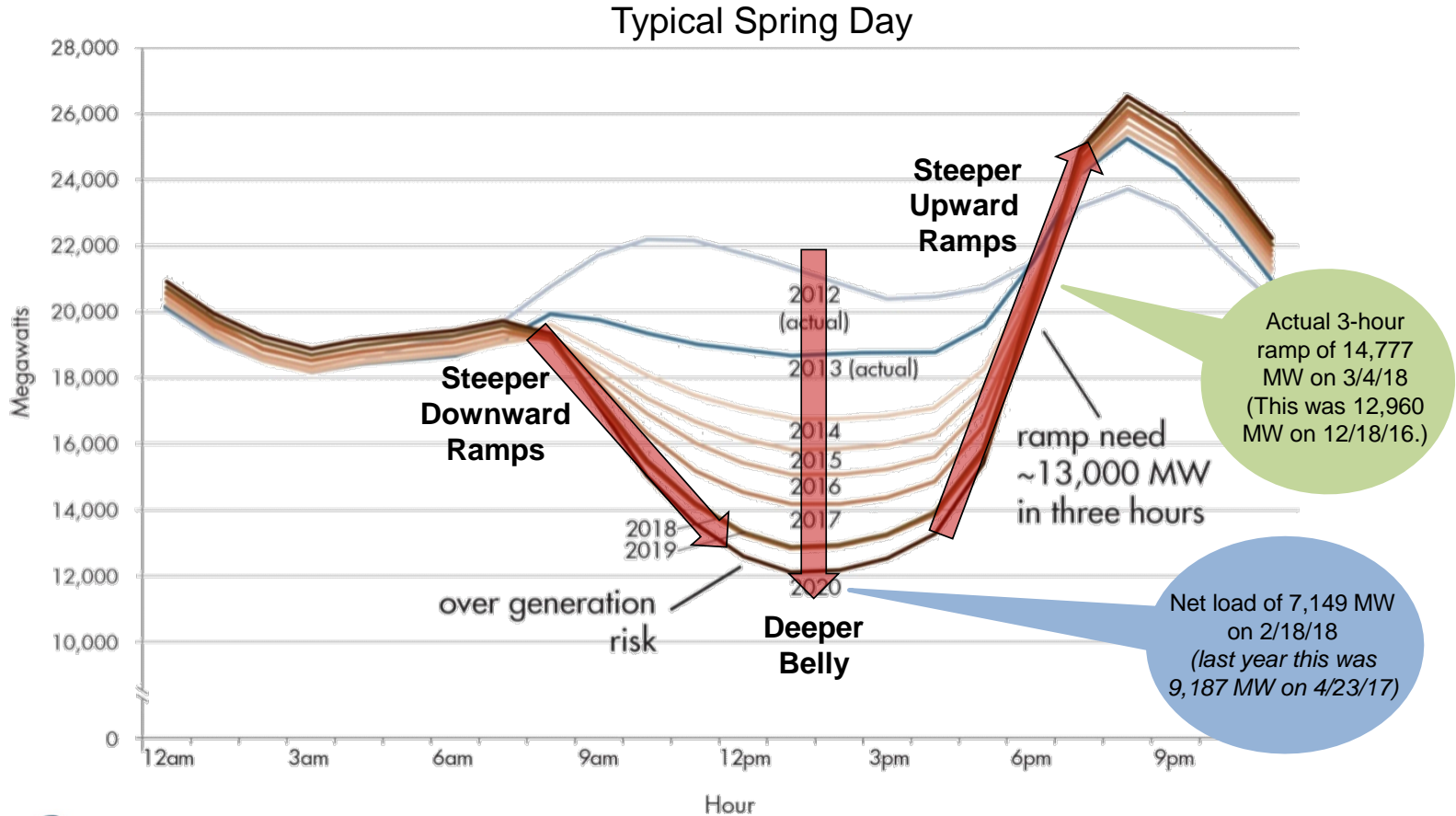
Mark Rothleder
Vice President
Market Quality and Renewable Integration

September 28, 2018

The balancing of supply and demand

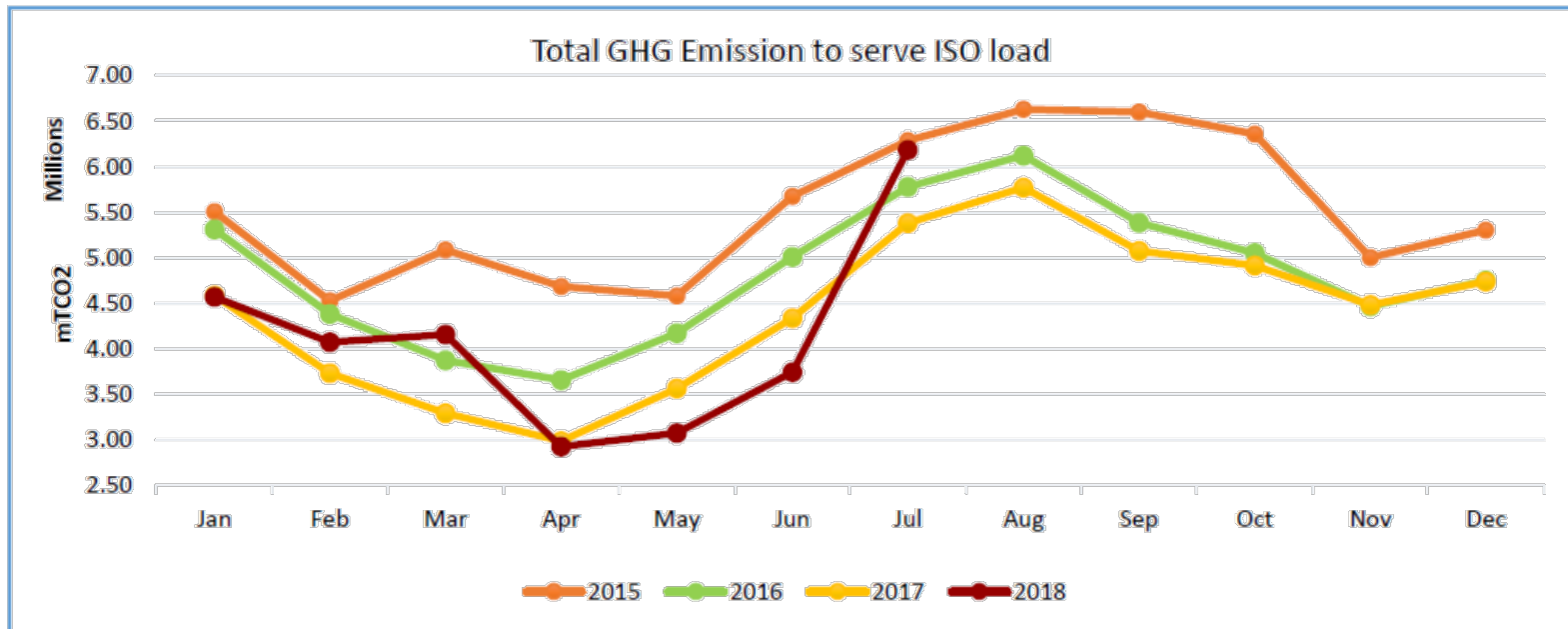


Actual net-load and 3-hour ramps are approximately four years ahead of the ISO's original estimate



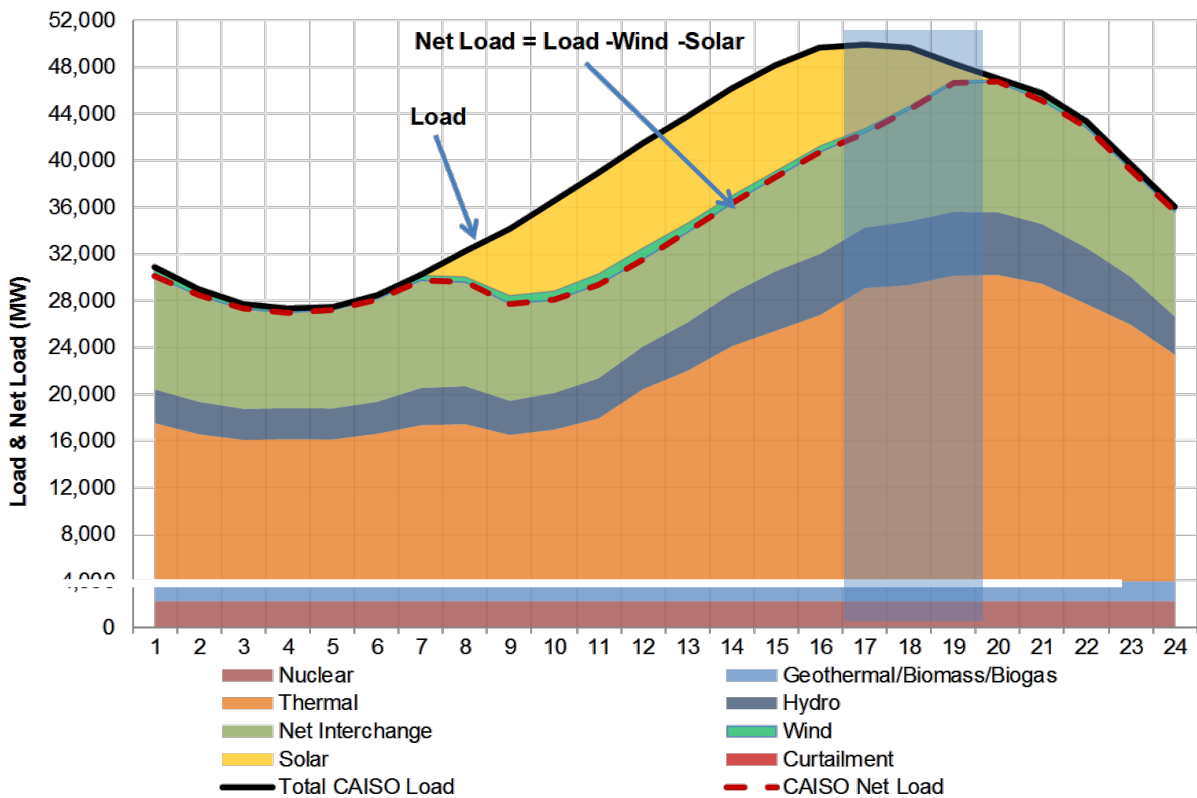
CAISO GHG emissions reduced by 23% since 2014

YTD (January - July) million mTCO2	2015	2016	2017	2018
GHG Emission to serve ISO load	36.35	32.18	27.88	28.73



In 2017, the CAISO peak load was 50,116 MW and occurred at 15:58:24 on Friday, September 1, 2017

Generation Breakdown --- 09/01/2017

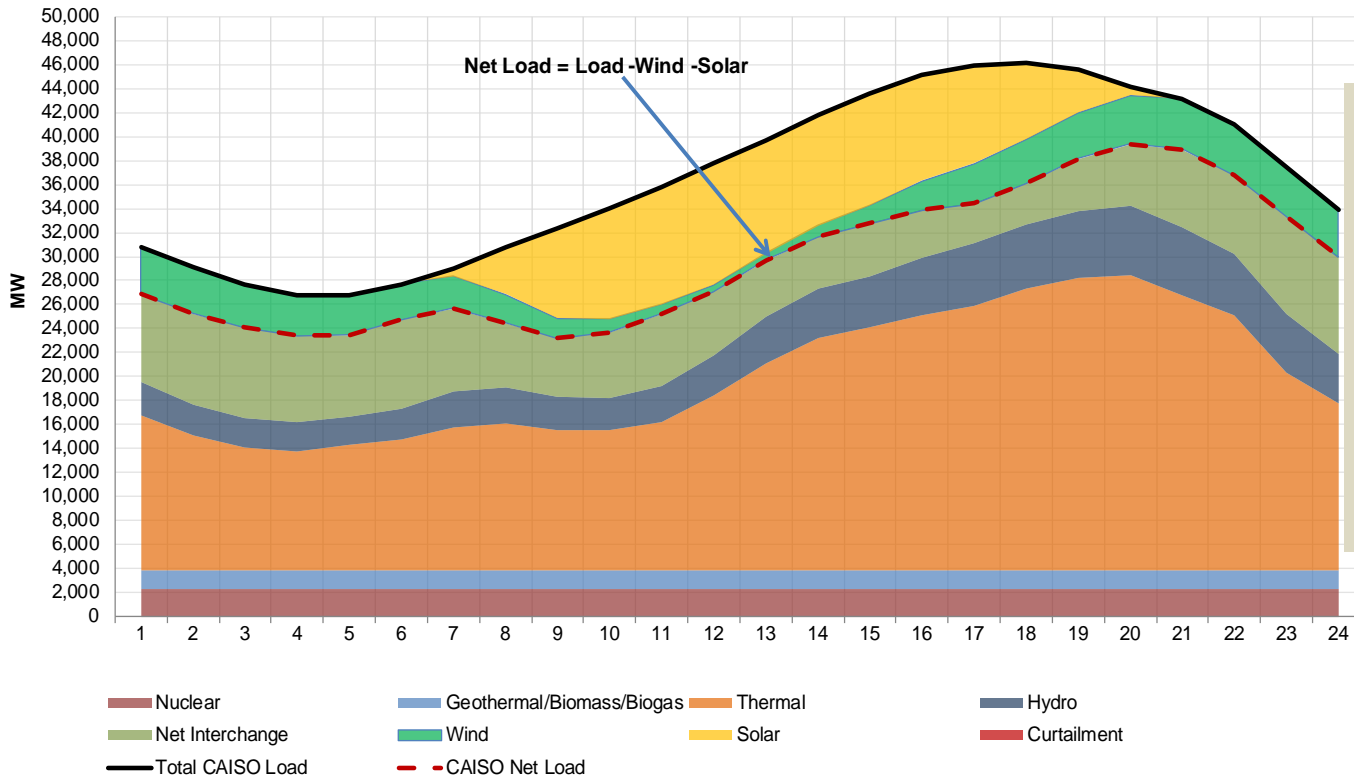


15:58 to 18:44

- Net Load peaked 2 hours and 46 minutes after peak demand
- Peak load decreased by 2,148 MW
- Solar production decreased by 7,199 MW
- Net Load increased by 5,258 MW

On July 24, 2018, the CAISO peak load was 46,500 MW

Generation Breakdown --- 07/24/2018

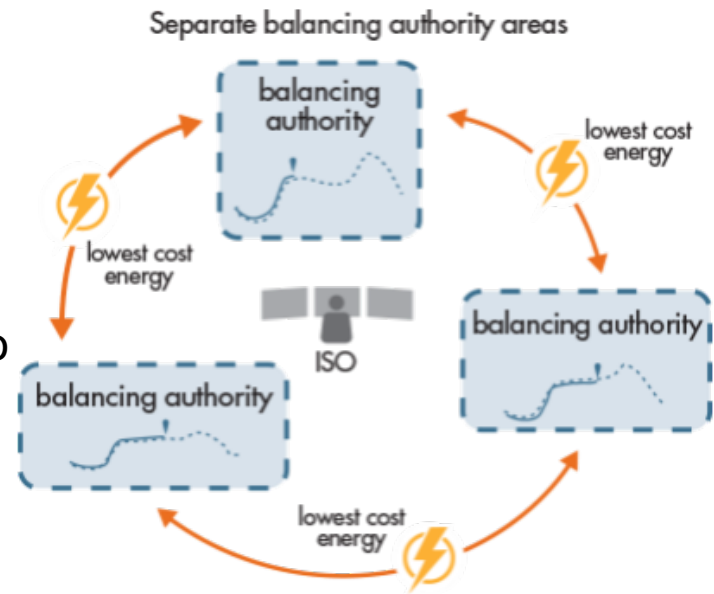


Net Interchange

- Net Interchange at time Peak was approx. 3,400MW
- Net Interchange at time of Net Peak was approx. 5,100MW

EIM provides an easily-scalable extension of real-time market to the broader region

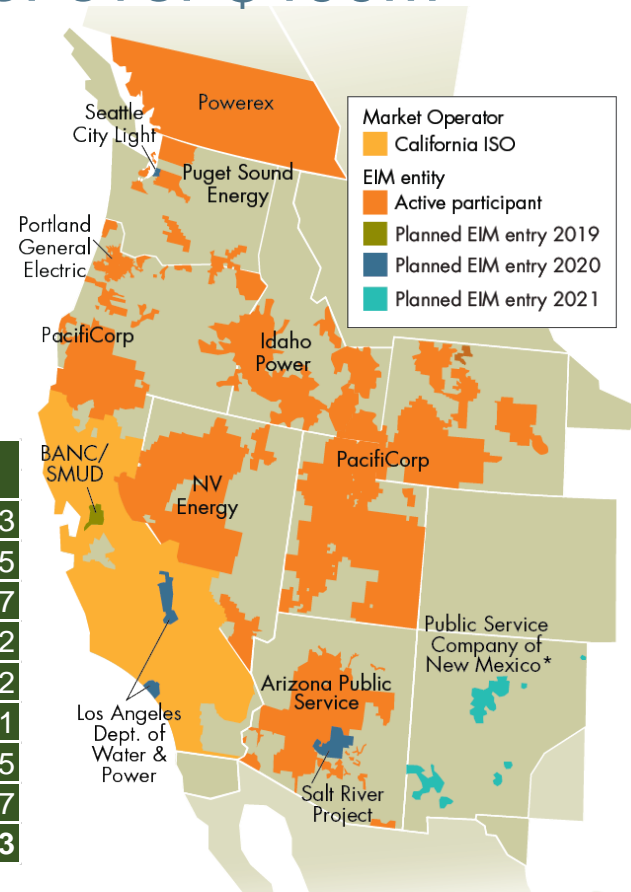
- Builds on existing market: automated dispatch minimizes cost, facilitates renewables, resolves imbalance & avoids congestion
- Situational awareness enhances reliability
- Easily scalable, low-cost, low risk, no exit fees, voluntary option for new participants
- Preserves BAA autonomy, including compliance, balancing, and reserve obligations



Western EIM serves 2/3 of the western load and has gross economic benefits of over \$400M

- Nine western states – Arizona, California, Idaho, Oregon, Nevada, New Mexico, Utah, Washington & Wyoming
- Canada – southern portion of British Columbia
- Mexico – Baja California (under consideration)

BAA	2014	2015	2016	2017	2018	Total
APS			5.98	34.56	14.49	55.03
IPCO					7.75	7.75
ISO	1.23	12.66	28.34	36.96	42.78	121.97
NVE		0.84	15.57	24.20	9.51	50.12
PAC	4.73	26.23	45.47	37.41	22.18	136.02
PGE				2.83	8.98	11.81
PSE			1.56	9.86	5.33	16.75
PWRX					2.27	2.27
Total	5.96	39.73	96.92	145.82	113.29	\$ 401.73



Regional coordination will evolve to meet the needs as the system transforms

- Expanded renewable and clean energy targets
 - California SB100 – 60% by 2030, 100% by 2045
- Western Energy Imbalance Market
 - Continues to grow, 2/3 of WECC load will participate by 2020
 - Explore extending success of EIM into Day-Ahead Market
- Reliability Coordinator
 - ISO will be RC of record by July 1, 2019 for CA BAA and other BAAs by November 2019.
 - ISO will be the RC of 80% - 90% of the load area in the west
- Western RTO?
 - Where there's a will, there may be a way

A suite of solutions are necessary



Storage – increase the effective participation by energy storage resources.



Western EIM expansion – expand the western Energy Imbalance Market.



Demand response – enable adjustments in consumer demand, both up and down, when warranted by grid conditions.



Regional coordination – offers more diversified set of clean energy resources through a cost effective and reliable regional market.



Time-of-use rates – implement time-of-use rates that match consumption with efficient use of clean energy supplies.



Electric vehicles – incorporate electric vehicle charging systems that are responsive to changing grid conditions.



Renewable portfolio diversity – explore procurement strategies to achieve a more diverse renewable portfolio.

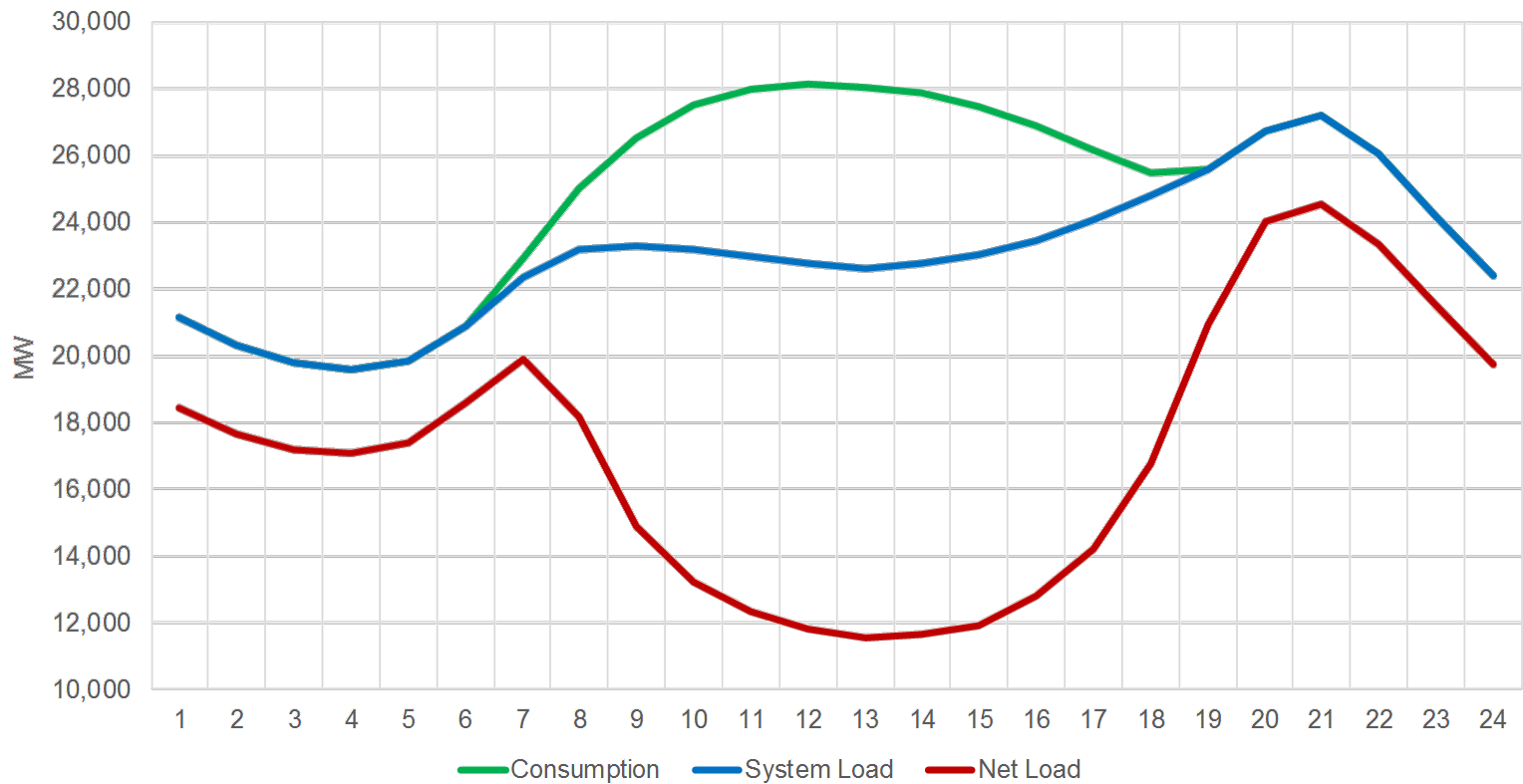


Flexible resources – invest in fast-responding resources that can follow sudden increases and decreases in demand.

APPENDIX

Comparison of average consumption, system load and net load for all days in April, 2018

Average Consumption, System Load and Net Load --- April 2018



Comparison of average consumption, system load and net load for all days in August, 2018

