

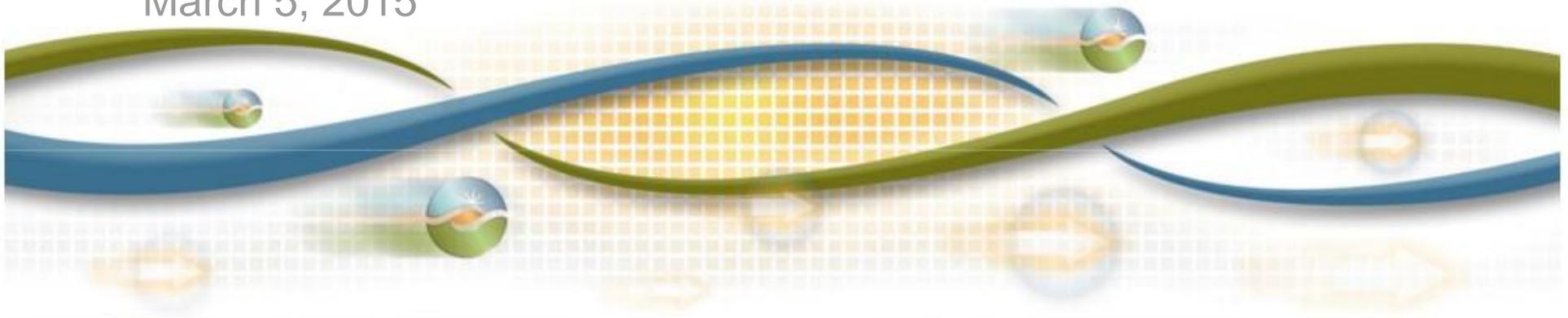


California ISO
Shaping a Renewed Future

Energy imbalance market update

Mark Rothleder, VP, Market Quality and Renewable Integration
John Anders, Lead Counsel

EIM Transitional Committee meeting
General Session
March 5, 2015





Mark Rothleder, Vice President Market Quality and Renewable
Integration

UPDATE ON EIM OPERATION

EIM Operations Update

- Benefits assessment for 2014-Q4 issued.
 - Next 2015-Q1 assessment will expand to include flexibility and 5-minute dispatch benefits
- Pricing discovery waiver update
 - FERC extended until March 16 while continuing to consider requested transitional measures
 - Infeasibilities improved in PACW but continue in PACE
- 15-minute transfers moderate with seasonal conditions
- 5-minute PAC to ISO transfers started February 4
- Identified and resolved flexible ramp constraint relaxation and credit issues affecting PAC and ISO

Summary of EIM benefits for the 4th Quarter 2014

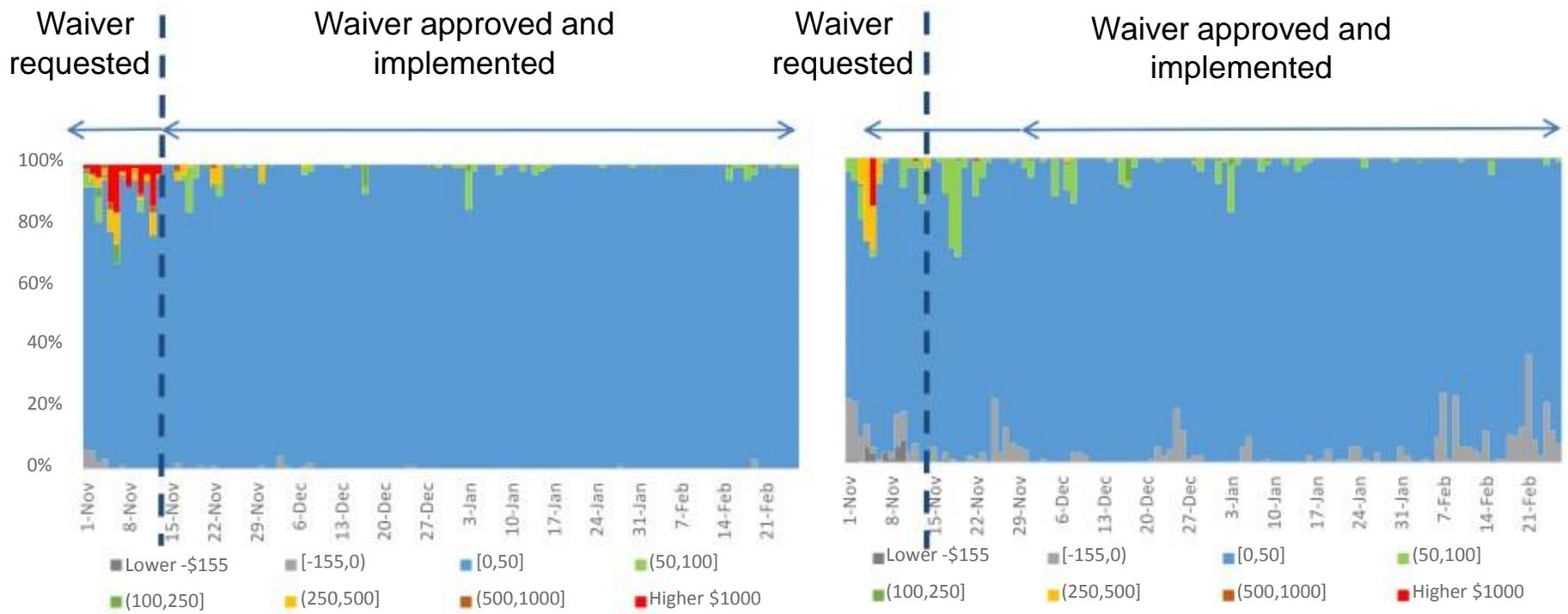
BAA	November	December	Total
ISO	\$0.65	\$0.59	\$1.24
PACE	\$1.05	\$1.26	\$2.31
PACW	\$1.39	\$1.03	\$2.42
Total	\$3.09	\$2.88	\$5.97

- Results represent benefits from 79% of all the intervals where the largest absolute price difference between the MALIN_500 and PACE or between the MALIN_500 and PACW is less than \$50/MWh.

15-Minute price frequency in PACE and PACW

15-minute PACE Aggregate Price

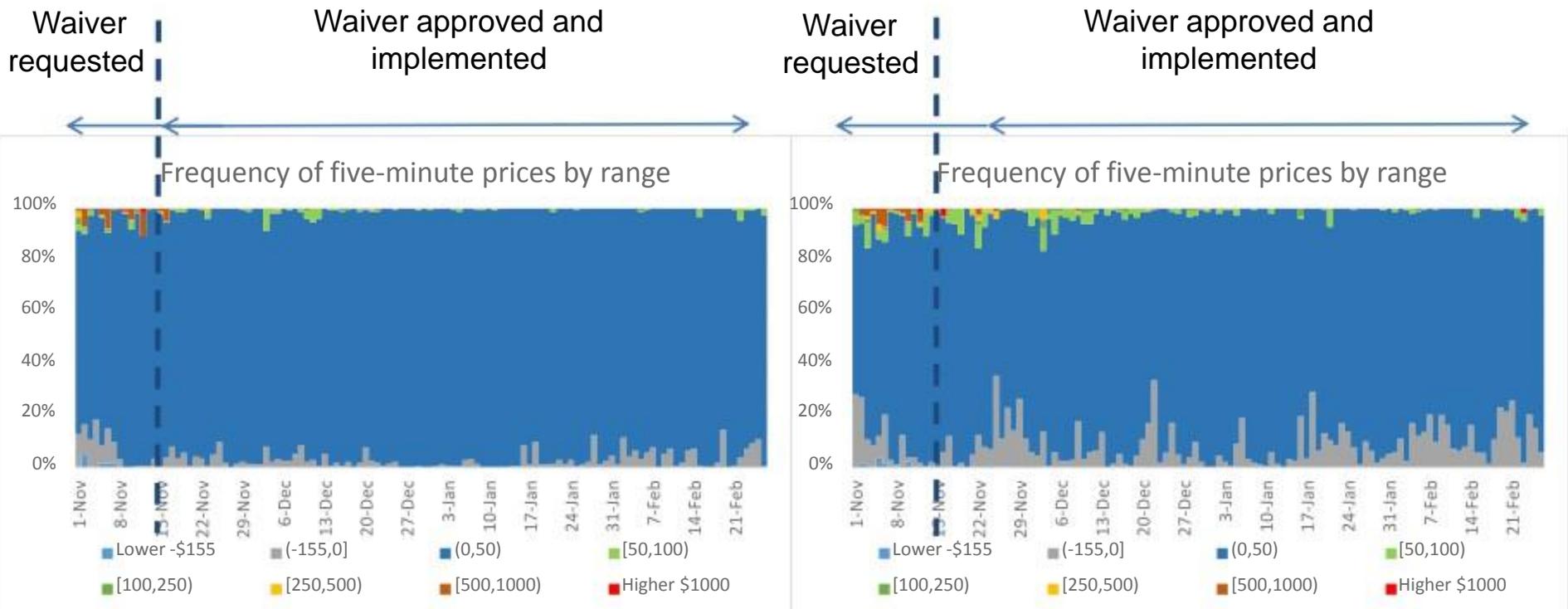
15-minute PACW Aggregate Price



5-Minute price frequency in PACE and PACW

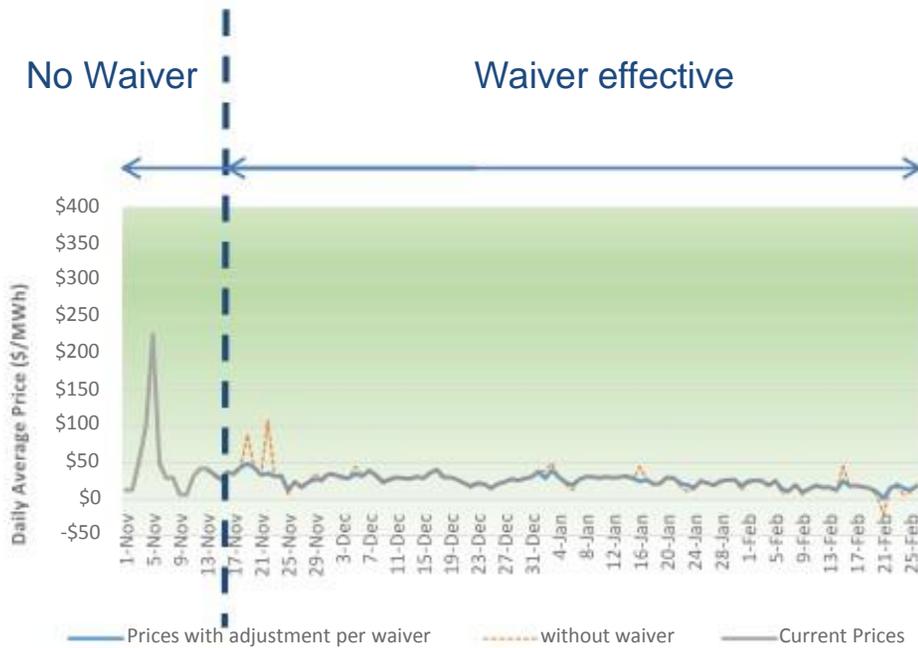
5-minute PACE Aggregate Price

5-minute PACW Aggregate Price

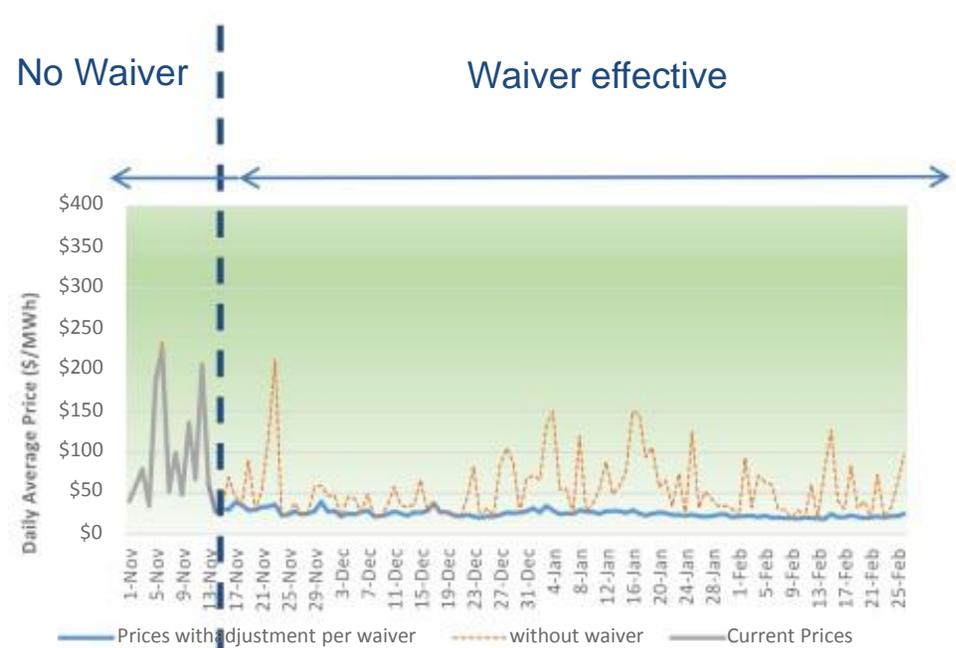


Prices stabilized after November 14 pricing discovery waiver

15-minute PACE Aggregate Price

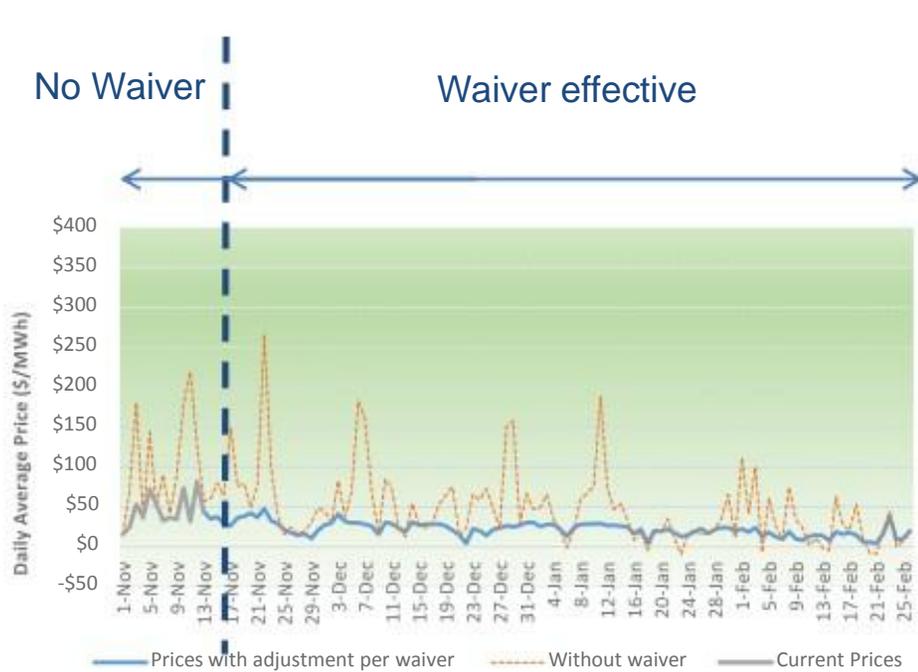


15-minute PACW Aggregate Price

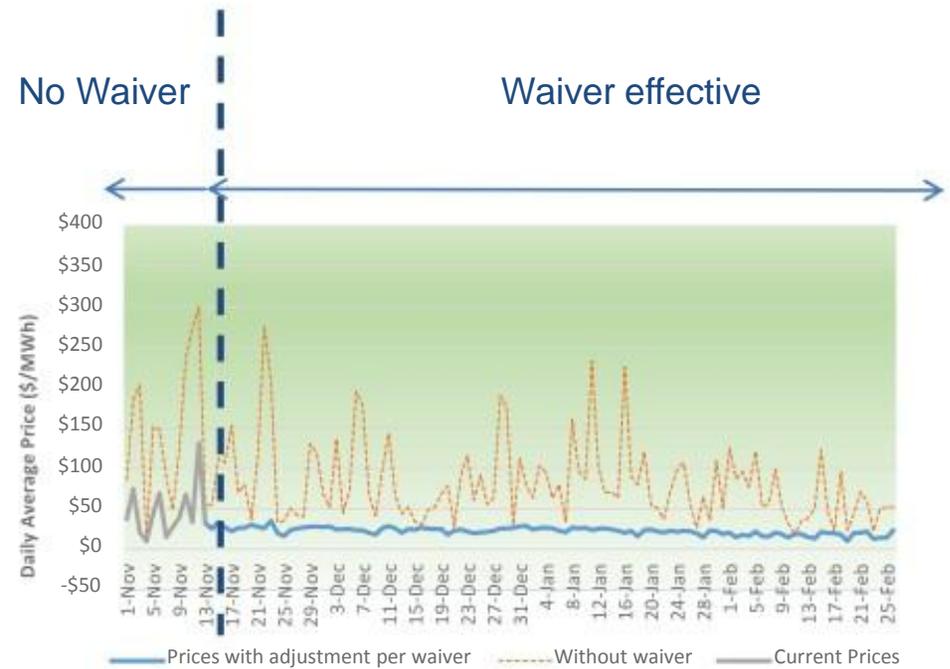


Prices stabilized after November 14 price discovery waiver

5-minute PACE Aggregate Price

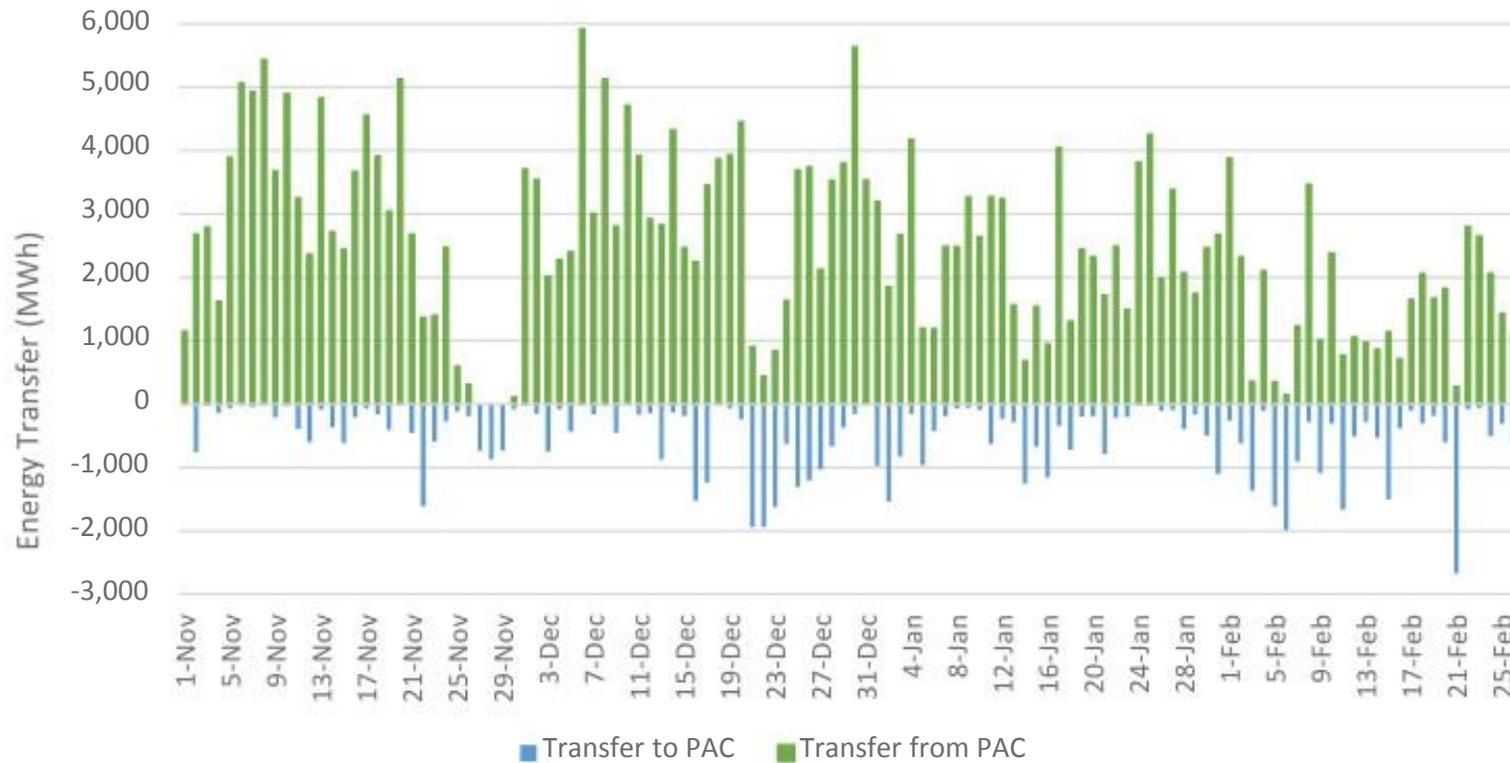


5-minute PACW Aggregate Price



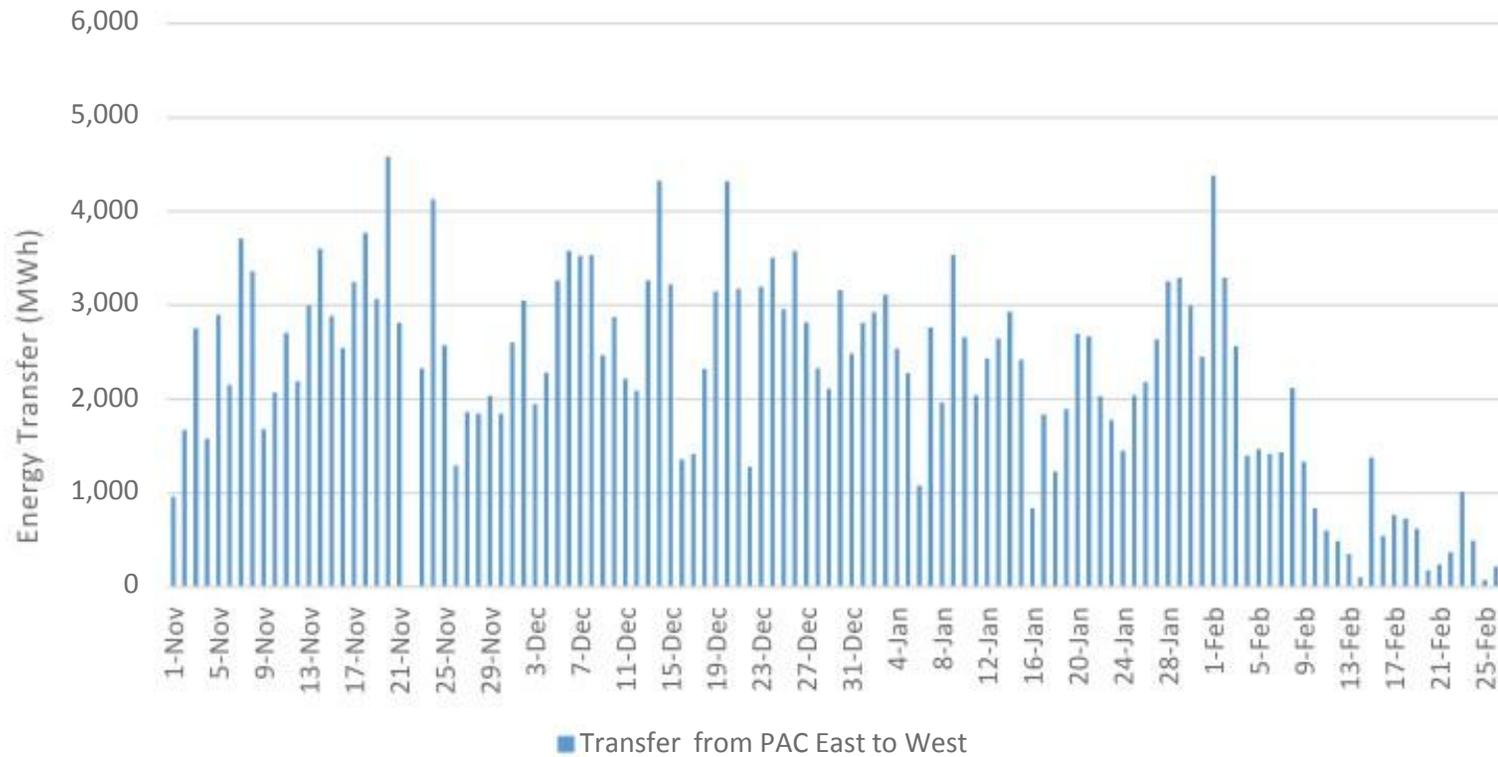
15-minute transfers between PacifiCorp and ISO

(+) PacifiCorp to ISO / (-) ISO to PacifiCorp

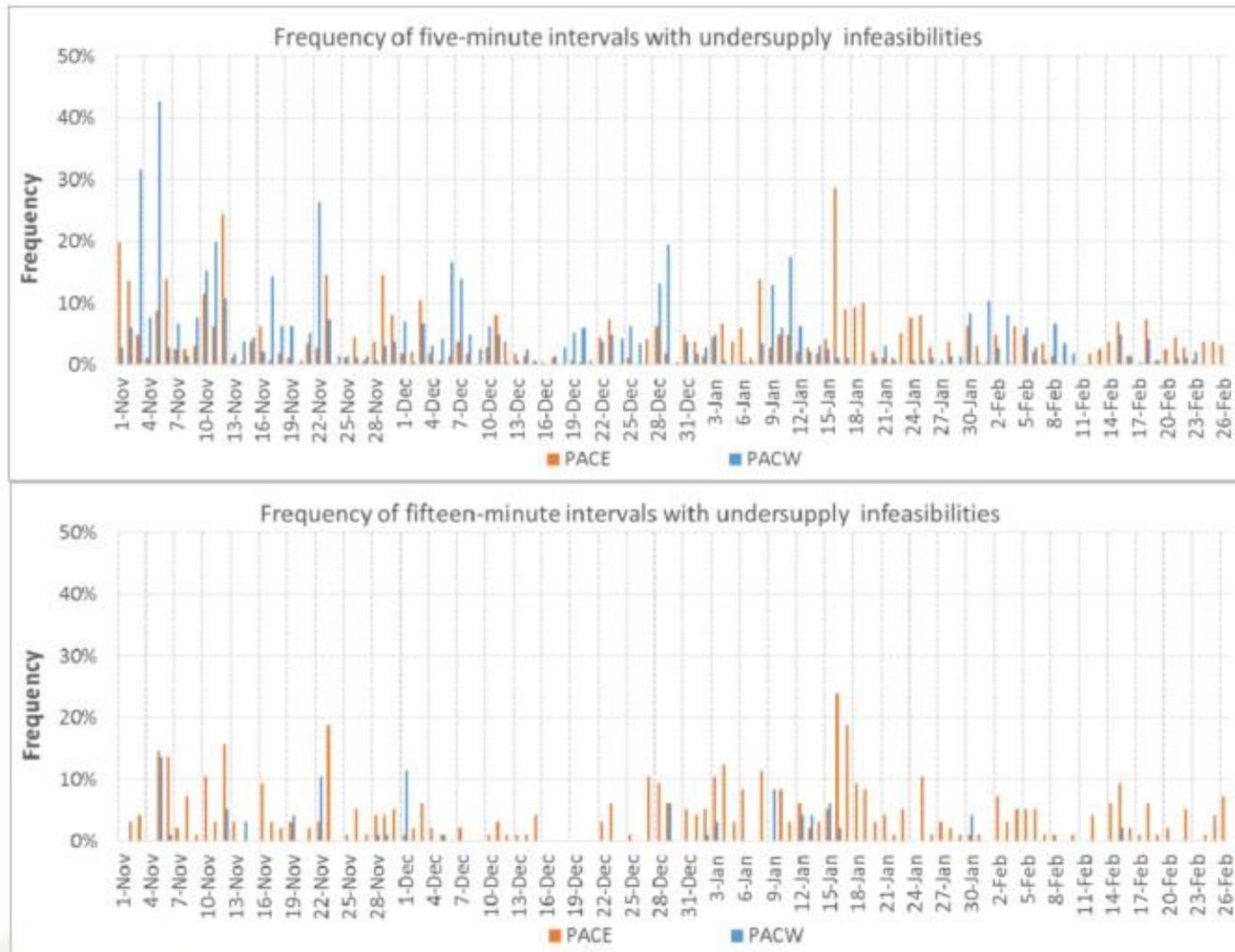


15-minute transfers between PACE and PACW moderated in February

(+) PacifiCorp East to PacifiCorp West



Frequency of 5' and 15' intervals with MW undersupply infeasibilities



Nevada Energy implementation progressing on schedule.

- Information exchange occurring (network model, BSAP)
- Scheduling coordinator training to complete end of March
- NVE to file revised OATT - March 6
- Schedule for testing and market simulation being developed
 - Functional testing - April through June
 - Connectivity and integration testing - starting in May
 - Unstructured market simulation - starting in June
 - Structured market simulation - starting in August
 - Parallel production (non-binding) - starting 9/1/15



John Anders, Lead Counsel

UPDATE ON EIM ENHANCEMENTS

Transitional adjustments have been filed with FERC and several remain pending.

- Limited waiver of pricing parameters under certain conditions granted (149 FERC ¶ 61,194)
- Second waiver requested to include November 1-13 pending (FERC Docket ER-15-817-000)
- Tariff amendment to extend treatment for 1 year following EIM entity implementation pending with one month waiver extension (FERC Docket ER15-861-000)
- Tariff amendment to reduce administrative charges to a fixed amount pending (FERC Docket ER15-850-000)

Year-one enhancements completed in phase 1 will be presented to the ISO Board on March 26-27.

- Allow EIM transfers based on the intertie scheduling limit or the available transfer capability
- Reduce flexible ramping constraint combinations
- Apply the resource sufficiency evaluation to the ISO
- Add base schedule import/export declines to resource sufficiency evaluation
- Include a GHG flag and cost based bid adder
- Redesign the EIM administrative charge
- Settlement of non-participating resources
- Clarify administrative pricing rules



Questions