



# Energy imbalance market update

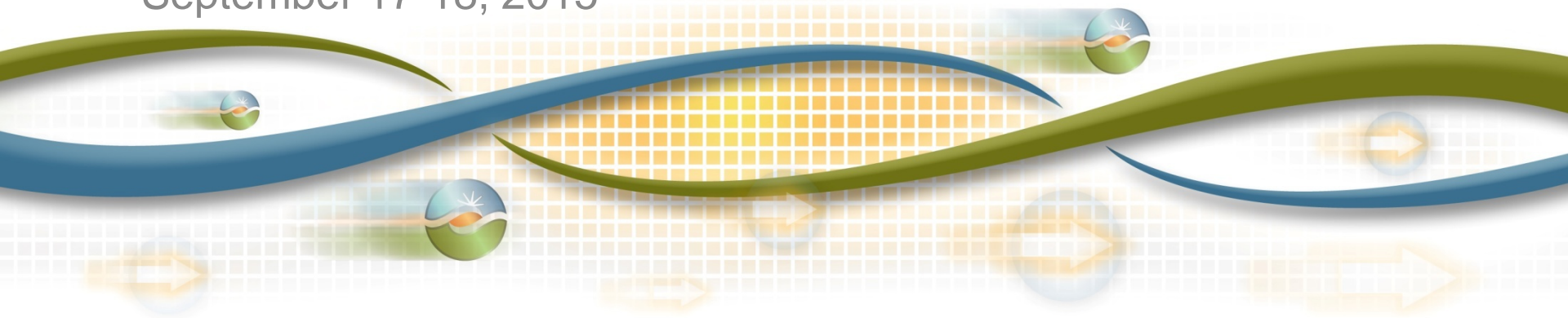
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Board of Governors Meeting

General Session

September 17-18, 2015



# EIM operations update

- Benefits assessment for 2015-Q2 issued.
  - 2015-Q2 benefits based on 5-minute results
- Transfers increased
- Frequency of infeasibilities drop below 1%
- Recent regulatory activities round out first year of operations
  - FERC approved waiver to November 1, 2014
  - ISO filed available balancing capacity proposal
  - ISO filed readiness requirements
  - ISO filed transitional measure

# Actual gross EIM benefits increased in 2<sup>nd</sup> Quarter 2015

BAA	Nov – Dec 2014	Jan – Mar 2015	Apr – Jun 2015 <sup>1</sup>	Total
ISO	\$1.24 M	\$1.45 M	\$2.46 M	\$5.15 M
PACE	\$2.31 M	\$2.62 M	\$3.26 M	\$8.19 M
PACW	\$2.42 M	\$1.19 M	\$4.46 M	\$8.07M
<b>Total</b>	<b>\$5.97 M</b>	<b>\$5.26 M</b>	<b>\$10.18 M</b>	<b>\$21.41</b>

<sup>1</sup> Q2-2015 analysis based on 5-minute granularity. Prior analysis was 15-minute granularity.

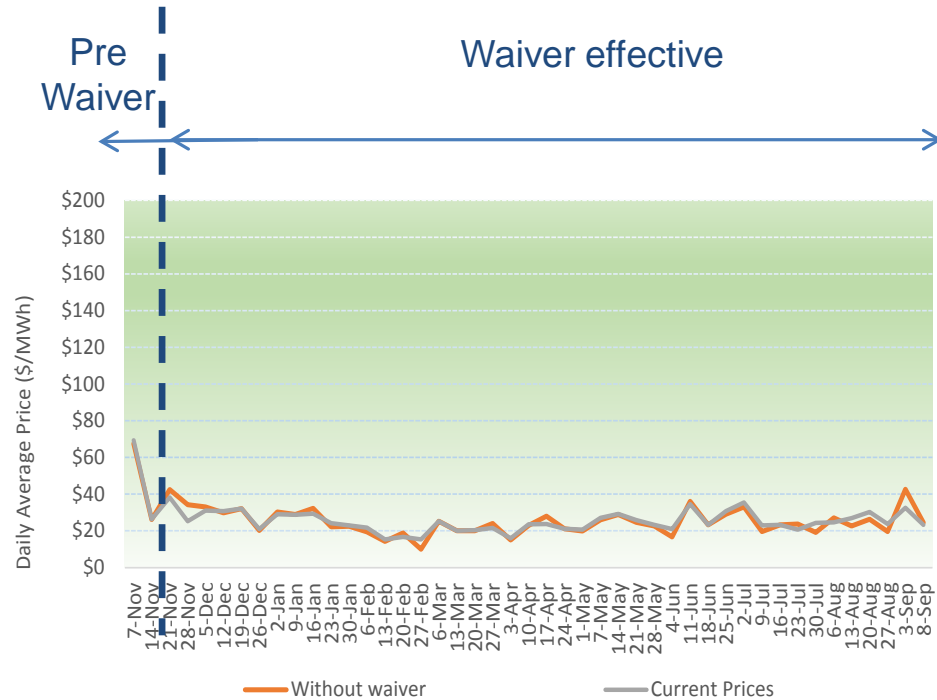
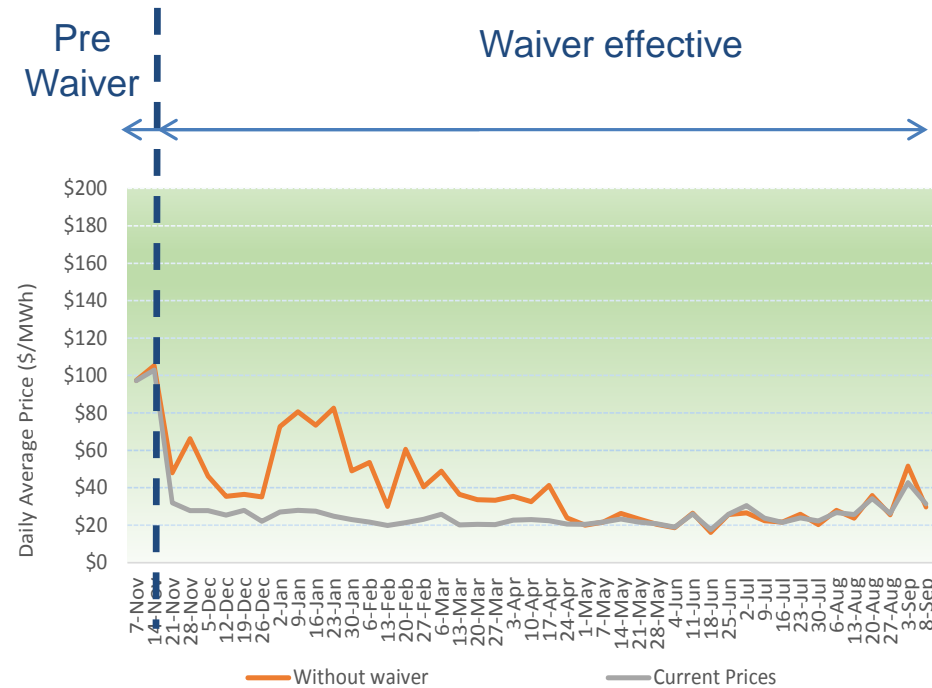
Report contains enhancements over the 2014 Q4 report:

- Benefit calculations based on five minute market intervals
- Estimated 1,553 metric-tons CO2 avoided by reduced renewable curtailment

# Pricing performance improvement continues

## 15-minute PACE Aggregate Price

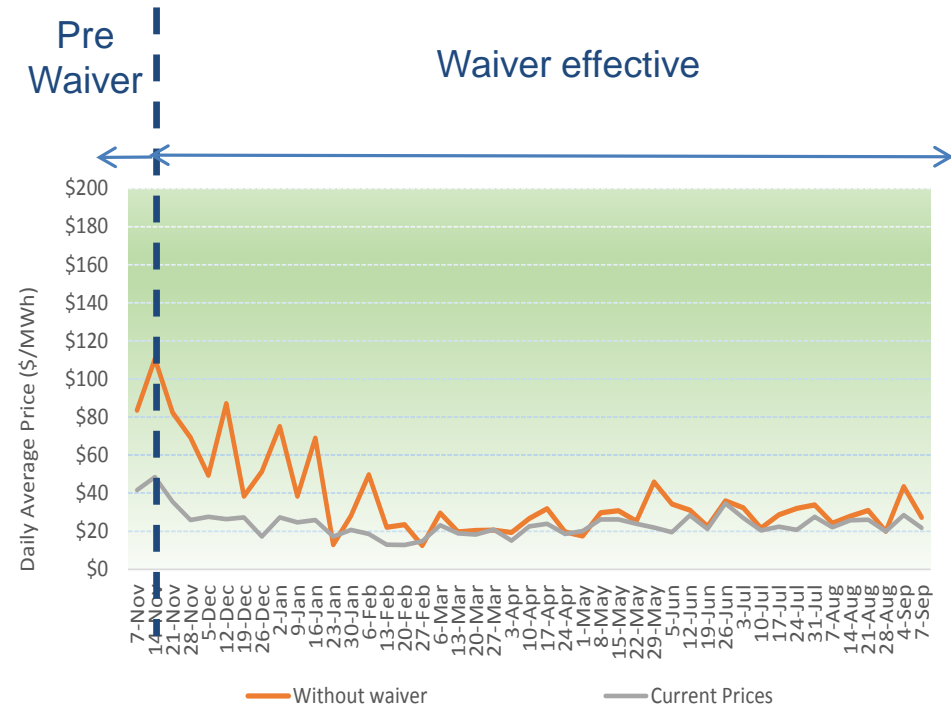
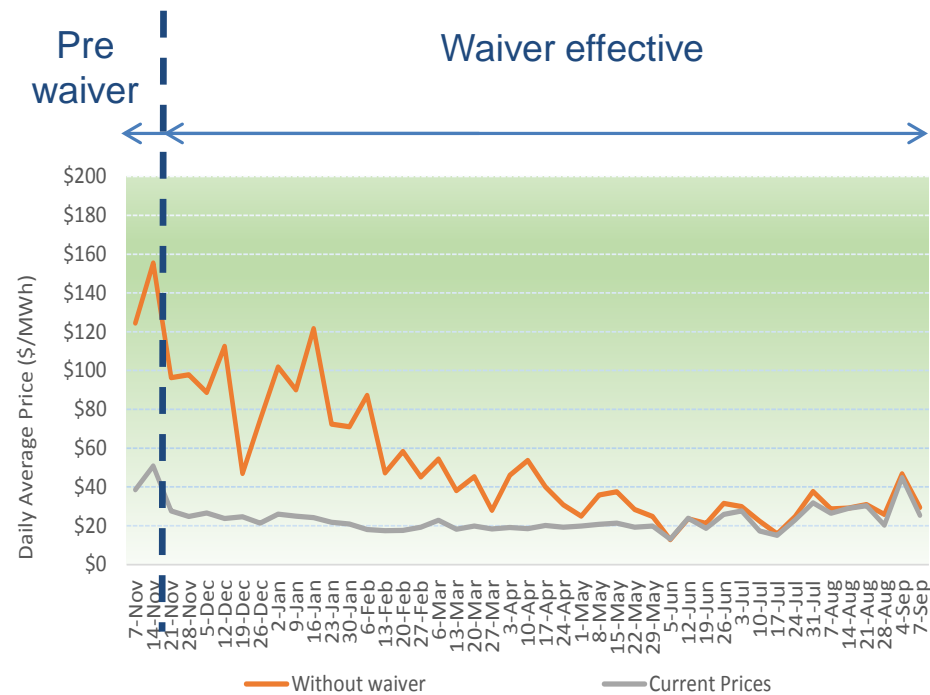
## 15-minute PACW Aggregate Price



# Pricing performance improvement continues

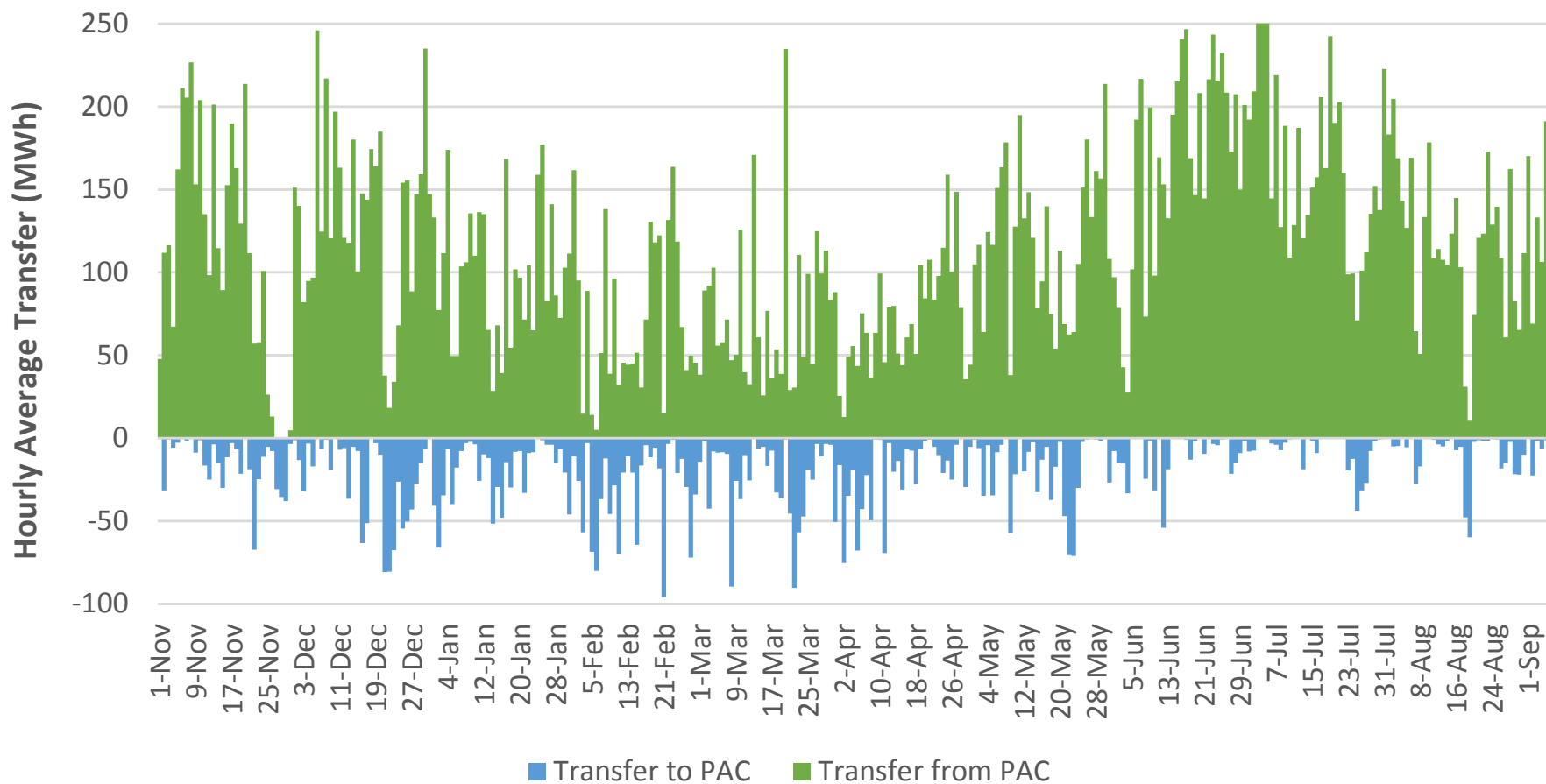
## 5-minute PACE Aggregate Price

## 5-minute PACW Aggregate Price



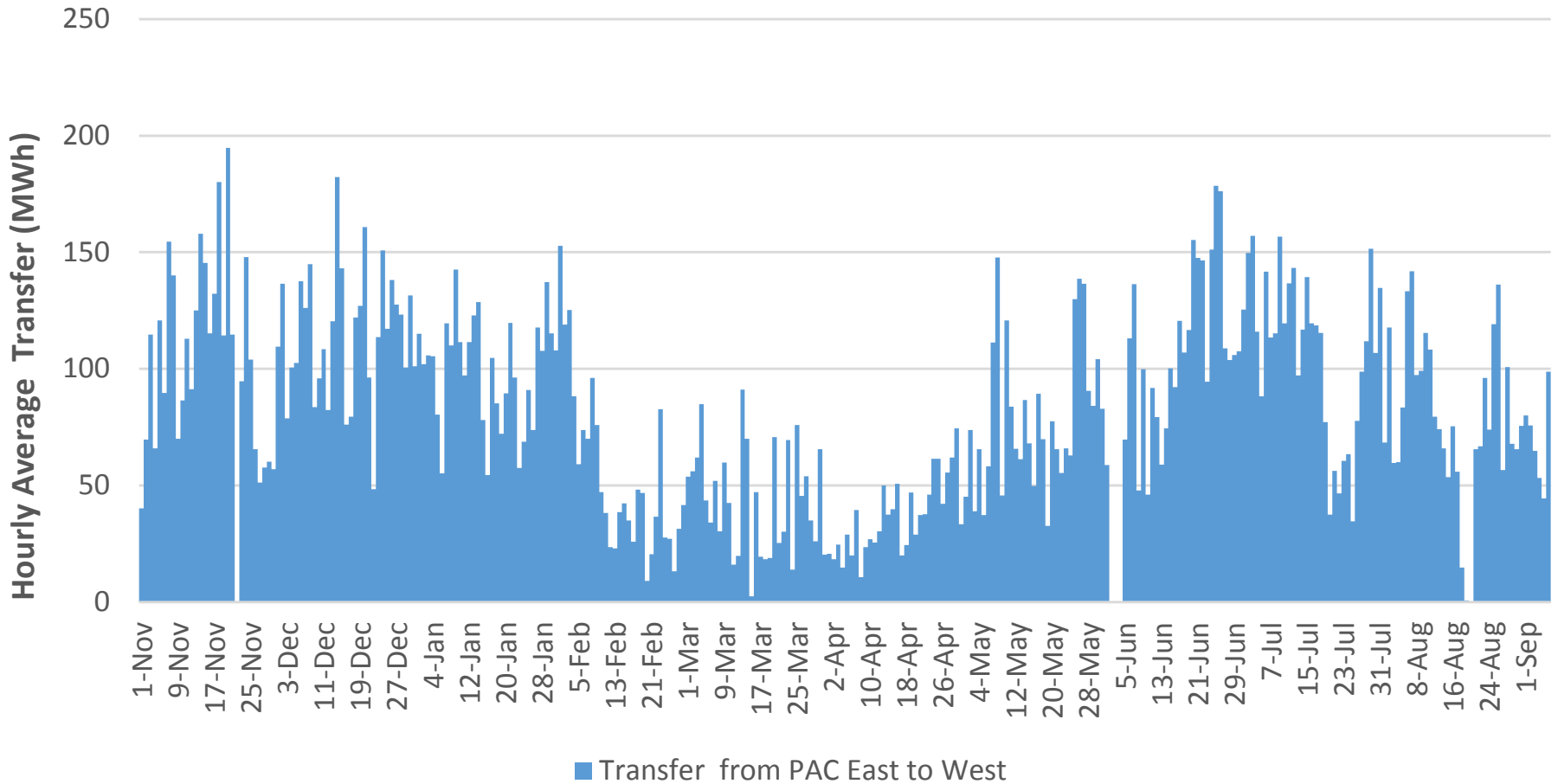
# Transfer from PacifiCorp and ISO increases

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



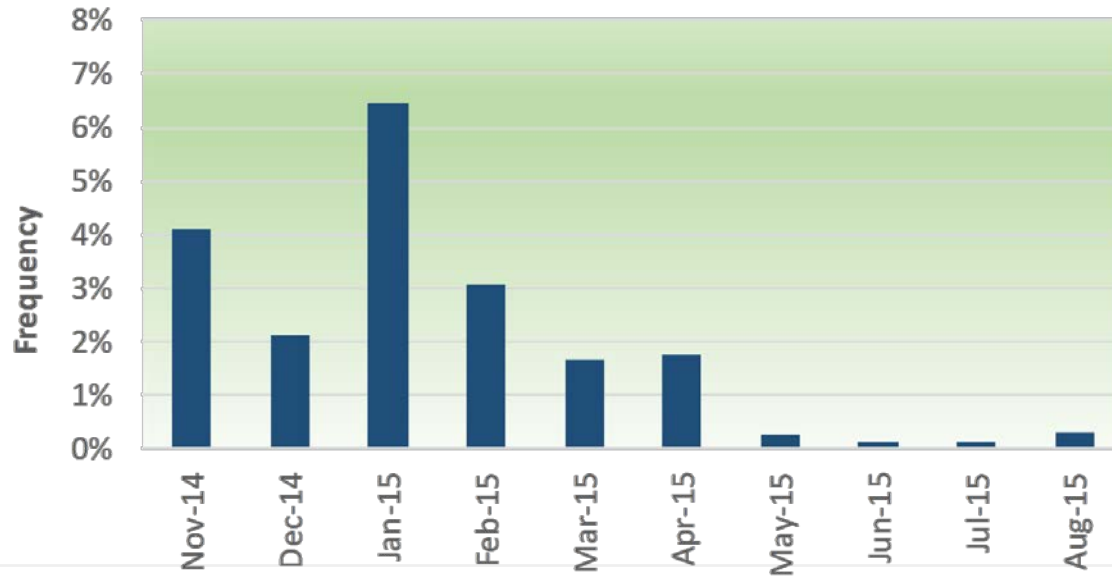
# Transfers between PACW and PACE increase

(+) PacifiCorp East to PacifiCorp West

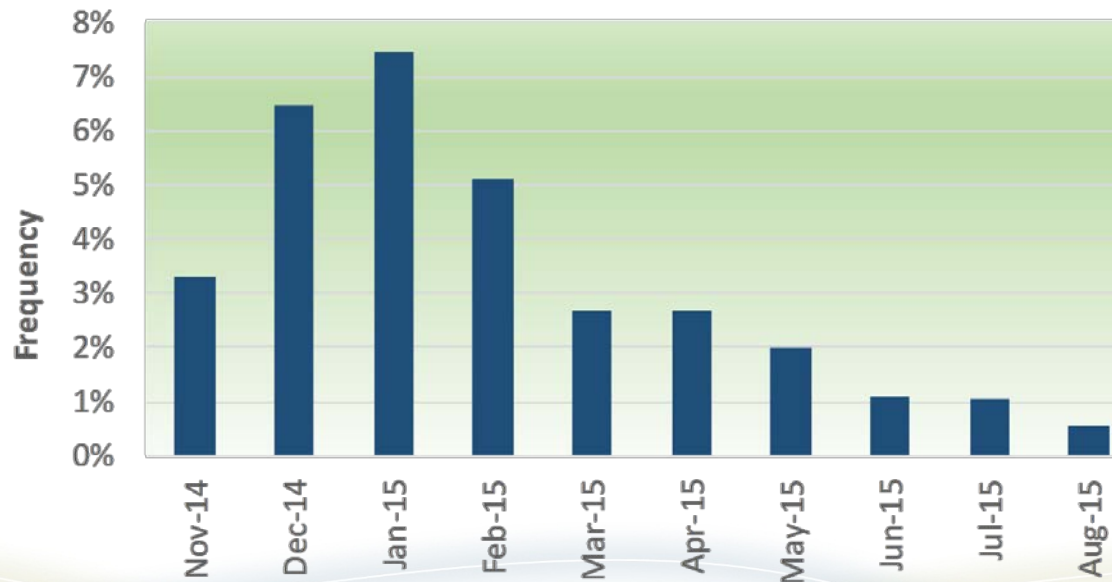


# Frequency of infeasibilities drops below 1%

15-minute



5-minute





# NV Energy – implementation update

- ISO and NVE conducting parallel operations activities.
- Recent updates for readiness criteria indicate:
  - Completed or met 23 out of 34 readiness criteria
  - On track to meet remaining criteria
    - Settlements and metering quality pending confirmation of NVE metering data and validation of charges.
    - Market solution quality and validation in progress for parallel operations as evaluated during periods with stable data.
  - ISO, NVE and PacifiCorp are conducting joint EIM exercises in parallel operations environment to test EIM Year 1 enhancements and new paths of transfer
  - Opened OASIS access in parallel operations to all market participants for review of market prices
- ISO and NVE are on track to certify EIM readiness by September 30 and begin fully binding financial operations on November 1.