



# Energy imbalance market update

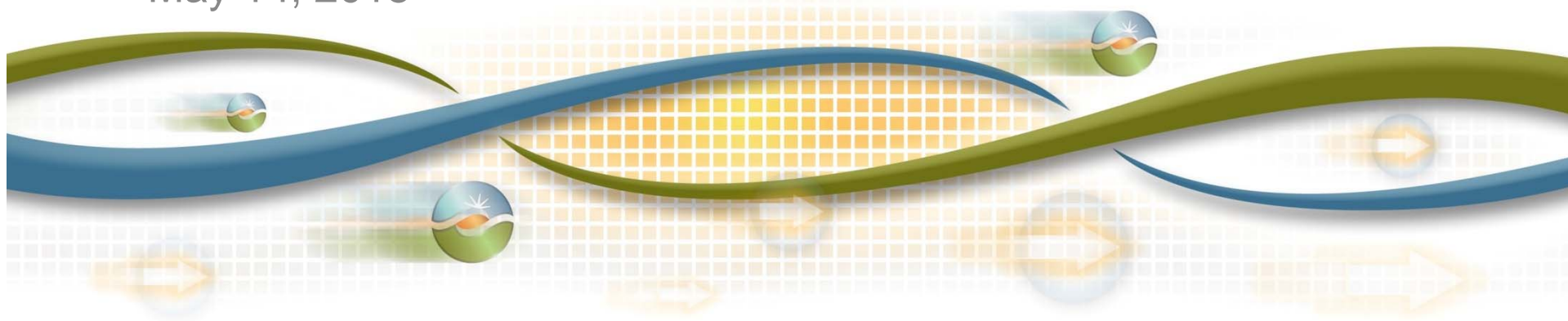
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Vice President, Market Quality & Renewable Integration

Board of Governors Meeting

General Session

May 14, 2015



## EIM operations update

- Benefits assessment for 2015-Q1
- Pricing performance update
- Transfers continue to reflect seasonal conditions
- Frequency of infeasibilities improves

## Summary of EIM benefits for the 1<sup>st</sup> Quarter 2015

BAA	January	February	March	Total
ISO	\$0.48	\$0.49	\$0.48	\$1.44
PACE	\$0.88	\$0.83	\$0.91	\$2.63
PACW	\$0.42	\$0.49	\$0.28	\$1.19
<b>Total</b>	<b>\$1.78</b>	<b>\$1.81</b>	<b>\$1.67</b>	<b>\$5.26</b>

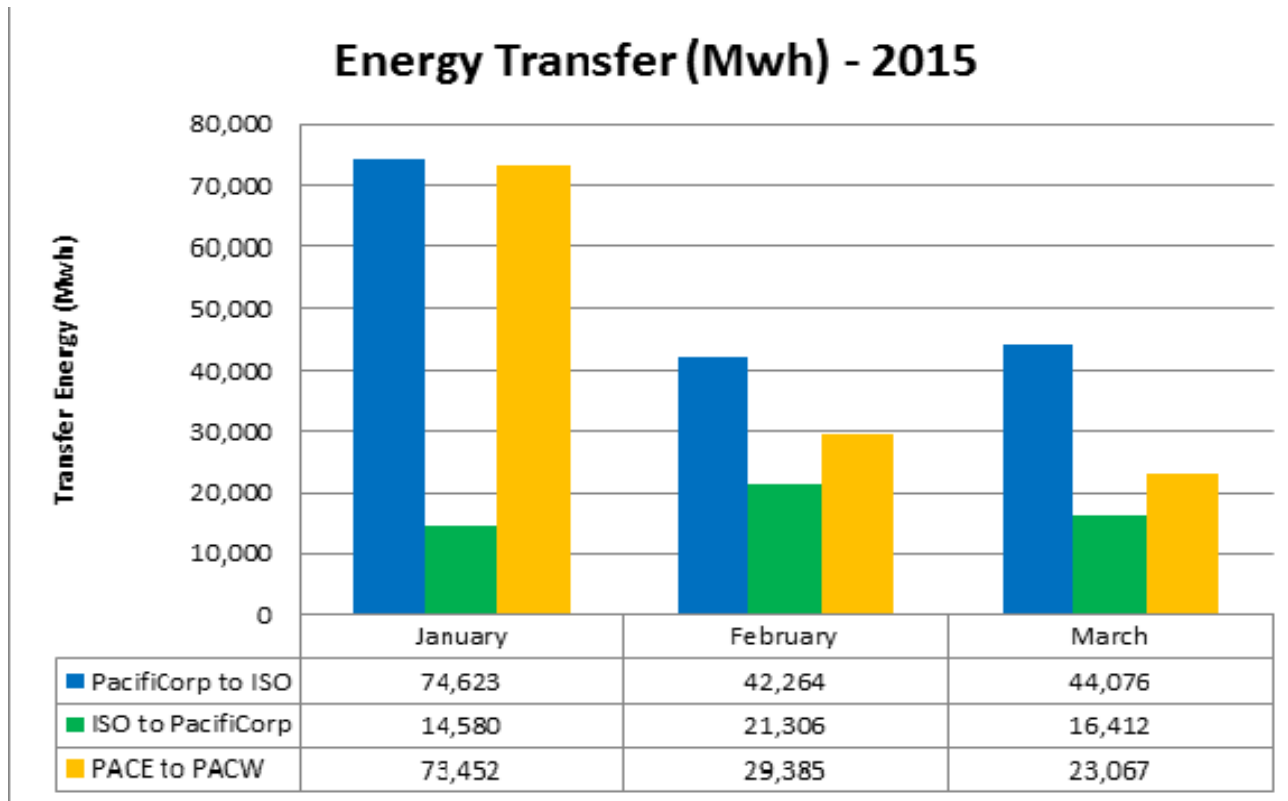
Benefits reflect:

- More efficient dispatch, both inter- and intra-regional
- Reduced renewable energy curtailment
- Reduced flexibility reserves needed in PacifiCorp BAAs

This report contains enhancements over the 2014 Q4 report:

- Benefit calculations include all fifteen minute market intervals
- Calculations used relevant prices including any corrections
- Calculations of avoided renewable curtailment

# Summary of EIM benefits for the 1<sup>st</sup> Quarter 2015

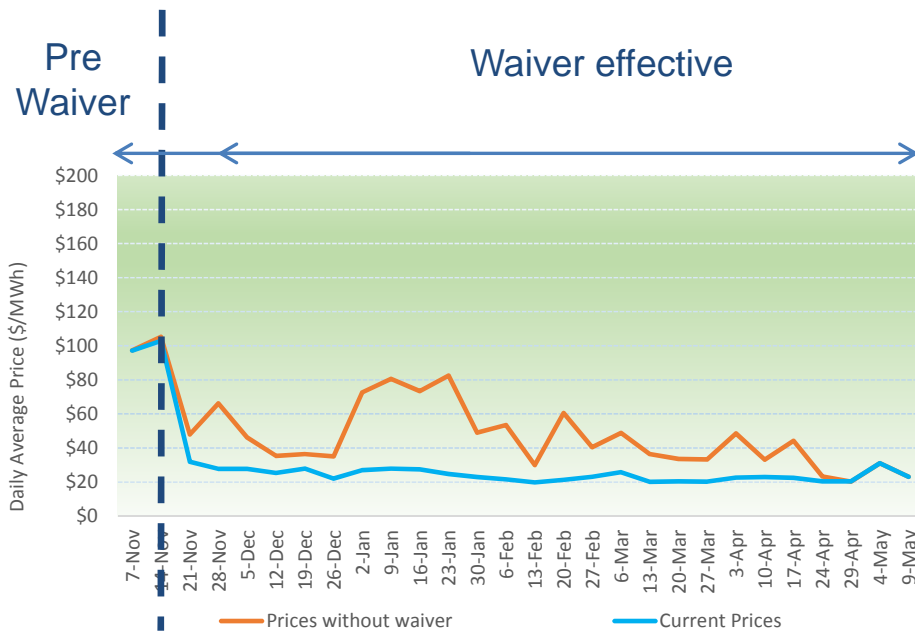


Highest levels of transfers in the 15-minute intervals:

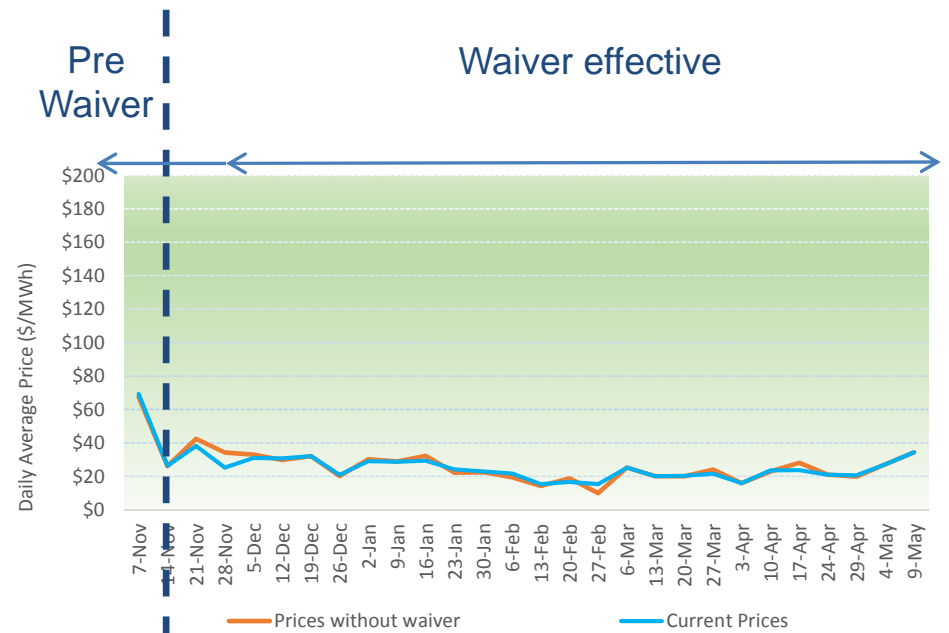
- 421 MW PACW to ISO
- 321 MW ISO to PACW
- 200 MW PACE to PACW

# Pricing performance improves in April

## 15-minute PACE Aggregate Price

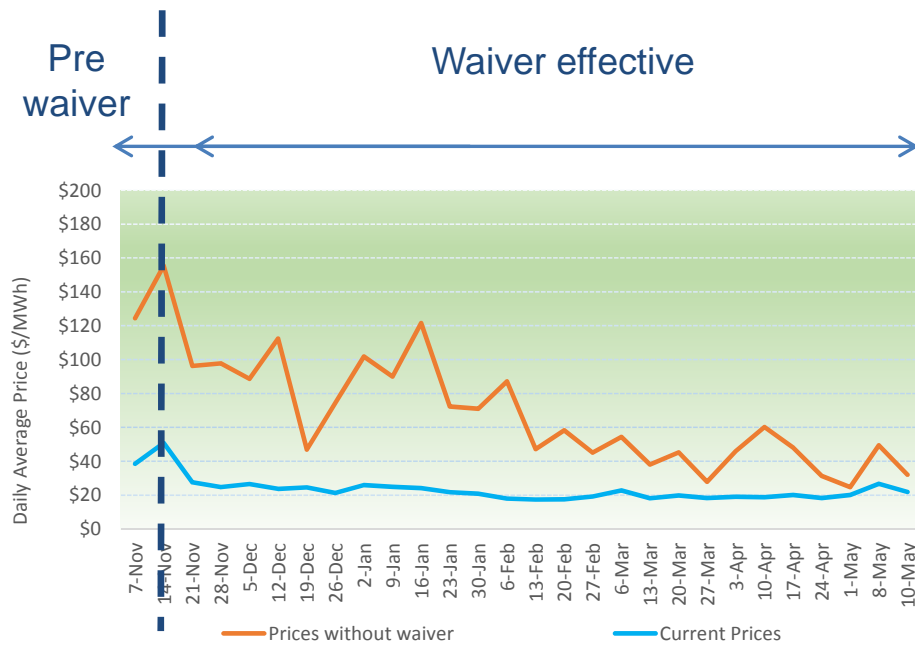


## 15-minute PACW Aggregate Price

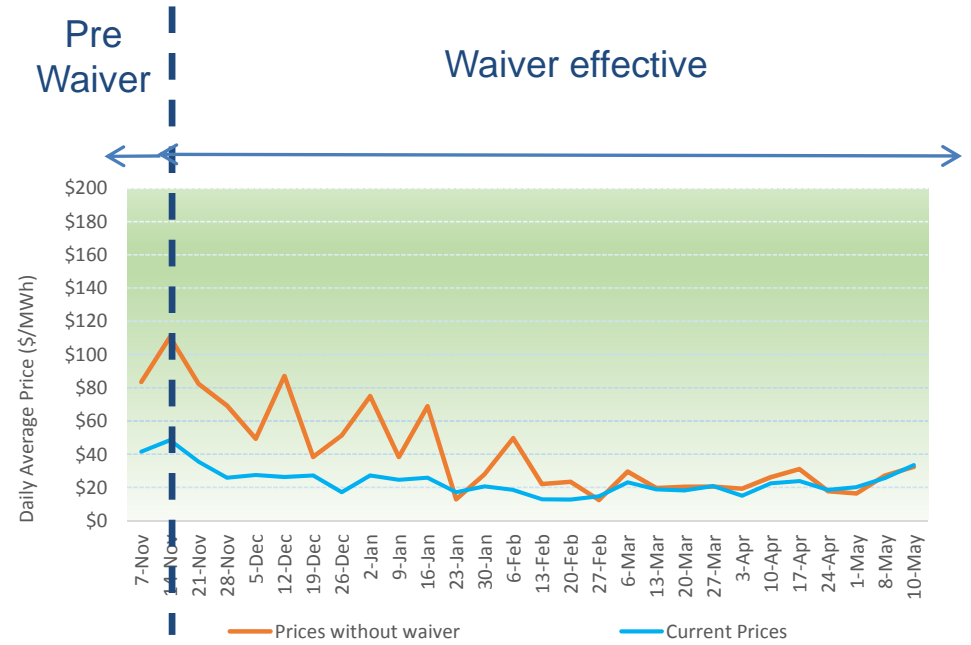


# Pricing performance improves in April

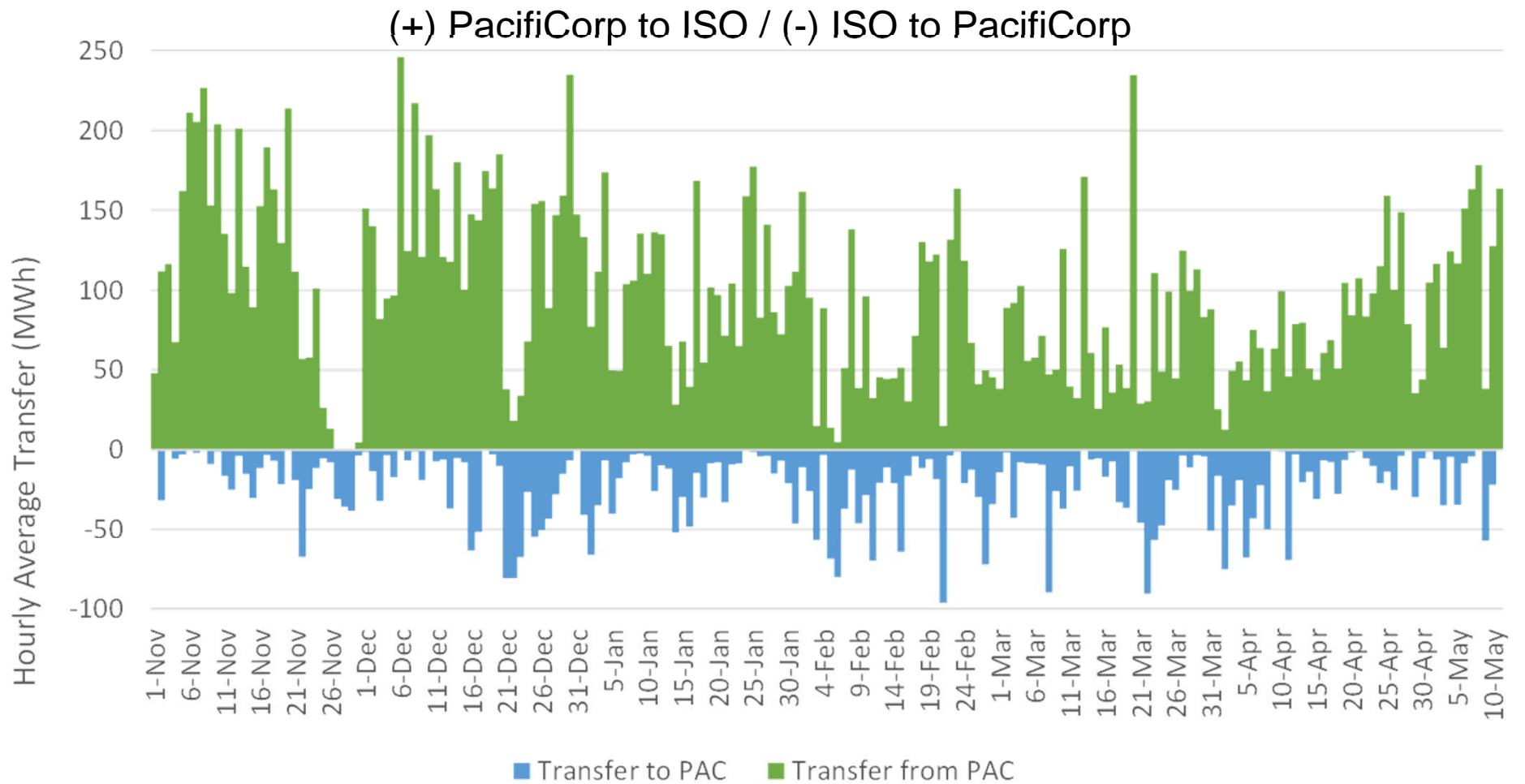
## 5-minute PACE Aggregate Price



## 5-minute PACW Aggregate Price

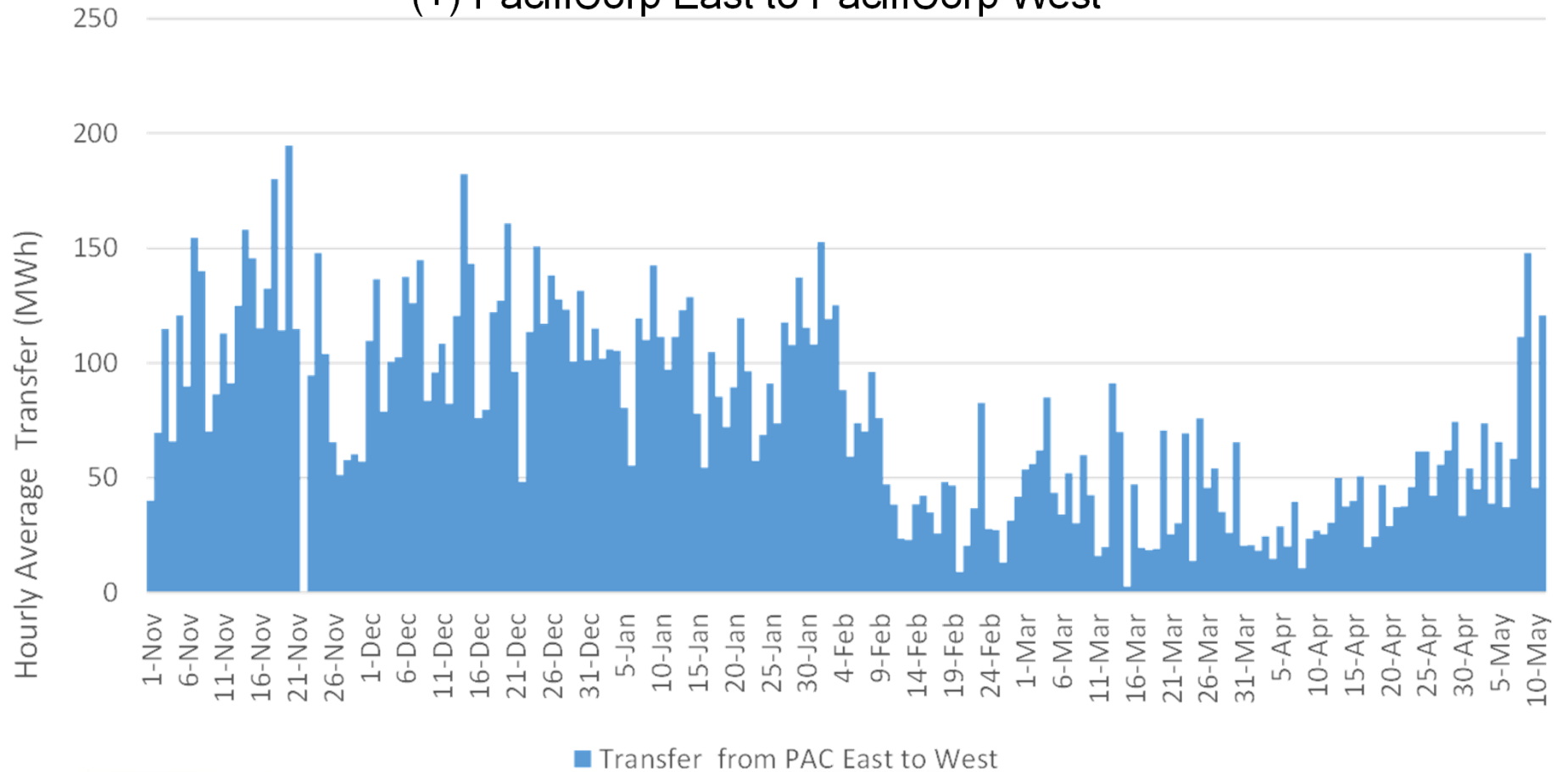


# Hourly average transfer from PacifiCorp and ISO



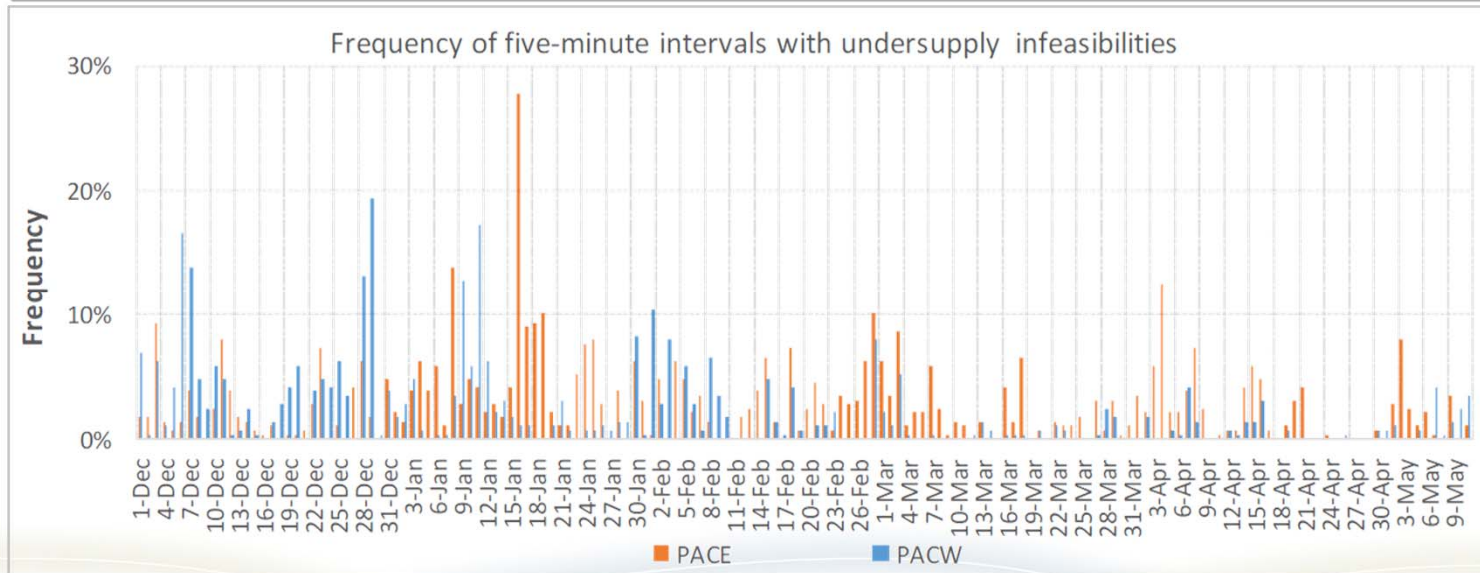
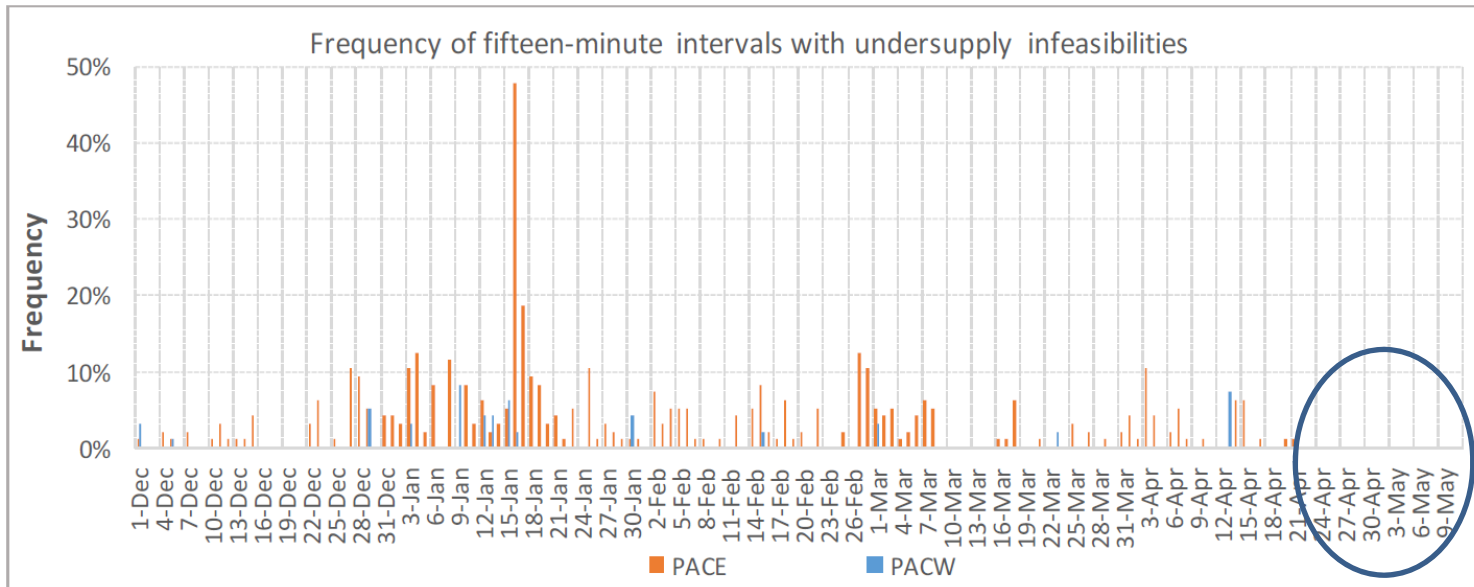
# Hourly average transfers between PACE and PACW decreased in February but increased in May

(+) PacifiCorp East to PacifiCorp West





# No 15-minute infeasibilities since April 22





# Questions