# Briefing on market performance

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Board of Governors

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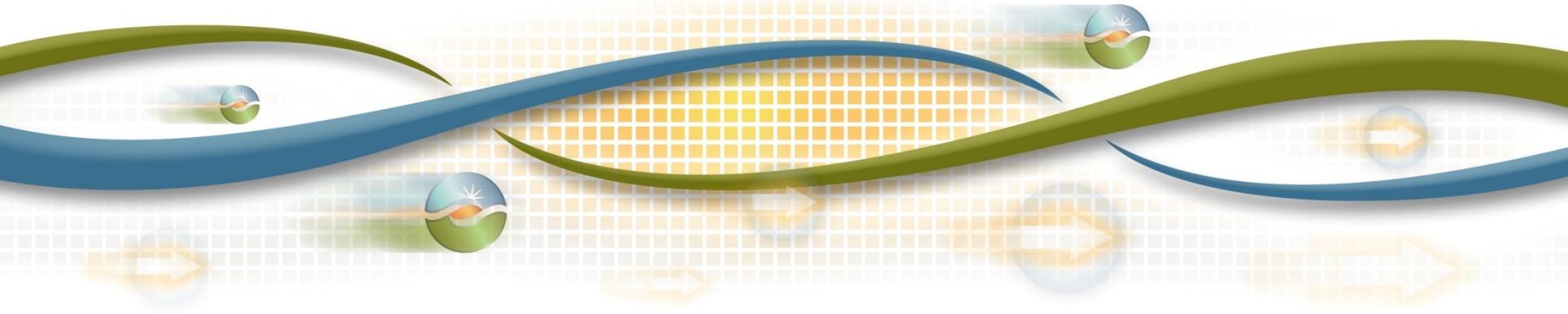
Update on full network model expansion and energy imbalance market

- Full network model (FNM) expansion was implemented on October 15.

- PacifiCorp energy imbalance market (EIM) launched on November 1.

October 1   October 15   November 1

EIM parallel operation

EIM go live

FNM expansion

California ISO
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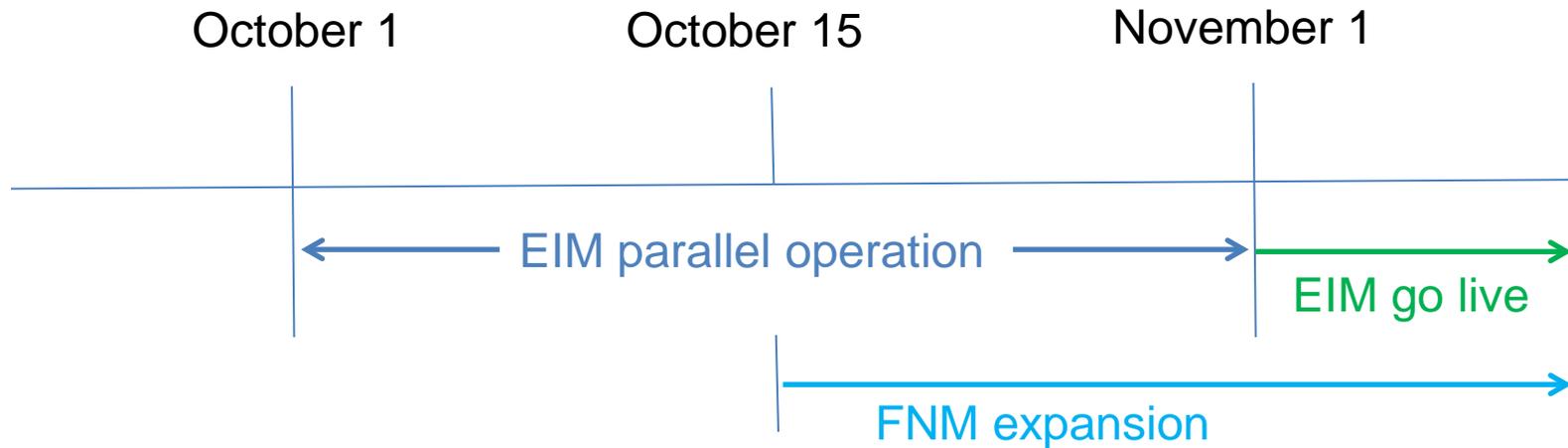
Full network model expansion accounts for flows caused by external balancing areas activity
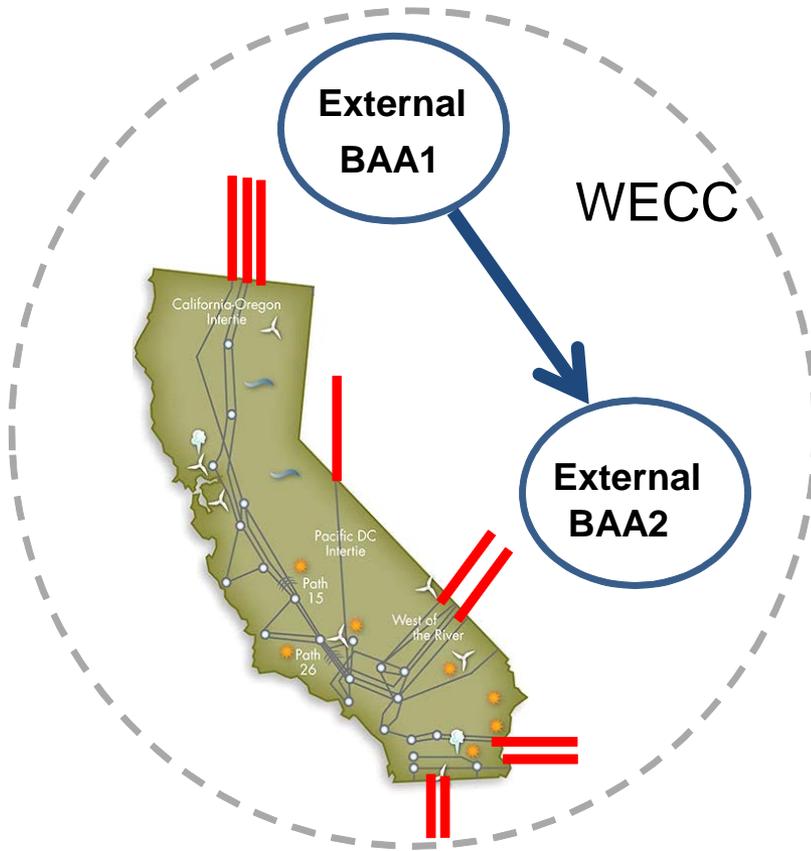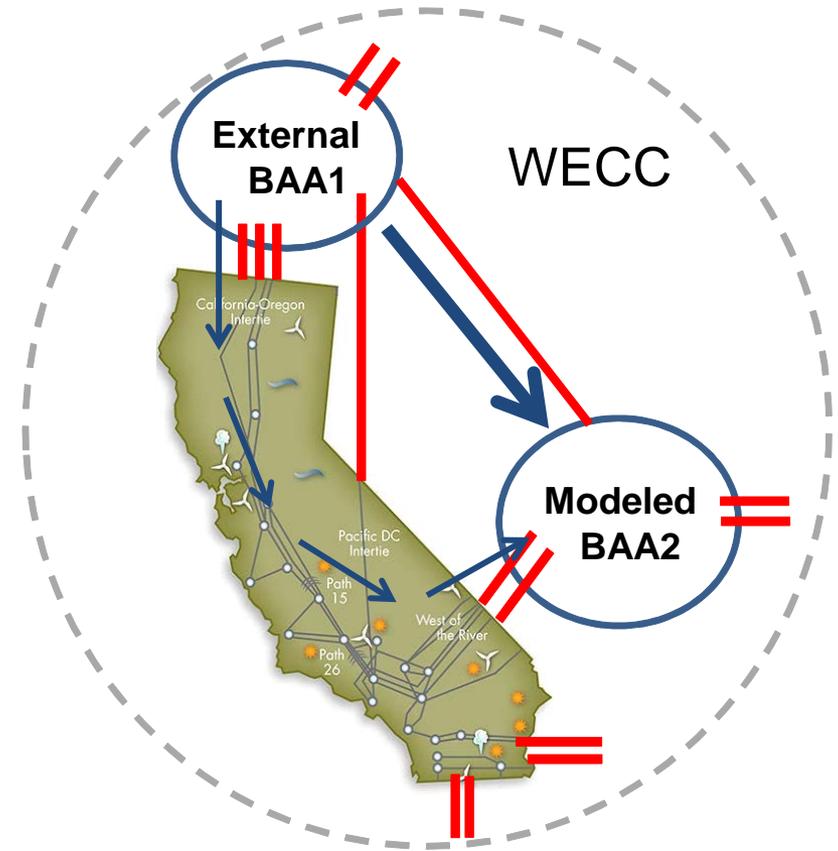
The accuracy metric indicates improved flow modelling with implementation of the full network model.

FNM Accuracy Metric

Scenario 1   ISO models external unscheduled flow impacts in DA

Scenario 2   ISO does not model external unscheduled flow impacts in DA

Description of metric   http://www.caiso.com/Documents/FullNetworkModelExpansion_Pre-ImplementationAnalysis.pdf

*3 - week Rolling Cumulative

Date	Scenario 1* $\Sigma\|DaExUSFtie,hour - ActExUSFtie,hour\|$	Scenario 2* $\Sigma\|0 - ActExUSFtie,hour\|$	PASS/FAIL
11/4/2014	1,671,900	1,790,739	PASS
11/5/2014	1,723,446	1,841,068	PASS
11/6/2014	1,752,605	1,917,699	PASS
11/7/2014			PASS
11/8/2014			PASS
11/9/2014			PASS
11/10/2014			PASS
11/11/2014			PASS
11/12/2014			PASS
11/13/2014			PASS
11/14/2014			PASS
11/15/2014			PASS
11/16/2014			PASS
11/17/2014			PASS
11/18/2014			PASS
11/19/2014			PASS
11/20/2014			PASS
11/21/2014			PASS
11/22/2014			PASS
11/23/2014	1,552,095	1,843,055	PASS
11/24/2014	1,543,089	1,839,606	PASS
11/25/2014	1,561,754	1,870,504	PASS
11/26/2014	1,552,618	1,867,605	PASS
11/27/2014	1,513,909	1,821,015	PASS
11/28/2014	1,479,564	1,782,455	PASS
11/29/2014	1,464,396	1,768,638	PASS
11/30/2014	1,460,660	1,765,958	PASS

Scenario 1

ISO models external unscheduled flow impacts in the day-ahead

Scenario 2

ISO does not model external unscheduled flow impacts in the day-ahead

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Energy imbalance market extends real-time market functions to the Western Interconnection.

Balancing Authority Areas
California ISO
PacifiCorp

California ISO
Shaping a Renewed Future
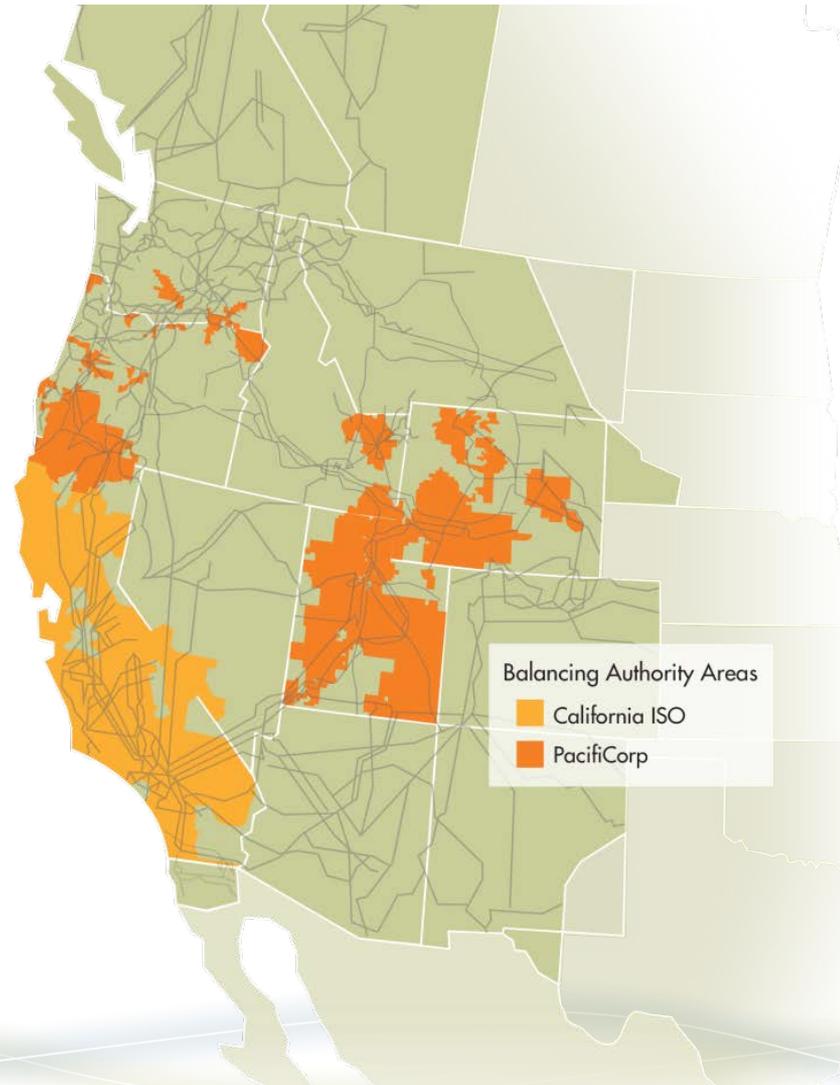
15-minute transfers between PacifiCorp and ISO

(+) PacifiCorp to ISO / (-) ISO to PacifiCorp
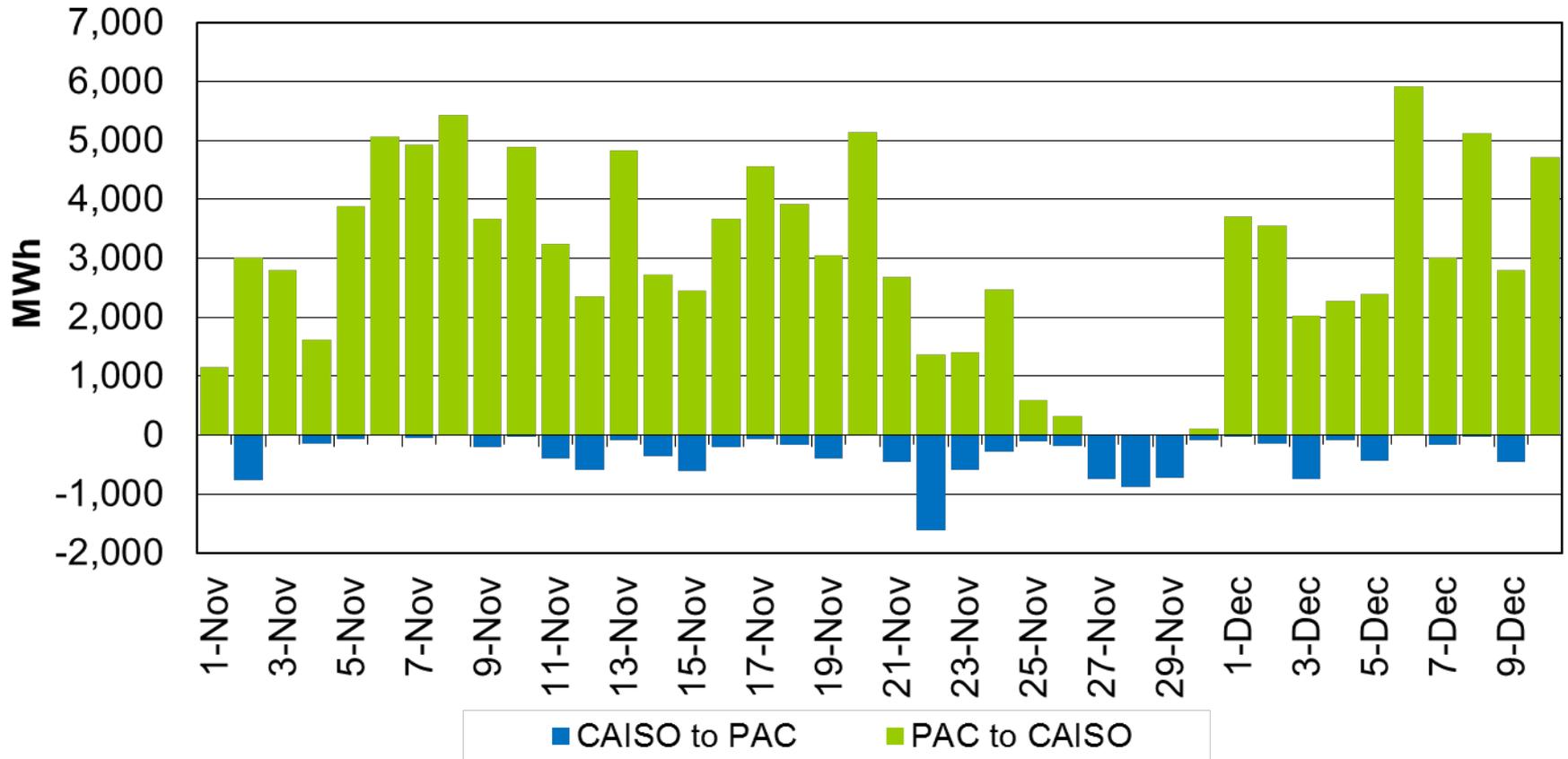
15-Minute price frequency in PACE and PACW

15-minute PACE Aggregate Price
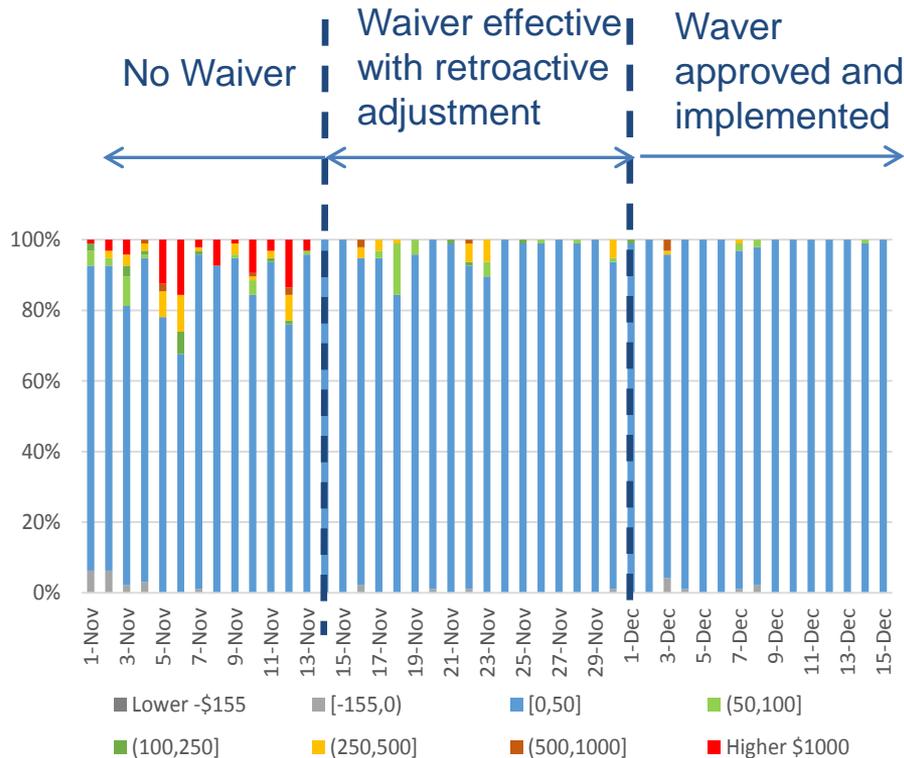
15-minute PACW Aggregate Price

5-Minute price frequency in PACE and PACW
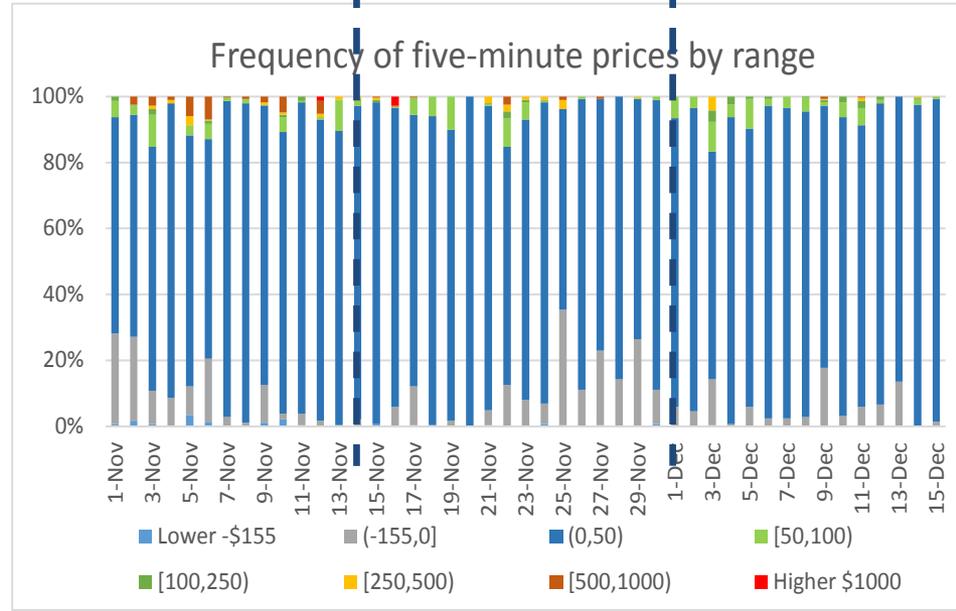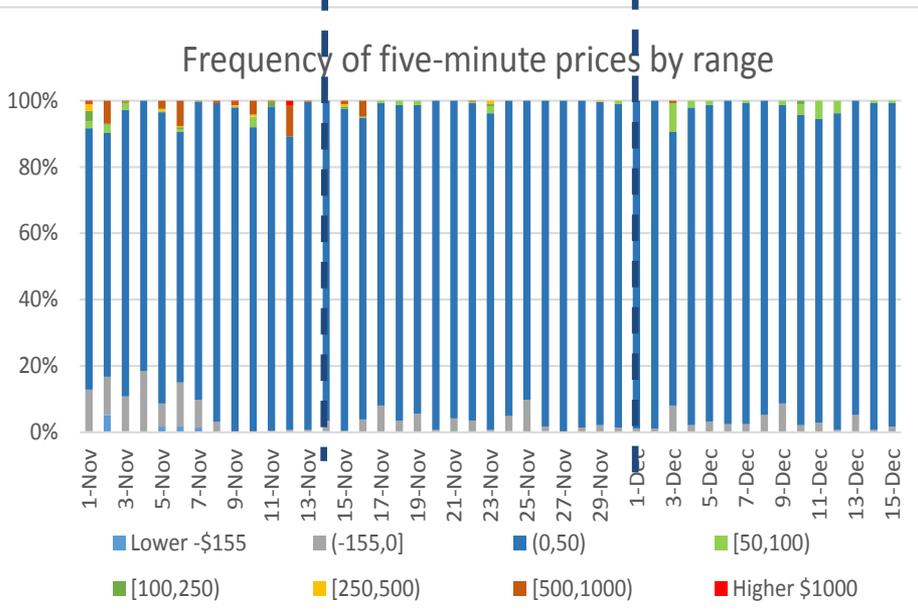
Energy imbalance market deployment update

- EIM dispatching participating resources as designed to balance real-time supply/demand across the EIM areas.

- Optimized transfers benefiting both supply and demand.

- Experienced some transitional data transfer, software issues and process learning.

- Tuning new business practices to enhance information flow between operations and market inputs.

- ISO will track EIM regional benefits and provide quarterly reports to stakeholders

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