



Briefing on Western Energy Imbalance Market

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EIM Governing Body Meeting

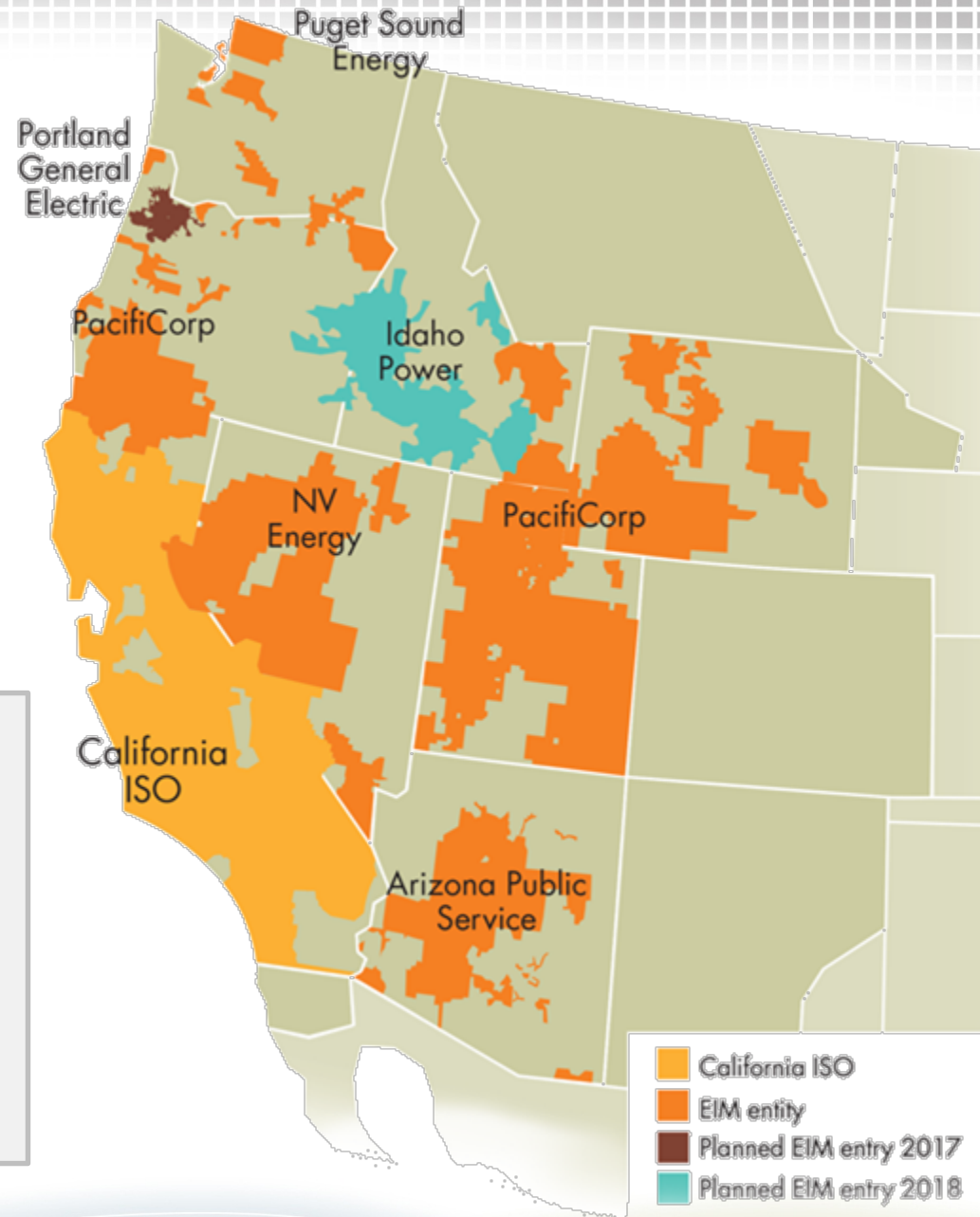
General Session

November 30, 2016



EIM update

- Arizona and Puget
 - Went live October 1st
 - Portland General
 - Fall 2017
 - Idaho Power
 - Spring 2018
- Entities exploring future entry
 - CENACE, Baja CA
 - Balancing Authority of Northern California (BANC)
 - Los Angeles Department of Water & Power (LADWP)
 - Seattle City Light (SCL)



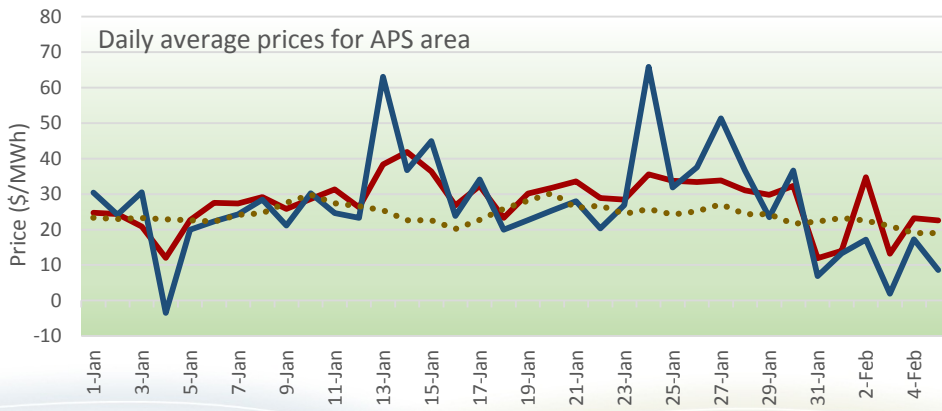
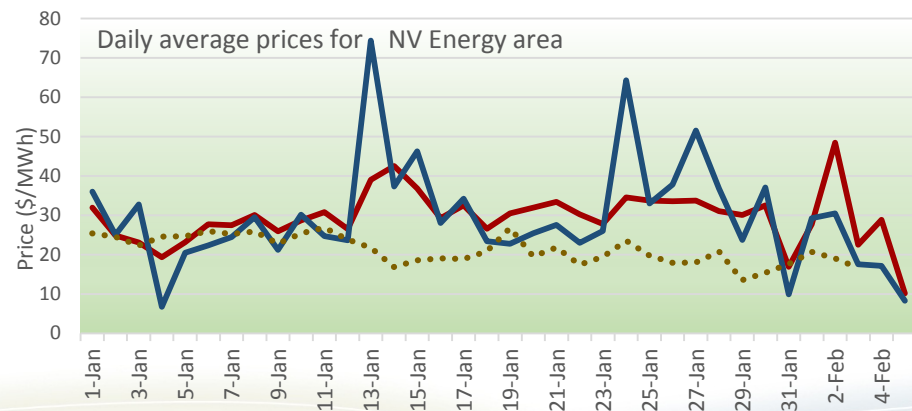
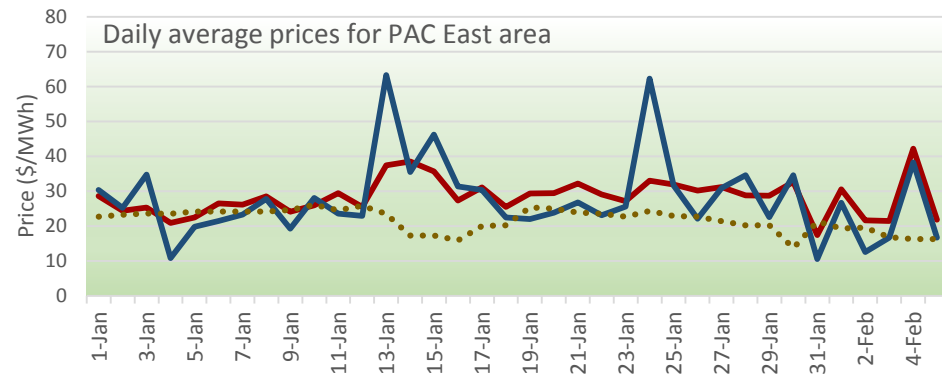
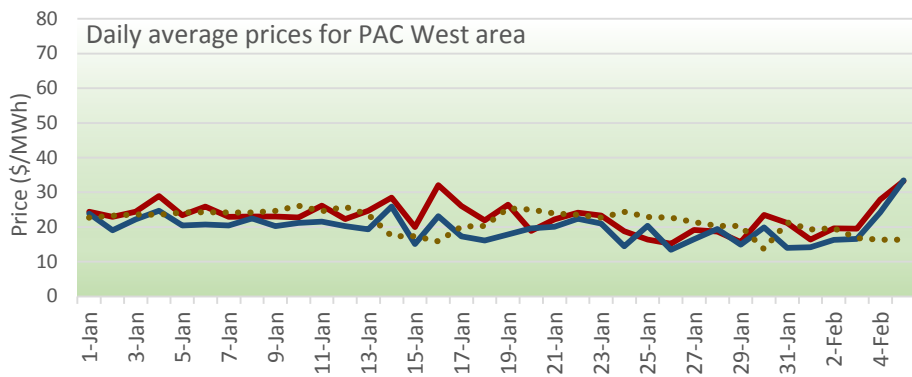
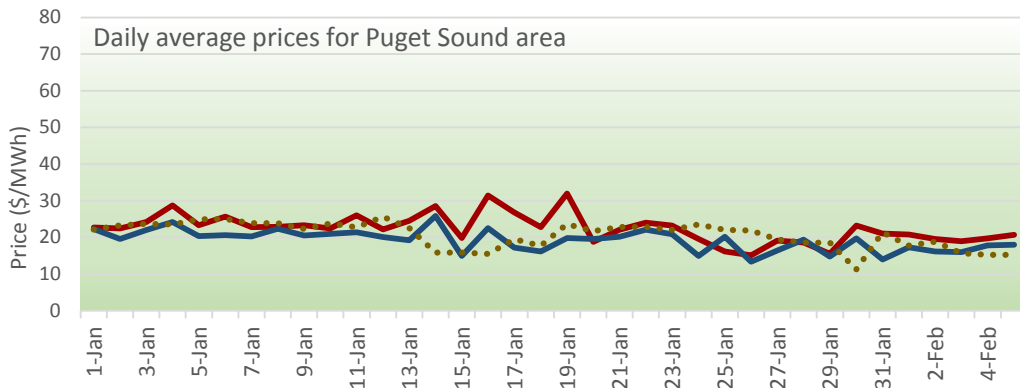
Gross economic benefits since start of EIM = \$114.4M

BAA	2014	2015*	1 st Qtr 2016	2 nd Qtr 2016	3 rd Qtr 2016	Total
CAISO	\$ 1.2	\$ 12.7	\$ 6.4	\$ 7.9	\$ 5.4	\$ 33.6
NVE	-	\$.8	\$ 1.7	\$ 5.2	\$ 5.6	\$ 13.3
PAC	\$ 4.7	\$ 26.2	\$ 10.9	\$ 10.5	\$ 15.1	\$ 67.4
Total	\$ 6.0	\$ 39.7	\$ 18.9	\$ 23.6	\$ 26.2	\$ 114.4

*NVE did not begin participating till 4th quarter of 2015.

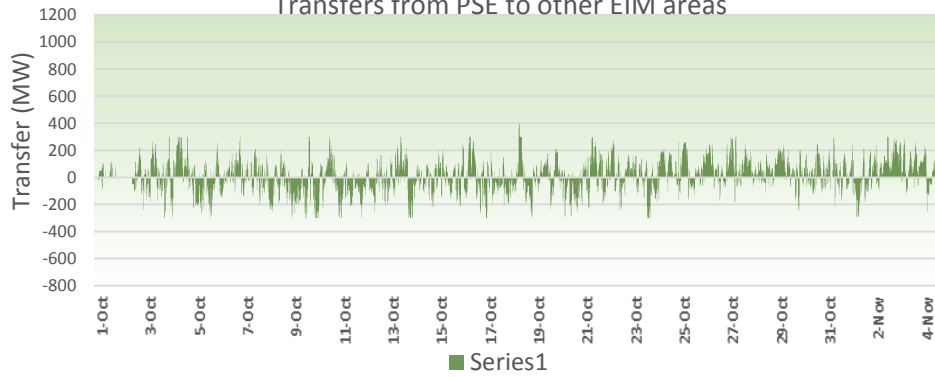
BAA	July	August	September	Q3 – 2016 Total
CAISO	2.24	1.38	1.82	5.44
NVE	1.88	2.16	1.55	5.60
PAC	6.09	4.92	4.12	15.12
Total	10.21	8.46	7.49	26.16

Daily average prices in EIM areas

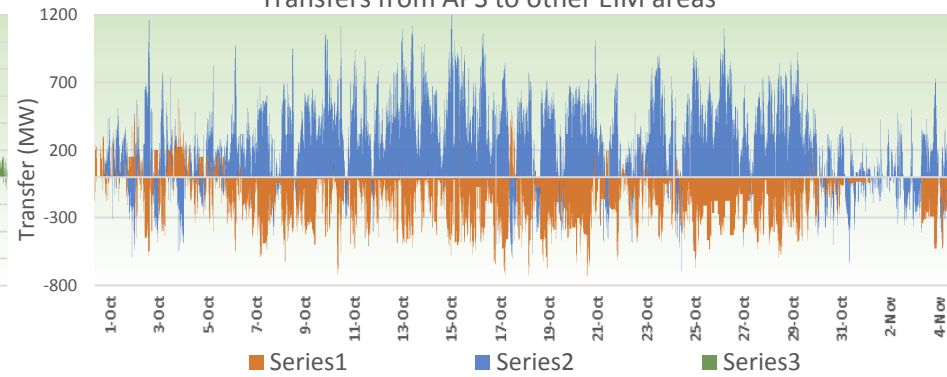


Transfer capabilities have been gradually released

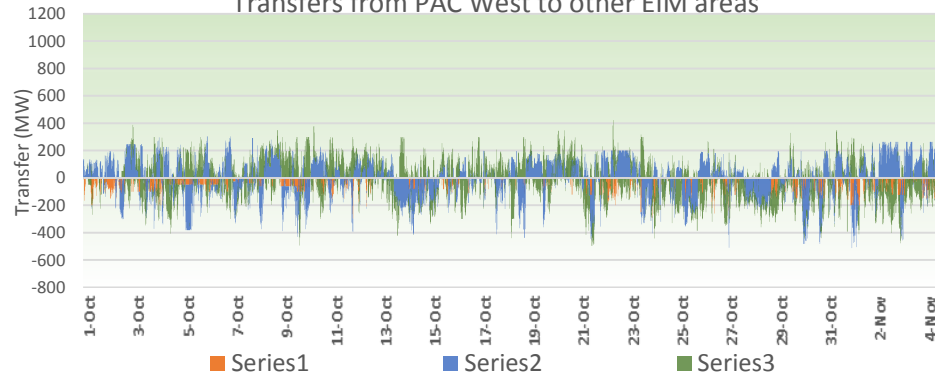
Transfers from PSE to other EIM areas



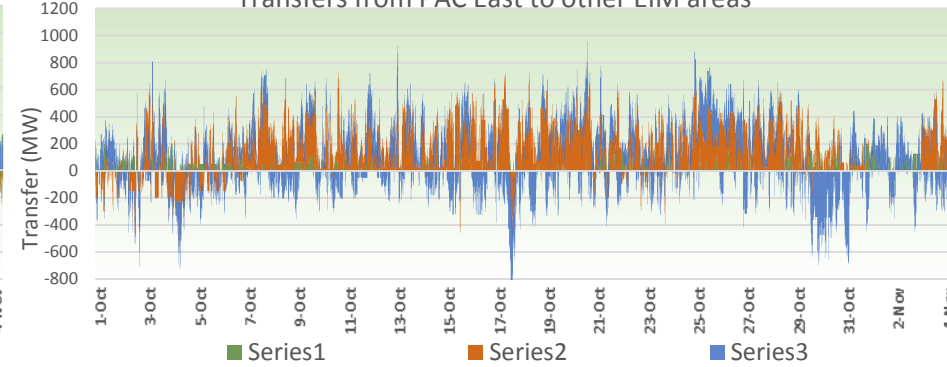
Transfers from APS to other EIM areas



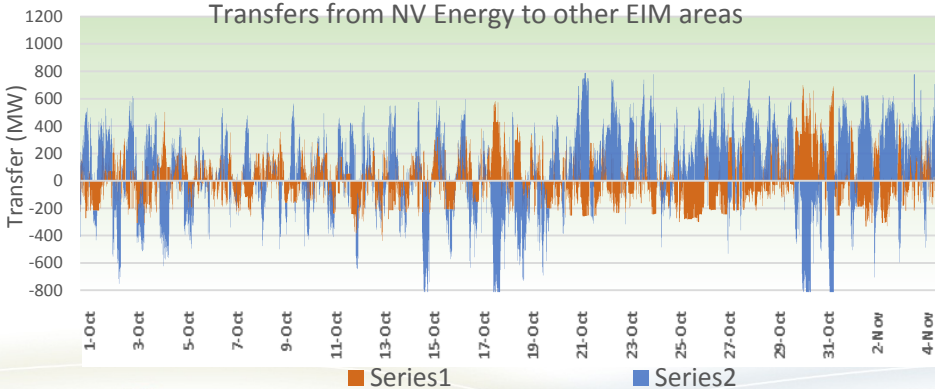
Transfers from PAC West to other EIM areas



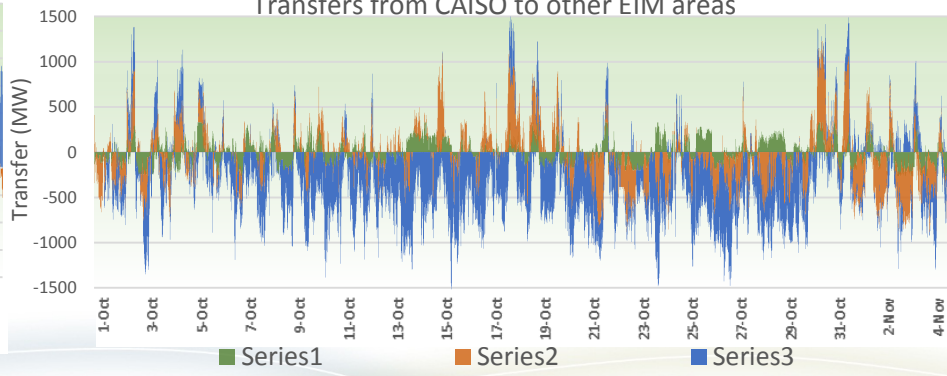
Transfers from PAC East to other EIM areas



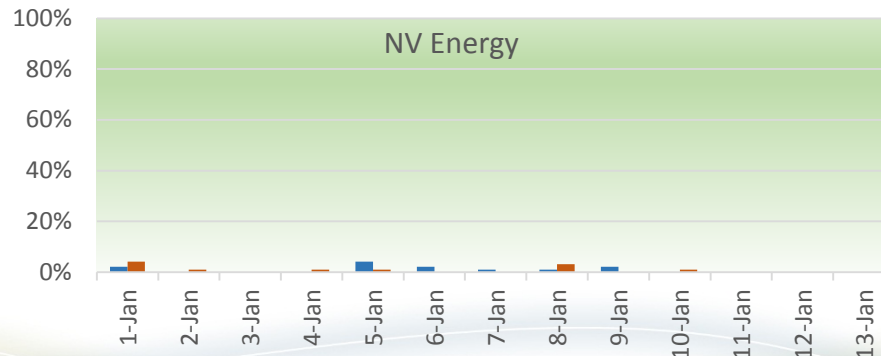
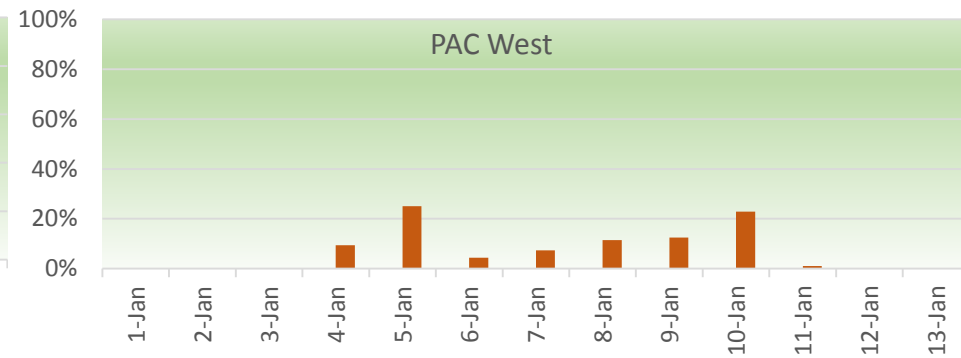
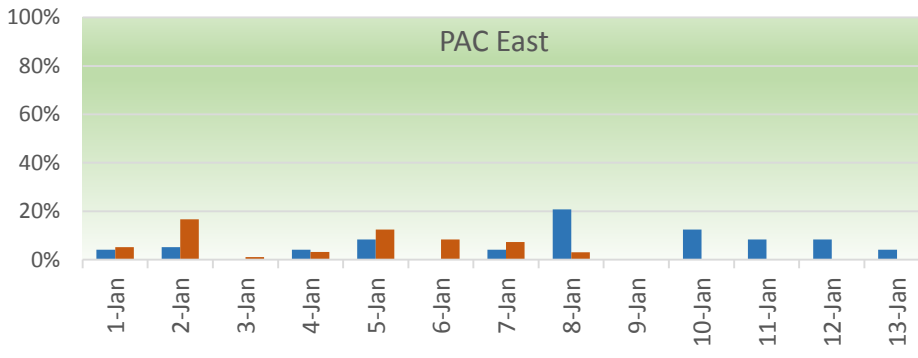
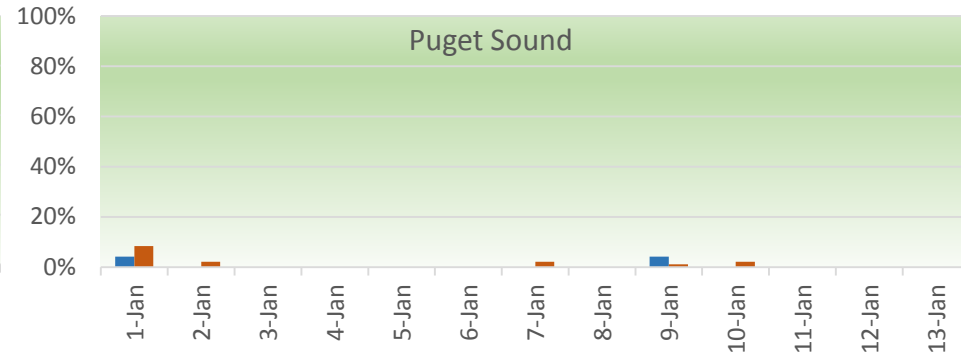
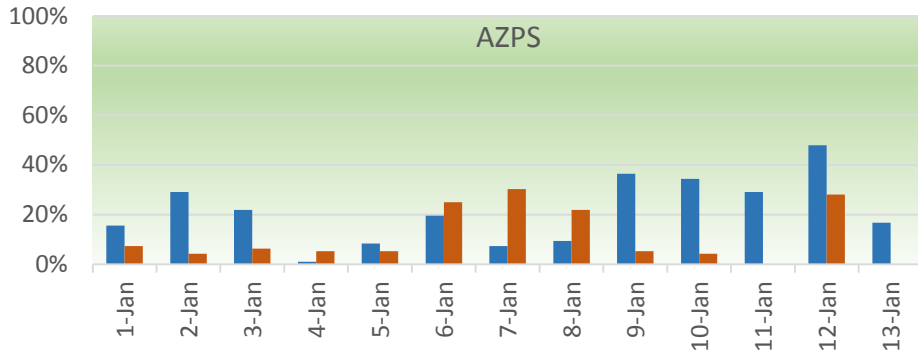
Transfers from NV Energy to other EIM areas



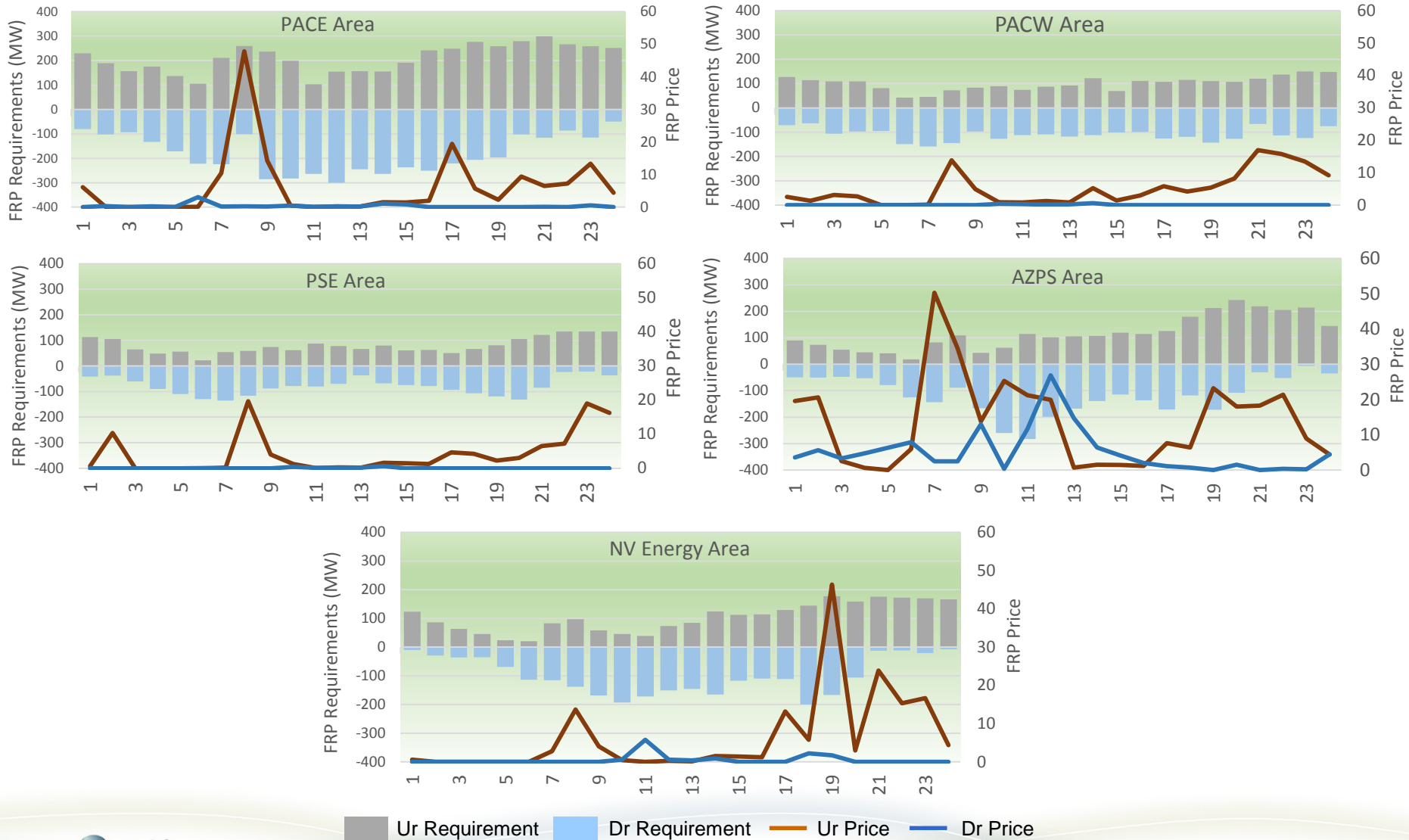
Transfers from CAISO to other EIM areas



Challenges passing flex sufficiency the first days after implementation of flex ramp product



Flex ramp product requirements and prices reflecting the hourly profile needs





QUESTIONS