

EIM Transmission Allocation & Real-Time Bilateral Markets

EIM Regional Issues Forum

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Arizona Public Service Company

Customers: 1.2 million (89% residential)

Service Territory:

- 34,646 square miles
- 11 of the 15 Arizona counties

2017 Peak BAA Demand: 7,318 MW

Generation Capacity: Over 6,000 MW of owned or leased capacity (~8500 MW with long-term contracts)

Transmission & Distribution: 34,937 miles

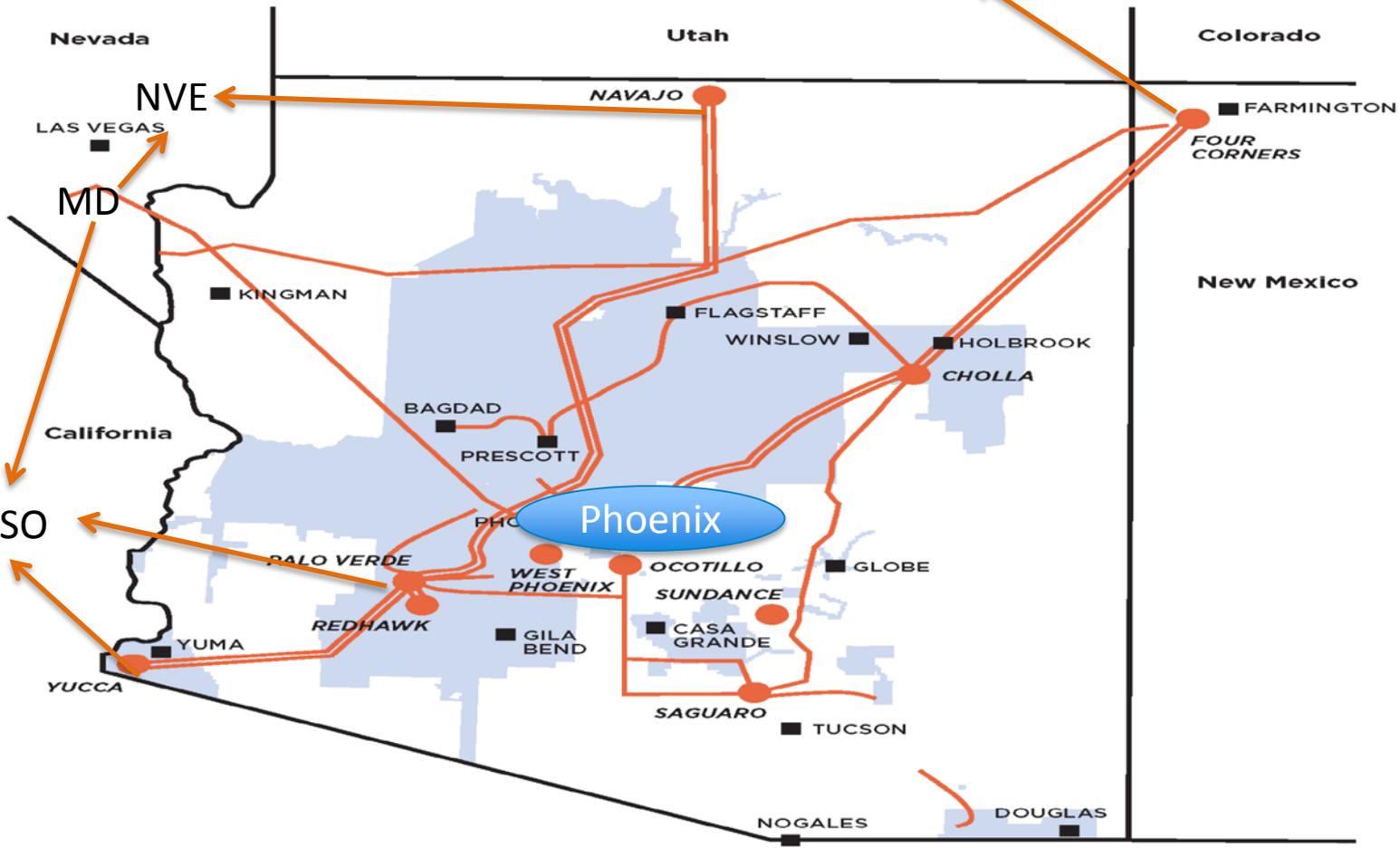
- Transmission: 5,958 miles
- Distribution: 28,979 miles

EIM Participating Resources

<u>Resource Type</u>	<u>Capacity (MW)</u>	<u>Shared Hubs (PL/Yuma)</u>	<u>Counter Flows</u>
Coal	380	N /A	380
Gas Fired	3,660	1,844	1,816
MicroGrid	33	22	11
Utility Scale Solar **	230	N /A	N /A
Wind **	99	N /A	N /A
Total	4,402	1,866	2,207

**** Curtailable during negative pricing
or trough hours**

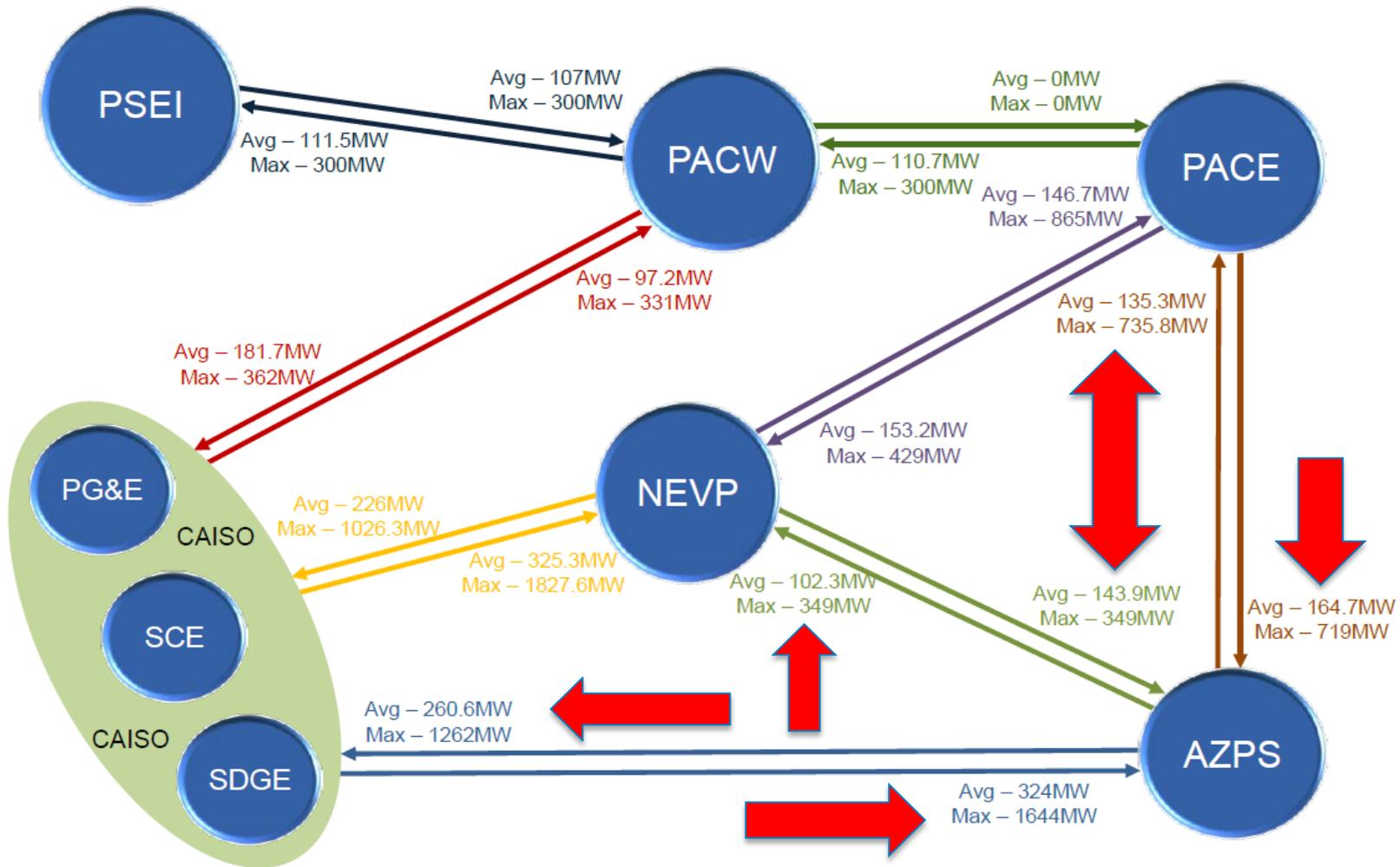
PACE



NVE
MD
CAISO

- APS Retail Electric Service Territory
- Major APS Power Plants
- Principal APS Transmission Lines

EIM Energy Transfer Capabilities – Q3 2017

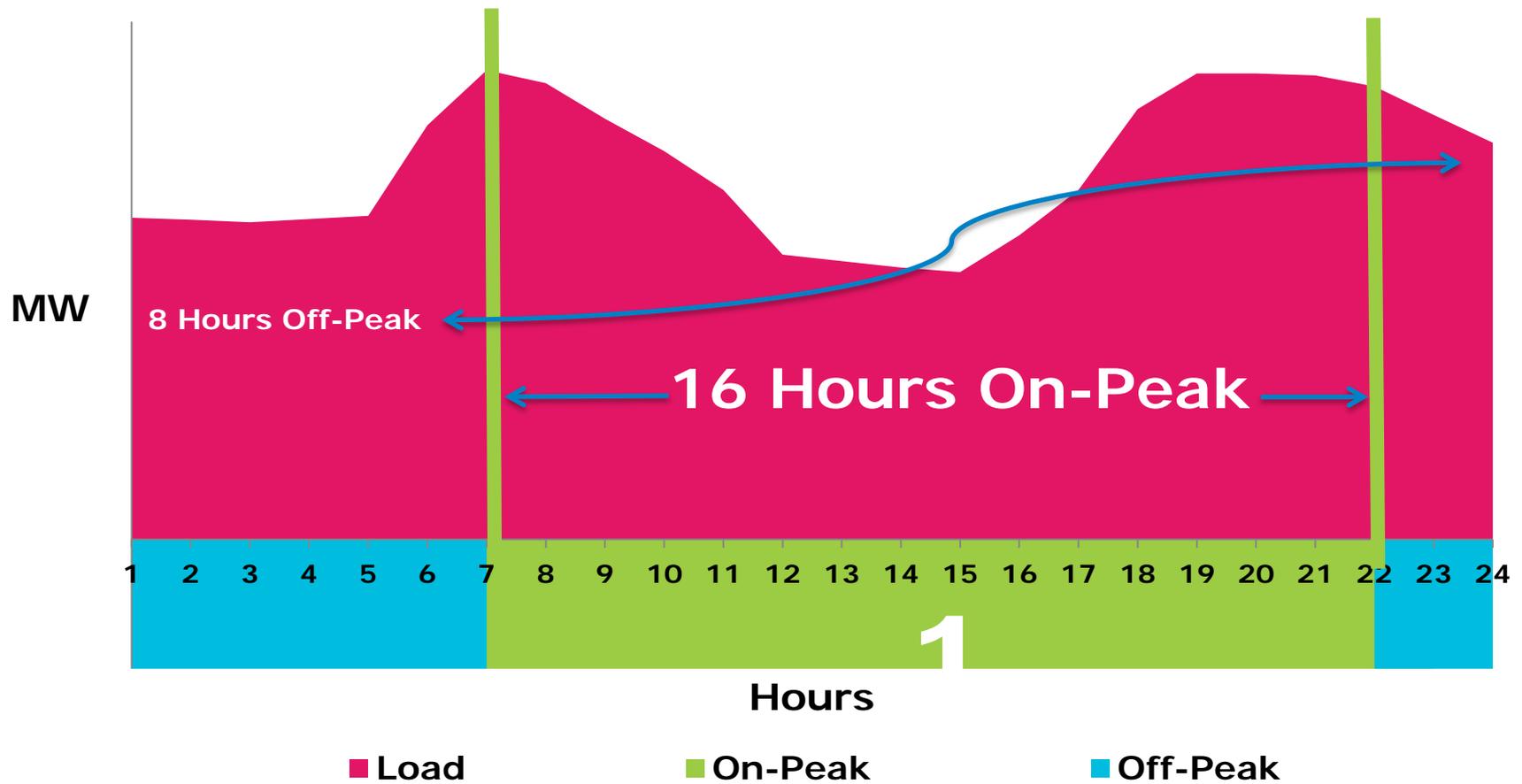


Bilateral Market Liquidity

- Real-Time Exposure:
 1. Base Schedules/Bid Curves are due at T-75 by the PRSC, any trades ½ hour before submittals, you might introduce the risk of UIE charges.
 2. Traders can adjust Base Schedules (unit dispatch) at T-55 for any load forecast changes.
 3. At T-40, the BAA can make final adjustments for any late tag changes by 3rd parties (JOU's).
 4. Conclusion, no power transactions for two hours prior to the start of any operating hour, unless;
 - Emergency sales for SRSB or purchases during contingencies,
 - Capacity shortages due to large contingencies.

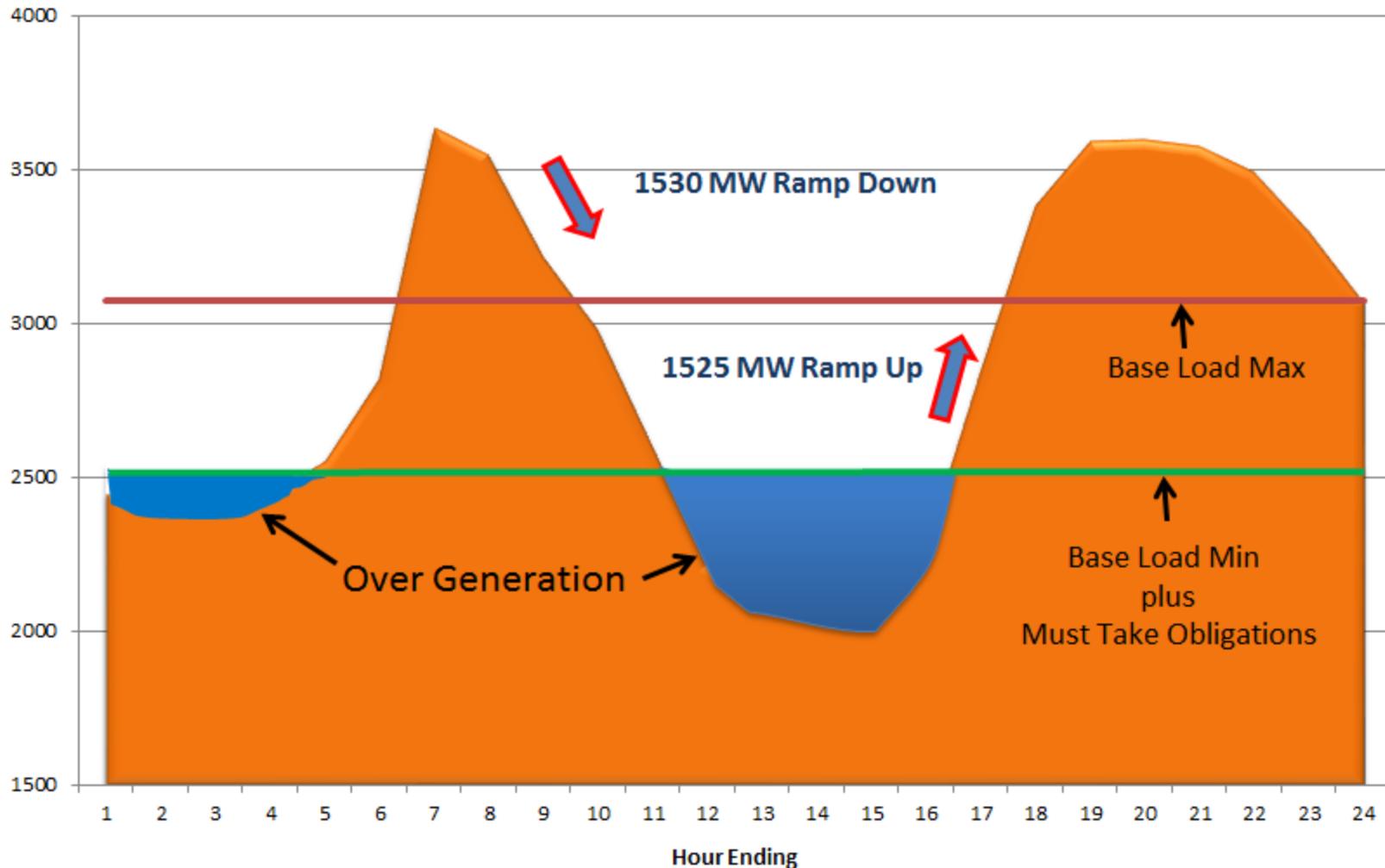
- Day-Ahead Products:
 1. Besides the standard On-Peak and Off-Peak products available in the bilateral markets (Slide 7),
 2. APS promoted the Trough and Evening-Peak products with WSPP that went into effect in 2016 (Slides 8-9).

Non-Summer Demand And Standard Product Hours



Thermal Generation Serving Load Shape

Clear Winter Day – Present (Camelback)



Demand Shape & New Products

Trough and Evening Peak

