

Energy Imbalance Information Sessions

November 12 | Phoenix, AZ

Jim Kendrick
VP of Power Marketing

AGENDA

1. Welcome & Introduction
2. Study Update
3. WALC Energy Imbalance Currently
4. California Independent System Operator (CAISO) presentation
5. Lunch break
6. Southwest Power Pool (SPP) presentation

AEPCO-CAWCD-SPPA- WAPA DSW Market Study

Dave Slick

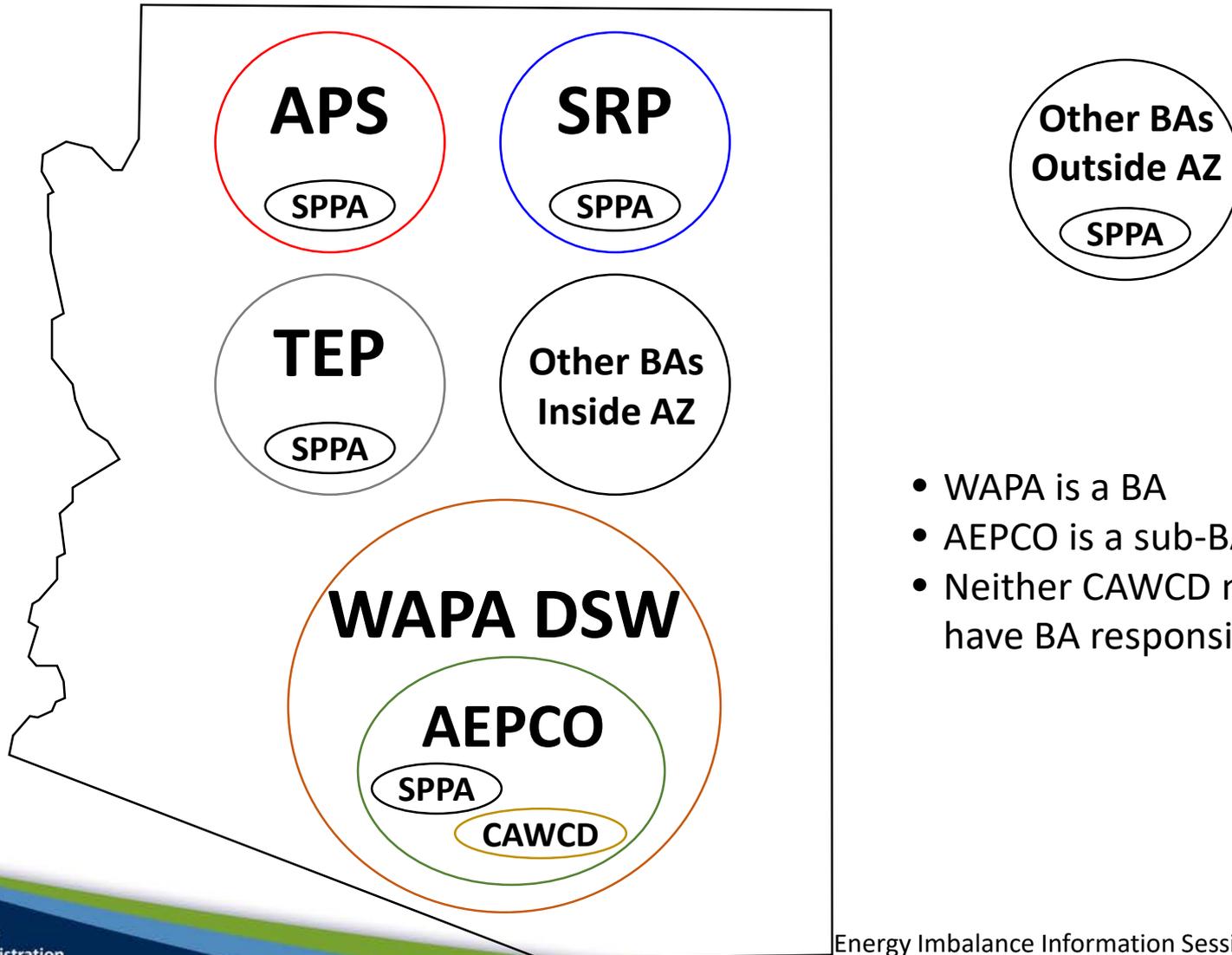
KR Saline & Associates

Study Participants

2019 Peak Demand
from Each Entity's
Perspective

1	AEPCO	Arizona Electric Power Cooperative	649 MW
2	CAWCD	Central Arizona Water Conservation District	446 MW
3	SPPA	Southwest Public Power Agency	866 MW
4	WAPA DSW	Western Area Power Administration Desert Southwest Region	1,688 MW

Balancing Area Perspective



- WAPA is a BA
- AEPCO is a sub-BA
- Neither CAWCD nor SPPA have BA responsibilities

Objective

For the Study Participants collectively, and each Study Participant individually, identify the representative annual economic impact associated with joining either CAISO's Energy Imbalance Market (EIM) or SPP's Western Energy Imbalance Service (WEIS).

Study Developments & Schedule

- The Study Participants began discussions in May 2019 and have had approximately 10 meetings to date.
- After soliciting study proposals from E3 and Brattle, the Study Participants selected one of the proposals provided by E3.
- The Study Participants are planning to conduct a WECC-wide production cost assessment of the representative future calendar year 2024.
- The Study Participants and E3 will collaborate in developing assumptions for the “base condition” analysis, and plan to explore a number of “sensitivity conditions” to enhance and further qualify the results and insights provided by the study.
- Study work is scheduled to begin in November 2019 and be completed by August 2020.

Non-Disclosure Agreement

- The Study Participants have established an NDA understanding among themselves and with E3.
- On one hand, the Study Participants do not want to expose proprietary, confidential and/or commercially sensitive information to people who are outside of the Study Participant group.
- On the other hand, the Study Participants are well integrated within the electric utility industry and the public power community in Arizona.
- Consequently, the Study Participants anticipate sharing some information with non-study participants at appropriate junctures as the study unfolds.

Cost – Benefit Considerations

- The AEPCO-CAWCD-SPPA-WAPA DSW market study performed by E3 is expected to provide estimates of “gross” benefits associated with participating in either EIM or WEIS. “Gross” benefits do not include costs associated with market participation.
- The Study Participants have initiated a separate effort aimed at identifying: a) initial costs of market participation, b) annual ongoing costs of market participation, and c) implementation costs associated with market participation.
- A comparison of the benefits identified by the market study with the costs identified by the separate effort is expected to provide an estimate of the net benefit of either EIM or WEIS market participation.

Questions?

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WALC Energy Imbalance Currently

John Paulsen

Energy Management & Marketing Manager

WALC Energy Imbalance Currently

- WALC resources for Energy Imbalance
- Settlement of Energy Imbalance
- Resource Limitations
- Imbalance needs increasing
- DSW/WALC is studying how to adapt

Feedback desired

Send comments or concerns to:

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John Paulsen

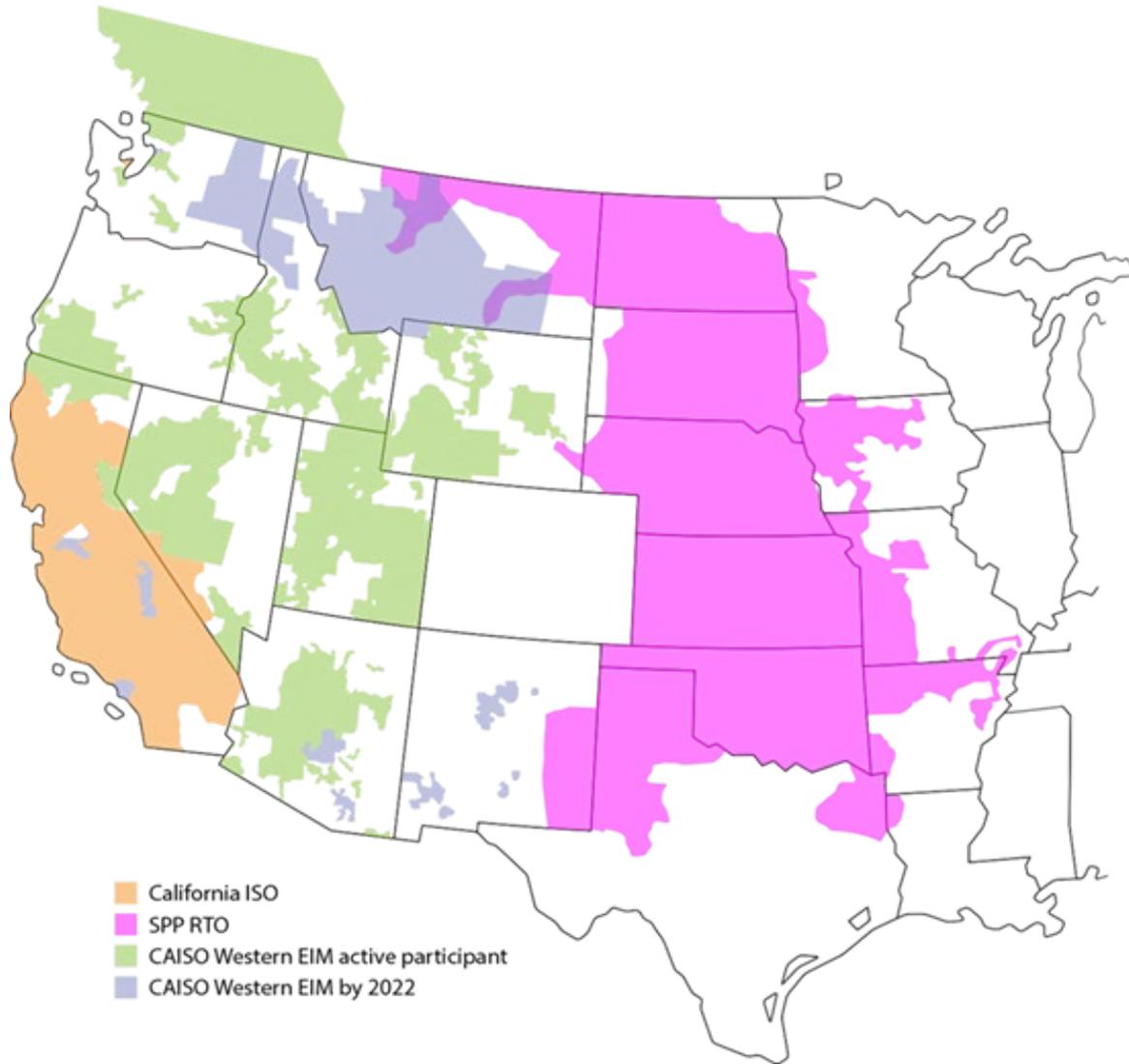
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Hoover Dam



- California ISO
- SPP RTO
- CAISO Western EIM active participant
- CAISO Western EIM by 2022