

Markets in the West Workshop

April 9-10, 2019 | Phoenix, AZ

WELCOME!

Investing in a Connected Future

Mark A. Gabriel

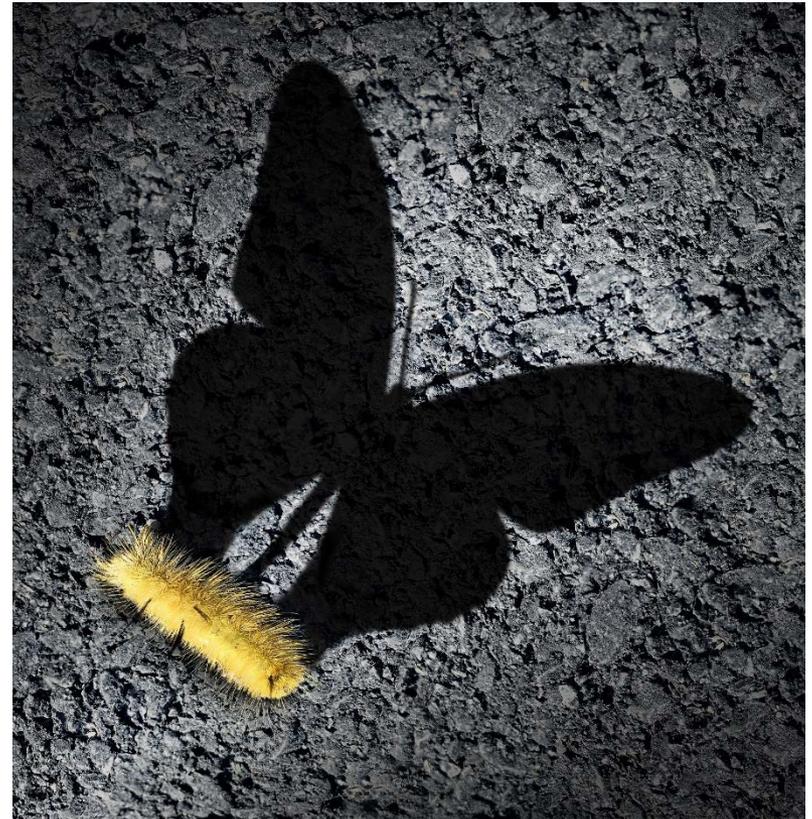
WAPA Administrator and CEO

Why a Workshop?



Changes in industry

- Reliability Coordinator
- Markets
- New regulations
- Changing fuel mix
- Security and resilience emphasis



Changing generation mix



Wind records

- ERCOT: 56.16% penetration Jan. 19, 2019 at 3:10 am
- SPP: 62.13% penetration, March 31, 2018 at 1:54 am
- CAISO: 64.6% served by wind & solar, May 26, 2018 at 2:28 pm



Solar

- Electric co-operatives - 75% of utility-sponsored community solar programs

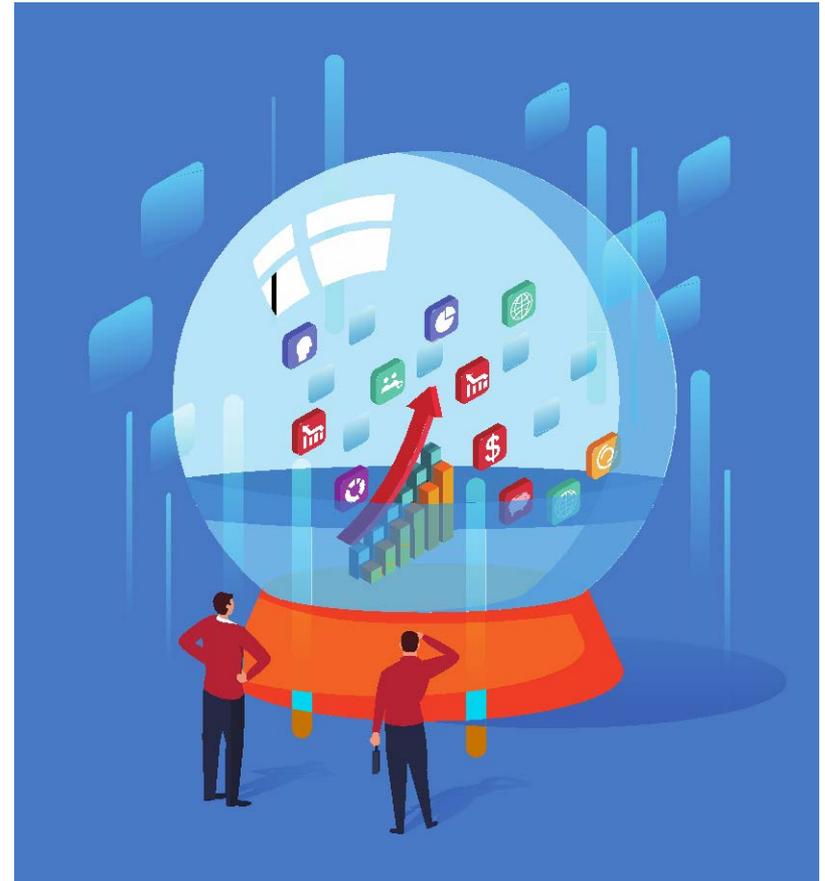


Battery storage

- 1st storage connected to WAPA system in December
- Biggest technology disruptor for customers

Preparing for the future

- Chart the course
- Take control of our joint destiny
- Gain market access for our customers
- Facilitate benefits for transmission system
- Protect your investment



Markets are coming



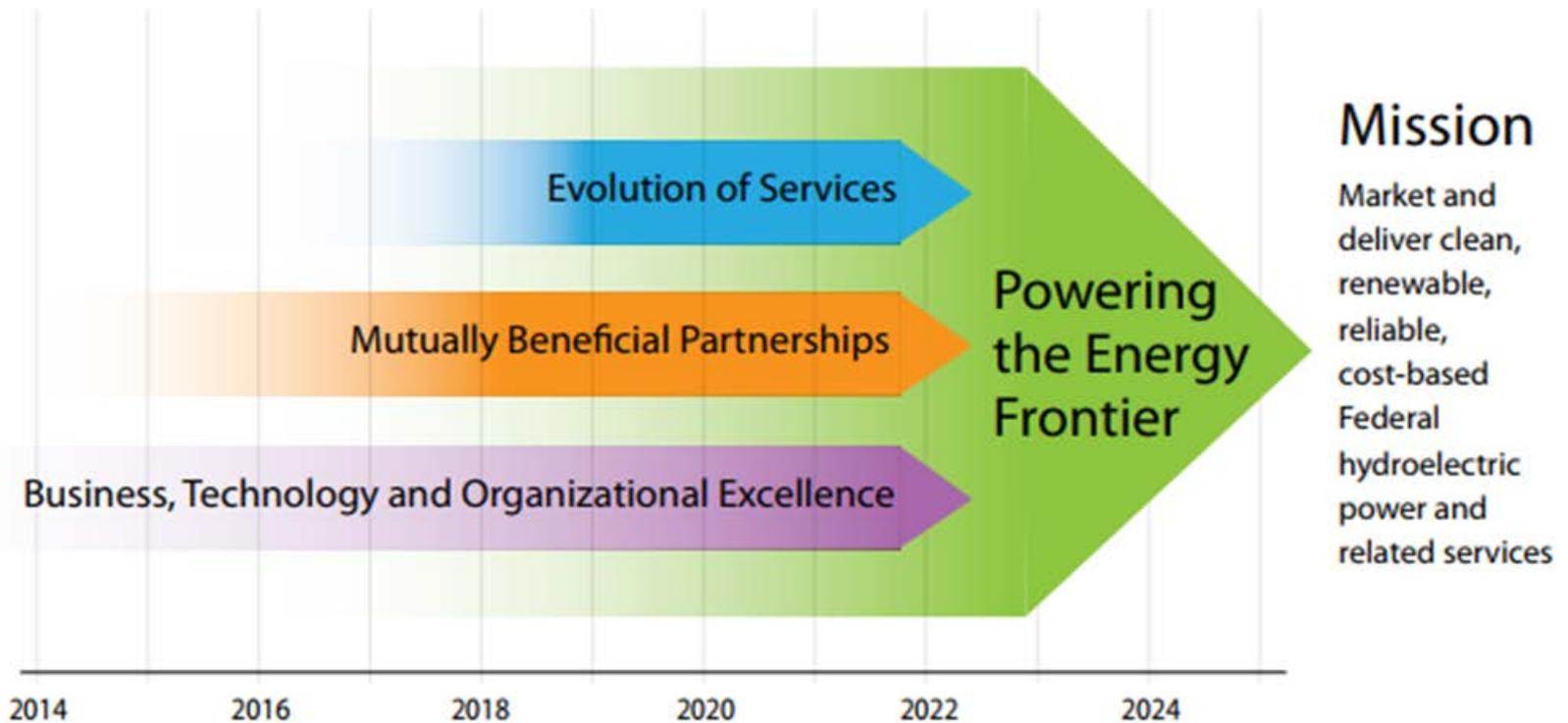
- Reduced trading partners
- Load demands are shifting
- Appropriate compensation for transmission
- Flow gates vs. contract paths

Future drivers

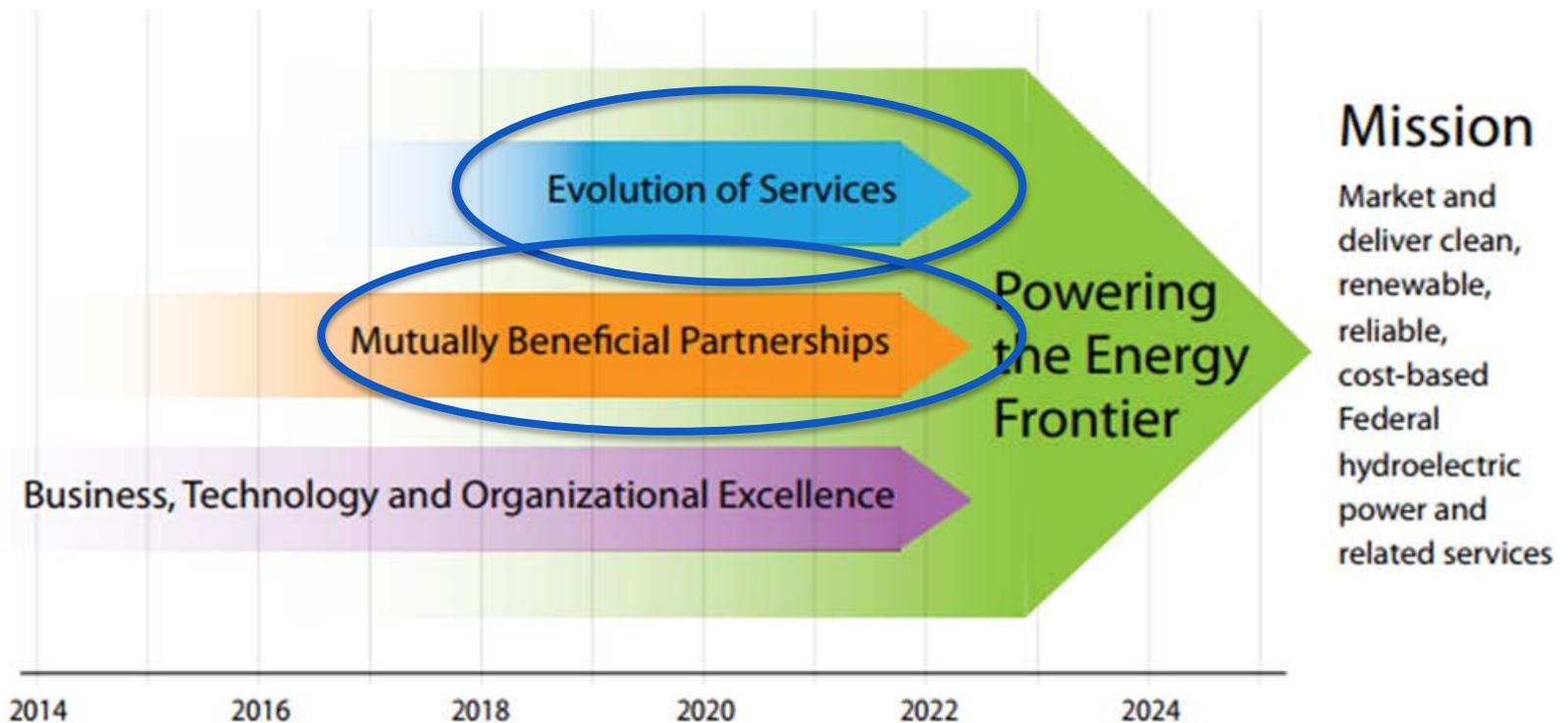
- Advances in artificial intelligence
- Blockchain
- Consumer choice and control
- Electrification of Everything



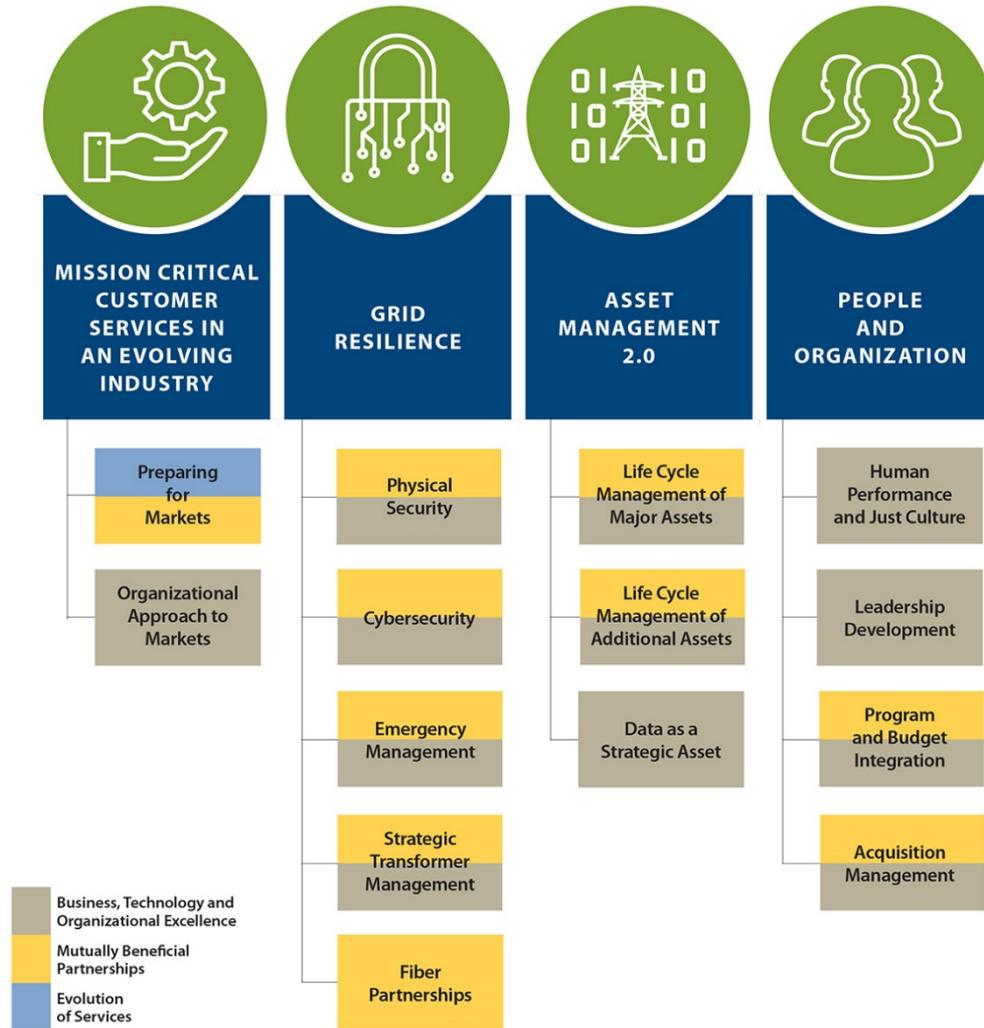
Strategic Roadmap 2024



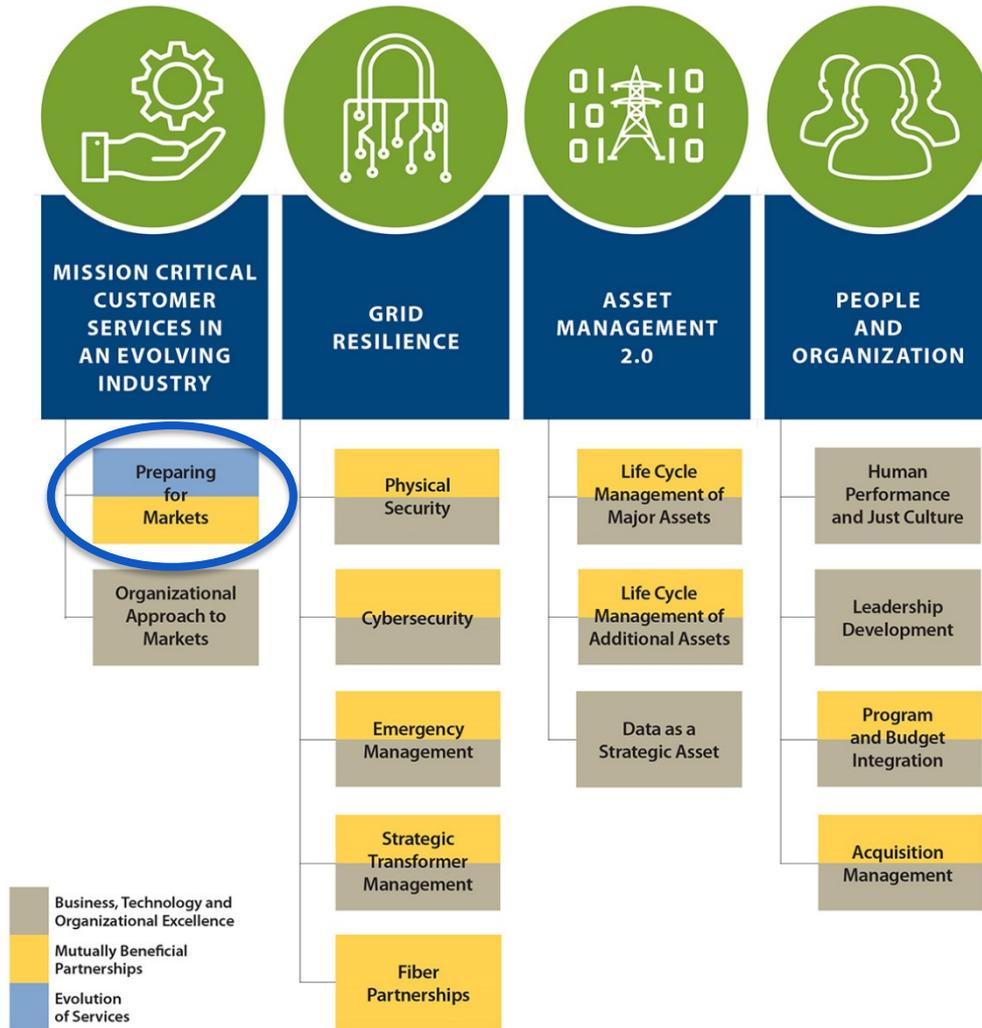
Strategic Roadmap 2024



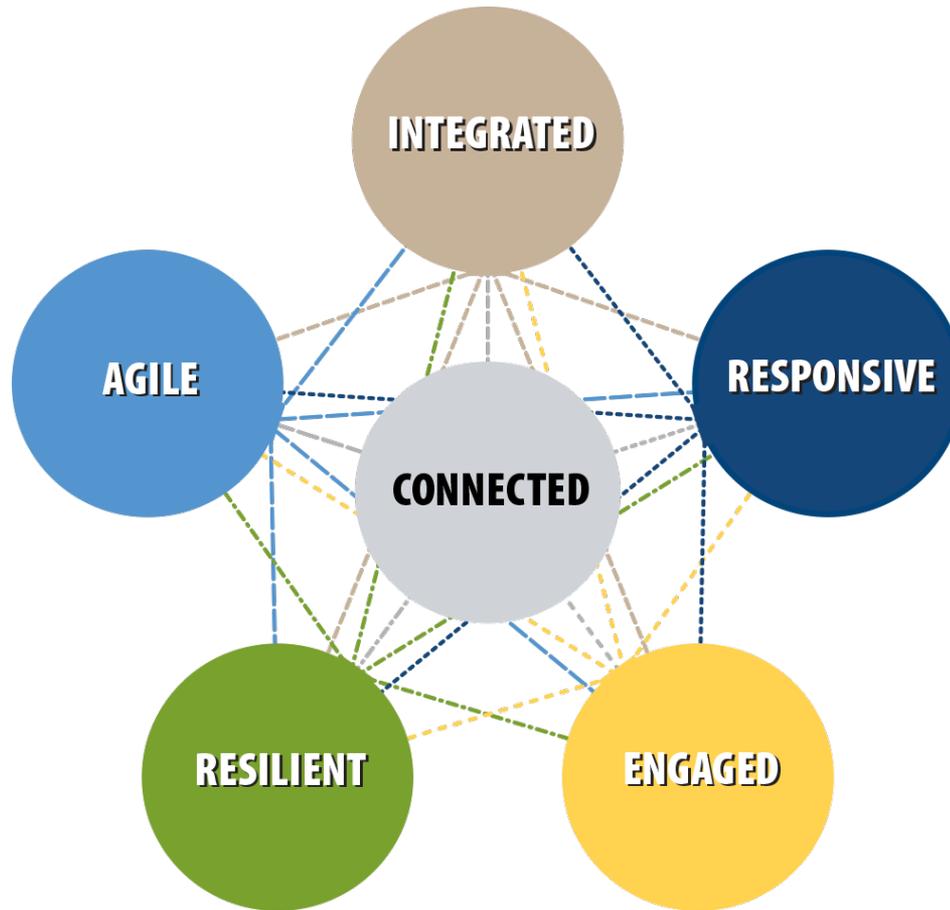
2019 Tactical Action Plan



2019 Tactical Action Plan



A connected WAPA



Today's discussion

- Opportunity to look into the crystal ball together
- Appreciate active participation
- Continue to travel a successful path forward



Contact/follow me

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*Fort Randall Dam
Courtesy of USACE*

Reliability Coordinator Transition

Don Fuller

CAISO Director of
Strategic Alliances

Carl Monroe

SPP Executive Vice
President and COO

Map of Reliability

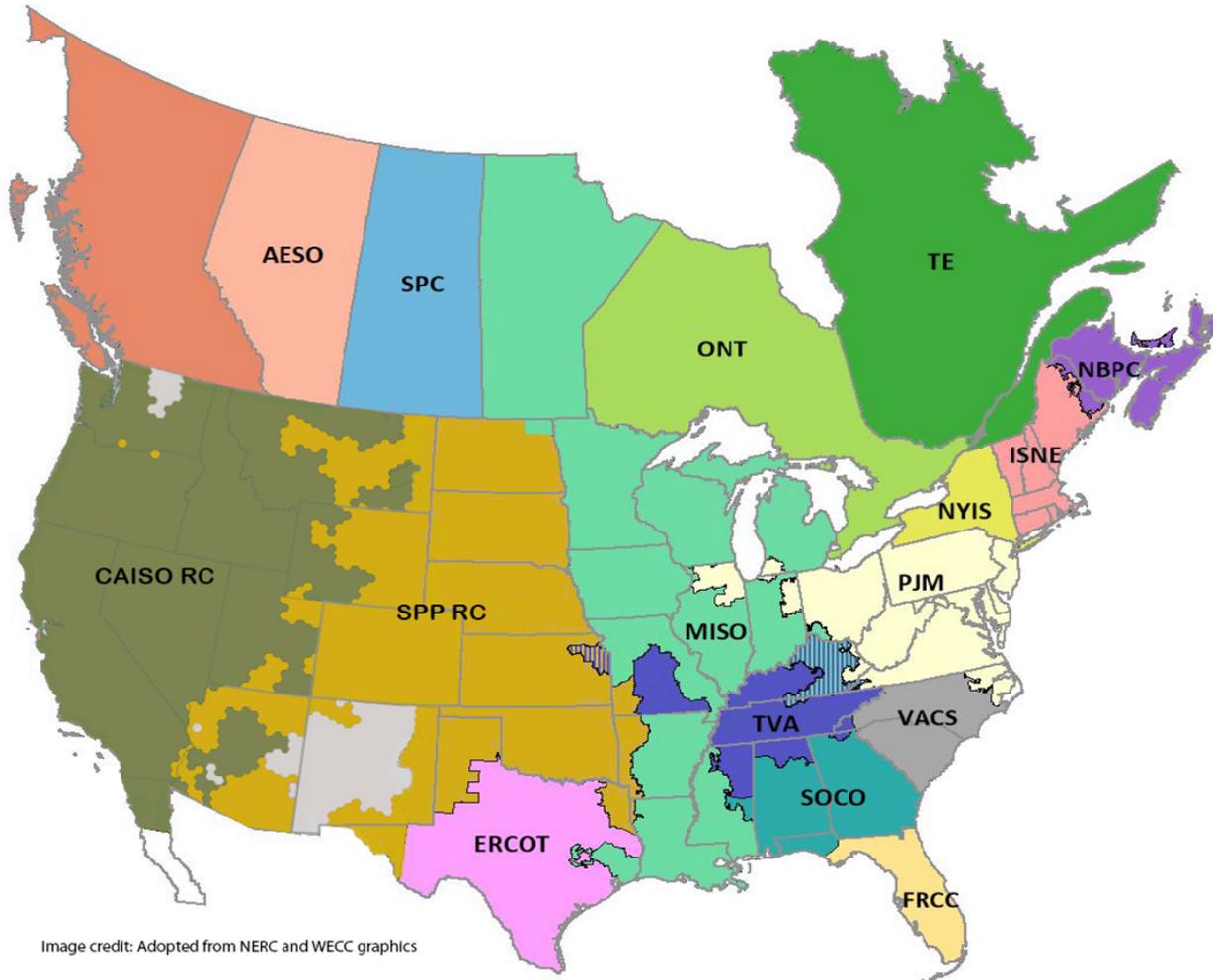
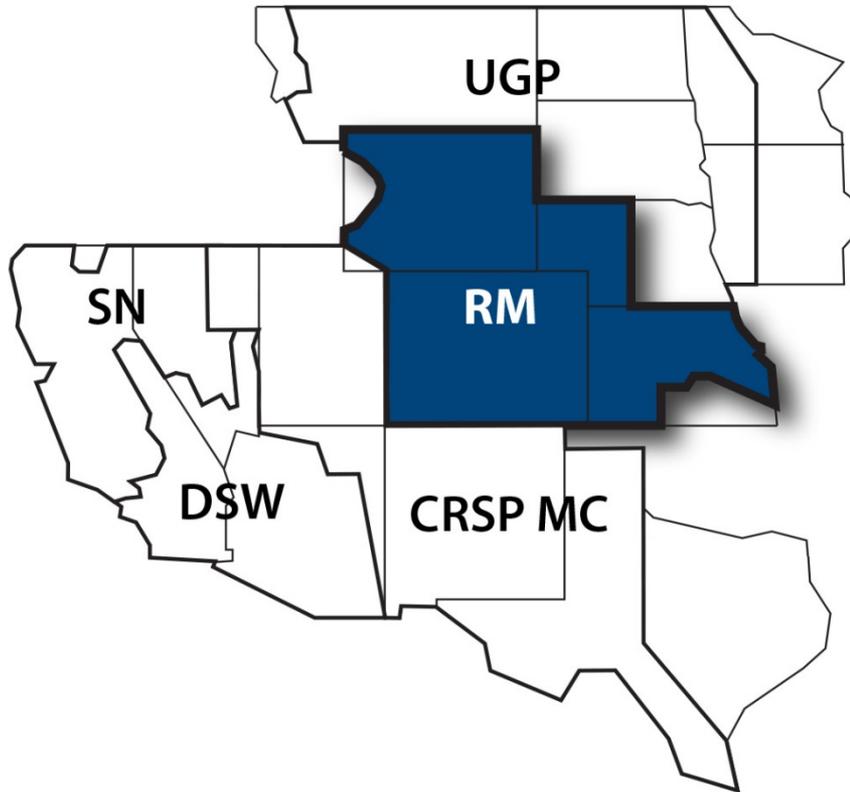


Image credit: Adopted from NERC and WECC graphics

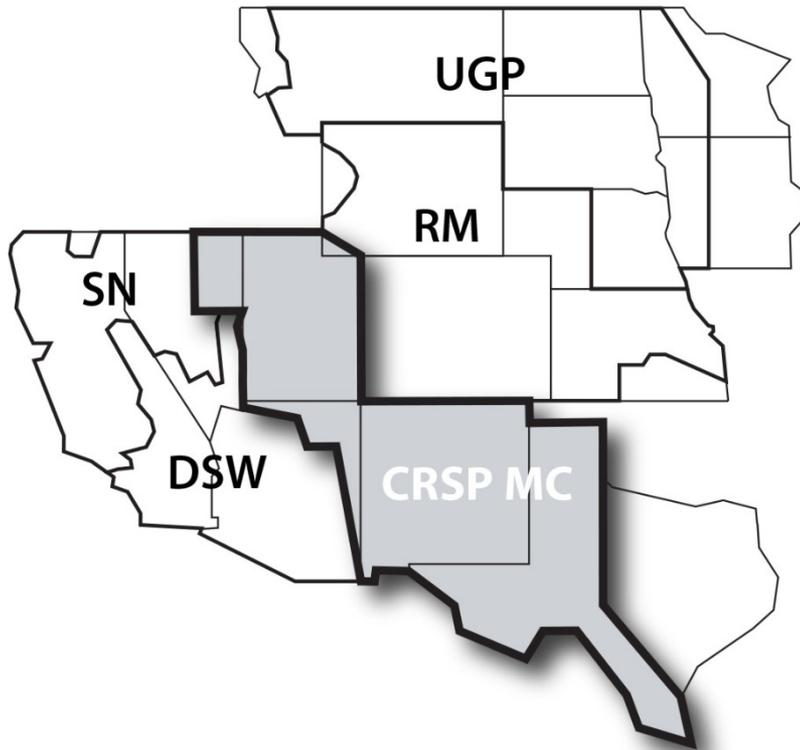
State of the Regions

Rocky Mountain



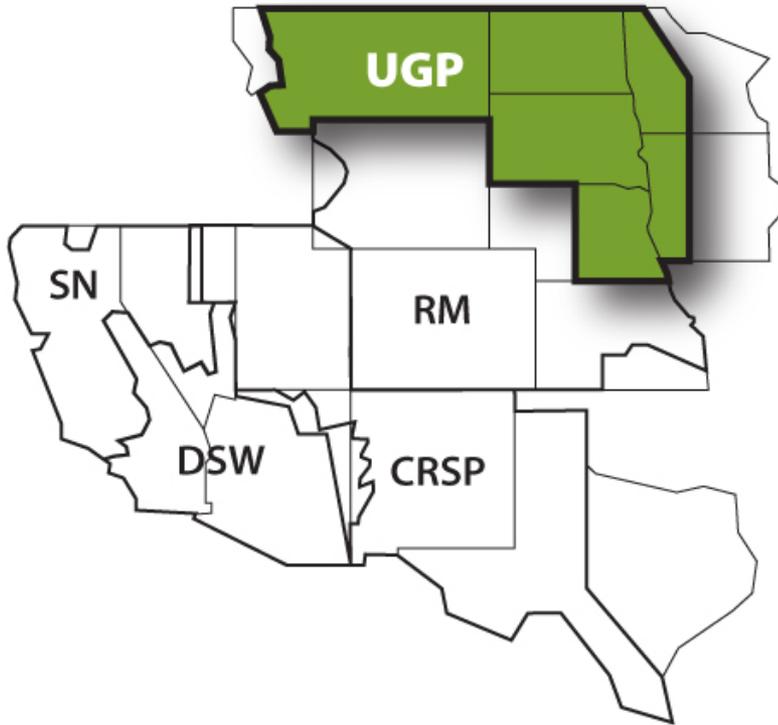
- Northwest Power Pool
- WEIS
- WAPA RC project update

Colorado River Storage Project Management Center



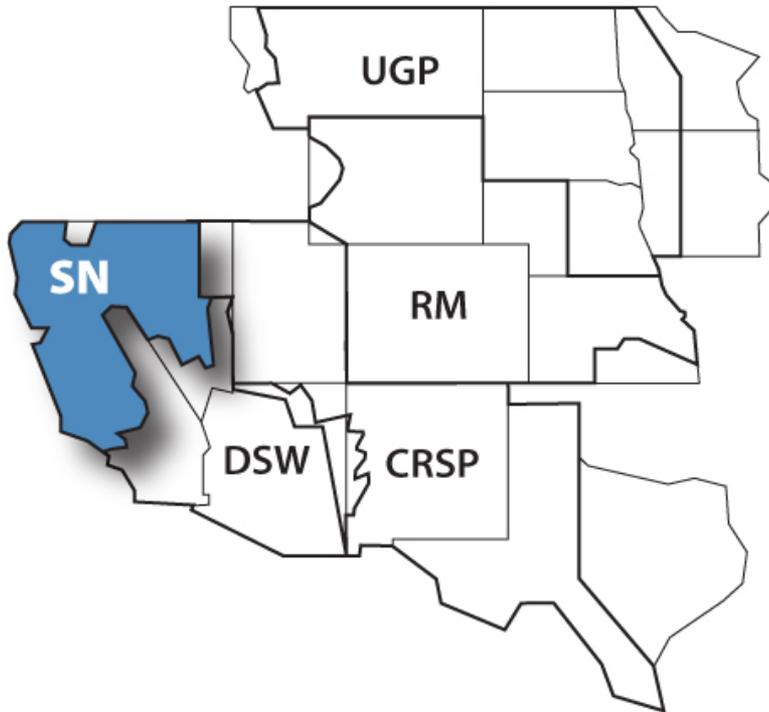
- EIM changes timing of bi-lateral market
- SCED vs AGC
- Drought & BA regulation

Upper Great Plains



- SPP participation
- Able to meet power obligations to customers & buy and sell in market
- Benefits exceed expectations

Sierra Nevada



- Keeping CVP viable
- BANC EIM Phase II gap analysis for customers
- Evaluate participation in EIM with Reclamation

Desert Southwest



Market formation efforts

- Past
- Present
- Future

Roundtable Discussions

Rodney Bailey

WAPA Power Marketing Advisor

Structured conversations

- Facilitator
- Note taker
- Four rounds of discussions
- 30 minutes of discussion, 30-minute report out

Ground rules

- Be respectful
- Eliminate distractions
- Be specific
- Believe in best intention
- Honor others' time
- Participate
- No defensiveness
- Agree to disagree
- Use the parking lot
- Others?

Next Steps

Rodney Bailey

WAPA Power Marketing Advisor

Thank you