

# MARKETS

SPP and Markets+  
Carrie Simpson, VP of Markets



*Working together to responsibly and economically  
keep the lights on today and in the future.*



SouthwestPowerPool



SPPorg



southwest-power-pool



Southwest Power Pool  
**WESTERN  
ENERGY  
SERVICES**

# WHO WE ARE

# OUR BEGINNING



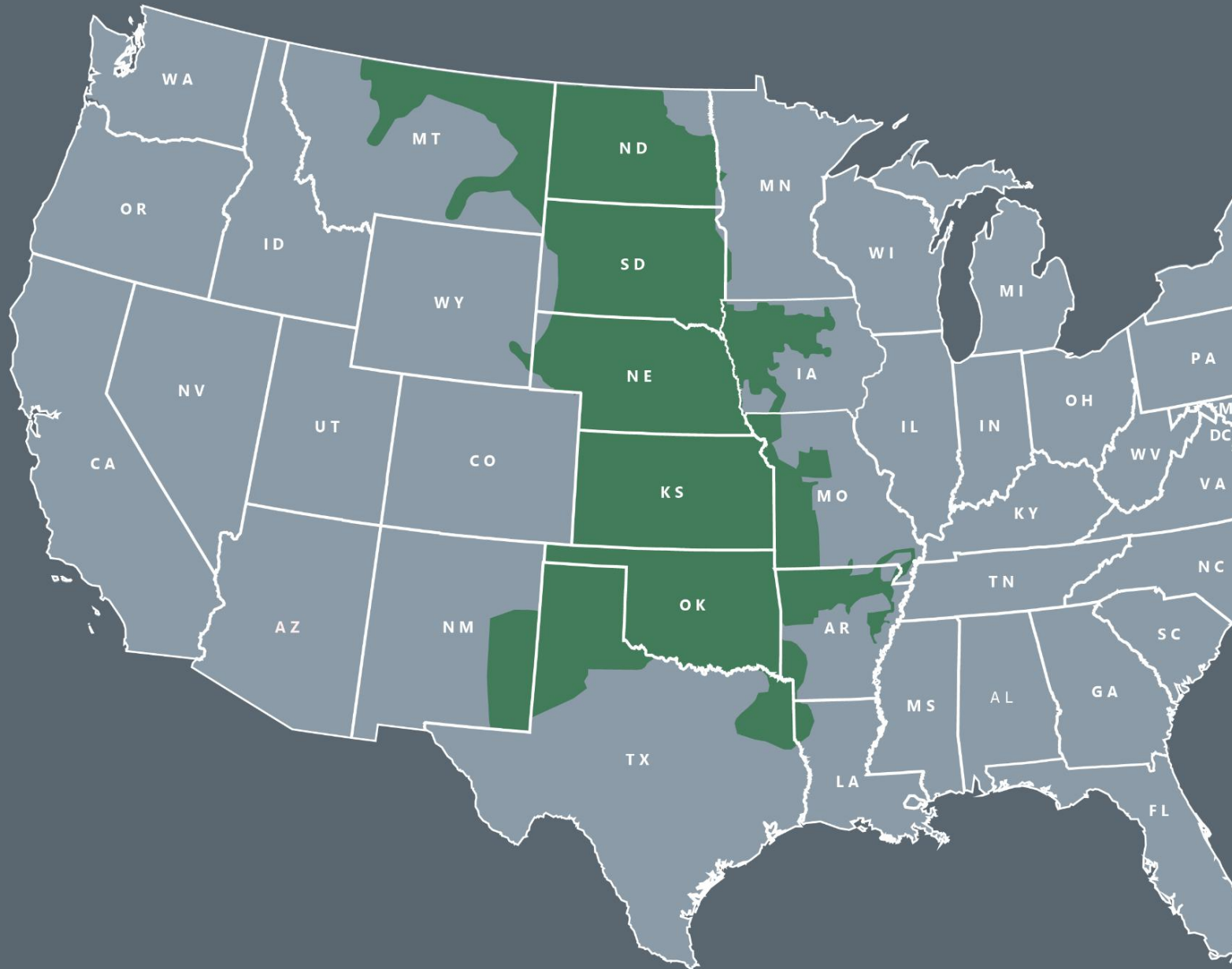
- In 1941, 11 member utilities pooled electricity to power aluminum plant at Jones Mill for critical defense.
- Maintained after WWII to continue benefits of regional coordination.

# OUR MAJOR SERVICES

- Facilitation
- Reliability Coordination
- Balancing Authority
- Transmission Service/Tariff Administration
- Market Operation
- Transmission Planning
- Training
- Contract Services

## **OUR APPROACH:**

Regional, Independent, Cost-Effective and Focused on Reliability

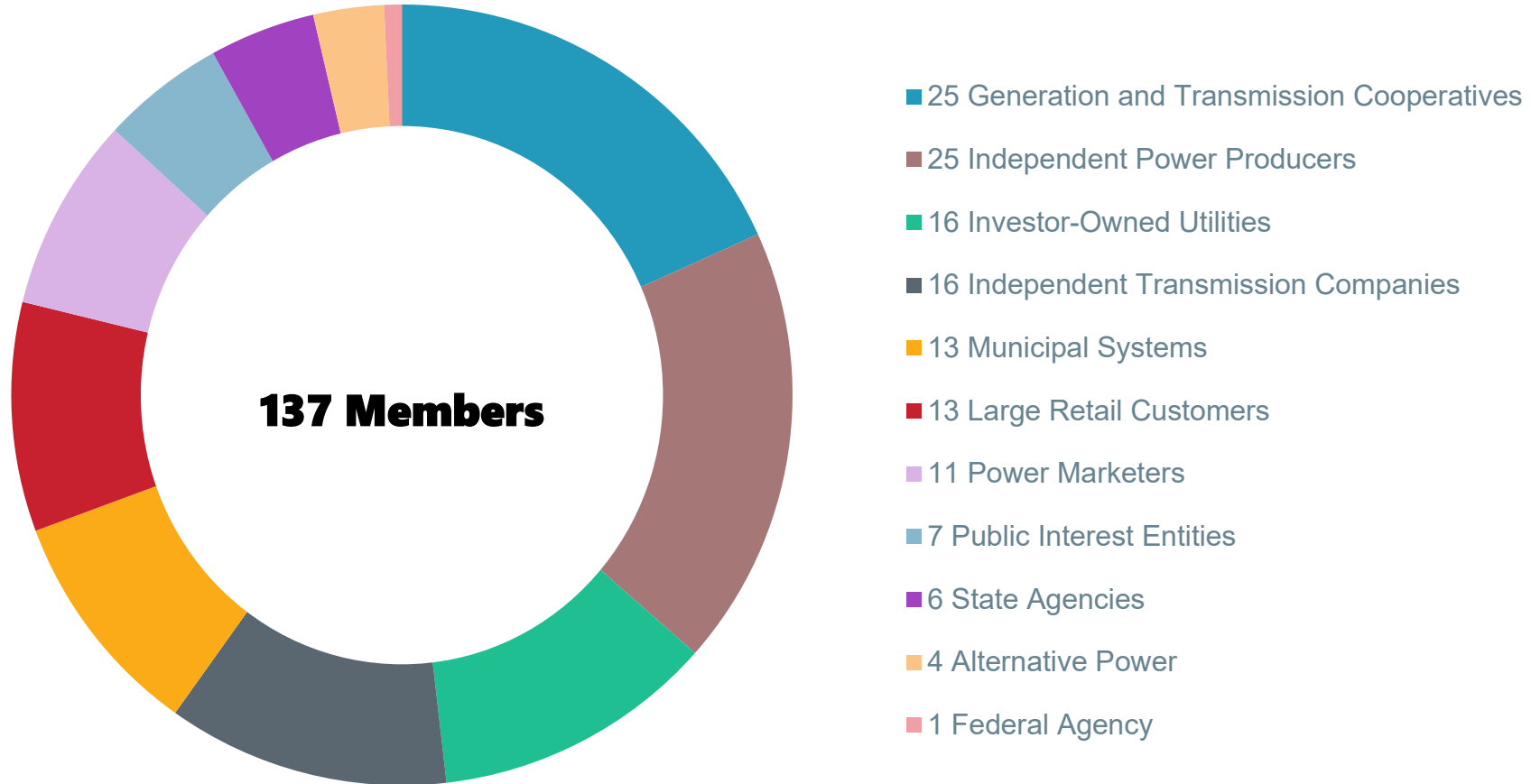


## RTO OPERATING REGION

- **557,546** square mile service territory
- **~18 million** population served
- **1,007\*** generating plants
- **5,292\*** substations

\* In SPP's balancing authority area

# SPP'S 137 MEMBERS: INDEPENDENCE THROUGH DIVERSITY



*As of March 2026*

# MARKETS

# SPP MARKETS

## Transmission Service

Participants buy & sell use of transmission lines owned by different parties

## Integrated Marketplace

Participants buy & sell wholesale electricity in day-ahead & real-time

- **Day-Ahead Market** commits cost-effective & reliable generation for region
- **Real-Time Balancing Market** economically dispatches generation to balance real-time generation & load while ensuring reliability
- **Consolidated Balancing Authority** operates as a single region

## Western Energy Imbalance Service Market

Contract-based, real-time balancing market in Western Interconnection

# MARKETPLACE BENEFITS

- 2025 Annual Benefits: \$2.7 Billion
- Reduce total energy costs through centralized unit commitment while maintaining reliable operations.
- Day-ahead market allows additional price assurance capability prior to real time.
- Operating reserve products support implementation of the SPP balancing authority and facilitate reserve sharing.



## RTO Expansion

- 7 western organizations joining RTO; expected \$49M annual savings for new & existing members

## Western Energy Imbalance Service (WEIS) Market

- Launched Feb. 2021; 3 new members joined in 2023 bringing load to 13.5GW

## Markets+

- New real-time/day-ahead market in development with western parties

## Western Reliability Coordination Service

- Maintaining reliability for 13 western transmission operators

## Western Interconnection Unscheduled Flow Mitigation Plan

- Helping western organizations manage grid congestion

## Western Resource Adequacy Program Operator

- Partnering with Western Power Pool to ensure resource adequacy

Achieve  
clean  
energy  
goals

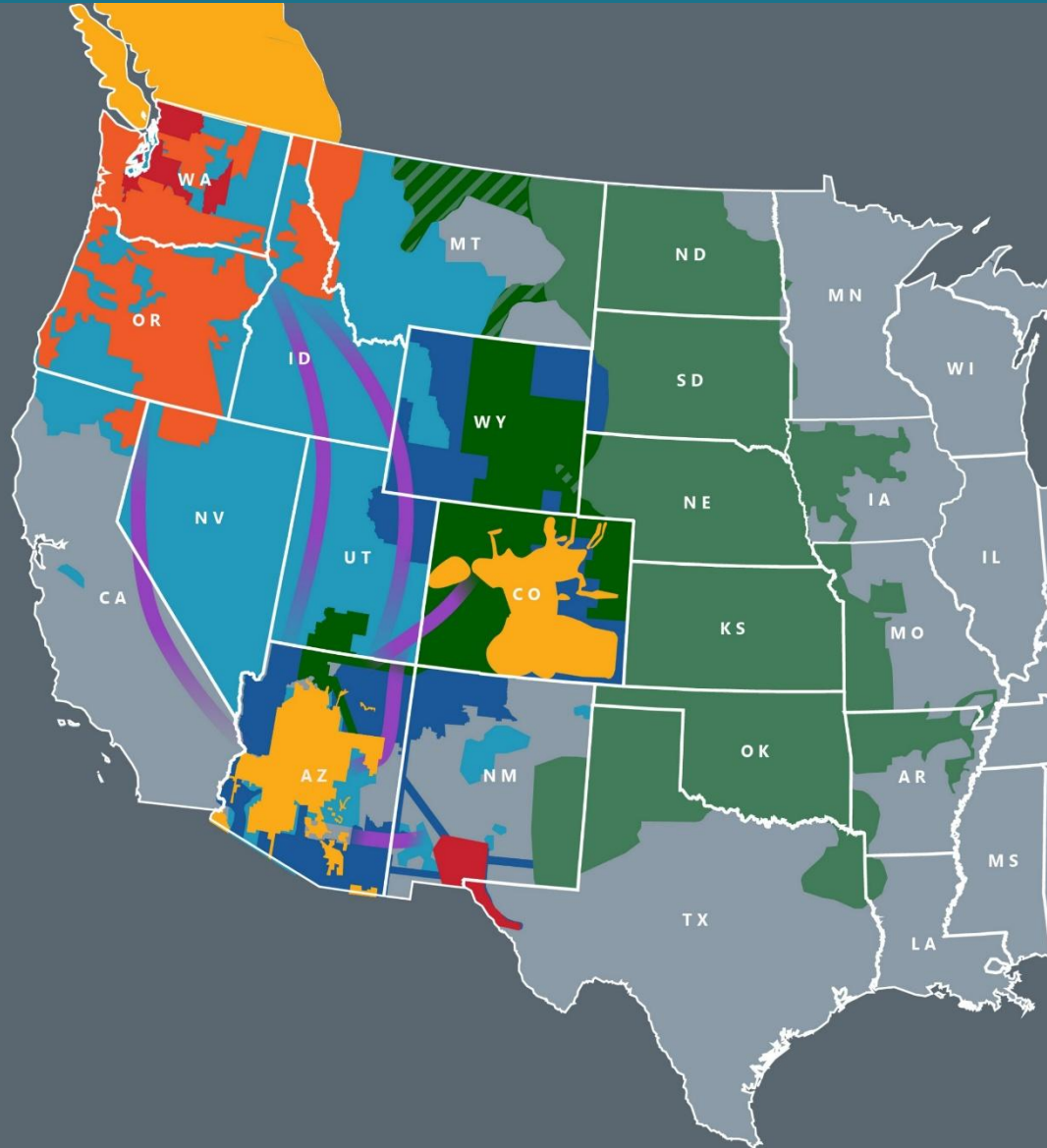
Reinforce  
system  
reliability

New  
opportunities  
to trade low-  
cost power

Provide  
economic  
benefits

Maintain  
resource  
adequacy

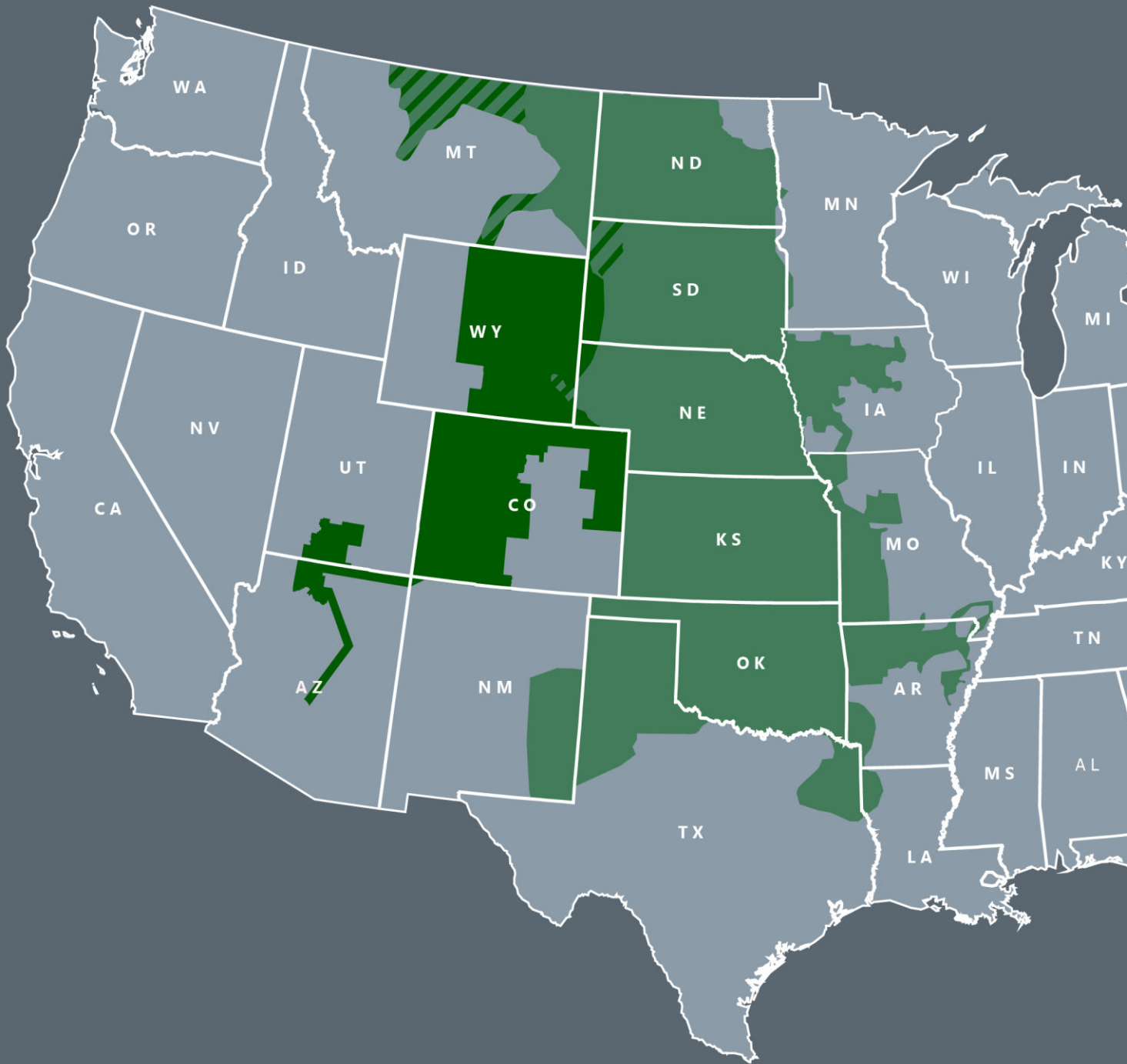
# SPP'S SERVICES FOOTPRINTS



- Regional Transmission Organization (RTO)
- RTO Expansion
  - Basin Electric Cooperative
  - Colorado Springs Utilities
  - Deseret
  - MEAN
  - Platte River Power Authority
  - Tri-State G&T
  - United Power
  - WAPA - Colorado River Storage Project
  - WAPA - Rocky Mountain Region
  - WAPA - Upper Great Plains
- Markets+ (2027 Wave 1 Parties)
  - Arizona Public Service
  - Powerex
  - Public Service Company of Colorado
  - Salt River Project
  - Tucson Electric
- Markets+ (2028 Wave 2 Parties, as of Nov 3)
  - Bonneville Power Administration
  - Chelan County PUD
- Markets+ (Funding Party / Indicated Intent to Join)
  - El Paso Electric
  - Grant County PUD
  - Puget Sound Energy
  - Tacoma Power
- Markets+ areas connect via transmission service rights of participants
- Western Resource Adequacy Program (WRAP)
- Western Reliability Coordinator (RC)

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○ Regional Transmission Organization (RTO)

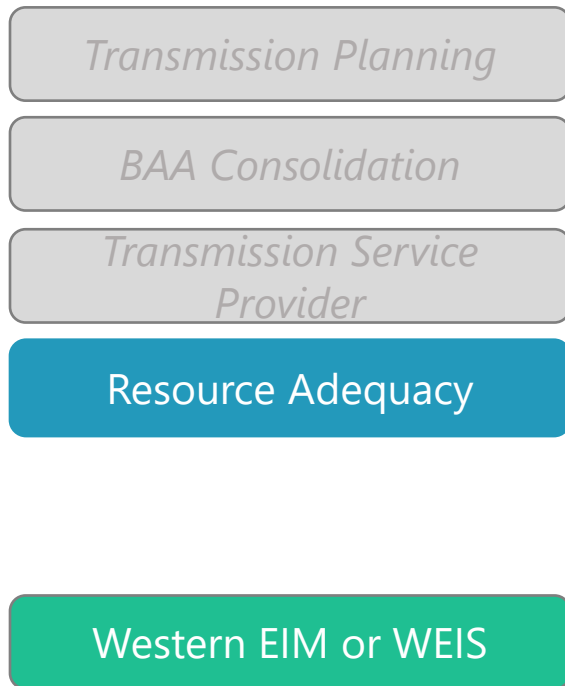
● RTO Expansion

- Basin Electric Cooperative
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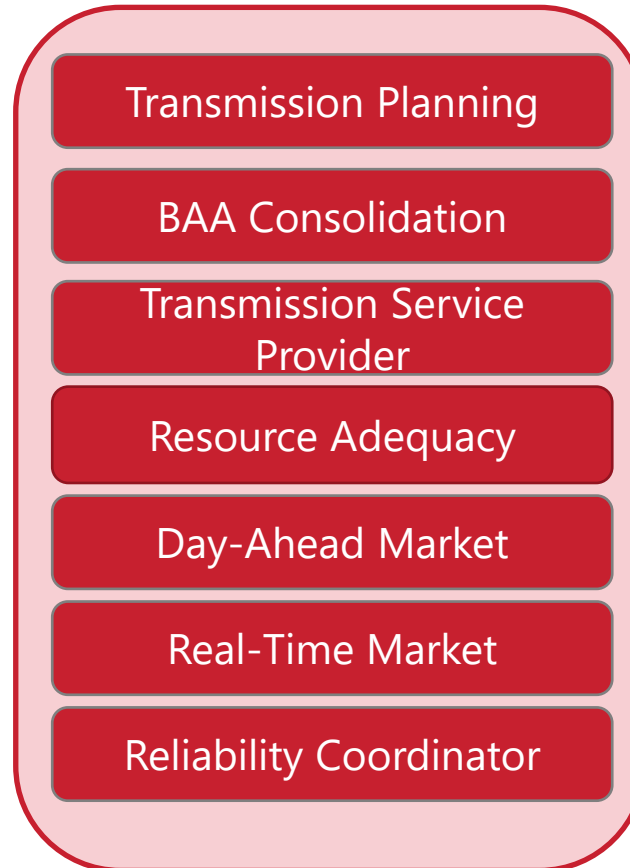
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# HOW IT ALL EVOLVED

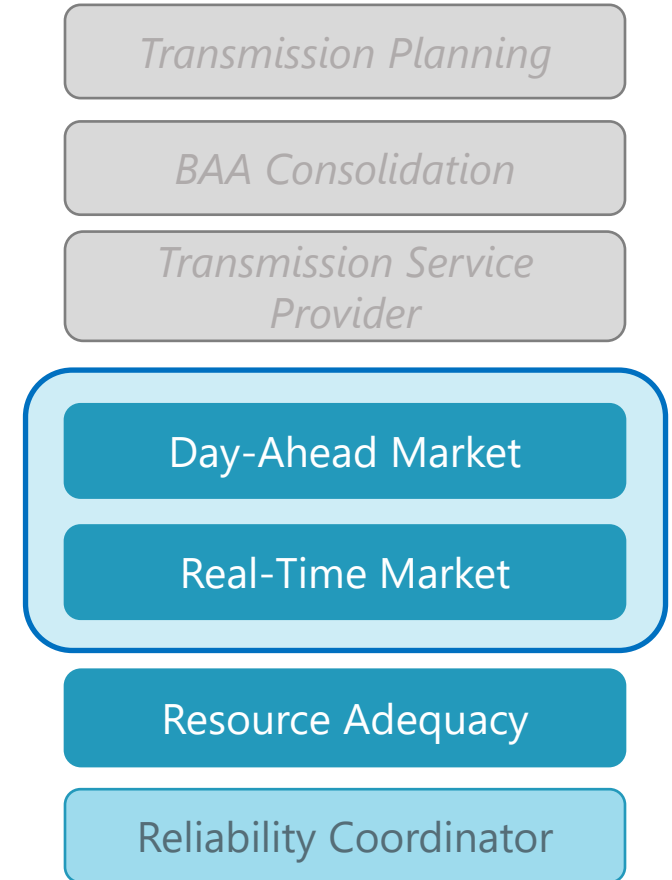
## Imbalance Markets



## RTO



## A new option: **MARKETS+**



# **WHAT IS MARKETS+?**

- **Markets+ developed organically when western entities worked with SPP to create a DA and RT market including a tariff and protocols.**
- **Designed by western stakeholders, facilitated by SPP staff**
- **Markets+ created its own governance modeled after SPP's RTO process**
- **The Markets+ tariff and protocols were initially based on SPP RTO Integrated Marketplace (IM) and Western Energy Imbalance Service (WEIS) but adapted to the needs of western entities.**

# PARTICIPATION PHASES – INCREMENTAL APPROACH

## Phase 0: Exploration 2022

SPP facilitated webinars and face-to-face meetings on possible Markets+ design elements

Published Markets+ Service Offering in November 2022

Requested parties sign Phase 1 agreements to participate in Tariff and Protocol development by April 2023

## Phase 1: Tariff and Protocols 2023-2024

Establish Markets+ governance proposed in Service Offering as much as practical

Facilitate development of Markets+ Tariff and Protocols with voting participants and stakeholders

Leverage “boilerplate” day-ahead and real-time features and focus on completing unique Markets+ items

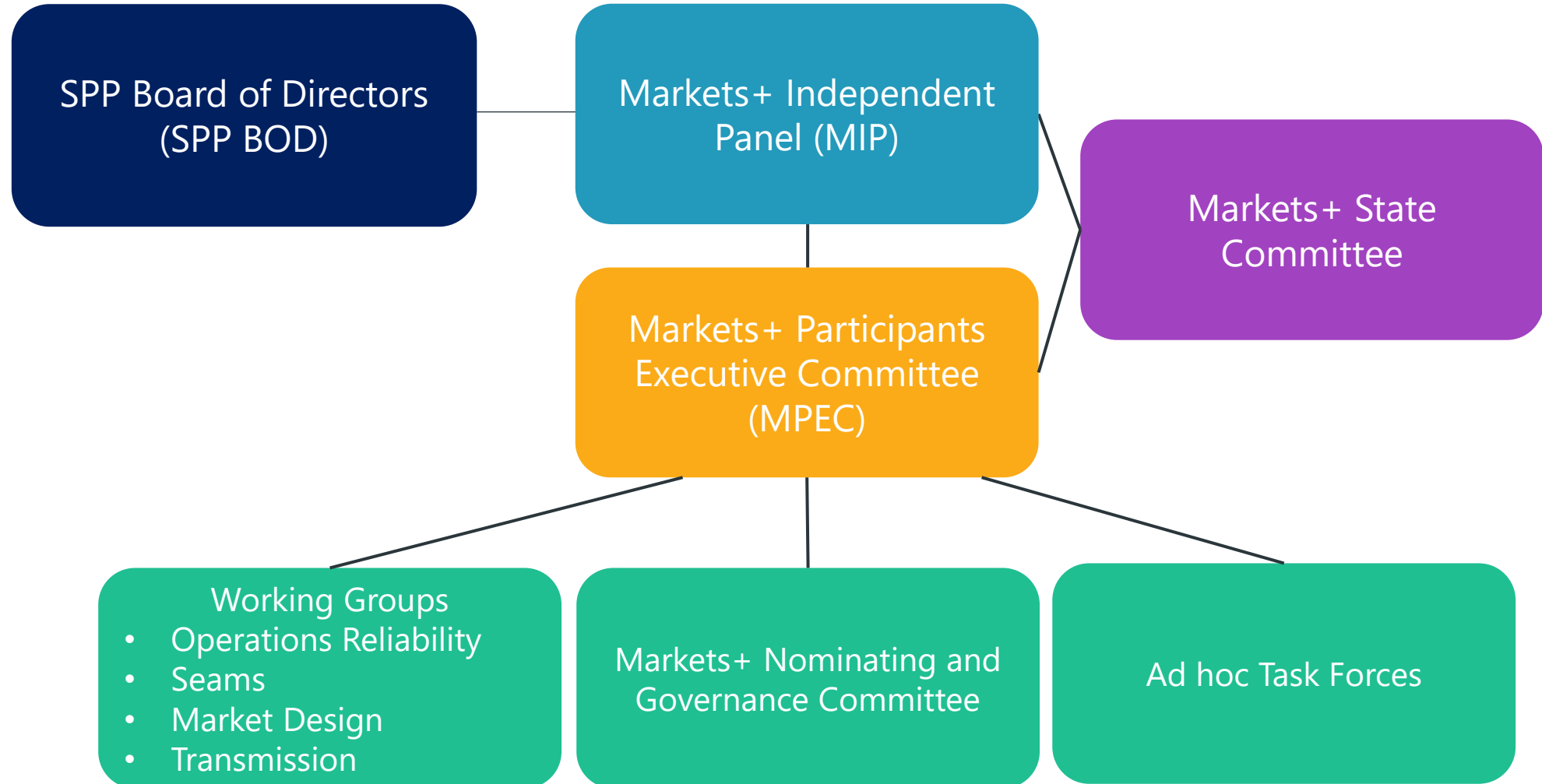
## Phase 2: Implementation 2025-2027

Upon FERC approval, SPP acquires/modifies necessary software, hardware and related processes

Participating entities commit to fund implementation efforts

Entities integrated into the system

# MARKETS+ INDEPENDENT GOVERNANCE

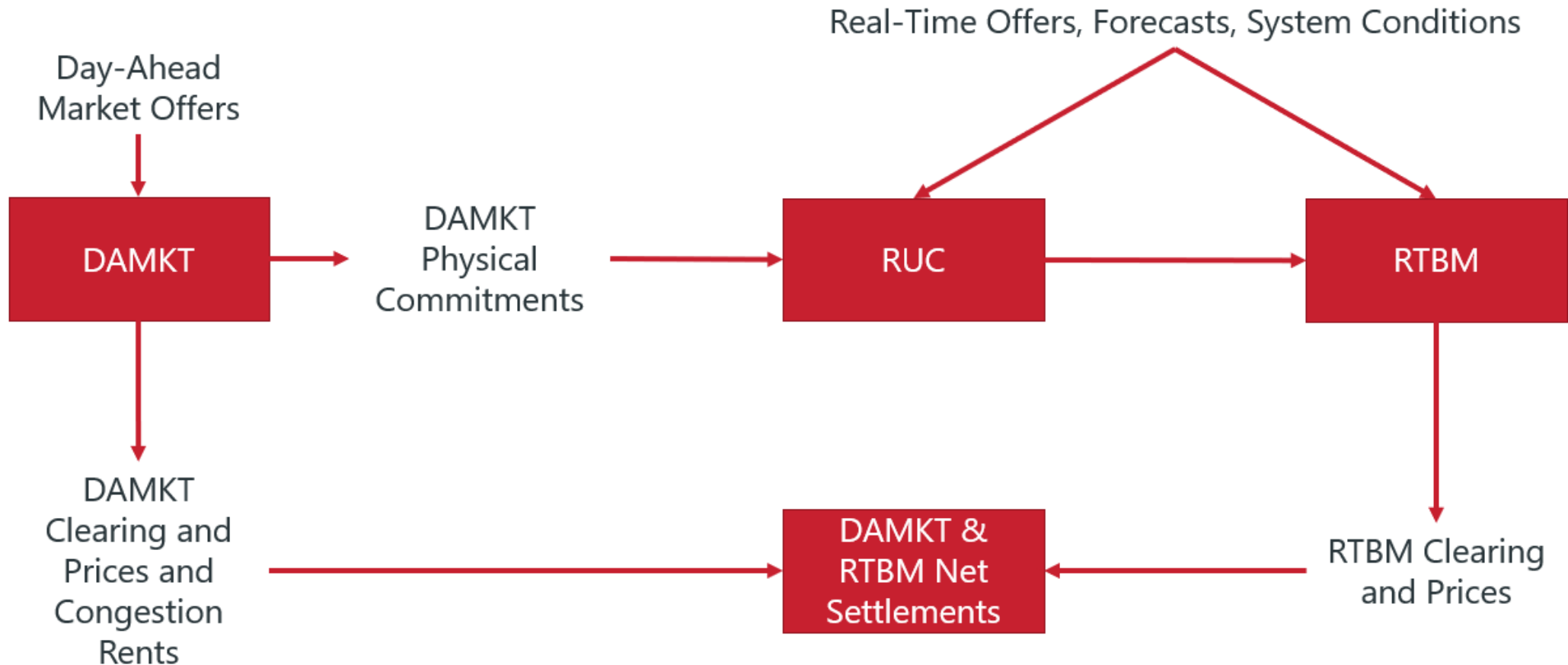


# SPP RTO MARKET DESIGN ELEMENTS IN MARKETS+

- Leveraging 10+ years of success of managing markets in the Eastern Interconnect, accruing over \$2.5B in market benefit
- Markets+ consists of four main components
  - Day-Ahead Market
  - Reliability Unit Commitment processes (RUC)
  - Real-Time Balancing Market
  - Post-Operating Day settlement of market charges and payments



# MARKET+ DESIGN BASED ON SPP MARKETPLACE



# MARKETS+ DESIGN FOR WEST-SPECIFIC NEEDS



**Governance**



**Transmission  
Capability**



**Congestion  
Rent Allocation**



**Resource  
Adequacy and  
Must Offer  
Obligation**



**Incorporation  
of GHG  
programs**



**Aggregate  
Resource  
Model**



**Market  
Transmission  
Use Charge**



**Market  
Monitoring**

# INCORPORATION OF GHG PROGRAMS

- Incorporation of price-based GHG compliance program that will exist at M+ go live
- Transparent tracking and reporting that will be used for price-based GHG programs and reduction programs



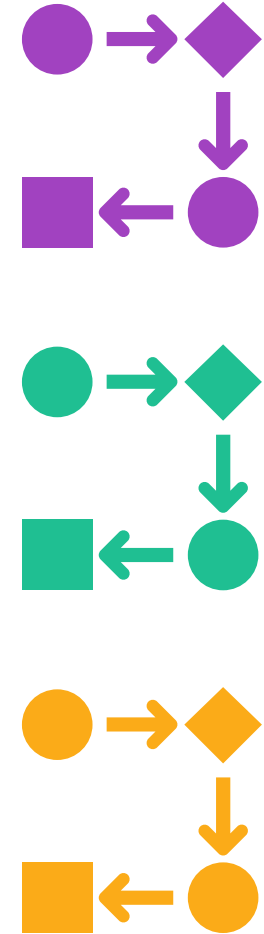
# TRANSMISSION CAPABILITY

- Transmission Service Providers and Market Participants will identify what transmission capability or capacity is available for use in Markets+
- Markets+ will optimize identified capability using flow-based dispatch and not interfere or charge transmission service priorities.
- Markets+ respects the transmission rights of participating and non-participating transmission service providers and respective non-customers



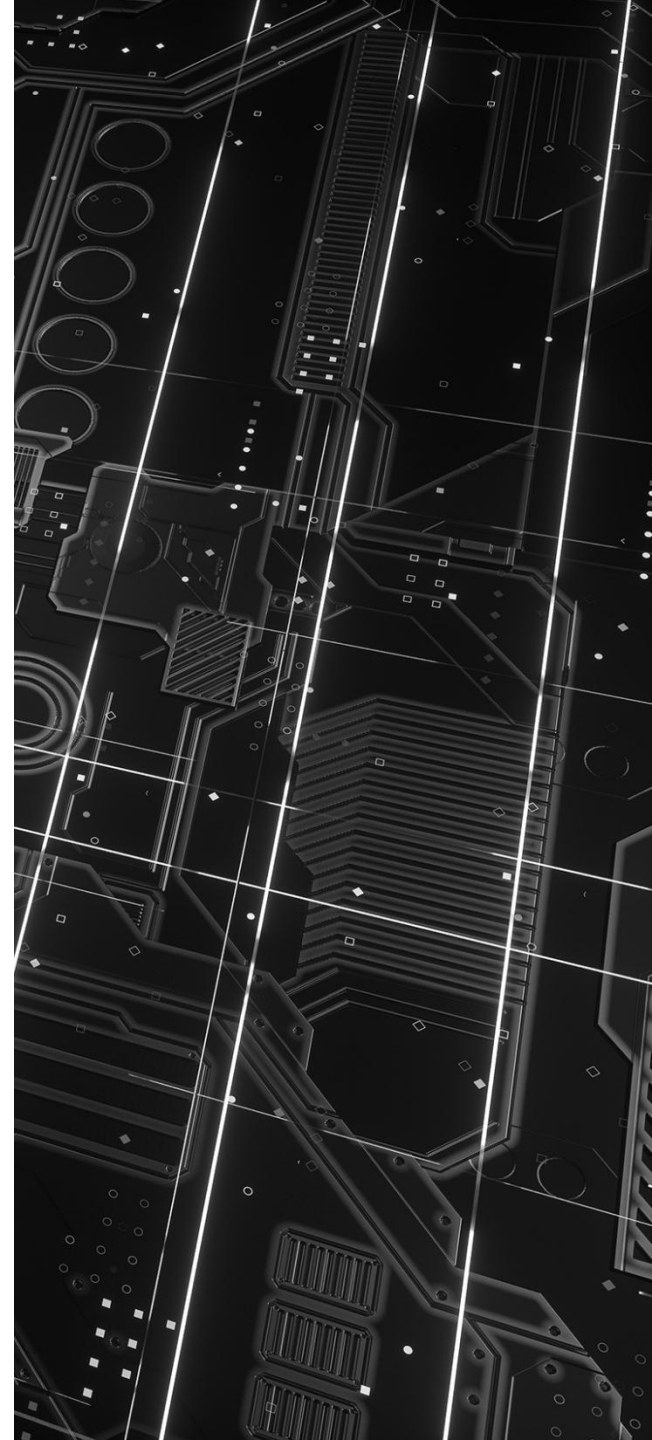
# MARKET TRANSMISSION USE CHARGE

- A charge calculated by SPP and assessed to all purchases from and sales to the market
- Rate calculated using historical short-term firm sales revenue data from participating M+ TSPs
- Revenue from the MTU charge will be distributed to M+ Transmission Service Providers
- Mitigates anticipated transmission sales revenues lost by TSPs resulting from adoption of M+

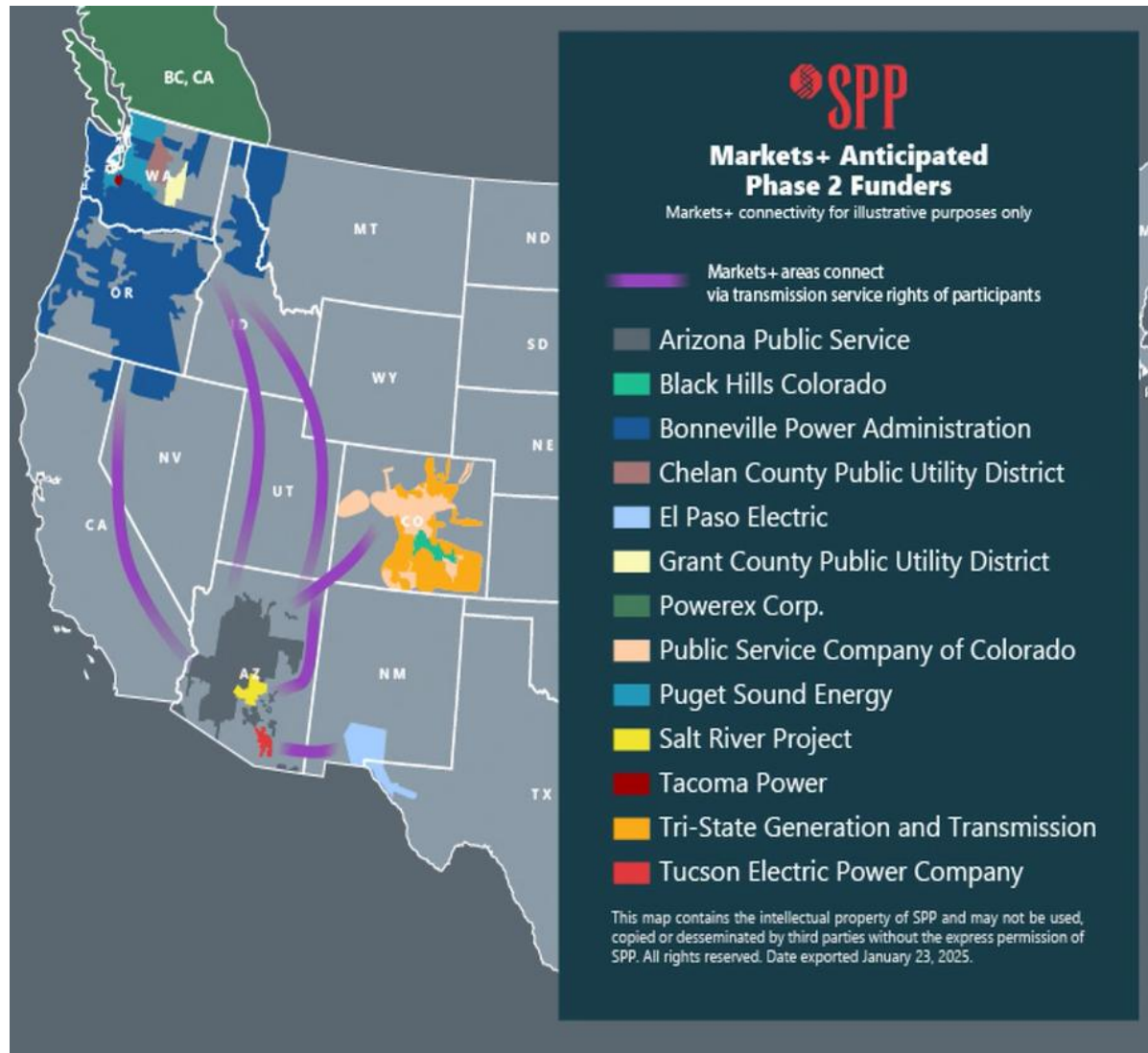


# RESOURCE ADEQUACY AND MUST OFFER OBLIGATION

- Uniform, regional resource adequacy program
  - Western Resource Adequacy Program ("WRAP")
- Must offer obligation informed by WRAP
- BAs remain responsible for balancing and ancillary services



# MARKETS+ FOOTPRINT

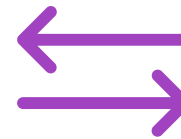


- **Tariff Approved in January 2025**
- **Phase two governance and implementation underway**
  - 40 + Participants
- **Wave One go-live October 1, 2027**
  - Powerex/BC Hydro, APS, SRP, TEP, and PSCo
  - 2023 NEL 184 TWh
- **Wave Two go live October 1, 2028**
  - BPA, Chelan, Grant, PSE, Tacoma
  - 2023 NEL 95 TWh

# HIGH LEVEL TIMELINE FOR WAVE ONE

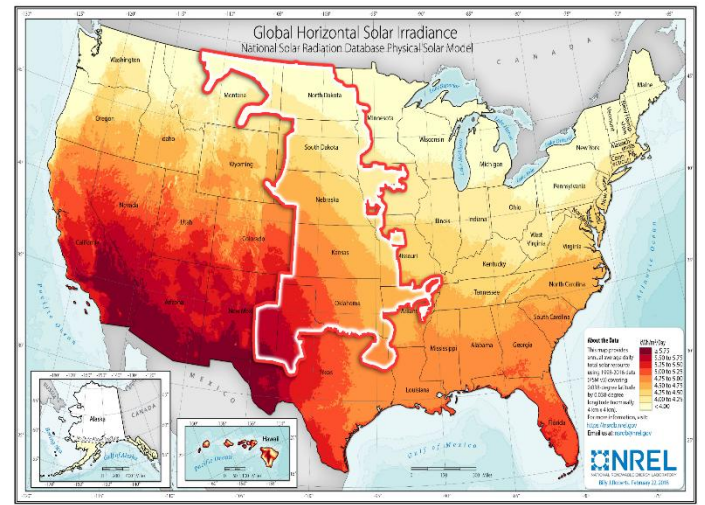
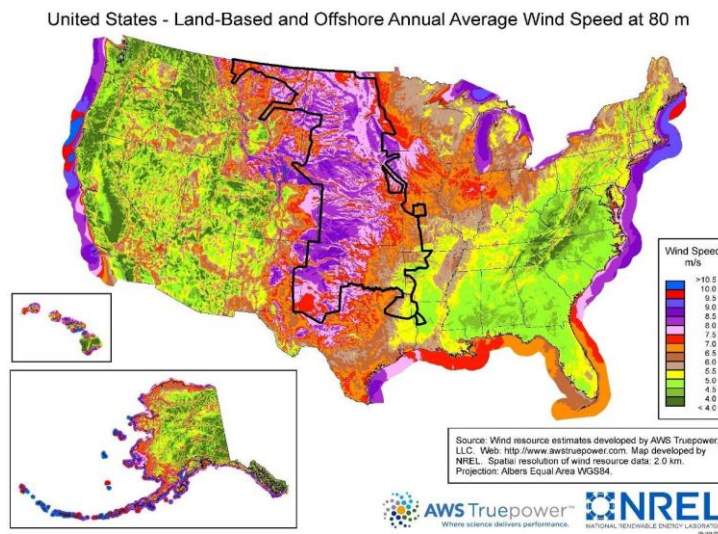
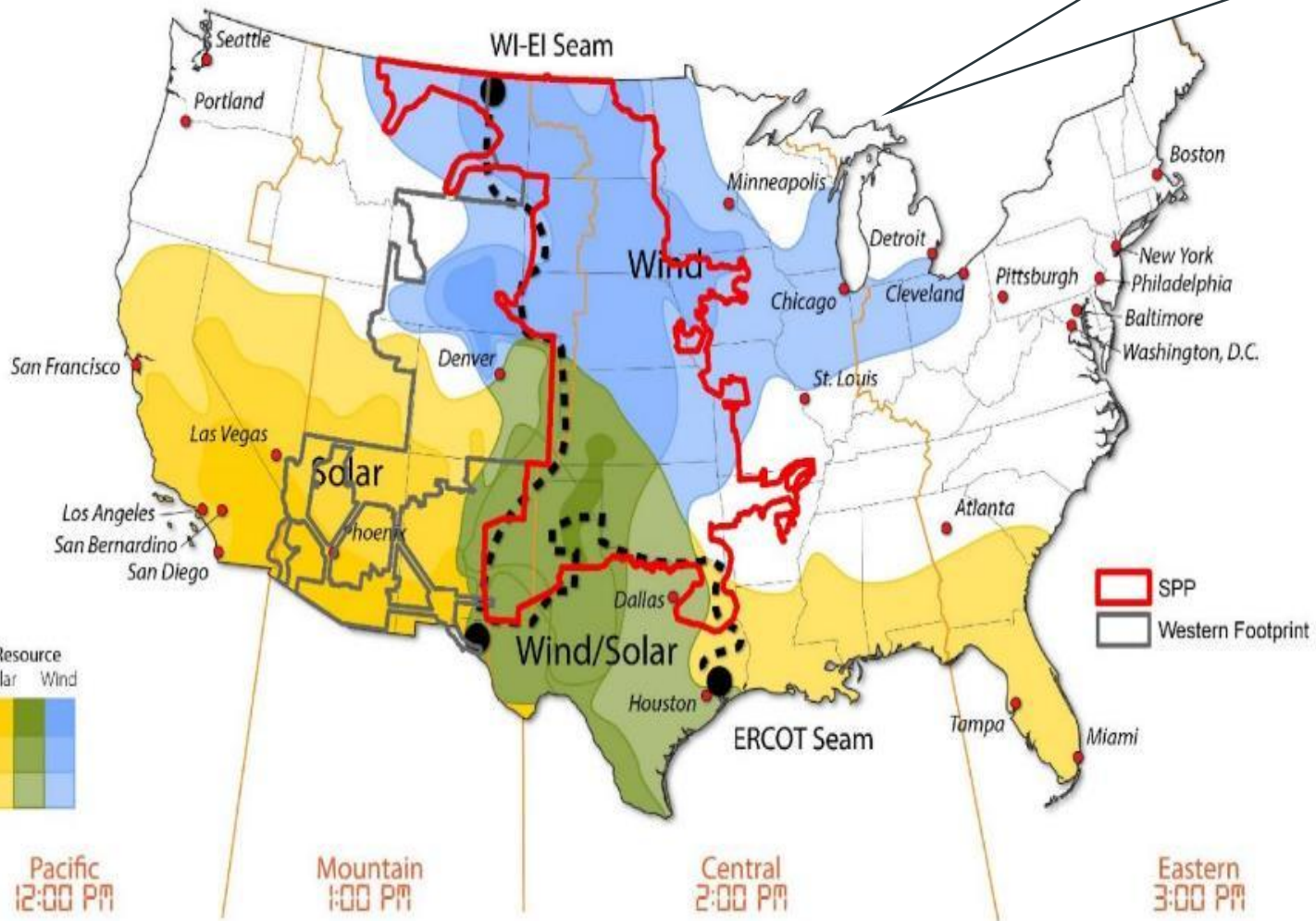


# HIGH LEVEL TIMELINE FOR WAVE TWO



# LEVERAGING DIVERSITY

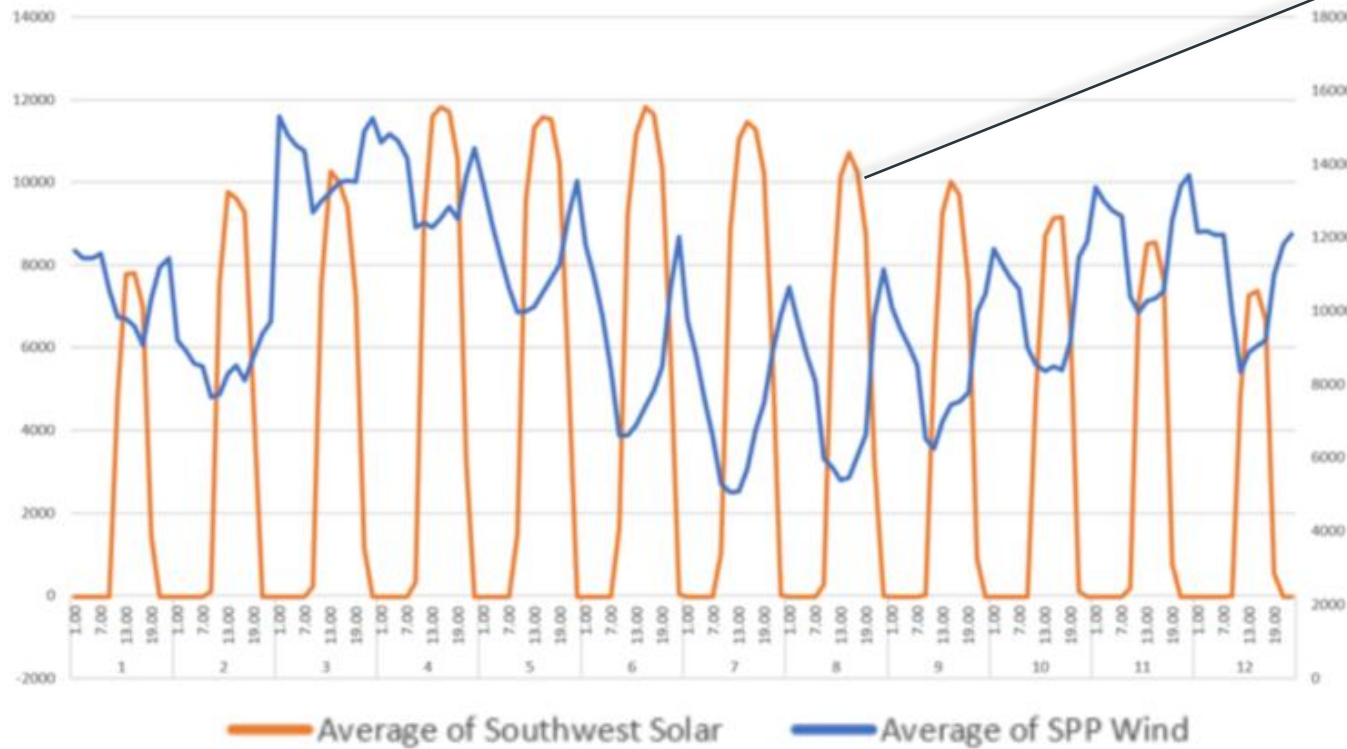
Resource mix, load and time zone diversity can be leveraged across a larger footprint!



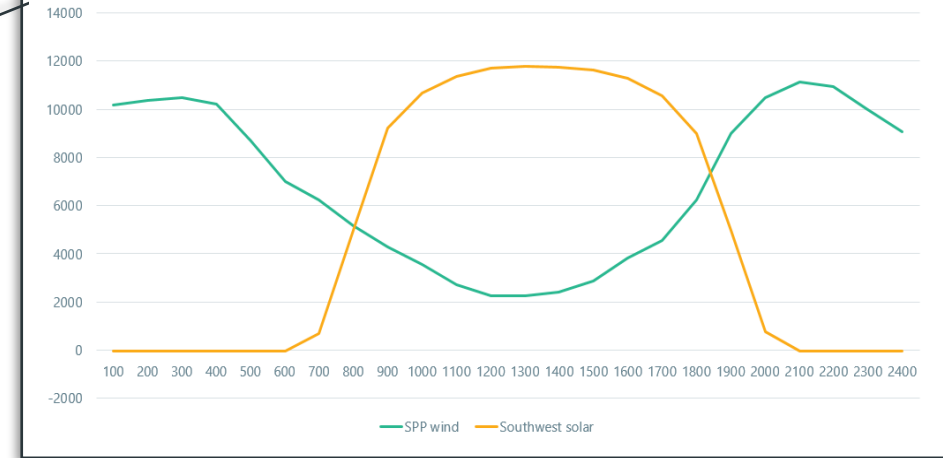
\*Areas not shaded have annual average wind speeds less than 7.0 m/s and solar production less than 4.75 kWh/m<sup>2</sup>/day (from NREL data)

# LEVERAGING DIVERSITY

Jan-June 2021 and July-Dec 2020  
Hourly Average Output



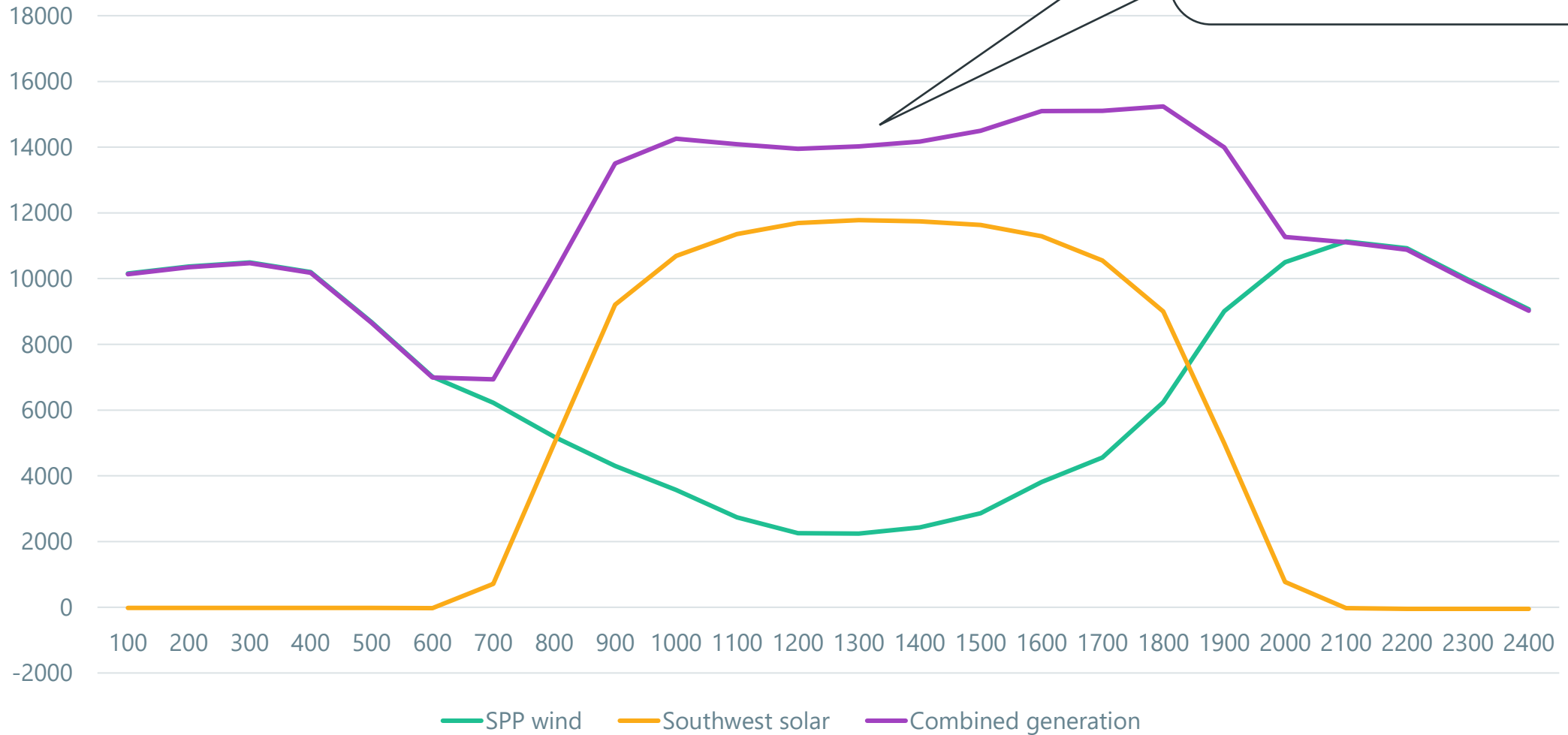
August 5, 2020



Midwest wind and southwest solar are extremely complimentary, especially with time zone diversity.

# LEVERAGING DIVERSITY

Combining solar and wind mitigates ramping issues and provides more consistent generation in both footprints.



# QUESTIONS