



HELPING OUR MEMBERS WORK TOGETHER  
TO KEEP THE LIGHTS ON... TODAY AND IN THE FUTURE.

# Mountain West Transmission Group (MWTG) Introduction and Process

October 13 – Denver, CO

October 16 – Little Rock, AR

# Agenda

- Overview of SPP
- Overview of the MWTG Members
- SPP Process
  - New Member Integration Process
    - Study of the MWTG System
    - Cost and Benefits To SPP of MWTG Joining
  - General Areas of Proposed Modifications to SPP Governing Documents\*\*
    - Governance
    - MWTG Regional Cost Allocation and Rate Design
    - WAPA CRSP and LAP Specific Provisions
    - Operational Provisions
    - Planning Process
    - Competitive Bidding
- Timeline/Next Steps
  - Tariff, Membership Agreement and Bylaw Changes
  - The SPP Stakeholder Process
  - Filings at FERC and Applicable State Commissions
  - Implementation

\*\* Proposed Revisions to SPP's Tariff, Membership Agreement, and Bylaws

# OVERVIEW OF SPP

# Our Mission

Helping our members work together to  
keep the lights on ...  
today and in the future.

# The SPP Difference

- Relationship-based
- Member-driven
- Independence Through Diversity
- Evolutionary vs. Revolutionary
- Reliability and Economics Inseparable

# Our Major Services

- Facilitation
- Reliability Coordination
- Balancing Authority
- Transmission Service/Tariff Administration

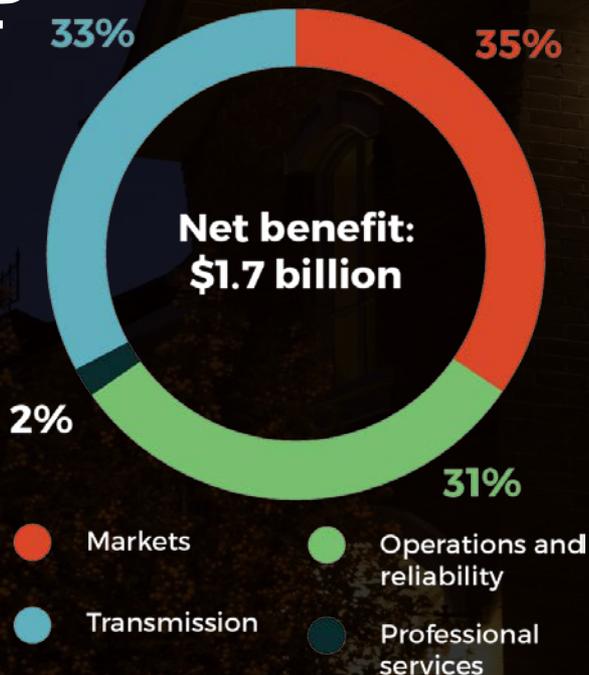
- Market Operation
- Transmission Planning
- Training
- Standards Setting
- Compliance Enforcement

## **OUR APPROACH:**

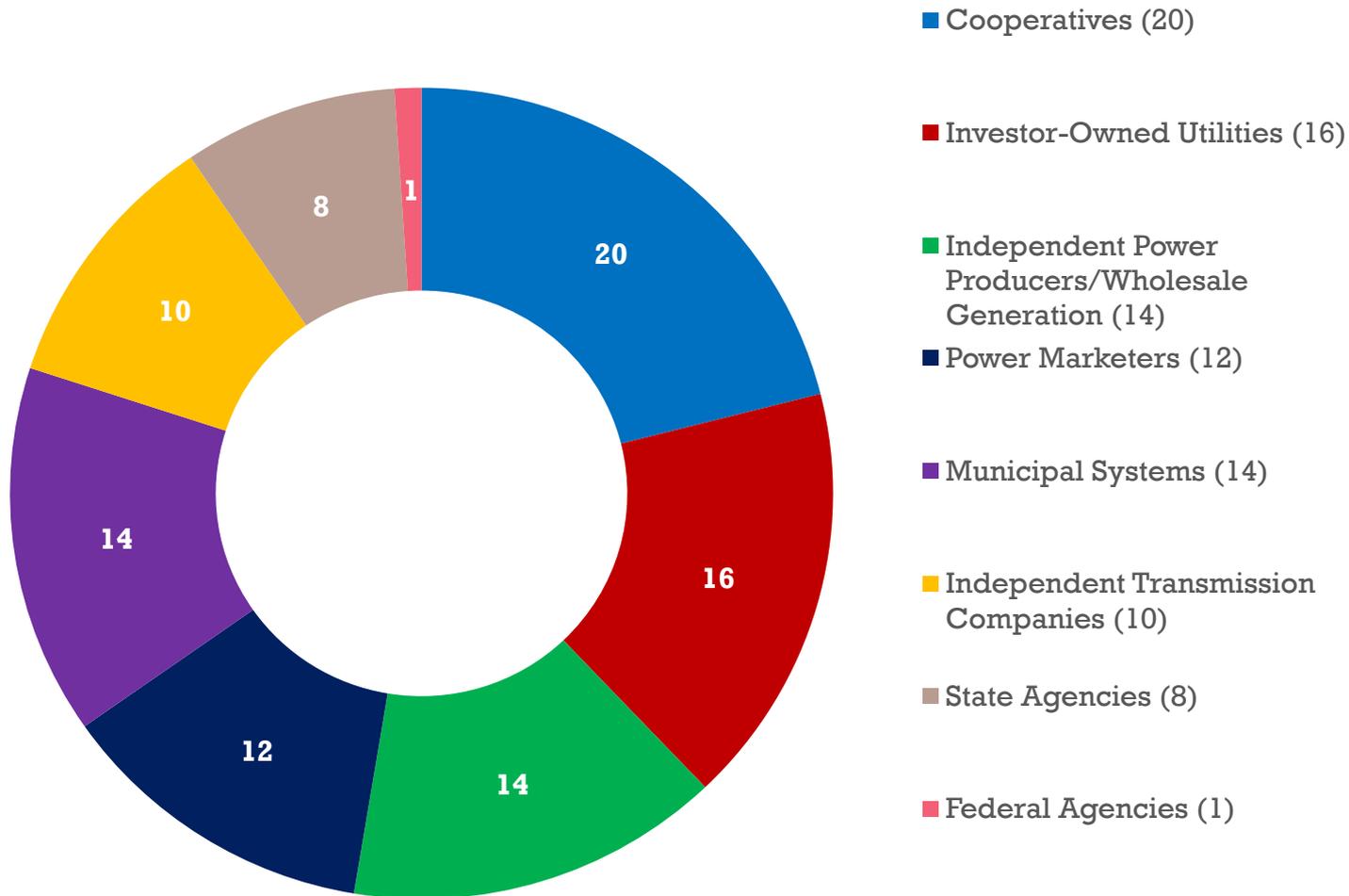
Regional, Independent, Cost-Effective and Focused on Reliability

# THE VALUE OF SPP

- Transmission planning, market administration, reliability coordination, and other services provide net benefits to SPP's members in excess of more than \$1.7 billion annually at a benefit-to-cost ratio of 11-to-1.
- A typical residential customer using 1,000 kWh saves \$5.71/month because of the services SPP provides.



# SPP's 95 Members: Independence Through Diversity



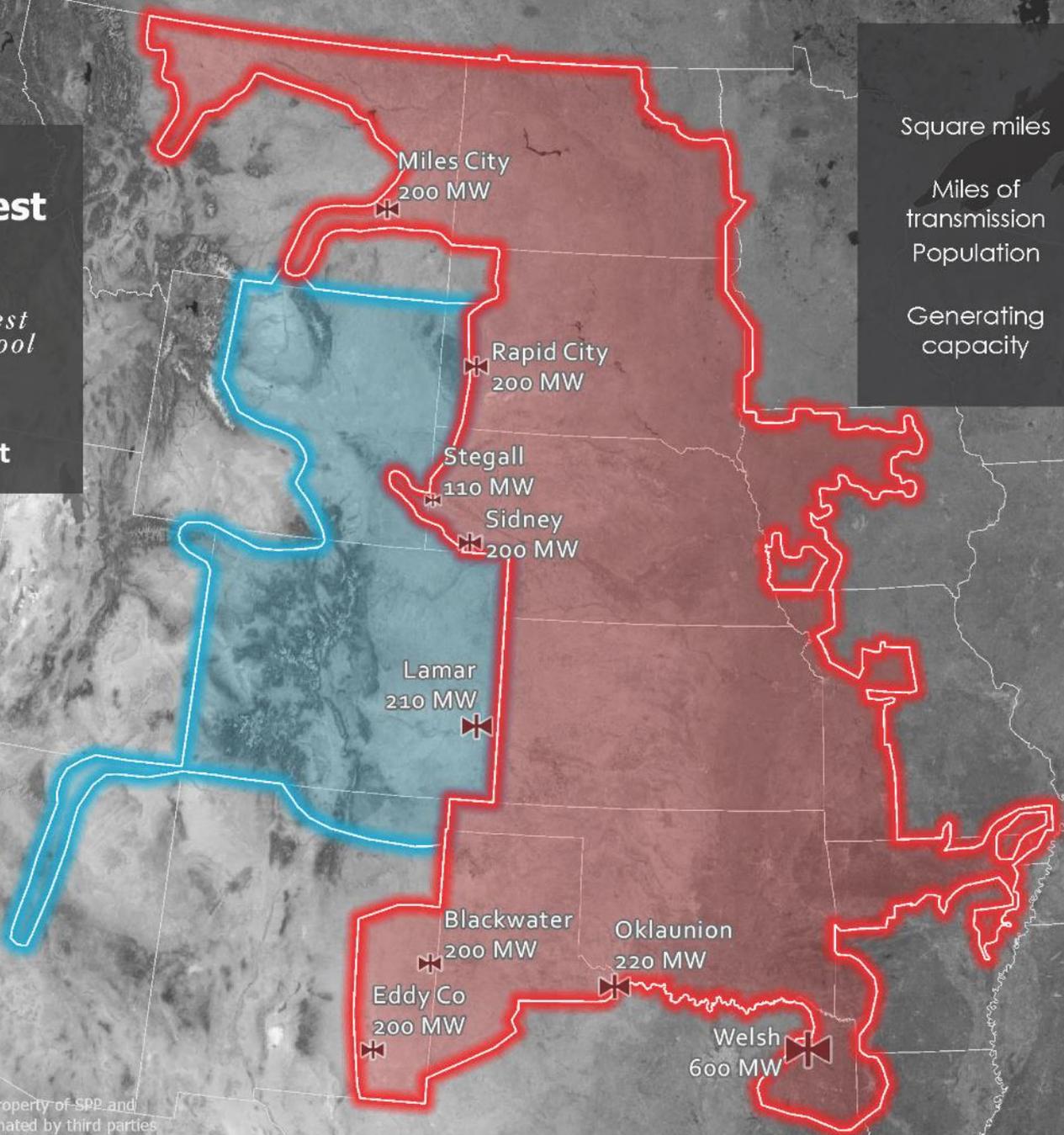
As of April 12, 2017

# OVERVIEW OF THE MWTG MEMBERS

# SPP & Mountain West Footprint



- █ SPP
- █ Mountain West



	SPP	MWTG
Square miles	546,000	165,000
Miles of transmission	65,755	16,000
Population	17.5 mil	6.4 mil
Generating capacity	83,945 MW	21,000 MW

This map contains the intellectual property of SPP and may not be used, copied or disseminated by third parties without the express permission of SPP. All rights reserved.  
 Date Exported 10/6/2017 1 inch equals 178 miles

# Mountain West Transmission Group (MWTG)

1. Basin Electric Power Cooperative (BEPC)
2. Black Hills Energy (BHE)
  - a) Black Hills Power, Inc.
  - b) Black Hills Colorado Electric
  - c) Cheyenne Light, Fuel and Power
3. Colorado Springs Utilities (CSU)
4. Platte River Power Authority (PRPA)
5. Public Service Company of Colorado (PSCo)
6. Tri-State Generation and Transmission Association, Inc. (TSGT)
7. Western Area Power Administration
  - a) Loveland Area Projects (WAPA RMR)
  - b) Colorado River Storage Project (WAPA CRSP)

# Characteristics of MWTG Transmission Owners

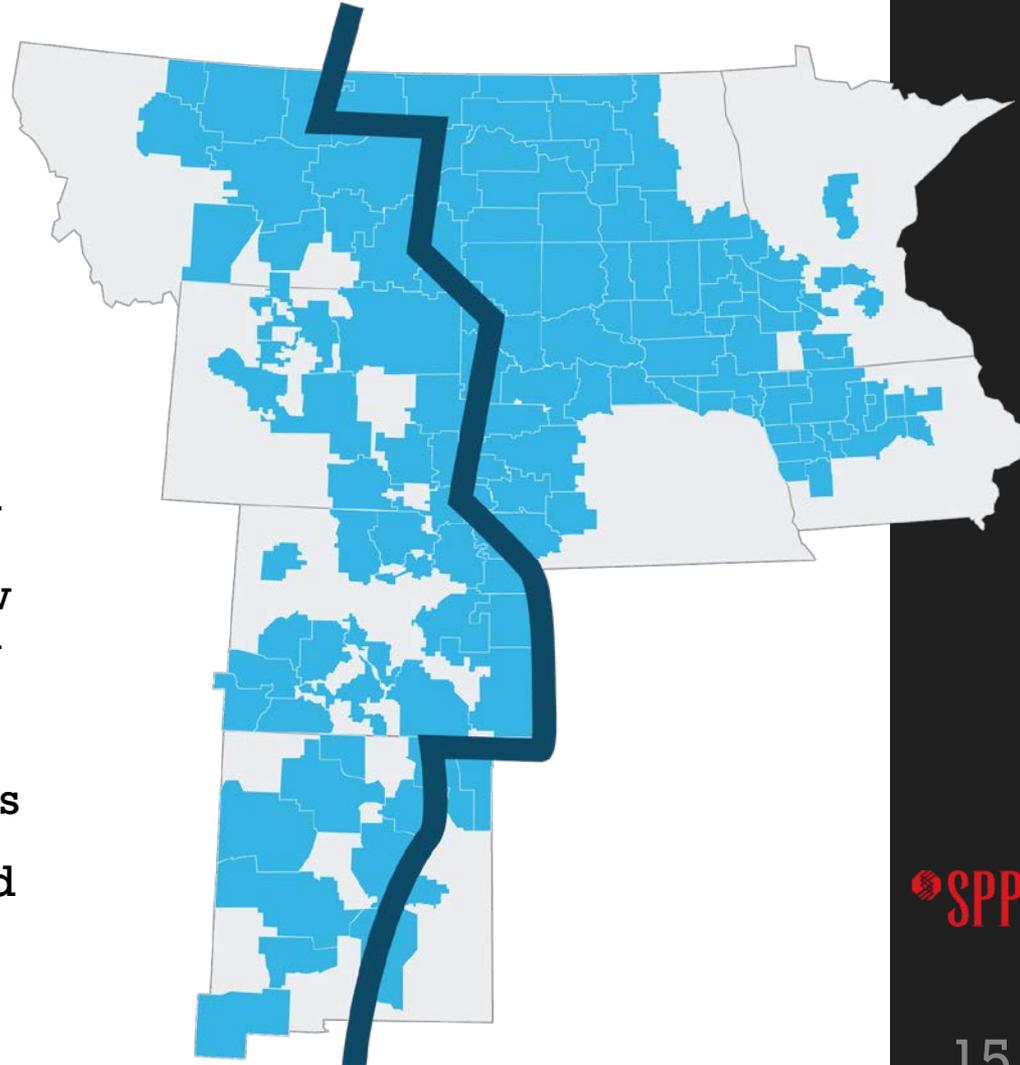
- Average Monthly Peak Load = ~12,000 MW
- Annual Energy = ~70 Million MW-hrs
- Miles of Transmission = ~16,000
- Transmission Revenue Requirements = ~\$600 Million/Year

# Significant Work to Date by MWTG Parties

- Strong cooperative effort over three years
- Conducted a Market Study to evaluate benefits of having a joint tariff as well as a joint tariff with a full Day-2 market
- Developed a Request for Information for RTO response
  - CAISO, MISO, PJM, SPP responded
  - Selected SPP with term sheet being negotiated since January
- Significant success with resolving issues around rate design and cost shift mitigation

# Basin Electric Power Cooperative

- Consumer-owned rural electric cooperative corporation
- Headquarters: Bismarck, ND
- Over 2,300 miles transmission lines and 81 switchyards
- Operate ~5,200 MW of generation and have ~6,600 MW of capacity within portfolio
- Provide supplemental wholesale power to 141 rural electric member systems in Colorado, Iowa, Minnesota, Montana, Nebraska, New Mexico, North Dakota, South Dakota and Wyoming
- Members' systems serve approximately 3.0 million customers
- Members located in the Eastern and Western Interconnections



# Black Hills Energy Overview

## Overview

We are a **customer focused, growth-oriented utility company** with a tradition of exemplary service and a vision to be the energy partner of choice. Based in Rapid City, South Dakota, the company serves over **1.2 million electric and natural gas utility customers in nearly 800 communities** in Arkansas, Colorado, Iowa, Kansas, Montana, Nebraska, South Dakota and Wyoming. The company generates wholesale electricity and produces natural gas, crude oil and coal. Employees partner to produce results that improve our customers' lives with energy.

## Utilities

### Gas

Arkansas  
Colorado  
Iowa  
Kansas  
Nebraska  
Wyoming\*

### Electric

South Dakota  
Colorado  
Wyoming\*

\*Utility supplies electric and gas service to Cheyenne, Wyoming and vicinity and gas service to northeast and northwest Wyoming

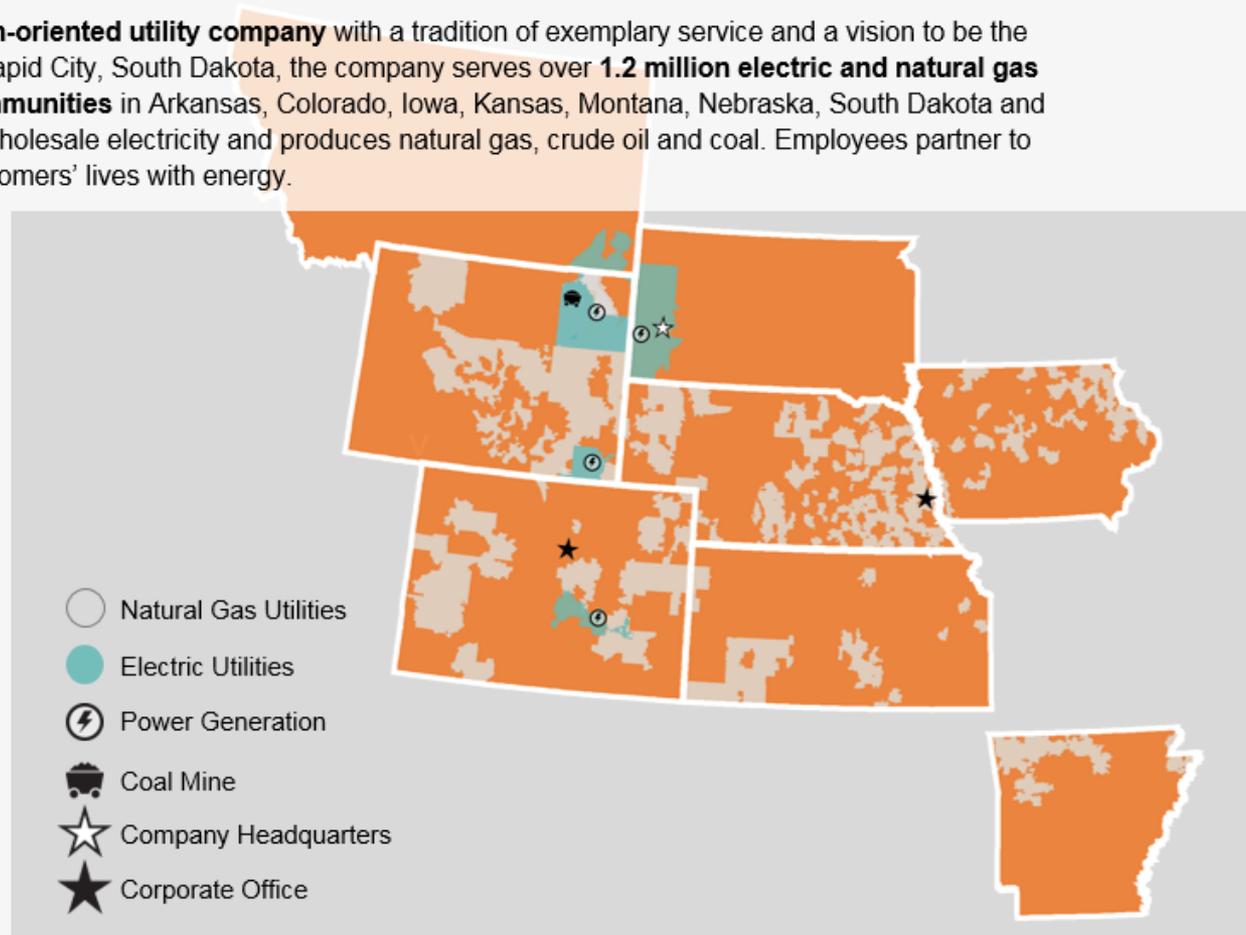
## Non-regulated Energy

### Power Generation

Black Hills Electric Generation

### Coal Mining

Wyodak Resources

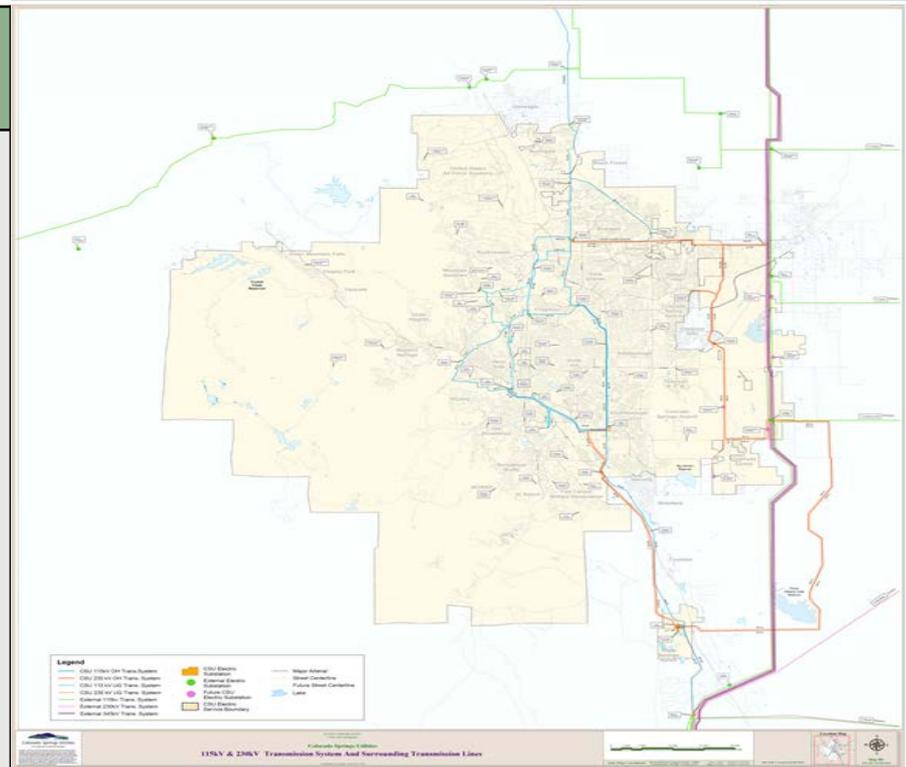


# Colorado Springs Utilities

In 1924, the residents of Colorado Springs voted to create a four-service public utility. Since then, as a municipal not-for-profit utility, our focus has been on the basics - providing exceptional customer service while keeping costs low. Today, we continue to provide reliable electricity, natural gas, water and wastewater services to the Pikes Peak region and our customers still enjoy competitive prices, exceptional hometown service, responsible environmental practices and a voice in how their utility operates.

## Electric System

- Electric customers ~222,000
- Electric service territory - 475 sq. mi.
- 908 MW System Peak (2012)
- 4.58 GWh Annual Load (2016)
- Generation capacity 1,026 MW
- Six points of interconnection
- Transmission 115 & 230 kV (232 mi)
- Distribution 12.5 & 34.5 kV (3,318 mi)



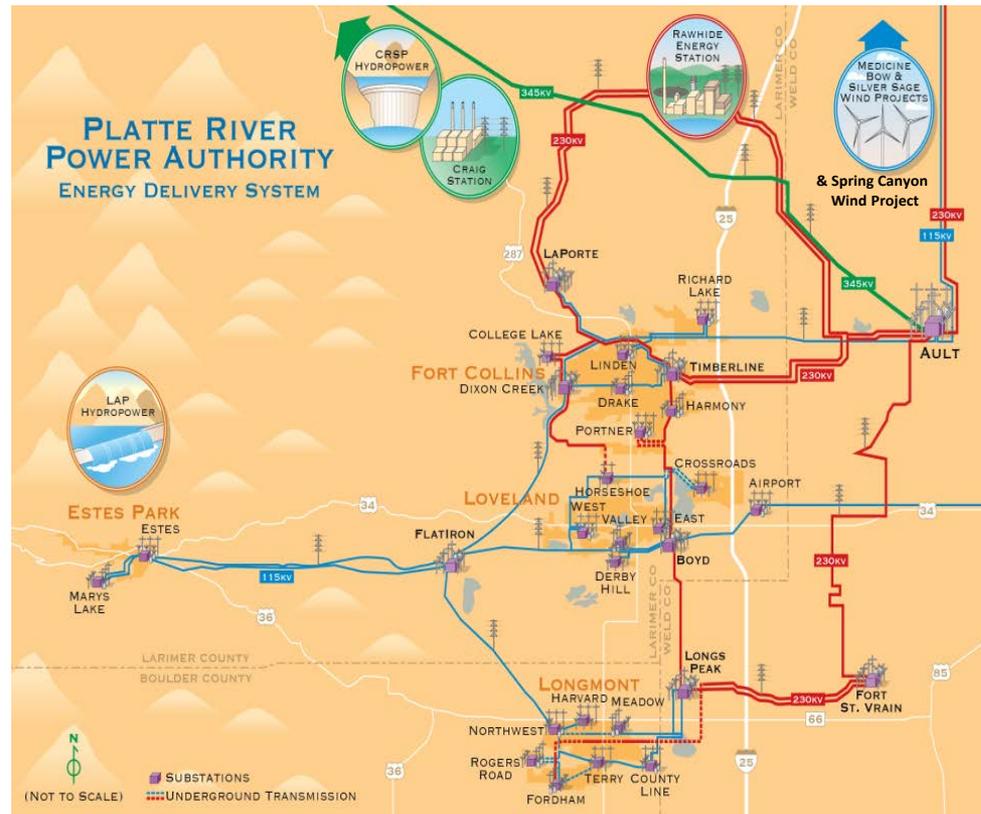
# Platte River Power Authority

Generates and delivers safe, reliable, environmentally responsible, and competitively priced energy and services to its owner communities of Estes Park, Fort Collins, Longmont, and Loveland, Colorado.

- Not for profit
- Joint Ownership / Joint Action
- Municipal utility structure
- Local governance
- Population of 325,000
- System resources include coal, hydro, gas, wind and solar
- Peak load 650 MW



**Platte River**  
Power Authority



**Mountain West Transmission Group**



# WAPA

## Colorado River Storage Project (“CRSP”) and Loveland Area Project (“LAP”)

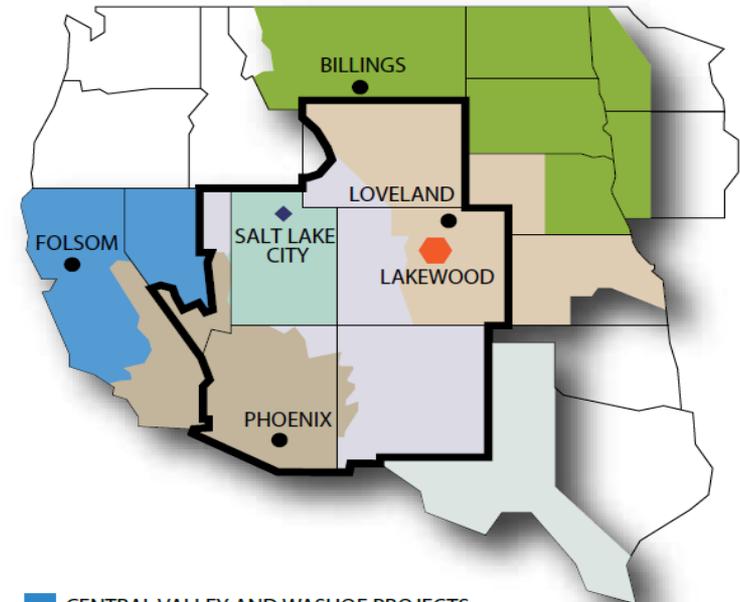
WAPA is a power marketing administration under the U. S. Department of Energy that markets and transmits wholesale electrical power across 15 states through an integrated 17,000-plus circuit mile, high-voltage transmission system.

WAPA delivers power from 10 rate-setting projects that encompass both Western’s transmission facilities and the power generating facilities owned and operated by the Bureau of Reclamation, the Army Corps of Engineers and the State Department’s International Boundary and Water Commission. These projects are made up of 14 multipurpose water resource projects, one coal-fired plant and one transmission project. Power rates are set to recover all costs, with interest, associated with power delivery, such as annual operating costs, the specific allocated multipurpose costs associated with recovering the federal investment in the generation facilities and other costs assigned to power for repayment.

**Mission:** Market and deliver clean, renewable, reliable, cost-based federal hydroelectric power and related services.

**Vision:** Continue to provide premier power marketing and transmission services to our customers, as well as contribute to enhancing America's energy security and sustaining our nation's economic vitality.

### MARKETING AREAS

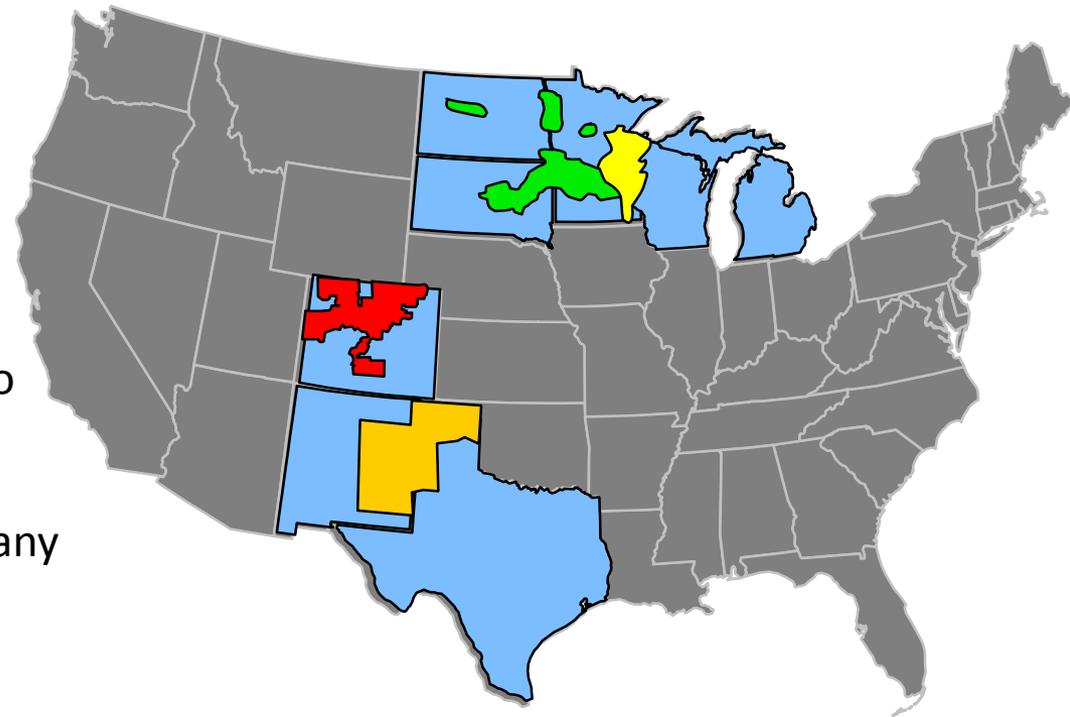


- CENTRAL VALLEY AND WASHOE PROJECTS
- PARKER-DAVIS, BOULDER CANYON AND CENTRAL ARIZONA PROJECTS
- FALCON-AMISTAD PROJECT
- PROVO RIVER PROJECT
- LOVELAND AREA PROJECTS
- PICK-SLOAN MISSOURI BASIN PROGRAM—WESTERN DIVISION AND FRYINGPAN-ARKANSAS PROJECT
- PICK-SLOAN MISSOURI BASIN PROGRAM—EASTERN DIVISION
- SALT LAKE CITY AREA/INTEGRATED PROJECTS  
COLORADO RIVER STORAGE, COLLBRAN, RIO GRANDE, SEEDSKADEE AND DOLORES PROJECTS



# Xcel Energy

- Northern States Power Minnesota
  - 1.46 million electric customers
  - 509,000 gas customers
- Northern States Power Wisconsin
  - 257,000 electric customers
  - 113,000 gas customers
- Public Service Company of Colorado
  - 1.45 million electric customers
  - 1.38 million gas customers
- Southwestern Public Service Company
  - 389,000 electric customers



# **SPP NEW MEMBER INTEGRATION PROCESS**

# Communication Process

Prospective member(s) of SPP typically experience the following five stages of integration activity:

1. Initial Discussions
2. Due Diligence and Membership Agreement Discussions
3. SPP OATT and Governing Document Changes (if applicable)
4. FERC and State Approvals as Necessary
5. Integration

SPP's New Member Communication Process focuses on stages 1, 2 and 3 due to confidential nature of communications expected.

# Status Update

Stage 1 - initiated May 2016 when MWTG asked SPP to provide information about SPP and its interest in providing services to the members of the MWTG.

Stage 2 - initiated January 2017 when MWTG issued its press release to begin negotiations to change the SPP OATT, Governing Documents, or RSC Bylaws for membership into SPP.

- Known as the **First Triggering Event** in the communication process.
- SPP Staff established a Members Forum\* and State Commission Forum\* to give guidance and assist SPP Staff on due diligence during this stage.

*\* Execution of a confidentiality agreement was required to participate in the Members Forum or State Commission Forum.*

# Current Status

Stage 3 - initiated September 2017 when MWTG decided to publicly announce results of discussions with SPP to date.

- Known as the **Second Triggering Event** in the communication process.
- Required SPP Staff to convene these **special all-member and stakeholder meetings** to discuss proposed document changes and analyses conducted to date.

# Next Steps

Changes to SPP Governing Documents will be presented for approval, using the SPP stakeholder process, prior to going to the Members Committee and Board:

- Corporate Governance Committee – Review and approve changes to the Governing Documents.
- SPC – Provide guidance on negotiating strategies and other new member deliberations.
- MOPC – Review and approve changes to the SPP OATT.
- RSC – Approve matters for which the RSC has delegated authority, in accordance with the RSC and SPP Governing Documents, prior to SPP Board action.

# Quantitative Analysis of Costs and Benefits to SPP Members

# Costs and Benefits to SPP

- Addition of MWTG would reduce the budgetary Schedule 1A rate for 2020 from \$0.48/MW-hr to approximately \$0.43 with transitional phase-in
  - Year 1 = 60% of Schedule 1A
  - Year 2 = 65% of Schedule 1A
  - Year 3 = 70% of Schedule 1A
  - Thereafter = 100% of Schedule 1A
- Transitional phase-in of Schedule 1A rate helps address cost shift issues from the elimination of rate pancaking in MWTG
- Schedule 1A savings to existing members of SPP of \$16-\$25 million annually for the first 3 years and over \$150 million NPV for the initial 10 years of MWTG membership

# Costs and Benefits to SPP

- Analysis of other quantifiable costs and benefits include APC, Contingency Reserve Sharing, Reduced PtP Revenue, DC-Tie cost allocation, and load diversity resulting in additional 10-year NPV benefits to SPP of approximately \$50M
- Total quantified 10-year NPV benefits net of expected costs to existing SPP Members is approximately \$209M

# Other MWTG Studies

- MWTG engaged The Glarus Group to evaluate the benefits of optimizing the DC-Ties
  - [https://www.dora.state.co.us/pls/efi/efi\\_p2\\_v2\\_demo.show\\_document?p\\_dms\\_document\\_id=868854&p\\_session\\_id=](https://www.dora.state.co.us/pls/efi/efi_p2_v2_demo.show_document?p_dms_document_id=868854&p_session_id=)
- MWTG engaged The Brattle Group to conduct a production cost analysis to evaluate:
  - Bilateral Market (status quo)
  - Joint Transmission Tariff
  - Regional Market
  - <https://www.wapa.gov/About/keytopics/Documents/mountain-west-brattle-report.pdf>

# Transmission Study Of The MWTG System

- SPP will conduct a reliability assessment of each of the MWTG member's transmission system
  - Similar to assessments performed for integrations of Nebraska and Integrated Systems
- Purpose of the assessment is to ensure that each system satisfies SPP's minimum reliability planning criteria
- Any noted deficiencies must be addressed by the deficient party
  - The costs of any additional transmission upgrades that may be required to resolve these deficiencies will be directly assigned to the deficient party
  - Helps to ensure an equitable transition to a regional tariff, regional planning process, and regional cost allocation

# General Areas of Proposed Modifications to SPP Governing Documents

# Governance

- MWTG seeks to participate in the existing SPP stakeholder process with certain modifications, some of which include:
  - 1. Westside Transmission Owners Committee** – Creation of committee with decision making authority over certain issues reserved to the TOs.
  - 2. Regional State Committee expansion** – Expand state commissioner venue for RTO policy engagement, including resource adequacy and congestion rights allocation oversight for the Western Interconnection region of SPP. Also, RSC Western states would have competing rights on regional cost allocation proposals.
  - 3. SPP Board Authority** – MWTG proposes SPP Board not have authority to change items reserved to the Westside Transmission Owners Committee. Also, MWTG proposes the SPP Board voting be performed by open ballot.
  - 4. Committee Seats** – MWTG requests that seats be added on the SPP Board Committees for Westside representation.

# Governance

<b>MWTG Proposal</b>	<b>Status</b>
Existing Stakeholder Process	Engage in SPP
Transmission Owner Committee for the Western Interconnection	Used in PJM
Rights Retained by Transmission Owners in the Western Interconnection	Used in PJM
Shared Rights with State Regulators	Used in SPP and MISO
Open Board Voting	Used in MISO
Western Interconnection Representation on SPP Board Committees	Occurred with previous SPP integrations

# Proposed RSC Structure

	East	West
<b>Regional Cost Allocation Design</b>	RSC primary right SPP secondary right Both Section 205	Westside TO primary right RSC secondary right Both Section 205
<b>Resource Adequacy</b>	RSC primary right	RSC primary right
<b>Congestion Rights Allocation</b>	RSC primary right	RSC primary right

# Reserved Rights

- **Reserved filing rights of the Individual Westside TOs**
  - Transmission Revenue Requirement
  - Zonal rate design: single owner zone
  - Zonal rate design: multi-owner zone
- **Collective Rights of Westside TO Committee to Approve Changes**
  - Regional Through and Out Rate
  - Zonal construct and zonal changes
  - Cost allocation
  - DC Ties cost allocation authority shared with RSC-East

# Planning Process

- MWTG will adopt SPP's existing ITP, transmission service, and generator interconnection planning processes
  - Planning for SPP East and SPP West will use common futures and all benefit metrics currently utilized in SPP East
  - Portfolio of proposed regional solutions in SPP West would be reviewed and approved by stakeholders before going to the SPP Board for consideration
- Establish two planning regions for Order 1000 purposes
  - SPP East will engage in interregional planning with other planning regions in the Eastern Interconnection
  - SPP West will engage in interregional planning with other planning regions in the Western Interconnection
- SPP West Local Planning Process
  - MWTG requests that the ITP accommodate locally planned projects coordinated among MWTG planners and stakeholders
  - Includes upgrades below 200 kV and treated as zonal reliability upgrades

# Competitive Bidding Process

- MWTG will adopt the Order 1000 competitive bidding process developed by SPP subject to the following conditions and changes:
  - Two separate FERC Order 1000 planning regions (East and West) under a single SPP tariff
  - There will be no bonus points with the MWTG project proposal process
  - Projects under the Order 1000 competitive bidding process must:
    - receive regional cost allocation,
    - have an installed cost greater than \$25M and
    - transmission lines must be greater than 50 miles in length
- The MWTG project proposal process will be transparent and the timing will be consistent with the SPP East DPP process

# General SPP Tariff Impacts

- Zonal Construct Design: Eight license plate rate zones
- Cost Shift Mitigation: Seven year mitigation agreement amongst MWTC participants
- Regional Through and Out Rate (“RTOR”): Single average rate for transactions exiting MWTC. After Cost Shift Mitigation, Revenue distribution 60% MW-Mile/40% ATRR.
- Cross-Interconnect RTOR Revenue Distribution: RTOR Revenue Split between SPP East and SPP West on Load Ratio Share
- DC-tie ATRR: New Schedule 11 DC-Tie applied to all loads and exports
- Zonal Entry Criteria: Includes cost shift mitigation
- Grandfathered Agreements: Same treatment as existing GFAs in SPP
- Creditable Upgrades: Auction Revenue Crediting Process
- Definition of Transmission: 100kV and above for SPP West

# Cost Allocation And Rate Design

- MWTG is proposing separate cost allocation procedures for facilities planned in SPP West
  - Upgrades planned in SPP East not cost allocated to SPP West and upgrades planned in SPP West not cost allocated to SPP East
- Transmission Service and Generator Interconnection upgrades will be directly assigned to customers using SPP's existing methodology for determining cost assignment
  - No "safe harbor" provision
- Cost allocation for ITP upgrades based partially on benefits and voltage level
- For a project to receive regional cost allocation in SPP West the following criteria must be met:
  - Must be a network transmission facility with operating voltage of 200 kV or above
  - Must have a project cost of at least \$15 million, and
  - Must be part of a portfolio that has a benefit to cost ratio greater than or equal to 1.25

# Cost Allocation for ITP Upgrades in SPP West

Different from Highway/Byway: Benefits test applied to allocate portion of “regional” costs to benefitting zones

Threshold: Greater than \$15 million in project costs

VOLTAGE	SPP WEST LOAD-RATIO-SHARE	ZONAL ALLOCATION BASED ON BENEFITS
300 kV and above	50%	50%
200 kV to 300 kV	30%	70%

\*Below 200 kV allocated to local zone

SPP Tariff: Highway/Byway

VOLTAGE	SPP EAST LOAD-RATIO-SHARE	LOCAL ZONE PAYS
300 kV and Above	100%	0%
< 300 kV and > 100 kV	33%	67%
100 kV and Below	0%	100%

# Cost Allocation And Rate Design

- The Federal Service Exemption, which is described later, will apply to all project costs eligible for regional cost allocation.
- MWTG will periodically review the reasonableness of the cost allocation methodologies beginning in the fifth year after the first SPP West regionally allocated project is placed into service.
  - MWTG entities may review the reasonableness of the cost allocation at any time and SPP staff will provide analytical and other support.
  - Any changes to the SPP West cost allocation design will only apply prospectively for facilities not yet approved by the SPP Board; previously approved upgrades will not be reallocated.

# WAPA Specific Provisions

- As a Federal Power Marketing Administration (PMA), WAPA RMR AND CRSP will have to meet certain requirements similar to WAPA UGP such as:
  - Various statutory provisions
  - Withdrawal provisions
  - Net billing provisions
  - Rate review standard with FERC
  - Limitation on financial penalties
- Most of these provisions are addressed in Section 39.3 of the SPP Tariff
- The Federal Service Exemption (FSE) will be applied to RMR and CRSP
  - Exemption from all costs of any regionally-allocated project
  - Exemption from the marginal congestion and loss components for statutory load transactions in the SPP market

# Operational Provisions

- **Market Design**

- MWTG will adopt the existing SPP Integrated Marketplace rules
- Modifications only to incorporate a Westside BA into the market and to optimize the Integrated Marketplace across the four Mountain West DC-Ties

- **Two Balancing Authorities**

- SPP East and SPP West

- **Operating Reserves**

- Explore methods to share operating reserves between the East and West Balancing Authorities using the DC-ties.

- **Tools**

- SPP will provide Real Time Contingency Analysis services

- **Reliability Coordination**

- SPP will provide RC services once SPP is certified for the Western Interconnection

# Operational Provisions

- **Resource Adequacy Analysis**

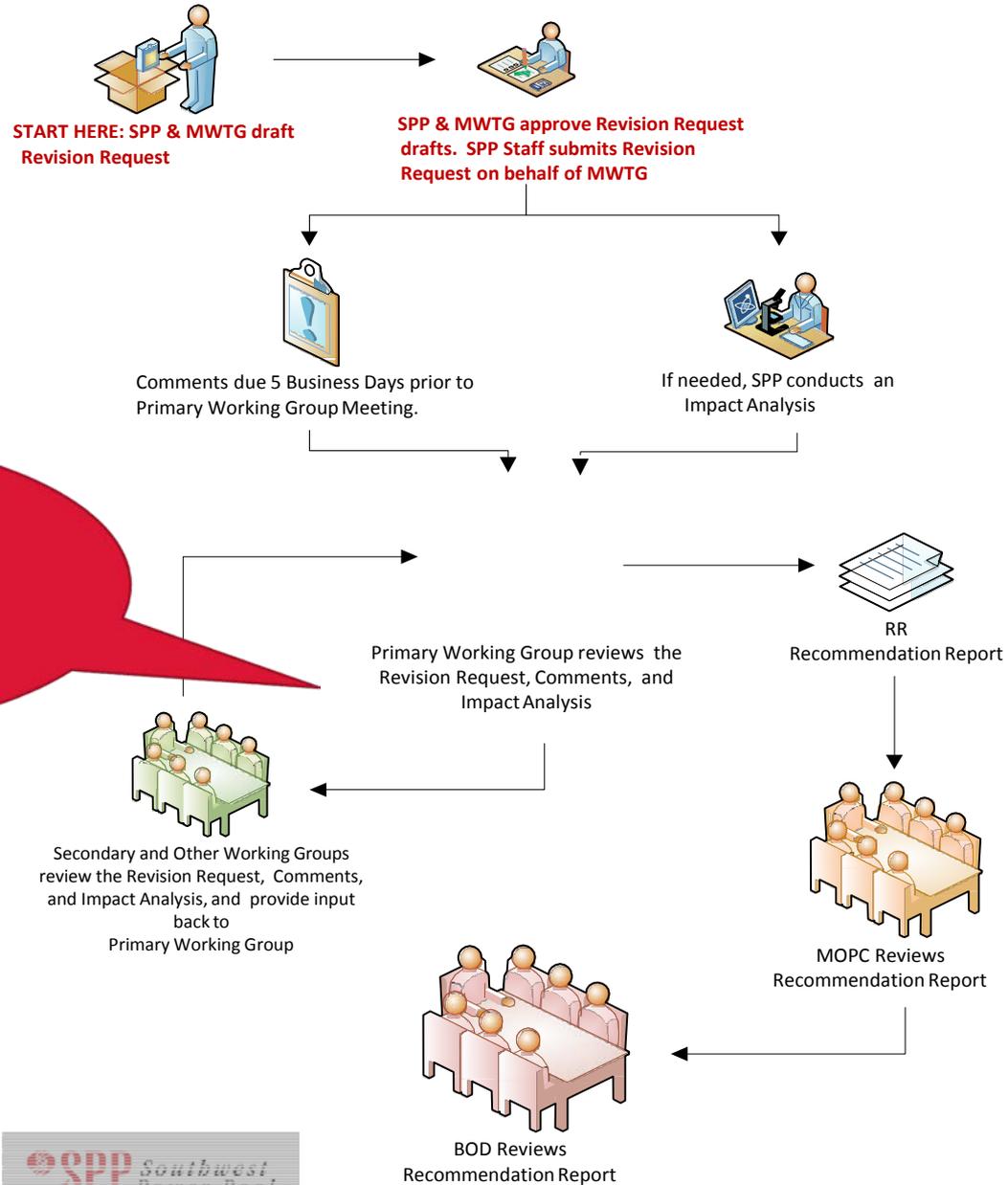
- SPP will perform a LOLE study of the MWTG region to evaluate the possibility of adopting a single planning reserve margin for the MWTG region

- **Capacity Accreditation**

- MWTG reserves the right to determine the accreditation rules for intermittent generation in the MWTG footprint.
- MWTG will receive an exemption from the SPP Criteria until Westside rules are established.

# STAKEHOLDER PROCESS AND TIMELINE

# The Revision Request Process, at a Glance specific to MWTG Integration



Opportunity to be involved, SPP stakeholder process



# SPP Stakeholder Process

- Changes to any governing document (SPP Tariff, Bylaws and Membership Agreement) must go through the SPP stakeholder process for review and approval before they are considered by the SPP Board
  - Most working groups require minimally a two meeting review policy before voting
- Regional Tariff Working Group (RTWG) has primary responsibility to consider changes to the SPP Tariff
- Corporate Governance Committee (CGC) has primary responsibility to consider changes to the Membership Agreement and SPP Bylaws
- Other working groups that will have to review some of the proposed changes may include the Economic Studies Working Group, Transmission Working Group, Market Working Group, Operations Reliability Working Group
- In addition to information-sharing and education, the CAWG and RSC may need to consider impacts to RSC Bylaws and other impacted areas within their delegated authority

# RR Governing Docs & Primary WG

Documents Subject to RR Process	SPP Primary Working Group
- Tariff	- RTWG
- Market Protocols	- MWG
- Operating Criteria	- ORWG
- Planning Criteria	- TWG
- Business Practices	- BPWG
- Integrated Planning Manual	- TWG/ESWG
- Revision Request Process	- MOPC
- Minimum Transmission Design Standards for Competitive Upgrades	- PCWG
- Communications Protocols*	- ORWG
- Reliability Coordinator & Balancing Authority Data Specs*	- ORWG

*\* These documents are effective upon approval by Primary Working Group and only subject to being appealed by MOPC*

# Primary WG Meeting Dates

RTWG	MWG	ORWG	BPWG	PCWG	ESWG	TWG
10/26/17	10/24/17	10/04/17	10/25/17	10/04/17	10/12/17	10/25/17
11/16/17	11/14/17	11/02/17	11/15/17	11/08/17	11/08/17	11/07/17
12/13/17	12/11/17	12/07/17	12/12/17	12/07/17	12/14/17	12/13/17
01/25/18	01/09/18	02/01/18	01/10/18	01/03/18	01/11/18	12/20/17
02/22/18	02/06/18	03/01/18	02/07/18	02/07/18	02/21/18	01/10/18
03/22/18	03/13/18	04/04/18	03/14/18	03/07/18	03/25/18	03/14/18
04/19/18	04/17/18	05/03/18	04/18/18	04/04/18	04/17/18	04/18/18
05/24/18	05/15/18	05/31/18	05/16/18	05/02/18	05/15/18	06/13/18
06/28/18	06/12/18	06/27/18	06/13/18	06/06/18	06/14/18	07/25/18
07/26/18	07/10/18	08/02/18	07/11/18	07/06/18	07/19/18	09/12/18
08/23/18	08/14/18	09/06/18	08/15/18	08/01/18	08/15/18	10/10/18
09/27/18	09/11/18	10/03/18	09/12/18	09/05/18	09/13/18	12/12/18
10/25/18	10/09/18	11/01/18	10/10/18	10/03/18	10/11/18	12/19/18

***\*Extra meetings may be required to meet approval deadlines***

# THE PATH TO RTO MEMBERSHIP

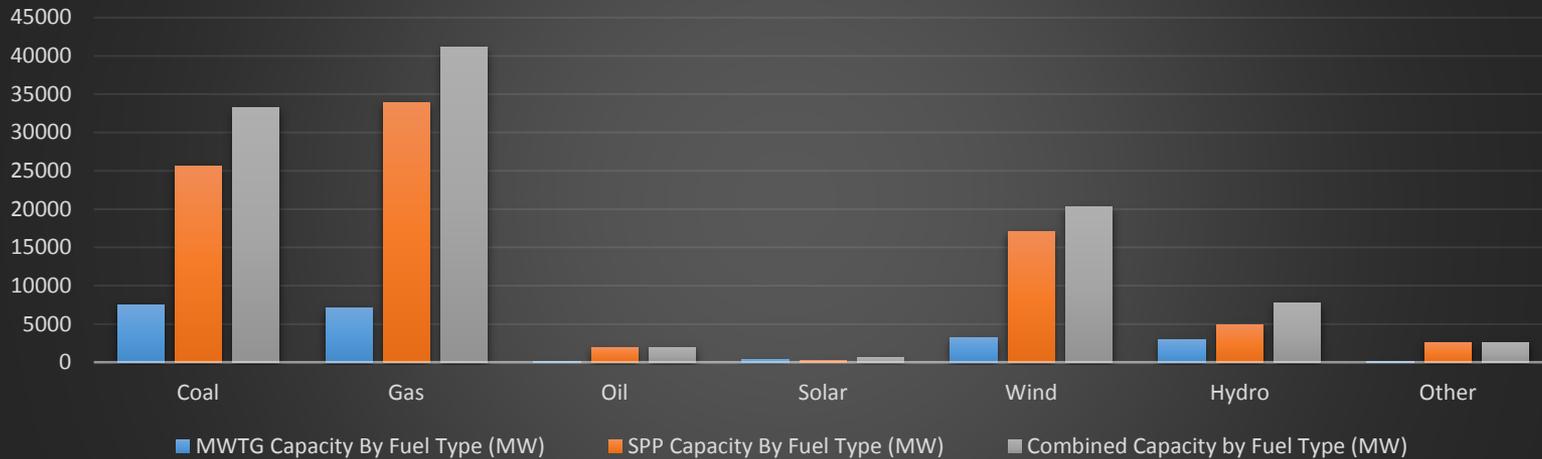


RTO IMPLEMENTATION • GO LIVE OCT 1, 2019

# Additional Information

# Resource Mix Impact

## Capacity by Fuel Type (MW)



## Capacity by Fuel Type (%)

