



## Mountain West electricity providers explore RTO options

*Mountain West Transmission Group to open discussions on possible membership; expanded electricity market may improve reliability and create savings*

**DENVER** (January 6, 2017) – Ten electricity service providers representing nearly 6.4 million customers primarily in the U.S. Rocky Mountain Region announced plans today to explore potential participation with an existing regional transmission organization (RTO). These providers could expand their electricity market operations if benefits can be realized.

The informal group, known as the Mountain West Transmission Group, began discussions in 2013 to evaluate a suite of options ranging from a common transmission tariff to RTO participation. Today, the group intends to commence discussions with the Southwest Power Pool (SPP) as the next step in exploring potential membership with a particular RTO. In the event these discussions with SPP are unsuccessful, however, the participants may pursue similar discussions with either the Midcontinent Independent System Operator (MISO), PJM Interconnection, or both.

“We are leveraging our collective strength through this mutually beneficial collaboration to increase flexibility,” said Mark A. Gabriel, Administrator and CEO of Western Area Power Administration.

“Participating in Mountain West is part of WAPA’s evolution of mission-critical customer service in the ever-changing energy industry.”

Stuart Wevik, Group VP of Electric Utilities at Black Hills Energy said: “The development of a wholesale energy market presents opportunities to reduce costs and increase reliability. We will continue to evaluate these two pillars in the next phase of analysis to ensure that we continue to deliver safe, reliable and cost effective energy to our customers.”

“Participation in a regional market can provide operational efficiencies through economies of scale and increased opportunities to bring lower cost renewables into our system,” said Jason Frisbie, General Manager and CEO, Platte River Power Authority. “These advantages would enable us to add additional value for our member owners by increasing our ability to deliver reliable, cost-effective and environmentally-responsible energy.”

“Colorado Springs Utilities is looking forward to evaluating whether participation in an RTO is a good fit for the future our community,” said John Romero, general manager of Energy Acquisition, Engineering and Planning.

“This agreement marks an important step forward in our mission to deliver reliable, low-cost power and services to our members,” said Paul Sukut, Basin Electric CEO and general manager. “Leveraging the assets and strength of others in the region will facilitate enhanced service and increased capabilities for our members. Like our decision to join SPP for our east-side power supply, this announcement reflects years of diligent work and analysis by our employees and the Mountain West team. We’re committed to working with the participants and look forward to continued analysis for the betterment of our membership.”

“As Tri-State evaluates how an organized market could benefit its member systems, working together to explore RTO membership is a positive step in assessing the association’s needs and future direction,” said Joel Bladow, Tri-State Generation and Transmission Association senior vice president of transmission.

“This is a crucial step in evaluating the potential benefits of a regional energy market for the Mountain West,” said Steve Beuning, Xcel Energy director for Market Operations.

The decision to evaluate membership in an existing RTO follows substantial Mountain West analysis. Mountain West would bring a combined 15,700 miles of transmission line to an existing RTO. The group has performed a transmission cost study; a projected market benefits study; and an evaluation of proposals provided by four existing independent system operators, including SPP, MISO, the California Independent System Operator and PJM.

Subject to stakeholder input and appropriate approvals, Mountain West expects to make a decision in mid-2017 and, if applicable, reach market implementation by early 2019. While Mountain West is optimistic that an RTO may benefit its entire membership, each Mountain West participant will ultimately need to evaluate for itself whether potential membership makes sense.

**About the Mountain West Transmission Group**

Participants in the Mountain West Transmission Group include:

- Basin Electric Power Cooperative (BEPC), based in Bismarck, N.D.;
- Black Hills Energy’s three electric utilities in Colorado, South Dakota and Wyoming, subsidiaries of the Rapid City-based Black Hills Corp
- Colorado Springs Utilities (CSU);
- Platte River Power Authority (PRPA), based in Fort Collins, Colo.;
- Public Service Co. of Colorado (PSCo), an operating company of Xcel Energy based in Denver;
- Tri-State Generation and Transmission Association (Tri-State), based in Westminster, Colo.; and
- Western Area Power Administration (WAPA)’s Loveland Area Projects (LAP) and Colorado River Storage (CRSP) Project.

The Mountain West participants are exploring if joining an RTO would result in the anticipated level of benefits. RTO benefits may include optimized use of existing generation and transmission assets through an expanded electricity market; improved grid access; continued improved grid reliability services; and improved generation and transmission planning across multiple states and systems. By exploring membership with an existing RTO, the Mountain West participants would have the advantage of an existing electricity market design.

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## Mountain West Transmission Group Frequently Asked Questions Updated January 5, 2017

### I. Background

#### A. What is the Mountain West Transmission Group?

The Mountain West Transmission Group (“Mountain West”) is an informal collaboration of electricity service providers that are working to develop strategies to adapt to the changing electric industry. The group was formed in early 2013 to evaluate an array of options ranging from a common transmission tariff to Regional Transmission Organization (RTO) membership.

1. Based on the results of evaluations performed to-date, Mountain West is focusing its attention on full membership in an existing RTO.
2. If Mountain West joins an RTO, it would be under that RTO’s existing governance, market, and tariff provisions.<sup>1</sup>
3. Participation in Mountain West is voluntary; therefore, if Mountain West joins an RTO, each electricity service provider will ultimately decide for itself if it will join with the other Mountain West participants.

#### B. Who are the Mountain West Transmission Group participants?

Mountain West includes two investor-owned utilities; two municipal electricity providers; two generation and transmission cooperatives; and two federal power marketing administration projects. The Mountain West participants are a subset of the WestConnect planning region and are members of the Colorado Coordinated Planning Group (CCPG). Current participants are listed below and other electricity providers may join after initial implementation.

1. Basin Electric Power Cooperative (BEPC)
2. Black Hills Corporation’s three electric subsidiaries:
  - a. Black Hills Power (BHP)
  - b. Black Hills Colorado Electric Utility Company (BHCE)
  - c. Cheyenne Light Fuel & Power Company (Cheyenne)
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 (Tri-State)
7. Western Area Power Administration (WAPA)
  - a. Loveland Area Projects (LAP)
  - b. Colorado River Storage Project (CRSP)

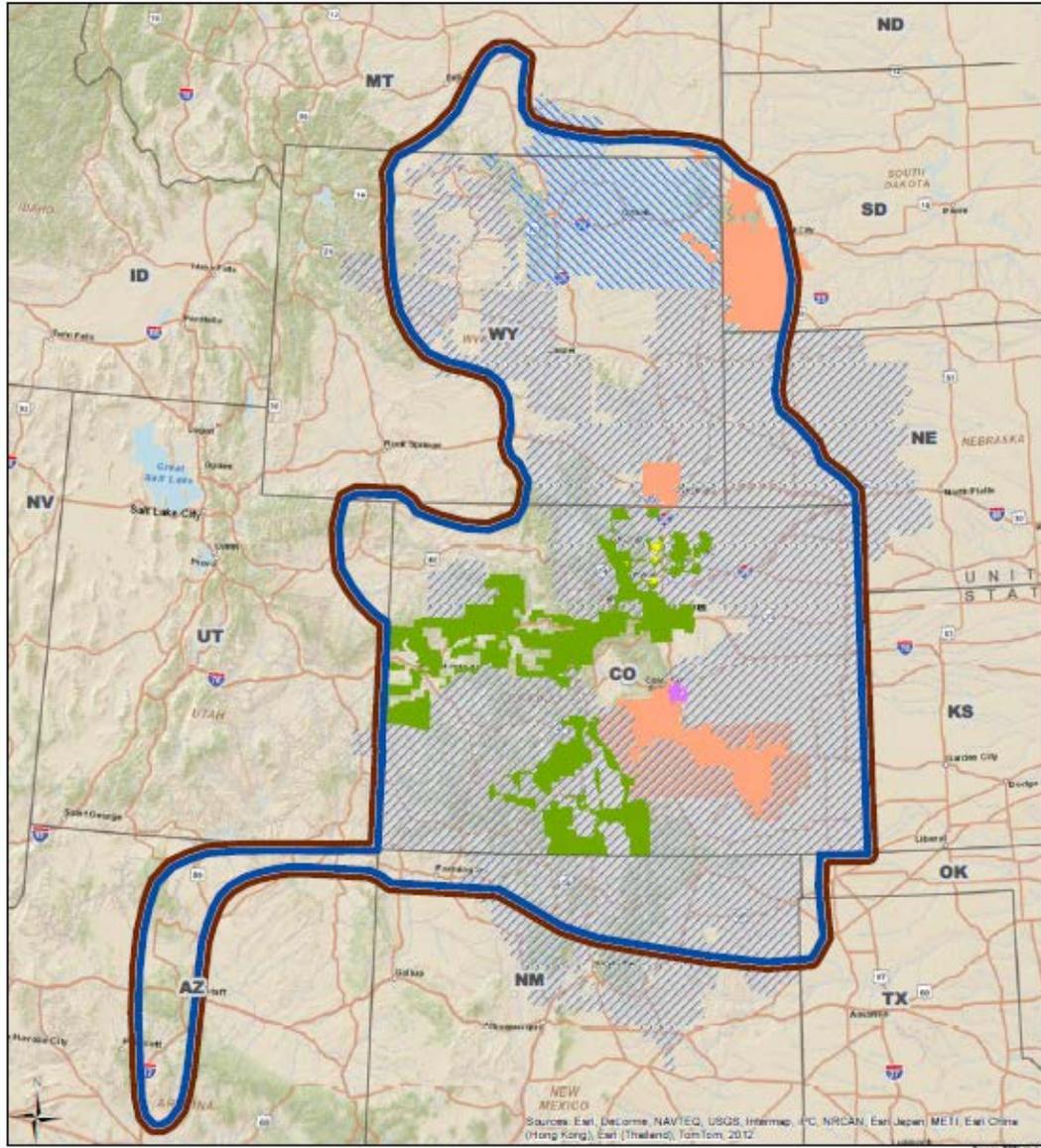
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<sup>1</sup> This would be with the exception of tariff revisions to add the participants, incorporate specific requirements based on unique organizational characteristics, and governance modifications to add participating states.



**C. What is the service territory of the Mountain West participants?**

The proposed service territory is shown in the following map. It includes the WAPA Colorado/Missouri Balancing Authority and the PSCo Balancing Authority.



**Mountain West Transmission Group  
Membership Areas**



**D. What’s the tail that goes from the Four Corners area into Central Arizona?**

The “tail” is a set of transmission lines owned by WAPA’s Colorado River Storage Project.



## II. What options are being evaluated?

Mountain West is evaluating (A) a common transmission tariff without a wholesale market and (B) Regional Transmission Organization (RTO) membership which includes both a common tariff and a wholesale market.

Based on the results of evaluations to-date, the group is focusing its attention primarily on full RTO participation.

### A. Common Tariff Option

#### ***What is a common transmission tariff?***

Today, each Mountain West participant has its own transmission tariff or tariffs. These tariffs set the terms and rates for providing transmission service to all transmission customers; which includes selling transmission service, performing transmission studies, interconnecting new generators, and many other wholesale electricity functions. The common transmission tariff would be a single tariff consisting of multiple transmission zones. Under a zonal design, the customers pay the transmission rate for the zone in which their loads are located and do not incur additional transmission charges for transporting energy across other zones in the footprint. Zonal rate design is used by all RTOs in the U.S. except the California Independent System Operator (CAISO) and the New York Independent System Operator (NYISO.)

#### ***Why create a common tariff?***

Currently, there are nine transmission tariffs in the Mountain West footprint. If the nine tariffs were to be combined into one, the Mountain West participants would collectively:

1. Make more efficient use of the existing transmission system by transitioning away from contract-path to flow-based transmission sales. This allows more optimal utilization of available transfer capability.
2. Eliminate transmission rate pancaking for grid use. “Rate pancaking” is a term used to describe the addition of delivery charges that occurs when wheeling energy across multiple transmission systems. Rate pancaking impedes the use of least-cost generation resources, including renewable resources, by increasing transaction costs.
3. Support improved transmission planning and interconnection processes by increasing coordination between and across the systems. This would help to avoid duplication of facility investments and may create additional siting opportunities for new resources.



## B. Regional Transmission Organization (RTO) Option

### *What functions does an RTO perform?*

1. Manages the operation of the transmission systems and generation resources of multiple electricity providers to optimize the utilization of the assets.
2. Maintains a wide-area view and real-time situational awareness of the entire footprint to monitor and manage the reliability of the system.
3. Serves as the centralized operator for a Day-2 Market for auction-based electricity products including varying combinations of energy, capacity, and ancillary services. The markets include day-ahead unit commitment, reliability unit commitment, and real-time dispatch.
4. Provides market monitoring oversight.
5. Facilitates transmission planning across multiple transmission systems and states.
6. Performs ongoing assessments to ensure that generation and transmission resource adequacy are in alignment with reliability, economic, and public policy requirements.

### *Why consider an RTO?*

As the rules and regulations associated with operating the system have evolved over time, it has become an increasingly complex task to optimize the efficiency of the system, while concurrently managing reliability. RTOs are able to use their wide-area view, real-time situational awareness, and ability to optimize market dispatch operations across a broader footprint. This can lead to enhanced coordination, increased reliability, greater efficiency, and more economic integration of renewable resources.

### *What are the Benefits of RTO Market Participation?*

Participation in an RTO may provide significant value for Mountain West, which will be evaluated as part of detailed ongoing RTO discussions. For example, the Mid-Continent Independent System Operator (MISO)<sup>2</sup>, the Southwest Power Pool (SPP)<sup>3</sup>, and PJM Interconnection (PJM)<sup>4</sup> have recently released statements regarding the value their RTOs bring to their respective regions. The RTO's regional operational control permits more efficient grid use. This results in daily operational cost savings. This also creates savings over time through reduced regional infrastructure investments in response to growth in demand or changes in energy production resources.

Utilities participating in an RTO market have benefited from more efficient commitment and dispatch of generation, improved operating reserve

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<sup>2</sup> <https://www.misoenergy.org/WhatWeDo/ValueProposition/Pages/ValueProposition.aspx>

<sup>3</sup> <https://www.spp.org/about-us/newsroom/total-savings-from-spp-s-markets-cross-the-1-billion-mark/>

<sup>4</sup> <http://www.pjm.com/about-pjm/value-proposition.aspx>



procurement, and more efficient wind and solar resource integration. The RTO provides its grid access and wholesale electricity market services through a single transmission tariff.

### III. What analyses have been done and what are the results to-date?

#### A. Transmission Cost Study

In 2013, the Mountain West participants engaged a consultant to evaluate potential common tariff transmission pricing structures, evaluate potential cost shifts, and develop a method to mitigate those cost shifts. The transmission cost study resulted in the following preliminary design proposal:

1. The Mountain West footprint will be divided into multiple pricing zones
2. Network customers pay the zonal rate in which their load sinks
  - a. Owners in each zone retain revenue for zonal network load
  - b. Elimination of internal point to point (PTP) transmission agreements
3. Single Regional Through and Out Rate (RTOR) applied to PTP sales
  - a.  $RTOR = \frac{\text{Total Mountain West Annual Transmission Revenue Requirement (ATRR)}}{\text{Total Mountain West Load}}$
  - b. Revenues allocated based on ATRR and MegaWatt-Mile split, after mitigation
  - c. Cost shifts would be mitigated over seven years

**Current status:** The methods for the transmission cost evaluation and cost shift mitigation are fully developed and the model is currently being updated with actual 2015/2016 costs and revenues.

#### B. Production Cost-Benefits Analysis

Mountain West initiated a production cost study in March 2016 with the Brattle Group, a consulting firm, to perform a detailed analysis of the potential production cost savings from 1) a common tariff and 2) a common tariff with full RTO market participation.

The study was conducted in two phases. Results of the analyses indicate that RTO membership has the potential to provide greater benefits than a common tariff alone. In anticipation of the greater level of benefits, Mountain West is now focusing its efforts on further evaluation of potential RTO membership.

The estimated aggregate production cost savings from the 2016 and 2024 studies for the Mountain West footprint are shown below in millions of dollars per year. The results shown assume current trends in load growth, natural gas prices, inflation, etc. Confidential individual entity results were prepared for each Mountain West participant.



Aggregate Production Cost Savings (millions per year)	Annual Benefits 2016	Annual Benefits 2024
Single Tariff/ Existing Bilateral Market	\$14 M	Not Studied
Single Tariff/ RTO “Day 2” Market	\$53 M	\$71 M

**A. Other potential savings not included in the current analysis**

Among other things, RTO markets bring additional savings for real-time dispatch optimization of energy and ancillary services, as well as potential planning reserve margin reductions. These savings are not reflected in the studies MWTG has commissioned.

**B. Request for Information on Tariff Administration and RTO Services**

In May 2016, Mountain West issued a Request for Information (RFI) for an RTO to provide services ranging from common tariff administration to full RTO Market membership

The RFI was delivered to four RTOs: the California Independent System Operator (CAISO), the Mid-Continent Independent System Operator (MISO), PJM Interconnection (PJM), and the Southwest Power Pool RTO (SPP). Responses to the RFI were received in mid-July 2016. The range of RTO costs to provide tariff administration or full RTO membership are shown below.

RTO Costs (in millions)	Start-Up Cost from RTO	Annual Cost
Tariff Administration only	\$4-7 M	\$3-7 M
RTO Membership	NA <sup>5</sup>	\$24-60 M

**IV. What is the current status and what are the next steps?**

**A. Has Mountain West reached any consensus?**

Yes. The participants in Mountain West have signed a non-binding confidential Memorandum of Understanding (MOU.) The MOU memorializes certain rate design details that have been agreed upon by the Mountain West participants.

<sup>5</sup>Start-up costs for the RTO to incorporate the Mountain West participants into the membership are included in the annual cost.



**B. What are the next steps?**

The Mountain West participants have executed a non-binding letter of understanding to hold detailed discussions with SPP about how the RTO might accommodate the terms of the Mountain West MOU and other related rate design specifications. This is not a decision to join SPP. This step is focused on having further and more in-depth discussions with SPP to determine whether the needs of Mountain West can be met. In the event these discussions are unsuccessful, the Mountain West participants may pursue similar discussions with MISO, PJM, or both.

**C. What approvals are required?**

The process of transferring functional control of transmission and generation assets to an RTO entails significant authorizations and approvals which vary by type of entity. Mountain West is comprised of four different types of electricity service providers including two investor-owned utilities; two municipal electricity providers; two generation and transmission cooperatives; and two federal power marketing administration projects. Each of the participants will have a multi-step approval process involving some combination of executive, board of director, customer, city, state, and federal approvals. Ultimately, approval from the Federal Energy Regulatory Commission (FERC) will be required.

**D. What is the estimated Mountain West timeline?**

<b>Ongoing:</b>	Customer, regulator, and stakeholder meetings
<b>January 2017:</b>	Mountain West consensus on specific RTO for additional discussions
<b>Early - Mid 2017:</b>	Discussions with RTO; Mountain West entities develop proposed membership recommendation
<b>Mid 2017 – Mid 2018:</b>	Stakeholder processes; state and federal regulatory approvals
<b>2019:</b>	Implementation