



# WestConnect Regional Planning Update

WRP Energy Committee

May 4, 2015

Webinar

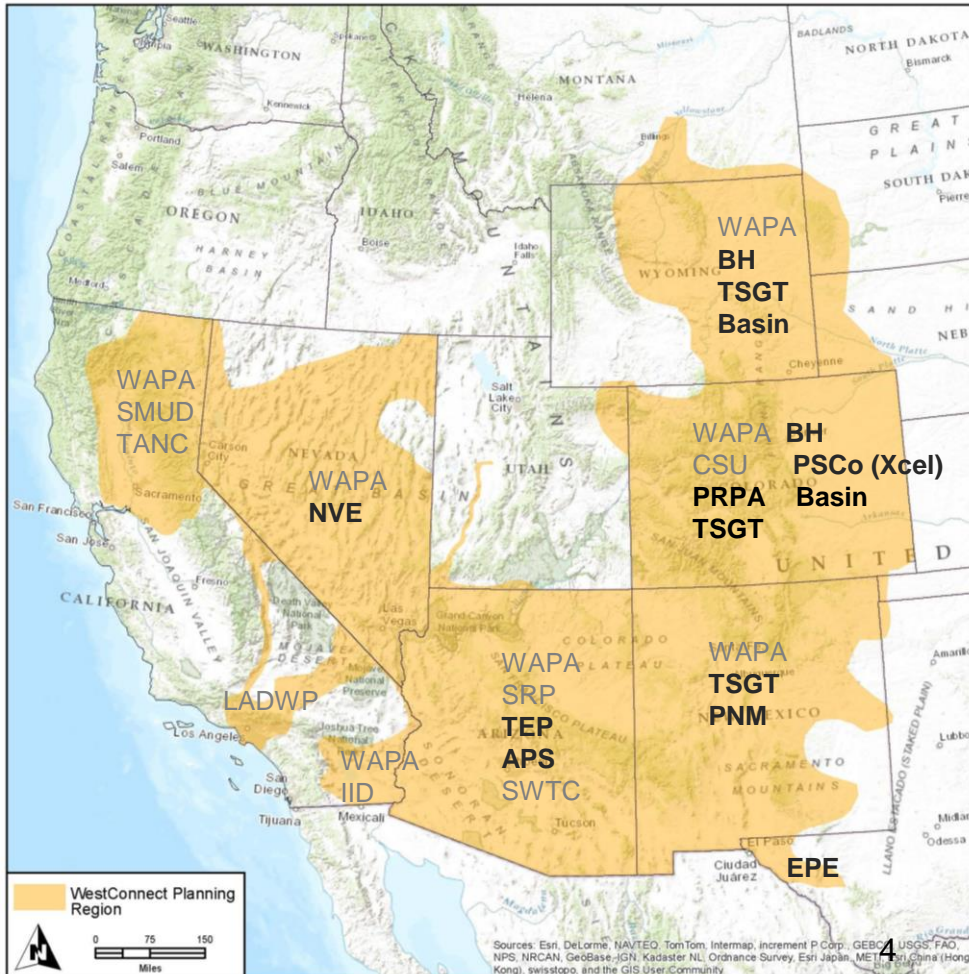
# Outline

- WestConnect Overview
  - Membership, Structure & Footprint
  - Planning process and regulatory status
- Order 890 Update (2014)
  - 2015 Ten-Year Transmission Plan
- Order 1000 Update (2015 and 2016/17)
  - Progress to date

# Participant Enrollment by Sector

- Transmission Owners
  - APS
  - Basin Electric
  - Black Hills
  - El Paso Electric
  - NV Energy
  - Public Service New Mexico
  - Platte River Power Authority
  - Tucson Electric Power
  - Tri-State
  - Xcel
- Transmission Customers
  - None
- Independent Transmission Developers
  - Southwestern Power Group
  - TransCanyon LLC
  - Xcel Western Transmission Co.
- State Regulatory Commission Members
  - None
- Key Interest Groups
  - None

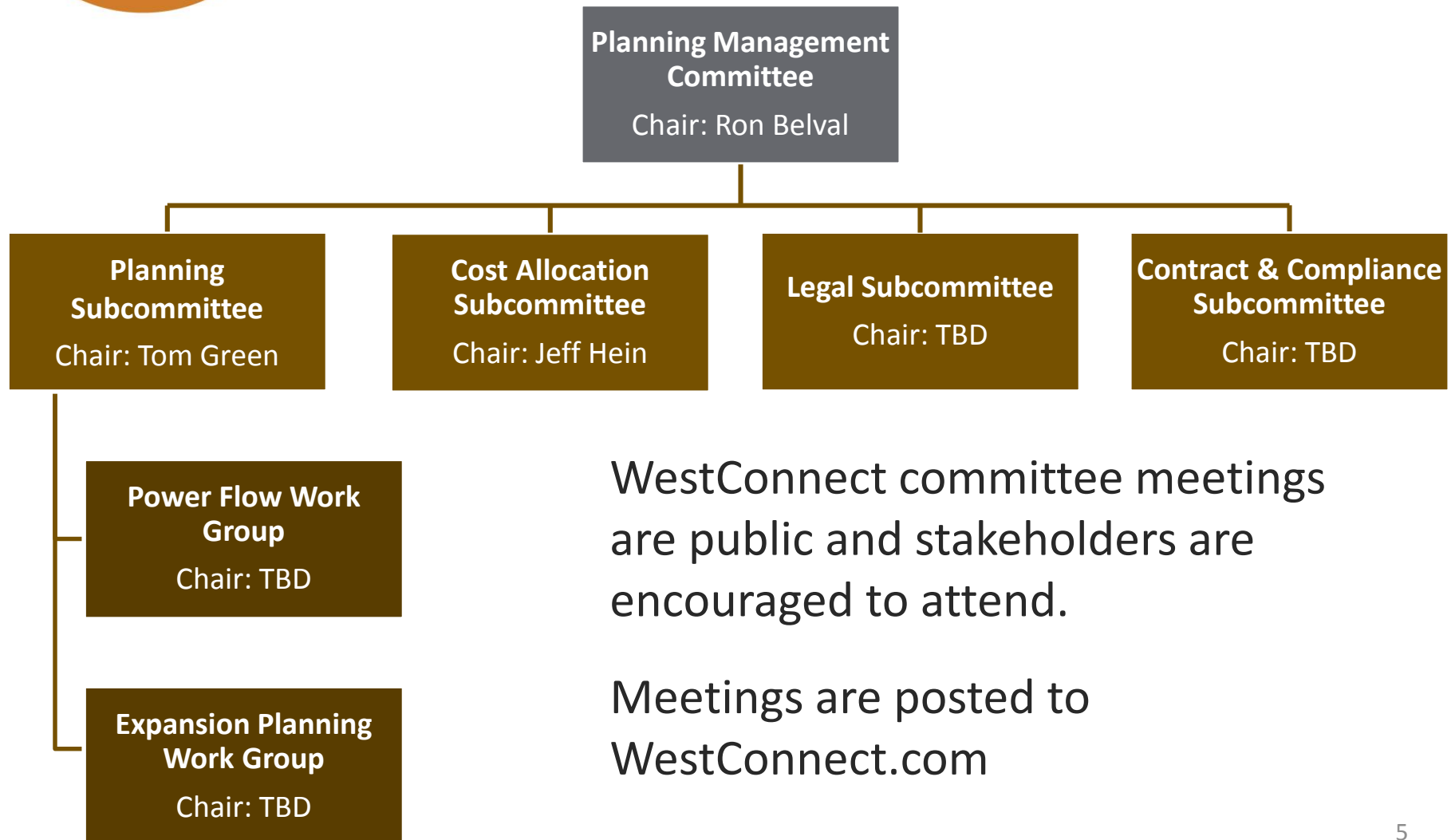
# Anticipated WC Planning Region



- Current TO membership shown on map
- Non-TO members:
  - Southwestern Power Group
  - TransCanyon LLC
  - Xcel Western Transmission Co.

Entities in **grey** text are transmission providers that participate in the WestConnect Order 890 planning process but have not yet signed the Order 1000 Planning Participation Agreement (PPA).

# Committee Structure

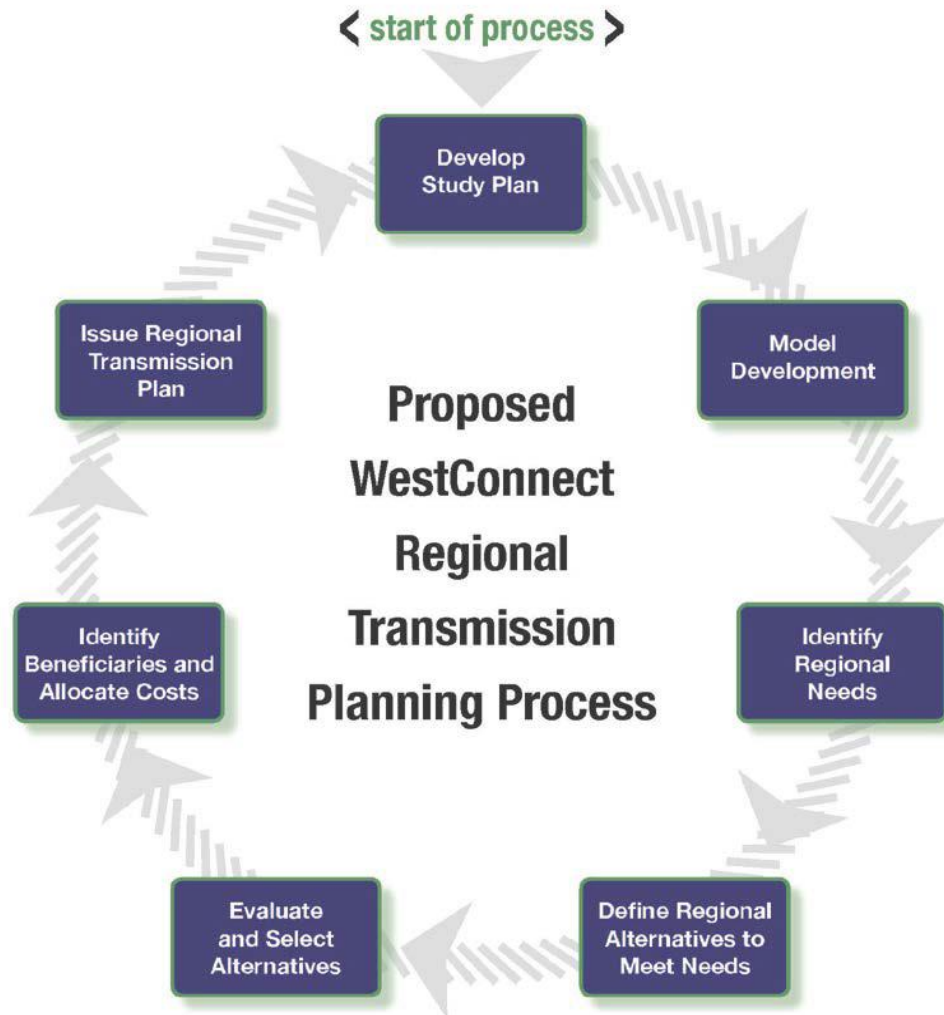


WestConnect committee meetings are public and stakeholders are encouraged to attend.

Meetings are posted to [WestConnect.com](http://WestConnect.com)



# Regional Planning Process



The background of the slide features a silhouette of a power transmission tower in the center, with power lines extending from it. Behind the tower and across the top of the slide are dark, jagged mountain ranges. In the upper right corner, a large, bright yellow sun is partially obscured by the mountains, creating a sunset or sunrise scene against an orange and yellow sky.

# Regulatory Update - Regional

- Regional Compliance Status
  - 2<sup>nd</sup> Regional order issued September 18, 2014
  - Required WestConnect to file the Planning Participation Agreement (PPA) with FERC
  - Directed abbreviated cycle to start January 1, 2015
- 3<sup>rd</sup> Regional compliance filings submitted November 17, 2014
- Waiting on response from FERC

# Regulatory Update - Interregional

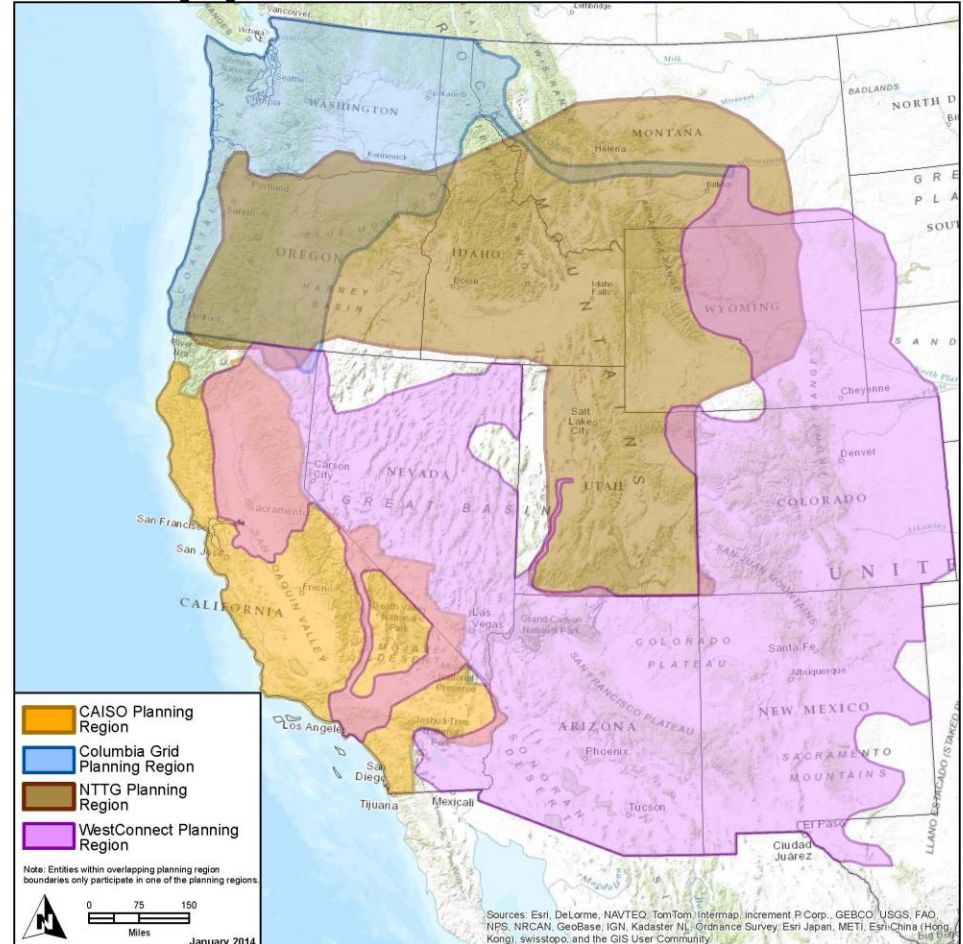
- Interregional Compliance Status
  - Interregional Compliance Status Interregional orders issued December 18, 2014
  - CAISO filed minor tariff changes on February 17, 2015 to address FERC's December order
  - WestConnect filed a transmittal letter notifying FERC the CAISO proposed changes met WestConnect's compliance requirement
  - Effective date for Interregional Order 1000 is October 1, 2015 (WestConnect, CAISO, NTTG)



# Interregional Coordination

- Interregional stakeholder meeting held Feb. 26, 2015
  - Regional planning status
  - Discussion of coordination activities
  - Strong attendance
  - Primarily positive feedback

Western Planning Regions





# **2015 TEN-YEAR TRANSMISSION PLAN**

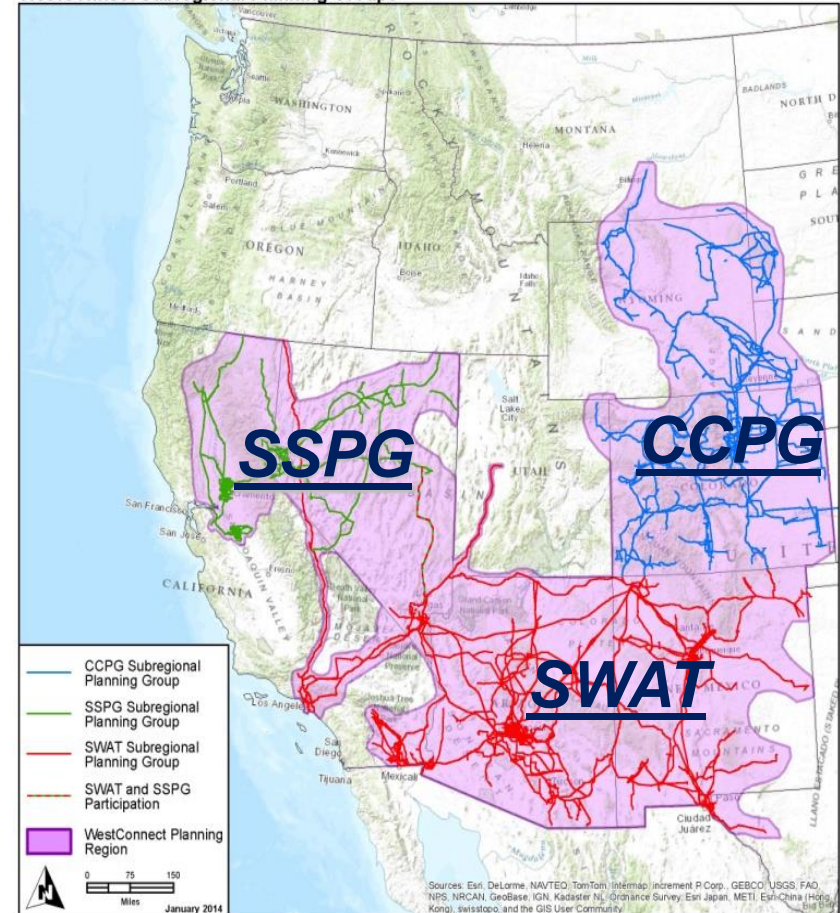
# WestConnect Order 890 Ten-Year Transmission Plan

- Documents the results of the subregional planning processes within the WestConnect planning area
  - Provides a summary of all studies conducted and reported by the SPGs and workgroups within the WestConnect footprint.
  - Provides a proposed study plan for the SPG's next planning cycle.
- Provides a summary of the WestConnect and SPGs Stakeholder activities
- Plan includes ten-year transmission projects of:
  - Entities that have signed WestConnect Project Agreement for Subregional Transmission Planning,OR
  - Other entities whose projects meet several prerequisites

## CCPG, SSPG and SWAT are the subregional planning groups for the WestConnect planning region. The SPGs:

- Coordinate subregional data input for regional base cases
- Define subregional study plans, provide study resources, and perform subregional planning studies
- Provide forum for coordination and peer review of TO 10-year plans and regional planning studies

WestConnect Subregional Planning Groups





# Changes since 2014...

- 43 projects listed in the 2015 Plan have indicated a status of In-Service since the 2014 Plan.
- 37 projects have been listed with a Status as Under Construction.
- 24 projects listed in the 2014 Plan have now been identified as Withdrawn
- 51 new planned projects and one new conceptual project

## In-service since 2014...

Type of Project	Number of Projects	Transmission Line Project Miles	Planned Investment (\$ x 1,000)
<b>IN-SERVICE</b>			
<i>Substation</i>	17	N/A	\$ 138,000
<i>Transmission Line</i>	14	212	\$ 303,000
<i>Transmission Line and Substation</i>	4	231	\$ 564,000
<i>Transformer</i>	6	N/A	\$ 42,000
<i>Other</i>	2	N/A	\$ 4,000
<b>Total Projects</b>	<b>43</b>	<b>443</b>	<b>\$ 1,051,000</b>

## Under-construction since 2014...

Type of Project	Number of Projects	Transmission Line Project Miles	Conceptual Investment (\$ x 1,000)
<b>UNDER CONSTRUCTION</b>			
<i>Substation</i>	7	N/A	\$ 56,000
<i>Transmission Line</i>	18	700	\$ 596,000
<i>Transmission Line and Substation</i>	8	133	\$ 353,000
<i>Transformer</i>	4	N/A	\$ 21,000
<i>Other</i>	0	N/A	\$ -
<b>Total Projects</b>	<b>37</b>	<b>833</b>	<b>\$ 1,026,000</b>

# Project Organization

- WC Plan is organized by Planned and Conceptual projects as defined by the following:
  - **Planned:** Project has a sponsor, incorporated in entity's regulatory filing, has participation / construction agreement, or permitting has been obtained or will be sought.
  - **Conceptual:** Project lacks formal sponsor, or requires more study and refinement prior to committing to construct. Such projects may be viewed as viable alternatives still seeking sponsorship.
- Sorted by Voltage Class
- Sorted by In-Service Date
- Sorted by State
- Sorted by SPG



# 2015 Transmission Plan Summary

- 183 total planned projects equating to over \$13 billion
- 75 additional conceptual projects totaling \$12 billion

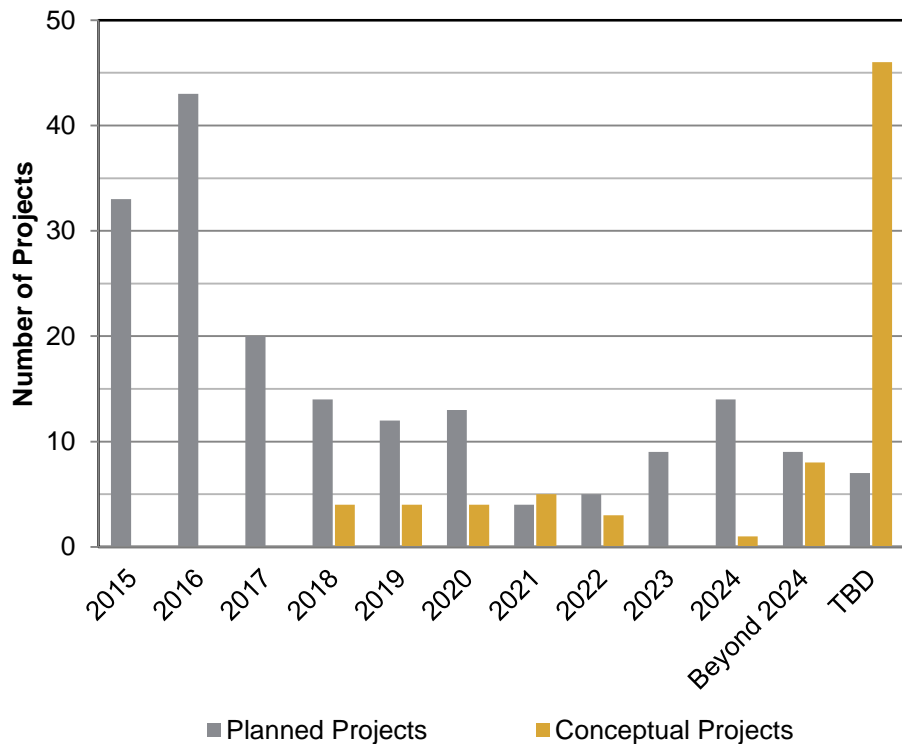
Type of Project	Number of Projects	Transmission Line Project Miles	Planned Investment (\$ x 1,000)	Number of Projects	Transmission Line Project Miles	Conceptual Investment (\$ x 1,000)	Total Investment (\$ x 1,000)
	PLANNED			CONCEPTUAL			
<i>Substation</i>	39	N/A	\$ 321,000	9	N/A	\$ 70,000	\$ 391,000
<i>Transmission Line</i>	75	4,130	\$ 10,178,000	48	4,450	\$ 4,150,000	\$ 14,328,000
<i>Transmission Line and Substation</i>	27	1,182	\$ 1,969,000	16	2,470	\$ 7,795,000	\$ 9,764,000
<i>Transformer</i>	28	N/A	\$ 232,000	2	N/A	\$ 40,000	\$ 272,000
<i>Other</i>	14	22	\$ 594,000	0	N/A	\$ -	\$ 594,000
<b>Total Projects</b>	<b>183</b>	<b>5,334</b>	<b>\$ 13,294,000</b>	<b>75</b>	<b>6,920</b>	<b>\$ 12,055,000</b>	<b>\$ 25,349,000</b>

# Historical Comparison

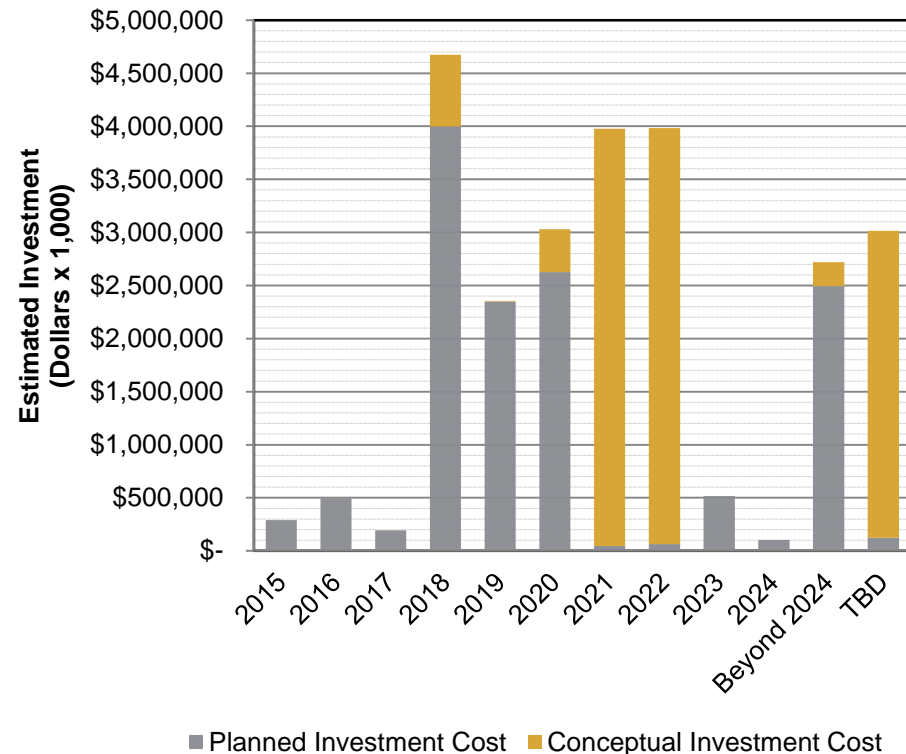
	2015	2014	2013
<b>Planned</b>	183	199	205
<b>Conceptual</b>	75	66	68
<b>Total No. Projects</b>	258	265	273
<b>Planned</b>	5,334	6,418	6,028
<b>Conceptual</b>	6,920	6,453	7,305
<b>Total Miles</b>	12,254	12,871	13,333
<b>Planned</b>	\$13,294	\$14,494	\$11,099
<b>Conceptual</b>	\$12,055	\$12,085	\$18,342
<b>Total Estimated \$M</b>	\$ 25,349	\$ 26,579	\$ 29,441

# In-Service Date and Cost Summaries

**WestConnect Projects by Year**

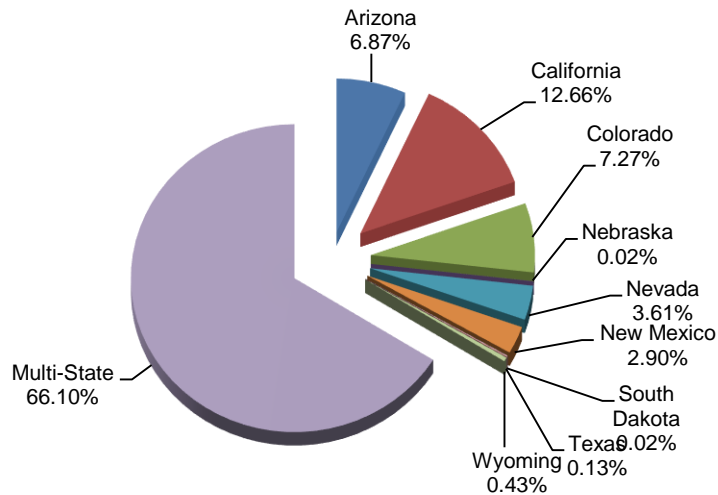


**Capital Investment by Year**



# Investment by State

## Capital Investment by State



State(s) Traversed	Number of Projects	Transmission Line Project Miles	Planned Investment (\$ x 1,000)	Number of Projects	Transmission Line Project Miles	Conceptual Investment (\$ x 1,000)
	PLANNED			CONCEPTUAL		
Arizona	66	555	\$ 722,000	49	1,089	\$ 1,020,000
California	21	815	\$ 3,154,000	2	140	\$ 54,000
Colorado	26	386	\$ 532,000	10	668	\$ 1,312,000
Nebraska	1	0	\$ 4,000	0	0	\$ -
Nevada	21	23	\$ 248,000	8	293	\$ 667,000
New Mexico	15	107	\$ 131,000	2	255	\$ 602,000
South Dakota	1	0	\$ 4,000	0	0	\$ -
Texas	12	14	\$ 34,000	0	0	\$ -
Wyoming	6	217	\$ 108,000	0	0	\$ -
Multi-State	14	3,217	\$ 8,357,000	4	4,475	\$ 8,400,000
<b>Total</b>	<b>183</b>	<b>5,334</b>	<b>\$ 13,294,000</b>	<b>75</b>	<b>6,920</b>	<b>\$ 12,055,000</b>

# Interstate and Independent Developer Projects

Name of Project	Line Miles	Voltage	From	To
Centennial West Clean Line	900	500 kV DC	New Mexico	California
Chinook Project	1000	500 kV DC	Montana	Nevada
Harcuvar Transmission Project	90	230 kV	Arizona	Arizona
High Plains Express Initiative	2500	500 kV	Wyoming	Arizona
Long View Energy Exchange	90	500 kV	Arizona	Arizona
Lucky Corridor Project	130	345 kV	New Mexico	New Mexico
North Gila – Imperial Valley #2 Project	85	500 kV	Arizona	California
Southline Transmission Project	240/120	345 kV/230 kV	New Mexico	Arizona
Southwest Intertie Project	339	500 kV	Idaho	Nevada
SunZia Southwest Transmission Project	515	500 kV	New Mexico	Arizona
TransWest Express	725	600 kV DC	Wyoming	Nevada
Tres Amigas Project	22	345 kV	New Mexico	New Mexico
Western Spirit Clean Line	125	345 kV	New Mexico	New Mexico
Wyoming-Colorado Intertie	180	345 kV	Wyoming	Colorado
Zephyr Project	850	500 kV DC	Wyoming	Nevada

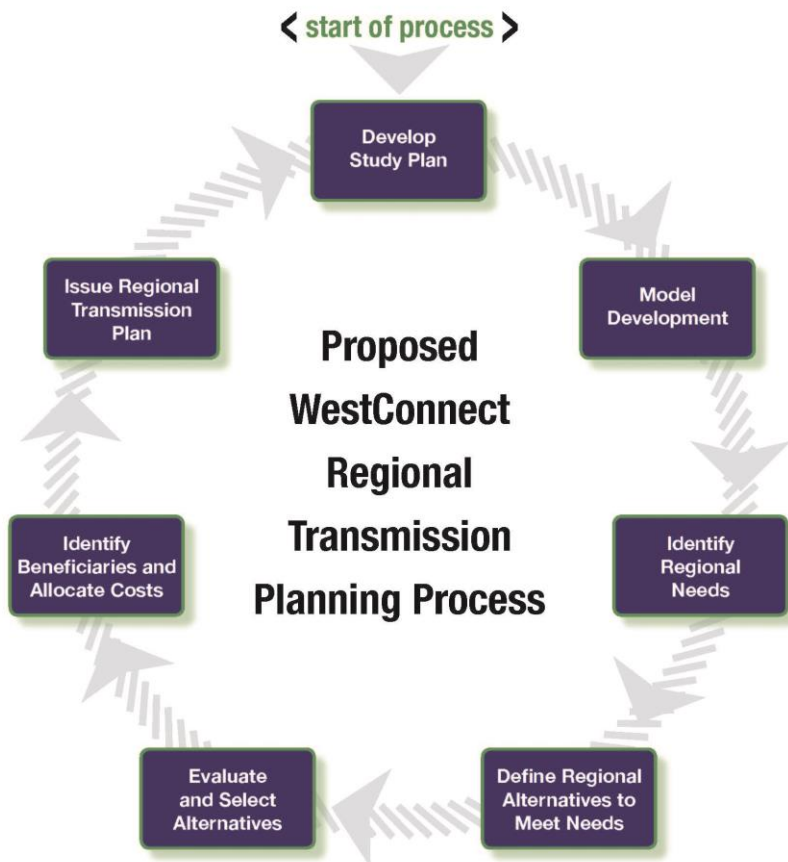


# **Order 1000 Planning Process**

## ***2015 Abbreviated Cycle***



# Order 1000 Process Overview



- Biennial study cycle
- Information flows from TOs and SPGs up to WC
- Enhancements as compared to current 890 planning efforts:
  - WestConnect will perform a regional reliability assessment
  - Production cost modeling will be used to identify economic needs
  - Cost allocation will be performed on eligible projects and cost allocation is binding
- WC [Business Practice Manual](#) (BPM)

The background of the slide features a silhouette of a power transmission tower in the center, with power lines extending from it. Behind the tower are dark, layered mountain ranges. In the upper right corner, a large, bright yellow sun is setting, casting a warm orange glow across the sky.

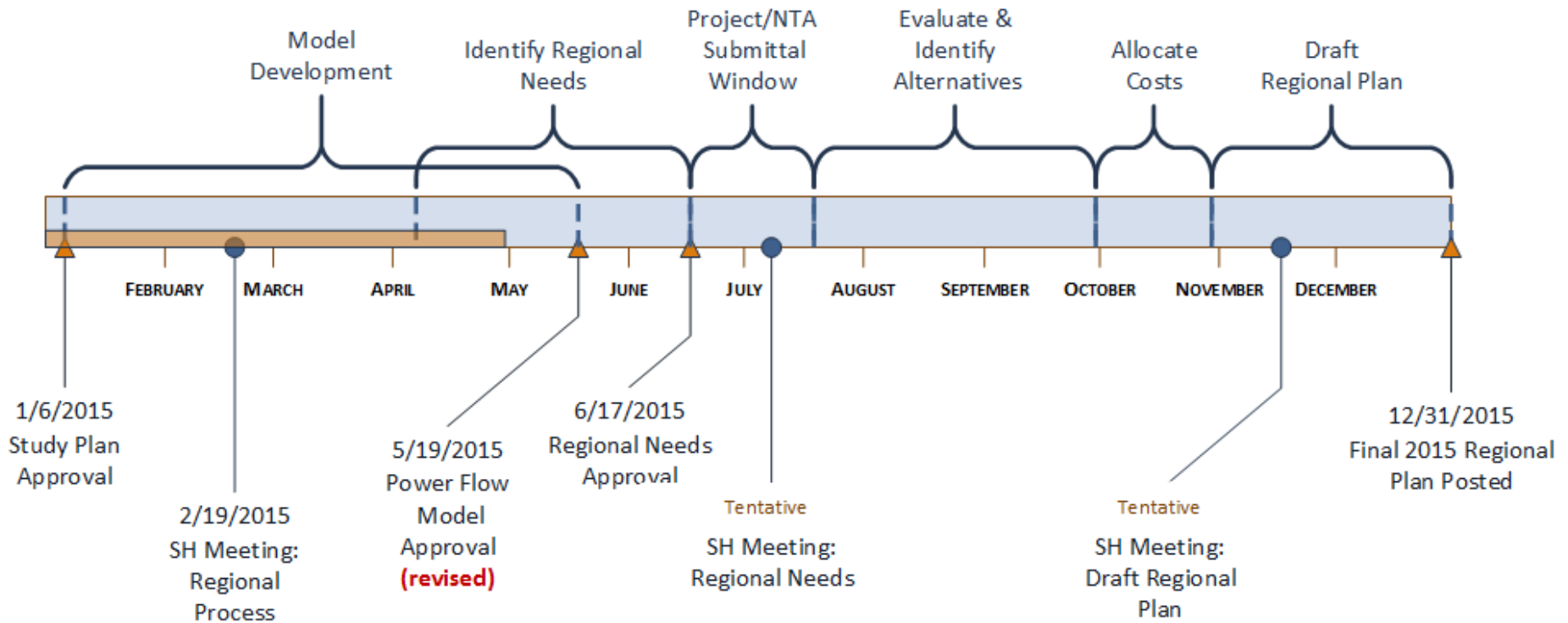
## Process Status

- Initial regional planning effort for WestConnect
  - Differences between Order 890 versus Order 1000
- 2015 Abbreviated Cycle
  - Shake-down cruise for full cycle
  - Approved Study Plan on January 7, 2015
    - Posted to westconnect.com [here](#)
  - Finishing model development phase
- 2016-2017 Biennial Cycle
  - Study plan development in Q4 2015
  - Expect robust powerflow and production cost modeling efforts in full cycle

# 2015 Study Plan: Major Components

- **Regional Model Development**
  - Reliability: 2024 Heavy Summer Regional power flow case
  - Economic: 2024 WestConnect Regional Production Cost Model (PCM)
  - Public Policy: Verify RPS in powerflow model
- **Identification of Regional Needs**
  - Reliability assessment: Steady state N-1 TPL evaluation
  - Economic assessment: limited, focused on model development
  - Policy: RPS driven needs apparent in powerflow model
- **Collection of Alternatives**
- **Evaluation and Identification of Regional Alternatives**
- **Regional Cost Allocation**
- **Issuance of Regional Study Plan**

# 2015 Abbreviated Planning Cycle Schedule

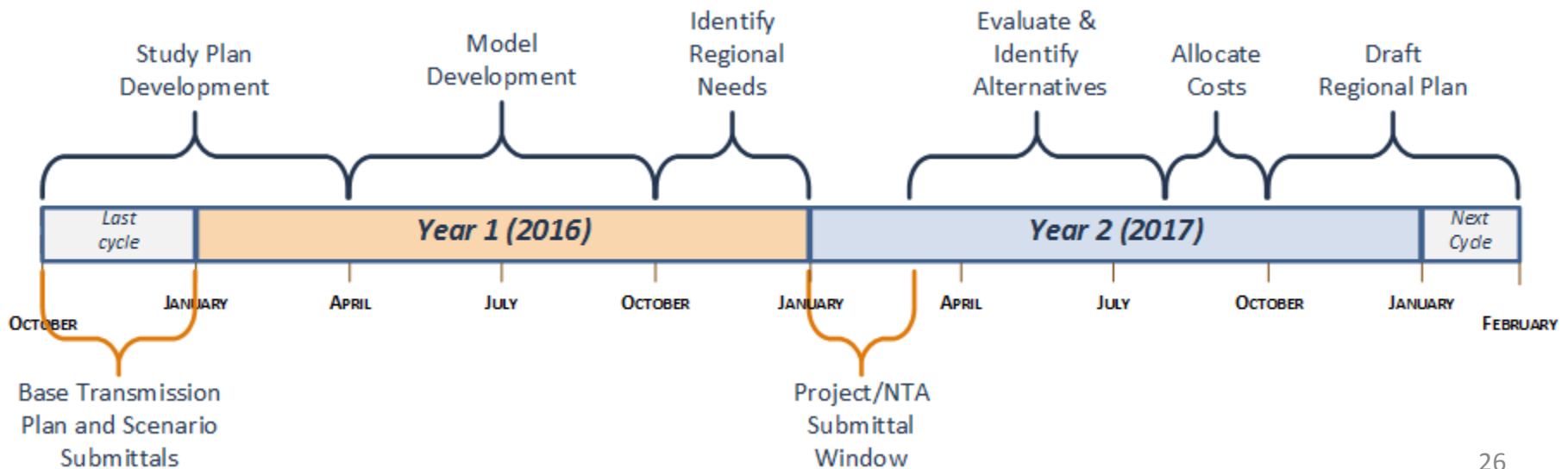


## Abbreviated versus Full-Cycle: Process Elements

Process Element	2015 Abbreviated Process	2016-2017 Biennial Process
Develop study plan	Yes (Complete)	Yes
Model Development: Powerflow	Yes (one case)	Yes
Model Development: Production Cost Model	TBD	Yes
Model Development: Public Policy Check	Yes (RPS only)	Yes
Identify Regional Needs	Yes (Reliability and Policy only)	Yes
Open Season for Alternatives to Meet Needs	Yes	Yes
Evaluate and Select Alternatives	Yes	Yes
Identify Beneficiaries and Allocate Costs	Yes	Yes
Issue Regional Transmission Plan	Yes	Yes

# 2016-2017 Biennial Process

- Full process
- Starts in Q4 2015...





The background of the slide features a stylized landscape. In the foreground, a dark silhouette of a power line tower stands against a bright orange and yellow sunset sky. The sun is a large, glowing yellow circle on the right side. In the background, there are dark, layered silhouettes of mountains.

# Opportunities For Engagement

- Meetings are open to public
- Option to join distribution lists
- Stakeholder meetings

# Next Meetings

- ...can be found on the WestConnect Calendar [here](#)
- PMC Meetings:
  - May 5 - 9:00 a.m. to Noon (PPT), webinar/conference call
  - May 19 - 9 a.m. to 3 p.m. (MDT), Denver (TGST)
  - June 2 - 9:00 a.m. to Noon (PPT), webinar/conference call
  - June 16 - 9 a.m. to 3 p.m. (MDT), Denver (TGST)