

The background of the slide is a stylized illustration of a sunset over a mountain range. The sky is a gradient of orange and yellow, with a large, bright sun on the right side. The mountains are depicted in dark blue and black silhouettes. A power line tower is visible in the center-right of the image, with power lines extending across the sky.

# **WestConnect**

# **2019 Annual Interregional Information**

Annual Interregional Coordination Meeting  
February 19, 2019

The background of the slide is a stylized illustration of a sunset over a mountain range. The sky is a gradient of orange and yellow, with a large, bright sun on the right side. In the foreground, there are dark blue silhouettes of mountains and a single power line tower with its cables stretching across the scene.

# Topics

- WestConnect Regional Planning Overview
- 2018-19 Regional Planning Cycle
  - Model Development
  - Regional Transmission Needs Assessment
  - Scenario Studies
- Interregional Transmission Project Submittals
- Upcoming Meetings



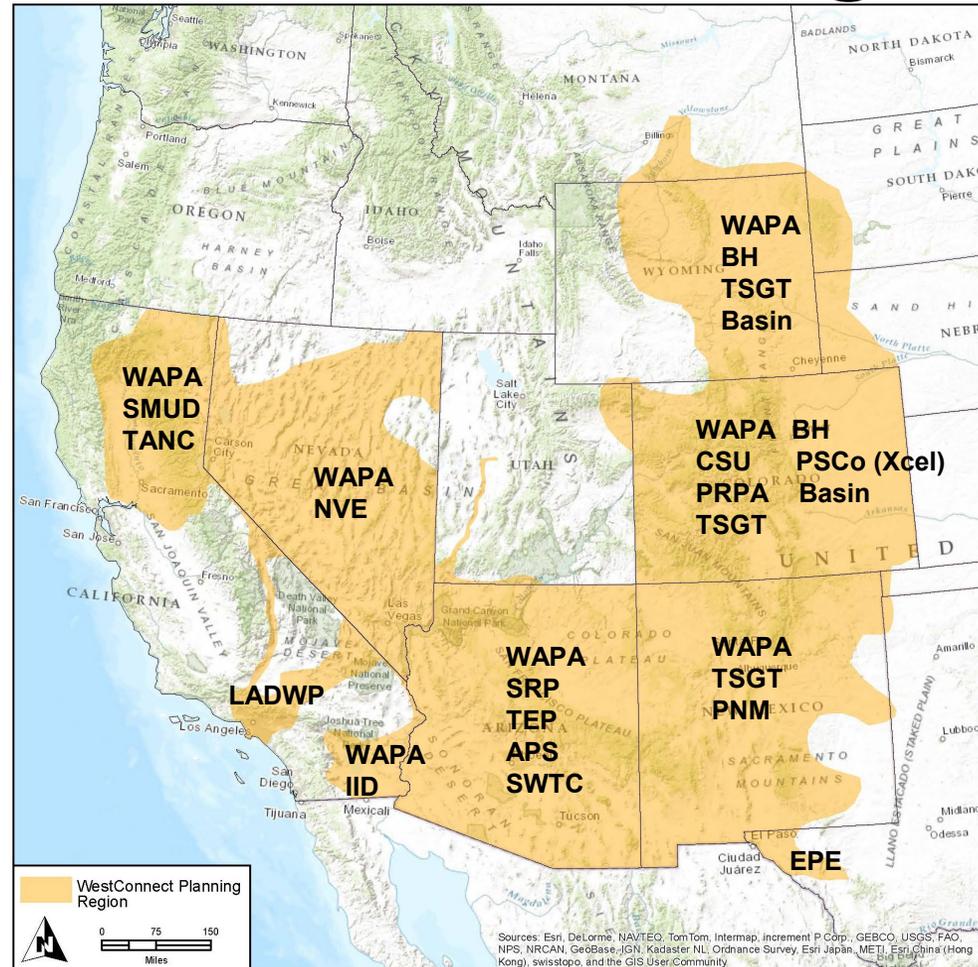
# WestConnect Regional Planning Overview

Charlie Reinhold, WestConnect Project Manager

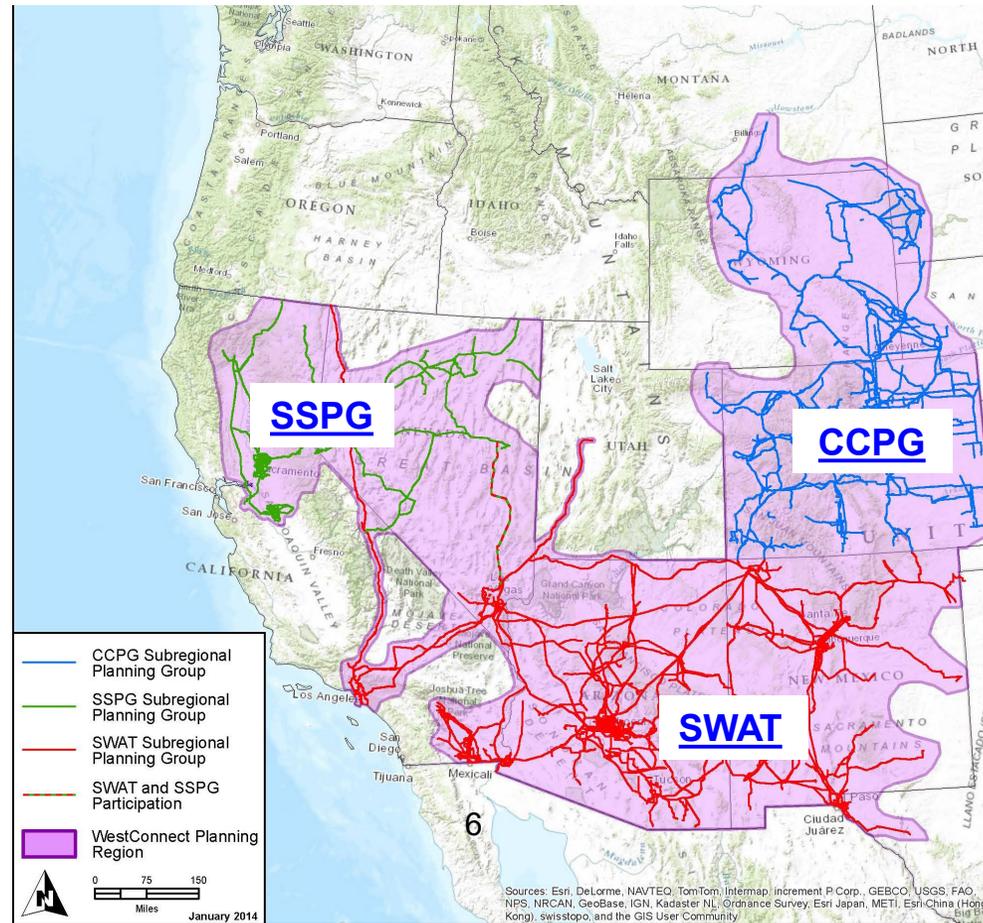
# Regulatory Update

- Regional Compliance Filings
  - All tariff revisions related to the regional planning requirements of Order 1000 were fully accepted by FERC on January 21, 2016
  - On August 8, 2016 the 5<sup>th</sup> Circuit Court of Appeals vacated FERC's compliance orders related to mandates regarding the role of the non-jurisdictional utilities in cost allocation
    - On [November 16, 2017](#) FERC upheld its previously compliance orders and provided further explanation as to why its mandates will ensure just and reasonable rates between public and non-public utility transmission providers in the WestConnect region
    - FERC's decision is back in front of the 5th Circuit on appeal

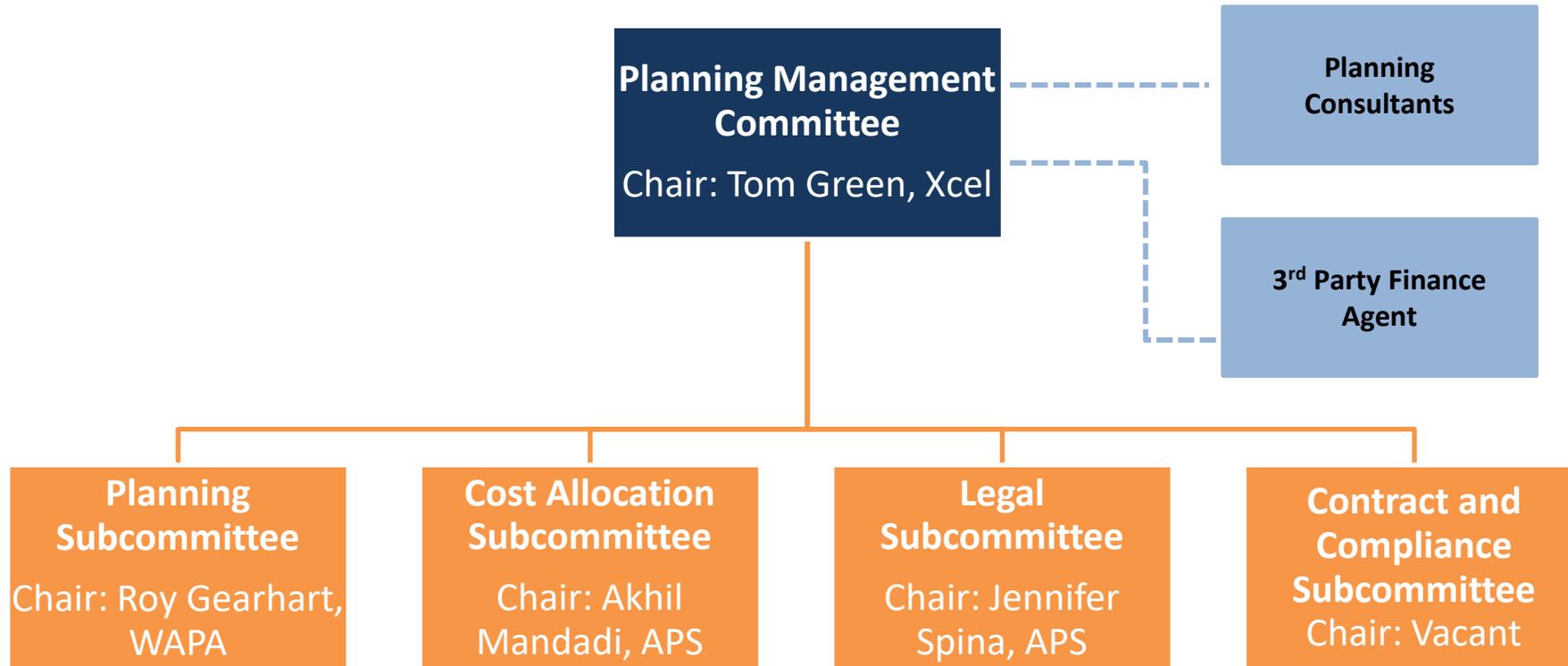
# WestConnect Planning Region



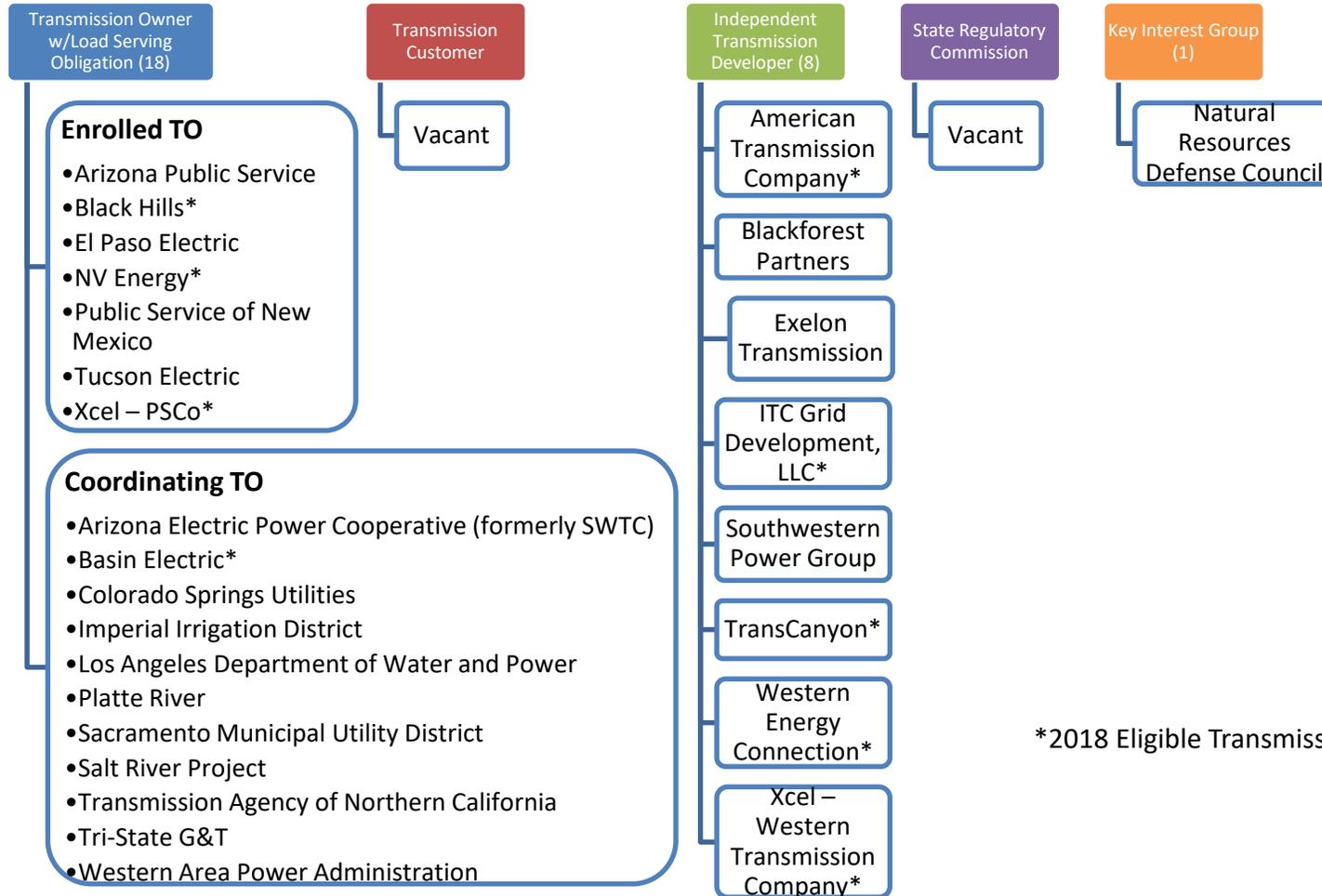
# WestConnect Subregional Planning Groups



# PMC Organization



# PMC Membership as of 12/21/2016



\*2018 Eligible Transmission Developer

## PMC Activities

- Monthly in-person meetings held at rotating member facilities
  - 2019 Meeting Schedule is available on the [WestConnect Calendar](#)
- Manages the Regional Transmission Planning Process
- Currently developing the scenario studies as outlined in the [2018-19 Regional Study Plan](#)



# 2018-2019 Regional Planning Cycle Update

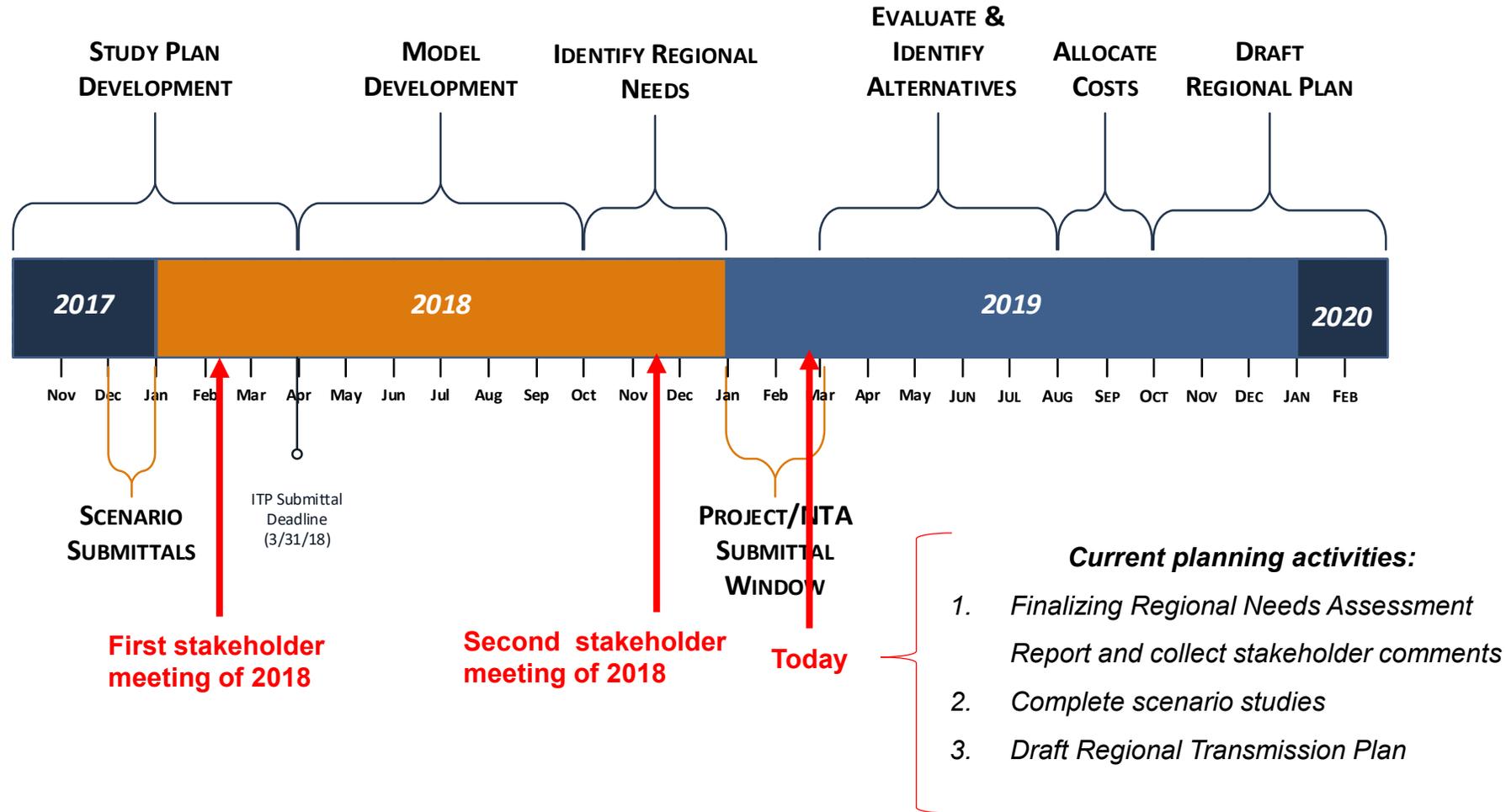
Roy Gearhart, Planning Subcommittee Chair, WAPA



# Planning Update Topics

1. Summarize completed 2018-19 planning tasks:
  - *Study Plan*
  - *Model Development Report*
2. Review results of Regional Needs Assessment
  - *Study work is complete*
  - *Documentation is being finalized and will be available for stakeholder comment*
3. Summary of Scenario studies and current status
  - *Key assumptions and study methods*
  - *Schedule for completion*
4. Next steps and schedule for remainder of 2018-19 planning cycle
  - *Drafting of 2018-19 Regional Transmission Plan*
5. Interregional Notes
6. Opportunities for stakeholder engagement

# 2018-19 Process Update



# Two Key Planning Tasks are Complete

- 2018-19 Study Plan was approved by PMC on **March 14, 2018**
  - Numerous iterations and public drafts made available to stakeholders for comment
  - Final version is available on WestConnect website
  - Identifies reliability and economic Base Cases (which inform the Regional Assessment), the Base Transmission Plan, and the scope of the Regional Assessments
  - Includes two information-only scenario studies: CAISO export condition and load stress (both reliability assessments)
- 2018-19 Model Development Report was approved by the PMC on **January 16, 2019**
  - In this cycle, the actual study models were approved individually as they were prepared/finalized
  - The report summarizes the key assumptions in the models used to perform the regional needs assessment

# Base Transmission Plan

- Base Transmission Plan is the transmission network topology that is reflected in the regional planning models.
  - Base Transmission Plan = *Planned TO Projects* + *High probability ITD Projects*
- Inclusion is based on project information gathered in WestConnect’s Transmission Plan Project List for the 2018-19 cycle – this was collected in early 2018
- The Model Development Report will provide details about what the 2018-19 Base Transmission Plan represents

## Overview of 2018-19 Base Transmission Plan

Type of Project	Number of Projects	Transmission Line Project Miles	Planned Investment (\$K)
Substation	61	N/A	\$ 220,021
Transmission Line	75	647	\$ 357,005
Transmission Line and Substation	21	197	\$ 256,732
Transformer	22	N/A	\$ 29,080
Other	12	N/A	\$ 70,309
<b>Total Projects</b>	<b>191</b>	<b>843</b>	<b>\$ 933,147</b>

# Base Transmission Plan: Changes from Last Cycle

**Projects placed in-service between the 2016-2017 & 2018-2019 Cycle**

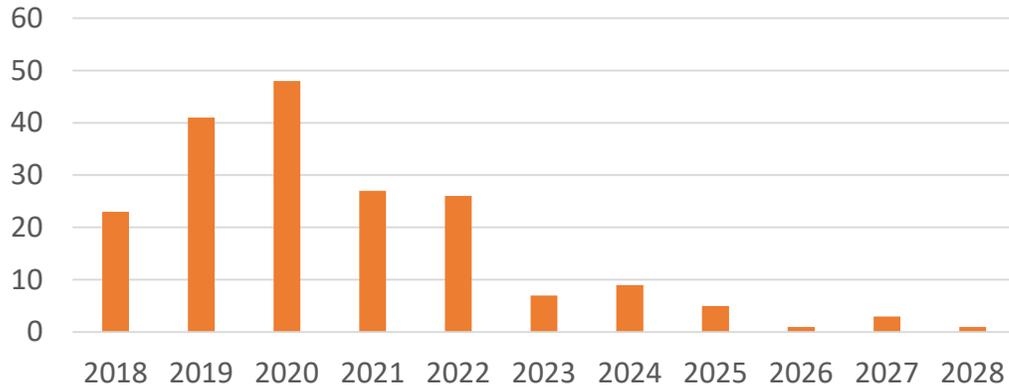
Type of Project	Number of Projects	Transmission Line Project Miles	Planned Investment (\$K)
Substation	7	N/A	\$27,002
Transmission Line	13	42	\$28,210
Transmission Line and Substation	2	77	\$15,800
Transformer	7	N/A	\$35,392
Other	7	N/A	\$1,447
<b>Total Projects</b>	<b>36</b>	<b>119</b>	<b>\$107,851</b>

**Projects starting construction between the 2016-2017 & 2018-2019 Cycle**

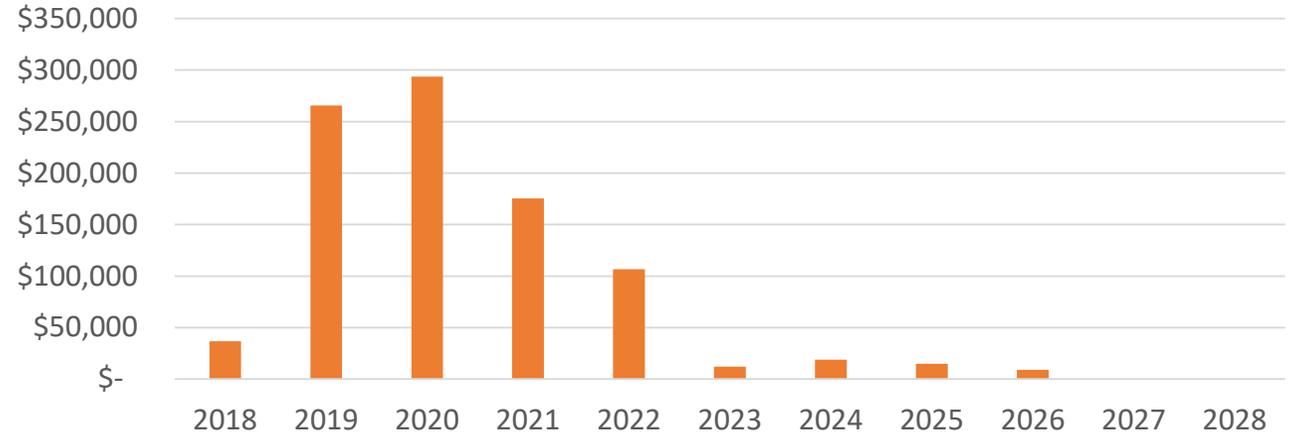
Type of Project	Number of Projects	Transmission Line Project Miles	Planned Investment (\$K)
Substation	3	N/A	\$ 24,096
Transmission Line	4	153	\$297,000
Transmission Line and Substation	-	N/A	\$ -
Transformer	1	N/A	\$10,000
Other	1	N/A	\$38,600
<b>Total Projects</b>	<b>9</b>	<b>153</b>	<b>\$369,696</b>

# Base Transmission Plan: Timing of Projects

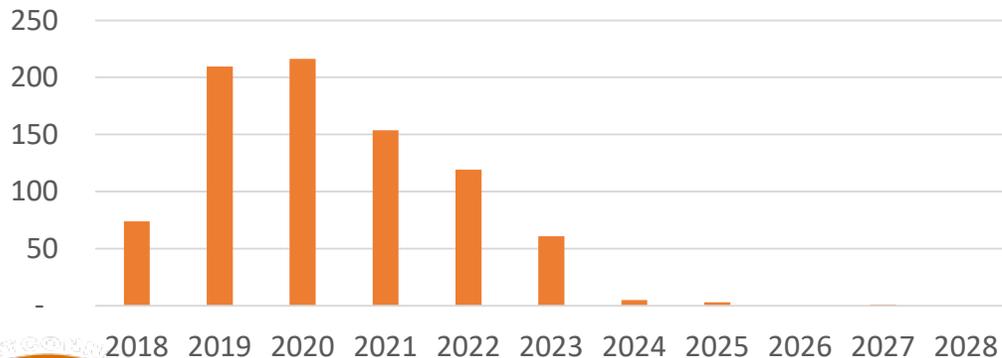
Planned Projects by In-Service Year  
(Number of Projects)



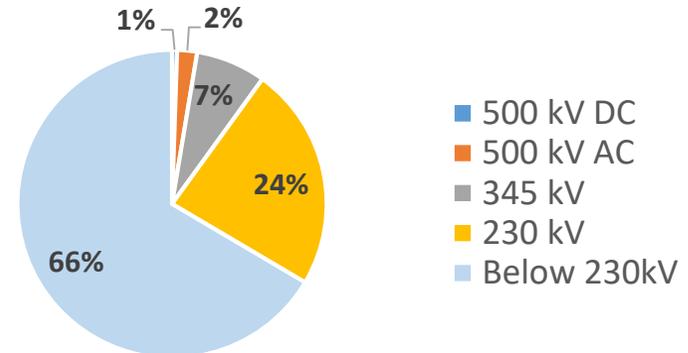
Planned Projects by In-Service Year (Planned Investment (\$K))



Planned Projects by In-Service Year  
(Transmission Line Project Miles)



Planned Projects sorted by Voltage Class  
(Number of Projects)



# Base Transmission Plan: Geography and Drivers

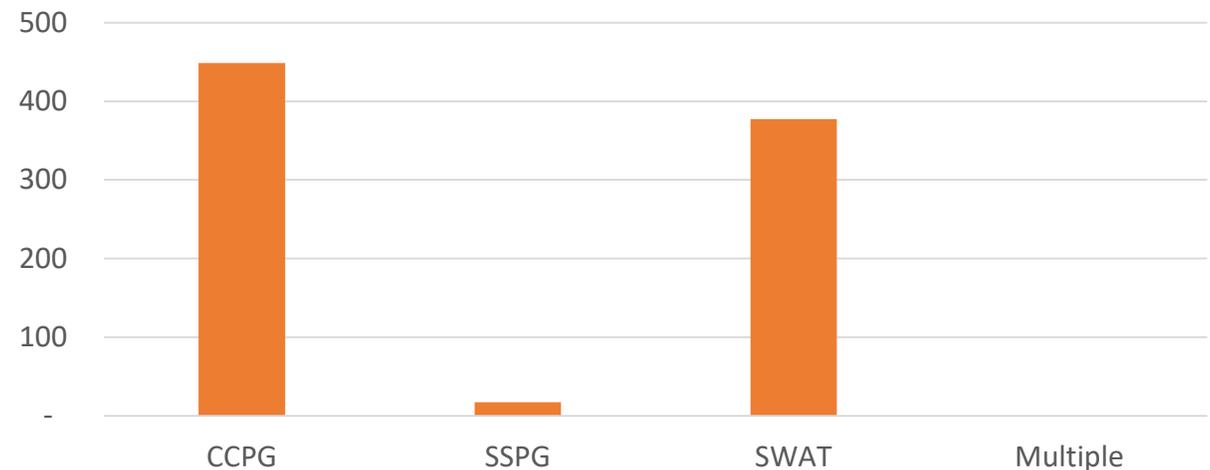
## Planned Projects by State(s) Traversed

State	Number of Projects	Transmission Line Project Miles	Planned Investment (\$K)
Arizona	65	237	\$263,017
California	28	7	\$22,423
Colorado	32	254	\$350,296
Nevada	24	11	\$31,000
New Mexico	12	127	\$138,109
South Dakota	2	48	\$23,400
Texas	10	14	\$-
Wyoming	10	20	\$52,902
Multiple	8	127	\$52,000
<b>Total Projects</b>	<b>191</b>	<b>843</b>	<b>\$933,147</b>

## Planned Projects by Driver

Driver	Number of Projects	Transmission Line Project Miles	Planned Investment (\$K)
Reliability	171	826	\$858,148
Public Policy	14	4	\$46,749
Economic	6	13	\$28,250
<b>Total Projects</b>	<b>191</b>	<b>843</b>	<b>\$933,147</b>

## Planned Projects by Subregional Planning Group (Transmission Line Project Miles)



# Models Approved for Regional Assessment

Case Name	Study Type	Case Description and Scope
<b>2028 Heavy Summer Base Case</b>	Reliability	Expected peak load for June - August during 1500 to 1700 hours MDT, with typical flows throughout the Western Interconnection
<b>2028 Light Spring Base Case</b>	Reliability	Light-load conditions in spring months during 1000 to 1400 hours MDT with solar and wind serving a significant but realistic portion of the WECC total load
<b>2028 Base Case PCM</b>	Economic	Business-as-usual, expected-future case with median load and hydro conditions and representation of resources consistent with enacted public policies.

# Regional Assessment Study Work is Complete

- The work scope defined in the Study Plan has been completed and the PMC has concluded that there are **no regional transmission needs** in the WestConnect footprint
- This conclusion is based on member review of:
  - Reliability analyses: Neither the Heavy Summer or Light Spring assessments identified regionally significant reliability issues that were between two or more WestConnect member or impacted two or more WestConnect members
    - The results include 14 voltage issues within multi-TO systems and 7 branch overloads and 105 voltage issues within single-TO systems which the Planning Subcommittee determined to be local issues and not regional.
  - Economic analysis: There was no regionally significant congestion identified in the base case, and thus, there were no identified regional economic needs.
    - The results include 9 congested elements in multi-TO systems and 21 congested elements in single-TO systems which the Planning Subcommittee determined to be local issues and not regional.
- The Planning Subcommittee and the PMC are finalizing the documentation that supports these conclusions (“Regional Needs Assessment Report”)

# Reliability Assessment

- Assessment for regional needs was based on reliability standards adopted by the North American Electric Reliability Corporation (NERC) TPL-001-4 Table 1 (P0 and P1) and TPL-001-WECC-CRT-3.1 (Transmission System Planning Performance WECC Regional Criterion)
- Steady state contingency analysis:
  - Limited to N-1 contingencies for elements 230-kV and above, generator step-up transformers for generation with at least 200 MW capacity, and member-requested N-2 contingencies.
  - All bulk electric system (BES) branches and buses in the WECC model were monitored with violation reports filtered to exclude branch flows that increased less than 1% and voltage decline less than 0.5%
- Transient stability analysis:
  - Limited to contingencies that could have a regional impact – 8 major contingencies across system

**Results are available in Appendix B of the Regional Assessment Report.**

# Steady State Contingency Analysis Results

- The table on the right lists the total number of disturbances that caused issues in each power flow case
  - The disturbances are totaled by owner and sorted by affected element owner(s)/operator(s)
- The results showed 14 voltage issues within multi-TO systems, 7 branch overloads, and 105 voltage issues within single-TO systems which
  - The Planning Subcommittee determined to be local issues and not regional

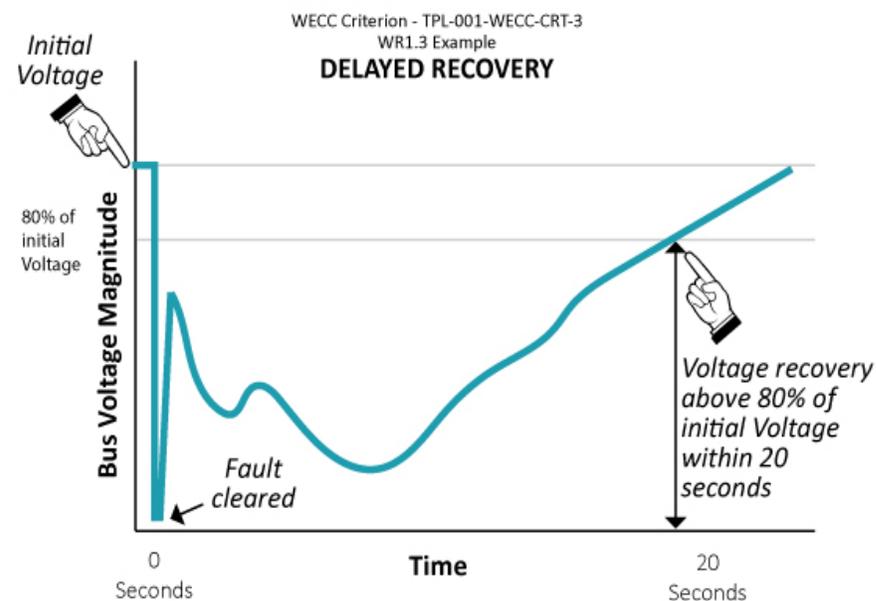
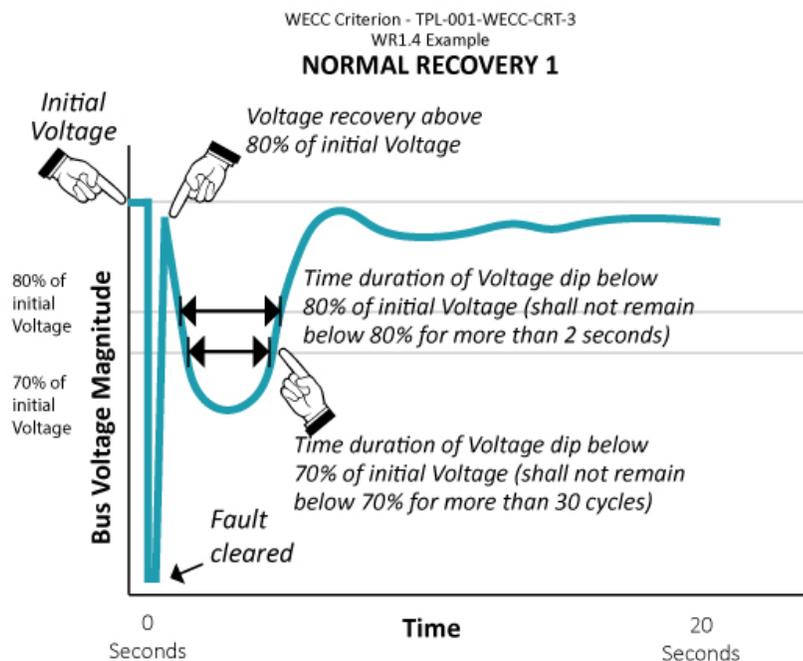
2028 Base Case PF	Disturbance Owner	Number of Disturbances	Affected Element			Regional Need	
			Operator(s) / Owner(s)	Issue	Number of Elements With Issue		
HS	Base Case	-	NVE	High V	1	NO	
	█	1	█	High % V Decrease	6	NO	
	EPE	1	PNM/TSGT	High % V Decrease	7	NO	
	EPE	1	PNM	Low V	1	NO	
	█	1	█	High % V Decrease	1	NO	
	█	1	█	Branch Overload	1	NO	
	█	1	█	Low V	1	NO	
	█	3	█	Branch Overload	5	NO	
	█	4	█	High V	12	NO	
	IMPA	4	LADWP/PG&E	High V	24	NO	
	█	1	█	High V	1	NO	
	█	15	█	Low V	25	NO	
	LSP	█	4	█	High V	12	NO
		IMPA	4	LADWP/PG&E	High V	24	NO
█		1	█	Branch Overload	1	NO	
█		2	█	High V	4	NO	

# Transient Stability Runs

## Description

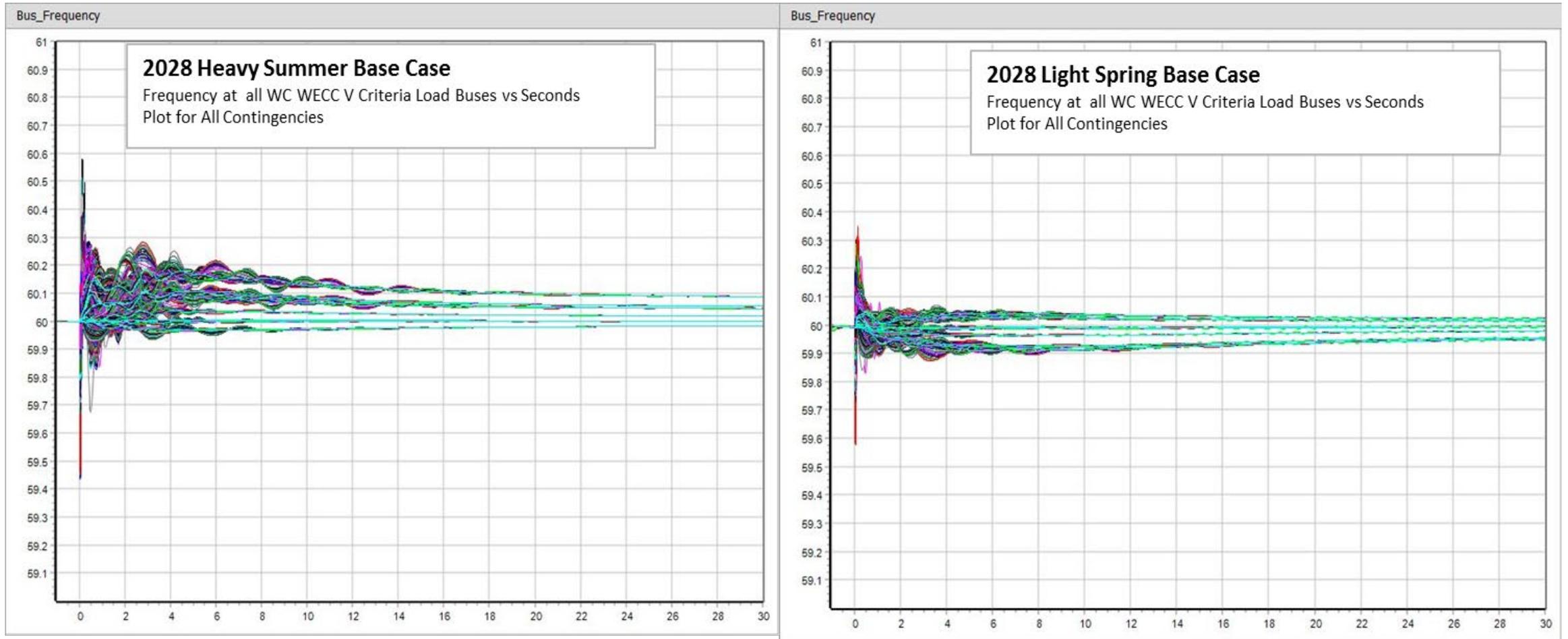
1. **1PV:** Tripping 1 Palo Verde (PV) generator and its generator step-up (GSU) transformer with fault on the Palo Verde 500kV bus
2. **DP-Com:** Tripping Daniel Park-Comanche 345kv Lines 1 & 2 with fault at the Comanche 345kV bus
3. **MS-Wind:** Fault on Missile Site 345kV Bus, loss of Missile Site – Harvest Mi & Missile Site – Daniels Park 345kV Lines, and loss of Limon and Missile Site Wind Generation
4. **LRS-Fault:** Fault on Laramie River 345kV Bus, loss of Laramie River – Ault 345kV Line, & loss of Laramie River #3 Generation
5. **PV-CR\_at\_C:** Palo Verde – Colorado River 500kV Line, Fault at Colorado River
6. **PV-CR\_at\_P:** Palo Verde – Colorado River 500kV Line, Fault at Palo Verde
7. **Hass-NG\_at\_H:** Hassyampa – North Gila 500kV Line, Fault at Hassyampa
8. **Hass-NG\_at\_N:** Hassyampa – North Gila 500kV Line, Fault at North Gila

# Transient stability analysis – Refresher on WECC Criteria

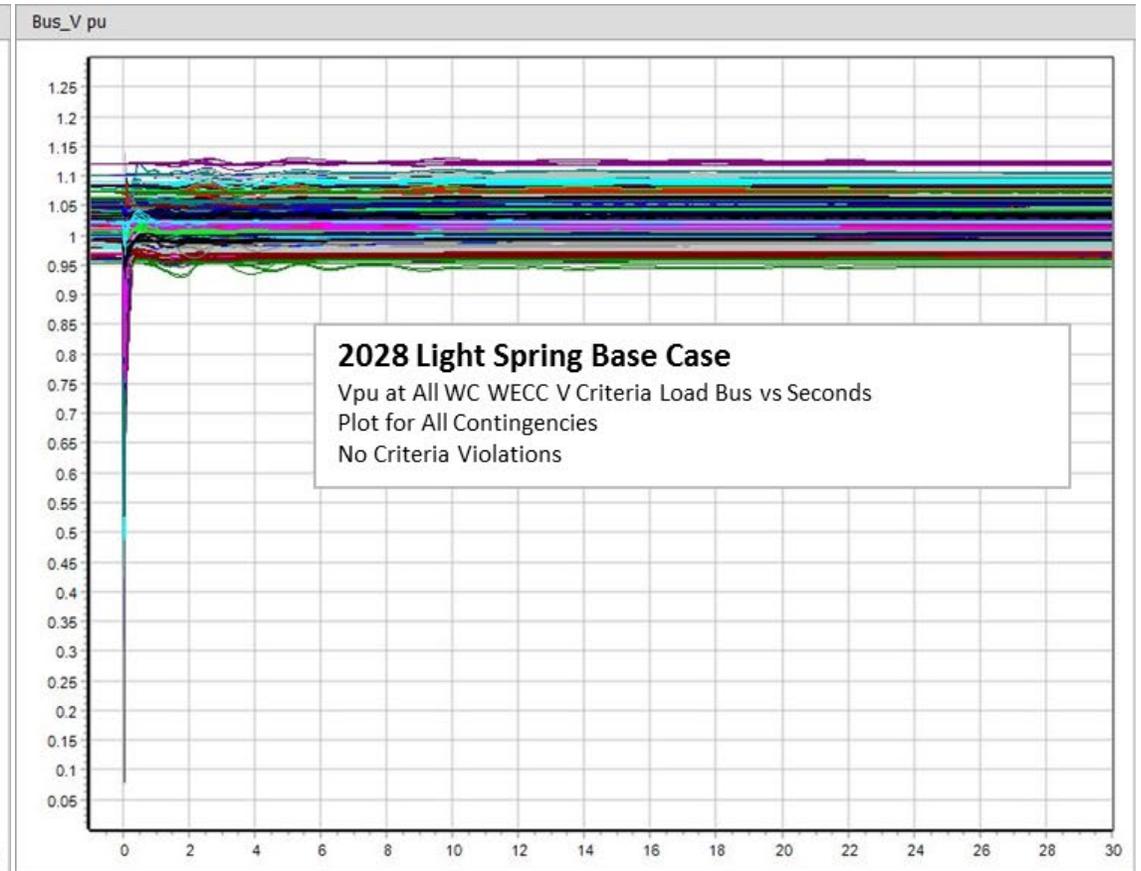
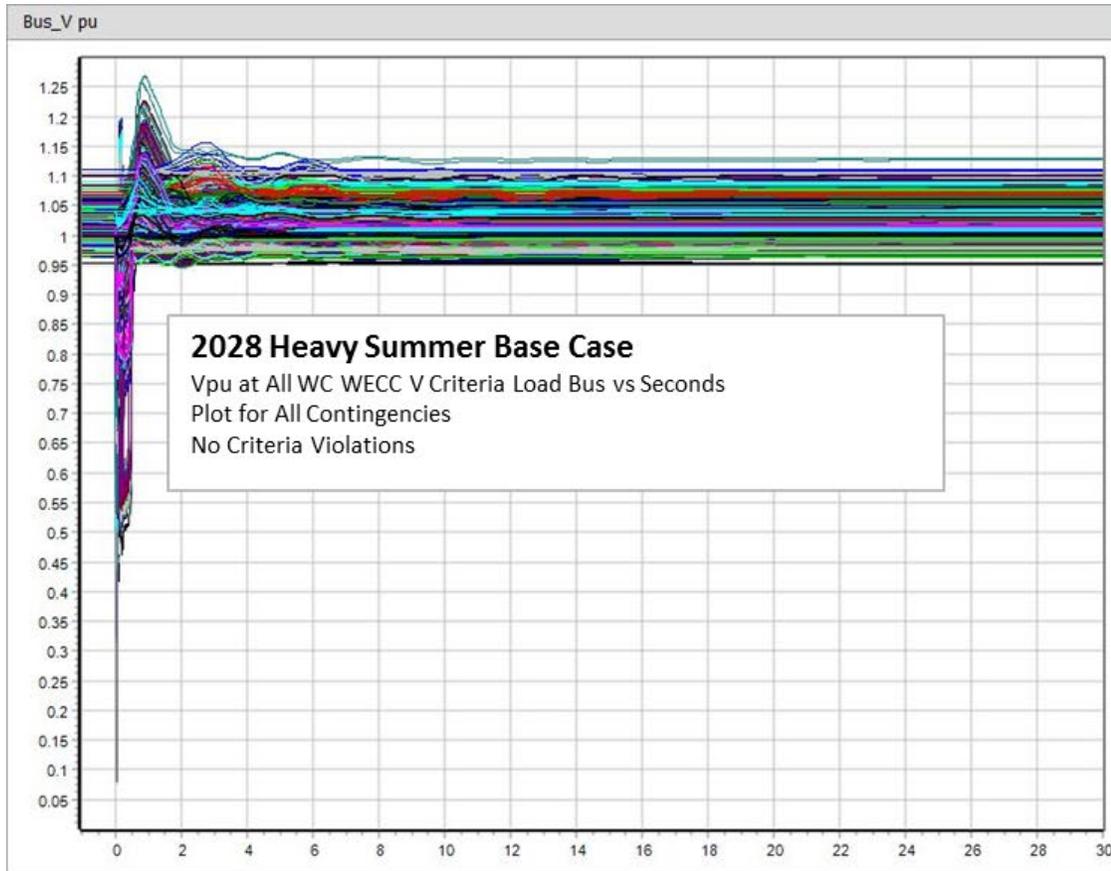


- Recovery should be stable (not volatile)
- Oscillations (if any) should be damped
- Above plots show acceptable recovery of BES bus serving load

# Frequency at All WestConnect Load Buses with WECC Voltage Criteria, for All Transient Stability Simulated Contingencies in Each Reliability Base Case



# Per Unit Voltage at All WestConnect Load Buses with WECC Voltage Criteria, for All Transient Stability Simulated Contingencies in Each Reliability Base Case



# Summary of Transient Stability Simulations: No Violations. The Unrestored Load & Tripped Generation Reported by The Simulations Is Acceptable Per TPL standards

Disturbance			HS Summary				LSP Summary			
Area Name	Owner Name	Name	Violations	Tripped Load (Unrestored)	Tripped Gen	Islanded Load	Violations	Tripped Load (Unrestored)	Tripped Gen	Islanded Load
WestConnect	WestConnect	Base	0	0	0	0	0	0	0	0
ARIZONA	APS, City of LA, EPE, IID, PNM, SRP, SCE, SCPPA	1PV	0	2,894	119	65	0	815	102	65
PSCOLORADO	Xcel/PSCO	DP-Com	0	107	0	0	0	68	0	0
PSCOLORADO	Xcel/PSCO	MS-Wind	0	304	0	0	0	103	0	0
WAPA R.M.	BEPC, TSGT	LRS-Fault	0	29	0	0	0	14	102	0
SOCALIF	SCE	PV-CR_at_C	0	640	0	0	0	116	0	0
ARIZONA, SOCALIF	SCE	PV-CR_at_P	0	3,035	119	0	0	831	0	0
ARIZONA, SANDIEGO	APS	Hass-NG_at_H	0	1,775	0	0	0	574	0	0
SANDIEGO	APS	Hass-NG_at_N	0	37	0	0	0	57	0	0

**No Violations, & the unrestored load & tripped gen reported by the simulations is acceptable per TPL standards (see Table 1 in [TPL-001-4](#))**

- Note “c.” in [TPL-001-4](#): Simulate the removal of all elements that Protection Systems and other controls are expected to automatically disconnect for each event.
- Note “b.” in [TPL-001-4](#): Consequential Load Loss as well as generation loss is acceptable as a consequence of any event excluding P0.

# Economic Assessment

- Objective was to arrive at a set of congested elements that warranted testing for the economic potential for a regional project solution, recognizing that the presence of congestion does not always equate to a regional need for congestion relief at a particular location.
- The congestion analysis was limited to:
  - Transmission elements (or paths/interfaces) between multiple WestConnect member TOs;
  - Transmission elements (or paths/interfaces) owned by multiple WestConnect member TOs; and
  - Congestion occurring within the footprints of multiple TOs that has potential to be addressed by a regional transmission project or non-transmission alternative.
- Congestion within a single TO's footprint (and not reasonably related or tied to other TO footprints) is out of scope of the regional planning effort and is alternatively subject to Order 890 economic planning requirements.

# Results of Regional Economic Needs Assessment

- Appendix C of the Regional Needs Assessment Report contains additional information about how WestConnect came to the determination that the congestion did not justify a regional economic need
- A wheeling charge sensitivity was performed to test impact to congestion as a result of that assumption.
  - The sensitivity did not justify any regional economic needs
  - The results are also available in Appendix C

Element Information		Congestion Hours (% Hrs) / Cost (\$)	Regional Need
Owner/ Operator(s)	Branch/Path Name	2028 Base Case	
TANC WAPA-SNR BPA  PACW PGE CAISO	P66 COI	69 (0.79%) / 3,795K	No
WAPA-RM PSCO	SANJN PS-WATRFLW 345kV Line Ckt 1	74 (0.84%) / 2,209K	No
BEPC TSGT	SAWMILLCK-LAR.RIVR 230kV Line Ckt 1	4 (0.05%) / 941K	No
WAPA-RM TSGT DG&T	P30 TOT 1A	8 (0.09%) / 828K	No
TSGT EPE PNM	P47 Southern New Mexico	42 (0.48%) / 690K	No
BEPC TSGT PACE	DAVEJOHN-SAWMILLCK 230kV Line Ckt 1	3 (0.03%) / 490K	No
NVE LADWP	P32 Pavant-Gonder InterMtn-Gonder 230 kV	36 (0.41%) / 311K	No
LADWP NVE	INTERMT-GONDER 230kV Line Ckt 1	1 (0.01%) / 6K	No
TSGT WAPA-RM	P36 TOT 3	2 (0.02%) / 3K	No
		324 (4%) / 17,671K	No
		1,089 (12%) / 16,645K	No
		1,896 (22%) / 14,825K	No
		894 (10%) / 8,219K	No
		431 (5%) / 7,218K	No
		307 (4%) / 4,877K	No
		67 (0.76%) / 2,459K	No
		177 (2%) / 1,885K	No
		55 (0.63%) / 1,482K	No
		47 (0.54%) / 1,439K	No
		117 (1%) / 996K	No
		2 (0.02%) / 627K	No
		6 (0.07%) / 482K	No
		21 (0.24%) / 358K	No
		72 (0.82%) / 357K	No
		2 (0.02%) / 18K	No
		1 (0.01%) / 16K	No
		1 (0.01%) / 10K	No
		1 (0.01%) / 2K	No
		1 (0.01%) / 13K	No
			No
<b>Total Congestion Cost:</b>		\$88,870K	

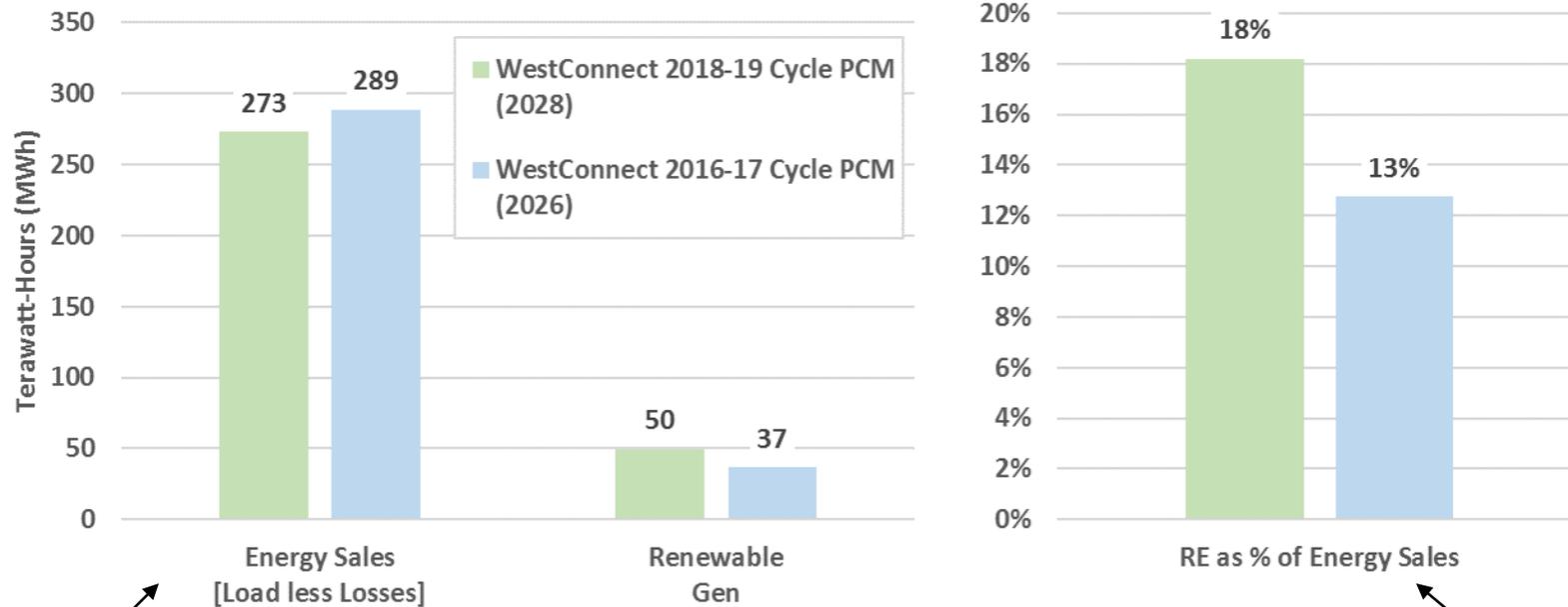
# Public Policy Assessment

- WestConnect begins evaluation by identifying a list of enacted public policies that impact local TO (see study plan)
- Enacted public policies were incorporated into the base models through the roll-up of local TO plans and their associated load, resource, and transmission assumptions.
- Regional public policy needs can be identified one of two ways:
  - New regional economic or reliability needs driven by enacted Public Policy Requirements; or
  - Stakeholder review of local TO Public Policy Requirements-driven transmission projects and associated suggestions as to whether one or more TO projects may constitute a public policy-driven regional transmission need.
- No regional public policy needs were identified in the 2018-19 planning cycle

# Enacted Public Policies Incorporated into 2028 WestConnect Planning Models

Enacted Public Policy	Description
Arizona Renewable Energy Standard	Requires IOUs and retail suppliers to supply 15% of electricity from renewable resources by 2025), with a minimum of 30% of the renewable resources provided by distributed generation
California SB350	Requires IOUs and municipal utilities to meet a 50% RPS by 2030 and also requires the establishment of annual targets for energy efficiency savings
California AB398/SB32	Requires the California State Air Resources Board to approve a statewide greenhouse gas emissions limit equivalent to the statewide greenhouse gas emissions level in 1990 to be achieved by 2020 and to ensure that statewide greenhouse gas emissions are reduced to at least 40% below the 1990 level by 2030.
Colorado SB 07-100	Requires IOUs to identify Energy Resource Zones, plan transmission to alleviate constraints from those zones, and pursue projects according to the timing of resource development in those zones
Colorado HB10-1001	Established Colorado Renewable Energy Standard (RES) to 30% by 2020 for IOUs (Xcel & Black Hills)
Colorado SB13-252	Requires cooperative utilities to generate 20% of their electricity from renewables by 2020
Colorado HB10-1365	Requires rate regulated utilities in CO with coal-fired generation to reduce emissions on the smaller of 900 MW of generation of 50% of a company's coal generation fleet. Full implementation to be achieved by 12/31/2017
Nevada SB123	To reduce emissions from coal-fired generators, requires reduction of at least 800 MW generation capacity from coal-fired generation plants, addition of at least 350 MW of generating capacity from renewable energy facilities, and construction of at least 550 MW of generating capacity from other types of generating plants by 2020.
Nevada SB374	Requires net metering be available to each customer-generator who submits a request to the company.
Nevada Renewable Portfolio Standard	The percentage of renewable energy required. Increases every two years until it reaches 25 percent by 2025.
New Mexico Efficient Use of Energy Act	Require utilities to include cost-effective EE and DR programs in their resource portfolios and establish cost-effectiveness as a mandatory criterion for all programs.
New Mexico Renewable Energy Requirements	Subject to the Reasonable Cost Threshold (RCT), the RPS Rule outlines renewable energy requirements that are a function of PNM's retail energy sales. <ul style="list-style-type: none"> <li>No less than 10% of retail energy needs for calendar years 2011 through 2014;</li> <li>No less than 15% of retail energy needs for calendar years 2015 through 2019;</li> <li>No less than 20% of retail energy needs for calendar year 2020 and subsequent years</li> </ul>
SRP 2020 20% Sustainable Energy Goal	SRP has established a goal that by 2020, SRP will meet a target of 20% of its expected retail energy requirements with sustainable resources. Among them are a diversified resource mix of wind, geothermal, large hydro and low-impact hydro, and solar.

# Comparison of Net Load/Sales and renewable generation across planning cycles (entire WestConnect Region)



Annual energy sales have decreased by 5% since the 2016-17 planning cycle

Renewable generation has increased 35% since the 2016-17 planning cycle

Renewable energy served 18% of load in the 2018-19 process (5% higher than in 2016-17)

\*RE excludes nuclear and hydro (except for SRP)



# Scenario Studies are Currently Under Development

- *Study plan included two scenario studies:*

## Load Stress Study

**Purpose:** Test the robustness of the Base Transmission Plan against changes in load.

**Assumptions:** Study will be performed using the peak load condition from the Base Case production cost model. To stress the system, loads will be increased 10% and the generation-load gap will be filled with existing generator capacity not already dispatched in Base Case. In certain areas, renewable capacity may be added if there is not sufficient existing generation to meet the load increase. Details of the redispatch to fill the load-generation gap will need to be addressed through the Planning Subcommittee, the intent of the scenario is to focus on reliability, but a congestion/economic study may be considered if deemed useful.

- *10% is a guideline and may vary, depending on input from TO's*

## CAISO Export Stress Study

**Purpose:** Evaluate the reliability of the WestConnect regional system if power flows from the CAISO to WestConnect during CAISO overgeneration conditions.

**Assumptions:** Performed using a realistic CAISO export to WestConnect condition from the WestConnect 2028 Base Case production cost model. The export condition will be defined, technically, based on (1) simulation results from the WestConnect 2028 Base Case production cost model filtered for hours in which the CAISO exports to WestConnect; and (2) technical guidance from the CAISO describing the type of conditions that might cause flows from the CAISO to WestConnect to help reduce the flagged hours (if multiple) to a single hour. The details of the analysis will be determined at a later date by the Planning Subcommittee.

# Load Stress Scenario Assumptions

- Conforming loads in the 2028 Heavy Summer case are being updated based on specific instruction from each TO
  - Default target is adjustment to conforming loads such that total load increase is 10%
  - Certain TOs opted to adjust their total load 5%
  - Others targeted specific MW values for their system
- Current status:
  - Members are providing feedback on generation dispatch to meet load increase
  - Based on this feedback Energy Strategies will develop draft 1 of case and perform preliminary contingency analysis
  - This work will take place during February and March

# CAISO Export Scenario Assumptions

- Purpose: Evaluate the reliability of the WestConnect regional system if power flows from the CAISO to WestConnect during CAISO overgeneration conditions
- Simulation results from the WestConnect 2028 Base Case production cost model was filtered for hours in which the CAISO exports to WestConnect
  - This information was used to establish realistic future conditions that result in export
- Current status:
  - June 18 Hour 15 selected by members
  - Draft 1 was constructed based on PCM assumptions. Members are reviewing test results and study case will be iterated to address member comments.
  - This work will take place during February and March

# CAISO Export PF Scenario Case – Screening CAISO Export Hours (Continued)

- FYI, focusing on hours with CAISO Export &/or W-to-E Flow on P46 & P49 flowing  $\geq 80\%$  of their annual max away from CAISO &/or W-to-E:
  - More spring hours
  - A few more mid- and late-summer hours

Date	Hour	Flow (MW)			% of Max CAISO Export &/or W-to-E Flow		
		P46 [E->W]	P49 [E->W]	CAISO Export to WC (Approx.)	P46 [E->W]	P49 [E->W]	CAISO Export to WC (Approx.)
3/26/2028	16	-2,303	-4,276	5,752	54%	78%	89%
3/27/2028	12	674	-2,607	5,187	0%	48%	80%
3/27/2028	13	15	-2,475	5,547	0%	45%	86%
3/31/2028	14	-955	-2,585	5,180	23%	47%	80%
4/26/2028	15	-509	-3,078	5,327	12%	56%	83%
4/30/2028	15	-2,292	-4,542	6,456	54%	83%	100%
4/30/2028	16	-1,661	-3,524	5,232	39%	65%	81%
6/18/2028	13	-2,724	-4,647	4,814	64%	85%	75%
6/18/2028	14	-3,122	-4,995	5,252	74%	91%	81%
6/18/2028	15	-4,231	-5,463	6,284	100%	100%	97%
6/18/2028	16	-4,107	-5,189	6,143	97%	95%	95%
9/10/2028	14	-3,130	-4,537	5,570	74%	83%	86%
9/11/2028	13	-1,944	-4,587	5,386	46%	84%	83%

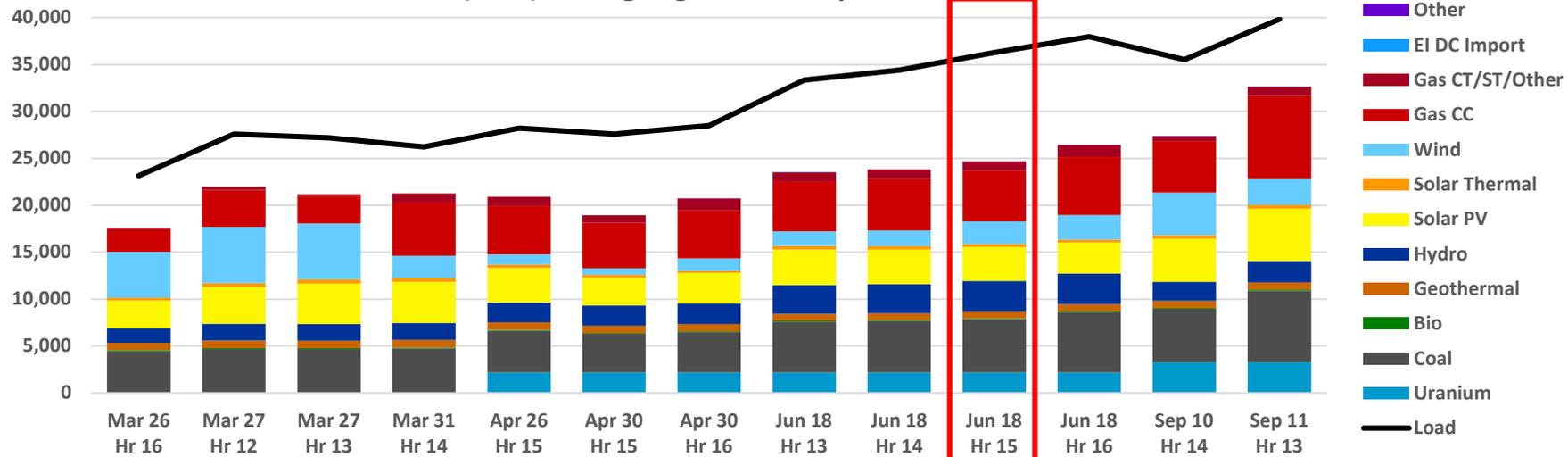
**Hour 15 of June 18th has the highest CAISO-to-WestConnect flow and is the proposed basis for CAISO Export PF Case**

Note: "CAISO Export to WC (Approx.)" includes all monitored, "seam" branches between CAISO and WestConnect Load Areas (i.e., flow on unmonitored/non-BES "seam" branches is not included)

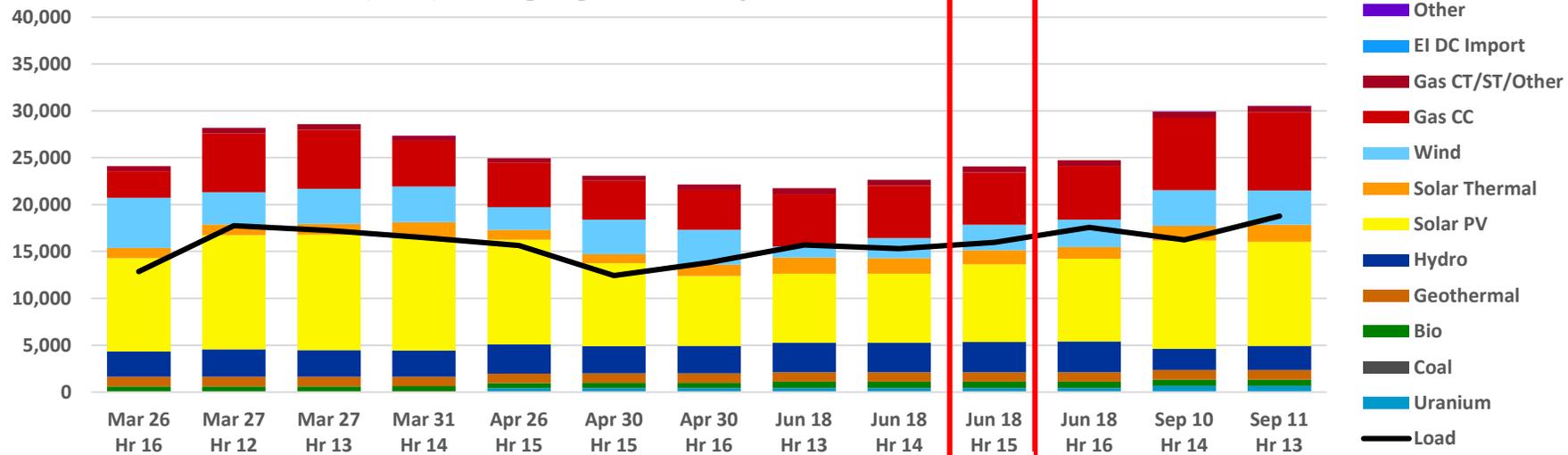
# Summary of WestConnect & CAISO Contracted Generation & Load during High CAISO Export Hours

Note: Supplemental slides at the end of this slide deck provide the chronological hourly dispatch vs. load

## WestConnect Generation & Load (MW) during High CAISO Export Hours



## CAISO Generation & Load (MW) during High CAISO Export Hours



WestConnect

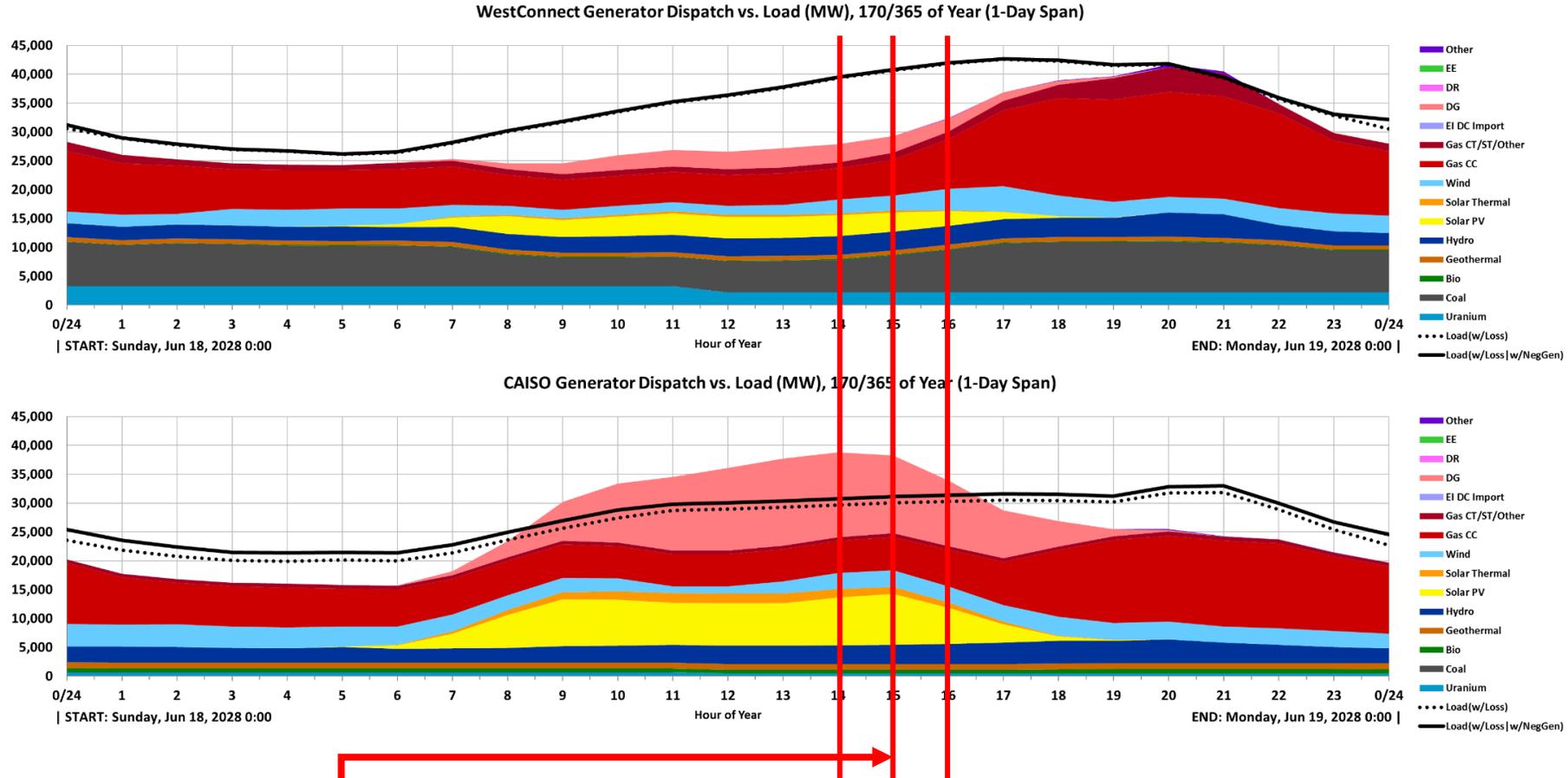
Highest CAISO-to-WestConnect flow and the proposed basis for CAISO Export PF Case



# WestConnect & CAISO Gen/Load during High CAISO Export Hours

█ = CAISO Export &/or W-to-E Flow on P46 & P49  $\geq 90\%$  of annual max  
█ = CAISO Export &/or W-to-E Flow on P46 & P49  $\geq 80\%$  of annual max

**Note: Behind-the-meter (BTM) generation is shown on the resource-side in these charts & is not part of the Load**



**Highest CAISO-to-WestConnect flow and the proposed basis for CAISO Export PF Case**

WestConnect



# Next steps and schedule for remainder of 2018-19 planning cycle

- Finalize Regional Assessment Report
  1. Approval by PMC to distribute for Stakeholder comments
  2. Collect and review/respond to Stakeholder comments
  3. PMC approves final version of document
- Finalize scenario assessments
  1. Finish technical analysis in Planning Subcommittee and report any findings to PMC
  2. Decide where/how to document study – the PMC has not taken up this issue
- Draft 2018-19 Regional Transmission Plan
  1. Targeting approval of document in late Q4
  2. Official stakeholder comment period will likely take place around November meeting
  3. Will be a roll-up of prior reports
- Begin to focus on 2020-2021 Study Plan in late Q4

# Opportunities for stakeholder engagement

1. Stakeholders may comment on interim reports that are being finalized in 2019 (Model Development, Regional Assessment)
  - The 2018-19 Regional Transmission Plan will be made available in Q4 2019 and this document will be available to stakeholders for comments/review
  - The Regional Assessment Report is also available for comments
2. Stakeholders may participate in Planning Subcommittee or PMC meetings
3. WestConnect will also be participating in the Interregional Coordination Meeting in February 2019, and stakeholders are invited to attend this meeting
4. To join email distribution lists, contact Heidi Pacini ([heidi@pacenergies.com](mailto:heidi@pacenergies.com))
5. The next Stakeholder Meeting will be in November, 2019

The background of the slide is a stylized illustration. It shows a transmission tower in the center, with power lines extending from it. The tower and lines are set against a backdrop of dark blue mountains. The sky is a gradient of orange and yellow, with a large, bright yellow sun on the right side, suggesting a sunset or sunrise.

# Interregional Transmission Project (ITP) Submittals

Charlie Reinhold,  
WestConnect Project Manager

## 2018 Interregional Transmission Project Submittals

Project Name	Company	Project Submitted To	Lead Planning Region	Seeking Cost Allocation from WestConnect
Cross-Tie Project	TransCanyon, LLC	WestConnect CAISO NTTG	WestConnect	Yes
HVDC Conversion Project	San Diego Gas & Electric	WestConnect CAISO	CAISO	No
North Gila - Imperial Valley #2	ITC Grid Development, LLC.	WestConnect CAISO	WestConnect	Yes
SWIP North	Western Energy Connection, LLC	WestConnect CAISO NTTG	NTTG	Yes
TransWest Express DC	TransWest Express, LLC	WestConnect CAISO NTTG	CAISO	Yes
TransWest Express AC/DC	TransWest Express, LLC	WestConnect CAISO NTTG	CAISO	Yes

ITP Evaluation Process Plans from the 2018-19 planning cycle can be reviewed [here](#)

Since WestConnect did not identify any regional transmission needs in the 2018-19 regional planning cycle, WestConnect will not evaluate any ITPs in the 2018-19 planning cycle.

## Upcoming Meetings

- **WestConnect PS & PMC Meetings:**
  - March 19-20, Energy Strategies Offices, Salt Lake City, UT
  - No CAS meetings currently scheduled
- **2019 WestConnect Stakeholder Meetings:**
  - November 21, 2019, Tempe, AZ (*tentative*)

**Additional Information Regarding the  
Regional Planning Process can be  
Accessed at:**

**[www.WestConnect.com](http://www.WestConnect.com)**

# Questions?

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