WestConnect Regional Transmission Planning

2024-25 Planning Cycle

DRAFT 4 Regional Study Plan

Draft Approved by WestConnect PMC on February 21, 2024

Final Approved by WestConnect PMC on {Date}, 2024

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Contents

1. Introduction

The first step of the WestConnect Regional Transmission Planning Process ("Planning Process") is the development of a Regional Study Plan which identifies the scope and schedule of the study work to be performed during the two-year planning cycle ("planning cycle"). This document reflects the WestConnect Regional Study Plan ("Study Plan") for the 2024-25 planning cycle. **Table 1** below lists the acronyms used in the document.

Table 1. List of Acronyms

Acronym	Meaning
AQCC	Air Quality Control Commission
BPM	WestConnect Regional Business Practice Manual
CAS	WestConnect Cost Allocation Subcommittee
CFE	Carbon Pollution-Free Electricity
DR	Demand Response
EE	Energy Efficiency
FERC	Federal Energy Regulatory Commission
GHG	Greenhouse Gas
GSU	Generator step-up (in context of generator step-up transformers)
IRP	Integrated Resource Plan
ITP	Interregional Transmission Project
NTA	Non-transmission alternative
OWM	Organized Wholesale Market
PMC	WestConnect Planning Management Committee
PPA	Planning Participation Agreement
PS	WestConnect Planning Subcommittee
RES	Renewable Energy Standard
RCT	Reasonable Cost Threshold
RPS	Renewable Portfolio Standard
TO	Transmission Owner
TOLSO	Transmission Owner with Load Serving Obligation
TPPL	Transmission Plan Project List
WECC	Western Electricity Coordinating Council
ZEV	Zero-Emission Vehicle

The WestConnect Planning Management Committee ("PMC") has overall responsibility for all WestConnect regional planning activities. The Planning Process activities described within this Study Plan will be conducted under the direction of the PMC by the WestConnect Planning Subcommittee ("PS") and WestConnect Cost Allocation Subcommittee ("CAS"), with input from PMC members and stakeholders, as described in greater detail in subsequent sections of this document.

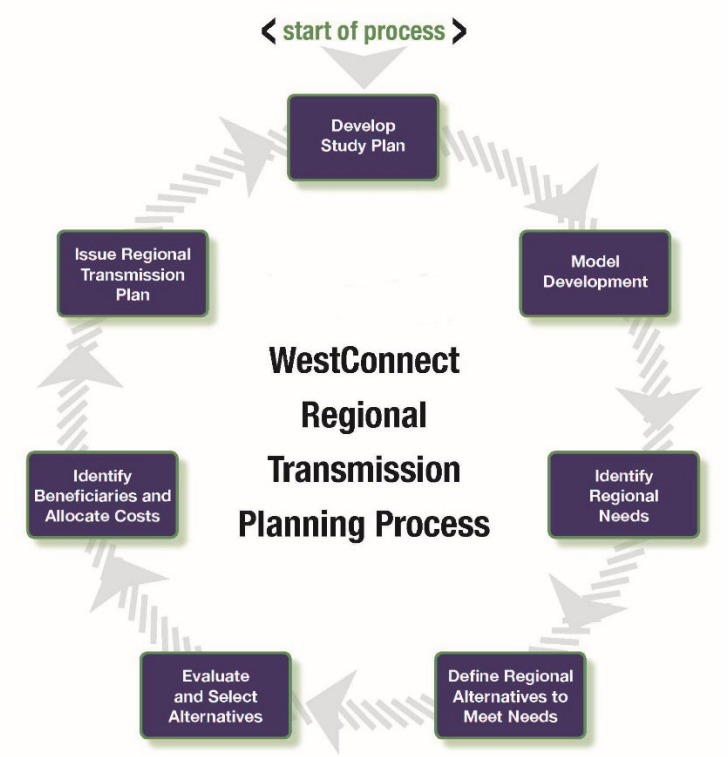
Process Background

The Planning Process was developed for compliance with Federal Energy Regulatory Commission ("FERC") Order Number 1000, Transmission Planning and Cost Allocation by Transmission Owning and

Operating Public Utilities, ("Order No. 1000").[1] The Planning Process is performed biennially and consists of seven primary steps as outlined in **Figure 1**.

The Planning Process is in conformance with Order No. 1000 as supplemented by numerous Compliance Filings and resulting FERC Orders. Readers can access the text of the compliance documentation on the WestConnect website,[2] and are encouraged to consult the compliance documentation and the WestConnect Regional Business Practice Manual ("BPM") for additional process information, which is posted to the WestConnect website.[3] Also, for Transmission Owner with Load Serving Obligation ("TOLSO") members that are jurisdictional to the FERC, their FERC-approved tariff may preside over this document.

Figure 1: WestConnect Regional Transmission Planning Process



The Planning Process commences in even-numbered years, resulting in the development of a Regional Transmission Plan ("Regional Plan") every other year. During the first year of the planning cycle, WestConnect performs system assessments to determine if there are any regional reliability, economic, or public policy-driven transmission needs, collectively referred to as "regional needs". If regional needs are identified, WestConnect will solicit alternatives (transmission or non-transmission alternatives (NTAs)) from WestConnect members and stakeholders to determine if they have the potential to meet any identified regional needs. WestConnect will then evaluate those alternatives to determine whether any alternatives meet the identified regional needs, and which alternatives provide the more cost-

[1] *All references to Order No. 1000 include any subsequent orders*

[2] www.westconnect.com

[3] *WestConnect BPM:* https://doc.westconnect.com/Documents.aspx?NID=17155&dl=1

effective or efficient solution. The more efficient or cost-effective solutions will be identified in the Regional Plan. Any alternatives that were submitted for the purposes of regional cost allocation and selected into the Regional Plan may go through the cost allocation process if they are deemed to be eligible for regional cost allocation. During the last quarter of the process WestConnect will develop and finalize the Regional Transmission Plan Report ("Regional Plan Report") which will describe the process used to identify regional needs, identify transmission facilities or NTAs selected as the more efficient or cost-effective solutions to identified regional needs, and document why projects were included or not included in the Regional Plan.

2. Overview of 2024-25 Regional Transmission Planning

2.1 Schedule

Table 2 below provides an overview of the expected schedule of activities to be conducted as part of the 2024-25 planning cycle. This schedule is subject to change. Changes to the schedule of activities outlined below will be noticed on the WestConnect website, emailed to stakeholder lists, and discussed at committee meetings.

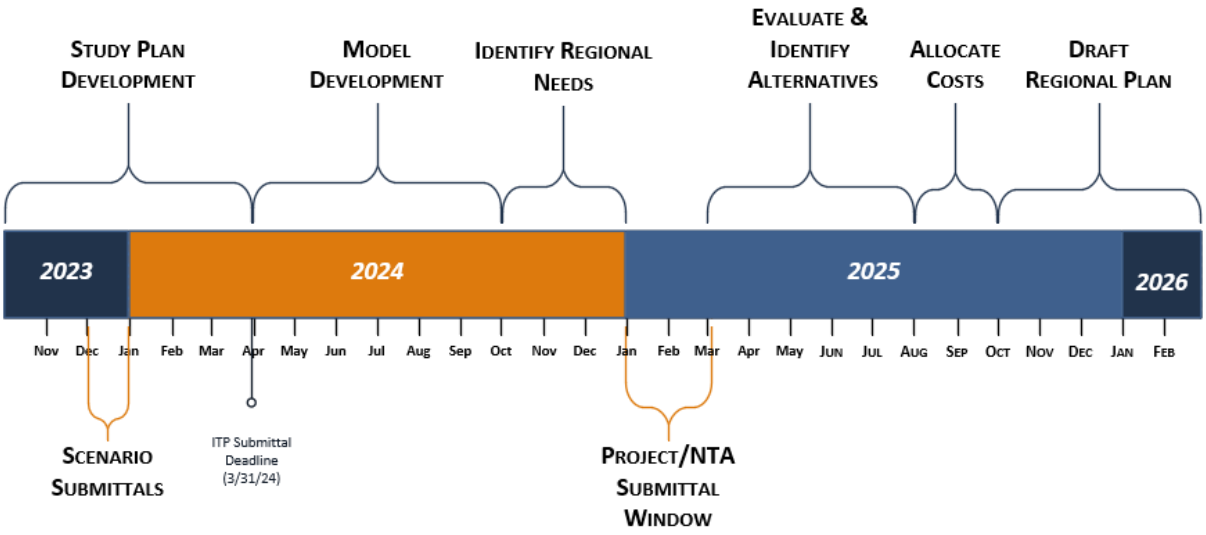
Table 2: Tentative Schedule for 2024-25 Regional Planning Cycle

Due Date	*Quarter*	*Activity*
February 21, 2024	Q1	Stakeholder Meeting to present draft Regional Study Plan
February 26, 2024	Q1	Draft Regional Study Plan posted to WestConnect website
March 20, 2024	Q1	Final Regional Study Plan approved by PMC
March 26, 2024	Q1	Interregional Coordination Meeting
March 31, 2024	Q1	Interregional Transmission Project ("ITP") submittal deadline[4]
September 2024	Q3	Regional models finalized
November 21, 2024	Q4	Stakeholder meeting to discuss identified regional needs
December 2024	Q4	Regional transmission needs posted to WestConnect website
January 2025	Q5	Submittal window opens for projects to meet the posted regional needs. Submittal window lasts for no less than 30 days
September 2025	Q7	WestConnect posts listing of projects meeting an identified regional need selected for the purposes of cost allocation
November 2025	Q8	Draft Regional Plan Report posted to WestConnect website
November 2025	Q8	Stakeholder meeting to discuss the draft Regional Plan Report
November 30, 2025	Q8	Stakeholder comments on draft Regional Plan Report due
December 2025	Q8	Final 2024-25 Regional Plan Report posted

[4] *The timing of this ITP submittal deadline being early in 2024, as opposed to after the PMC's identification of regional transmission needs, is driven by the fact that the Western Planning Regions' coordination activities require, no later than March 31st, an identification of ITPs submitted into the regional processes of all relevant planning regions. For the WestConnect region, the PMC will not begin evaluating whether an ITP may satisfy an identified regional transmission need in the WestConnect region until after the PMC identifies regional transmission needs at year-end 2024.*

The 2024-25 regional planning cycle timeline is shown in **Figure 2.**

Figure 2: 2024-25 Planning Cycle Timeline



2.2 Regional Needs Assessment Background

During Quarters 2 and 3 of the 2024-25 planning cycle, the models that are needed to perform the regional transmission assessments will be developed as described in this document. The PMC will conduct an assessment of the regional transmission needs using models representing a 10-year timeframe, developed for year 2034. Three types of assessments will be performed during the Planning Process: reliability (steady state and/or transient), economic (production cost), and public policy. The public policy assessment will utilize the reliability and economic planning tools and models.[5] Models from the Western Electricity Coordinating Council ("WECC") will be used as starting cases, and they will include the systems of all WECC Transmission Owner ("TO") entities. These cases are used as the foundation for the models that WestConnect will develop and use for the regional transmission need assessments.

TOLSO members and other participants will update the WECC models, as described in more detail below, to ensure the WestConnect footprint is properly represented.[6] To promote interregional coordination, WestConnect may utilize modeling data from TOs outside the WestConnect planning region. To the extent WestConnect receives updated modeling data from those TOs during the development of the regional models, it will be considered and, if appropriate, incorporated into the regional models. The PMC will approve the WestConnect models prior to their use in the regional needs assessment. The PMC will not evaluate regional transmission needs for systems outside of the WestConnect planning region.

[5] *Other public policy assessment methodologies may be used at the discretion of the PMC.*

[6] *All parties participating in the model development process, and several other stages of the WestConnect planning process that involve handling of non-public data, are required to execute a non-disclosure agreement (NDA) with WestConnect. The agreement is located here: https://doc.westconnect.com/Documents.aspx?NID=17191&dl=1*

After the PS completes the regional transmission assessments (as described in Sections 4.0, 5.0, and 6.0) for the studies included in the scope of this Study Plan, the PS will identify a list of transmission issues resulting from the studies, and make a recommendation to the PMC as to which, if any, regional issues should constitute economic, reliability, or public policy-driven transmission needs. The process for identifying those regional transmission needs for which a regional transmission (or NTA) solution or solutions is sought and evaluated shall utilize various communication channels with stakeholders, including open PMC and PS meetings, stakeholder meetings, and the development of a Regional Transmission Needs Assessment Report (which will allow for stakeholder comment and input). The Transmission Needs Assessment Report will be delivered to the PMC for review and approval, and it will contain the PS recommendations on regional transmission needs for the planning cycle. The regional transmission needs will be finalized pending the PMC approval of that report.

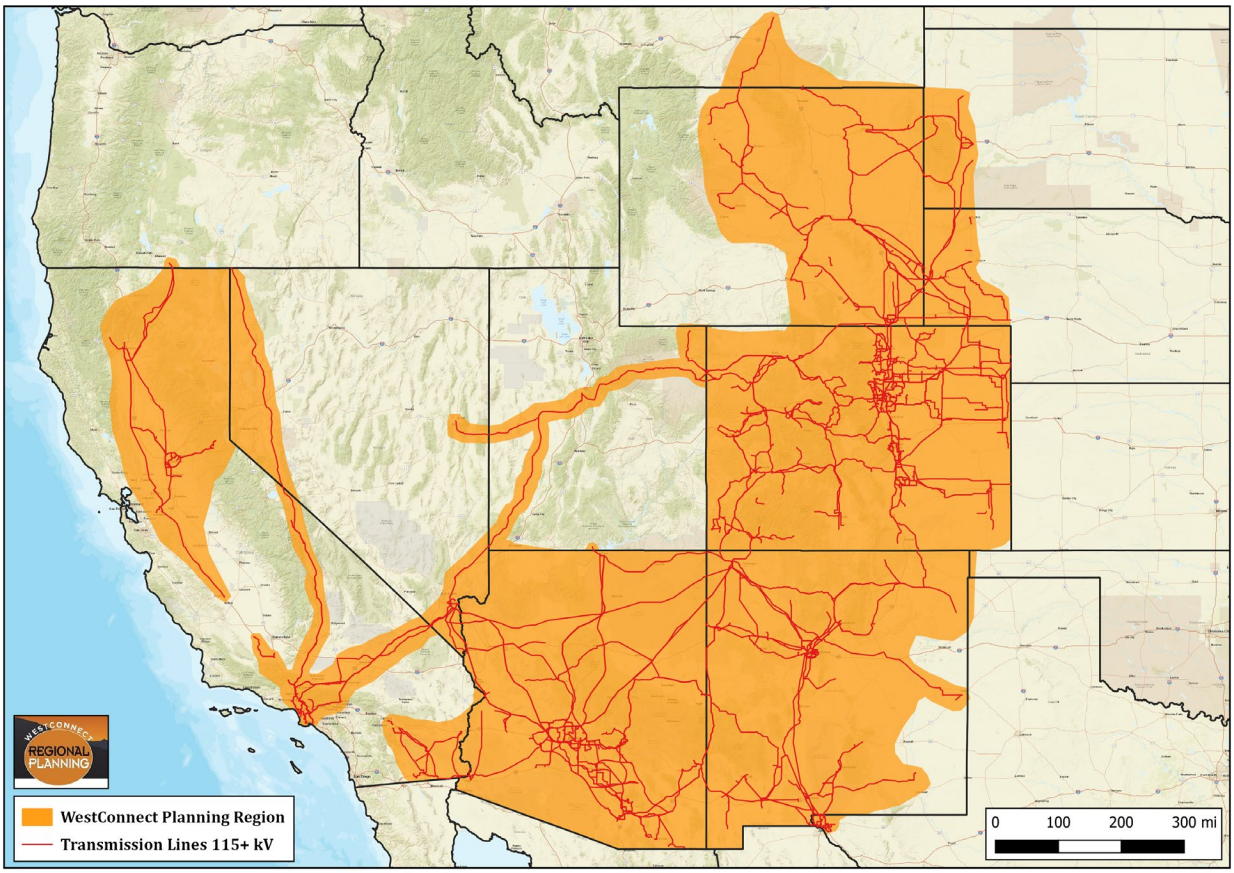
2.3 Planning Region

The Planning Process evaluates the regional transmission needs of the WestConnect planning region, which is defined as the combined footprints of signatories to the Planning Participation Agreement (PPA) from within the TOLSO member sector. TOLSO members participating in the WestConnect 2024-25 Planning Process and the systems considered in the regional transmission needs assessment include:

- Arizona Electric Power Cooperative, Inc.
- Arizona Public Service
- Basin Electric
- Black Hills Energy
- Colorado Springs Utilities
- Deseret Generation and Transmission Co-operative
- El Paso Electric
- Imperial Irrigation District
- Los Angeles Department of Water and Power
- Platte River Power Authority
- Public Service Company of New Mexico
- Sacramento Municipal Utility District
- Salt River Project
- Tucson Electric Company / UNS Electric
- Transmission Agency of Northern California
- Tri-State Generation and Transmission
- Western Area Power Administration (Desert Southwest, Rocky Mountain, Sierra Nevada)
- Public Service Company of Colorado (Xcel Energy)

WestConnect does not conduct FERC Order 1000 regional transmission needs assessments for non-members. The approximate footprint of TOLSO members and other TOs participating in WestConnect is shown in **Figure 3.**

Figure 3: Approximate Footprint of WestConnect TOLSO Members and Participating TOs



The following PMC Members from the Independent Transmission Developer (ITD) Member Sector and Key Interest Group also participate in the planning effort:

- Black Forest Partners
- Southwestern Power Group
- TransCanyon
- Western Energy Connection, LLC
- Xcel Western Transmission Company
- GridLiance Southwest, LLC

2.4 Local versus Regional Transmission Issues

For the purposes of the regional transmission needs assessment, a single-system need impacts only the TOLSO-footprint in which it resides. Single TOLSO transmission issues and non-member issues are not within the scope of the Planning Process, and are not considered regional transmission needs. However, for the sake of completeness and study transparency, the Planning Process will include a review of all single-system transmission issues to ensure that in combination, none of the issues are regional in nature and/or co-dependent. Any single-system issues are the responsibility of the affected TOLSO to resolve, if necessary.

Regional needs are generally defined by impacts to more than one TOLSO. However, the PMC may determine that in some instances, the multi-TOLSO impacts are local, rather than regional, in nature. In such cases, WestConnect will provide an explanation as to how impacts are classified.

2.5 Opportunities for Stakeholder Involvement

The Planning Process is performed in an open and transparent manner to attain objective analysis and results. WestConnect invites and encourages interested parties or entities to participate in and provide input to the Planning Process at all levels. Stakeholders also have opportunities to participate in and provide input to local transmission plans as provided for in each TOLSO member's Open Access Transmission Tariff.

WestConnect planning meetings are open to stakeholders.[7] Stakeholders' opportunities for timely input and meaningful participation are available throughout the Planning Process. More specifically, WestConnect will accept and consider stakeholder comments on the following reports planned for the 2024-25 planning cycle:

- Study Plan
- Model Development Report
- Regional Needs Assessment
- Alternative Evaluation (if applicable)[8]
- Cost Allocation (if applicable)[9]
- Regional Transmission Plan.

In addition, WestConnect will conduct at least two stakeholder meetings per year to update stakeholders on the Planning Process and collect input. Additional meetings may be scheduled as needed. Notice of all stakeholder meetings and stakeholder comment periods will be posted to the WestConnect website.

2.5.1 Interregional Coordination

WestConnect will coordinate planning data and information with the two other established Planning Regions in the Western Interconnection (California ISO and NorthernGrid) by:

- Participating in annual interregional coordination meetings
- Distributing regional planning data or information such as:
  - Draft and Final Regional Study Plan
  - Regional Transmission Needs Assessment Report
  - List of Interregional Transmission Projects ("ITPs") submitted to WestConnect
  - Assessments and selection of ITPs into Regional Plan
  - Draft and Final Regional Plan
- Sharing planning assumptions if and when requested and subject to applicable confidentiality requirements; and
- Participating in a coordinated ITP evaluation process, as necessary, when an ITP is submitted to WestConnect as an alternative to meet an identified regional need.

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[7] Administrative, legal, and/or contractual matters (and from time to time, matters involving the handling and protection of non-public information) are non-public in nature and are discussed outside of public planning meetings.

[8] The Alternative Evaluation will only occur if a regional need is identified.

[9] Cost Allocation will only occur if a project seeking cost allocation is identified and chosen as the more efficient or cost-effective alternative to meet an identified regional need.

The process WestConnect intends to utilize to conduct its interregional coordination activities is described in the WestConnect Regional Planning Process BPM posted to the WestConnect website.

2.6 Interregional Transmission Project Submittals

An ITP is defined in the common tariff language developed for the Order 1000 interregional compliance filings as a proposed new transmission project that would directly interconnect electrically to existing or planned transmission facilities in two or more planning regions and that is submitted into the regional transmission planning processes of all such planning regions. If an ITP proponent desires to have their project evaluated to meet an identified regional need, they must submit their project to WestConnect via the WestConnect Regional Project Submittal Form no later than March 31, 2024, at which time they need not identify which regional transmission need the project proposes to address. ITP proponents can also have their project evaluated for inclusion in the Base Transmission Plan by participating in the process described in Appendix A.[10]

3. Base Transmission Plan

WestConnect creates the regional base transmission plan at the beginning of each planning cycle to establish the transmission network topology that is reflected in the regional planning models for the 10-year timeframe and evaluated in the regional needs assessments. The base transmission plan consists of the "planned" incremental transmission facilities included by TOLSOs in local transmission plans,[11] as well as regional transmission facilities identified in previous regional transmission plans that are not subject to reevaluation.[12] It also includes any assumptions TOLSO members may have made with regard to other incremental regional transmission facilities in the development of their local transmission plans. As defined by WestConnect, planned facilities include projects that are expected to be in-service during the approaching 10 years and meet one of the following criteria: (1) are required to meet public policy requirements, (2) have a sponsor and are incorporated in an entity's regulatory filings or capital budget, or (3) have an agreement committing entities to participate and construct. "Conceptual" transmission projects are not included in the base transmission plan.

The base transmission plan may also include transmission projects under development by ITDs in the WestConnect planning region, to the extent there is sufficient likelihood associated with these projects to warrant their inclusion in the base transmission plan. A description of the criteria used to identify projects for inclusion can be found in the WestConnect BPM.

The base transmission plan is developed using project information collected via the WestConnect Transmission Plan Project List ("TPPL"), which serves as a project repository for TOLSO member and TO participant local transmission plans as well as ITD projects. The TPPL data used for the 2024-25 planning cycle was based on updates submitted as of February 2, 2024, with subsequent updates to the data made by members in the following weeks. The list of base transmission plan projects and details about the process used to identify the 2024-25 Base Transmission Plan are summarized in Appendix A and Appendix B.

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[10] Additional details regarding the ITP submittal and evaluation process can be found in the WestConnect Business Practice Manual

[11] Developed in accordance with Order No. 890 local planning processes.

[12] There were no regional transmission projects identified to meet regional need(s) in the 2022-23 Planning Cycle

As part of the planned activities for 2024, WestConnect intends to create summary information regarding the base transmission plan. The summary information will be developed using both data in the TPPL and other information, such as:

- Cost information
- Line mileage information
- Voltage information
- State-level summaries
- Information on how the 2024-25 Base Transmission Plan has changed as compared with the 2022-23 Regional Transmission Plan, including a list of projects that have gone into service, new projects added to the Base Transmission Plan, and other summary statistics.

The 2024-25 Base Transmission Plan summary information will be included in the 2024-25 Model Development Report, which is scheduled to be completed by the end of Q3, 2024. When the 2024-25 Regional Plan Report describes the planned projects in the region, this summary information will be used and, if necessary, updated to include any additional regional projects selected into the plan as the more efficient or cost-effective solution to a regional need.

4. Regional Reliability Assessment

The regional reliability assessment will be performed on power flow models developed by WestConnect. The study cases to be used for the regional reliability assessment are summarized in **Table 3**.

Table 3: Power Flow Cases for Regional Reliability Assessment

WestConnect Case	Case Description	WECC Case	Planned Availability
2034 Heavy Summer	General 10-Year WECC Planning Case	2034 Heavy Summer (34HS1)	Oct 25, 2023
2034 Light Spring	Specialized 10-Year, light load with "significant, but reasonable" renewable resources	2034 Light Spring (34LSP1S)	Sep. 27, 2024[13]

The process and scope for regional model development and the regional reliability assessment is described further in this section. The models will be developed during Quarters 2 and 3 of the planning cycle. The PMC will approve the regional power flow models and the contingency list used to assess regional reliability transmission needs. The regional reliability assessment will take place in Quarter 4.

[13] *WestConnect may utilize non-approved versions of the 2034 Light Spring Case. A "review" case is scheduled to be available in July 2014.*

4.1 Model Development Process

WestConnect will review and modify the WECC seed cases[14] identified in this Study Plan through coordination with Subregional Planning Group (SPGs) and TOLSO members.[15]

After collecting initial updates through the process described above, WestConnect will compile the regional power flow models through a phased approach:

1. Review and revise WECC power flow base case topology, including transmission lines, transformers, connectivity, reactive devices, and corresponding power flow data. These changes do not include load magnitudes and resource levels or status.

2. Review and revise interchange flows and schedules, iterating between any loads and resources revisions. Importantly, WECC will have ten-year seed cases for both the heavy summer and light spring conditions.

3. Provide remedial action schemes (RAS) and contingency definitions based on modeled topology.[16]

The process utilized for model development, including coordinating with the TOLSO members, Independent Transmission Developers, and other stakeholders in the development of these cases, will be conducted and managed by the WestConnect planning consultant at the direction of the PS. Once the cases have been vetted, the PS will initiate the regional reliability assessment.

4.2 Key Assumptions

In developing the models for use in the regional reliability assessment, WestConnect must make a number of assumptions as it relates to generation, transmission, and load modeling. Descriptions of the assumptions that will be used in developing the study cases are provided below:

- **Transmission Assumptions** – Existing transmission system plus 2024-25 Base Transmission Plan, with TOLSO members confirming the inclusion/exclusion of projects through the process described above.

- **Demand Forecasts** – Provided by TOLSO members and embedded in WECC seed cases, specific to season and condition of study case. May be updated as necessary by TOLSO members.

- **Generation Projects** – Existing and planned generation facilities. Specifically, generation consistent with TOLSOs' approved resource plans as of March 2024[17], developed through an integrated resource planning (IRP) or similar process. The governance for these resource plans varies by the type of utility (PUC regulated, municipal, cooperative), but in all cases should be open, rigorous, and prescriptive.

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[14] The regional power flow models will be developed in a format accessible by users of the GE PSLF, Siemens PTI PSS/E, or PowerWorld Simulator power flow applications.

[15] The WestConnect Subregional Planning Groups consist of the Southwest Transmission Planning Group (SWAT), the Sierra Subregional Planning Group (SSPG), and the Colorado Coordinated Planning Group (CCPG).

[16] When submitting contingencies, PSLF or PowerWorld users should use the WECC RAS and Contingency File Format while PSS/E users should use "CON" files or spreadsheet format.

[17] Modifications to modeling assumptions may be updated during the model development phase of the planning cycle, subject to PMC approval.

- **Public Policy Requirements** – Public Policy Requirements are reflected in the study cases through local planning assumptions (e.g., load, generation, demand response, etc.), to the extent a plan for compliance with the Public Policy Requirements has been completed by the TOLSO member.

- **Major Path Flows and Interchange** – Path flows and interchange will be established based on the generation, load, and system condition being modeled in the study case.

- **Operating Procedures** – Any special operating procedures required for compliance with NERC reliability standards will be considered and included in the power flow cases.

- **Protection Systems** – The impact of protection systems including RAS required for compliance with NERC reliability standards will be included in the power flow cases.

- **Control Devices and Reactive Resources** – Any special control devices or reactive resources will be included in the power flow cases, including shunt capacitors/reactors, static var compensators, synchronous condensers and other voltage control devices.

- **Contingency List** – Participants will provide the contingency list in the WECC RAS and Contingency Format (available in GE PSLF and PowerWorld Simulator). A list of contingencies to be studied will be developed by the TOLSO members and SPGs and provided to the PMC concurrent with the final review of the base cases. The PS along with the PMC can add to the list if needed. Contingencies will be limited to N-1 (TPL Category P1 and P2) contingencies for elements 230-kV and above, generator step-up ("GSU") transformers for generation with at least 200 MW capacity, and member-requested N-2 (TPL Category P4, P5 and P7) contingencies. If a participant provides justification as to why lower voltage contingencies might impact the system in a regional manner, the PS may decide to include those contingencies.

- **Facilities with Multiple Owners** – the TOLSO members will verify which buses, lines, and transformers have multiple owners. This data will be maintained either directly in the power flow models (when possible) and/or in a spreadsheet, and will be used when processing the results of the reliability and economic assessments described in Sections 4.3 and 5.3, and to help the PS focus on issues with the highest potential for being a regional reliability-driven transmission need.

4.3 Study Methodology and Criteria

An assessment of the WestConnect regional power flow cases will be conducted to ensure the WestConnect planning region as a whole is in compliance with applicable North American Electric Reliability Corporation (NERC) standards and WECC regional criteria for the 2034 planning horizon. The assessment will include steady state contingency analysis and transient stability analysis. The following standards and criteria are applicable for the assessment:

- Table 1 Planning Events from NERC TPL-001-5.1 Transmission System Planning Performance Requirements; [18] and

- WECC TPL-001-WECC-CRT-4 Transmission System Planning Performance. [19]

[18] http://www.nerc.com/files/TPL-001-5.1.pdf

[19] https://www.wecc.org/Reliability/TPL-001-WECC-CRT-4.pdf

Monitoring and violation reporting will be performed for transmission elements above 90-kV outside of the WestConnect footprint and member-identified elements within or bordering the WestConnect footprint.

4.3.1 Steady State Contingency Analysis

Power flow contingency analyses will be performed for all power flow areas within the WestConnect planning footprint. More specifically, the assessment will evaluate performance of the regional system under Normal system conditions consistent (TPL Category P0) with normal ratings and voltage ranges and under certain emergency system conditions and planning event contingencies (TPL Category P1, P2, P4, P5 and P7) applicable facility ratings and voltage criteria shall not be exceeded, .[20] The power flow solution options will only enable control systems reasonably able to intervene within 20 seconds, meaning that SVC Control will be enabled while the other control options (Switched Shunt Control, LTC Transformer Control, and Phase Shifter Control) will be disabled.

4.3.2 Transient Stability Analysis

The transient stability performance of the regional system will be studied consistent with the standards and criteria provided above to identify any occurrences of under frequency load shedding, sufficient frequency recovery (e.g., undamped oscillations), and general instability (e.g., cascading trips). WECC criterion will be used to define acceptable voltage recovery and system performance within the first 30 seconds post-disturbance.

WestConnect members will determine the specific contingencies for inclusion in the transient stability analysis. These contingencies will be limited to those that may have a regional impact, including but not limited to major generator and transmission trips with and without faults.

4.4 Regional Reliability Needs

When conducting the regional reliability assessment, violations of standards or criterion creating reliability issues that the PMC determines to be regional in nature will be identified as a regional reliability need. By definition, regional reliability needs are identified by reliability issues that impact more than one TOLSO member system. Specifically, in the event a simulated outage produces one or more NERC TPL violations in more than one TOLSO member system, those violations may result in the identification of a regional reliability-driven transmission need.

If a single-system reliability violation is identified, the violation will be referred back to the appropriate TOLSO for resolution. The affected TOLSO will have an opportunity to identify mitigation for the violation, and will submit the modeling data associated with the mitigation to the PS. The PS will review the mitigation and make a recommendation to the PMC regarding whether or not to include the mitigation in the study. Upon approval by the PMC, the modeling for the mitigation will then be incorporated back into the regional power flow model. Single-system reliability violations typically do not cause a regional reliability-driven transmission need.[21] In the event a simulated outage produces NERC TPL violations in more than one TOLSO member system, that violation will first be referred to the affected TOLSO members and discussed with the PS to determine if the violation is local in nature. However, issues that impact more than one TOLSO member may result in the identification of a regional

[20] *P4, P5 and P7 contingencies are optional and must be volunteered by TO members*

[21] *There may be certain exceptions, such as when a jointly owned contingency causes reliability issues in a single area*

reliability-driven transmission need. Once finalized, regional reliability needs will be posted to the WestConnect website and described in the Regional Needs Assessment documentation. The PMC approves both the base models and the Regional Needs Assessment.

Table 4 provides examples of the ownership of affected elements involved with various examples of reliability issues that may be caused by a contingency and whether they are (1) likely a single-system reliability violation ("Local" in the table); (2) potentially a regional reliability-driven transmission need ("Regional Potential" in the table); or (3) in need of further review before a determination can be made ("Flag for Further Review" in the table).

Table 4. Reliability Assessment Regional vs Local Needs Matrix

Ownership[22] of the Element(s)[23] with Reliability Issue(s)	Example of Reliability Issue(s) and Affected Element(s)	Regional or Local?
Single-owner bus	Bus with voltage issue has only one owner	Local
Single-owner line	Overloaded line has only one owner	Local
Single-owner transformer	Overloaded transformer has only one owner	Local
Multiple single-owner buses	Multiple buses have voltage issues and are each owned by different owners	Regional Potential
Multiple single-owner lines	Multiple overloaded lines are owned by different owners	Regional Potential
Multiple single-owner transformers	Multiple overloaded transformers are owned by different owners	Regional Potential
Multi-owner bus	Bus with voltage issue is owned by multiple owners	Regional Potential
Multi-owner line	Overloaded line is owned by multiple owners	Regional Potential
Multi-owner transformer	Overloaded transformer is owned by multiple owners	Regional Potential
Single-owner bus & different Single-owner line	Bus with voltage issue has one owner & an overloaded line has a different owner	Regional Potential
Single-owner line with one **or both** terminal buses having a different single-owner	• Overloaded line and one of its terminal buses have one owner while the other terminal bus has a different owner, or • Overloaded line has one owner while its terminal buses have a different owner • Overloaded line has one owner, one of its terminal buses has a different owner, and the other terminal bus has a separate owner (different than the owners of the line or other terminal bus)	Flag for Further Review

[22] "Ownership" refers to the entity or entities whose permission is needed to replace, update, or remove the affected element(s)

[23] "Line" and "Transformer" are inclusive of adjacent facilities not explicitly modeled in the power flow case (e.g., breakers, bus-ties, wave traps)

Ownership[22] of the Element(s)[23] with Reliability Issue(s)	Example of Reliability Issue(s) and Affected Element(s)	Regional or Local?
Single-owner line with both terminal buses having multiple, different owners	Overloaded line has one owner and both terminal buses have multiple, owners which are different from the line's owner	Flag for Further Review
Single-owner line & multi-owner terminal bus or buses	Overloaded line has one owner; one of its terminal buses has multiple, different owners; and the other terminal bus multiple, different owners.	Flag for Further Review
Single-owner bus & different single-owner transformer	Bus with voltage issue has one owner & an overloaded transformer has a different owner	Regional Potential
Single-owner transformer with one **or both** terminal buses having a different single-owner	• Overloaded transformer and one of its terminal buses have one owner while the other terminal bus has a different owner, or • Overloaded transformer has one owner while its terminal buses have a different owner • Overloaded transformer has one owner, one of its terminal buses has a different owner, and the other terminal bus has a separate owner (different than the owners of the transformer or other terminal bus)	Flag for Further Review
Single-owner transformer with both terminal buses having multiple, different owners	Overloaded transformer has one owner and both terminal buses have multiple, owners which are difference from the line's owner	Flag for Further Review
Single-owner transformer & one or more multi-owner terminal buses	Overloaded line has one owner; one of its terminal buses has multiple, different owners; and the other terminal bus multiple, different owners.	Regional Potential

5. Regional Economic Assessment

The regional economic needs assessment will be performed using a production cost model (PCM) developed by WestConnect. The cases to be used for the regional economic assessment is summarized in **Table 5**.

Table 5: Production Cost Model Case Summary

WestConnect Case	Case Description	WECC Case	Planned Availability
2034 PCM	10-Year Anchor Data Set Case with updated WestConnect data	2034 ADS PCM	1.0: Jan. 31, 2024 2.0: Jun 30, 2024

The process used by WestConnect to develop the regional PCM is described in the following section. The analysis used to perform the regional economic assessment is also included. The model will be developed during Quarters 2 and 3 of the 2024-25 planning cycle. The PMC will approve the regional economic model used to assess regional economic transmission needs. The regional economic assessment will take place in Quarter 4.

5.1 Model Development Process

The WestConnect 2032 PCM will be reviewed and updated by WestConnect during Quarters 2 and 3 of the 2024-25 planning cycle consistent with the process described below in order to create the WestConnect 2034 PCM Base Case.

The PS will initiate and coordinate a review of the data and assumptions contained within the WestConnect 2032 PCM by the WestConnect members, participants, and stakeholders. Once the data and assumptions have been reviewed by the TOLSO members, WestConnect will compile any changes submitted by the TOLSO members to create the 2034 PCM Base Case. Once compiled, the PS will perform a series of initial testing and benchmarking studies with the goal of validating the output of the WestConnect 2034 PCM Base Case. Comparisons with historical path flows, typical wind/solar operation, historical generator dispatch, and other study results/models will be performed at the discretion of the PS to help vet the PCM results. Comparisons with the WestConnect 2034 power flow cases will be used to keep assumptions synced between the reliability and economic models. Once the WestConnect 2034 PCM Base Case has been vetted, the PS will initiate the regional economic assessment. The PS will also develop and conduct sensitivities, as discussed in more detail in Section 5.3.

5.2 Key Assumptions

Specific data and assumptions to be reviewed by the TOLSO members will include, but are not limited to:

- Changes needed to make data and assumptions consistent with the 2034 Heavy Summer and 2034 Light Spring power flow cases described earlier in the Study Plan
- Consistent with the key assumptions of the reliability models (Section 4.2), the load, generation, and transmission are reflected in the model based on local planning assumptions (e.g., load, generation, demand response (DR), energy efficiency (EE), etc.), based on the planning information provided by Members. PS may choose to perform spreadsheet-based analyses to verify the assumptions included in the model (e.g., accounting of renewable generation);
- Branch switching throughout the year
- Fuel price assumptions and related assumptions (e.g., carbon pricing or other environmental impact costs)
- Unit operating characteristics
- Load, resource, and transmission bus assignments to balancing authorities; and
- Wheeling charge approach to appropriately represent inter-Balancing Authority interactions.

5.3 Study Methodology and Criteria

To evaluate the potential for regional economic needs in the WestConnect planning footprint, WestConnect identifies congested elements through forward-looking production cost modeling. Using results from base case model runs and sensitivities,[24] the PS will review metrics such as congested hours and congestion cost for regional transmission elements greater than 90-kV and WECC transfer paths (or other defined interfaces in the WestConnect footprint) along with any TOLSO member-specified lower voltage BES elements.

[24] *In this document, the term "sensitivity" has the same meaning as "scenario" in the common tariff under the section that describes cost allocation for economic projects.*

Regional transmission facilities or paths/interfaces with significant congestion are identified and verified through PS review, historical benchmarking, and follow-up study. Given the regional focus of the Planning Process, the PS will limit their analysis to:

- Transmission (or paths/interfaces) between multiple TOLSO member systems;
- Transmission (or paths/interfaces) owned by multiple TOLSO members; and
- Congestion occurring within the footprint of multiple TOLSO members (congestion in one TOLSO Member footprint reasonably related or tied to congestion in another TOLSO Member footprint) that has potential to be addressed by a regional transmission project or NTA.[25]

5.3.1 Sensitivities

WestConnect will also conduct sensitivity studies on the 2034 PCM Base Case economic model to better understand whether regional transmission congestion may be impacted by adjusting certain input assumptions subject to significant uncertainty. The sensitivity analysis is intended to make relatively minor adjustments that would still remain within the expected future framework of the base models. This sensitivity analysis may include variables such as:

- Load forecast
- Hydro conditions (e.g., wet vs. dry)
- Natural gas prices
- Emissions cost (e.g., CO_2)
- Other modeling parameters

By adjusting individual input assumptions subject to uncertainty, the sensitivity assessment will help WestConnect understand how sensitive the economic performance of the Base Transmission Plan is to key variables. The PS will make recommendations to the PMC regarding how sensitivity analysis will be incorporated into the study process.

5.4 Regional Economic Needs

The process to assess congestion will include a vetting of any congested elements to allow the PS to determine whether congestion issues are regional in nature. After this vetting process, the PS will produce a list of the congested elements that were identified in the base case. The PMC may further evaluate that list of congested elements and determine which should constitute regional economic needs. The objective is to arrive at a set of congested transmission elements that warrant being tested 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. Once finalized, regional economic needs will be posted to the WestConnect website and described in the Regional Needs Assessment documentation. The PMC will concurrently approve the base models and the results of the regional economic assessment.

[25] *Congestion within a single TOLSO Member's footprint (and not reasonably related or tied to other TOLSO Member footprints) is out of scope of the regional planning effort and is alternatively subject to Order 890 economic planning requirements.*

6. Public Policy Assessment

WestConnect will first solicit members to identify Public Policy Requirements in the region and identify if any of the Public Policy Requirements are driving local projects in the TOLSOs' local transmission plans that are incorporated in the base case models used in the WestConnect planning process. An initial list of Public Policy Requirements is provided in this section and will be further refined in public WestConnect meetings.

In an effort to engage stakeholders, the list of Public Policy Requirements in the region and local projects in the TOLSOs' local transmission plans that are driven by Public Policy Requirements will be provided to stakeholders. Stakeholders will be asked to review the information and suggest to WestConnect possible regional public policy-driven transmission needs. An open stakeholder comment window will be announced via posting on the WestConnect website and through an email to the WestConnect stakeholder distribution list for the purposes of collecting suggestions of possible regional public policy-driven transmission needs.

6.1 Public Policy Requirements

Public Policy Requirements means those requirements enacted by state or federal laws or regulations, including those enacted by local governmental entities, such as a municipality or county. **Table 6** lists the Public Policy Requirements that have been identified and will be considered in the WestConnect 2024-25 planning cycle. To the extent a plan for compliance with the Public Policy Requirements was completed prior to the model development phase of the WestConnect 2024-25 planning cycle, the WestConnect 2034 economic and reliability models will reflect these public policies' conditions for the study year 2034. Each TOLSO member will provide confirmation in this regard as part of the model development phase of the WestConnect 2024-25 planning cycle. Company goals, although not Public Policy Requirements, such as the PNM Commitment to Carbon Free by 2040[26], may also be considered in the development of the base models but will not be used in the evaluation of public policy-driven transmission needs.

Table 6: Public Policy Requirements for Consideration in the WestConnect 2024-25 Planning Process

Public Policy Requirement	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 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

[26] *Public Service of New Mexico plans to produce 100% carbon free energy by 2040. Source: https://www.pnm.com/our-commitment*

Public Policy Requirement	Description
California SB100	Requires Investor-owned utilities (IOUs) and municipal utilities to meet a 60% renewable portfolio standard ("RPS") by 2030
California SB350	Requires IOUs and municipal utilities to meet a 50% RPS by 2030 and requires the establishment of annual targets for energy efficiency savings
Colorado HB 18-1270 ("Energy Storage Procurement Act")	Directs the Commission to develop a framework to incorporate energy storage systems in utility procurement and planning processes. See C.R.S. § 40-2-201, et seq. The legislation broadly addresses resource acquisition and resource planning, and transmission and distribution system planning functions of electric utilities. Energy storage systems may be owned by an electric utility or any other person. Benefits include increased integration of energy into the grid; improved reliability of the grid; a reduction in the need for increased generation during periods of peak demand; and, the avoidance, reduction, or deferral of investment by the electric utility
Colorado HB 19-1261 and SB 1261 ("GHG Reduction Bills")	HB 19-1261 requires the Air Quality Control Commission ("AQCC") to promulgate rules and regulations for statewide greenhouse gas ("GHG") pollution abatement. Section 1 of SB 1261 states that Colorado shall have statewide goals to reduce 2025 greenhouse gas emissions by at least 26%, 2030 greenhouse gas emissions by at least 50%, and 2050 greenhouse gas emissions by at least 90% of the levels of statewide greenhouse gas emissions that existed in 2005. A clean energy plan filed by a utility is deemed approved if the plan demonstrates an 80% reduction by 2030.
Colorado HB10-1001	Established Colorado Renewable Energy Standard ("RES") to 30% by 2020 for IOUs (Xcel & Black Hills)
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 SB 18-009 ("Energy Storage Rights Bill")	Protects the rights of Colorado electricity consumers to install, interconnect, and use energy storage systems on their property without the burden of unnecessary restrictions or regulations and without unfair or discriminatory rates or fees.

Public Policy Requirement	Description
Colorado SB 19-077 ("Electric Vehicles Bill")	The bill enables a regulatory approval process for electric utilities to invest in charging facilities and provide incentive rebates; thus, the investments and rebates may earn a return at the utility's authorized weighted-average cost of capital. Where approved, the costs for the investments and rebates may be recovered from all customers of the electric utility similar to recovery of distribution system investments. Natural gas public utilities may provide fueling stations for alternative fuel vehicles as non-regulated services only.
Colorado SB 19-236 ("PUC Sunset Bill")	The primary purpose of this bill is to reauthorize the CPUC, by appropriations, for a seven-year period to September 1, 2026. Reauthorization is required by the sunset process. Additionally, the bill carries numerous requirements for utilities and the CPUC to achieve an affordable, reliable, clean electric system. Included in the bill are requirements to reduce the qualifying retail utility's carbon dioxide emissions associated with electricity sales to the qualifying retail utility's electricity customers by eighty percent from 2005 levels by 2030, and that seeks to achieve providing its customers with energy generated from one-hundred-percent clean energy resources by 2050. The bill also subjects co-ops to Colorado Public Utility Commission rulemaking.
Colorado SB13-252	Requires cooperative utilities to generate 20% of their electricity from renewables by 2020
Colorado SB21-072	This bill requires electric transmission utilities in Colorado to join an organized wholesale market ("OWM") by January 1, 2030, provided that the OWM meets certain criteria set forth in the statute. This bill also creates the Colorado Electric Transmission Authority, a governmental entity that is authorized to independently develop and finance transmission projects.
Colorado HB21-1266	This bill is a broad policy measure to promote environmental justice in disproportionately impacted communities through the creation of an Environmental Justice Task Force. The bill requires wholesale generation and transmission cooperatives to file with the Public Utilities Commission a Clean Energy Plan to achieve 80% emissions reductions by 2030.
Colorado SB 21-246	The primary purpose of this bill is to direct the approval of plans for the electrification of buildings that use fossil fuel-based systems through existing demand side management programs.
Colorado HB21-1238	The primary purpose of this bill is to update the PUC's rules and decision-making process with respect to natural gas demand-side management programs including the use of the Social Cost of Carbon and Social Cost of Methane.

Public Policy Requirement	Description
Colorado SB21-272	The primary purpose of this bill is to update the PUC's rules and decision-making process to better incorporate the impacts and benefits to underserved or disproportionately impacted communities and groups including workforces impacted by generation acquisition and retirement. Other requirements include how utilities finance resources or investments, the retirement of renewable energy credits, and the inclusion of the Social Cost of Carbon in resource planning decisions.
Colorado SB23-016	This legislation updates the State of Colorado's statutory greenhouse gas emissions goals (HB19-1261) to add a 65% reduction goal for 2035, an 80% reduction goal for 2040, and a 90% reduction goal for 2045, as well as amending the state's 2050 goal from a 90% reduction goal to 100%.
Public Policy Requirement: California SB 1020	Description: Under SB 1020, at least 90% of all retail sales of electricity in California must be supplied by eligible renewable and zero-carbon energy resources by December 31, 2035. By December 31, 2040, 95% of all retail electricity sales must be supplied by eligible renewable and zero-carbon energy resources. Additionally, all electricity resources by the end of 2035.
Executive Order 14057 (EO 14057), Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability (Dec. 8, 2021)	The President's executive order directs the federal government to use its scale and procurement power to achieve five ambitious goals: • 100 percent carbon pollution-free electricity ("CFE") by 2030, at least half of which will be locally supplied clean energy to meet 24/7 demand; • 100 percent zero-emission vehicle ("ZEV") acquisitions by 2035, including 100 percent zero-emission light-duty vehicle acquisitions by 2027; • Net-zero emissions from federal procurement no later than 2050, including a Buy Clean policy to promote use of construction materials with lower embodied emissions; • A net-zero emissions building portfolio by 2045, including a 50 percent emissions reduction by 2032; and • Net-zero emissions from overall federal operations by 2050, including a 65 percent emissions reduction by 2030.
New Mexico Efficient Use of Energy Act	Require utilities to include cost-effective energy efficiency ("EE") and demand response ("DR") programs in their resource portfolios and establish cost-effectiveness as a mandatory criterion for all programs

Public Policy Requirement	Description
New Mexico Energy Transition Act (2019 SB 489)	Subject to the Reasonable Cost Threshold ("RCT"), the Energy Transition Act defines renewable energy requirements that are a percentage of a utility's retail energy sales and the type of utility: • By 2020, 20% for public utilities and 10% for cooperatives • By 2025, 40% for public utilities and cooperatives • By 2030, 50% for public utilities and cooperatives • By 2040, 80% for public utilities with provisions associated with carbon free generation • 100% carbon-free by 2045 for public utilities and by 2050 for cooperatives
SRP Sustainable Energy Goal	Reduce the amount of CO_2 emitted per megawatt-hour (MWh) by 65% from 2005 levels by 2035 and by 90% by fiscal year 2050.
Texas RPS	Texas RPS requires a total renewable capacity of 5,880 MW (which has already been achieved) by 2025 be installed in the state which is in turn converted into a renewable energy requirement. The renewable energy requirements are allocated to load serving entities based on their amount of retail energy sales as a percent of the total Texas energy served
Texas Substantive Rule 25.181 (Energy Efficiency Rule)	Require utilities to meet certain energy efficiency targets
New Mexico Title 17-Public Utilities and Utility Services Part 574 Applications to Expand Transportation Electrification	"The purpose of this rule is to implement Section 62-8-12 NMSA 1978, applications to expand transportation electrification, and to bring to New Mexico the economic development and environmental benefits of expanded electrification of the State's transportation modalities and transportation infrastructure. Three-year plan with a planning outlook for two-years beyond the proposed three-year plan"

Public Policy Requirement	Description
New Mexico Title 17-Public Utilities and Utility Services Part 588 Grid Modernization Grant Program	Grid modernization roadmap and grant program is focused on improvements to electric distribution or transmission infrastructure, including related data analytics equipment, that are designed to accommodate or facilitate the integration of renewable electric generation resources with the electric distribution grid or to otherwise enhance electric distribution or transmission grid reliability, grid security, demand response capability, customer service or energy efficiency or conservation and includes:(a) advanced metering infrastructure that facilitates metering and providing related price signals to users to incentivize shifting demand;(b) intelligent grid devices for real time system and asset information at key substations and large industrial customers;(c) automated control systems for electric distribution circuits and substations;(d) communications networks for service meters;(e) distribution system hardening projects for circuits and substations designed to reduce service outages or service restoration times;(f) physical security measures at key distribution substations; (g) cybersecurity measures;(h) energy storage systems and microgrids that support circuit-level grid stability, power quality, reliability or resiliency or provide temporary backup energy supply;(i) electrical facilities and infrastructure necessary to support electric vehicle charging systems;(j) new customer information platforms designed to provide improved customer access, greater service options and expanded access to energy usage information; and (k) other new technologies that may be developed regarding the electric grid.
New Mexico Advanced Clean Car Rule	Starting in calendar year 2026, 43% of all new passenger cars and light-duty trucks shipped to New Mexico auto dealerships by national auto manufacturers must be zero emission vehicles. Similarly, beginning in calendar year 2026, 15% of all new commercial heavy-duty trucks shipped to New Mexico auto dealerships by national auto manufacturers must be zero emission vehicles. These percentages gradually increase over time.

6.2 Study Methodology and Criteria

Regional public policy-driven needs are evaluated in the following ways:

1. New regional economic or reliability needs identified during the regional economic and reliability needs assessments are further evaluated to determine if they were driven by Public Policy Requirements; and

2. Stakeholders are given an opportunity to review a list of Public Policy Requirements impacting the WestConnect region and a map representation of the local projects driven by those Public Policy Requirements. Stakeholders can then suggest to WestConnect which Public Policy Requirements may result in possible regional public policy-driven transmission needs.

For the second component above, the WestConnect regional public policy needs assessment leverages WestConnect and stakeholders in determining if a Public Policy Requirement (or set of Public Policy Requirements) may drive a regional public policy transmission need that is appropriate to address in that planning cycle. WestConnect will provide stakeholders with (1) the list of Public Policy Requirements impacting the WestConnect region and (2) a list of local public policy-driven transmission projects and a map representation of the projects. Stakeholders review the information and make suggestions as to whether a regional need may be driven by Public Policy Requirements

The PMC will then select which, if any, of the proposed regional needs driven by Public Policy Requirements will be evaluated in the 2024-25 planning cycle. The PMC will make this selection by considering factors, including, but not limited to:

1. whether the Public Policy Requirement is driving a regional transmission need that can be reasonably identified in the current planning cycle;
2. the feasibility of addressing the regional transmission need driven by the Public Policy Requirement in the current planning cycle;
3. the factual basis supporting the regional transmission need driven by the Public Policy Requirement; and
4. whether a Public Policy Requirement has been identified for which a regional transmission need has not yet materialized, or for which there may exist a regional transmission need but the development of a solution to that need is premature

6.3 Regional Public Policy-driven Transmission Needs

If any regional public policy needs are identified, the needs will be identified and described in the Regional Need Assessment report and posted to the WestConnect website. It is possible that a specific model will be developed to evaluate the specific public policy need and associated solutions.

7. Solutions to Regional Needs

After the Regional Need Assessment Report is finalized, regional needs will be posted to the WestConnect website and a project solution submittal window will open. Upon closure of the submittal window, WestConnect will initiate an evaluation of the benefits and costs of the proposed solutions to identify if any is a more efficient or cost-effective regional solution.

If no project solutions are submitted, WestConnect will seek to develop solutions to the regional needs.

In the event that no regional transmission needs are identified, the PMC will not collect transmission or non-transmission alternatives for evaluation (as there will be no regional transmission needs to evaluate the alternatives against).

8. Scenario Studies

In addition to the regional needs assessment, WestConnect also conducts information-only scenario[27] studies that look at alternate but plausible futures. They represent futures with resource, load, and public policy assumptions that are different in one or more ways than what is assumed in the Base Cases.

Proposals for scenarios enter into the Planning Process through a 30-day open submittal window, which opens during Quarter 8 of the previous planning cycle. During the open window, stakeholders may provide proposals for specific scenarios for WestConnect to consider including in the Study Plan for the upcoming planning cycle. The PMC and PS can also develop scenarios for inclusion in the Study Plan.

Once the scenario proposals are received, the PS evaluates the scenarios and makes a recommendation (documented through the Study Plan) to the PMC on which ones should be evaluated in the planning cycle. The PS may work with individual requestors to clarify the intent of the scenarios. The PS may also recommend combining scenarios that appear to have common goals, themes, or modeling assumptions.

The PMC also has ultimate authority to determine how to treat regional transmission issues that are identified in the information-only scenario studies. They will determine whether an issue identified in a scenario—whether it be reliability, economic, or public-policy based—constitutes additional investigation by the PS. Since the assessment of a scenario is different than an "expected future" base case such assessments may provide useful information for future planning cycles, especially if the scenario appears likely to become an expected future for the region. Also, results from the scenario assessments may help the region identify emerging opportunities for infrastructure (generation, transmission, or otherwise). Any transmission issues that might come to light as a result of the WestConnect scenario assessments are not to be confused with the WestConnect task under Order No. 1000 to identify regional transmission needs and to solicit for proposals to more cost effectively or efficiently satisfy such needs. In other words, the WestConnect scenario assessments do not obligate TOLSO members to any responsibility outside the scope of Order No. 1000.

WestConnect also provides the opportunity for stakeholders to provide suggestions that might allow for more efficient or cost-effective alternatives to the regional plans. These types of suggestions may be different from the scenarios mentioned above. They may also be different than proposals to meet identified regional needs. These types of suggestions may be submitted at any time, but have the most potential to contribute to the Planning Process if they are presented through the scenario submission window. The PMC will consider such suggestions on a case-by-case basis to determine if any such suggestions warrant analyses, and how to incorporate any analyses into the Planning Process. Stakeholders submitting such suggestions are expected to provide evidence as to how their proposals might result in a more efficient or cost-effective regional plan. As with scenarios, the PMC will determine whether the PS should assess any suggestions.

[27] *The term "scenario" may be used differently in other documents, including the cost allocation section of the common tariff.*

8.1 Scenarios Received for the 2024-25 Study Plan

WestConnect held an open window from December 1, 2023, through January 10, 2024. Three requests were submitted during the open window, shown in Table 7.

Table 7 Scenarios Received During the Open Window

Requestor	Description/Name
Ron Belval, Rob Kondziolka	Renewable Resource Adequacy Feasibility/Gap Analysis
TransCanyon, LLC	Decreased line ratings from increased ambient temperatures
Xcel Energy	Extreme Cold Weather

These scenario requests were reviewed by the PS on January 16, 2024. A representative for each scenario request provided a presentation to the PS to summarize the request and answer questions. Following the meeting the WestConnect representatives worked with the requestors for the Renewable Resource Adequacy Feasibility /Gap Analysis scenario and a fourth scenario was developed. This scenario is described as the 20-Year Increased Renewable scenario. During an interim PS meeting on February 8, 2024, the three original scenarios were revisited, and the 20-Year scenario discussed. The discussion at that meeting led to agreement that three scenarios would be included in the Study Plan. The scenarios are summarized below.

8.1.1 Decreased Facility Rating Scenario

The purpose of the Decreased Facility Rating Scenario is to evaluate the impacts of an overall decrease in facility ratings by a given percentage. The thought behind the proposal is that transmission facility ratings can be adversely impacted by several factors, including higher ambient temperatures. The purpose of this study is to provide a relative view of how decreased facility ratings might impact reliability.

Assessment

Study Type	Reliability
Modeling	34 Heavy Summer WestConnect Base Model
Methodology	Reduce facility ratings and/or modify facility monitoring consistent with the agreed upon methodology defined in the "Follow Up" section below. Then run contingency analysis consistent with the base regional assessment with no modifications to loads and resources.
Follow up in January 2025	Once the WestConnect Regional assessment is complete (Q4 of 2024), the PS should agree on the following: 1. Specific methodology for the study. Options include: a. Region-wide reduction in the level of loading monitored for facilities (e.g. 95% instead of 100%). b. Region-wide or subregional reduction by an agreed-to percentage for facilities (e.g. 5% reduction). c. Members provide specific ratings reductions for their facilities, based on agreed-to temperature increases. 2. Documentation – format and content
Reporting	Document any impacts to the WestConnect regional reliability attributed to the reduced ratings, similar to the base reliability assessment reporting. This could include a quantification of the increased number of contingency violations throughout the system. Members may also wish to report on which subregions have higher impacts, estimated transmission upgrades needed, and other qualitative or quantitative impacts.

8.1.2 Extreme Cold Weather Scenario

The purpose of the Extreme Cold Weather Scenario is to evaluate the reliability of the WestConnect footprint for a 10-year, heavy winter condition, with higher-than-expected loads and reduced resource availability that would be the result of extremely cold weather throughout the region.

The thought behind the request is that an extreme cold weather event will result in higher loads than expected, combined with shortages of resources. For example, historical cold weather conditions have led to shortages in natural gas availability. Renewable resources could also be unavailable. As a result, such a scenario could have an impact on the reliability of the system. The scenario may provide valuable information into system import or export capabilities, and potential reliability issues, including how to serve load, that could result in the need for transmission or resource enhancements.

Assessment

Study Type	Reliability
Modeling	10-year Heavy Winter WECC model
Methodology	From an agreed upon 10-year WECC model, modify the case to increase loads by a given percentage and reduce or remove certain resources based on extreme cold weather performance. Perform a reliability assessment consistent with the base regional reliability assessment.
Follow up in January 2025	Once the WestConnect Regional assessment is complete (Q4 of 2024), the PS should agree on the following: 1. Base case for the seed case 2. How the case should be modified including a. Load levels b. Resources to remove and/or reduce. c. Any other modifications 3. Reporting – format and content
Reporting	Document any impacts to the WestConnect regional reliability attributed to an extreme cold weather event, similar to the base reliability assessment reporting. This could include a description of how the impacts differ from the base assessment, including changes in the number of contingency violations, in total and by subregion. Members may also wish to report on which subregions have higher impacts, estimated transmission upgrades needed, and other qualitative or quantitative impacts.

8.1.3 20-Year Increased Renewable Scenario

The purpose of this scenario is to perform regional reliability and economic assessments using models that represent a 20-year timeframe with aggressive renewable energy penetration. A 20-year scenario can help WestConnect members understand transmission-related issues associated with a 20-year future that attempts to capture current policy requirements throughout the Planning Region, as well as public policy requirements that are likely to change in the 20-year planning horizon and are expected to trend towards more aggressive objectives for carbon reduction. The study can provide both quantitative and qualitative perspectives of how the WestConnect transmission system could be affected, and the magnitude of transmission buildout that might be required to mitigate reliability and economic issues.

Assessment

Study Type	Economic, Reliability
Modeling	Economic: Modify the 2034 WestConnect Base PCM Reliability: Modify the 2034 WestConnect Base Heavy Summer M, or export conditions from the Scenario PCM
Economic Study Methodology	**Loads:** 20-year loads based on member load forecasts, projected to a 20-year timeframe. **Resources:** 20-year resource additions based on members' understanding or assumptions regarding potential long-term resource development. This may include plans from internal long-term studies and generator interconnection queues. Options for identifying resource additions include (details may be determined later): • TO's provide specific resource placement information. • Resources spread evenly throughout individual TO service territories. • Utilize publicly available sources to locate resources, including the Nature Conservancy Power of Place West report that was released in 2019: https://www.nature.org/content/dam/tnc/nature/en/documents/TNC_Power-of-Place-WEST-Executive_Summary_WEB_LR.pdf. • Planning Consultant works with TOs to develop resource assumptions. Renewable resources should be sufficient to meet current known, as well as potential future public policy initiatives and goals that are intended to reduce carbon emissions significantly. It would be beneficial for members to make aggressive assumptions for retirement of fossil fuel generation, especially coal-fired generation, and replaced by a mix of renewable resources. From the scenario PCM, perform an economic assessment consistent with the base regional economic assessment.
Reliability Study Methodology	The reliability model(s) may be developed from exporting the Scenario PCM by selecting and exporting one or more hours of interest. As an alternative, utilize the WestConnect Base 10-year heavy summer model and modify the loads and resources based on the assumptions listed in the economic methodology section above. Multiple reliability models may be developed at the discretion of members, to represent various stress conditions due to resource location assumptions, dispatch patterns, or other conditions. Perform a reliability assessment consistent with the base regional reliability assessment.

Follow up in January 2025	Once the WestConnect Regional assessment is complete (Q4 of 2024), the PS will develop specific study methodology, including: 1. How to modify the Base PCM model including a. Load levels b. Fossil fuel resources to remove and/or reduce. c. Renewable (wind, solar, storage) to add, including specific locations and capacities. d. Any other modifications 2. Methodology for creating the reliability model(s). Options are exporting from the scenario PCM, or modifying the Base Reliability model. 3. Reporting, including format and content.
Reporting	Document any impacts to the WestConnect system for the 20-year scenario. This could include a description of how the impacts differ from the base assessment, including changes in the economic congestion results, and a quantification of reliability issues, by region and by subregion. Members may also wish to report on which subregions have higher impacts, estimated transmission upgrades needed, and other qualitative or quantitative impacts.

Appendix A – Base Transmission Plan Process

To identify transmission projects for inclusion in the 2024-25 Base Transmission Plan, the PS reviewed the transmission project lists submitted to WestConnect by the TOLSO members and participants via the TPPL, inclusive of the project status (e.g., planned, conceptual). All TOLSO member projects designated with a "planned" project status are included in the base transmission plan. As defined by WestConnect, planned facilities include projects that are expected to be in-service during the approaching 10 years, have a sponsor and are incorporated in an entity's regulatory filings or capital budget, or have an agreement committing entities to participate and construct. Individual members and participants reviewed the TPPL data and provided any necessary updates with regard to the project status.

The PS also reviewed the list of non-TOLSO projects submitted via the TPPL submittal window to determine if any of those projects met the threshold identified by the PMC for inclusion in the base transmission plan. These meetings were open to the public and noticed accordingly. Upon reviewing the project information submitted by the project sponsors, WestConnect identified two[28] ITD projects for inclusion in the 2024-25 Base Transmission Plan.

Coordination with other regions

As stated in the BPM, WestConnect will coordinate planning data and information with the two other Planning Regions in the Western Interconnection, the California ISO, and NorthernGrid. This includes the coordination of planning data to the extent practical. WestConnect will seek the following regional planning data and information from the other Western Planning Regions during the times within its regional planning cycle that such data can be usefully incorporated together with its own regional planning information in order to conduct its regional planning activities.

[28] *Pending final review*

Appendix B – Base Transmission Plan

The tables below include the planned projects that are slated for inclusion in the Base Transmission Plan. The tables are organized by SPG.

SWAT Base Transmission Plan Projects for 2024-25 Regional Planning Cycle

Sponsor	Project Name	Development Status (as of February 2024)	Voltage	In 2022-23 Regional Transmission Plan?	In-Service Date
Arizona Electric Power Cooperative	Marana Substation Rebuild	Planned	115 kV	Yes	2024
Arizona Electric Power Cooperative	Greenlee Transformer Upgrade	Planned	345 kV	No	2024
Arizona Electric Power Cooperative	Pantano Transformer Upgrade	Planned	230 kV	No	2024
Arizona Public Service	Pinal Central - Sundance 230kV Line	Planned	230 kV	No	2027
Arizona Public Service	TS21 500/230kV Substation	Planned	500 kV AC	No	2032
Arizona Public Service	Three Rivers 230kV Transmission Line Project	Planned	230 kV	Yes	2024
Arizona Public Service	Contrail 230kV Lines	Planned	230 kV	Yes	2025
Arizona Public Service	Broadway 230kV Lines	Planned	230 kV	Yes	2025
Arizona Public Service	Runway Additional 230kV Lines	Planned	230 kV	Yes	2026
Arizona Public Service	TS22 Project	Planned	500 kV AC	Yes	2029
Arizona Public Service	Jojoba to Rudd 500kV line	Planned	500 kV AC	Yes	2032
Arizona Public Service	Bagdad 230kV Transmission Line	Planned	230 kV	No	2027
Arizona Public Service	Dromedary 230kV Switchyard and Lines	Planned	230 kV	No	2025
Arizona Public Service	Hashknife Energy Center Generation Tie Line Project	Planned	500 kV AC	No	2026
Arizona Public Service	Proving Ground Solar and Storage 500kV Interconnection	Planned	500 kV AC	No	2026

Sponsor	Project Name	Development Status (as of February 2024)	Voltage	In 2022-23 Regional Transmission Plan?	In-Service Date
Arizona Public Service	West Camp Wind Gen Tie Project	Planned	345 kV	No	2026
Arizona Public Service	Sun Valley to Outer Circle 230kV line	Planned	230 kV	No	2027
Arizona Public Service	Bianco 230kV Lines	Planned	230 kV	No	2028
Arizona Public Service	Panda - Freedom 230kV Line Rebuild	Planned	230 kV	No	2031
Arizona Public Service	Pinnacle Peak to Ocotillo 230kV Line Rebuilds	Planned	230 kV	No	2031
Arizona Public Service	Runway - Stratus 230kV Cut-In to TS21	Planned	230 kV	No	2032
Arizona Public Service	TS21 to Broadway 230kV Line	Planned	230 kV	No	2032
Arizona Public Service	Four Corners to Cholla to Pinnacle Peak 345kV Line Rebuilds	Planned	345 kV	No	2035
El Paso Electric Company	Verde 115 kV Substation (Load Serving Station Portion Added), 115/24kV 50 MVA Transformer Addition	Planned	115 kV	Yes	2027
El Paso Electric Company	Afton-Newman 345kV Line Reconfiguration, In and Out in Vado 345 kV Substation	Planned	345 kV	Yes	2028
El Paso Electric Company	McCombs Substation (New) and Related 115 kV Line Reconfiguration	Planned	115 kV	Yes	2027
El Paso Electric Company	Jornada-Arroyo 115 kV Line (Reconductor/Rebuild)	Planned	115 kV	Yes	2027
El Paso Electric Company	Apollo-Cox Line 69 kV to 115 kV (Moongate-Apollo Portion - Rebuild)	Planned	115 kV	Yes	2027
El Paso Electric Company	Afton North 345 kV Substation (New)	Planned	345 kV	Yes	2028
El Paso Electric Company	Afton-Afton North 345 kV Double Bundled Line (New)	Planned	345 kV	Yes	2028
El Paso Electric Company	Vado Substation 345/115 kV (New)	Planned	345 kV	Yes	2028
El Paso Electric Company	Seabeck Switching Station 115 kV (New)	Planned	115 kV	Yes	2029
El Paso Electric Company	Seabeck-Horizon 115 kV Line (Rebuild, Upgrade)	Planned	115 kV	Yes	2029
El Paso Electric Company	Seabeck-San Felipe 115 kV Line (Reconfiguration)	Planned	115 kV	Yes	2029

Sponsor	Project Name	Development Status (as of February 2024)	Voltage	In 2022-23 Regional Transmission Plan?	In-Service Date
El Paso Electric Company	San Felipe Substation 115/69 kV (New) & 1 X 115/69 kV Autotransformer	Planned	115 kV	Yes	2025
El Paso Electric Company	Sparks-San Felipe Line (Voltage Conversion, Rebuild, Reconductor) 69 kV to 115 kV	Planned	115 kV	Yes	2027
El Paso Electric Company	San Felipe (New) 115 kV Capacitors (2 x 15.9 MVAR)	Planned	115 kV	Yes	2026
El Paso Electric Company	Pine Switching Station 115 kV (New)	Planned	115 kV	Yes	2027
El Paso Electric Company	Pine-Seabeck 115 kV Line (New)	Planned	115 kV	Yes	2029
El Paso Electric Company	Marvin-Pine 115kV Line (Reconductor)	Planned	115 kV	No	2028
El Paso Electric Company	CE-2 Substation (New) and Related 115 kV West Loop Line Reconfiguration	Planned	115 kV	Yes	2027
El Paso Electric Company	Vado-Salopek 115 kV Line (Rebuild, Reconductor)	Planned	115 kV	Yes	2028
El Paso Electric Company	New Amrad SVC device connecting on high-voltage side to Amrad 345 kV side using its own dedicated step-up transformer to a dedicated bay.	Planned	345 kV	Yes	2027
El Paso Electric Company	CE3 Substation (New) and Related 115 kV West Loop Line Reconfiguration	Planned	115 kV	Yes	2029
El Paso Electric Company	Anthony-Vado 115 kV Line (Rebuild, Reconductor)	Planned	115 kV	Yes	2028
El Paso Electric Company	CE-4 Substation (New) and Related 115 kV West Loop Line Reconfiguration	Planned	115 kV	Yes	2030
El Paso Electric Company	In-and-Out into Vado 345 kV Substation from Afton North-Newman 345 kV Line	Planned	345 kV	Yes	2028
El Paso Electric Company	Vado 224 MVA Vado 345/115 kV Autotransformer (New)	Planned	345 kV	Yes	2028
El Paso Electric Company	Leasburg Substation 115 kV (New)	Planned	115 kV	Yes	2028
El Paso Electric Company	Arroyo-Cox 69 kV to 115 kV (Arroyo-Moongate 115 kV line - Reconductor, Reconfiguration and Moongate-Apollo 115 kV line - Reconfiguration)	Planned	115 kV	Yes	2027

Sponsor	Project Name	Development Status (as of February 2024)	Voltage	In 2022-23 Regional Transmission Plan?	In-Service Date
El Paso Electric Company	Eastlake Temporary Substation (New) and Related 115 kV line reconfiguration	Planned	115 kV	No	2024
El Paso Electric Company	Verde 115 kV Switching Station (New) and Related 115 kV Line Reconfiguration	Planned	115 kV	No	2024
El Paso Electric Company	Austin-Marlow 115 kV Line (Rebuild, Reconductor)	Planned	115 kV	No	2024
El Paso Electric Company	Lane-Wrangler 115 kV Line (Rebuild, Reconductor)	Planned	115 kV	No	2024
El Paso Electric Company	Westside Temporary Substation (New) and Related 115 kV Line Reconfiguration	Planned	115 kV	No	2024
El Paso Electric Company	Ascarate-Trowbridge 115 kV Line (Reconductor)	Planned	115 kV	No	2025
El Paso Electric Company	Horizon-San Felipe 115 kV Line (New)	Planned	115 kV	No	2025
El Paso Electric Company	Pellicano-Montwood 115 kV Line (Reconductor)	Planned	115 kV	No	2025
El Paso Electric Company	WS2 Substation (New) and Related 115 kV Line Reconfiguration	Planned	115 kV	No	2025
El Paso Electric Company	Eastlake Substation (New) and Related 115 kV Line Reconductor and Reconfiguration	Planned	115 kV	No	2026
El Paso Electric Company	Wrangler-Eastlake 115 kV Line (Rebuild, Reconductor)	Planned	115 kV	No	2027
El Paso Electric Company	Arroyo Variable Line Shunt Reactor (50-100 MVAR) on the Arroyo end of the West Mesa-Arroyo 345 kV Line	Planned	345 kV	No	2027
El Paso Electric Company	Newman 2 Thermal Generation Conversion to Synchronous Condenser	Planned	115 kV	No	2027
El Paso Electric Company	Afton North-Airport 345 kV Line (New)	Planned	345 kV	No	2028
El Paso Electric Company	Afton-Newman 345kV Line Reconfiguration	Planned	345 kV	No	2028
El Paso Electric Company	Airport 345/115 kV Autotransformer (New)	Planned	345 kV	No	2028
El Paso Electric Company	Airport 345/115/24 kV Substation	Planned	345 kV	No	2028
El Paso Electric Company	Marvin (FE6) 115 kV New Full Substation	Planned	115 kV	No	2028
El Paso Electric Company	Artesia/Eddy HVDC Tie Replacement (New)	Planned	345 kV	No	2028

Sponsor	Project Name	Development Status (as of February 2024)	Voltage	In 2022-23 Regional Transmission Plan?	In-Service Date
El Paso Electric Company	WS1 Substation (New) and Related 115 kV Line Reconfiguration	Planned	115 kV	No	2028
El Paso Electric Company	McNutt Substation (New) and Related 115 kV Line Reconfiguration	Planned	115 kV	No	2028
El Paso Electric Company	EA1 Substation (New) and Related 115 kV Line Reconfiguration	Planned	115 kV	No	2029
El Paso Electric Company	FE7 115 kV Substation (New) and Related 115 kV Line Reconfiguration	Planned	115 kV	No	2029
El Paso Electric Company	Caliente 345/115 kV Autotransformer T3 (New)	Planned	345 kV	No	2030
El Paso Electric Company	CE4-Executive 115 kV Line (New)	Planned	115 kV	No	2030
El Paso Electric Company	Marlow-Trowbridge 115 kV Line (Rebuild, Reconductor)	Planned	115 kV	No	2030
El Paso Electric Company	Newman-McCombs 115 kV Line Circuit 1 (Reconductor)	Planned	115 kV	No	2030
El Paso Electric Company	Newman-McCombs 115 kV Line Circuit 2 (Reconductor)	Planned	115 kV	No	2030
El Paso Electric Company	Copper Thermal Generation Conversion to Synchronous Condenser	Planned	115 kV	No	2030
El Paso Electric Company	NE3 Substation (New) and Related 115 kV Line Reconfiguration	Planned	115 kV	No	2031
El Paso Electric Company	Newman 3 Thermal Generation Conversion to Synchronous Condenser	Planned	115 kV	No	2032
El Paso Electric Company	Newman 4 ST Thermal Generation Conversion to Synchronous Condenser	Planned	115 kV	No	2032
El Paso Electric Company	Dyer 115/69 kV Autotransformer T1 (Upgrade)	Planned	115 kV	No	2032
El Paso Electric Company	Newman-Roberts 115 kV Line Circuit 1 (Reconductor)	Planned	115 kV	No	2032
El Paso Electric Company	CE2-Rio Grande 115 kV Line (Rebuild)	Planned	115 kV	No	2033

Sponsor	Project Name	Development Status (as of February 2024)	Voltage	In 2022-23 Regional Transmission Plan?	In-Service Date
Imperial Irrigation District	Ramon-Mirage ck #2	Planned	230 kV	No	2025
Imperial Irrigation District	Path 42 RAS Revision and Rating Increase	Planned	230 kV	Yes	2024
Los Angeles Department of Water and Power	New Valley - Rinaldi Line 3 and upgrade Valley - Rinaldi Lines 1 and 2	Planned	230 kV	No	2028
Los Angeles Department of Water and Power	New Valley - Toluca Line 3 and upgrade Valley - Toluca Lines 1 and 2	Planned	230 kV	No	2026
Los Angeles Department of Water and Power	Victorville 500/287 kV auto-transformer installation	Planned	500 kV AC	No	2025
Los Angeles Department of Water and Power	Upgrade McCullough – Victorville Transmission Line	Planned	500 kV AC	No	2028
Los Angeles Department of Water and Power	Upgrade Lugo-Victorville Line 1 & terminal equipment	Planned	500 kV AC	No	2027
Los Angeles Department of Water and Power	New Rosamond Station	Planned	230 kV	No	2025
Los Angeles Department of Water and Power	Apex-Crystal Transmission Line	Planned	500 kV AC	No	2027
Los Angeles Department of Water and Power	Re-conductor Rinaldi-Tarzana 230kV Line 1 & 2	Planned	230 kV	No	2025
Los Angeles Department of Water and Power	New Receiving Station X (LAX)	Planned	230 kV	No	2026
Los Angeles Department of Water and Power	Reconductor Barren Ridge - Haskell Canyon 230 kV Line 1	Planned	230 kV	No	2025
Los Angeles Department of Water and Power	McCullough-Victorville series cap upgrade	Planned	500 kV AC	No	2025
Los Angeles Department of Water and Power	Tarzana-Olympic 1A & 1B 138 kV conversion to 230 kV	Planned	230 kV	No	2026

Sponsor	Project Name	Development Status (as of February 2024)	Voltage	In 2022-23 Regional Transmission Plan?	In-Service Date
Los Angeles Department of Water and Power	Upgrade Scattergood Auto and Phase Shifting Transformer	Planned	230 kV	No	2026
Los Angeles Department of Water and Power	Upgrade Toluca-Hollywood Line 1 Underground Cable	Planned	230 kV	No	2027
Los Angeles Department of Water and Power	Upgrade Rinaldi - Airway Lines 1 and 2	Planned	230 kV	No	2029
Los Angeles Department of Water and Power	Clearance Mitigation Upgrade for Adelanto-Toluca Line 1	Planned	500 kV AC	No	2026
Los Angeles Department of Water and Power	Adelanto-Rinaldi Line 1 Clearance Mitigation	Planned	500 kV AC	No	2026
Los Angeles Department of Water and Power	Add voltage support in the LA Basin	Planned	138 kV	No	2025
Los Angeles Department of Water and Power	Upgrade Hollywood - Fairfax 138kV Series Reactor	Planned	138 kV	No	2027
Los Angeles Department of Water and Power	Upgrade Fairfax - Olympic 138kV Series Reactor	Planned	138 kV	No	2030
Los Angeles Department of Water and Power	Sylmar Bank E	Planned	230 kV	No	2026
Los Angeles Department of Water and Power	Sylmar Bank F	Planned	230 kV	No	2026
Los Angeles Department of Water and Power	Sylmar Bank G	Planned	230 kV	No	2028
Los Angeles Department of Water and Power	New IPP Synchronous Condensers (2 x 375 MVA and 1 spare 375 MVA)	Planned	345 kV	No	2026
Los Angeles Department of Water and Power	New Toluca - Atwater Line 2 and upgrade Toluca - Atwater Line 1	Planned	230 kV	No	2029

Sponsor	Project Name	Development Status (as of February 2024)	Voltage	In 2022-23 Regional Transmission Plan?	In-Service Date
Public Service Company of New Mexico	Quail Ranch Switching Station	Planned	345 kV	No	2023
Public Service Company of New Mexico	Hidden Mountain Switching Station	Planned	345 kV	No	2026
Salt River Project	Hassayampa - Pinal West 500kV #2	Planned	500 kV AC	No	2028
Salt River Project	Coolidge Expansion Project	Planned	500 kV AC	Yes	2026
Salt River Project	Browning 500/230 kV Transformer 3	Planned	500 kV AC	Yes	2024
Salt River Project	Browning 500/230 kV Transformer 4	Planned	500 kV AC	Yes	2025
Salt River Project	Reconductor Anderson - Kyrene 230 kV	Planned	230 kV	Yes	2028
Salt River Project	Reconductor Orme - Rudd 230 kV #1	Planned	230 kV	Yes	2024
Salt River Project	Reconductor Orme - Rudd 230 kV #2	Planned	230 kV	Yes	2024
Salt River Project	Laveen 500/230 kV Project 230 kV Lines	Planned	230 kV	No	2027
Salt River Project	Laveen 500/230 kV Project Substation Portion	Planned	230 kV	No	2027
Salt River Project	Rudd 500/230 kV Transformer #5	Planned	500 kV AC	No	2026
Salt River Project	Rudd 500/230 kV Transformer #6	Planned	500 kV AC	No	2029
Salt River Project	Duke 500/230 kV Transformer #2	Planned	500 kV AC	No	2028
Salt River Project	Reconductor Miami - Pinto Valley 115 kV	Planned	115 kV	No	2026
Salt River Project	Nate 230 kV	Planned	230 kV	No	2027
Salt River Project	Pinnacle Peak SRP - WAPA Series Reactors	Planned	230 kV	No	2026
Salt River Project	Henshaw - Knox Series Reactors	Planned	230 kV	No	2028
Salt River Project	Kyrene East - West Series Reactors	Planned	230 kV	No	2028
Salt River Project	Pinal Central 500/230 kV Transformer #3	Planned	500 kV AC	No	2024
Salt River Project	Pinal Central 500/230 kV Transformer #4	Planned	500 kV AC	No	2024
Salt River Project	Rudd 500/230 kV Transformer #6	Planned	500 kV AC	No	2029

Sponsor	Project Name	Development Status (as of February 2024)	Voltage	In 2022-23 Regional Transmission Plan?	In-Service Date
Tri-State Generation and Transmission Association	Frontier Reactor Addition	Planned	115 kV	Yes	2026
Tucson Electric Power	Grier 138/13.8 kV Substation	Planned	138 kV	No	2028
Tucson Electric Power	Lago Del Oro 138/13.8 kV Substation	Planned	138 kV	Yes	2031
Tucson Electric Power	Corona 138/13.8 kV Substation	Planned	138 kV	Yes	2033
Tucson Electric Power	Craycroft-Barril 138/13.8 kV Substation	Planned	138 kV	Yes	2031
Tucson Electric Power	Golden Valley 230kV Transmission Line	Planned	230 kV	Yes	2031
Tucson Electric Power	Hartt 138/13.8 kV Substation	Planned	138 kV	Yes	2028
Tucson Electric Power	Grier 138-kV Transmission Line	Planned	138 kV	No	2028
Tucson Electric Power	Rancho Vistoso - Lago Del Oro 138kV Line	Planned	138 kV	Yes	2032
Tucson Electric Power	Naranja 138/13.8 kV Substation	Planned	138 kV	Yes	2029
Tucson Electric Power	Vine 138/13.8 kV Substation (was UA North)	Planned	138 kV	Yes	2027
Tucson Electric Power	New 138kV line North Loop to Naranja to La Canada	Planned	138 kV	Yes	2029
Tucson Electric Power	Re-Conductor Vail to Kantor 138-kV Transmission Line, south of Nogales Tap	Planned	138 kV	No	2031
Tucson Electric Power	Kantor Capacitor Bank Addition	Planned	138 kV	No	2028
Tucson Electric Power	Sears Wilmot 138/13.8 kV Substation	Planned	138 kV	Yes	2031
Tucson Electric Power	Rio Rico 138kV Switchyard	Planned	138 kV	Yes	2027
Tucson Electric Power	Greenlee Capacitor Additions	Planned	345 kV	Yes	2025
Tucson Electric Power	Rio Rico Capacitor Bank Addition	Planned	138 kV	Yes	2027
Tucson Electric Power	Rillito 138kV Conversion to breaker-and-a-half substation	Planned	138 kV	Yes	2027
Tucson Electric Power	Orange Grove Capacitor Bank Addition	Planned	138 kV	Yes	2025
Tucson Electric Power	New 230kV Yard at Tortolita Substation	Planned	230 kV	Yes	2026

Sponsor	Project Name	Development Status (as of February 2024)	Voltage	In 2022-23 Regional Transmission Plan?	In-Service Date
Tucson Electric Power	New 230kV Yard at DMP Substation	Planned	230 kV	Yes	2026
Tucson Electric Power	New 230kV Yard at Vail Substation	Planned	230 kV	Yes	2027
Tucson Electric Power	Tortolita to DMP 230kV line	Planned	230 kV	Yes	2026
Tucson Electric Power	DMP to Vail 230kV line	Planned	230 kV	Yes	2027
Tucson Electric Power	Tortolita 500/230kV Transformers	Planned	500 kV AC	Yes	2026
Tucson Electric Power	DMP 230/138kV Transformers	Planned	230 kV	Yes	2026
Tucson Electric Power	Vail 345/230kV Transformers	Planned	345 kV	Yes	2027
Tucson Electric Power	Bopp-Donald 138/13.8kV Substation	Planned	138 kV	Yes	2031
Tucson Electric Power	Cottonwood to Bopp-Donald 138kV line	Planned	138 kV	Yes	2031
Tucson Electric Power	Bopp-Donald to Midvale 138kV line	Planned	138 kV	Yes	2032
Tucson Electric Power	TEPTDA 138kV Substation	Planned	138 kV	Yes	2032
Tucson Electric Power	Whetstone 138kV Substation	Planned	138 kV	Yes	2025
Tucson Electric Power	Harshaw 138kV Substation	Planned	138 kV	No	2027
Tucson Electric Power	Rio Rico - Harshaw 138kV Transmission Line	Planned	138 kV	No	2027
Tucson Electric Power	Kipper 138kV Substation	Planned	138 kV	No	2026
Tucson Electric Power	Canoa Ranch to Kantor 138kV Transmission Line	Planned	138 kV	No	2028
Tucson Electric Power	Gateway 138kV Substation	Planned	138 kV	No	2030
Tucson Electric Power	Kantor to Gateway 138kV Line	Planned	138 kV	No	2030
Tucson Electric Power	Gateway to Valencia 138kV Transmission Line	Planned	138 kV	No	2030
Tucson Electric Power	Port 138kV Substation	Planned	138 kV	No	2029
Tucson Electric Power	Aerospace Research Campus Transmission Project	Planned	138 kV	No	2026
Western Area Power Administration - DSW	Bouse – Kofa	Planned	161 kV	Yes	2025
Western Area Power Administration - DSW	Parker – Blythe	Planned	161 kV	Yes	2027

Sponsor	Project Name	Development Status (as of February 2024)	Voltage	In 2022-23 Regional Transmission Plan?	In-Service Date
Western Area Power Administration - DSW	Tucson - Oracle	Planned	115 kV	No	2026
Western Area Power Administration - DSW	Bouse upgrade	Planned	230 kV	No	2027
Western Area Power Administration - DSW	Pinal Central - ED5 Transmission Line	Planned	230 kV	No	2025
El Paso Electric Company	Rio Grande-Sunset 69 kV Lines (5500/5600) (Rebuild, Reconductor)	Planned	Below 115 kV	No	2024
El Paso Electric Company	Clint-Valley 69 kV Line (Rebuild, Reconductor)	Planned	Below 115 kV	No	2024
El Paso Electric Company	Lane-Americas 69 kV Line (Reconductor)	Planned	Below 115 kV	No	2024
El Paso Electric Company	Rio Bosque-Ascarate 69 kV Line (Reconductor)	Planned	Below 115 kV	No	2024
El Paso Electric Company	Sparks-Felipe 69 kV Line (Rebuild, Reconductor)	Planned	Below 115 kV	No	2024
El Paso Electric Company	Hawkins Substation 69 kV (New) and Line Reconfiguration	Planned	Below 115 kV	No	2025
El Paso Electric Company	Americas-Passmore 69 kV Line (Reconductor)	Planned	Below 115 kV	No	2026
El Paso Electric Company	Passmore Substation (New) and Related 69 kV Line Reconductor and Reconfiguration	Planned	Below 115 kV	No	2026
Imperial Irrigation District	Grapefruit Switching Station Upgrade	Planned	Below 115 kV	No	2025-26
Imperial Irrigation District	92kV “R” Line Network Upgrades	Planned	Below 115 kV	Yes	2025

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Sponsor	Project Name	Development Status (as of February 2024)	Voltage	In 2022-23 Regional Transmission Plan?	In-Service Date
Black Hills Energy	BHCT-G29 Substation	Planned	115 kV	No	2025
Black Hills Energy	Skala - Cañon City 115 kV Rebuild	Planned	115 kV	No	2024
Black Hills Energy	Cañon City - Hogback 115 kV Rebuild	Planned	115 kV	No	2024
Black Hills Energy	Hogback - Cañon West 115 kV Rebuild	Planned	115 kV	No	2024
Black Hills Energy	West Station - Portland 115 kV Rebuild	Planned	115 kV	No	2025
Cheyenne Light Fuel and Power	Orchard Valley 115 kV Substation	Planned	115 kV	Yes	2024
Cheyenne Light Fuel and Power	Allison Draw 115 kV Substation	Planned	115 kV	Yes	2024
Cheyenne Light Fuel and Power	Bison - Orchard Valley 115 kV Line	Planned	115 kV	Yes	2024
Cheyenne Light Fuel and Power	Orchard Valley - King Ranch 115 kV Line	Planned	115 kV	Yes	2024
Cheyenne Light Fuel and Power	Bison - West Cheyenne 115 kV Line	Planned	115 kV	Yes	2024
Cheyenne Light Fuel and Power	Happy Jack - North Range #2 115 kV Line	Planned	115 kV	No	2024
Cheyenne Light Fuel and Power	Allison Draw - Campstool 115 kV Line	Planned	115 kV	Yes	2024
Cheyenne Light Fuel and Power	Allison Draw - CPGS 115 kV Line	Planned	115 kV	Yes	2024
Cheyenne Light Fuel and Power	Bluffs 230 kV Substation	Planned	230 kV	Yes	2026

Sponsor	Project Name	Development Status (as of February 2024)	Voltage	In 2022-23 Regional Transmission Plan?	In-Service Date
Cheyenne Light Fuel and Power	Sweetgrass 230 kV Substation	Planned	230 kV	Yes	2026
Cheyenne Light Fuel and Power	Sweetgrass - Bluffs 230 kV Line	Planned	230 kV	Yes	2026
Cheyenne Light Fuel and Power	West Cheyenne 230 kV Substation	Planned	230 kV	Yes	2026
Cheyenne Light Fuel and Power	West Cheyenne - Sweetgrass 230 kV Line	Planned	230 kV	Yes	2026
Cheyenne Light Fuel and Power	West Cheyenne - Windstar 230 kV Line	Planned	230 kV	Yes	2026
Cheyenne Light Fuel and Power	Wallick 115 kV Substation	Planned	115 kV	No	2025
Cheyenne Light Fuel and Power	Sweetgrass - Bison 115 kV #3 & #4	Planned	115 kV	No	2025
Colorado Springs Utility	Flying Horse Flow Mitigation	Planned	115 kV	Yes	2024
Colorado Springs Utility	South System Improvement - Midway to Kelker 230kV Line	Planned	230 kV	No	2027
Colorado Springs Utility	Central System Improvement - Kelker Substation Rebuild - New Kelker-Southplant 115kV Line	Planned	115 kV	Yes	2026
Colorado Springs Utility	Flying Horse Power Transformer	Planned	115 kV	Yes	2026
Colorado Springs Utility	Claremont Transformer	Planned	230 kV	Yes	2026
Colorado Springs Utility	Horizon Transformer	Planned	230 kV	No	2026
Colorado Springs Utility	Central Bluffs Substation	Planned	115 kV	No	2026
Colorado Springs Utility	Kelker-Central Bluff Line Uprate	Planned	115 kV	No	2027
Colorado Springs Utility	Kelker-Rock Island Line Uprate	Planned	115 kV	No	2027
Colorado Springs Utility	North Plant-Central Bluff Line Uprate	Planned	115 kV	No	2026

Sponsor	Project Name	Development Status (as of February 2024)	Voltage	In 2022-23 Regional Transmission Plan?	In-Service Date
Colorado Springs Utility	Cottonwood-Kettle Creek Line Uprate	Planned	115 kV	No	2027
Platte River Power Authority	Timberline 230/115kV Transformer T3 Replacement	Planned	230 kV	Yes	2024
Platte River Power Authority	Longs Peak 230/115kV T1 Transformer Replacement	Planned	230 kV	Yes	2025
Platte River Power Authority	Drake - Timberline 115kV Line Rebuild	Planned	115 kV	Yes	2025
Public Service Company of Colorado/ Xcel Energy	Gilman-Avon 115 kV Transmission Line	Planned	115 kV	Yes	2027
Public Service Company of Colorado/ Xcel Energy	Colorado's Power Pathway	Planned	345 kV	Yes	2027
Public Service Company of Colorado/ Xcel Energy	Stagecoach Switching Station	Planned	230 kV	Yes	2024
Public Service Company of Colorado/ Xcel Energy	Daniels Park to Prairie Reconductor 230kV	Planned	230 kV	Yes	2026
Public Service Company of Colorado/ Xcel Energy	Midway Transformer Upgrade	Planned	230 kV	Yes	2023
Public Service Company of Colorado/ Xcel Energy	Metro Water Recovery Trans Service, Sub	Planned	115 kV	No	2024
Public Service Company of Colorado/ Xcel Energy	Kestrel Substation	Planned	230 kV	No	2024
Public Service Company of Colorado/ Xcel Energy	Poder (Formerly Stock Show) Distribution Substation	Planned	115 kV	No	2026
Public Service Company of Colorado/ Xcel Energy	Sandstone Switching Station	Planned	345 kV	No	2027

Sponsor	Project Name	Development Status (as of February 2024)	Voltage	In 2022-23 Regional Transmission Plan?	In-Service Date
Tri-State Generation and Transmission Association	Rolling Meadows Substation	Planned	115 kV	Yes	2026
Tri-State Generation and Transmission Association	Milk Creek Switchyard on Craig-Meeker 345kV line	Planned	345 kV	Yes	2024
Tri-State Generation and Transmission Association	Slater Double Circuit Project	Planned	115 kV	Yes	2025
Tri-State Generation and Transmission Association	Boone - Huckleberry 230 kV	Planned	230 kV	Yes	2026
Tri-State Generation and Transmission Association	Badger Creek - Big Sandy 230 kV	Planned	230 kV	Yes	2028
Tri-State Generation and Transmission Association	Big Sandy - Burlington 230 kV Uprate	Planned	230 kV	Yes	2028
Tri-State Generation and Transmission Association	Archer - Stegall Sectionalization Project	Planned	115 kV	Yes	2024
Tri-State Generation and Transmission Association	Crosspoint Substation	Planned	230 kV	No	2025
Tri-State Generation and Transmission Association	Sulfur Creek Tap	Planned	138 kV	No	2026
Tri-State Generation and Transmission Association	Breaker Addition at Sidney Substation	Planned	115 kV	No	2024
Tri-State Generation and Transmission Association	Breaker Addition at Garnet Mesa	Planned	115 kV	No	2024
Tri-State Generation and Transmission Association	Breaker Addition at Hesperus Substation	Planned	115 kV	No	2024
Western Area Power Administration - RMR	Sand Creek Tap	Planned	115 kV	Yes	2025

Sponsor	Project Name	Development Status (as of February 2024)	Voltage	In 2022-23 Regional Transmission Plan?	In-Service Date
Western Area Power Administration - RMR	Stegall Bus Sectionalization	Planned	230 kV	Yes	2025
Western Area Power Administration - RMR	Blue Mesa	Planned	115 kV	Yes	2026
Western Area Power Administration - RMR	Glendo Podolak upgrade	Planned	115 kV	Yes	2024
Western Area Power Administration - RMR	Brush KY1A	Planned	115 kV	Yes	2025
Western Area Power Administration - RMR	Weld KV1A	Planned	230 kV	Yes	2023
Western Area Power Administration - RMR	Wiggins KY1A	Planned	115 kV	Yes	2025
Western Area Power Administration - RMR	Weld Substation Upgrade - 230kV Breaker and a Half	Planned	230 kV	No	2032
Western Area Power Administration - RMR	Lyman 5-Breaker ring bus (34.5kv) and new control building	Planned	115 kV	No	2032
Western Area Power Administration - RMR	Nunn KY1A Replacement	Planned	115 kV	No	2033
Western Area Power Administration - RMR	Yellowtail Phase-2, replace KV2A, 13.8kv CB 128, 528	Planned	230 kV	No	2030

SSPG Base Transmission Plan Projects for 2024-25 Regional Planning Cycle

Sponsor	Project Name	Development Status (as of February 2024)	Voltage	In 2022-23 Regional Transmission Plan?	In-Service Date
Sacramento Municipal Utility District	Coyote Creek 230 kV Switching Station	Planned	230 kV	No	2027
Sacramento Municipal Utility District	El Rio 230 kV Substation Conversion	Planned	230 kV	No	2026
Sacramento Municipal Utility District	El Rio 230/115 kV Transformer	Planned	230 kV	No	2026
Sacramento Municipal Utility District	Station J 115 kV Substation	Planned	115 kV	No	2030
Sacramento Municipal Utility District	Country Acres 230 kV Switching Station	Planned	230 kV	No	2026

ITD Base Transmission Plan Projects for 2024-25 Regional Planning Cycle

Sponsor	Project Name	Development Status (as of February 2024)	Voltage	In 2022-23 Regional Transmission Plan?	In-Service Date
SunZia Transmission, LLC	SunZia Transmission Project	Planned	500 kV DC	No	2025
NGIV2, LLC	North Gila – Imperial Valley #2	Planned	500 kV	No	2029

Appendix C – Other Regional Planning Process Activities

The PMC will identify transmission developers eligible to utilize cost allocation developed in the Regional Planning Process using the Transmission Developer Qualification Criteria, which are outlined in the Transmission Developer Qualification Application posted on the WestConnect website. Transmission developers seeking eligibility for potential designation as the entity eligible to use the regional cost allocation for a transmission project selected in the Regional Plan for purposes of cost allocation must submit to the PMC information as outlined in the Transmission Developer Qualification Application. The submittal window for this information as part of the 2024-25 planning cycle will be determined and announced by the PMC.

Once projects have been selected for inclusion in the Regional Plan, WestConnect will select an eligible transmission developer (as determined by the Transmission Developer Qualification Criteria mentioned above) to utilize the cost allocation developed for each project selected for the purposes of regional cost allocation.

For details on the developer selection process, refer to the WestConnect BPM or the member tariffs, which are posted on the Open Access Same-Time Information System (OASIS) website – links below.

WestConnect Enrolled TOLSO Member	OASIS Link
Arizona Public Service Company	http://www.oasis.oati.com/azps/index.html
Basin Electric Power Cooperative	http://www.oatioasis.com/bepw/index.html
Black Hills Power, Inc.	http://www.oatioasis.com/BHBE/index.html
Black Hills Colorado Electric Utility Company, LP	http://www.oatioasis.com/bhct/index.html
Cheyenne Light Fuel & Power Company	http://www.oatioasis.com/CLPT/index.html
Deseret Generation and Transmission	http://www.oasis.oati.com/DGT/index.html
El Paso Electric Company	http://www.oatioasis.com/epe/index.html
Public Service Company of New Mexico	http://www.oatioasis.com/pnm/index.html
Tri-State Generation and Transmission	https://www.oasis.oati.com/tsgt/index.html
Tucson Electric Power Company	http://www.oatioasis.com/tepc/index.html
UNS Electric, Inc.	http://www.oatioasis.com/UNST/index.html
Xcel Energy – Public Service Company of Colorado	http://www.oasis.oati.com/psco/index.html