ITP Evaluation Process Plan

TransWest Express Project

June 14, 2016

The goal of the coordinated Interregional Transmission Project (ITP) evaluation process is to achieve consistent planning assumptions and technical data of an ITP to be used in the individual regional evaluations of an ITP. The joint evaluation of an ITP is considered to be the joint coordination of the regional planning processes that evaluate the ITP. The purpose of this document is to provide a common framework, coordinated by the Western Planning Regions, to provide basic descriptions, major assumptions, milestones, and key participants in the ITP evaluation process.

The information that follows is specific to the ITP listed in the ITP Submittal Summary below. An ITP Evaluation Process Plan will be developed for each ITP that has been properly submitted and accepted into the regional process of the Planning Region to which it was submitted.

ITP SUBMITTAL SUMMARY

Project Submitted To:	California Independent System Operator (California ISO), WestConnect, Northern Tier Transmission Group (NTTG)
Relevant Planning Regions:	California ISO, WestConnect, NTTG
Cost Allocation Requested From:	California ISO, WestConnect

The Relevant Planning Regions identified above developed and have agreed to the ITP Evaluation Process Plan.

ITP SUMMARY

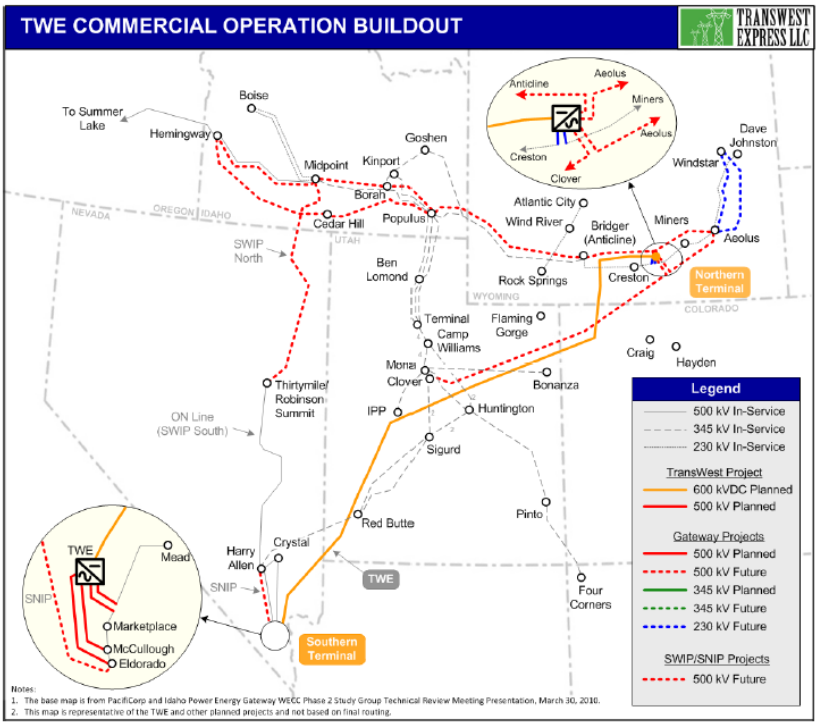
The TransWest Express Transmission Project (TWE Project) is a proposed 730-mile, phased 1,500/3,000 MW, ±600 kV, bi-directional, two-terminal, high voltage direct current (HVDC) transmission system with terminals in south-central Wyoming and southeastern Nevada.

The TWE Project northern terminal will be interconnected at 230 kV to the existing PacifiCorp 230 kV transmission line between the Platte and Latham substations in the NTTG planning region and to the 3,000 MW Chokecherry and Sierra Madre Wind Energy Project. The TWE Project design provides for connecting the northern terminal to the existing 230 kV Western Area Power Administration system in the WestConnect Planning Region near the Miracle Mile substation, and connecting with the planned PacifiCorp/Idaho Power Gateway West Project and/or the planned PacifiCorp Gateway South Project. Both of these 500 kV projects are currently routed adjacent to the TWE Project northern terminal.

The TWE Project southern terminal will be interconnected to the 500 kV Eldorado substation in the California ISO Planning Region. It also will be interconnected to the 500 kV McCullough substation and the 500 kV Mead to Marketplace transmission line in the WestConnect Planning Region.

The environmental analysis for the TWE Project is being jointly led by the U.S. Department of Interior's Bureau of Land Management (BLM) and the U.S. Department of Energy's Western Area Power Administration (Western). The BLM and Western published the Final Environmental Impact Statement (FEIS) for the TWE Project on May 1, 2015. The Agency Preferred Route as identified in the FEIS is shown in Figure 1. Regional planning entities should consider the Agency Preferred Route as the proposed route for the TWE Project. Although the federal agencies could revise the Agency Preferred Route within their respective Records of Decisions that are scheduled for publication in 2016, it is unlikely. If the route is revised from the Agency Preferred Route, however, TransWest will notify the planning regions.

Figure 1: TWE Project Commercial Operation Buildout System Map
(Source: TWE ITP Submittal Attachment)



TransWest has developed and preserved several design options that can be considered by the regional planning entities as alternatives to the TWE Project as proposed[1].

These Design Options include:

- Building a third terminal at the Intermountain Power Plant near Delta, Utah, to connect with the 345 kV substation that is both interconnected to the Utah grid and to the 2,400 MW HVDC Southern Transmission System that connects central Utah to the Adelanto substation near Los Angeles.

[1] The Relevant Planning Regions will coordinate their study of the TWE Project per the primary configuration that was submitted.

- Building 500 kV AC technology in lieu of HVDC technology in the segment from Wyoming to Utah and/or the segment from Utah to Nevada.

- Building the initial phase capacity above 1,500 MW up to 3,000 MW.

ITP EVALUATION BY RELEVANT PLANNING REGIONS

The California ISO has been identified as the Planning Region that will lead the coordination efforts with the other Planning Regions involved in the evaluation process. In this capacity, the California ISO will organize and facilitate interregional coordination meetings and track action items and outcomes of those meetings. For information regarding the ITP evaluation within each Relevant Planning Region's planning process, please contact that Planning Region directly via the contacts identified in this document.

Given that the joint evaluation of an ITP is considered to be the joint coordination of the regional planning processes that evaluate the ITP, the following describes how the ITP fits into each Relevant Planning Region's process. This information is intended to serve only as a brief summary of each Relevant Planning Region's process for evaluating an ITP. Please see each Planning Region's most recent study plan and/or Business Practice Manual for more details regarding its overall regional transmission planning process.

California ISO

The objective of the TWE Project is to provide needed transmission capacity between the Desert Southwest and California regions, represented by the California ISO and WestConnect, and the Rocky Mountain region, represented by NTTG and WestConnect. This additional transmission capacity will facilitate access between diverse renewable resources and diverse utility load profiles. The TWE Project will facilitate access by the Desert Southwest/California market to Wyoming's renewable wind resources. This direct interconnection will result in lowering the cost of RPS compliance for the Desert Southwest while simultaneously providing the solar resources in the Desert Southwest with access to Rocky Mountain regional markets, such as the Denver and Salt Lake City metro areas.

The stated purpose of the TWE Project is to provide certain regional benefits to the California ISO by providing access to Wyoming wind and increasing transmission capacity between PacifiCorp and the California ISO which would enhance the value of the existing Energy Imbalance Market and in further integrating their grids, were that to occur. However, it should be noted that while the TWE Project has identified its need as being tied to procurement of out-of-state renewable resources, California state policy has not yet confirmed the need for resources. However, as the California ISO is interested in working to explore the benefits interregional transmission may bring in accessing out-of-state renewable resources. The ISO intends to study this project in the context of our 50% RPS special studies in the 2016-2017 transmission planning process and coordinate with WestConnect and NTTG in that regard. To this end, the ISO considers the TWE Project "properly submitted" and accepted into our regional planning process.

The objective of the California ISO analysis will be to assess, at a "high" or "cursory" level, the TWE Project within the framework of California's 50% renewables portfolio. Using Wyoming wind portfolio information provided by the California Public Utilities Commission (CPUC), the assessment will attempt to capture the following with and without the TWE Project:

- transmission capability to deliver Wyoming wind resources to California;
- identify renewable curtailments;
- coordinate topology and resource modeling with WestConnect and NTTG;
- jointly working with WestConnect and NTTG, consider analysis results and as appropriate, develop recommendations and input refinements should further analysis be conducted in future study cycles

The following "portfolios" will be considered the California ISO analysis:

- FCDS Portfolio: California ISO 50% RPS renewable portfolio with ~2,000 MW Wyoming resources - Full Capacity Deliverability Status (FCDS)[2]
- EO California ISO 50% RPS renewable portfolio with ~2,000 MW Wyoming resources - FCDS + Energy Only Deliverability Status (EO)

The California ISO will develop the detailed modeling information for the GridView and GE PSLF computer programs and exchange that information with WestConnect and NTTG commensurate with existing data confidentiality requirements.

Northern Tier Transmission Group

The NTTG Regional Transmission Plan evaluates whether transmission needs within the NTTG Footprint may be satisfied on a regional and interregional basis more efficiently or cost effectively than through local planning processes. While the NTTG Regional Transmission Plan is not a construction plan, it provides valuable regional insight and information for all stakeholders, including developers, to consider and use in their respective decision-making processes.

The first step in developing NTTG's 2016-2017 Regional Transmission Plan is to identify the Initial Regional Plan that includes NTTG's Funding Transmission Providers' local transmission plans and the uncommitted projects in NTTG 2014-2015 Regional Transmission Plan. NTTG then uses Change Cases to evaluate regional and interregional transmission projects that may produce a more efficient or cost effective regional transmission plan for NTTG's footprint. A Change Case is a scenario where one or more of the uncommitted transmission project(s) in the Initial Regional Plan will be added to, defer, or replace one or more of the other non-committed project(s) in the Initial Regional Plan.

The Initial Regional Plan and Change cases will be evaluated using power flow and dynamic analysis techniques to determine if the modeled transmission system topology meets the system reliability performance requirements and transmission needs. If the Change Case fails to meet these minimum reliability requirements, it will either be set aside as unacceptable or modified by the addition of another uncommitted project to ensure transmission reliability. The number of Change Cases will be determined through the technical planning process so as to carefully examine the reliability of and need for the non-committed regional and interregional project to meet the region's transmission needs. The set of uncommitted projects, either from the Initial Regional Plan or a Change Case, that delineate the more efficient or cost-effective regional transmission plan, as measured economically by changes in capital

[2] California ISO FCDS entitles a Generating Facility to a Net Qualifying Capacity amount that could be as large as its Qualifying Capacity and may be less pursuant to the assessment of its Net Qualifying Capacity by the CAISO. FCDS provides a reasonable assurance that a generator's Qualifying Capacity can be delivered to load and maintain reliable system performance during contingency conditions simultaneously with all other dependable generation in the same general area at peak load conditions.

related costs, losses and reserve margin, and adjusted by their effects on neighboring regions will be selected into NTTG's Regional Transmission Plan. A more detailed discussion of NTTG's study process can be found in NTTG's Biennial Study Plan posted on NTTG's website.

NTTG will coordinate its ITP planning assumptions and data with the other Relevant Planning Regions. It should also be noted that the sponsors of all three interregional projects submitted into NTTG's regional planning process identified, as a project objective, the ability to deliver renewable generation from NTTG's planning region to the California ISO planning region in response to California's Renewable Portfolio Standards requirements. NTTG and the California ISO will coordinate to ensure appropriate resources in California are dispatched down or turned off to accommodate renewable resource from the NTTG planning region.

WestConnect

WestConnect's 2016-17 Regional Study Plan was approved by its Planning Management Committee (PMC) in March of 2016[3]. The study plan describes the system assessments WestConnect will use to determine if there are any regional reliability, economic, or public policy-driven transmission needs. The models for these assessments are being built and vetted during Q2 and Q3 of 2016. If regional needs are identified during Q4 of 2016, WestConnect will solicit alternatives (transmission or non-transmission alternatives (NTAs)) from WestConnect members and stakeholders to determine if they have the potential to meet the identified regional needs. If an ITP proponent desires to have their project evaluated as a solution to any identified regional need, they must re-submit their project during this solicitation period (Q5) and complete any outstanding submittal requirements. This could include multiple project alternatives submitted as multiple submittals from a single Q1 ITP submittal. In late-Q5 and Q6, WestConnect will evaluate all properly submitted alternatives to determine whether any meet the identified regional needs, and will determine which alternatives provide the more efficient or cost-effective solution. The more efficient or cost-effective regional projects will be selected and identified in the WestConnect Regional Transmission Plan. Any regional or interregional alternatives that were submitted for the purposes of cost allocation and selected into the Regional Transmission Plan may go through the cost allocation process (if eligible)[4].

WestConnect regional assessments are performed using Base Cases and Scenarios, which provide a robust platform that is used to identify regional transmission needs and emerging regional opportunities, if any. Base Cases are intended to represent "business as usual," "current trends," or the "expected future", while Scenarios complement the Base Cases by looking at alternate but plausible futures. In the event regional opportunities are observed in the assessments of the Scenario studies, these opportunities do not constitute a "regional need". Specifically, these regional opportunities will be informational in nature and not result in changes to the WestConnect Regional Transmission Plan and will not result in Order 1000 regional cost allocation.[5] Given that the submitted ITPs submitted to WestConnect, such as the TWE Project, are aligned closely with the Scenarios WestConnect plans to evaluate in this cycle, the PMC will consider this factor when making its determination on how to collect and evaluate alternatives that may address opportunities that may arise from the Scenario assessments. WestConnect recognizes, in the context of interregional transmission project analysis, that other regions may identify regional needs that

[3] http://www.westconnect.com/filestorage/03_16_16_wc_2016_17_study_plan.pdf

[4] Please see the WestConnect Business Practice Manual for more information on cost allocation eligibility

[5] WestConnect has not yet addressed how alternatives (regional or interregional) to meet regional opportunities will be collected or evaluated. This decision will be made by the PMC when and if regional opportunities are identified

may align with opportunities observed in the WestConnect planning region. Current expectations are that the WestConnect Scenario analyses and observed opportunities will advance coordinated interregional planning activities.

TWE Project representatives and other stakeholders are encouraged to participate in the development of the Base Cases and Scenarios to be studied in WestConnect's 2016-17 Planning Cycle. These studies, as outlined in Table 1, will form the basis for any regional needs or opportunities that ultimately may lead to ITP project evaluations in 2017.

Table 1: WestConnect 2016-17 Transmission Assessment Summary

10-Year Base Cases (2026)	10-Year Scenarios (2026)
Heavy Summer (reliability) Light Spring (reliability) Base Case (economic)	Clean Power Plan: Utility Plans Case (economic) Clean Power Plan: Utility Plans Case (reliability) Clean Power Plan: Heavy RE/EE (economic) Clean Power Plan: Heavy RE/EE (reliability) Clean Power Plan: Market Compliance Case (economic) Regional Renewables (economic)
May result in the identification of regional needs, requires solicitation for alternatives to satisfy needs	**Informational studies that may result in the identification of regional opportunities, alternative collection and evaluation is optional and is not subject to regional cost allocation**

DATA AND STUDY METHODOLOGIES

The coordinated ITP evaluation process strives for consistent planning assumptions and technical data among the Planning Regions evaluating the ITP. The Relevant Planning Regions have summarized, in Table 2, the types of studies that will be conducted that are relevant to the TWE Project evaluation in each Planning Region. Methodologies for coordinating planning assumptions across the Relevant Planning Region processes are also described.

Table 2: Relevant Planning Region Study Summary Matrix

Planning Study	California ISO	NTTG	WestConnect
Economic/Production Cost Model	Using the California ISO PCM Base Case, based on the WECC/TEPPC 2026 Common Case, GridView will be used to perform production cost simulation. All model information will be shared with WestConnect and NTTG.	Using the NTTG PCM Base Case, based on the WECC/TEPPC 2026 Common Case, GridView will be used to conduct PCM analysis to determine those hours in the study year when load and resource conditions are likely to	Regional Economic Assessment will be performed on WestConnect 2026 Base Case PCM (based on WECC/TEPPC 2026 Common Case) and several Scenarios[6]

[6] ITP Project evaluation is subject to a number of factors, the first and most critical being the identification of regional needs and/or opportunities as a part of the 2016 Base Case and Scenario Case transmission assessments.

		stress the transmission system within the NTTG Footprint	
Reliability/Power Flow Assessment	The GE PSLF will be used to perform steady state and as needed, transient analysis. The WECC 2025 HS1 and 2026 LSP1 will be modified as needed to accurately model the California network and resources that reflects the ISO's finalized 2015-2016 transmission plan. The TWE Project will be added to that model. All model information will be shared with WestConnect and NTTG.	The selected stressed hours will be transferred from GridView to the PowerWorld powerflow model to conduct reliability analysis	Regional Reliability Assessment will be performed on 2026 Heavy Summer and Light Spring cases, as well as several Scenarios [5]

Note that the TWE Project evaluation will be conducted by each Relevant Planning Region in accordance with its approved Order 1000 Regional Planning Process. This includes study methodologies and benefits identified in planning studies.

Data Coordination

The Relevant Planning Regions will strive to coordinate major planning assumptions through the following procedures.

Economic/Production Cost Model

The Relevant Planning Regions intend to use the WECC/TEPPC 2026 Common Case (2026 Common Case) as the starting point data set for regional economic planning studies conducted in 2016 and 2017 (as applicable). Each Planning Region intends to update the 2026 Common Case with their most recent and relevant regional planning assumptions to reflect its starting point transmission topology and generation data. The Planning Regions intend to provide change cases reflecting these updates to each other and WECC in late Q3, 2016.[7]

As an example, the California ISO will update the 2026 Common Case to reflect their most recent Transmission Plan.[8] NTTG will ensure that its prior Regional Transmission Plan[9] is reflected. WestConnect

[7] This schedule is dependent on the 2026 Common Case being provided by WECC no later than the end of Q2, 2016
[8] California ISO 2015-2016 Transmission Plan
[9] NTTG 2014-2015 Regional Transmission Plan

will represent their current Base Transmission Plan,[10] and ColumbiaGrid will provide major updates to the 2026 Common Case based on the information from the latest Biennial Plan[11] to other Planning Regions.

Through this coordination of planning data and assumptions, the Relevant Regions will strive to build a consistent platform of planning assumptions for Economic/Production Cost Model evaluations of the ITP.

Reliability/Power Flow Assessment

Since each Planning Region reflects characteristics and a planning focus that is unique, different power flow models are generally needed to appropriately reflect each region's system and key assumptions. As such, each planning region will develop its models and data that accurately reflect their Planning Region, but will coordinate this information with the other Relevant Planning Regions. The identification of the starting WECC power flow cases ("seed cases" for the purpose of this evaluation plan), significant assumptions or changes a Planning Region may make to a seed base case are examples of information that will be considered by each Planning Region and coordinated with the other Planning Regions. As such, the inclusion or removal of major regional transmission projects will be coordinated through existing data coordination processes, but the season or hour of study and particular system operating conditions may vary by Planning Region based on its individual regional planning scope and study plan.

The following scenarios will be studied in both the Production Cost Model and the Power Flow Assessment.

1. Base case with EO Portfolio
2. Base case with FCDS Portfolio
3. Base case with EO Portfolio and the TWE Project
4. Base case with FCDS Portfolio and the TWE Project

Cost Assumptions

In order for each Relevant Planning Region to evaluate whether the TWE Project is a more efficient or cost-effective alternative within their regional planning process, it is necessary to coordinate ITP cost assumptions among the Relevant Planning Regions. For planning purposes, each Region's cost share of the TWE Project will be calculated based on its share of the calculated benefits provided to the Region by the TWE Project (as quantified per that Region's planning process). The project cost of the TWE Project, as provided in their ITP Submittal form, is shown in Table 3. TransWest has developed cost information for alternative configurations and can provide this data as requested.

Table 3: Project Sponsor Cost Information[12]

Project Configuration	Cost ($) (2015$)
Initial phase (1500 MW)	$2.4 billion
Full project (3000 MW)	$3.0 billion

[10] WestConnect 2016-2017 Base Transmission Plan

[11] ColumbiaGrid's update to the 2015 Biennial Transmission Plan

[12] This information is contingent upon verification by the Planning Regions and may be subject to change during the ITP evaluation process

After each Relevant Planning Region identifies their transmission needs and (as applicable) the benefits of the ITP, project costs for each Region to use in the determination of the more efficient or cost-effective alternatives for the region will be determined as follows:

Assumptions
Total Benefits ($) = California ISO Benefits ($) + NTTG Benefits ($) + WestConnect Benefits ($)
Project Cost ($) = Total capital cost of project, as agreed upon by Regions
Cost Calculations (for Planning Purposes)
California ISO Cost for Planning Purposes = [California ISO Benefits/Total Benefits] * Project Cost
NTTG Cost for Planning Purposes = [NTTG Benefits/Total Benefits] * Project Cost
WestConnect Cost for Planning Purposes = [WestConnect Benefits/Total Benefits] * Project Cost

Note that this information on cost assumptions applies to costs that will be used for *planning evaluation purposes.* These costs may be different than what is assumed for any relevant cost allocation procedures.

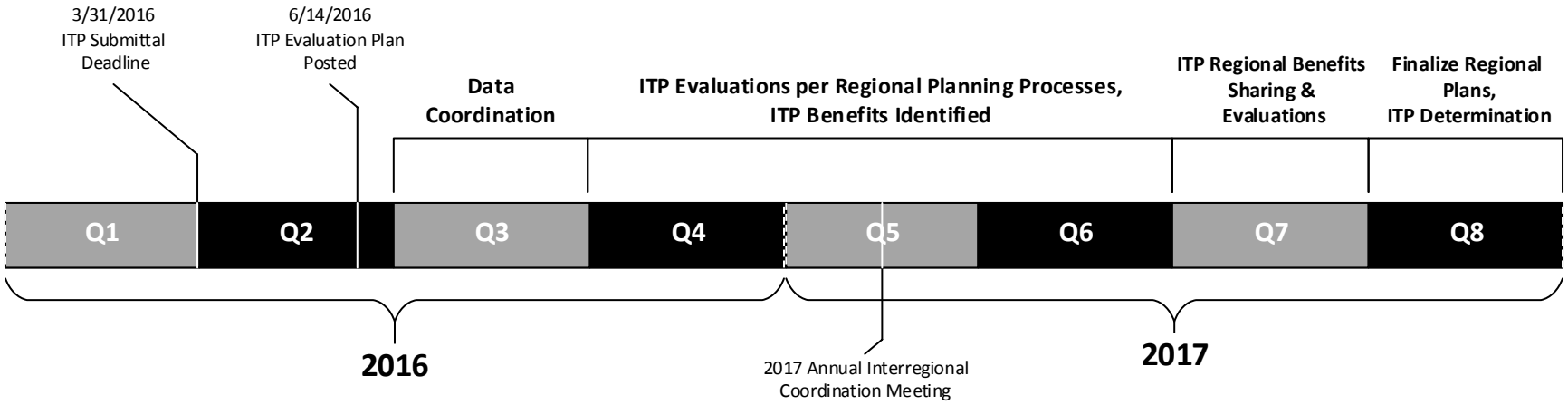
COST ALLOCATION

Interregional Cost Allocation does not apply for TWE Project for the 2016-2017 ITP cycle. Cost Allocation was not requested from NTTG but was requested from the California ISO and WestConnect. The California ISO intends to study this project in the context of its 50% special studies in the 2016-2017 transmission planning process where cost allocation will not apply. With WestConnect as the only Relevant Planning Region for which Cost Allocation *may* apply, Interregional Cost Allocation is not applicable this cycle.

SCHEDULE AND EVALUATION MILESTONES

The ITP will be evaluated in accordance with each Relevant Planning Region's regional transmission planning process during 2016 and (as applicable) 2017. The ITP Evaluation Timeline, shown in Figure 2, was created to identify and coordinate key milestones within each Relevant Planning Region's process. Note that in some instances, an individual Planning Region may achieve a milestone earlier than other Regions evaluating the ITP.

Figure 2: ITP Evaluation Timeline



Meetings among the Relevant Planning Regions will be coordinated and organized by the lead Planning Region per this schedule at key milestones such as during the initial phases of the ITP evaluations and during the sharing of ITP regional benefits.

CONTACT INFORMATION

For information regarding the ITP evaluation within each Relevant Planning Region's planning process, please contact that Planning Region directly.

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