



California ISO



ITP Evaluation Process Plan

Cross-Tie Transmission Project

June 14, 2018

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 ISO, Northern Tier Transmission Group (“NTTG”) and WestConnect
Relevant Planning Regions ¹ :	NTTG and WestConnect ²
Cost Allocation Requested From:	California ISO, NTTG and WestConnect

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

ITP SUMMARY

TransCanyon, LLC (TransCanyon) submitted the 213-mile Cross-Tie Transmission Project (Cross-Tie Project) for consideration as an Interregional Transmission Project. Cross-Tie is a proposed 1500 MW, 500 kV HVAC transmission project that will be constructed between central Utah and east-central Nevada (see Figure 1), connecting PacifiCorp’s proposed 500-kV Clover substation (in the NTTG planning region) with NV Energy’s

¹ With respect to an ITP, a Relevant Planning Region is a Planning Region that would directly interconnect electrically with the ITP, unless and until a Relevant Planning Region determines that the ITP will not meet any of its regional transmission needs, at which time it will no longer be considered a Relevant Planning Region.

² The California ISO has determined that it is not a Relevant Planning Region for the Cross-Tie Transmission Project.

existing 500 kV Robinson Summit substation (in the WestConnect planning region). The proposed project includes series compensation at both ends of the Cross-Tie transmission line. In addition, series compensation is needed on the existing Robinson Summit to Harry Allen 500-kV line along with phase shifting transformers at Robinson Summit 345-kV.

The project would be required to satisfy the requirements of the National Environmental Policy Act (NEPA) and the Bureau of Land Management (BLM). A significant portion of the routing of the line has been previously studied under the Southwest Intertie Project Environmental Impact Statement, which received federal approval in a Record of Decision published in 1994 but was not constructed. Further, the project would be subject to the state approval processes applicable for Nevada and Utah. In any event, as the project is anticipated to follow existing transmission line corridors, TransCanyon believes that the risk of failing to obtain necessary administrative approval is considered minimal to moderate. According to TransCanyon, the project is expected to be in-service by 12/31/2024.

Figure 1: Cross-Tie Project Overview
 {Subject to change based on Sponsor’s review } (Source: TransCanyon 2018 ITP Submittal Attachment)



ITP EVALUATION BY RELEVANT PLANNING REGIONS

WestConnect has been identified as the Planning Region that will lead the coordination efforts with the other Relevant Planning Regions identified for the ITP. In this capacity, WestConnect will organize and facilitate interregional coordination meetings and track action items and outcomes of those meetings. For information regarding the ITP evaluation conducted within each Relevant Planning Region’s planning process, please contact that Planning Region directly.

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.

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 2018-2019 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 2016-2017 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 projects to meet the regions 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 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 Region. It should also be noted that the Cross-Tie Project submitted into NTTG's regional planning process identified, as a project objective, the ability to deliver renewable generation from NTTG's planning region to support the California ISO's future RPS requirements. Coordination to ensure appropriate resources in California are dispatched down or turned off to accommodate renewable resource from the NTTG planning region has not yet been determined.

WestConnect

WestConnect's 2018-19 Regional Study Plan was approved by its Planning Management Committee (PMC) in March of 2018.³ 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 built and vetted during Q2 and Q3 of 2018. If regional needs are identified during Q4 of 2018, 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

³ <https://doc.westconnect.com/Documents.aspx?NID=18068&dl=1>
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outstanding submittal requirements. In late-Q5 and Q6 of the 2018-19 planning cycle, 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 as the more efficient or cost-effective alternative to an identified regional need will then be evaluated for eligibility for regional cost allocation, and subsequently, for interregional cost allocation.⁴

WestConnect regional needs assessments are performed using Base Cases as identified in the regional study plan. Base Cases are intended to represent “business as usual,” “current trends,” or the “expected future”. WestConnect may also conduct information-only scenario studies that look at alternate but plausible futures. In the event regional transmission issues are observed in the assessments of the scenario studies, these issues do not constitute a “regional need”, will not result in changes to the WestConnect Regional Transmission Plan and will not result in Order 1000 regional cost allocation. The WestConnect Planning Management Committee 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 Planning Subcommittee.

Cross-Tie Project representatives and other stakeholders are encouraged to participate in the development of the Base Cases to be studied in WestConnect’s 2018-19 Planning Cycle. These studies, as outlined in Figure 2, will form the basis for any regional needs that ultimately may lead to ITP project evaluations in 2019. Stakeholders are also encouraged to participate in the development of the scenarios identified in WestConnect’s 2018-19 Study Plan. These studies are also outlined in Figure 2.

Figure 2: WestConnect 2018-19 Transmission Assessment Summary

10-Year Base Cases (2028)	10-Year Scenarios (2028)
Heavy Summer (reliability) Light Spring (reliability) Base Case (economic)	Load Stress Study (reliability) CAISO Export Stress Study (reliability)
May result in the identification of regional needs, requires solicitation for alternatives to satisfy needs	Informational studies that will not result in the identification of regional needs. 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. Below, the Relevant Planning Regions have summarized the types of studies that will be conducted that are relevant to the Cross-Tie Project evaluation in each Planning Region. Methodologies for coordinating planning assumptions across the Relevant Planning Region

⁴ Please see the [WestConnect Business Practice Manual](#) for more information on cost allocation eligibility.
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processes are also described.

Figure 3: Relevant Planning Region Study Summary Matrix

Planning Study	NTTG	WestConnect
Economic/Production Cost Model	Using the NTTG PCM Base Case, based on the WECC 2028 ADS 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 stress the transmission system within the NTTG footprint	Regional Economic Assessment will be performed on WestConnect 2028 Base Case PCM (based on WECC 2028 Anchor Data Set ⁵)
Reliability/Power Flow Assessment	The selected stressed hours will be transferred from GridView to the PowerWorld power flow model to conduct reliability analysis	Regional Reliability Assessment will be performed on WestConnect 2028 Heavy Summer and Light Spring cases ⁶

Note that the Cross-Tie 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 2028 Anchor Data Set (ADS) as the starting point data set for regional economic planning studies conducted in 2018 and 2019 (as applicable). Each Planning Region intends to update the 2028 ADS with their most recent and relevant regional planning assumptions to reflect its starting point transmission topology and generation data. The Planning Regions will strive to coordinate major updates made to the 2028 ADS as part of their regional model development efforts in late Q3, 2018.⁷

As an example, the California ISO will update the 2028 ADS to reflect their most recent Transmission Plan.⁸

⁵ WestConnect TP Project evaluation is subject to a number of factors, the first and most critical being the identification of regional needs as a part of the 2018-19 Base Case transmission needs assessments.

⁶ Id

⁷ This schedule is dependent on the 2028 Anchor Data Set being provided by WECC no later than the end of Q2, 2018, and the sharing of planning data or assumptions will be subject to applicable confidentiality requirements in each Planning Region.

⁸ California ISO 2017-2018 Transmission Plan
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NTTG will ensure that its prior Regional Transmission Plan⁹ is reflected. WestConnect will represent their current Base Transmission Plan,¹⁰ and ColumbiaGrid will provide major updates to the 2028 ADS based on the information from the latest Biennial Plan¹¹ to other Planning Regions subject to each region’s applicable confidentiality requirements.

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 seek to coordinate this information with the other Relevant Planning Regions subject to applicable confidentiality requirements. The identification of the starting WECC power flow cases (“seed cases” for the purpose of this evaluation plan), and 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.

Cost Assumptions

In order for each Relevant Planning Region to evaluate whether the Cross-Tie 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 Relevant Planning Region’s cost share of the Cross-Tie Project will be calculated based on its share of the calculated benefits provided to the Region by the Cross-Tie Project (as quantified per that Region’s planning process). The project cost of the Cross-Tie Project, as provided in their ITP Submittal form, is provided below.

Figure 4: Cross-Tie Project Sponsor Cost Information¹²

Project Configuration	Cost (\$)
Full project cost estimate	\$667.0 million (2015 \$\$)

Following are key assumptions upon which this cost estimate is based that are worth noting to facilitate a comparison of costs to other projects being evaluated:

- Includes initial estimate of \$91.0 million for upgrades on the existing system at Robinson Summit substation and on the Robinson Summit to Harry Allen 500-kV transmission line, based on preliminary studies provided as a part of the project submission. The extent of these upgrades will need to be confirmed through additional technical studies and would most likely apply to other

⁹ NTTG 2016-2017 Regional Transmission Plan
¹⁰ WestConnect 2018-2019 Base Transmission Plan
¹¹ ColumbiaGrid Update to the 2017 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

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- projects looking to connect at Robinson Summit.
- Includes AFUDC and overheads of ~\$100.0 million (estimated at 17.5% of total costs) per the TEPPC cost calculator.

The following Table 5 provides a detailed breakdown of the total project cost submitted by TransCanyon for use by Planning Regions for their analysis and cost allocation.

Figure 5: Cross-Tie Project Sponsor Cost Breakdown

<u>Project Component Cost</u>	<u>Per Mile</u>	<u>Total</u>
Clover - Robinson Summit line	\$ 2,319,250.45	\$ 461,530,838.79
ROW Cost	\$ 19,964.14	\$ 3,972,864.00
Clover Substation	N/A	\$ 10,959,685.80
Robinson Summit	N/A	\$ 28,930,423.20
Substation Adjustments	N/A	\$ 62,000,000.00
AFUDC/Overhead @17.5%	\$ 501,215.01	\$ 99,741,787.84
All Costs	\$ 2,840,429.60	\$ 667,135,599.63

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 (\$) = NTTG Benefits (\$) + WestConnect Benefits (\$)
Project Cost (\$) = Total capital cost of project, as agreed upon by Regions

Cost Calculations (for Planning Purposes)
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 may apply for the Cross-Tie Project for the 2018-2019 cycle.

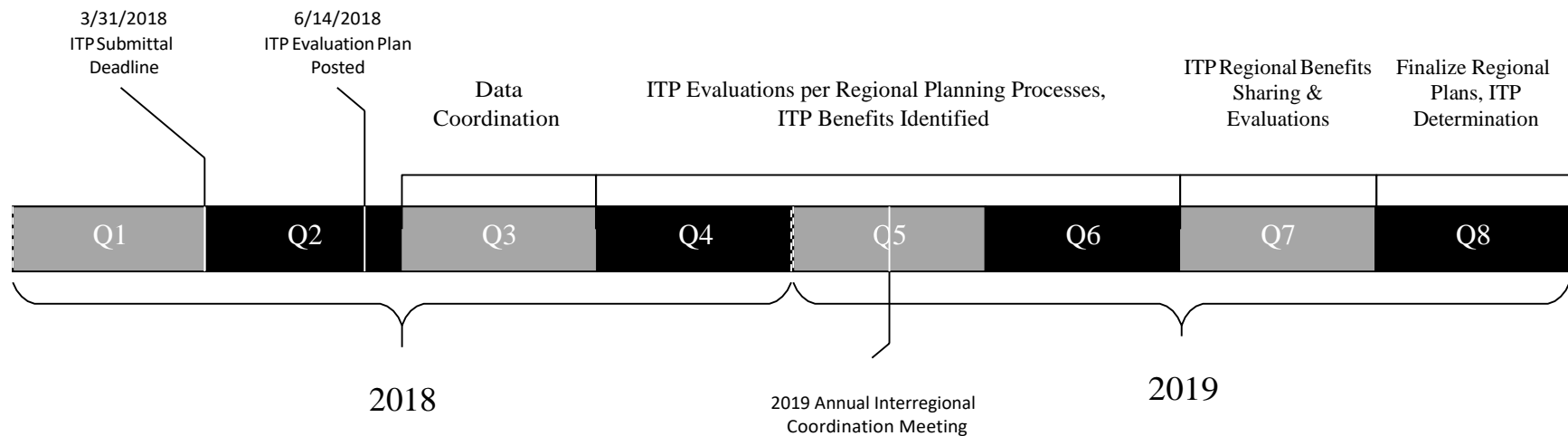
TransCanyon requested cost allocation from NTTG and from WestConnect, and met the necessary requirements within each respective Planning Region’s regional process to be considered eligible to request cost allocation. If both NTTG and WestConnect subsequently select the Cross-Tie project in their respective regional transmission plans for purposes of Interregional Cost Allocation, NTTG and WestConnect will individually apply their regional cost allocation methodology to the projected costs of

the Cross-Tie project assigned to each region as described in the previous section and in accordance with each region's regional cost allocation methodology. If only one of the two Relevant Planning Regions for the Cross-Tie Project select the project in its regional transmission plan for purposes of Interregional Cost Allocation, and the number of Relevant Planning Regions for the Cross-Tie project is reduced to one, the project will no longer be eligible for interregional cost allocation.

SCHEDULE AND EVALUATION MILESTONES

The ITP will be evaluated in accordance with each Relevant Planning Region’s regional transmission planning process during 2018 and (as applicable) 2019. The ITP Evaluation Timeline 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 6: 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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