

**California Transmission Planning Group (CTPG)
Technical Study Team Response to
June 2, 2011, Comments of
TransWest Express Transmission Project (TWE Project) on the
CTPG's Proposed 2011 Work Plan**

Comment:

The 2010 CTPG Statewide Transmission Plan identified a High Potential Southwest Corridor to facilitate renewable energy imports into southern California (slide 45 of May 19, 2011, presentation). However, the Southwest Corridor was not included on the list of 2011 Proposed Scenarios (slide 47). TWE assumes this was an oversight. It is absolutely imperative that the 2011 Work Plan include one or more scenarios with significant imports through the Southwest Corridor.

The WECC Transmission Expansion Policy Planning Committee (TEPPC) has completed its 2010 Study Program which included several scenarios in which 12,000 gWh/year of renewable energy resources were relocated from California to other states and/or provinces. Ten of these scenarios included major new transmission projects (3,000+ MW) to deliver the relocated resources back to California and eight of those scenarios showed the relocated resources being delivered through the Southwest Corridor.

Preliminary results from the 2010 TEPPC Study Program indicate savings of \$660 million/year for a scenario where 12,000 gWh or Wyoming wind resources are delivered to the Southwest Corridor on TWE. The TEPPC studies show smaller, but still substantial savings, can be obtained by importing 12,000 gWh or renewable energy from Montana or New Mexico delivered to the Southwest Corridor.¹

CTPG Technical Study Team Response:

As the CTPG explained during the May 19, 2011, stakeholder conference call, the scenarios listed on slide 47 were an initial proposal subject to input from stakeholders. The TWE Project's interest in a scenario that explores transmission upgrades within the CTPG's "high potential" Southwest Corridor is noted and will be considered by the CTPG Technical Study Team in its determination of the scenarios to be evaluated in Phase 2 of CTPG's 2011 study work.

¹ Figures in this paragraph are taken from TEPPC Interim Study Report, Draft, TEPPC 2010 Study Program Report of Updated 2019 Studies posted May 26, 2011.

<http://www.wecc.biz/committees/BOD/TEPPC/TAS/SWG/Shared%20Documents/Forms/AllItems.aspx?RootFolder=%2fcommittees%2fBOD%2fTEPPC%2fTAS%2fSWG%2fShared%20Documents%2f2010%20Study%20Cycle%2fStudy%20Results%20Report%2f2019%20Study%20Report&FolderCTID=&View=%7b9F236AF1%2dDE64%2d45EB%2d9B4A%2d735A0B494234%7d>

This report and the underlying assumptions continue to be reviewed by TEPPC and the Technical Analysis Subcommittee. Although the results may change as a result of this review process, recent information presented to TEPPC and TAS shows significant savings from the Wyoming wind portfolio cases under a broad range of assumptions about the quality of the Wyoming wind resource and the cost of transmission to deliver these resources to California.

The CTPG Technical Study Team advises stakeholders that it expects to undertake technical studies in connection with the CTPG’s 2011 work that would identify reliability criteria violations on transmission facilities that are either within California or that connect California to the Pacific Northwest, northwestern Nevada, central Nevada, southern Nevada, central Utah, or western Arizona. Other than for these facilities, the CTPG Technical Study Team does not expect to undertake technical studies to identify reliability criteria violations that may be associated with the addition of renewable resources. The CTPG’s resources and expertise permit a thorough examination of reliability impacts within California and adjacent areas, but are not currently well-suited to examining reliability impacts outside of these areas.

Accordingly, the CTPG Technical Study Team recommends that the project sponsors for proposed interregional transmission projects that are intended to support the development of renewable resources in regions *outside* of the regions that are physically connected to the facilities described above (*e.g.*, in regions such as Wyoming, New Mexico, eastern Arizona, *etc.*) contact the subregional transmission planning groups that typically evaluate transmission in the area of the proposed interregional transmission project. For example, the Colorado Coordinated Planning Group (CCPG), the Northern Tier Transmission Group (NTTG), WestConnect, and the Southwest Area Transmission (SWAT) transmission planning group typically evaluate proposed transmission projects in the Wyoming, Colorado, Utah, and southern Nevada areas. These regional organizations would therefore be the logical planning groups to examine the technical merits of the TransWest Express project as this project relates to the transmission systems in Wyoming, Colorado, Utah, and southern Nevada. The CTPG Technical Study Team believes it is important that the sponsors of such interregional transmission projects demonstrate, through technical analysis conducted by the pertinent subregional transmission planning organizations, that any reliability criteria violations associated with their proposed projects can be adequately mitigated.

The preliminary results of an analysis estimating the economic benefits of 20 proposed interregional transmission projects, including the TransWest Express project between Wyoming and southern Nevada, is described in the February 2011 draft report entitled “*Transmission Expansion Planning Policy Committee, Interim Study Report, TEPPC 2010 Study Program, Report of Updated 2019 Studies.*”² TEPPC’s study results are summarized on Table 5 of the report. These results indicate that the cost-effectiveness of interregional transmission projects is highly dependent on the extent to which renewable development outside the state of California is contingent on the construction of new inter-regional transmission. Assuming the relocation of 12,000 gWh of renewable energy development from California to Wyoming is contingent on the construction of the TransWest Express project, estimated savings—as noted in TransWest Express project’s comments—are \$659 million per year.³ However, TEPPC’s study results also indicate that if the relocation of 12,000 gWh of renewable energy development from California to Wyoming is not contingent on the construction of the TransWest Express project, then the estimated savings would be -\$315 million per year; in other words, absent other benefits, the

² This report is available at the following link:
http://www.wecc.biz/committees/BOD/TEPPC/TAS/SWG/Shared%20Documents/2010%20Study%20Cycle/Study%20Results%20Report/2019%20Study%20Report/2019%20Draft%20Study%20Report_clean_26May.docx.

³ See the second to the last column on Table 5.

TransWest Express project would not be economic.⁴ While TEPPC's study results cannot be considered conclusive, the results suggest that where renewable development can be accommodated by the existing transmission system, it, would usually not be cost-effective, absent other benefits, to build the proposed interregional transmission projects.⁵

Comment:

The TEPPC studies indicate that the West-of-River path can accommodate substantial imports without any upgrades. Phase 4 of the 2011 CTPG Work Plan also include some analysis of West or River capacity availability for new imports (slide 44). It is important as part of the 2011 Work Plan that this issue be comprehensively addressed.

TWE requests that a scenario with 12,000 gWh (3,000 MW) of Wyoming wind delivered over TWE be included in the 2011 Work Plan.⁶ This 12,000 gWh of Wyoming wind would replace 12,000 gWh of the highest cost or lowest ranked resources in the CPUC – Trajectory proposed scenario (slide 47). This is the approach used to develop the equivalent scenario in the 2010 TEPPC Study Program. TWE stands ready to work with CTPG, CPUC and others to specify the details of this scenario.

CTPG Technical Study Team Response:

The CTPG Technical Study Team will consider TWE's request that CTPG consider a scenario in which 12,000 gWh of the "lowest ranked" renewable energy resources in the California Public Utilities Commission's ("CPUC's") Trajectory scenario, are relocated to Wyoming as new wind generation.

The CTPG Technical Study Team notes that this scenario could be similar to the "West-of-River Stress" scenario conducted by the CTPG in Phase 4 of its 2010 study work. In the "West-of-River Stress" scenario, the CTPG assumed there would be 2639 gWh of wind energy in Wyoming. This energy was modeled as being injected into Eldorado substation in southern Nevada. In addition, the CTPG modeled another 8901 gWh of wind and solar energy injected at Eldorado substation from locations in Nevada and Arizona. Total injections of new renewable energy at Eldorado substation were therefore 11,540 gWh.

The CTPG Technical Study Team recognizes that physically modeling 12,000 gWh of wind energy at existing buses in Wyoming, rather than as injections of both wind and solar energy at Eldorado substation, may produce significantly different results than were found in the

⁴ See the last column on Table 5.

⁵ As the results in the last column on Table 5 show, only one of the proposed interregional transmission projects evaluated by TEPPC results in reduced costs compared to the alternative of using the existing interregional transmission system to accommodate the assumed relocation of 12,000 gWh of renewable energy development from California to other states.

⁶ This appears to be the most cost-effective resource relocation with equivalent transmission expansion scenario from the 2010 TEPPC Study Program. The CTPG may also wish to consider other Southwest Corridor import scenarios that provide additional renewables from the Desert Southwest in addition to 3,000 MW of Wyoming wind.

previously studied West-of-River Stress scenario. In addition, the use of the CPUC's Trajectory scenario and the relocation of the "lowest ranked" renewable resources in that scenario, could have important consequences not evident in the West-of-River Stress scenario. Finally, in order to develop the scenario requested by TWE it will be necessary to obtain and understand the ranking details underlying the CPUC's Trajectory scenario.

Comment:

TWE also requests that the CTPG coordinate with TEPPC to the extent practicable so that the TEPPC and the CTPG study results reflect common assumptions and data sets (slide 33).

CTPG Technical Study Team Response:

The CTPG Technical Study Team appreciates TWE's interest in using data and assumptions that are "common" between the CTPG and TEPPC. To a significant extent this happens automatically since the CTPG's technical study work starts from the WECC power flow base cases. However, there will necessarily be differences as the CTPG develops its own set of scenarios and renewable resource development portfolios. (Notably, TWE's requested scenario incorporates assumptions and data that would not be common with the TEPPC analysis conducted to date.)

Comment:

The stakeholder meeting presentation indicates that the CTPG does not intend to consider benefit/cost analysis of transmission alternatives (slide 37). There is no other discussion in the presentation of economic analysis. TWE believes the absence of economic analysis is a fundamental shortcoming of the 2010 CTPG Statewide Transmission Plan and strongly urges the CTPG to include economic analysis in the 2011 Work Plan.

Simply put, it is not possible to produce a robust and efficient Statewide Transmission Plan without consideration of economic factors. The objective of the Statewide Transmission Plan should be to identify transmission projects that provide California consumers with access to resources to meet the 33% renewable energy standard with the lowest delivered power costs (including both generation and transmission costs). TEPPC has developed generic resource costs and other assumptions that can be used by the CTPG if the CTPG does not want to commission new work in this area as part of the 2011 Work Plan.⁷

CTPG Technical Study Team Response:

⁷ The results of the 2010 TEPPC Study Program indicate that WECC-wide variable production costs do not vary significantly as long as scenarios being compared include the same amount of renewable energy and sufficient transmission is added to avoid significant congestion. Therefore, it may not be necessary to conduct production costs modeling as part of CTPG's economic analysis.

The CTPG Technical Study Team appreciates TWE's interest in assessing the cost-effectiveness of potential transmission infrastructure additions relative to other alternatives for satisfying California's renewable requirements and other policy objectives. However, the CTPG has decided that its 2011 study work will not include any economic analyses of the type recommended by TWE.

The sponsor of a transmission infrastructure project has the responsibility for demonstrating to the relevant jurisdictional regulatory and permitting authorities under applicable rules and procedures that the infrastructure addition is technically, economically and/or environmentally superior to other feasible alternatives for satisfying the identified need.

Note that to the extent the renewable resource development portfolios evaluated by the CTPG in its 2011 study work were created on the basis of the economic competitiveness of the various technologies and resource locations, some measure of economic viability is implicit in the CTPG's work.