

**California Transmission Planning Group (CTPG)  
Technical Study Team Response to the  
November 14, 2011, Comments of TransWest Express (TWE)  
on CTPG's October 26, 2011, Draft Phase 2 Study Report**

**Comment:**

In June 2011, TWE provide comments on CPTG's 2011 Work Plan. In those comments, TWE made three specific recommendations, which are repeated here for convenience:

1. 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.
2. TWE also requests that CTPG coordinate with TEPPC to the extent practicable so that TEPPC and CTPG study results reflect common assumptions and data sets.
3. TWE believes the absence of economic analysis is a fundamental shortcoming of the 2010 CTPG Statewide Transmission Plan and strongly urges CTPG to include economic analysis in the 2011 Work Plan.

TWE would like to re-state these recommendations to the CTPG and also offer the following two additional recommendations as CTPG reviews and incorporates stakeholder comments into this important work.

4. TWE requests CTPG to review and incorporate the findings from the Draft Northern Tier Transmission Group 2010-2011 Biennial Transmission Plan

[http://nttg.biz/site/index.php?option=com\\_docman&task=cat\\_view&gid=308&dir=DESC&order=date&Itemid=31&limit=5&limitstart=5](http://nttg.biz/site/index.php?option=com_docman&task=cat_view&gid=308&dir=DESC&order=date&Itemid=31&limit=5&limitstart=5)

within its coordination efforts with other sub-regional planning groups. The NTTG's (draft) conclusion is that transmission capacity needs to be expanded in order to export additional Wyoming resources. TWE identifies this work for the CTPG's review due to the response TWE received from CTPG with respect to the need for transmission capacity not being clearly demonstrated within the WECC 10-Year Regional Transmission Plan analysis.

5. TWE requests CTPG to coordinate with the SWAT/WestConnect Eldorado Valley Study Group (EVSG). The EVSG has performed a conceptual system study analysis examining the impacts from additional resources being made available in the Eldorado Valley.

While TWE understands the limitations the CTPG has in incorporating the recommendations above, TWE requests that all CTPG planning documents include clear and concise caveats about these limitations in all reports it produces. The CTPG has done a good job in clearly stating that it does not have implementing authority and in identifying other groups, notably "Balancing Authority(ies), project sponsors and jurisdictional regulatory authorities" as the ultimate decision

makers. TWE suggests that the CTPG also list out the restrictions it has placed on itself with respect to economic evaluations and development of a broad range of alternative scenarios. Without these limitations being fully described, the reader of a CTPG planning report may misunderstand the significance of the “high potential” or “medium potential” project recommendations stemming from the analysis.

### **CTPG Technical Study Team Response:**

With respect to TWE’s five recommendations, the CTPG Technical Study Team responds as follows:

1. CTPG’s 2011 study work includes one scenario in which 3,621 MW of installed renewable capacity (9,161 gWh) was modeled as being injected at Eldorado substation in southern Nevada (the West of River Import with 50-percent Eldorado Injection scenario). Eldorado substation is the southern terminus of the proposed TWE project. The 3,621 MW of installed renewable generating capacity modeled as injecting power at Eldorado substation exceeds the “3,000 MW” of “Wyoming wind delivered over TWE” that TWE recommended CTPG include in one of its 2011 study scenarios.
2. TWE requests that CTPG “coordinate with TEPPC [WECC Transmission Expansion Planning Policy Committee] to the extent practicable so that TEPPC and CTPG study results reflect common assumptions and data sets.” CTPG’s and TEPPC’s analytic approaches are significantly different in that CTPG’s analysis is limited to technical snapshots of grid performance, while most of TEPPC’s analysis involves economic grid simulations for every hour of a year. However, in one important way, CTPG’s assumptions and TEPPC’s assumptions are roughly “common.” In CTPG’s West of River Import with 50-percent Eldorado Injection scenario referenced above, it is assumed that renewable generation capable of producing 9,161 gWh is built and injects power at Eldorado substation. Assuming this generating capacity were built in Wyoming and delivered to Eldorado substation on the TransWest Express project, the CTPG scenario is roughly comparable to the TEPPC analysis in which 12,000 gWh of renewable generating potential was removed from California and located in Wyoming and the TransWest Express project was built.<sup>1</sup>
3. The CTPG Technical Study Team understands the importance of “economic analysis” in identifying the most cost-effective solutions for maintaining grid reliability and meeting California’s Renewable Portfolio Standard (RPS) requirements. To date, CTPG has not performed such analysis. Project sponsors, Balancing Authorities and jurisdictional regulatory entities will undertake such analysis as required to support and obtain approval to build specific transmission projects. TEPPC (of which CTPG is an approved sub-regional planning organization) performs economic analysis and has produced results for the TransWest Express project. As shown on Table 71 of the WECC Board-approved September, 2011 “*Ten Year Regional Transmission Plan, 2019 Study Report, TEPPC 2010 Study Program*,” the TransWest Express project would either be (i) highly

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<sup>1</sup> See case “EC8-2” (TransWest Express) on Table 71 in the September, 2011 WECC-Board approved document entitled “*Ten Year Regional Transmission Plan, 2019 Study Report, TEPPC 2010 Study Program*.”

economic assuming that the 12,000 gWh of relocated renewable generating potential would only relocate if the TransWest Express project were built,<sup>2</sup> or (ii) highly uneconomic assuming the 12,000 gWh of relocated renewable generating potential relocated without any major transmission additions.<sup>3</sup> Notably, TEPPC's modeling mitigates potential reliability criteria violations under both sets of assumptions (by redispatching fossil-fired generation out of economic-merit order) so both outcomes are plausible from a reliability standpoint.

4. TWE recommends that CTPG “review and incorporate the findings from the Draft NTTG [Northern Tier Transmission Group] 2010-2011 Biennial Transmission Plan... within [CTPG's] coordination efforts with other sub-regional planning groups.” The CTPG Technical Study Team has not been involved in the NTTG study work that is documented in NTTG's undated “*2010-2011 Biennial Transmission Plan, Draft Report*” posted on the NTTG website. Accordingly, CTPG will not incorporate the findings from that report in CTPG's 2011 Phase 2 study report. However, CTPG acknowledges the value of coordinating with other transmission planning groups within the WECC and intends to explore options for such coordination during CTPG's development of its 2012 work plan. Finally, the CTPG Technical Study Team notes that NTTG's 2010-2011 Biennial Transmission Plan draft report indicates that the NTTG declined to undertake an economic study of the TransWest Express HVDC project.
5. TWE recommends that CTPG “coordinate with the SWAT/WestConnect Eldorado Valley Study Group (EVSG).” As noted above CTPG acknowledges the value of coordinating with other transmission planning groups within the WECC and intends to explore options for such coordination during CTPG's development of its 2012 work plan.

TWE suggests that CTPG “list out the restrictions it has placed on itself with respect to economic evaluations and development of a broad range of alternative scenarios.” CTPG believes it has noted the limitations of its study work. These limitations are described in CTPG's study plans, study reports, and in responses to stakeholder comments. In particular, CTPG has repeatedly indicated that it has not attempted a broad assessment of alternatives for mitigating identified reliability criteria violations. CTPG therefore has not represented that any particular transmission infrastructure addition identified through the course of CTPG's study work—whether characterized as “high” potential or “medium” potential—is, in fact, the best solution and thereby “needed.”

### **Comment:**

The West of River Import Scenarios provide some insight into how California's transmission system would perform under a scenario with significant quantities of Wyoming wind transferred to southeastern Nevada by an HVDC transmission project. However, the particular scenario

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<sup>2</sup> See the ninth column of Table 71 showing a \$659 million annual savings with the addition of the TransWest Express project.

<sup>3</sup> See the tenth column of Table 71 showing a -\$315 million annual savings with the addition of the TransWest Express project.

analyzed does not ‘test the import capability’ of the West of River path: it merely identifies that it can handle the particular import level included within the scenario without the need of additional transmission facilities. A more interesting test of the import capability along the West-of\_River Path would be to determine how much capacity could be added before violations are observed followed by a discussion of mitigation plans that could be employed to allow additional resources to be accessed by California. The Draft SWAT/WestConnect EVSG High Level Feasibility Report (October 19, 2011) provides some insights on such an analysis.

### **CTPG Technical Study Team Response:**

As noted above, CTPG has evaluated a scenario in which 3,621 MW of installed renewable generating capacity is modeled as injecting power at Eldorado substation (the West of River Import with 50-percent Eldorado Injection scenario). Based on the study results for this scenario CTPG has not identified any reliability criteria violations on the West of River system that are associated with this injection of power. This is not surprising considering the existing entitlements in the northern portion of the West of River path (6,637 MW), and the fact that some of the fossil-fired generation that is decremented to accommodate new renewable resources is located electrically east of Eldorado substation.

The CTPG Technical Study Team believes that unless future flows on the northern portion of the West of River path are projected to approach the existing rating of this path, studies that would evaluate the transmission additions necessary to increase the existing path rating are largely academic and of limited usefulness. The CTPG Technical Study Team’s analysis of the renewable resource development portfolios currently being considered by California planning entities, indicate that flows on the northern portion of the West of River path are unlikely to approach the existing path rating.

### **Comment:**

The results of the scenarios described in the Phase 2 Study Report do provide some useful insights that can be considered as CTPG completes Phase 2 of the planning process and begins to formulate the 2011 Statewide Transmission Plan. The results of the scenarios indicate that future California transmission needs are dependent on the location of new resources and on the system conditions being studied. Because resource locations and system conditions were combined into a limited number of scenarios, TWE is concerned that the results may be misinterpreted.

For example, the results for the South to North Scenario and the West of River Scenarios indicate that additional transmission may be needed in the Midway-Tesla area. Some may interpret these results as an indication that the resources selected for these scenarios drive the need for the Midway-Tesla area reinforcements. However, these are the only scenarios studied using Light Autumn system conditions.

If other scenarios were also studied with Light Autumn system conditions, the same Midway-Tesla reinforcements might be indicated. For example, the Public Policy Scenario and the Central California Scenario indicate high south-to-north flows between southern and northern

California under Heavy Summer conditions. Under Light Autumn conditions, these south-to-north flows could be even higher indicating a need for the Midway-Tesla reinforcements.

To provide a better understanding of the relative impacts of resource locations and system conditions, it would be useful for CTPG to study each resource location scenario under the three system conditions that have been developed – Heavy Summer, Heavy Spring and Light Autumn. If that cannot be accomplished due to limited time or personnel resources, CTPG should at least consider studying the Public Policy Scenario under all three system conditions since this scenario may be seen by some as a “reference” case.

**CTPG Technical Study Team Response:**

The CTPG Technical Study Team agrees with TWE that analysis of the Public Policy scenario and the Central California scenario under spring and autumn conditions could indicate higher levels of south-to-north flows on Path 15 than is indicated during summer peak conditions. Whether these flows would be high enough to result in reliability criteria violations cannot be known without doing the studies. CTPG has determined that it will not undertake these studies in connection with its 2011 study work. However, the CTPG Technical Study Team will consider such studies in connection with the development of its 2012 work plan.