California Transmission Planning Group (CTPG)
Technical Study Team Response to the
November 14, 2011, Comments of Clean Line Energy Partners (Clean Line) and Centennial West Clean Line (Centennial West)
on CTPG's October 26, 2011, Draft Phase 2 Study Report

Comment:

In identifying nine renewable resource development scenarios and then contemplating how certain transmission infrastructure upgrades can mitigate reliability concerns associated with those scenarios, the Report lays a solid foundation for analyzing California's future transmission needs. However, the existing scenarios could be modified or expanded to include additional renewable resource development possibilities that offer substantial benefits to California. Both the Renewable Energy Transmission Initiative (RETI) and the Western Governors Association (WGA) have identified large Competitive Renewable Energy Zones (CREZ) throughout the Southwest region, and proposed transmission projects like Centennial West will substantially increase import capacity. In addition, the WECC 10-year regional transmission plan notes at page 30 that interstate DC lines induce "significant cost savings…as compared with generation assumed in the Expected Future." See also Table 2, page 31[1].

CTPG Technical Study Team Response:

CTPG's 2011 study work includes one scenario in which 2634 MW of installed renewable capacity (6868 gWh) were modeled as being injected at Eldorado substation in southern Nevada, 3,621 MW of installed renewable capacity (9,161 gWh) were modeled as being injected at Palo Verde substation in central Arizona, and another 32 MW of installed capacity were modeled as injected in New Mexico (238 gWh) (the West of River Import with 50% Palo Verde Injection scenario). Because the existing transmission system between New Mexico and southern California consists primarily of lines that are routed through Arizona and southern Nevada, this scenario can be considered an indirect way of assessing the performance of existing transmission lines connecting into southern California for renewable generation developed at locations east of the Colorado River, such as New Mexico.[2]

It is unclear from Clean Line/Centennial West's comments whether this amount of installed renewable generating capacity (a total of 6287 MW) would satisfy the "additional renewable resource development possibilities" referenced in the comments. In any event, injecting the output of this large amount of renewable resource development at Eldorado and Palo Verde substations did not result in reliability criteria violations on the West of River path. This is not surprising considering the existing capability of the West of River path (10,623 MW), and the

[1] "WECC 10-year Regional Transmission Plan", Western Electricity Coordinating Council (WECC), September 2011. Information about WECC's 10-year planning process can be found at the following link: http://www.wec.biz/library/StudyReport/Wiki%20Pages/Home.aspx.

[2] CTPG recognizes there is value in coordinating with transmission planning groups that focus on the transmission systems in New Mexico, Arizona, southern Nevada, and the Four Corners area. The CTPG Technical Study Team intends to explore options for such coordination during CTPG's development of its 2012 work plan.

fact that some of the fossil-fired generation that is decremented to accommodate new renewable resources is located electrically east of Eldorado and Palo Verde substations.

The CTPG Technical Study Team acknowledges that Direct Current lines such as the Centennial West Clean Line project offer a potentially economic way of facilitating renewable resource development in locations distant from California. Indeed, Table 71 of the WECC Board-approved September, 2011 "*Ten Year Regional Transmission Plan, 2019 Study Report, TEPPC 2010 Study Program,*" indicates that the Centennial West Clean Line project would be highly economic assuming that the 12,000 gWh of relocated renewable generating potential would only relocate to New Mexico if the Centennial West Clean Line project were built.[3] However, Table 71 also indicates that the Centennial West Clean Line project would be highly uneconomic assuming the 12,000 gWh of renewable generating potential relocates to New Mexico without any major transmission additions.[4] 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.

Comment:

The current West-of-River scenarios do assume a large import flow from out-of-state resources, but it is unclear whether those resources represent imports from the Rocky Mountain Region or the Desert Southwest. The presentation slides and the Draft Report offer conflicting answers to this question; although, it appears that the WOR scenarios contain substantial resource imports from states other than AZ and NM. It would be helpful to clarify the state of origin for the assumed generation, as well as incorporate specific projects like the Centennial West Clean Line as a modification of the West of River Import in the studies. In general, studying increased imports specifically from AZ and NM, either by adding scenarios or modifying existing ones, will enhance the conceptual scope and improve its usefulness for California stakeholders.

CTPG Technical Study Team Response:

As indicated above, the West-of-River Import with 50-Percent Palo Verde Injection scenario modeled a large amount of renewable resources as injecting power at Eldorado and Palo Verde substations. And, as stated above, CTPG believes this modeling can serve as a rough proxy for establishing the impact of renewable generation additions in New Mexico on the existing transmission system connecting southern California to southern Nevada and central Arizona. To be clear, CTPG modeled all of the renewable generation listed on Table 14 of the draft 2011 Phase 2 Study Report (the renewable portfolio for the West of River Import with 50% Palo Verde Injection scenario) at the locations listed on that table.

[3] See the ninth column of Table 71 showing a $321 million annual savings with the addition of the Centennial West Clean Line project (see the line for case "EC13-1").

[4] See the tenth column of Table 71 showing a -$353 million annual savings with the addition of the Centennial West Clean Line project (see the line for case "EC13-1").

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Because the injection of power at Eldorado and Palo Verde substations did not result in reliability criteria violations, the suggestion by Clean Line/Centennial West to "incorporate specific projects like the Centennial West Clean Line…in the studies" would serve no purpose under the study approach currently used by CTPG.

Finally, the CTPG Technical Study Team notes that Clean Line/Centennial West's comments do not indicate what level of "increased imports specifically from AZ and NM" would "enhance the conceptual scope and improve its usefulness for California stakeholders." There are an infinite number of renewable resource development portfolios that could be studied. The CTPG Technical Study Team believes there needs to be reasoned determination of which portfolios are likely to materialize over time. Clean Line/Centennial West's comments do not offer such a determination.