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California Energy Commission
Dockets Office, MS-4
1516 Ninth St.
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May 24, 2011

11-IEP-1E

DOCKET

11-IEP-1G

DATE May 24 2011

RECD. May 24 2011

Re: Transmission Planning for Renewables (Docket No. 11-IEP-1E and 11-IEP-1G)

Commissioners:

TransWest Express LLC (TWE) submits the following as Public Comments into the California Energy Commission's (CEC) 2011 Integrated Energy Plan proceedings on "Transmission Planning for Renewables."

TWE appreciates the opportunity to comment on the subject of Transmission Planning for Renewables and hopes its feedback will aid the CEC in preparation of its final Plan report and, above all, for building the transmission infrastructure to meet California's needs.

The TransWest Express Transmission Project (TWE Project) is a 3,000 MW, 600 kV direct current electric transmission system that will begin in south-central Wyoming, extend through northwestern Colorado and central Utah, then end in southern Nevada's Eldorado Valley where interconnections into the California grid are available. Under development since 2005, with an expected in-service date in 2016, the TWE Project will deliver Wyoming's world-class wind resources – which are both high-capacity and cost-effective – to support California's plan to add 54 TWh of renewable energy supply by 2020.

In 2010, Western Area Power Administration (Western) and TWE announced an agreement where Western may own up to 50% of the TWE Project. Through Western's Transmission Infrastructure Program (TIP), Western may invest up to \$1.5 billion to own one-half of the TWE Project. Similar to the role it had in California on the Path 15 upgrade, Western will provide environmental analysis, permitting, land acquisition and other development services to support the TWE Project.

The TWE Project, like the major transmission infrastructure investments of the 1970's and 80's that brought significant benefits to California from the delivery of out-of-state energy resources, will give the Southwest an unparalleled opportunity to access the highest-quality renewable resources in the U.S. More information can be found at www.transwestexpress.net.

General Comments

Over the past 40+ years, imports of electricity into California from throughout the Western Interconnection have resulted in the reliable, efficient delivery of thousands of megawatts of electricity to serve California customers. California ratepayers are paying significantly less for their electricity, and California's economy has benefitted significantly as a result of its planning and practices that facilitated energy imports. Wyoming wind energy can continue that tradition in the future.

- **Wyoming wind resources delivered to California provide a practical, low-cost renewable energy solution.**

In 2008 the Western Electric Industry Leaders (WEIL) Group commissioned a regional resource and transmission analysis that identified regional benefits from expansion of the regional transmission system to access remote resources to serve California. There have been several reports on similar analysis that has found similar results.

In 2009, WECC sought and was awarded a \$14.5 million grant by DOE to develop 10-year and 20-year region-wide transmission plans for the Western Interconnection. The first 10-year plan will be delivered to DOE in November 2011. This plan is being developed in an open stakeholder-driven process overseen by WECC's Transmission Expansion Policy Planning Committee (TEPPC). California utilities, regulatory agencies, and the CEC have been active participants in this process. The CAISO and the California Transmission Planning Group (CTPG) are both represented on TEPPC as sub-regional planning groups.

Although a draft of this Regional 10-year Transmission Plan has not yet been released, the study program that will drive this plan is nearly complete and preliminary results have been widely disseminated. TEPPC's study program included a number of study cases where potential future renewable resources assumed to be developed in California were replaced with renewable resources developed in other sub-regions within the West. **These study cases indicate that substantial savings can be achieved by accessing higher-quality, lower cost renewables outside of California.**

For example, replacing 12,000 GWh per year of the lowest ranking California renewable resources (a mix of solar, wind and biomass) with an equal amount of energy from high-quality Wyoming wind resources, delivered by the TWE Project plus additional combustion turbines so that the Wyoming portfolio's capacity value is equivalent to the replaced California resources, **would reduce the cost of this block of resources by approximately 40% compared with the costs of developing these resources in California.** Although the Wyoming resource development scenario showed the greatest savings over California resources for the 12,000 GWh per year cases, the out-of-state resource cases incorporating high quality wind resources in Montana, New Mexico and Wyoming resulted in savings on the order of \$400M to \$750M per year.¹

¹ Figures in this paragraph are taken from TEPPC Interim Study Report, Draft, TEPPC 2010 Study Program Report of Updated 2019 Studies posted May 11, 2011.

The fundamental reason for these savings is the total capital cost of a Wyoming wind facility plus transmission (about \$3000/kw) that produces energy with a 40+% capacity factor can produce less expensive energy than a solar facility with a \$4,000+/kw capital cost and a 25% capacity factor.

There are a number of other factors that are also material to the viability of out of state resources, but these fundamental economic benefits are the main reason why California and the CEC need to preserve the opportunity to bring these benefits to California.

Some of these other factors have been misrepresented in some of the comments made as part of the transmission work shop. TWE would like to offer our view on these factors and how they pertain to Wyoming wind and the TWE project.

- **Wyoming renewable resources are no more difficult to integrate than other resources.** System integration is a challenge for all renewable resources, whether located in California or in other states. The operational flexibility afforded by direct current technology as featured on the TWE Project will allow operators to treat Wyoming resources as directly interconnected to the California grid or as an integrated system backed up by Wyoming-based flexible generation.

In addition, the timing of Wyoming's strongest winds, which peaks during the afternoon, ideally complements California's electric needs. Intermountain region wind does not follow the same pattern as coastal winds found in California, Oregon and Washington.

- **Solar pricing is coming down, but wind continues to be the hands down economic winner.** With costs that are significantly higher than high quality wind delivered to California, solar costs will need to decrease significantly to become economic.² While some have predicted a dramatic decrease in solar costs these reductions will take years to realize. Wind turbine generation is a mature and reliable technology that is also seeing some cost reductions as larger machines designed for high wind regions like Wyoming are being developed. Siting challenges with large scale solar also continue to plague the larger projects. Development of widespread distributed solar installations while important also has its own challenges at the levels being proposed in California and all at a higher cost to consumers.

<http://www.wecc.biz/committees/BOD/TEPPC/05241102/Lists/Minutes/1/Draft%202019%20Study%20Report%2011May%20clean.docx>

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 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.

² The significant cost advantage of high-quality wind over solar is maintained even when the cost of gas-fired peaking units is added to the wind resources to provide capacity equivalent to the solar resources.

- **Permitting and siting new energy infrastructure is equally complex across the west.**

The most important factor or challenge for a regional transmission project is to permit and site the transmission line. While this is a challenge for multi-state projects, it is not significantly different than the aggregate permitting and siting challenges to meet California's ambitious renewable energy goals. Western has joined the Bureau of Land Management as a joint lead agency in the preparation of an Environmental Impact Statement for the TWE Project. Public Scoping closed in April 2011, and TWE is committed to complete the permitting process for the TWE Project in time to meet the market needs in California and neighboring states.

Achieving California's RPS goals of 33% entirely within the state will be extremely difficult and there are several studies available stating it may not be possible. In any event, there will be significant resources available from out of state that complement California load requirements and will be economically beneficial to the rate payers.

Significant planning must continue inside of California to meet its renewable needs. A significant part of that planning must be the reinforcement of California's transmission system to accept out of state resources. Some of that planning is going on now in WECC. The CAISO and CTPG have yet to identify the full potential for these out of state resources within their transmission planning exercises. Neither of these transmission groups has performed their own independent resource and transmission economic analysis as WECC is performing. These California planning groups are relying on commercial interest metrics which are inherently reactive and not effective to facilitate projects where the transmission takes longer to permit and build. As California has been able to plan for and move to construct transmission projects such as the Tehachapi and the Sunrise projects based on the potential for overall economic benefits, California needs to apply the same philosophy on planning for the potential of significant out of state renewable entering the California grid from strategic points where currently significant amounts of out of state coal resources are delivered into California load pockets.

The CEC should encourage and participate in energy and transmission planning that keeps all renewable options open for California. TWE looks forward to further interaction with the CEC on these matters and requests consideration of these comments. Please contact David Smith, Director of Engineering, TransWest Express LLC at david.smith@tac-denver.com with any questions.

Sincerely,

Original signed by
David Smith