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Comments of TransWest Express LLC on
February 22, 2013 Draft of California ISO 2013-2014 Transmission
Planning Process Unified Planning Assumptions and Study Plan
and
TransWest Express, LLC Study Request

Introduction

TransWest Express LLC (TransWest) is developing the TransWest Express Project (TWE Project), a 730-mile, 600 kV high voltage direct current (HVDC) transmission project extending from south central Wyoming to southeastern Nevada. The TWE Project will deliver Wyoming's high quality wind resources to consumers in California and neighboring states.

TransWest appreciates this opportunity to comment on the Draft 2013-2014 Transmission Planning Process Unified Planning Assumptions and Study Plan (Draft Study Plan) prepared by the California Independent System Operator (CAISO). TransWest's comments are set forth in Part I, below.

Part II of this submission contains a request for Economic Planning Study to examine the benefits of an interregional transmission project to integrate cost-effective, renewable generation resources being developed in south central Wyoming with load in California.

I. Comments on Draft Study Plan

Policy Driven Objectives

The CAISO's 2013-2014 Transmission Planning Process (TPP) will be of considerable significance to consumers in the CASIO Balancing Authority. The TPP, correctly executed, will identify the projects and investments needed to assure a reliable and economically efficient transmission grid for consumers who are served by CAISO and the Participating Transmission Owners.

The Draft Study Plan lays out an extensive set of studies to evaluate and assure the continued reliability of the CAISO transmission grid.

However, TransWest believes the Draft Study Plan falls short in its approach to considering economic issues. As further explained in the comments that follow, TransWest believes that CAISO should be evaluating future additions to the grid based on three primary policy objectives:

1. Providing the lowest delivered cost of power to consumers considering a reasonable range of feasible alternatives. The delivered cost of power in this context includes generation capital costs, transmission capital costs and variable operating costs.
2. Providing a sufficiently robust grid so that vigorous competition can take place among generators to cost-effectively serve the needs of consumers.
3. Providing sufficient optionality within any transmission plan that clearly states both (i) the primary targeted transmission investments incorporated into the plan and (ii) a set of contingency or secondary investments that have sufficient flexibility to become the primary investments if certain assumptions that formed the basis for the primary investments change materially, e.g., delays in transmission plan projects and/or project failure of planned generation resources.

TransWest recommends that these objectives be included in Section 3.1 of the Draft Study Plan in addition to the policy objectives currently listed in that section. In addition, the CAISO should consider additional policy objectives such as energy diversity from renewable resources and reliability of supply.

Supporting RA Deliverability Status for Resources Outside the ISO Balancing Authority Area

TransWest applauds CAISO's commitment in Section 3.1.2 of the Draft Study Plan to reassess its approach for determining deliverability of imported resources to qualify for Resource Adequacy (RA) status. CAISO's prior approach of limiting RA for imports based on historic imports under peak load conditions was not a sound approach to assessing transmission deliverability.

There are still flaws to the CAISO's proposal in the Draft Study Plan that should be remedied before the plan is finalized. CAISO's claim that RA deliverability is integral to achieving the 33% Renewable Portfolio Standard (RPS) policy is inaccurate, and its proposal to only consider RA deliverability for projects included in a very limited number of potential resource portfolios is too limiting. RA deliverability for imports should be available for all resources seeking to

provide RA capacity utilizing the full capacity of the interties as determined using applicable reliability standards. The CAISO should not constrain itself when considering deliverability over California import lines of RA capacity to any pre-selected set of resource portfolios. It is likely that other resource mixes will be able to meet the public policy objectives and the RA capacity obligations, perhaps with separate resources, at a lower all-in delivered cost. The 33% RPS policy goal does not require LSE buyers to select only projects that offer RA capacity. RA capacity and the transmission costs for deliverability of the capacity need to be considered by load-serving entity buyers; however, certain projects may not require RA capacity payments to develop their projects. CAISO should remove or correct any inaccurate statements that link RA deliverability to the 33% RPS policy objective. Instead the CAISO should focus on determining whether there are ways to expand existing import capability in a way that would satisfy all applicable requirements (e.g. public policy, RA capacity obligations, etc.) at the lowest cost to consumers.

Policy Driven 33% RPS Transmission Plan Analysis

Resource Portfolios

Section 4.2 of the Draft Study Plan outlines a process for developing sufficient transmission to enable compliance with California's 33% RPS. This process relies exclusively on resource portfolios developed by the California Public Utilities Commission (CPUC) and California Energy Commission (CEC). While TransWest respects the roles played by CPUC and CEC in California energy policy matters, we believe CAISO is obligated through Section 24.4.6.6 of the CAISO Fifth Replacement FERC Electric Tariff (Tariff) to not rely exclusively on CPUC and CEC as the only sources for resource portfolios. There are a number of specific elements CAISO must consider within the process as outlined in Section 24.4.6.6 of the Tariff, not all of which are required within the CPUC process. For example, Section 24.4.6.6 provides, among other things, that the CAISO will consider:

(d) the potential capacity (MW) value and energy (MWh) value of resources in particular zones that will meet the policy requirements, as well as the cost supply function of the resources in such zones;

....

(f) potential future connections to other resource areas and transmission elements;

....

(i) the effect of uncertainty associated with the above criteria . . .

The CAISO's Draft Study Plan too narrowly relies on the CPUC and CEC resource portfolios to evaluate transmission upgrades and additions needed to meet state or federal policy requirements or directives, and needs to consider the above, and other, criteria set forth in Section 24.4.6.6.

Economic Efficiency

A missing key element in the process outlined in the Draft Study Plan is the lack of an assessment of delivered power costs to consumers. The process seems to assume that the resources included in the resource portfolios developed by CPUC and CEC combined with whatever transmission CAISO determines is necessary to deliver these resources will result in an optimal solution. However, this will not necessarily be the result. In developing its resource portfolios, CPUC and CEC make assumptions about what transmission is needed for delivery of certain resources. In the past, CPUC's models have primarily selected resources that are assumed to need little or no new transmission investment.¹

To the extent these resources actually do require new transmission investments, the original assumptions under which they were selected for the resource portfolio are incorrect. This is a foreseeable occurrence, given the timing mismatch between the CPUC and CEC processes for developing resource portfolios, and the CAISO's TPP. Within this year's response to stakeholder comments, the CPUC and CEC stated that 'unfortunately the timing of the two processes do not allow for integrating the results of the 2012/2013 TPP portfolios² into the 2013/2014 portfolios. Without a transparent exchange of transmission data between the CAISO TPP and the development of portfolios by the CPUC and CEC, it is very difficult if not impossible to ensure that the objective of providing the lowest delivered power cost to consumers is being achieved. CAISO should perform its own independent total delivered cost analysis rather than deferring to CPUC and CEC in this critical area.

High Out-of-State Import Scenario Impacts on High Voltage System in California

Within the 2012 – 2013 TPP, the CAISO performed an information-only sensitivity study to evaluate the required upgrades to accommodate a high out-of-state import scenario into the CAISO system at the Eldorado Substation in Nevada. TransWest appreciates that the CAISO prioritized this work to elevate it into the 2012 -2013 as an information-only, sensitivity study. TransWest has reviewed the results from this study and has been engaged with the CAISO, the impacted California utilities and numerous other entities in the WECC Path Rating Process for

¹ The spreadsheet model used by the CPUC and CEC to produce the renewable resource portfolios includes transmission expansion/cost assumptions that are exogenously developed; i.e., there is no determination within the model that the assumed transmission additions are cost-effective and therefore needed relative to other feasible alternatives.

² http://www.energy.ca.gov/2013_energypolicy/documents/2012-12-19_workshop/Response_to_Stakeholder_Comments.pdf, p. 4.

the TWE Project and numerous other upgrades within the area. TransWest provided comments to the CAISO on the apparent inconsistencies used by the CAISO for this analysis and other similar analysis performed in the 2012 – 2013 TPP and within WECC Path Rating studies currently in progress.

To the extent that the CAISO cannot reconcile these inconsistencies prior to finalizing the 2012 – 2013 CAISO Transmission Plan or if the CAISO determines upgrades would be required based on the results of the information-only, sensitivity study, TransWest strongly suggests that the CAISO elevate the high out-of-state import study to full consideration within the CAISO 2013 - 2014 TPP and re-examine the potential need for upgrades. The results of this study can then be employed within TransWest's Economic Planning Request, described in Part II below, consistent with other Economic Planning Studies utilizing previously conducted CAISO reliability assessments from the same TPP.

Economic Planning Studies

Section 4.4 of the Draft Study Plan takes a very narrow view of economic transmission studies. The suggested approach within the Draft Study Plan would compare the total cost (capital and operating) of new transmission projects to savings in production (operating) costs resulting from the new transmission facilities.

The highest value for long-distance transmission investment results from the financial certainty that is provided to prospective consumers who are concerned with the possibility of physical curtailment or the adverse economic consequences of congestion if the interregional transmission were not in place. In other words, an economic test that compares (i) a case with new remote generation and new long-distance transmission, to (ii) a case with new remote generation but without new long-distance transmission, is of limited usefulness since the second case is essentially infeasible. For the renewable resources needed to meet the 33% RPS, the costs are predominantly capital costs. Capital costs and performance of new renewable generators at different locations can and do vary considerably. But these capital cost and performance differences never come into play in the congestion analysis contemplated by the Draft Study Plan since the economic test assumes exactly the same mix and location of new renewable resources in both cases; i.e. the only differences between the cases is the new long-distance transmission.

TransWest's study request, described later in this document, relies on the economic study methodology developed by CAISO with additional consideration of the difference in resource capital costs and resource performance at different grid locations. These factors must be included to provide a complete economic picture.

Furthermore, the CAISO should repeat the Economic Planning Studies for Desert SouthWest Area performed in 2012 – 2013 TPP with consideration/sensitivity of the impacts to the stated

operational benefits if varying amounts of renewable resources utilize the project capacity. Some commenters within the CPUC and CEC portfolio development process have already suggested that resource areas be added in Arizona given the fact that CAISO has recommended for approval, a transmission line based on the production costs savings found by the CAISO in the 2012 – 2013 TPP. Although these comments could not be incorporated by the CPUC and CEC due in part to the timing between the two processes as outlined earlier, the likelihood of alternative uses for transmission capacity needs to be factored into the CAISO's economic planning studies, along with the total electric supply cost impacts.

Regional Transmission Planning

Except for a discussion of the Conceptual Statewide Transmission Plan in Section 3.2, the Draft Study Plan makes no mention of coordination with regional transmission planning efforts being undertaken by WECC and other regional transmission planning groups in the Western Interconnection. The absence of any discussion about regional coordination in the Draft Study Plan is especially disappointing in light of the interregional coordination requirements incorporated in FERC Orders 890 and 1000.

In addition, TransWest is a member of the WestConnect/SWAT-led Eldorado Valley Study Group (EVSG) along with CAISO. To the extent that CAISO can better coordinate with the EVSG on planning assumptions within this region, the CAISO TPP could be made more effective.

II. TransWest Economic Planning Study Request

In accordance with Sections 24.3.3 (d), 24.3.4.1 and 24.4.6.7 of the Tariff, TransWest respectfully submits to the CAISO an Economic Planning Study Request to examine the benefits of a new inter-regional transmission project to provide California consumers with access to new cost-effective generation resources on a regional basis, specifically prospective renewable resources being developed in south central Wyoming (Study Request). The anticipated benefits from such an investment would be derived from the reduction in electric supply costs (considering generation capital costs, transmission capital costs and system operating costs) resulting from improved access to cost-effective remote generating resources whose capital cost and operating performance is superior to resources built within California.

Background

In 2011, an analysis of the benefits of integrating renewable resources from Wyoming through new long-distance transmission to California was conducted by the Western Electricity Coordinating Council (WECC) and the results published within the 2011 10-Year Regional

Transmission Plan (WECC Plan).³ Accessing these high quality renewable resources in Wyoming was found to be the most cost-effective alternative to meet California policy needs (i.e., 33% RPS) within the 10-year planning horizon.

The WECC Plan, in discussing long-distance transmission alternatives, suggested that decision-makers “keep an open mind regarding transmission infrastructure investment and resource procurement options. Accessing some of the most potentially productive renewable resources by developing viable transmission projects in the Western Interconnection may provide lower-cost, environmentally preferred options for LSEs and consumers.”⁴ As the WECC Plan found, the benefit drivers for such an Economic Planning Study rely heavily on the comparative capital cost for transmission and generation and the production levels (or capacity factor) of various renewable resources. As the CAISO is aware, in the preceding TPP, TransWest submitted an economic study request which the CAISO declined to perform.⁵ TransWest, however, believes granting this economic study request is fully consistent with Section 23.3.4.1 of the Tariff, and would reflect sound and prudent planning practices under the TPP.

Section 24.3.4.1 of the Tariff sets forth five factors that the CAISO will consider in determining whether an economic study request shall be designated a High Priority Economic Planning Study for consideration in the development of the CAISO’s comprehensive transmission plan. TransWest submits that the study request discussed in detail below is warranted under at least two of those five factors. Importantly, the Tariff does not require that any single request be evaluated for its relevance to all five factors—on the contrary, the factors listed in Section 24.3.4.1 are set forth as alternative criteria, any one of which can be relied upon by the CAISO to designate a study request as a High Priority Economic Planning Study.⁶ The CAISO has discretion – which it should exercise here - to expand its consideration of projects that may deliver substantial economic and environmental benefits to California, even if the project benefits are not framed in terms of congestion relief or narrowly-drawn “resource areas” already identified by the CPUC or CEC.

In this case, the Economic Planning Study requested is intended to encompass upgrades required “to integrate new generation resources or loads on an aggregated or regional basis” consistent with Section 24.3.4.1(e) of the Tariff. Approximately 3,000 MW of high quality wind resources are being developed in south central Wyoming and the aggregate of these new generation resources, if integrated into the CAISO, can be expected to provide substantial economic benefit. This type of Economic Planning Study is needed to review the integration of these resources.

³ http://www.wecc.biz/library/StudyReport/Documents/Plan_Summary.pdf

⁴ WECC Study, Summary at p. 32.

⁵ Draft 2012-2013 Transmission Plan at p. 312 (Feb. 1, 2013).

⁶ This is made clear in the Tariff by use of the word “or” between subsections (d) and (e) of Section 24.3.4.1.

Moreover, the requested Economic Planning Study is consistent with the intent of Section 24.3.4.1(b) of the Tariff, as it addresses delivery of generation from an otherwise location-constrained resource area (south central Wyoming) to allow high-quality renewable resources being developed there to be accessed in California. TransWest acknowledges that the Tariff at Section 24.3.4.1(b) refers to resource areas “assigned a high priority by the CPUC or CEC” and TransWest’s understanding is that the CAISO has looked in particular to the CPUC’s Long-Term Procurement Plan proceeding (LTPP) to determine whether a certain resource area is one that has been assigned a high priority. The CPUC’s LTPP has not, to date, indicated out-of-state resource areas as having a high priority, but TransWest is concerned that the CPUC’s LTPP is not intended to be used for transmission planning and may focus too narrowly on in-state generation without having more open consideration for the benefits of efficient out-of-state resources.

In fact, several stakeholders commented⁷ within the joint CPUC/CEC process to develop portfolios for the CAISO 2013 -2014 TPP that the assumptions about out-of-state renewables are out-of-date and not consistent with assumptions about in-state renewables. The CPUC/CEC response⁸ to these comments was that they recognize there are inconsistencies between in-state and out-of-state processes and they will update these in the next round of portfolios. The CAISO has responsibility to administer an open, non-discriminatory TPP and that process should not be unduly constrained to the CPUC and CEC resource development scenario process.

The Economic Planning Study being requested here addresses delivery of up to 3,000 MW of generation from an area in Wyoming that is ‘location constrained’ and this Study Request addresses network transmission facilities intended to access generation from an energy resource area. The CAISO should find that the requested study would encompass study of upgrades needed to integrate new generation resources on a regional basis for reliable and efficient delivery within California and the CAISO Balancing Authority Area.

TransWest submits that the CAISO’s determination to reject past requests for study of inter-regional projects that would provide for reliable and economic delivery of clean, renewable resources should not be repeated in another planning cycle. It is inconsistent with the Tariff to refuse to undertake a robust economic study consistent with this request, where the request involves analysis of upgrades to integrate resources on an aggregated/regional basis, from a location-constrained resource area that should (consistent with WECC’s 2011 Study) be viewed

⁷ SDG&E, Pathfinder/ Zephyr and Clean Line Energy

http://www.energy.ca.gov/2013_energypolicy/documents/2012-12-19_workshop/comments/SDGE_comments_RPS_Portfolios_CAISO_2013-2014_TPP_Final.pdf;

http://www.energy.ca.gov/2013_energypolicy/documents/2012-12-19_workshop/comments/Pathfinder_Zephyr_Comments_130111_on_2013-2014_TPP_Renewable_Portfolios_90737.PDF;

http://www.energy.ca.gov/2013_energypolicy/documents/2012-12-19_workshop/comments/Clean_Line_Energy_Comments.pdf.

⁸ http://www.energy.ca.gov/2013_energypolicy/documents/2012-12-19_workshop/Response_to_Stakeholder_Comments.pdf.

as “high priority” (even if it has not been designated as such by the CPUC). There is no sound policy rationale for CAISO to ignore planning scenarios with the potential to provide billions of dollars of benefits to California consumers.⁹

Details of Economic Planning Study Request

- 1) Calculate the benefits associated with reduced Electric Supply costs from improved access to approximately 11,500 GWh/yr of cost-effective renewable resources in south central Wyoming through investment in a 730-mile, 3,000 MW HVDC transmission line. Compare the Electric Supply costs and transmission investment with other alternative resource and transmission cases utilizing the Transmission Economic Assessment Methodology augmented with an accounting of differences in capital costs between cases (both generation and transmission capital costs).
- 2) The CAISO should also examine the additional integration benefits derived from a geographically diverse resource that is much less correlated with other California based resources and more correlated with CAISO load shapes. The Wyoming wind profile is unlike California wind and solar profiles and would provide significant diversity benefits.
- 3) A deliverability assessment for RA capacity utilizing the existing system would be warranted for this Economic Planning Study. However, the CAISO would not need to consider any potential transmission upgrades to deliver RA capacity as it is highly unlikely the cost for transmission upgrades could be absorbed by the RA values derived from wind energy projects.
- 4) To the extent required, the CAISO should consider whether existing and/or new gas generation would be required to provide the equivalent RA value that other resource and transmission alternatives would provide so the cases are more comparable. The deliverability of RA capacity for the alternative resource/transmission cases will also need to be established to make these comparisons.
- 5) The following transmission solutions should be considered to access these cost-effective resources:
 - a) Consider a 730-mile, 3,000 MW, two-terminal, bi-pole configured, HVDC transmission system between interconnected to the Wyoming transmission system and the 500 kV substations located within the Eldorado Valley near Boulder City, NV. The project would be placed in service in 2017 at 1,500 MW and 2018 at an additional 1,500 MW. The capital cost estimate for this infrastructure investment is \$3.0B in 2013 dollars.
 - b) Consider a portion (e.g. 50%, 1,500 MW) of the costs of the transmission system project above will be recovered through the CAISO Transmission Access Charge (TAC)

⁹ As one example, the 2011 WECC 10-Year Regional Transmission Plan included a scenario where high-quality Wyoming wind power delivered over the TWE Project could provide \$660 million per year of cost savings for California consumers.

mechanism, assuming remaining portion of infrastructure is included in other transmission tariff(s) through Participant funding and/or other interregional cost allocation methods. This would involve a proportional capital investment (approximately \$1.5B).

- c) Reduce HVDC transmission system described above in item 1 to a capacity of 2,600 MW as a sensitivity to explore the potential impacts of the on-going Phase 2 WECC Path Rating Process item outlined in the CAISO's 2012 -2013 Transmission Plan for the High Out-of-State Import Study. This would involve a \$2.8B capital infrastructure investment.
 - d) Investigation of other solutions to access these resources may be warranted as well.
- 6) The Economic Planning Study should consider the Wyoming wind resources within the high capacity area of Wyoming with particular focus on the Wyoming wind resource projects that have received advanced standing within their respective permitting processes. Note that there are wind energy projects in Wyoming with well advanced stages of permitting, including the 3,000 MW Chokecherry and Sierra Madre Wind Energy Project.
- 7) To develop comparative alternative cases to consider the potential reduction in electrical supply costs to reach the cost-effective resources, the CAISO should consider the various portfolios under consideration within the Policy Driven portion of the TPP, including the following cases. If necessary, due to timing considerations, the CAISO should use the results from the 2012 -2013 TPP to inform these alternative cases. The alternative cases to consider should include at a minimum the following four alternatives:
- a) Remove 11,500 Gwh/yr of the lowest ranked resources from the bottom of the Commercial Interest (CI) portfolio. This scenario would be similar to the one used within the CAISO 2012 - 2013 ISO Transmission Plan Sensitivity Study for high out-of-state import of renewables.
 - b) Remove 11,500 GWh/yr of resources from the Commercial Interest portfolio that would require transmission upgrades to provide RA deliverability. To the extent that there is less than 3,000 MW of renewables in the CI portfolio, the remaining MWs should be removed from the bottom of the portfolio. Similar to the 2012 - 2013 ISO Transmission Plan Sensitivity Study for high out-of-state import of renewables.
 - c) Remove 11,500 GWh/yr of the lowest ranked resources from the bottom of the Environmental portfolio.
 - d) Remove 11,500 GWh/yr of the lowest ranked resources from the bottom of the High Distributed Generation portfolio.

These alternative cases, which are derived from the portfolios being examined in the 2013 – 2014 TPP Public Policy analysis, would represent a proxy for the extent of potential economic benefits that could be derived under a number of different planning assumptions (e.g. increased load forecasts, increased deployment of electric vehicles, distributed generation targets not being met, Demand-Side Management targets not being



met, contracted projects failing to meet development milestones, increases in transmission cost assumptions used to develop portfolios, extended planning horizons, 40% RPS considerations, etc.). The amount of energy in each of the four cases above would need to be adjusted for the three different capacity levels of the mitigation solutions listed above.

- 8) As suggested in our draft Study comments above, the CAISO should also consider further study of the High Out-of-State Import Study to ensure this Economic Planning Study reflects an accurate assessment of the required CAISO upgrades to accommodate the imports into California through the 500 kV substations located in the Eldorado Valley.

TransWest has conducted similar economic planning analysis, has worked with other organizations that have conducted very similar analysis and has been supporting the regional economic planning work at WECC and in other forums. TransWest appreciates that the CAISO has most recently focused on congestion mitigation analysis within its Economic Planning Studies. However, it is critical that the CAISO expand beyond this focus of congestion mitigation, and designate as a High-Priority Economic Planning Study the evaluation of benefits associated with high-quality, low cost resources from out of state, consistent with the above request.

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