

**PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Order Instituting Investigation into)
implementation of Assembly Bill 970 regarding)
the identification of electric transmission and)
distribution constraints, actions to resolve those)
constraints, and related matters affecting the)
reliability of electric supply.)
_____)

I.00-11-001

**COMMENTS OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR ON THE
CONCEPTUAL RENEWABLE RESOURCES TRANSMISSION PLANS OF THE
UTILITIES**

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Dated: September 15, 2003

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The California ISO has reviewed the Renewable Conceptual Transmission Plan Reports submitted by Southern California Edison Company (“SCE”), Pacific Gas and Electric Company (“PG&E”), and San Diego Gas and Electric Company (“SDG&E”), to the California Public Utilities Commission (“CPUC”) on August 29, 2003. On August 22, 2003, the CA ISO provided comments on the preliminary study results presented at the August 18, 2003 Renewable Transmission Study Workshop. Those comments were appended to the SCE Report in Attachment A and in the SDG&E Report in Appendix C and are attached. Given the scope of work and the conceptual nature of the studies, the CA ISO concurs with many of points in the reports prepared by the three utilities. However, further development of transmission projects to serve renewable resources within the SCE, PG&E, and SDG&E transmission systems should consider and address the CA ISO’s August 22, 2003 comments.

September 15, 2003

Respectfully Submitted:

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Cal-ISO Comments on Utility Preliminary Renewable Conceptual Transmission Plans presented on August 18, 2003

1. SCE, SDG&E, and PG&E have each accomplished a significant amount of work in a short period of time on top of the many other studies that they are responsible for, particularly SCE. They deserve to be commended.
2. The SCE, SDG&E and PG&E presentations and SCE report set forth assessments of the transmission upgrades required to interconnect and deliver the renewable resources identified in the CEC's Preliminary Renewables Resource Assessment on July 1, 2003. In assessing the need for transmission upgrades, the utilities generally have assumed that both dependable and intermittent renewables identified by the CEC will displace dependable generation located close to load centers and maintain maximum imports from the Northwest, Arizona, and between PG&E and SCE (on Path 26, 49, and 66¹). This assumption is conservative and likely impacts the outcome of the studies. Moreover, to appropriately identify transmission projects needed as a result of interconnecting renewable generation it is important to distinguish transmission additions required to meet utility resource adequacy requirements and to mitigate congestion costs from those needed to interconnect additional generation. This distinction is important because further information and analysis is required to establish need for projects necessary to meet resource adequacy needs and to mitigate congestion costs. Once utilities have identified all the resources they will rely upon to meet their resource adequacy requirements it will be possible to analyze transmission requirements to meet utility resource adequacy requirements both with and without renewable resources that are included in their dependable resource portfolios. Some must-take renewable resources may be utilized primarily for their contribution to energy needs only and an analysis of transmission requirements for these resources will be based primarily on economic dispatch benefits of displaced resources rather than on capacity resource adequacy needs. Unfortunately, it is difficult to make a comparison at this time because the deliverability component of a resource adequacy requirement has not yet been defined. In any event, additional information that is important in assessing the need for additional transmission facilities to meet the renewables portfolio standard would be obtained through further assessments assuming dispatch scenarios that are consistent with utility overall plans to meet their resource adequacy requirements as described in more detail below. The ISO recognizes that within the time available to complete and finalize the utility reports and given the current lack of definition regarding deliverability requirements, it is not practical to complete such additional assessments at this time. However, the ISO recommends that the conservative assumptions and likely impact on the results should be discussed in the Utility Renewable Conceptual Transmission Plan Reports. The Reports should emphasize that the projects identified as potentially

¹ Path 26: Transmission path connecting PG&E and SCE systems at Midway and Vincent substations. Path 49: Transmission Path between Arizona and California. Path 66: Transmission path between the Northwest and California.

- needed to reinforce the bulk transmission system to accommodate renewables will require additional need analysis. The additional need analysis should be based on (a) the need to deliver firm capacity and energy resources to load, (b) the economic benefits of delivering low cost non must-take energy to load, or (c) operational reliability needs.
- a. As an interim measure, the utilities have proposed in the CPUC's procurement proceeding a 115% of planning reserve margin. Using this level for purposes of this discussion, each utility should identify the dependable resources that they will use to meet 115 % of their peak load, and identify the transmission upgrades that would be required to assure that utilities can meet their resource adequacy deliverability requirements with these resources. Worst case² combinations of availability of these resources should be deliverable under peak load conditions. Once transmission upgrades required to meet resource adequacy requirements (absent the addition of renewables) are identified, these can be compared to transmission upgrade needs with renewables included in the dependable resource portfolios. In this manner more information will be available about upgrades that are needed primarily to meet resource adequacy requirements with and without new renewable generation..
 - b. Transmission projects, including projects to interconnect renewable resources, can be justified by showing that they will provide economic benefits to customers by providing access to low cost non must-take energy. Where such justification is available, the benefits to customers should be included in an assessment of overall net-costs.
 - c. Transmission projects can be justified by the system operator for operational reliability needs. For example, large concentrations of wind generation could require additional transmission capacity margin to allow for unpredictable wind generation fluctuations beyond reasonable redispatching capabilities of the system to avoid transmission operational reliability criteria violations.
3. Projects such as Pardee-Vincent, Vincent-Rio Hondo, Lugo-Mira Loma, Cottonwood-Vaca Dixon, Contra Costa-Newark and the west of Devers reconductoring are examples of projects identified as potentially needed to reinforce the bulk transmission system. The need analysis for these projects is especially dependant on market generation dispatch assumptions.
 4. The ISO will be working on a preliminary conceptual economic transmission analysis using the CEC renewable resource scenario as one of the resource assumptions. Results of this analysis will be shared once it is completed.
 5. Resource adequacy deliverability analyses for all three utilities need to be coordinated. The detailed rules for performing a coordinated analysis need to be worked out as part of the upcoming resource adequacy workshops that the CPUC will be hosting.
 6. Renewable transmission plans need to be coordinated with existing transmission plans and existing transmission planning processes. For example, SCE, and

² In this context, worst case is from a deliverability perspective.

- SDG&E should coordinate the identified projects with STEP project alternatives to ensure that transmission needs are met with the most economic alternative.
7. Alternative transmission plans need to be compared to the identified plans. Alternatives should be identified that have the potential to provide regional benefits. For example, SCE should eventually analyze an alternative that connects one of the two new 500 kV lines emanating from Tehachapi to PG&E's Midway Substation—the increased transfer capability on Path 26 could make this alternative more economical than the project identified in the report.
 8. Projects identified in the plans should not be characterized as cost effective until items 2, 6 and 7 above are performed.
 9. 72% of the renewable energy, in the CEC provided study assumptions, are located in the SCE territory. This amount exceeds SCE RPS target needs by 39%. SCE study assumptions should not assume that all of the renewable generation in their studies would be delivered to SCE load. A more appropriate assumption would be to proportionally schedule the additional 39% to PG&E and SDG&E load, based on their RPS needs.

PROOF OF SERVICE

I hereby certify that on September 15, 2003, I served by electronic and U.S. mail, the Comments of the California Independent System Operator on the Conceptual Renewable Resources Transmission Plans of the Utilities in Docket # 1.00-11-001.

DATED at Folsom, California on September 15, 2003.

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