

**BEFORE THE 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.

Investigation 00-11-001
(Filed November 2, 2000)

**PREHEARING CONFERENCE STATEMENT OF THE
CALIFORNIA WIND ENERGY ASSOCIATION
ON THE REFINEMENT OF THE TRANSMISSION COST METHODOLOGY
ADOPTED IN D.04-06-013**

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Pursuant to the Assigned Commissioner Ruling (ACR) issued on September 10, 2004, and Rule 2.3(b) in the Commission Rules of Practice and Procedure, the California Wind Energy Association (CalWEA) submits this prehearing conference (PHC) statement on refining the transmission cost methodology adopted in Decision (D.) 04-06-013 for use in the next renewable portfolio standard procurement.

We offer suggestions below for whether and how each of the issues identified in the ACR should be further developed, and identify several additional issues. At the outset, however, we offer two procedural suggestions.

I. The Commission Should Obtain Independent Analyses on the Most Complicated Topics

The Commission should obtain independent analyses on the most complicated topics at hand, most importantly:

- the quantification of network benefits associated with each upgrade;
- the necessity and cost of inter-utility transmission upgrades attributed to out-of-area resources;
- ensuring that the costs of network upgrades are properly attributed to the source of the upgrade; and
- studying and recommending ways to lower transmission costs by better integrating wind resources into the system.

Each issue is discussed below. These analyses would ideally be conducted by the California Independent System Operator (CAISO), but could be conducted (or supplemented) by the CEC and their consultants or the Commission could hire independent experts whose costs would be covered by the utilities. If the analyses are not conducted by the CAISO, we would hope that the consultants would work closely with the CAISO. The Commission should also consider the benefits of having the TRCRs themselves be prepared by the independent entity for commission review and approval.

Independent analyses will inject objectivity and fairness. First, independent analyses would remedy the problem of the utilities' resources far exceeding those of the renewable energy parties and the capabilities of the CPUC. Second, independent analyses would provide all parties with a benchmark against which to compare utility assessments, instead of simply reacting to utility analyses which can contain non-transparent judgments. Independent analyses on the most critical subjects are needed to ensure a fair process and to ensure truly least-cost, best-fit bidding results.

II. The Commission Should Rely on Workshops to Resolve Issues as Much as Possible

The Commission should seek to minimize litigation in these proceedings by convening workshops whenever possible. The Commission should provide clear direction in advance regarding the workshop products it expects and should provide an expedited path to Commission resolution of impasses when they occur. If possible, the study groups themselves (Tehachapi and others as they are created) should be called upon to resolve resource-area-specific issues. Considerable progress has been made in the Tehachapi Study Group (TSG) to date; we believe that it serves as a good model for the bringing the parties to consensus, or at least narrowing the areas of disagreement.

These workshops would be even more productive if they revolve around the work of independent analysts. Workshops could be held with the independent analyst before and after the analyses are conducted, and the Commission could solicit parties' formal comments on the consultant's final recommendations before adopting them in some form. Briefing, and evidentiary hearings when necessary, with Commission-defined, expedited procedures and schedules, could then be limited to the areas of remaining disagreement.

III. Comments on Issues Identified in the ACR

A. Sharing of gen-tie facilities

Absent specific findings from transmission study groups, we believe that the approach used in D.04-06-013 for handling shared gen-tie facilities is appropriate, though

a few procedural modifications are needed. The adopted approach requires each utility to describe in its Transmission Ranking Cost Report (TRCR) any facilities it considers to be gen-ties that may be shared by more than one renewable project, specifying the location and the capital costs of such facilities. The developers may then use this information in constructing their bids and may also contest the utility's gen-tie determination in comments on the TRCR.

In the initial round of bidding, however, the process and the time allowed for resolving disputes related to the TRCRs was insufficient. In the future, the Commission should institute formal processes for challenging TRCRs, and allow sufficient time between the time that those disputes are resolved and the time that bids are due. This would allow bidders sufficient time to discuss gen-tie costs with other potential bidders before bids are due.

B. Evaluation of network benefits and costs

CalWEA has consistently argued that counting the costs of transmission upgrades without benefits will produce inefficient and discriminatory bidding results. A methodology for estimating these benefits should be integral to the calculation of the net upgrade costs which are then translated into the bid adders. Failure to systematically quantify the network benefits of transmission costs associated with all bids (thereby assigning to benefits the arbitrary figure of zero) would be a far greater error than imperfectly assessing the benefits. In the case of Tehachapi, as the CAISO's July 15, 2004, presentation of its Transmission Economic Assessment Methodology (TEAM)" showed (in Phase 5 of this proceeding), very substantial economic benefits would accrue from upgrading Path 26 (which could be accomplished in the process of accommodating Tehachapi wind projects). The CAISO also showed, in their August 18 presentation to the TSG, that one of the alternatives for the Tehachapi upgrade would provide substantial additional benefits (e.g., ancillary services and operational flexibility) that they were not able to quantify. All of these network benefits should be quantified going forward.

Likewise, the reasonableness of the utilities' estimates of upgrade costs should be reviewed. We believe that the costs in the TRCRs are often materially inflated.

We suggest, on this topic, that a workshop be convened to: (a) discuss the

feasibility of using TEAM to calculate the economic benefits associated with the upgrades for all major renewable resource areas within the state; (b) if a TEAM analysis of the benefits associated with some or all resource areas is not practical, what shortcuts should be used, if any, to make the estimates; (c) develop a proposed workplan to guide the independent analyst in developing estimates of network benefits and in reviewing the TRCRs' estimates of upgrades costs; (d) determine the role to be played by the TSG, and possibly other study groups, in the assessment of network benefits and upgrade costs.

C. Curtailability and Cost Savings for Generators Selecting Energy-Only Interconnection Service

Under FERC's Order No. 2003, an interconnecting generator may choose to buy energy-only interconnection service. Energy-only service relieves the transmission provider of having to assure capacity. The bid evaluations must reflect the upgrade cost avoided when a generator selects energy-only interconnection service. The Commission should (a) review the CAISO's revised tariff concerning the Large Generator Interconnection Procedures (LGIP), specifically its deliverability assessment, which has not yet been adopted by the FERC, and (b) ensure that bidders have the right to bid -- and to have their bids evaluated accordingly. That is, if a project uses transmission service that does not cause a network upgrade, it should not be evaluated as triggering the costs of such an upgrade.

D. Dynamic line ratings

Line upgrades are not the only means of accommodating a generator interconnection. Transmission study groups should be tasked with studying the benefits of dynamic rating (DR) equipment and factoring its use into upgrade designs. The Commission should adopt guidelines for estimating the benefits of DR for application in cases where study group recommendations on DR are not available.

Dynamic rating is an accepted means of determining, in real time, a line's load-carrying capability. Dynamic rating has is being used on facilities owned by Pacific Gas & Electric and San Diego Gas & Electric and elsewhere in the country.

Dynamic rating, also known as real-time rating, is the process by which the

transmission provider monitors, in real time, a transmission line's load-carrying capability. In the absence of dynamic rating, a transmission owner assigns to each line a normal rating, which is based on an assumed (usually normal) set of weather conditions. Wind, ambient temperature, and degree of sunshine all affect a line's load-carrying capability. Wind cooling reduces the sag, thus increasing the line's load-carrying capability. For most transmission lines, the ratings are based on the assumption of normal wind velocities (0.61-1.22 meters per second) and worst-case assumptions with respect to sunlight and ambient temperatures. At those low velocities, the line-cooling effect is limited. But wind generators operate at much higher wind velocities.¹ So at the very times when wind generators begin to operate, the cooling effect exceeds that assumed by the normal rating. This higher cooling effect allows the line to carry current in amounts far higher than those permitted by static ratings without causing dangerous sag or harm to the equipment.

Dynamic rating equipment allows the transmission owner to monitor weather conditions in real time, and to permit loadings that exceed the line's normal rating. Experience has shown that real-time-monitored transmission lines can typically be operated at ampacities 10-30% higher than static ratings for 90-98% of the time.²

There appears to be some reluctance on the part of the utilities to consider DR in the planning process. We are uncertain as to whether the utilities are allowed to use DR in the planning process. If not, the Commission should recognize DR as part of the overall planning process, and ensure that the lower costs achieved through DR, and the benefits to ratepayers, are captured and then reflected in the bid adders.

E. Coincident generation

The parties should attempt to come to consensus on how the difference between maximum coincident generation and total nameplate generation should be taken into account for each wind resource area. Coincident generation was not properly accounted

¹ Wind turbines start operating at wind speeds of 4 to 5 meters per second and reach maximum power output at around 15-17 meters/second. At very high wind speeds (i.e., gale force winds at 25 meters/second, 56 miles/hour), wind turbines shut down.

² CIGRE Paper 22-301, 2000 Session, Application of Real Time Thermal Ratings for Optimizing Transmission Line Investment and Operating Decisions, by Seppa, Clements, Payne, Damsgaard-Mikkelsen, Eltra and Coad. CIGRE is the International Council of Large Electric Systems.

for in the TRCRs, even though it can significantly reduce transmission needs. Currently in Tehachapi, for example, 360 MW of project nameplate capacity has approximately 310 MW of coincident generation. The CEC's RPS integration cost analysis team should be requested to participate in these discussions, bringing any useful data from the integration cost studies.

F. Use of existing intercompany transmission capacity by renewable resources located outside the purchasing company's service territory

In the rush to the initial round of RFPs, the parties and the Commission applied insufficient time and attention to the utilities' TRCR revisions that estimated the cost of importing renewables from one service territory to another. These estimates—a typical case of the utilities piling onto renewables interconnections upgrades that are needed or desirable for reasons other than integrating the renewable project -- were exceedingly high and likely discouraged bidders located in one service territory from bidding into another service territory, and are likely to have a major effect on the bidding results.

The commission should obtain from an independent third party a review of the utilities' estimates of import costs, including the necessity of the upgrades assumed to be required.

IV. Additional Issues that the Commission Should Address

A. The commission should develop guidelines for proper allocation of upgrade costs

The Commission's D.04-06-013 does not contain guidelines to ensure that, for purposes of the bid adders, the utilities properly attribute the costs of network upgrades to the source of the upgrade. The Commission should charge an independent analyst with proposing TRCR guidelines that will ensure that (a) transmission costs are appropriately attributed to proposed renewable and nonrenewable generators and (b) if the utility is already planning upgrades to its transmission system for other reasons, e.g., reliability, the costs of any such upgrades are not allocated to renewable resource development.

B. The utilities should be required to update the TRCRs before each solicitation

Each utility should be required to update its TRCR before each solicitation, so

that bids are ranked according to the most recent information about the state of the transmission system. The independent analyst should review the draft TRCRs to ensure that they have been developed consistent with adopted guidelines and adopted reports of the independent analyst. The parties should also have ample time to review and comment on the draft TRCRs, and the timeline should allow for Commission review and adjustments as necessary.

C. The TRCRs should be modified to reflect more efficient integration of wind energy (and other intermittent renewables) into the state's energy supply

The state's electric system, particularly (but not limited to) its hydro resources, could be coordinated with wind resources so as to reduce grid congestion and thus reduce the additional transmission capacity that is required to accommodate new wind resources. The efficient integration of wind energy has not been evaluated to any meaningful degree and should be, because of the very large efficiencies that might be gained. Therefore, we recommend that, in addition to the tasks noted above, the independent analysts be tasked with studying and recommending ways to lower transmission costs by better integrating wind resources into the system. If these recommendations are adopted by the CPUC and/or the ISO, they can then be factored into the TRCRs and the bid adders.

D. The utilities should provide the parties with some information or examples about how the bid adders were used in the first round of bids

Parties who are not participants in the utilities Procurement Review Groups (PRGs) are in the dark as to what transmission bid adders were applied to bids, what bid-specific adjustments were made, and how the bid adders affected the results. In order to improve the process for the next round of bids, we need some information about what occurred the first time around. One way to inform the parties without violating confidentiality rules would be for the utilities and their PRGs to jointly prepare a memo to parties in this proceeding which summarizes the experience, along with any recommendations for change.

E. The utilities should set a date for their 2005 solicitations so that the timeline for refinement of the transmission bid adders can be set accordingly

A substantial amount of work needs to be done to properly refine the transmission bid adder methodology and results. This work should commence as soon as possible so that its completion does not delay the next round of bids. At the same time, it is sufficiently important that the bid adders be far closer to accurate this time around, which warrants scheduling the next round of bidding to allow the job to be done well.

Respectfully submitted,

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