

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA ALJ Ruling's**

**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)**

**INITIAL COMMENTS OF THE
CALIFORNIA WIND ENERGY ASSOCIATION
ON THE
PROPOSED INTERIM METHODOLOGY FOR DEVELOPMENT AND
CONSIDERATION OF TRANSMISSION COSTS IN RPS PROCUREMENT**

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April 14, 2004

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Pursuant to the Administrative Law Judge's Ruling proposing an Interim Methodology for Development and Consideration of Transmission Costs in RPS Procurement ("ALJ Ruling" or "proposed methodology") issued April 2, 2004, and the extension of time granted on April 7, 2004, the California Wind Energy Association (CalWEA) respectfully offers its initial comments.

- I. A Bid Adder that Disregards Benefits Conflicts with the Statute; A Minor Adjustment to the PD's Proposed Cost-Assessment Procedure Will Solve The Problem**
 - A. The Statute Compels Consideration of Benefits**

The ALJ Ruling states (at 4):

"CalWEA proposes that the Commission make a blanket determination that network benefits of transmission upgrades exceed their costs and, as a result, that no transmission costs be included in the assessment of RPS bids. I do not accept this proposal because it is counter to both Public Utilities Code sec. 399.14(a)(2)(B) and D.03-06-071."

CalWEA respectfully requests reconsideration of this conclusion. Section 399.14(a)(2)(B) requires a --

process that provides criteria for the rank ordering and selection of least-cost and best-fit renewable resources to comply with the annual California Renewables Portfolio Standard Program obligations on a total cost basis. This process shall consider estimates of indirect costs associated with needed transmission investments and ongoing utility expenses resulting from integrating and operating eligible renewable energy resources.

The references to "least cost" and "total cost" must mean net cost to the state's consumers. To choose a \$40 million project over a \$50 million project when the former produced \$5 million in benefits while the latter produced, say, \$20 million in benefits would not produce a "least cost" result, nor would it be a "best fit." Disregarding benefits would be like administering a driving test that evaluated the testee's ability to make right-hand turns but not left-hand turns. The error would be no less significant for an interim test than for a permanent test. Benefits are not subordinate to cost; they are integral to the calculation of cost.

Therefore, benefits must be reflected in the determination of cost. To ignore them is to assign them the arbitrary value of zero, a number that is certainly wrong and lacking in factual basis.

CalWEA's point was not that the Commission should ignore cost -- such a result would violate Section 399.14(a)(2)(B), as the PD states. Our point was that the record supported a fact-based finding that network upgrades produce many kinds of benefits, that those benefits are substantial, that many of those benefits relate directly to the cost of power and transmission service to California consumers (in reduced congestion costs, for example, as opposed to the indirect benefits of lower pollution, etc.) and that the procedural expenditure to quantify the benefits would be more costly than the incremental benefit of precision. CalWEA thus

concluded in its pre-hearing conference(PHC) statement (at 7):

"[T]he Commission after this hearing should determine that the record supports a finding that in the case of each generator interconnection, network benefits will at least equal network costs, thereby obviating a bid adder process. At the very least, the hearing process should aim to answer the question of whether certain types of upgrades have this effect, thereby narrowing the scope of bid adder inquiries that are necessary."

B. The ALJ Ruling's Concern About "Delay" Cannot Support The Illogic Of Disregarding Benefits

The ALJ Ruling further states (at 5): "Holding hearings to address network benefits may not improve the accuracy of transmission cost estimates and would delay the initial procurement." In its PHC statement, CalWEA had acknowledged that accuracy in predicting network benefits will be difficult. But that difficulty does not translate, logically, into a statement that accuracy will not improve with more attention, such as attention provided by a paper hearing consisting of witness affidavits. Nor does it translate into a policy of assigning benefits of zero -- a number which, while precise, is certainly wrong. The "may not" phrase in the above-quoted sentence lacks a logical and factual basis. If accepted, the phrase implies that there would be no use in considering benefits in a permanent methodology either, a result no less in conflict with the statute than disregarding benefits in an interim methodology.

As for the concern with "delay[ing] the initial procurement": we readily acknowledge that analysis of benefits will require time expenditure. But the term "delay" is a value-laden term, a pejorative one; and it has arisen only in the context of benefits. To apply it here is to discriminate, again, against the concept of benefits. For if "delay" were a paramount concern, the Commission would have dispensed with the pre-hearing conference (which did little more than allow parties to repeat orally what they had written in PHC statements); and/or eliminated the initial or reply comments on the ALJ Ruling. The Commission habitually uses multiple steps

to reach a decision; to single out one step -- a substantive, statutorily-compelled analysis of benefits -- and call it "delay" is discriminatory.

C. Some Systemization of the Benefits Calculation Is Necessary For An Efficient And Nondiscriminatory Process

The ALJ Ruling states (at 5):

"Other than mandating consistency and transparency, the interim methodology does not specify the manner in which a utility should consider such factors [i.e., benefits, local reliability, low income or minority communities, environmental stewardship, and resource diversity] in assessing projects' bids."

In a different context, the ALJ Ruling states (at 6) that "[l]ike network benefits, utility consideration of curtailability proposals should be consistent and transparent to the Commission when it reviews proposed RPS contracts."

The Commission should not leave it to each utility to determine a "consistent and transparent" method for analyzing benefits. That approach will force each developer, who lacks the regulatory affairs budgets which the utilities fund through rates, to argue their points three times (once for each utility) rather than once -- an extremely inefficient and unfair process. There also is the problem of neutrality. As the Commission knows, the utilities vary in their commitment to, and neutrality regarding, renewable energy. Their methods for arriving at terms and conditions for generation interconnection are not always "consistent" or "transparent," leading to frequent disputes.¹ The "delay" that concerns the ALJ Ruling now will not go away;

¹ Cf. Southern California Edison Co. (Moreno Valley), 106 F.E.R.C. 61,218, Docket Nos. ER04-383-000 (setting for hearing municipality's allegations of undue preference in interconnection agreements)(March 5, 2004); Southern California Edison Co. (Whitewater), Docket No. ER02-2189-000, 100 F.E.R.C. 61,219 (Aug. 27, 2002), rehearing pending (dispute over classifications of upgrades for wind project); Southern California Edison Co. (High Desert Power), Docket No. ER03-1243-000, 105 F.E.R.C. para. 61,080 (Oct. 22, 2003)(dispute over one-time costs associated with interconnection agreement for new generator); Southern California Edison Co. (Wildflower), 97 FERC 61,148 (Nov. 7, 2001) (directing SCE to modify

it will be a greater delay later as developers struggle with the utilities' benefits calculations. Systematizing the benefits process now will reduce contention in the procurement process, and thereby speed up that process.

At the least, if the Commission feels it lacks expertise to develop a scheme for benefits calculation now, it should assign the task to an entity more neutral than the utilities, such as the California ISO or a Commission-selected consultant.

D. A Process for Determining Benefits Can Be Fit Within the Procedure Described By the ALJ Ruling

CalWEA agrees with the ALJ Ruling's intent to expedite the first round of bidding through an interim methodology. CalWEA proposes a process that would accommodate these timing goals while avoiding the logical and legal error of adding costs but not subtracting benefits. We explain this process in two steps: First, we place network benefits in four distinct categories and explain how these categories can be applied to each network upgrade to quantify the benefits. Then we describe how to fit a process of benefits determination into the cost-determination process set forth in the ALJ Ruling.

1. Categorization of Network Benefits

The Commission should require the utilities to evaluate the network benefits associated with the following four categories of upgrades to ensure that the major benefits associated with all elements of the upgrades required for each project are evaluated and quantified:

interconnection agreement to provide transmission credits).

- a. upgrades short of constructing new poles and wires that increase the capability of a pre-existing circuit or portion of the network by various means;²
- b. upgrades requiring construction of new poles and wires that provide a loop around a pre-existing circuit or interface of transmission network (group of circuits);
- c. increases in the capability of an interface resulting from new generation at the load end of a constrained interface (in a load pocket); and
- d. upgrades calling for a new switchyard or substation where a generator interconnects to a pre-existing circuit of the grid.

This fourth type of upgrade increases the reliability of the pre-existing circuit even when an interconnection does not involve looping a pre-existing circuit.

Because most upgrades to facilities operating at voltages of 230 kV and above (which could fall into any of the four categories) will benefit the network,³ we suggest a simplifying

² This category could include replacing a wave trap (a device that separates an electrical signal used for protective relaying from the power traveling on a circuit), switch, circuit breaker, current transformer or potential transformer that limits flows on a circuit. This also includes the addition of new conductors or a transformer or the substitution of higher rated conductors on the same poles and wires in order to increase the amount of current a circuit can carry. This category also could include an increase in the voltage of the circuit. Reactive power flows through a circuit can be reduced by installing capacitor banks or static VAR compensators at the load. Stability limitations on transfer capability can be remedied in various fashions (such as series capacitors, special protective schemes for generation dropping, dynamic braking, and fast load dropping).

³ Facilities operating at or above 230 kV are capable of transmitting hundreds of MW each (only four 230 kV circuits were specified by SCE for interconnecting 2,500 MW of wind generation under one of SCE's conceptual plans) and provide line charging for voltage support and flexibility to expand the existing ISO Controlled Grid. Such high capacity facilities are features of a transmission network and are seldom specified to gather power from generators unless other system needs can be met. This is the case in the Tehachapi area where such facilities (as proposed by both SCE and the Cal ISO) will loop constrained portions of the ISO Controlled Grid, enable SCE to firm up service to loads in the Tehachapi area, improve voltage for loads and generators in the Tehachapi area and enable the owners of pre-existing lines (such as those of LADWP passing through the Tehachapi area) to be firmed up.

assumption for these particular upgrades. Specifically, if an upgrade involves facilities operated at 230 kV and above, then there should be a rebuttable presumption that network benefits exist such that the net cost of the transmission adders would be zero.⁴

2. Quantification of Network Benefits

A method for measuring network benefits is needed for those upgrades carried out on facilities operating at a voltage lower than 230 kV. The magnitude of the benefits could be determined through two steps: determine the MW increase in transfer capability, and calculate the dollar value of that increased transfer capability.

a. Determine the MW increase in transfer capability

Whenever a single element of a network is upgraded, the network gains the ability to transmit more power over that element. The increased benefit is measurable in terms of MW of transfer capability on that circuit. Moreover, if that upgraded circuit is part of a multi-circuit interface, the firm capability of the interface (the interface's capability after experiencing the most severe single contingency) is increased, so long as the circuit being upgraded is not the most severe single contingency associated with the interface.⁵ Also, upgrades on an interface increase the stability limit of the interface and tend to decrease the losses on the interface - and

⁴ If the Commission does not find it suitable to consider all upgrades on facilities operating at or above 230 kV to produce network benefits equaling the cost of the upgrade, then the load flow analysis suggested for lower voltage facilities can be applied to those higher voltage facilities as well.

⁵ Most network upgrades – and looping in particular - provide greater “N minus 1” thermal transfer capability (measured in MW) on a constrained portion of the grid and sometimes a higher stability limit (also measured in MW). Whenever an upgrade creates a loop around a constrained interface, the firm and non-firm transfer capability as well as the stability limit of that interface tend to be increased, and the losses over that interface are decreased (for any given amount of power flow).

the network as a whole. Each of these benefits is quantifiable in terms of MW of transfer capability and in terms of dollars of loss savings.

An increase in MW of transfer capability will produce greater amounts of firm transmission rights (FTRs) and will lower locational marginal prices (LMPs). The reduction in LMPs will be even greater during those periods in which the transfer capability of the grid is increased to accommodate new wind generation but the increased transfer capability is not loaded with wind generation (about 2/3rds of the time).⁶

Utility planning engineers can precisely calculate the effect on transmission losses and the increase in steady-state transfer capability on the pre-existing network associated with each upgrade through load flow simulations. (Load flow simulations are regularly conducted in accordance with NERC and regional reliability standards, and can be performed by using automated features of load flow software.) In some cases, determining the effect of upgrades on some interfaces requires more complicated stability studies as well, but much of the benefit can be identified through load flow simulations.

b. Calculate the dollar value of the increased transfer capability

Once the MW of transfer capability across a constrained interface is known from the load flow simulation, its value can be determined. Today, the Cal ISO calculates cost differentials across inter-zonal interfaces in each ten-minute period and maintains records of those cost differentials. As the Cal ISO implements Market Design 2002 (“MD02”), it will be able to quantify the value of each MW of increase in transfer capability between each node of the Cal ISO transmission system because the Cal ISO will be calculating (and presumably forecasting)

⁶ Wind generation will use those increased MW of transfer capability only about 1/3rd of the time owing to the limited capacity factor of wind generation. The other 2/3rds remains available for

LMPs at each such node. It is just such forecasts of LMPs that transmission users will use in developing the amounts they will bid for FTRs between selected nodes.

Accordingly, each Transmission Owner (TO) should be required to provide an estimate of the MW of loss savings and the effect of each upgrade upon the MW of transfer capability across existing constrained interfaces as part of their evaluation of benefits in their Transmission Ranking Reports. And, as MD02 is put in place, that requirement should be expanded to include the effect of each upgrade on FTRs and the values thereof.

3. Integrating Benefits Calculation into the Cost Determination Process

The ALJ Ruling requires each utility to file a Transmission Ranking Costs Report. To accommodate the benefits calculation process, each Report should describe the upgrade, and identify its category consistent with the four categories listed above. For upgrades other than those to facilities operating at voltages of 230 kV and above (for which benefits should be deemed to equal costs), the Report would describe the upgrade's contribution to the network in terms of loss savings and increased transfer capabilities as determined by load flow simulation. Then the report would quantify the benefits to the network based on the MW increase in transfer capability and dollar savings associated therewith.

The ALJ Ruling provides for parties' initial comments in response to each utility's Transmission Ranking Costs Report. In these initial comments, each party may comment on the utility's classification of the upgrade and the associated benefits. Where a party has conducted its own studies it may offer its own calculation of benefits. If a record on benefits already exists for a transmission project (Tehachapi, for example), the proponent may cite to that record for evidence of benefits.

For a transmission project that does not have a record on benefits, the proponent may submit as its response to the utility's Transmission Ranking Costs Report an affidavit explaining the benefits and their value.

With this process, the Commission will have before it a record on cost and benefits. As the ALJ Ruling says (at 10), "[t]he Commission can then assess the adequacy of the reports on the basis of the filed comments and determine whether additional steps are warranted before the utilities' results are used in ranking bids for the initial RPS procurement." If the utilities require additional time to include benefits calculations in the Reports, an additional 14 days should be sufficient. An additional 14 days should be added to the parties' response time as well.

4. The Value of CalWEA's Approach

CalWEA's approach:

- a. makes a determination of benefits an integral part of the process for determining costs, as is required by statute,
- b. avoids the arbitrary determination that benefits equal zero,
- c. uses the procedure created by the ALJ Ruling, while adding only 28 days to a process whose cost and benefits effects will be felt for years,
- d. allows for use of the existing record on benefits where such record exists, and
- e. creates an opportunity for the creation of a record on the benefits of transmission projects where no such record exists.

II. The ALJ Ruling Incorrectly Penalizes Curtailable Projects for Network Costs, In Conflict With FERC Orders 2003 and 2003-A

The ALJ Ruling states (at 6):

The utilities should develop transmission cost estimates that allow delivery of the full output of the renewable projects, with no provision for curtailment as a means to reduce transmission costs. As noted by SDG&E in its PHC statement, some System Impact Studies and Facilities Studies may not address

deliverability needs. Unless a contract has been signed that provides for curtailment in lieu of full deliverability, the utility's transmission cost estimates should include deliverability costs, if warranted, in addition to System Impact Study and Facilities Study results.

D.03-06-071 recognizes that the utilities may favor curtailability and dispatchability as attributes of bids. Projects may submit bids that provide for less-than-full deliverability of project output, e.g., curtailments when transmission is constrained. The utility would then assess, on a case-by-case basis, whether and the extent to which the published transmission cost estimates should be modified in assessing such projects' bids.

Generators have an unqualified right under FERC's Large Generator Interconnection Procedures (LGIP), established in FERC Orders 2003 and 2003-A, to interconnect as an Energy Resource and use the as-available transmission capacity of the transmission provider. This right contrasts to the right of the generator to be interconnected as a Network Resource.

The ALJ Ruling does not take into account the generator's right to avoid network upgrade costs into consideration when setting the transmission adder. In essence, the ALJ Ruling transfers to the utilities the discretion that generators have under federal law to elect to interconnect on a lower-cost basis. That is, the ALJ Ruling would grant utilities the discretion to "assess, on a case-by-case basis, whether and the extent to which the published transmission cost estimates should be modified in assessing such projects' bids." This approach would allow the utility to penalize the generator through transmission adders for upgrades required to meet an "N minus one" transmission reliability criterion even though the generator may elect to avoid costly network upgrades needed to meet an "N minus one" criterion and curtail its output during "N minus one" events.

The correct solution would be to remove the utility's discretion to modify the bids. The Commission instead should require that a lower adder be used if, by opting for Energy Resource treatment, the generator causes lower cost (or zero cost) upgrades.

III. The ALJ Ruling Incorrectly Rejects The Use Of Dynamic Ratings

At pp. 6-7, the ALJ Ruling states:

CalWEA suggests that dynamic line ratings be used in the transmission cost estimates. I disagree. Typical ambient conditions are taken into account in establishing line ratings for planning purposes. Dynamic line ratings, by their nature, reflect operating conditions that are not pervasive enough to be considered in reliability planning studies. As a result, it is not appropriate to use dynamic line ratings in determining needed transmission upgrades.

The ALJ Ruling does not describe dynamic ratings correctly. By taking wind conditions into account, transmission requirements for wind generators can be substantially reduced. This is the result of the fact that high wind velocities needed to produce wind generation also cool transmission conductors and allow them to carry increased amounts of current without adverse consequences. Dynamic monitoring equipment allows transmission designers to accomplish this desirable objective.

Modern dynamic rating equipment measures the tension in each separate segment (between deadend towers) of a transmission circuit and accounts for ambient temperature, wind velocity, wind direction (vis-à-vis the alignment of the transmission segment), radiation from sunshine, etc. When high wind velocity is taken into account, a circuit segment can carry substantially more than the rating associated with design conditions without causing impermissible line sag or overheating. Real time increases in line ratings of as much as 40% are not uncommon.

The equipment on each segment contains its own monitoring devices and micro-computer and is calibrated to tell the transmission provider in real time how much power can be carried by each segment of a transmission circuit. Accordingly, if any segment of a transmission line is in a “dead spot” not sufficiently cooled by prevailing winds, the dynamic monitoring

equipment will record that fact and cause the rating of the entire circuit to be reduced.

Finally, the ALJ Ruling's concern that dynamic line ratings are not pervasive enough is not based on fact. Dynamic ratings are presently in use in multiple portions of the Cal ISO grid.

In short, to omit dynamic ratings is to arrive at the wrong determination of costs. CalWEA is prepared to present a witness on the foregoing facts.

IV. VAR Reporting Will Increase the Network's Cost-Effectiveness

At page 7, the ALJ Ruling finds:

CalWEA suggests that wind generators report the extent to which they would be able to produce Volt Amperes Reactive (VARs), for use in development of transmission cost estimates. However, except for projects in the ISO interconnection queue, transmission cost estimates should be developed without reference to specific projects. Developers may submit VAR characteristics of their proposed projects, to the extent known, as part of their bids, and the utilities may take this information into account in assessing the bids.

Traditional wind generators are induction generators that are characterized by very large consumption of VARs. As a consequence, the original types of wind generators required that substantial amounts of transmission capacity be set aside for providing VARs to the wind machines in addition to the capacity needed to accept megawatts of output. In addition, the original types of wind generators were designed to drop off whenever a short circuit depressed voltages near the generator and prevented the transmission system from providing VARs to the generator.

Modern designs, however, employ static VAR compensators and capacitor banks to provide VARs that are closely calibrated to the VAR consumption of the machines, and to the VAR needs of the local grid, even during short circuit conditions. Moreover, modern designs are able to remain on the line without interruption during short circuits (short circuit or fault carry

through). The benefit of this capability is not reflected in the transmission cost estimates calculated to date, and should be. SCE has correctly pointed out at FERC the important benefits of good VAR control.⁷ In their Transmission Ranking Costs Reports, therefore, the utilities should be required to take into account the VAR characteristics of modern wind generators – i.e., they should assume that wind generators can operate within industry VAR requirements normally imposed on synchronous generators at the point of interconnection.

Finally, the sizing of transmission facilities needs to take into account the fact that maximum Coincident Generation from clusters of wind generators is materially less than Nameplate Generation. For a large resource area like Tehachapi, the difference is approximately 15%. Utilities routinely consider load diversity in designing transmission and distribution systems, and diversity of wind generation similarly needs to be factored into the cost determination. For example, all main transmission facilities will cost 15% less, taking this into consideration. SCE did not take this factor into consideration in making its transmission cost estimates for Tehachapi.

Respectfully submitted,

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⁷ Southern California Edison, Request for Rehearing of FERC Order 2003-A, Standardization of Generator Interconnection Agreements and Procedures, Docket RM02-1-002 (at 2-5 and Appendix A), April 5, 2004. SCE states (at 5), “These additional reactive resources [added to existing wind facilities] have greatly improved overall system performance. SCE has continued to monitor the output and corresponding power factor of each Wind Generation Facility and has observed that all voltage degradation problems have been resolved with the exception of problems experienced under emergency or abnormal conditions. ... SCE itself has not received any indications from wind generation interconnection applicants that they cannot meet the power factor requirements due to voltage problems. In fact, the power factor requirements are imposed to avoid the voltage problems discussed above.”

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April 14, 2004

**CALWEA APPENDIX
PROPOSING ALTERNATE LANGUAGE
FOR THE RULING AND ITS ATTACHMENT A**

...

II. Interim Methodology for Estimates and Consideration of Transmission Costs

...

C. Network Benefits

CalWEA proposes that the Commission make a blanket determination that network benefits of transmission upgrades exceed their costs and, as a result, that no transmission costs be included in the assessment of RPS bids. ~~I do not accept this proposal because it is counter to both Public Utilities Code § 399.14(a)(2)(B)8 and D.03-06-071. I reject this proposal, as well as CalWEA's proposal to conduct hearings on the matter, in favor of CalWEA's subsequently proposed methodology for expeditiously quantifying the benefits associated with transmission upgrades. I find that Public Utilities Code § 399.14(a)(2)(B)9 and D.03-06-071 require the consideration of transmission benefits as integral to the calculation of cost, and that such consideration cannot be ignored in an interim methodology. I find further that systematizing the benefits process now will reduce contention in the procurement process, and thereby speed up that process, while requiring a modest amount of additional time to implement.~~

Each subject utility should calculate the benefits of transmission upgrades in its Transmission Ranking Costs Report and net those benefits against the costs of upgrades. Because most upgrades to facilities operating at voltages of 230 kV and above will benefit the network, the utilities should presume that network benefits exist such that the net cost of the associated transmission adders would be zero, or present evidence as to why such presumption should not be made. For facilities operating at a voltage lower than 230 kV, the utilities should measure network benefits according to the method detailed in Attachment A. Parties will have an opportunity to comment on these benefits calculations in response to each utility's Transmission Ranking Costs Report.

~~8 All statutory references are to the Public Utilities Code.~~

~~CalWEA proposes alternatively that hearings be held at this time to identify network benefits as offsets to transmission upgrade costs attributed to renewable projects. Vulcan and Oak Creek Energy Systems, Inc. (Oak Creek) join CalWEA in supporting the development of transmission cost estimates net of grid benefits. However, this approach is not desirable as part of the interim methodology. As CalWEA acknowledges, some network benefits may not be easily or accurately quantifiable and some may not be near term. The goal of D.03-06-071 was that transmission cost estimates reflect a workable approximation of transmission upgrade costs. Holding hearings to address network benefits may not improve the accuracy of transmission cost estimates and would delay the initial procurement.~~

~~The determination that network benefits should not be considered in the interim methodology does not preclude consideration of network benefits in assessing transmission costs for use in subsequent procurements. Contrary to PG&E's statement during the PHC, the Commission's determination in D.03-07-033 that the evaluation of network benefits for purposes of § 399.25 should be undertaken during a certificate of public convenience and necessity proceeding does not preclude consideration of network benefits in other forums for other purposes, including the RPS procurement process.~~

I note in addition that, as provided by D.03-06-071, bidders may describe expected network benefits in their bids, along with their projects' expected effects on local reliability, low income or minority communities, environmental stewardship, and resource diversity, for the soliciting utility's consideration in evaluating the bid. Other than mandating consistency and transparency, the

9 All statutory references are to the Public Utilities Code.

interim methodology does not specify the manner in which a utility should consider such factors in assessing projects' bids.

D. Curtailment as an Alternative to Reduce Transmission Cost Estimates

...

D.03-06-071 recognizes that the utilities may favor curtailability and dispatchability as attributes of bids. Moreover, generators have the right under FERC's Large Generator Interconnection Procedures to interconnect as an Energy Resource and use the as-available transmission capacity of the transmission provider. When pProjects may submit bids that provide for less-than-full deliverability of project output, e.g., curtailments when transmission is constrained, the utility should adjust the associated transmission costs and reduce the bid adder accordingly. The utility would then assess, on a case by case basis, whether and the extent to which the published transmission cost estimates should be modified in assessing such projects' bids.

The interim methodology does not address how a utility should assess transmission costs for such projects, how it should value such bids, or whether power curtailed in this fashion should be included in determining compliance with the utility's Annual Procurement Target under the RPS. ~~Like network benefits, a~~ Utility consideration of curtailability proposals should be consistent and transparent to the Commission when it reviews proposed RPS contracts.

E. Line Ratings

CalWEA suggests that dynamic line ratings be used in the transmission cost estimates, as they can significantly increase line ratings and are presently in use in many areas of the Cal ISO grid. I agree. By taking wind conditions into account, transmission requirements for wind generators can be substantially reduced. I disagree. Typical ambient conditions are taken into account in establishing line ratings for planning purposes. Dynamic line ratings, by their nature, reflect operating conditions that are not pervasive enough to be

~~considered in reliability planning studies. As a result, it is not appropriate to use dynamic line ratings in determining needed transmission upgrades.~~

F. Generation or Consumption of VARs

CalWEA suggests that wind generators report the extent to which they would be able to produce Volt Amperes Reactive (VARs), for use in development of transmission cost estimates. However, except for projects in the ISO interconnection queue, transmission cost estimates should be developed without reference to specific projects. Developers may submit VAR characteristics of their proposed projects, to the extent known, as part of their bids, and the utilities ~~may~~ should take this information into account in assessing the bids.

...

K. Dispute Resolution

...

I do not see a need to create a new dispute resolution mechanism at this time. Instead, parties should be allowed to file comments on the utilities' Transmission Ranking Costs Reports. I propose that initial comments on the Transmission Ranking Costs Reports be due ~~44~~ 28 days after the reports are filed, with reply comments due 7 days thereafter. The Commission can then assess the adequacy of the reports on the basis of the filed comments and determine whether additional steps are warranted before the utilities' results are used in ranking bids for the initial RPS procurement.

...

III. Longer-Term Issues

The interim methodology does not preclude future consideration of refinements in the method for determination of the most cost-effective transmission upgrades, or of other issues such as ~~network benefits, transmission line losses, and the possible displacement of non-renewable generation and~~

related transmission needs. During the PHC, we discussed study groups for the assessment of transmission needs for individual renewable resource areas. That topic is outside the scope of this ruling.

...

Attachment A

Proposed Interim Methodology for Development and Consideration of Transmission Costs in Renewable Portfolio Standard Procurement

...

B. Network Upgrades

1. Each subject utility shall estimate the cost (net of associated benefits) of its transmission network upgrades needed to accommodate the interconnection or expansion of a bidder's renewable energy generation facility and transmission of the project's output in accordance with these procedures.

...

C. Transmission Ranking Costs Report

1. Each subject utility shall prepare a Transmission Ranking Costs Report in which it provides estimates of the capital costs of upgrades to its transmission facilities that would be needed to accommodate interconnection and delivery of power from potential renewable energy bidders in the initial RPS procurement solicitation. Against these costs, the utility shall subtract the estimated transmission benefits associated with these upgrades.

...

d. Based on the conceptual transmission studies and any available System Impact Studies and Facilities Studies, each subject utility shall identify the transmission network upgrades that are expected to be needed to accommodate

each cluster of renewable resources. For clusters of wind generation, the sizing of transmission facilities should take into account the fact that maximum Coincident Generation from clusters of wind generators is materially less than combined Nameplate Generation. For each cluster, the subject utility shall identify levels of transmission capacity according to the following order:

...

g. Each subject utility shall estimate the network benefits associated with each upgrade and subtract them from the cost of the upgrade. For upgrades to facilities operating at voltages of 230 kV and above (which could fall into any of the four categories), the utility shall presume that network benefits exist such that the net cost of the associated transmission adders would be zero, or present evidence as to why such presumption should not be made. For facilities operating at a voltage lower than 230 kV, the utilities should estimate network benefits as follows:

(i) Determine the MW increase in transfer capability and transmission loss savings through load flow simulations.

(ii) Calculate the dollar value of the increased transfer capability based on Cal ISO data.

...

6. Each subject utility shall file its Transmission Ranking Costs Report in I.00-11-001, with service on all parties, no later than 14 28 days after Commission adoption of the Interim Methodology. Parties may file comments, with service on all parties, on the Transmission Ranking Costs Reports, no later than 14 28 days after the reports are filed. (Where a party has conducted its own studies it may offer its own calculation of costs and benefits. If a record already exists for a transmission project, the proponent may cite to that record. Where a transmission project does not have a record, the proponent may submit an affidavit explaining costs and benefits.) Parties may file reply comments, with service on all parties, 7 days thereafter.

...

D. Information to be Included in Bid Submittals for Transmission Cost Ranking Purposes

...

f. Whether the facility is interconnected to the existing transmission grid, and

g. The status of any interconnection application submitted to the ISO, and

h. For wind generators, the VAR characteristics of the technology to be used, whether the developer intends to use dynamic line ratings, and whether the developer intends to interconnect as an as-available resource.

E. Consideration of Network Transmission Costs in Ranking Bids

...

4. The process of assigning network upgrade costs to specific renewable bidders shall, for wind bids, take into account a bid's VAR characteristics, as-available status, and use of dynamic line ratings, and for all bids be based on assigning the lowest cost transmission available in each cluster according to the following priority:

...

~~6. In their bids, renewable bidders may describe expected network benefits, the extent to which the project would be able to produce Volt Amperes Reactive (VARs), and other transmission-related factors, and may propose less-than full deliverability of product output. Each utility shall consider such factors in a manner that is consistent and transparent to the Commission when it reviews proposed RPS contracts.~~