

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

In the Matter of the Application of Southern California Edison Company (U 338-E) for a Certificate of Public Convenience and Necessity Concerning the Devers-Palo Verde No. 2 Transmission Line Project.

Application 05-04-015  
(Filed April 11, 2005)

Order Instituting Investigation on the Commission's Own Motion into Methodology for Economic Assessment of Transmission Projects.

Investigation 05-06-041  
(Filed June 30, 2005)

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**REPLY COMMENTS OF THE  
CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION  
ON PHASE 1 ISSUES FOLLOWING WORKSHOP**

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October 26, 2005

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In accordance with the Administrative Law Judge's e-mail ruling of October 20, 2005, granting an extension of time up to October 26, 2005, to submit reply comments in the above-referenced dockets, the California Independent System Operator Corporation ("CAISO") submits the following comments.

**I. Introduction**

The CAISO's opening comments focused on the regulatory use of its Transmission Economic Assessment Methodology ("TEAM"), rather than on the questions targeting the substance of TEAM itself, which were addressed during the September 14-15, 2005 workshops. In particular, the CAISO recommended that where the CAISO has established that a transmission project will provide economic benefits to ratepayers, that a jurisdictional project proponent must only establish that base fact to trigger a rebuttable presumption of need that shifts the burden of proof to an opposing party to demonstrate by clear and convincing evidence that the project is not economic.

Under this proposal, interested parties retain the right to challenge the presumption and the Commission does not delegate its decision-making discretion. The CAISO took this approach to circumvent the purported legal and procedural obstacles that hindered the success of R.04-01-026.

The CAISO further noted that California law allows the Commission to implement the recommendation by recognizing the CAISO's expertise and statutory responsibility in the area of transmission planning. As such, the streamlining goal underlying R.04-01-026 could be accomplished without the need to scrutinize the minute details of TEAM. The CAISO recognizes that this solution constitutes a policy decision by the Commission that the ALJ may offer as an option in this proceeding. However, in this reply, the CAISO expands on the basis for deference contemplated by the OII – the identification and adoption of principles to delineate the requirements of an economic assessment. The CAISO notes that its prior regulatory recommendation remains complimentary to this exercise. By continuing to allow parties the opportunity to challenge the determination of economic “need” during the Commission’s Certificate of Public Convenience and Necessity proceeding, the Commission need not feel compelled to adopt “cook-book” like principles. Rather, the principles need only reflect a level of detail sufficient to ensure that the Commission has confidence in the quality of the project evaluation.

In this regard, the CAISO proposes that this phase advance consideration of the appropriate principles or framework underlying the economic assessment by developing:

- An evaluation matrix for project comparison.
- Acceptable methodology to be used in performing the evaluation measurements.

- Determine threshold values for the matrix that would indicate an acceptable project.

The above three items define how one: (a) evaluates a proposed project; (b) performs the study; and, (c) determines if the project is recommended.

## **II. Evaluation of Matrix for Project Comparison**

At the end of the September 15<sup>th</sup> workshop, the CAISO proposed a “Strawman for Discussion on Evaluation Matrix.” This matrix was composed of the Benefit-Cost-Ratio (“BCR”) for several perspectives, benefit and cost risks, and non-monetized considerations.

Although a consensus was not reached on the applicable threshold values, there appeared to be agreement that a transparent and standard evaluation matrix would be valuable. The CAISO recommends the following evaluation matrix for consideration by the Commission and respective stakeholders.

- Benefit-Cost-Ratio (lifecycle)
  - WECC
  - CAISO Modified Ratepayer
  - CAISO Nominal Ratepayer
  - CAISO Modified Participant
- Risks -- Benefits
  - Insurance Value Indicator – top 5 percent probability-weighted-average from the resulting probability distribution function (pdf)
  - Worst Case Indicator – bottom 5 percent probability-weighted-average from the resulting probability distribution function (pdf)
  - Tornado diagram (or similar graphical summary) – estimate 5-10 most sensitive assumptions and show base value, project break-even, and sensitivity of results to a range of input values<sup>1</sup>

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<sup>1</sup> The Tornado diagram includes the information contained in a “tipping point” analysis. The Tornado diagram shows the break-even point – in other words, at what point do the results start “tipping” in the opposite, or uneconomical, direction. The disadvantage of using only the tipping point analysis is that it shows only the downside potential and not the upside. The Tornado diagram provides information in both directions. For an example of a Tornado diagram, please refer to Figure ES.2 in the TEAM Report. The CAISO is proposing that this type of diagram be modified to include the break-even point.

- Risks -- Costs
  - Indicate range of probable project costs at the time of the economic analysis (i.e. plus 50%, minus 20%).
- Non-Monetized Considerations
  - Yet to be defined. May include increased access to renewables, non-monetized environmental values, additional reliability considerations, etc.

The evaluation matrix would be the key tool for summarizing and analyzing alternative projects including non-transmission alternatives.

### **III. Proposed Principles for Study Requirements**

As noted by the CAISO at the workshops, different study requirements are likely appropriate depending on the characteristics of the proposed project studied. The CAISO suggests that it would be prudent to have several categories of transmission projects based on estimated capital cost, number of utilities impacted, and other agreed-upon criteria. The CAISO has not currently had the opportunity to fully develop these categories and their suggested parameters. The CAISO anticipates proposing such criteria in future proceedings in this docket. However, the concept is that the larger a proposed transmission project is in terms of cost and utility impact, the more rigorous the study methodology will need to be.

For purposes of these comments, the proposed methodology is intended for projects costing several hundred million dollars or more, and having a significant impact on at least several major utilities -- in other words, the category of projects requiring the full study methodology. Compromises to this methodology can be considered after this category and the associated methodology for the category is complete.

## **A. Input Assumptions**

The CAISO recognizes that the results of any agreed-upon methodology can differ significantly, and even come to different conclusions, if the input assumptions are vastly different. In an attempt to standardize the input assumptions, and help alleviate the concern regarding different conclusions using the same methodology, the CAISO provides the following assumption protocol for consideration:

- Start with latest release of SSG-WI data.
- Update SSG-WI data with most recent CEC IEPR data.<sup>2</sup>
- Add environmental externalities as appropriate.<sup>3</sup>
- Develop generator-bidding strategies consistent with the TEAM or superior approach.
- Use SSG-WI data for the hydro uncertainty (as available). Develop other variable distributions consistent with TEAM or superior approach.
- Determine sensitivity cases and associated probabilities consistent with TEAM or superior approach.

## **B. Study Methodology**

The CAISO proposed methodology was presented at the September workshop. This proposed methodology, with some recent modifications, is summarized in Table 1 below.

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<sup>2</sup> Resource plans reviewed and compiled by the CEC as part of the IEPR process.

<sup>3</sup> Externalities for CO<sub>2</sub>, NO<sub>x</sub>, Sox, and other airborne emissions can be considered as part of this workshop process and appropriate values adopted as appropriate.

**Table 1  
CAISO Proposed Methodology Guidelines**

	<b>Key Principle</b>	<b>Study Attribute</b>	<b>Notes</b>
1	Benefit Framework	- Demonstrate benefit identify - Demonstrate revenue identify  - Compute participant benefits	Total benefits = $\Delta PC = \Delta CS + \Delta GS + \Delta TS$  CTL - GR = TR WECC subregions, CAISO market participants, non-CAISO participants, sum equal to societal
2	Network Representation	- DC-OPF model with nodal pricing	AC power flow optional, transportation model unacceptable
3	Market Prices	- Inclusion of credible bid strategies	Bid strategies must be theoretically sound and reflect system operating reserves and pivotal ownership on an hourly basis
4	Uncertainty	- Develop expected value and 30-year NPV probability distribution function	Recommend inclusion of a Tornado Diagram with break-even information for most sensitive assumptions.
5	Resource Alternatives	- Identify, consider, and discuss resource alternative(s)	Alternatives include specific resource types and portfolios
	Other Requirements	- Operating, capacity, system loss, environmental, insurance, and other benefits  - Multiple years  - Chronology	Benefits in addition to energy need to be identified and quantitatively considered as appropriate and feasible Minimum of two study years, 5 or more years apart. Additional successive years are discouraged. Minimum of 168 chronological hours per week, 12 weeks per year, preference is 8760 hours per year.

In the event that the above methodology is considered by the stakeholders to be too general, the CAISO proposes that the specifics of TEAM be adopted unless a superior

analytical approach can be demonstrated and employed.<sup>4</sup> For instance, TEAM developed bidding strategies using a price-cost markup regression analysis based on historical data.<sup>5</sup> If an alternative bidding strategy approach can be shown to be more comprehensive, robust, or accurate, that methodology should be employed by the project proponent. If time and resources do not permit a meaningful evolution of the TEAM technique, then the methodology employed in TEAM should be utilized. The same approach can be used for sensitivity selection and probability determination.<sup>6</sup>

#### **IV. Threshold Values for Evaluation Matrix**

Potential threshold values for the evaluation matrix were discussed at the September 15<sup>th</sup> workshop. There was some disagreement regarding whether “threshold values” or “minimum requirements” should be developed. The CAISO is open to developing indices for either perspective.

Threshold values or minimum requirements can be relatively easily developed for the BCR evaluation criteria. The risk criteria for the benefits can also be clearly defined. The risk criteria for the project and its operating costs require better definition so that the percentages of potential cost over- and under-runs are meaningful. Some language regarding the status of the project cost estimate, and whether specific permitting and licensing activities have been completed, will also need to be considered.

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<sup>4</sup> The CAISO maintains that TEAM represents a valuable analytical technique for evaluating the economic benefits of transmission projects. The CAISO also contends that TEAM represents a necessary a temporary stopping point in the evolution of these types of analyses, and that further innovations and refinements should be encouraged and supported.

<sup>5</sup> TEAM Report, Chapter 4.

<sup>6</sup> The CAISO assumes that most, if not all, of the Commission jurisdictional transmission project will first be reviewed by the CAISO for rate recovery purposes. Accordingly, the CAISO in its review process will be able to determine consistency with the TEAM approach or its superiority.



The most difficult criterion to define is the “non-monetized considerations.” On one hand, this criterion does not lend itself to a measurable index. Indeed, some may maintain that the measurement for this consideration must remain flexible, so it can act as a “catch all” for important parameters and considerations that are not reflected in the more traditional BCR or risk indices. On the other side, some may contend that a lack of a standard measurement and associated index undermines the transparency of the overall process and is therefore undesirable. The CAISO has not developed a recommendation regarding the standardization of the non-monetized consideration information. More discussion and stakeholder input would be valuable before a final recommendation regarding this subject is developed.

#### **V. Next Steps**

As evident from the above discussion, more work needs to be done should the Commission require adoption of principles or a general framework governing economic assessments as a recondition to streamlining the transmission planning process between the CAISO and Commission. The CAISO agrees with those parties who recommend that further proceedings under I.05-06-041 should be conducted pursuant to workshops and written comments, rather than evidentiary hearings. The workshops revealed that any disputes or differences among the parties did not involve factual disputes, but rather qualitative differences as to the respective merits of different approaches or study elements. The CAISO believes that such technical issues will be better addressed through workshops and comments. Such procedures will allow a more open and candid discussion that is better suited to reach solutions on the complex issues inherently raised by assessing the economic effects of transmission infrastructure expansion.

In addition, the CAISO believes a workshop process is less likely to impede or otherwise delay the consideration of Palo Verde-Devers #2. In fact, the CAISO believes that continued evaluation of TEAM should follow completion of the evidentiary hearing on SCE's application.

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Respectfully Submitted:

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