

**CTPG Technical Team Response to
CPUC Division of Ratepayer Advocates' (DRA's) April 28, 2010 Comments on
CTPG's draft Phase 2 Study Report**

Comment:

“1. DRA Objects to the use of a disclaimer on Page 1 of the Draft Report.

DRA believes use of a disclaimer of this nature is not appropriate for a FERC Order No. 890 Transmission Planning Organization.”

CTPG Response:

DRA's objection is noted.

Comment:

“2. The level of completeness and correctness of the document is below that expected for a document of this type and stage of development. Stakeholder review is made difficult at best and impossible in the RETI Heavy In-State Scenario – Northern California Peak Case, 7.12 of Appendix: Results Tables.

Table paging is generally very poor. Often the table heading is on one page and the data is on a following page, example: Table 2.2. Tables are not numbered or numbered incorrectly, example Table 7.1.1 and text in 7.2, C, 2nd paragraph: table numbers starting on page 56. Some tables are placed improperly and cannot be reviewed as a result. Example: Appendix: Results Tables, pages 51 through 66. Note: Pages in the Appendix are not numbered.”

CTPG Response:

CTPG's technical team generally agrees with DRA. The tight time constraints within which CTPG's Phase 2 study work was to be completed and documented, precluded publication of a draft report that was clean in all respects. CTPG is currently in the process of cleaning up the draft Phase 2 report.

Comment:

“3. In Section 1.2, Phase 2 Overview, the concept of a set of “least regrets” lines is introduced without definition and explanation.

This concept should be fully defined and explained.”

CTPG Response:

CTPG is currently discussing the concept of “least regrets” transmission upgrades and how such upgrades might be identified.

Comment:

4. Section 1.2, Phase 2 Overview, F. Generation Redispatch does not include criteria important to the ratepayer.

CTPG’s use of heat rate has merit in deciding which fossil units are redispatched (decremented) first. However, these “higher marginal costs of production” are insignificant compared with the potential costs to ratepayers for the transmission infrastructure changes that result from using this methodology. The Phase 2 Study OTC case clearly shows the value of considering location in the sequence and selection of units to be redispatched. DRA had requested a case be run in phase 2 utilizing the following criteria:

1. For each increment of renewable resource added in a particular area of the state, there should be a corresponding decrement of fossil generation in the same area of the state.
2. If that is not possible, then fossil generation should be decremented at a location based on an assessment of the impact of the added renewable generation on the major foundation transmission infrastructure of the state, e.g., Path 15, Path 26 and others.
3. Lastly, least economic fossil generators should be decremented before highly efficient plants providing criterion 1 and criterion 2 are met.

This was not done in Phase 2. DRA believes that use of these criteria will result in the following:

- (1) Appropriate renewables will be added as needed.
- (2) Fossil will be removed on a least impact and thus a least cost basis.
- (3) Impact on the Transmission Infrastructure will be greatly reduced.

DRA also requested this scenario when providing formal input to the Phase 3 Study Plan on March 24, 2010. Such a scenario was not included in the Draft Study Plan for Phase 3 issued on April 13, 2010. DRA will again request that this scenario be run in Phase 3 in a formal comment on the Draft Phase 3 Study Plan.

CTPG Technical Team Response:

CTPG believes that the scenario described by DRA above is essentially a scenario designed to minimize the number of reliability criteria violations that may arise and therefore reduce the amount of new transmission infrastructure that would be identified to mitigate those reliability criteria violations. The intent of DRA's proposed scenario is similar to BAMx's recommended "minimal transmission scenario."

After completion of the CTPG Phase 3 studies, it is expected that the respective Balancing Authority Areas (BAAs) will perform additional studies to further analyze the transmission projects that CTPG has determined will mitigate the identified reliability criteria violations. These studies should include analysis of other wires and non-wires alternatives that are effective in addressing the identified reliability criteria violations. These analyses would include operational studies and economic evaluations.

Given the timeframe for completing the Phase 3 work and other scenarios which CTPG has determined have a higher priority, CTPG will not be evaluating in Phase 3 a scenario designed to minimize the amount of new transmission that mitigates identified reliability criteria violations. However, the studies of alternatives that CTPG expects BAAs to perform, should have the result that only the most economical alternatives are pursued and this will likely result in the adoption of some non-wires alternatives.

Comment:

"5. DRA is concerned that there may be modeling problems in Phase 2.

The 2019 WECC Heavy Summer Case did not converge (solve) on initial input for a large number of cases. A solution was forced by addition of a number of additional transmission upgrades. Further, an anomalous flow at the Oregon-California border was discovered in the 7.7 Northern Scenario with Generation Interconnection Resource Queue – Northern California Peak Case. It appears possible that model criteria, e.g., limits of variable values and boundary conditions may not have been observed. CTPG should thoroughly investigate and resolve this issue prior to finalizing the Phase 2 Report."

CTPG Technical Team Response:

CTPG intends to investigate, in Phase 3, the referenced "anomalous flow at the Oregon-California border."

CTPG has not identified other modeling issues with the WECC 2019 "Heavy Summer" power flow case that could be related to the inability to obtain a solution when large amounts of renewable generation were added to the case with corresponding reductions in fossil-fired generation output. When the dispatch of the WECC 2019 Heavy Summer power flow case is changed to intentionally "stress" a particular path, the subsequent addition of large amounts of renewable generation on one side of the path and the

offsetting decrements of fossil-fired generation on the other side of the path, result in power flows which considerably exceed the path rating. It is not surprising for this system condition, that a powerflow solution cannot be achieved.

Comment:

“6. DRA is concerned that no cost data is provided for the infrastructure updates indicated by the cases.

All thirteen Phase 2 scenario results should contain, at the minimum, a high-level cost estimate for the indicated upgrades to allow for reasoned decision making regarding the merits of each of the thirteen cases in the future.”

CTPG Response:

CTPG is considering the use of high-level cost estimates as an input to a process for identifying which of the various transmission expansion projects identified in CTPG’s Phase 1 and Phase 2 studies would be included in a CTPG conceptual transmission plan that corresponds to expected system conditions. In addition, CTPG is considering the use of high-level costs estimates as an input to a process for identifying those elements of such a conceptual transmission plan that would constitute “least regrets” transmission projects.