

**California Transmission Planning Group (CTPG)
Technical Study Team Response to
Comments by the Bay Area Municipal Transmission Group (BAMx)
on CTPG's Proposed 2011 Work Plan**

Comment:

In BAMx's earlier comments, CTPG was asked to closely coordinate their analysis with the study work performed by the balancing areas (BAs) within the State, such as the California ISO. There may be no way to incorporate such alternative assumptions made by the BAs in CTPG's in the current year for both the California ISO and the respective balancing authorities. But over time, BAMx would expect convergence. So although CTPG may need to consider those assumptions in a subsequent planning cycle, earlier coordination should be attempted. When there are considerable discrepancies between the earlier CTPG and the California ISO studies, at a minimum, the differences between the study assumptions and need to be clearly identified. Importantly, CTPG also needs to recognize critical work done by the balancing authorities in the CTPG Statewide plan and any conclusions it makes in the Statewide plan needs to take into account BA studies done on a concurrent basis.

CTPG Technical Study Team Response:

BAMx's request that the CTPG coordinate more closely with the study work performed by other BAs is noted. Timing issues between the various California BAs' transmission-planning processes and those of the CTPG are a challenge. Fortunately, nearly all the BAs serving load in California are represented in the CTPG so the CTPG has access to the work being conducted within the various BAs.

Comment:

BAMx agrees with CTPG that verification of voltage profile, operating reserve levels, path load level as well as assessment/modification of the load levels modeling in the Base Cases need to be undertaken in the 2011 planning process. But a critical task under the Base Case review, as identified by CTPG, is to determine the degree to which the base cases model 'approved' transmission projects. Many of the other base case assumptions are technical in nature but including the projects that are not existing, in the base case should involve explicit Stakeholder involvement. BAMx believes that only those projects, which have all the following approvals, or are under construction should be modeled in the Base Cases:

1. Balancing Area Authority Approval;
2. California Public Utilities Commission (CPUC) Certificate of Public Convenience and Necessity/Permit To Construct (CPCN/PTC) Approval, if applicable; and,
3. Other permitting agency approval, such as Bureau of Land Management, if applicable.

Any other transmission projects that are considered more likely than others can be modeled as part of "sensitivity" cases and should not be included in the Base Case. For example, any transmission project approved under the California ISO Large Generator Interconnection Procedure, but does not have CPUC-approved CPCN/PTC, then that transmission project should not be part of the Base Case.

CTPG Technical Study Team Response:

The CTPG Technical Study Team understands BAMx's point that the inclusion of planned transmission projects in the CTPG's pre-renewable power flow cases that have not received all necessary authorizations, regulatory approvals and permits, can be interpreted as pre-judging the need for these projects. The CTPG also appreciates BAMx's suggestion that the inclusion of any planned transmission projects in the CTPG's pre-renewable power flow cases that have not received all necessary authorizations, regulatory approvals and permits, should only be made with "explicit stakeholder involvement."¹

After considering BAMx's suggestion, the CTPG has decided that it will include in its pre-renewable base cases only those new transmission projects that have Balancing Authority approvals. The CTPG believes that Balancing Authority approval is a good indicator that a transmission project will get built.

Comment:

BAMx supports CTPG's proposal of updating the renewable net short. BAMx believes that this is an important step in minimizing the risk of stranded or underutilized transmission infrastructure. BAMx supports the CTPG's proposal of collaborating with the California Energy Commission (CEC) on updating the net short and underlying assumptions. BAMx encourages CTPG to coordinate with CEC to use their preliminary net short estimates until the CEC net short amounts are finalized for the CEC Commissioners' consideration under 2011 IEPR.² BAMx believes that the earlier California Renewable Energy Transmission Initiative net short used by CTPG in the 2010 studies is completely outdated and the CTPG should work with the CEC Staff as proposed and CTPG should accommodate a range of net short estimates developed by the CEC.

CTPG Technical Study Team Response:

The CTPG Technical Study Team appreciates BAMx's support for an update of the renewable net short. Whether the CTPG adopts a single renewable net short estimate, or whether multiple net short estimates will be developed – possibly reflecting different assumptions regarding the amount distributed generation that will be added, or other variables – has not been decided. Any suggestions BAMx may have regarding what "range" of renewable net short estimates should be developed, and the rationale for adopting such ranges, are welcome.

Comment:

BAMx supports the CTPG's proposal to develop a new approach for determining the appropriate re-dispatch of fossil fuel generation, including in-state and out-of-state assumptions. BAMx suggests that such an approach would assume a WECC-wide optimization. More sophisticated analysis using a security-

¹ Note that obtaining relevant information concerning all necessary authorizations, regulatory approvals and permits for planned transmission projects outside the state of California could prove challenging and time-consuming.

² See the CEC presentation, entitled, "Proposed Method to Calculate the Amount of Renewable Generation Required to Comply with Policy Goals." Presented at the 2011 Integrated Energy Policy Report Staff Workshop, dated March 8, 2011.

constrained market simulation model, like that used by the California ISO in their 33-percent comprehensive analysis to determine the total economic impact of various transmission additions under various dispatch criteria, should be used for the 2011 planning cycle.

CTPG Technical Study Team Response:

The CTPG Technical Study Team is currently considering a recommendation to use WECC-wide economic merit-order redispatch to decrement fossil-fired generation to accommodate the output of renewable resources in the post-renewable power flow cases that will be evaluated in the CTPG's 2011 studies.

It is anticipated that Phase 2 of the CTPG's 2011 work will include a set of power flows cases where selected paths are stressed prior to the addition of renewable resources. The CTPG Technical Study Team also expects to develop a parallel set of cases for Phase 2 in which flows on a selected path(s) are set at a historically based flow level prior to the addition of renewable resources.

The CTPG Technical Study Team believes that NERC Standards require that system performance must meet requirements over "all demand levels,"³ and prohibit operating at levels which have not been studied. The set of power flow cases that employ a "stressed" path are structured to comply with these NERC standards. The CTPG Technical Study Team has determined that compliance is achieved by setting up power flows cases in which WECC paths are stressed prior to the addition of renewable resources.

The parallel set of power flow cases – in which flow on a selected path(s) is set at an historically based flow level prior to the addition of renewable resources – are expected to more-closely approximate the results of production simulation studies. This is because historically-based flow levels are the net result of each WECC Balancing Authority's dispatch of generation to minimize variable operating costs while respecting all grid constraints and contractual requirements.

In addition, the CTPG Technical Study Team is considering how the results of economic grid simulation studies conducted by the CAISO, and potentially the WECC Transmission Expansion Planning Policy Committee (TEPPC), could be used to adjust a strict heat rate-based economic merit-order decrementing approach for accommodating the output of renewable resources added to the CTPG's pre-renewable power flow cases. Such adjustments are intended to capture operational complexities (*e.g.*, generator start-up times, start-up costs, ramp rates, minimum down times, *etc.*) that can be modeled in chronologic production simulation models but not in snapshot power flow analysis.

³ In practice, transmission planners run cases for those representative demand levels where the most severe problems are expected to occur and use engineering judgment for the rest of the demand levels. The intent is that the system will be reliable under all foreseeable conditions. This practice complies with NERC Standards and Measurements, wherein the Standard states that system performance must be met under "all demand levels" and the Measurement by which this Standard is met shall include "System performance assessments based on simulation testing for selected demand levels over the range of forecast system demands." FERC Order 693 requires that "critical system conditions and study years be determined by conducting sensitivity studies with due consideration of the range of factors ..."