California Transmission Planning Group (CTPG)
Technical Study Team's Response to the
October 7, 2010 Comments of the
Bay Area Municipal Transmission Group (BAMx) on
CTPG's Draft Phase 4 Study Plan

BAMx Comment:

It is our understanding that CTPG will model this case [the 'West of River Stress' scenario] using the same "seed" (Base) case that they used in the earlier scenarios that model certain transmission upgrades with key approvals and environmental permits. Please confirm that the Southwest Scenario will not include any of the "High" and "Medium" potential transmission projects identified by CTPG in Phase 3.

CTPG Technical Study Team Response:

The starting point for the "West of River Stress" scenario will only include those "high potential" or "medium potential" transmission upgrades that are described on Table 2.1 of the final Phase 3 Study Report. In addition, certain transmission upgrades identified in California ISO generator interconnection studies were added at the California ISO's request. Depending on system performance under contingency conditions, the CTPG may include other "high potential" or "medium potential" transmission upgrades in order to obtain a power flow solution. The CTPG will document the inclusion of these upgrades in the Phase 4 Study Report.

BAMx Comment:

BAMx supports the use of three nearby WREZs (NV, AZ, and NM) as proxy locations of likely resource development for California imports. It is our understanding that CTPG will model the renewable resources provided by RETI at several southwest portals. If there are any reliability violations found in the Base Case as a result of increased renewable generation at these Southwest portals, in addition to suggesting more transmission, CTPG should back down the renewable imports into California so that we can determine how much renewables can be imported using the existing transmission system using the Base Case dispatch. As a Next Step, CTPG should determine whether adjusting the fossil generation dispatch can increase the amount of renewable imports over existing transmission.

CTPG Technical Study Team Response:

The approach described by BAMx appearss similar to the approach the CTPG used to evaluate Case C in CTPG's Phase 1 studies. (See section 6.3 of the CTPG's final Phase 1 Study Report.) The CTPG Technical Study Team believes BAMx's suggestion has merit and, time permitting, may attempt to iterate the amount of dispatched renewable generation (with offsetting changes in fossil-fired generation) to determine the amount of renewable generation that can be dispatched at the Eldorado, Palo Verde and North Gila without encountering reliability criteria violations.

BAMx's suggestion that the pattern of fossil-fired generation could be adjusted so as to increase the amount of renewable energy injected at Eldorado, Palo Verde and North Gila without encountering reliability criteria violations is valid. In fact, it reflects the manner in which the California ISO performs congestion management: ramping up relatively expensive fossil-fired generation on one side of constraint, and ramping down relatively efficient fossil-fired generation on the other side of the constraint, thereby allowing the lowest cost generation (renewable generation in this case) to inject its power onto the grid without violating any reliability criteria.[1]

The CTPG will consider BAMx's suggestion and, time permitting, may attempt to iterate the pattern of fossil-fired generation in order to find the maximum amount of dispatched renewable generation that can be injected at the Eldorado, Palo Verde and North Gila without encountering reliability criteria violations.

BAMx Comment:

The CTPG has indicated that in Phase 4, it will use the same "net short" estimate used in the earlier phases for all scenarios, *i.e.*, 52,764 gigawatt-hours. We recognize the need for Phase 4 studies to be consistent with Phase 1, 2 and 3 studies with respect to the net short calculation. However, given the level of uncertainty tied to the calculation of net short, BAMx believes that the CTPG needs to develop additional scenarios in the future that assume lower levels of 'net short'. For example, the California Air Resources Board "Low Load" scenario assumes the latest "incremental efficiency" and "distributed Generation" outlook, which results in a reduced net short of 36,926 gigawatt-hours. We believe that this is a more realistic scenario, especially in light of the recent *California's Clean Energy Future* initiative that provides similar targets for energy efficiency and distributed generation by 2020. A lower level of net short could result from assuming additional imports of renewable generation that utilize existing transmission and/or assuming significant amounts of Tradable Renewable Energy Credits (T-REC) and/or more State led incentive programs for Energy Efficiency, CHP, distributed renewables, and private generation.

CTPG Technical Study Team Response:

The CTPG Technical Study Team agrees with BAMx that the current "net short" estimate needs to be updated for purposes of the CTPG's activities beyond Phase 4. The CTPG Technical Study Team expects that the Renewable Energy Transmission Initiative (RETI) will have a central role in updating the renewable "net short" and encourages BAMx to work closely with RETI in the update process.

BAMx Comment:

The CTPG Phase 4 Study Plan is not clear about how CTPG plans to dispatch fossil resources in the power flow cases it expects to run. This is especially true for the scenario that includes the *High Potential Transmission Elements* as well as in the *Southwest Scenario*. Until Phase 3, the CTPG utilized the 70/30 in-state/out-of-state generation re-dispatch approach for most scenarios. We suggest CTPG to deploy an

[1] When there is congestion on the CAISO-controlled grid, those parties which are not curtailed in the congestion management process will nonetheless by subject to the costs of delivering power across the constraint.

'out-of-state' re-dispatch method in Phase 4 similar to the one CTPG implemented in a couple of scenarios (A-Q and B-Q) in Phase 3. Such a method would assume a WECC-wide carbon-based dispatch permitting the decrement of fossil generation across WECC based on minimizing carbon footprint for electricity production. We believe that this method is more appropriate than using the arbitrary in-state/out-of-state generation redispatch ratios. We encourage CTPG to have a detailed stakeholder discussion on this issue.

CTPG Technical Study Team Response:

The CTPG Technical Study Team agrees that different approaches for determining which fossil-fired generators should be decremented in order to accommodate increased renewable generation could be used. The CTPG Technical Study Team will take BAMx's suggestion to redispatch fossil-fired generation on the basis of minimizing carbon emissions (*i.e*., backing down coal generation) under advisement. However, as the CTPG has stated before, the carbon taxes that would be necessary to make continued coal generation uneconomic have yet to be considered or implemented. Accordingly, the fossil-fired generation redispatch pattern appropriate for use in determining what transmission upgrades are needed to support California's Renewable Portfolio Standard in year 2020 remains highly uncertain at this time.

BAMx Comment:

In our prior comments we had asked CTPG to provide additional information on the *shift factor* analysis that was undertaken in Phase 3. In particular, we had requested the details on the tool, the data, the methodology and the process that was implemented to conduct the shift factor analysis. However, this information was neither included in the Final Phase 3 report nor was it provided separately . We are aware that the Phase 4 Study Plan envisions performing additional power flow studies to determine whether the current list of 'high potential' and 'medium potential' transmission upgrades should be revised. We believe that the stakeholders should have access to all the data regarding the Phase 3 analysis that identified these "high" and "medium" potential transmission projects including the shift factor analysis, which received very little stakeholder input.

CTPG Technical Study Team Response:

See the CTPG technical study team's response to BAMx's October 27, 2010, request for additional information on CTPG's shift factor analysis. This response will be posted on the CTPG website at www.ctpg.us.