

**STFC Comments/Questions
Final Draft of Statewide Transmission Plan
California Transmission Planning Group (CTPG)**

Save the Foothill Coalition (STFC) appreciates the opportunity provided to submit the following General and Specific comments/questions to the CTPG.

General Comments

The STFC supports efforts by the CTPG to improve its processes and to broaden the scope of its future work as outlined in the March 3, 2011 Technical Steering Committee Report. As a representative of consumers, the STFC believes that performing Benefit/Cost analysis would be a substantial and positive step for providing stakeholders and decision makers with critical information, heretofore missing from the CTPG's work. The STFC encourages the CTPG to adopt such an analysis for the 2011 CTPG work plan.

The STFC also supports expanding coordination with the CEC, such as updating the net short and aligning the 2011 CTPG planning and study process with policy goals and objectives being concurrently identified in the CEC's 2011 Integrated Energy Policy Report. The STFC believes the net results of greater coordination with the CEC would be a more robust CTPG product of higher value to stakeholders.

Specific Comments/Questions

The Final Draft of the Statewide Transmission Plan published on the CTPG website lists the 500 kV Midway-Gregg #1 and #2 lines and the upgrade of Gregg substation with two 500/230 kV transformers, as "medium potential" transmission upgrades. It appears that these upgrades are substantively equivalent to PG&E's proposed Central California Clean Energy Transmission Project (C3ETP). Exactly how these upgrades came to be designated as "medium potential" is somewhat murky as the Phase 3 study report seems to suggest it was largely judgmentally based.

"While engineering assessment of the study results yielded a technical delineation between high and medium potential transmission upgrades, a shift factor 'analysis' was also employed to validate the engineering results. In a general sense, transmission elements that exhibited a high shift factor validated the engineering assessment that these element could be considered more significant and a candidate for the set of 'high potential' transmission upgrades. Correspondingly, those transmission elements that exhibited a low shift factor validated the engineering assessment that these elements could be considered less significant and a candidate for the set of 'medium potential' transmission elements." (section 10.4 of the final Phase 3 study report)

If there is any analytic rigor to the "engineering assessment" it is not evident from the report.

Question 1: Confirm that the referenced “engineering assessment” was an exercise in judgment and was not based on any analysis. If it was based on analysis, provide a description of that analysis.

The 500 kV Midway-Gregg #1 and #2 lines, and the upgrade of Gregg substation with two 500/230 kV transformers, appear in a number of the scenarios evaluated by CTPG. As noted above, it appears that these upgrades then found their way onto CTPG’s list of “medium potential” transmission upgrades through some sort of judgmental exercise (an “engineering assessment”), subsequently “validated” by “shift factor ‘analysis’.”

Exactly why these particular upgrades appear in certain scenarios is unclear. Section 7.2.3 of the final Phase 3 study report states that “Several grid configuration changes were made to the 2019 WECC ‘heavy summer’ power flow case to connect the RETI Best CREZ renewable resource additions to the grid, to add network transmission necessary that would allow a power flow solution that could otherwise not be obtained.” However Table 7.2.4 of the final Phase 3 study report indicates that the 500 kV Midway-Gregg #1 and #2 lines, and the upgrade of Gregg substation with two 500/230 kV transformers, were added to “Mitigate normal and emergency overloads on Los Banos-Midway and Gates-Midway 500kV lines (Path 15)” (Table 7.2.4 of the final Phase 3 study report.) Two very different reasons have been provided. Which is the correct reason?

Question 2: Clarify the technical basis for adding the 500 kV Midway-Gregg #1 and #2 lines, and the upgrade of Gregg substation with two 500/230 kV transformers.

Table 7.2.2 in final Phase 3 study report indicates that the pre-renewable flow on Path 15 (case “A1”) is 5168 MW south-to-north, 232 MW less than the nominal south-to-north path flow limit of 5400 MW.

Question 3: Explain why – absent the 500 kV Midway-Gregg #1 and #2 lines, and the upgrade of Gregg substation with two 500/230 kV transformers – there were “normal and emergency overloads on Los Banos-Midway and Gates-Midway 500kV lines (Path 15)” even though the south-to-north flows on Path 15 were less than the nominal path limit.

Setting the pre-renewable south-to-north flow on Path 15 at a level that is close to the Path 15 flow limit would seem to virtually guarantee that with the addition of renewable

resources in southern California and corresponding reductions in fossil-fired generation in northern California, Path 15 would be overloaded (i.e., there would be overloads under “normal” and/or “emergency” conditions) and some form of mitigation required. Pre-renewable path flows can be selected so as to pre-determine reliability criteria violations and, apparently, the mitigation solution for those violations.

Question 4: What is the basis for setting the pre-renewable flow on Path 15 (case “A1”) at 5168 MW south-to-north? On a historic basis, how often have south-to-north flows on Path 15 actually reached or exceeded the 5168 MW level?

When a reliability criteria violation is found, CTPG identifies a transmission infrastructure addition that will mitigate the violation. As noted above the 500 kV Midway-Gregg #1 and #2 lines, and the upgrade of Gregg substation with two 500/230 kV transformers, were added to achieve a power flow solution and/or to mitigate overloads. The final Phase 3 study report does not indicate what other alternatives may have been evaluated in determining that these upgrades would be effective in addressing the identified reliability issues.

Question 5: What, if any, alternative wires- or non-wires-solutions were tested by CTPG in its effort to address the identified reliability concern? Specifically, did CTPG evaluate and determine that the following alternatives would not address the identified reliability concern? If not, why did CTPG not perform such an evaluation? (Provide a response for each of the items listed below.)

Wires-Solutions

- Other transmission infrastructure additions.
- Expand existing or implement new Special Protection Schemes (SPS)/Remedial Action Schemes (RAS) to:
 - Cross-trip generation for N-1 and/or N-2 contingencies
 - Cross-trip generation and/or load for N-2 contingencies
 - Cross-trip transmission elements for N-1 and/or N-2 contingencies
 - Insert or remove electrical devices (series capacitors, reactors, etc.) upon contingencies

Non-Wires Solutions

- Redispatch fossil-fired generation on either side of Path 15 pre-contingency so as to avoid overloads that would otherwise occur with the contingency.

- Increased incremental energy efficiency impacts above the level included in CTPG's net short projection.
- Increased demand response program impacts above the level assumed in CTPG's power flow analysis.
- Increased distributed generation above the level included in CTPG's net short projection.
- Selective addition of new generation in critical locations.
- Different pattern of generation retirements/refurbishments than included in CTPG's power flow analysis.
- Some combination of above alternatives.