

**California Transmission Planning Group (CTPG)
Technical Study Team
Response to the August 5, 2011 Comments of the
Large-scale Solar Association (LSA)
on CTPG's Phase 2 Study Plan**

Comment:

The Discounted Core Used to Develop the Scenarios Is Based on Out-of-date Information.

The CTPG Study Plan notes that all CTPG scenarios “will include the discounted core, currently being considered as part of the CPUC Long Term Procurement Plan.” (p. 21). LSA has been participating actively in the California Public Utilities Commission’s (CPUC’s) Long Term Procurement Plan (LTPP) proceeding. Since the discounted core was originally proposed in the LTPP over a year ago, new information has become available and stakeholders have had some time to review the scenarios and underlying data and offer corrections and comments, which should be incorporated into the scenarios before they are used in the CTPG’s planning effort. Specifically, at a minimum, the discounted core should account for new information on commercial projects that have met the CPUC’s discounted core criteria since March/June 2010 and the Fairmont CREZ discounted core projects should be considered as discounted core projects in the Tehachapi Renewable Transmission Project CREZ.

To give some sense how much these updates will change the discounted core, LSA has sought information on the numbers of contracts that have been submitted to the CPUC since the June 2010 cut-off date in the discounted core criteria. As noted in the 2011 CTPG Draft Study Plan, the discounted core includes 23,017 GWh of resources. Based on information provided by the individual investor owned utilities, the expected annual deliveries for the contracts submitted since June 2010 are as follows:

- For SDG&E - 3,143 GWh; 30 contracts
- For PG&E - 4,934-5,074 GWh; 16 PPAs
- For SCE - 3,695 GWh; 59 contracts

The June 2010 date appears to be related simply to the original development of the LTPP scenarios, as June 2010 was when these scenarios were prepared. As described above, a considerable number of new contracts have entered the approval process since the June 2010 deadline embedded in the discounted core criteria. The energy from these new contracts would increase the size of the discounted core by approximately one-half and comprise a significant fraction of the overall renewable net short in the CTPG (44,852 GWh). (pg. 23).

LSA disagrees with the CPUC’s treatment of the discounted core projects in the LTPP scenarios. Specifically, the CPUC did not force individual discounted core¹ projects into the scenarios if the

¹ The discounted core is not held constant across the scenarios in the LTPP. According to the CPUC’s Attachment 2 to the February Scoping Memo, “to be included in the discounted core, the project must be a new, repowered, or restarted RPS-eligible generation project with: 1.) a signed power purchase agreement (PPA) either under review or already approved by the Commission as of June 1, 2010; and 2.) its major permit (Application for Certification if under the jurisdiction of the Energy Commission; Conditional Use Permit in most other cases) filed with and

project required new transmission. Instead these projects were subject to a second test before being included in the scenarios. In the LTPP, discounted core projects requiring new transmission were only forced into the scenarios if discounted core projects would provide at least 67 percent of the energy (GWh) that could be accommodated over the new transmission line.² LSA requests clarification from the CTPG on whether this additional transmission threshold was used to exclude discounted core projects from the scenarios included in the Study Plan.

Given the rapid change in the renewables contracting, it is critical that planning activities, like the 2011 Study that the CTPG is undertaking, use up-to-date inputs that accurately describe the state of renewables projects to ensure that the resulting plans will accommodate the projects that are far advanced in the approval process. Thus, the discounted core should be updated to include contracts that have been submitted for approval since June 2010.

CTPG Technical Study Team Response:

The CTPG Technical Study Team agrees with the LSA that an updated CPUC Discounted Core would be useful input for CTPG's 2011 Phase 2 transmission planning work. The CTPG Technical Study Team believes the CPUC is the appropriate entity to update the CPUC Discounted Core and, in Phase 1 of CTPG's 2011 study work, requested the CPUC to provide an update of its Discounted Core. The CPUC indicated, however, that they would not be updating the Discounted Core this year.

Among the renewable resource development portfolios to be evaluated in 2011, the CTPG has included the CPUC's Public Policy portfolio since this is the renewable portfolio that the CPUC has formally requested the CAISO to use "as a base case for the CAISO's 2011-2012 Transmission Planning Process."³ In developing CTPG's version of the CPUC Public Policy scenario, the CTPG has, however, made certain adjustments to the public policy renewable resource portfolio transmitted to the CAISO in the June 6, 2011 letter.

Specifically, the CTPG has used the output of the E3 calculator model as updated by the CPUC subsequent to the transmittal of the June 6, 2011 letter. The output of the E3 calculator model is different than the CPUC public policy renewable resource portfolio transmitted to the CAISO on June 6, 2011, in the Imperial CREZ as well as for the distribution level solar PV in the PG&E, SCE and SDG&E distribution service areas.

In addition, where there are conflicts between the renewable resources in the CPUC Discounted Core and the renewable resources in the CPUC public policy renewable resource portfolio, the

deemed data adequate by the appropriate agency, as of March 1, 2010." However, even if a project meets these criteria and is deemed a discounted core project, it is not necessarily included in the different scenarios if it requires new transmission.

² LTPP Scoping Memo, Attachment 2: Standardized Planning Assumptions (Part 2 – Renewables) for System Resource Plans, p. 12-13 (Filed February 10,2011).

³ June 6, 2011, letter from Julie Fitch of the CPUC Energy Division to Keith Casey of the CAISO.

CTPG uses the CPUC Discounted Core. The CPUC includes generation in its Discounted Core that it believes has a high likelihood of getting built. Like the LSA, the CTPG Technical Study Team believes it is reasonable to include generation in the Discounted Core that has signed Purchase Power Agreements (PPAs), interconnection agreements in place and other measures of likely success including applicable regulatory and environmental permits. It is the CTPG Technical Study Team's opinion that it is inappropriate for generation that has some or all of these measures of success to be excluded from the Discounted Core on the basis of a spreadsheet modeling determination (the E3 calculator model) that transmission triggered by the new generation would have a utilization level below "67 percent." The E3 calculator model includes highly generic assumptions concerning the costs of new transmission as well as the level of utilization of that transmission. The E3 calculator model contains no network modeling capabilities so any determinations within that model as to the use of any particular network upgrade are largely speculative. Moreover, the "67-percent" utilization threshold is arbitrary and is not tied to any objective analysis of the economic benefits of network upgrades (relative to alternatives) as compared to the cost of those upgrades.

One result of the adjustments made by the CTPG is to include 230 MW of large scale solar PV in the Fairmont CREZ that does not appear in the CPUC's public policy renewable resource portfolio. CTPG is modeling this generation as connected to the Antelope 230-kV bus. The Antelope area transmission system is being upgraded as part of SCE's segments 1-11 Tehachapi upgrade project.

Comment:

The "CPUC Public Policy" Scenario Should Incorporate Commercial Interest to Reflect the Most Likely Future Development.

In the previous draft of the Study Plan, the CTPG indicated that it would be studying all of the LTPP scenarios from the CPUC. In the revised Study Plan, the CTPG includes only the Cost-Constrained scenario. LSA has raised concerns about this scenario in other planning proceedings and, to the extent that a single LTPP scenario is singled out as the most appropriate scenario to study, supports the use of the Trajectory scenario, which reflects commercial interest. Focusing on the Cost-Constrained scenario exacerbates the discrepancy between renewables procurement and transmission planning.

The Cost-Constrained scenario is based solely on general assumptions about technology cost and does not consider (aside from the inclusion of certain "discounted core" projects) commercial interest, perhaps the best information available on the likely future of renewable development in the state. Commercial interest is the best indicator of what is happening on the ground, where developers are investing their resources and focusing their activities. Among the LTPP scenarios, only the Trajectory scenario places any weight on commercial interest beyond the discounted core, though even that scenario fails to fully account for up-to-date and comprehensive commercial interest. If any of the LTPP scenarios are to be studied, the Trajectory scenario appears to be most appropriate, though the discounted core must be updated to reflect current market conditions and projects' statuses.

Further, the Cost-Constrained scenario is based on assumptions regarding technology, financing and development costs derived from static and rapidly aging data. Despite the rapid changes in renewable technology and market evolution, the scenario reflects no sensitivities or other analysis capturing the potential for significant technology costs shifts to occur in the next ten years. Using static costs to develop this scenario essentially freezes renewable technology development by favoring mature technologies with lower costs currently over promising, but less mature, technologies with higher costs now, but potentially lower costs over the timeframe analyzed in the planning process. Thus, the Cost-Constrained scenario may not actually represent the lowest cost scenario over the planning horizon.

CTPG Technical Study Team Response:

As discussed above, the CTPG Technical Study Team has decided to evaluate the CPUC Public Policy scenario because this is the renewable portfolio that the CPUC has formally requested the CAISO to use “as a base case for the CAISO’s 2011-2012 Transmission Planning Process.” In addition, as the LSA acknowledges, the CPUC public policy renewable resource portfolio contains a significant amount of Discounted Core generation and this generation was selected by the CPUC on the basis of commercial interest. After deducting the CPUC-approved distribution solar PV program impacts in the PG&E, SCE and SDG&E distribution service areas (2,122 gWh) -- which CTPG accounts for by reducing its renewable net short estimate -- CTPG’s POU-CPUC Discounted Core contains 23,016 gWh of renewable energy. This accounts for 51 percent of CTPG’s 44,852 gWh renewable net short. Finally, the CTPG Technical Study Team observes that the CPUC Public Policy scenario accounts for the significant amounts of economically attractive out-of-state renewable resource development potential.

The CTPG Technical Study Team appreciates the LSA’s comment regarding the impact of ongoing advances in renewable resource technology and cost reduction. To some degree, these impacts are implicit in the renewable resource development portfolios being evaluated by the CTPG. For example, as compared to the CTPG’s 2010 studies which assumed significant amounts of solar thermal generation, a much larger amount of the solar generation is being modeled as solar photovoltaic. However, a more rigorous assessment of the likely trajectory of technology improvements and cost reductions over time is beyond the scope of the CTPG’s 2011 study work.

Comment:

In closing, LSA requests that the CTPG update the discounted core to include commercial projects which have met the CPUC’s discounted core criteria of having 1) a signed PPA either under review or already approved by the Commission and 2) its major permit filed with and deemed data adequate by the appropriate agency.

CTPG Technical Study Team Response:

The CTPG Technical Study Team agrees with the LSA that an update of the CPUC Discounted Core would be useful. However, the CTPG Technical Study Team believes the CPUC is the entity that should perform this update and encourages the LSA to continue working with the CPUC to secure such an update.