

**Comments of the California Energy Commission Staff on the California
Transmission Planning Group (CTPG) Draft 2010 Phase 4 Study Plan for 2020:
Dated September 23, 2010**

The Strategic Transmission Planning Office and Electricity Analysis Office of the California Energy Commission (CEC) appreciate the opportunity to comment on the CTPG 2010 Draft Phase 4 Study Plan for 2020 dated September 23, 2010. CEC staff's comments will address the following topics:

- 1. Development of a scenario for the retirements of the State's Once-Through Cooling (OTC) units and its impact on the transmission system and the type of generation development that should be constructed.**
- 2. Evaluation of the impact of renewable development on the SCIT Nomogram.**
- 3. Consideration of other state energy goals: (a) incremental energy efficiency impacts on load; and (b) incremental distributed generation and combined heat and power (CHP) impacts on load.**
- 4. Identification of the basis for satisfying planning reserve margins in California in the proposed Phase 4 Southwest Scenario.**

Specific Comments

- 1. Development of a scenario for the retirements of the State's Once-Through Cooling (OTC) units and its impact on the transmission system and the type of generation development that should be constructed.**

The CTPG Phase 2 Study indicated that OTC needs was independent of RPS. The CEC staff submitted comments on the Draft Phase 3 Study Plan on April 28, 2010, disagreeing with CTPG's perspective since transmission and generation upgrades in support of OTC replacement strategies will likely result in fewer incremental transmission modifications needed to meet the 33 percent renewable goals. Evaluating OTC policy for old steam boiler power plants both increases aggregate generation development and could reshape what kind of generation development minimizes the aggregate capacity that needs to be constructed.

The joint CEC-CPUC-CAISO proposal to the State Water Resources Control Board (SWRCB) was included in the OTC policy that was adopted on May 4, 2010¹, which calls for the use of transmission originally needed for renewable resources to replace some OTC capacity. Studying OTC outside of this context does not provide information relevant to energy policy makers.

The CEC staff recommends CTPG develop, at a minimum, an OTC retirement sensitivity case for the Southern California Alternative Analysis, since most of the retirements will be in Southern California. This case would provide input as to the impact the State's OTC policy could have on generation development and the transmission system.

- 2. Evaluation of the impact of renewable development on the SCIT Nomogram.**

¹ The State Water Resources Control Board adopted the Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling on May 4, 2010, Resolution No. 2010-0020 (http://www.swrcb.ca.gov/water_issues/programs/npdes/cwa316.shtml).

CEC staff recommends CTPG evaluate how renewable development will impact satisfaction of the SCIT Nomogram and whether it is necessary to evaluate the transmission system upgrades that enable a greater proportion of expected renewables development to count toward satisfying the SCIT Nomogram. CEC staff is unaware of active studies to devise a planning version of the methods used to develop the seasonal SCIT Nomogram now used to schedule resources, although discussion of this topic may surface efforts that have not heretofore been public. CEC staff believes greater transparency about the implications of the SCIT Nomogram as a constraint on generation development is necessary to guide decisions for both transmission and generation development.

The following four steps constitute a proposed method for tackling this topic:

- Step 1: Determine what power plant development resides within the SCIT cutplane and contributes inertia toward system stability and what does not. This knowledge is critical to evaluation of the impacts of renewable development in satisfying overall system requirements.
- Step 2: Devise an approximation to the current methods that develop the seasonal SCIT Nomogram that are useful in the planning time horizon. Such methods would be used in conjunction with renewable development scenarios to assess whether sufficient system inertia exists in a hypothetical future to satisfy reliability criteria.
- Step 3: Apply this new method to assess each scenario to determine if the planning version of SCIT was satisfied. Failure to satisfy the criteria would impose complementary fossil development within the SCIT cutplane up to a level at which the planning version of SCIT was satisfied. This is similar to evaluating proposed generation/transmission additions, observing thermal violations on transmission elements, and identifying remedial measures to eliminate the violation.
- Step 4: Assess an alternative method for mitigating SCIT violations observed in Step 3. Rather than investigating how much additional generation needed to be added within the SCIT cutplane, this step would identify whether upgrades to the transmission system would allow greater proportions of renewable development to be considered within the SCIT cutplane.

CTPG and other renewable assessment efforts are determining limited facets of the implications of large scale renewable development. An initial effort to evaluate the component of system stability that the SCIT Nomogram represents is another facet that is needed.

3. Consideration of other state energy goals: (a) incremental energy efficiency impacts on load; and (b) incremental distributed generation and combined heat and power (CHP) impacts on load.

CEC staff commends CTPG in assessing transmission needs to meet the state's renewable goals. To better understand California's transmission needs, CTPG should include other state energy goals in its assessment. The CEC staff recommends that CTPG include in its assessment incremental energy efficiency impacts on load and incremental distributed generation and CHP impacts on load.

On September 21, 2010, the ARB, CEC, CPUC and CAISO jointly released a series of documents supporting a policy view of the future called California Clean Energy Future (CCEF).² Not only do these jointly-issued documents identify a vision for the future electricity system, they identify concrete steps in

² <http://www.climatechange.ca.gov/energy/index.html>

which existing electricity planning systems should be modified to address this vision. In addition to the high renewable future that CTPG has been investigating, CCEF recognizes high levels of energy efficiency savings and other programmatic load modifiers. CTPG should be assessing renewable development, and corresponding transmission needs, in light of incremental energy efficiency and other load modifiers.

WECC's Transmission Expansion Planning Policy Committee (TEPPC) and FERC's efforts to reshape transmission planning also recognize that transmission planning efforts ought to address state policy goals. The current round of transmission planning undertaken by TEPPC is adjusting the base case load forecasts that balancing authorities submitted to WECC before transmission assessments are undertaken. They are also developing and will assess a high DSM scenario. The FERC transmission NOPR could explicitly impose a requirement that transmission planning be conducted in a manner that addresses state energy policy.

Although it may be too late to make a substantive change to baseline loads in developing power flow base cases for the proposed Phase 4 effort, CTPG needs to adjust its processes for 2011 and beyond to conform with the emerging standards that the CCEF effort, WECC and FERC are now formulating. CEC staff can provide the detailed data necessary for modeling these important state energy goals.

4. Identification of the basis for satisfying planning reserve margins in California in the proposed Phase 4 Southwest Scenario.

The proposed Phase 4 Southwest Scenario proposes removing 40% of new renewable generation located inside California and adding an equivalent amount of renewable generation in the southwest (including Wyoming and New Mexico resources). If this amount of generation is located outside California does CTPG plan to add generation in California to satisfy planning reserve margins in California?

From a planning reserve margin and also a redispatch perspective, can CTPG define how this amount of renewable generation, removed from California, will be accounted for in the planning reserve margin calculation and redispatch? It appears that a dispatch model must be run in order to determine what would be operating in California from a reliability perspective if 40% of the renewable net short is relocated outside California. Simply assuming that removing an amount of renewable generation within California and locating this generation outside California would not affect dispatch and reliability in California seems highly unlikely.

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