

**California Transmission Planning Group (CTPG)
Technical Study Team Response to the
February 2, 2012, Comments of the
California Consumers Alliance (CCA) on
The CTPG's Draft 2011 Statewide Transmission Plan**

Comment:

The Executive Summary of the Draft CTPG Statewide Transmission Plan states:

"The primary objective of CTPG has been to provide a foundation for a statewide transmission plan that identifies the transmission infrastructure needed to reliably meet California's 33% Renewable Portfolio Standard (RPS) goal by the year 2020."

CCA believes the CTPG has not reached its primary objective of identifying transmission needed to reliably meet California's RPS goal by 2020 and is currently using inconsistent and flawed assumptions in identifying transmission needs.

Among other prerequisites, in order to identify transmission *needs*, such as; locations where reliability criteria violations occur, comprehensive transmission planning must accurately take into account existing electrical infrastructure and transmission projects that have been approved by regulatory authorities and expected to be online.

CCA believes that CTPG's application of modeling Balancing Authority approved projects is at the very least, inconsistent. The 2011 CTPG Statewide Transmission Plan appears to be using selective criteria in deciding which transmission projects approved by a California Balancing Authority to model in the base case. To illustrate this observation, Section 3.9 of the draft statewide transmission plan reads:

"All scenarios evaluated by CTPG included transmission projects that have been approved by BPA or by a California Balancing Authority. A list of the significant transmission projects included in the nine scenarios is provided in Table 21."

First of all, CCA notes that transmission projects approved by Balancing Authorities (BAs) include upgrades such as Under Voltage Load Shedding (UVLS), Remedial Action Schemes (RAS), Special Protection Schemes (SPS) interim temperature adjusted line ratings as well as network upgrades previously identified as needed in Balancing Authorities' FERC compliant transmission planning processes and/or executed Large Generator Interconnection Agreements (LGIAs) and Procedures.

CTPG Technical Study Team Response:

As CCA notes, Balancing Authorities have approved a variety of measures for addressing the potential violation of reliability standards. These include both transmission infrastructure

additions as well as operational procedures, such as controlled load-drop. The CTPG's 2011 study work incorporated all of these measures to the extent they were effective in mitigating reliability-standard violations identified by the CTPG's studies. For purposes of the CTPG's 2011 statewide transmission plan, the CTPG chose not to list every Balancing Authority-approved measure—such a list would be quite lengthy. Instead, as the language quoted by CCA indicates, the CTPG chose to list only the most “significant” BA-approved transmission infrastructure additions.

Comment:

Secondly, while Table 21 of the Draft CTPG 2011 Statewide Plan draft includes selected California ISO Transmission Planning Process (TPP) approved transmission projects, other approved projects appear to be omitted. In other words, Table 21 is not a comprehensive list of transmission projects that have been approved by the California ISO, California's largest Balancing Authority. Furthermore, while Large Generator Interconnection Procedure (LGIP)-driven transmission projects were included in Table 21, it appears that CTPG has been selective in which network upgrades associated with studied and executed LGIAs to model in Phase 2 and the statewide plan draft.

CTPG Technical Study Team Response:

The CTPG's 2011 studies intended to model all Balancing Authority-approved transmission projects, specifically those projects expected to have an impact on the transmission footprint of interest to the CTPG. It is unclear from CCA's comment whether CCA has reviewed the power flow cases used by CTPG to verify that CTPG did not model all BA-approved transmission projects. If, based on such a review, CCA believes any transmission project approved by a Balancing Authority has been omitted from the CTPG's studies, the CTPG Technical Study Team requests that CCA provide a listing of those projects.

Comment:

As one example, according to the 2010/2011 Transmission Plan approved by the California ISO Board of Governors, the Borden-Gregg 230-kV reconductor is a California ISO 2010 request window proposal to mitigate California ISO-identified overloads under NERC Category A and C conditions and is a recommended solution for a facility not meeting thermal and voltage performance requirements. Additionally these overloads were also identified in the California ISO LGIP Transition Cluster Phase II study process. The California ISO Board-approved 2010/2011 TPP also described the transmission necessary to meet the state's 33% Renewable Portfolio Standard (RPS) goals. Key analytic components of the plan include: Identification of transmission needed to support meeting the 33% RPS goals over a diverse range of renewable generation portfolio scenarios, which are based on plausible forecasts of the type and location of renewable resources in energy-rich areas most likely to be developed over the 10 year planning horizon. The California ISO 2010/2011 TPP describes the Borden-Gregg reconductor project as

one of the 13 needed transmission projects underway to meet 33% RPS in 2020. Moreover this finding was recently reiterated in the California ISO’s draft 2011/2012 Transmission Plan:

**Elements of the 2011/2012 ISO Transmission Plan
Supporting Renewable Energy Goals**

Transmission Facility	Online
Transmission Facilities Approved and Permitted for Construction	
Sunrise Powerlink	2012
Tehachapi Transmission Project	2015
Colorado River – Valley 500 kV line	2013
Eldorado – Ivanpah 230 kV line	2013
Carrizo – Midway reconductoring	2012
Additional Network Transmission Identified as Needed in ISO in Interconnection Agreements but not Permitted	
Borden – Gregg reconductoring	2015
South of Contra Costa reconductoring	2014
Pisgah - Lugo	2017
West of Devers reconductoring	2018
Coolwater – Lugo 230 kV line	2018
Policy-Driven Transmission Elements Approved but not Permitted	
Mirage-Devers 230 kV reconductoring (Path 42)	2014

Additionally, in the 2011 Integrated Energy Policy Report and accompanying document Renewable Power in California: Status and issues, the California Energy Commission also considers the Borden-Gregg reconductor project ISO-approved. The Commission's reports list Borden-Gregg as one of "13 major transmission projects that are critical for delivering the renewable energy needed to meet California's 33 percent renewable mandate by 2020."

In summarizing, CTPG's action to exclude the Borden-Gregg reconductor project from the Phase 2 case appears to disparage a Balancing Authority (BA) approved upgrade that is consistently identified as needed. At best CTPG’s exclusion of the project reflects a disjointed study approach since Table 22 of the draft reads: “ISO Approved Major Transmission Projects,” which conspicuously lists the Borden-Gregg 230 kV line reconductoring.

CTPG Technical Study Team Response:

At the time the CTPG performed its 2011 study work, the reconductor of the 230-kV Borden-Gregg line had not yet been approved by the California ISO. Table E1 of the May 18, 2011, ISO-Board approved 2010/2011 TPP document does not include the reconductor of the 230-kV Borden-Gregg line in the list of “Transmission Facilities Approved...” Instead, Table E1 lists the “Borden Gregg Reconductoring” as “Additional LGIP Network Transmission not Permitted”.

At the time of the CTPG’s 2011 study work, the reconductor of the 230-kV Borden-Gregg line was contained in an unsigned Large Generator Interconnection Agreement (“LGIA”). Transmission upgrades included in unsigned LGIAs are not considered California ISO-approved.¹ The CTPG will correct Table 22 in the draft 2011 statewide transmission plan,

¹ The CTPG Technical Study Team notes that as of February 2, 2012, the California ISO’s 2011/2012 TPP has not received ISO Board-approval.

however, to indicate that the reconductor of the 230 kV Borden-Gregg line was not California ISO-approved at the time of the CTPG’s 2011 study work.²

As shown on Table 3 of the CTPG’s draft 2011 statewide transmission plan, the reconductor of the 230-kV Borden-Gregg line was identified in the CTPG’s 2010 study work as potential mitigation for reliability standard violations. As shown at the bottom of Table 3, this reconductor -- along with sixteen other reconductors, substation upgrades and new transmission lines -- provides mitigation that is technically equivalent to the “Install Midway-Gates-Gregg-Belotta-Tesla 500-kV or Midway-Gates-Los Banos-Tesla 500-kV and Gates-Gregg 500-kV” mitigation identified in the CTPG’s 2011 study work.

Comment:

CCA also notices that the 2011 CTPG statewide plan modeling fails to account for network upgrades included in the Fresno Reliability Transmission Projects (FRTP), approved by California ISO Board in 2010. The FRTP included 6 reconductoring projects, 7 new interim temperature adjusted line ratings, 12 contingencies with modified or new pump dropping SPS, 1 terminal equipment upgrade, and 2 firm load dropping SPS identified as a proposed mitigation needed preserve reliability in the Fresno Area with an expected 2014 online date.

Summary of Projects Needed to Meet Fresno Reliability Requirements

Description of Individual Upgrade Project	Estimated Cost (millions)	Required In-Service Date
Reconductor Panoche-McMullin 230 kV line to mitigate 14 off-peak and 2 on-peak contingency overloads	\$14	May 2014
Reconductor Panoche-Helm 230 kV line to mitigate 3 off-peak and 1 on-peak contingency overloads	\$35	May 2014
Reconductor Helm-McCall 230 kV line to mitigate 3 off-peak and 1 on-peak contingency overloads	\$10	May 2015
Reconductor McMullin-Kearney 230 kV line to mitigate 9 off-peak contingency overloads	\$20	May 2014
Reconductor McCall-Henrietta 230 kV line section to mitigate 10 off-peak contingency overloads	\$13	May 2015
Reconductor Certainteed-Legrand 115 kV line section to mitigate 3 off-peak contingency overloads	\$2	May 2014
Replace terminal equipment on Henrietta-Gates 230 kV line section (of Gates-McCall) to mitigate 4 off-peak contingency overloads	\$1	May 2014
Replace wave traps and obtain interim 884 Amp temperature adjusted summer emergency rating for Panoche-Gates 1 & 2 230 kV lines to mitigate off-peak overloads	\$13	May 2014
Modifications to the Helms pump dropping SPS.	\$13	May 2014
Obtain interim night time temperature adjusted ratings on 7 transmission lines	\$13	May 2014
Install local SPS to trip McCall 115 kV firm load for the Helm-McCall 230 kV/Gates-McCall 230 kV Double Circuit Transmission Line (DCTL) contingency to mitigate off-peak overloads	\$0.5	May 2014
Install SPS to trip firm load for the Helms-Gregg #1 and #2 230 kV DCTL contingency to mitigate 1 on-peak overload	\$6	May 2014
Total	\$127.5	

CTPG Technical Study Team Response:

² An LGIA containing the reconductor of the 230 kV Borden-Gregg line was fully executed on September 15, 2011.

As noted above, the CTPG's 2011 study work was designed to model all Balancing Authority-approved transmission projects. The power flow cases used by the CTPG in its 2011 study work did include the FRTP.

As described above, the CTPG chose not to list every Balancing Authority-approved measure for mitigating reliability standard violations. Rather, the CTPG chose to list only the most "significant" Balancing Authority-approved transmission infrastructure additions on Table 21 of the CTPG's draft 2011 statewide transmission plan. The FRTP is not listed on Table 21, but should have been. The CTPG will issue the final 2011 statewide transmission plan with Table 21 corrected to include the FRTP.

Comment:

Going forward, CCA requests that the CTPG clarify its views on:

- 1) What constitutes transmission projects approved by a Balancing Authority?
- 2) Why were Balancing Authority-approved projects described above omitted from Phase 2 study case and resulting 2011 statewide plan?

CTPG Technical Study Team Response:

The CTPG relies on its Balancing Authority members to identify the transmission projects that those Balancing Authorities have approved. For the California ISO, transmission project approval is secured either through (a) the California ISO Board's approval of transmission upgrades included in the ISO's TPP document, or (b) transmission upgrades included in signed LGIAs.

Though the reconductor of the 230-kV Borden-Gregg line was included on Table 22 as "ISO Approved", it had not yet been approved at the time of the CTPG's 2011 study work. Though the FRTP was inadvertently not listed on Table 21 as approved, it was in fact modeled in the CTPG's 2011 study work. As indicated above, the CTPG will issue its final 2011 statewide transmission plan (i) correcting Table 21 by including the FRTP, and (ii) clarifying Table 22 by noting the execution date of the LGIA containing the reconductor of the 230-kV Borden-Gregg line.

Comment:

In order to determine that a particular transmission project is needed to mitigate identified need(s), for example solving reliability criteria violations, it is imperative that by comparison to reasonable range of feasible alternatives, the transmission project (or other identified solution) offers the highest level of net economic benefits to consumers. A reasonable range of feasible alternatives would include, for example, the alternative of redispatching generation pre-contingency to mitigate (i.e., avoid) identified reliability criteria violations.

The CCA urges the CTPG and stakeholders to consider whether CTPG planning process as currently conceived can meet its primary objective.

CTPG Technical Study Team Response:

As CCA has noted, the CTPG’s “primary objective” is to “provide a foundation for a statewide transmission plan that identifies the transmission infrastructure needed to reliably meet California’s 33-percent Renewable Portfolio Standard (RPS) [requirement] by the year 2020.”³

The CTPG Technical Study Team believes the CTPG’s technical study work has provided a “foundation” for a transmission plan that identifies “needed” transmission infrastructure. The transmission upgrades included in the CTPG’s draft 2011 statewide transmission plan comprise one set of solutions for mitigating identified reliability criteria violations, that is, a “foundation” for the solutions that are ultimately determined to be “needed” to meet RPS requirements. Accordingly, the CTPG believes its planning process is meeting its “primary objective.”

As the CTPG has pointed out numerous times, the solutions identified by the CTPG are not the only solutions to the potential reliability violations revealed in its studies, and those solutions may not be the solutions that offer the “highest level of net economic benefits to consumers,” *i.e.*, the transmission infrastructure additions identified by the CTPG may not turn out to be the solutions that are determined by decision-makers to be implemented. Establishing which solutions offer the highest level of net economic benefits to consumers requires that (i) a range of feasible wires- and non-wires alternatives be identified, and (ii) an economic analysis of those alternatives be conducted. These assessments are beyond the scope of the CTPG’s current work. The CTPG anticipates that such assessments will be undertaken by project sponsors, and by regulatory authorities with responsibility for approving new transmission.

³ From the Executive Summary of the CTPG’s Draft 2011 Statewide Transmission Plan.