

**COMMENTS OF THE STAFF OF THE CALIFORNIA
PUBLIC UTILITIES COMMISSION**

**ON 2015-2016 TRANSMISSION PLANNING PROCESS PROGRESS AND RESULTS
DISCUSSED AT THE NOVEMBER 16 STAKEHOLDER MEETING**

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November 25, 2015

Introduction

The Staff of the California Public Utilities Commission (CPUC Staff) appreciates this opportunity to provide comments on the California Independent System Operator's (CAISO) 2015-16 Transmission Planning Process (TPP) progress, results and remaining studies, as discussed at the November 16, 2015 stakeholder meeting. Briefly, these comments request additional detail and explanation in the upcoming Draft 2015-2016 Transmission Plan (Draft Plan) regarding the role of additional achievable energy efficiency (AAEE) in reliability studies, regarding project cancelations, and regarding rationale for (1) modeling large amounts of frequency response-related thermal and hydro unit commitments, and (2) prioritizing congestion studies and study requests. The comments also seek greater detail regarding load and wind/solar dispatch scenarios in policy (Renewable Portfolio Standard or RPS) reliability and deliverability studies.

1. The Draft Plan Should More Fully Describe the Role of Additional Achievable Energy Efficiency (AAEE) in Reliability Studies and Conclusions.

The Draft Plan should indicate if, where and why any new infrastructure is identified as needed largely or solely based on violations occurring in study cases assuming no AAEE, and conversely should identify where assumed AAEE avoids infrastructure additions. This information helps the CPUC and other stakeholders understand the role of AAEE in the CAISO's reliability studies, and in avoiding or postponing infrastructure investments.

2. *The CAISO Should Provide Fuller Information in the Draft Plan Regarding all Previously Approved Transmission Projects Being Canceled and that Were Considered for Cancellation.*

The CAISO should post the full list of previously approved projects that have not begun construction and are being considered for cancellation in the present planning cycle. Additionally, for each project identified for cancellation whether identified in the November 2016 stakeholder meeting or subsequently, the Draft Plan should explain reasons for cancellation. This information will give the CPUC and other stakeholders useful insight regarding the potential for actual market and planning developments (such as regarding load growth, energy efficiency, demand response, local or other resources) to avoid need for transmission investments. It will also give insight into planning uncertainties inherent in reliability studies.

3. *The Draft Plan Should Clearly Identify Load, Wind Dispatch and Solar Dispatch Conditions Assumed for Each Policy (RPS)-Related Reliability and Deliverability Study Case, as Well as Which of These Conditions Led to Modeled Violations.*

These assumptions should be compared to analogous assumptions for TPP reliability studies such as summarized on page 25 of the March 31 2015 Final Study Plan shown as Appendix 1 to these comments (with some assumptions apparently not having been finalized by March 31). Reported assumptions should include assumed wind and solar dispatch levels for a study area in terms of percentage of nameplate capacity, in terms of percentage of the current (70% exceedance) QC level, and in absolute MW. This will clarify what conditions (locations, times, loads, resource dispatches) produce reliability or deliverability challenges for a given renewables portfolio. This in turn will aid consideration and appreciation of how these stresses might

- a. change under future renewables scenarios,
- b. interact with other challenges of integrating large amounts of additional renewables, such as regarding curtailments, or
- c. be studied differently (or not) if and when system resource adequacy (RA) and individual resource RA contributions are assessed using a stochastic methodology (e.g., Effective Load Carrying Capability or ELCC).

Additionally, any difference between assumed dispatch levels in deliverability studies and dispatch levels (especially for solar) assumed for summer peak reliability studies (e.g., on page 25 of the Final Study Plan, shown in Appendix 1) should be explained.

4. The Draft Plan Should More Fully Explain the Rationale and Consequences for the Economic Studies Enforcing Minimum Hourly Commitment of 4800 MW of Combined Cycle Plus 365 MW of (Storage) Hydro Generation for Frequency Response Purposes.

The requested explanations should include explanation of whether various rationale (such as inertia, mitigation for transmission outages) previously given for modeling 25% “regional” (various load areas) minimum generation requirements are no longer applicable locally or systemwide once the above frequency response-associated commitments are enforced. Furthermore, the anticipated section of the Draft Plan addressing frequency response studies should clarify the connection between frequency response studies (and studies such as economic studies that incorporate frequency response needs as modeling assumptions) and the CAISO’s frequency response initiative including its market design considerations.

As an important part of the frequency response studies and frequency response initiative, the CAISO should evaluate, discuss and where appropriate pursue non-conventional sources of frequency response.

Separately regarding the economic studies, CPUC staff request information on the number and timing of hours for which the net export constraint was binding, as well as the associated cost and curtailment consequences.

5. The November 16 TPP Presentation Indicated that Study Priorities for Identified Highest Congestion Areas and for Various Study Requests Have Yet to be Determined. CPUC Staff Request that the Draft Plan Clearly Explain the Rationale Used for Prioritizing These Studies.

We anticipate that with a 50% RPS possibly involving out-of-state resources and energy only delivery, as well as FERC Order 1000-related interregional planning coordination plus possible expansion of the CAISO footprint - - the need to efficiently and transparently prioritize these kinds of studies may increase.

6. The November 16 TPP Presentation Briefly Outlined the 50% RPS Special Study Involving Energy Only Deliverability for Two Contrasting Portfolios. CPUC Staff Expect and Request that Results Presented in the Draft Plan Help Clarify How Associated Transmission Needs/Costs, Energy Delivery Constraints, and Possible Partial RA Delivery Can and Should Be Estimated.

We understand that this study breaks new ground regarding the RPS level, energy only deliverability and the role of out-of-state resources. Thus, we do not expect complete or final resolution of the above or other questions, but do expect that this study will help clarify analytic issues, uncertainties and needs going forward.

Contacts:

Keith White, kwh@cpuc.ca.gov

Appendix 1

**Excerpt from page 25 of the March 31, 2015 Final Study Plan for the 2015-2016 TPP
showing renewable dispatch assumptions for various
reliability study cases in the three IOU areas**

Table 4-7: Summary of renewable output in PG&E

All years	Biomass/Biogas /Geothermal	Solar PV, ST	Wind	Stressed case
Sum Min Load	NQC~P Max	0	3xNQC~Pmax	High Output
Sum Off-Peak	NQC~P Max	NQC~Pmax	3xNQC~Pmax	High Output
Sum Partial-Peak	NQC~P Max	0	0	Low Output
Sum Peak	NQC~P Max	25%xNQC~= 25%xPmax	NQC~=33%xPmax	Low Output
Winter Peak	NQC~P Max	0	50%xNQC~= 16.6%xPmax	Low Output

Table 4-8: Summary of renewable output in SCE

	Biomass/Biogas /Geothermal	Solar PV, ST	Wind	Stressed case
Sum Min Load	NQC~P Max	0	2.8xNQC~= 93%xPmax	High Output
Sum Off-Peak	NQC~P Max	93%xNQC~= 93%xPmax	2.8xNQC~= 93%xPmax	High Output
Sum Partial-Peak	NQC~P Max	TBD	TBD	Low output
Sum Peak	NQC~P Max	36%xNQC~= 36%xPmax	0	Low Output

Table 4-9: Summary of renewable output in SDG&E

All years	Biomass/Biogas /Geothermal	Solar PV, ST	Wind	Stressed case
Sum Min Load	NQC~P Max	0	3xNQC~Pmax	High Output
Sum Off-Peak	NQC~P Max	81%xNQC~= 81%xPmax	2.9xNQC~= 96%xPmax	High Output
Sum Peak	NQC~P Max	55%xNQC~= 55%xPmax	NQC~= 33%xPmax	Low Output