

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

**ON THE 2014-2015 TRANSMISSION PLANNING PROCESS FOLLOWING THE  
NOVEMBER 19-20 STAKEHOLDER MEETING**

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**December 4, 2014**

**Introduction**

The Staff of the California Public Utilities Commission (“CPUC Staff”) appreciates this opportunity to provide comments on 2014-15 Transmission Planning Process (“TPP”) results and progress as reported and discussed at the November 19-20 stakeholder meeting. Our comments address

1. clarifying Southern California local area and sub-area long-term LCR study assumptions and implications,
2. providing the most useful information and study priorities going forward regarding the interaction for planning purposes of transmission accessing Imperial Valley renewable resources and supporting reliability of service to Southern California coastal loads,
3. more robust assessment of capacity value for the proposed Harry Allen-Eldorado transmission project, and
4. support for continuing overgeneration (frequency response) study refinements including operational scenarios, mitigation measures and alternative future developments significantly impacting frequency response issues.

Comments are included below.

- 1. For Each Area and Sub-Area, the CAISO Should More Clearly and Completely Quantify the Amounts and Types of Resource Additions Modeled in Long-Term LCR Studies, as Well as What Magnitudes of Resource Shortfall Below these Levels Would Trigger LCR Deficiency.***

This is necessary to establish not only clear understanding of what amounts and types of resources are being modeled in areas and sub-areas, particular in the LA Basin and San Diego, but also to establish a benchmark against which ongoing procurement,

performance monitoring and planning can be evaluated. Reporting of these resource assumptions might be via tables, and should be accompanied by key modeled resource characteristics where these are important and not obvious, such as speed and controllability of demand response, or duration of storage. Furthermore, the CAISO should clarify the implications of a statement on slide 28 that “*Addition of the Mesa Loop-in Project, as well as reduction of conventional resources in the Western LA Basin necessitates the expansion of the Western LA Basin sub-area to include the Valley sub-area to provide resources to meet its local reliability need.*” Does this mean that resources located in the Valley sub-area can substitute for resource needs in the Western LA Basin as previously identified for procurement purposes? Up to what MW level (of displacement) is possible, with what effectiveness factor (such as 1.5 MW of Valley resources displacing 1 MW of Western LA Basin resource need)?

***2. In Studying Transmission Options for Accessing Imperial Valley (IV) Resources and Supporting Reliability of Service to Coastal Southern California, the CAISO Should Identify High-Priority Options Focusing Especially on More Modest, Issue-Focused Options Having Relatively Lower Costs and Environmental Challenges.***

CPUC Staff appreciate the CAISO’s effort to consider interacting transmission planning issues regarding access to IV resources and coastal Southern California load center reliability - - in a proactive, integrated manner in consultation with stakeholders. We believe that it is especially important to assess the benefits and interaction of limited, issue-focused transmission solutions having relatively lower costs and environmental challenges, identifying policy, reliability or other developments that would drive such projects. Towards this end, the CAISO should characterize in a clear and consistent manner various potential Southern California transmission projects in terms of (a) added transfer capability from IV, (b) reduction in LCR need within specific LCR areas and sub-areas, (3) estimated cost, and (4) credible information on timeline and siting/permitting difficulty. This should aid prioritization of such projects for further study.

Additionally and more specifically, the CAISO should provide more detail and clarity regarding assumptions and rationale leading to finding 1900-2100 MW of

available deliverability-based versus 1700-1800 MW of available reliability-based transmission capability from the IV Area, assuming operational mitigation measures.

3. ***Capacity Benefits Accounting for Over Half of the Value Attributed to the Harry Allen-Eldorado Transmission Project Should be Calculated in a More Robust Manner Including Circumstances that May Yield Significantly Lower Benefits, also Recognizing that When Considering the Range of Energy and Capacity Benefit Uncertainties this Project May Not Be Cost-Effective, at Least if Funded Entirely by California.***

Preliminary results presented for economic assessment of the Harry Allen-Eldorado (HA-E) transmission project show a benefit-cost ratio of 1.06 and 1.14 for 7% and 5% real discount rates, respectively. Energy benefits based on locational marginal prices accounted for slightly less than half of total benefits and across a range of sensitivities ranged from zero (high DG RPS portfolio) to almost 2X the benefits under base assumptions (if assuming high load growth).

In contrast, only a single value was calculated for capacity benefits, based on the calculated 200 MW increase in RA import deliverability due to the HA-E project. The methodology for calculating capacity benefits was stated to be the same as the methodology used in the previous TPP cycle for calculating capacity benefits for the Delaney-Colorado River transmission project. This methodology<sup>1</sup> assumes that (1) California is in capacity deficit prior to 2020, (2) the desert southwest reaches deficit in 2025, (3) from 2025 onward there is a capacity cost advantage (\$41/kW-year in 2025) for new capacity obtained from the desert southwest that reflects a lower estimated levelized cost for new aeroderivative CTs (\$142/kw-yr in the desert southwest vs. \$182/kw-yr for California), and (4) from 2020 through 2024 the capacity cost advantage for the desert southwest is even greater (ranging from \$107/kW-year to \$51/kW-year) due to a capacity surplus situation in the desert southwest. An implicit assumption is that the cost advantage for sourcing capacity from the desert southwest is captured entirely by California ratepayers, and not at all by desert southwest suppliers.

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<sup>1</sup>see slides 37-39 from the November 20, 2013 TPP stakeholder meeting presentation

The above assumptions give an optimistic, high-end estimate of CAISO area capacity cost savings for obtaining 200 MW of additional import RA capacity made possible by the HA-E project. The following reasonable sensitivity assumptions would lower this capacity benefit:

- i. Desert southwest suppliers capture a significant portion (at least 1/2, as an alternative bookend to zero) of the capacity cost advantage relative to California,
- ii. Existing desert southwest capacity surplus may cease to be available for export prior to 2025, especially when considering the 400 MW of such surplus already assumed (in the 2013-2014 TPP analysis) to be incrementally sold to California via the Delaney-Colorado River project.
- iii. The CAISO system may not need or experience full (or any) economic value for 200 MW of system RA assumed to be imported over the HA-E project, particularly not for the full assumed 2020-2069 period. This could occur either because there is not a CAISO area system capacity shortfall as early as 2020, or if there are needs for local and flexible capacity such that filling such needs would also provide “system” RA and reduce or eliminate any residual need for system RA capacity.

Therefore, just as energy benefits are appropriately assessed across a range of relevant and informative sensitivities, capacity benefits for the HA-E project should also be assessed across a range of sensitivities. Such sensitivities appear to have the potential to generally yield lower, not higher, capacity benefits relative to what was presented in the November 20, 2014 meeting.

Finally, we note that under FERC Order 1000 and under the CAISO and other western transmission planning regions’ Order 1000 interregional filings with FERC, interregional transmission projects such as the HA-E project could be assessed for benefits accruing to multiple regions, which might share in project costs.

***4. CPUC Staff Support and Welcome Continued Overgeneration (Frequency Response) Study Refinements Including Exploration of Both Mitigation Measures and Alternative Future Developments Significantly Impacting Frequency Response Issues.***

The CAISO’s overgeneration study examined frequency response to a major outage (both Palo Verde nuclear units), which would drive down west-wide frequency until mitigated via frequency response. Based on AC powerflow and voltage stability

studies of conditions derived from a Gridview production simulation for April 7, 2024 (renewables-driven overgeneration), CAISO observed WECC frequency response to be adequate but with the CAISO area not contributing its required (under reliability standards) share and thus “leaning on” the rest of WECC. CAISO stated that study assumptions may have been optimistic in that there was considerable generator headroom (to respond upward) under this dispatch scenario, and behind the meter PV was modeled as load reduction which might disguise some of its problematic electrical and visibility/control issues. CAISO also stated that potential mitigation measures to be explored in future studies include load response, storage response, and building frequency response into inverter-based generation (e.g., PV), at some cost.

CPUC Staff appreciate this initial opportunity to learn of these studies that are clearly relevant to both policy and reliability objectives. We look forward to further clarification of the “potentially optimistic” assumptions noted above, and to informative investigation of load response, storage response, inverter-based frequency response or other mitigation measures. It is possible that west-wide developments will diverge from those represented in the TEPPC 2024 Common Case, such as regarding coal plant retirements and penetration of varied nonconventional resource types. It is also possible that evolving market and operational conditions will support more export, and less curtailment, of California renewable generation under “overgeneration” conditions. As the CAISO’s frequency response studies continue, the above possibilities may warrant consideration.

Finally, we note that the frequency response study scenario derived from production simulation dispatch showed both substantial CAISO area renewables curtailment (wind, solar, geothermal and bioenergy) and significantly lower than maximum storage recharge (which could absorb renewable generation). We request that the CAISO continue to evaluate the dispatch simulation giving rise to this situation, including whether modeling refinements are warranted.

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