

**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE
STATE OF CALIFORNIA**

Order Instituting Rulemaking to Develop An
Electricity Integrated Resource Planning
Framework and to Coordinate and Refine
Long-Term Procurement Planning
Requirements.

Rulemaking 16-02-007
(Filed February 11, 2016)

**REPLY COMMENTS OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR
CORPORATION ON ADMINISTRATIVE LAW JUDGE'S RULING SEEKING
COMMENT ON PROPOSED SYSTEM REFERENCE PLAN AND RELATED
COMMISSION POLICY ACTIONS**

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I. Introduction

The California Independent System Operator Corporation (CAISO) files these reply comments in response to opening comments on the Administrative Law Judge’s Ruling Seeking Comment on Proposed System Reference Plan and Related Commission Policy Actions (Ruling). In these reply comments, the CAISO first reproduces the relevant questions from the Ruling in bold, followed by the CAISO’s reply comments.

II. CAISO Reply Comments

1. Please comment on the appropriateness of the baseline resources included in the RESOLVE model. What changes would you make and why?

The CAISO agrees with the many party comments urging the Commission to reflect generator retirements beyond once-through cooling resources and Diablo Canyon.¹ The baseline resources should reflect retirements of both natural gas-fired and renewable resources because not all existing resources will continue to operate after their respective contracts terminate. The CAISO appreciates the detailed analysis and modeling conducted by parties on this issue.²

¹ See for example opening comments filed by Calpine Corporation (Calpine), NRG Energy, Inc.(NRG), LS Power Development, LLC (LS Power), the Office of Ratepayer Advocates (ORA), Pacific Gas & Electric (PG&E), Southern California Edison (SCE), TransWest Express LLC (TransWest), and the Union of Concerned Scientists (UCS).

² See, for example, the opening comments filed by Calpine and UCS.

The CAISO also agrees with the numerous party comments encouraging the Commission to re-examine and update resource cost curves where possible, ultimately including demand-side resources into the optimization.³

The CAISO provides additional comments on curtailment in response to Question 4, net export limit in response to Question 7 and the greenhouse gas (GHG) Planning Price in response to Question 14.

4. Comment on the viability of renewable curtailment as a grid integration strategy.

The CAISO echoes concerns brought forth by parties about the ultimate cost of using renewable curtailment as a grid integration strategy.⁴ SCE specifically noted that the RESOLVE modeling may underestimate curtailment as compared to actual data reported in 2017.⁵ CAISO expects that the Commission's production cost modeling will provide greater insight into the extent of renewable curtailment and identify other renewable integration strategies.

The CAISO also agrees with SCE's comments regarding the need to consider Remedial Action Schemes (RAS).⁶ The CAISO will need to conduct engineering analyses to understand the impact of large volumes of renewable curtailment on the RAS currently in operation.

5. Comment on the advisability of early procurement of renewables to take advantage of federal ITC and PTC availability.

The CAISO agrees with those comments that consideration of early procurement based on the ITC and PTC requires a more nuanced approach.⁷ For example, it is unlikely that all of the tax savings associated with these credits will be passed onto ratepayers. The CAISO also agrees that a rush to procure resources to take advantage of the tax credits may increase rather than decrease contract prices and create logistical challenges for actual construction.

³ See, for example, the opening comments filed by the California Environmental Justice Alliance and Sierra Club (CEJA/SC), Calpine, the Natural Resources Defense Council (NRDC), NRG, ORA, Ormat, PG&E, San Diego Gas and Electric (SDGE), SCE, and UCS.

⁴ See for example, the opening comments filed by CEJA/SC, California Community Choice Association (CalCCA), LS Power, ORA, SDGE, SCE, and TransWest.

⁵ SCE Opening Comments, p. 17.

⁶ SCE Opening Comments, p. 21.

⁷ See for example CalCCA, CEJA/SC, CLECA, Calpine, NRG, ORA, PG&E, and SDGE, and SCE.

7. Comment on the impact of import/export constraints on this analysis.

The CAISO agrees with party comments that the modeled net export limit directly influences the level of renewable curtailment and makes ambitious assumptions about the level of exported power neighboring systems can absorb.⁸ For example, the RESOLVE model may assume California can export excess solar generation at a time when neighboring systems may not have the flexibility due to the lack of day-ahead scheduling coordination. The CAISO also clarifies that the net export limit is needed in the modeling, at the 2,000 MW limit that has been described in CAISO's previous comments.⁹ SDGE claims that the RESOLVE model does not need to reflect a net export limit and that the model already incorporates hurdle rates.¹⁰ The CAISO disagrees with SDGE's assertion because removing the net export limit is akin to assuming there is a regional system operator. As the CAISO has noted before, unless the scenario specifically considers a regional system operator, the CAISO does not believe a net export limit above 2,000 MW is defensible. The CAISO agrees with the ORA that further study is needed.¹¹

9. Do you agree with the recommendation to utilize the 42 MMT Scenario for IRP planning purposes? Why or why not?

The CAISO does not have additional comments to this question but takes this opportunity to respond to statements and questions posed by Vote Solar in its response to questions 2 and 9. Vote Solar's comments seem to conflate several different processes at the CAISO. On the surface, CAISO agrees with Vote Solar's assertion that the RESOLVE model is limited in its ability to reflect ramping and flexibility needs. However, Vote Solar's comments draw unsupported conclusions about the Flexible Resource Adequacy Criteria and Must Offer Obligation (FRAC-MOO) stakeholder initiative and a special study conducted under the Transmission Planning Process (TPP) to analyze local capacity requirements for slow response resources, such as demand response. Vote Solar takes these separate processes and erroneously concludes as follows:

⁸ See opening comments for NRG, p. 7; ORA, pp. 7-8; PGE, p. 25; SCE, p. 29

⁹ See opening comments for CAISO; See also, the CAISO June 28, 2017 and July 24, 2017 comments in this proceeding.

¹⁰ SDGE opening comments, p. 15.

¹¹ ORA opening comments, p. 8.

CAISO's recent analysis demonstrates the need for greater and more localized flexible ramping services... These facts suggest that the Reference System Plan should not be used by CAISO for its TPP. Rather, the CAISO should develop detailed locational grid needs and ramping needs to update its TPP. Specifically, the CPUC should request that the CAISO analysis show where and how locational ramping needs are required. Moreover, CAISO should indicate if traditional generation or transmission upgrades can remedy problems, or whether locational DERs must be used.¹²

First, the slow response analysis is completely separate from the FRAC-MOO stakeholder initiative. The CAISO's slow response study is designed to determine the conditions in which the CAISO can rely on slow responding resources to meet local capacity requirements. Local capacity requirements are set based on planning for contingency events during stressed system conditions. In the slow response study, demand response resources were considered after all other resources were deployed to respond to a contingency, not for ramping needs. It is not correct to draw any conclusions about ramping needs on the system, or the effectiveness of slow response resources to meet ramping needs, from the slow response analysis.

Although the CAISO supports modeling improvements (either in RESOLVE or transitioning to a production cost model), CAISO does not see how developing analyses in the TPP would replace similar flexibility analysis in the IRP process.

Lastly, CAISO does not understand Vote Solar's ask for CAISO to indicate "whether locational DERs must be used" to address locational ramping needs. There is no planning standard that requires DERs must be used either in the absolute or instead of generation and transmission upgrades. DERs are considered in alternative assessments along with other non-wires and transmission alternatives with the mitigation being a matter of the technical requirements, policy and costs to address all of the identified needs. It is clearer to state that if DERs are deployed to address needs on the system, the location of these resources matter and location granularity is needed to analyze the effectiveness of these resources.

¹² Vote Solar Opening Comments, response to Question 9.

11. Do you support transmitting the Default Scenario and associated portfolio to the CAISO for use as the reliability base case in the TPP for 2018? Why or why not?

The CAISO agrees with SCE's comments noting that the TPP requires data granularity to be effective.¹³ Ultimately the usefulness of the analysis conducted in the TPP is directly derivative of the input assumptions. For example, if parties are keen to understand the impact of locating renewables or retiring natural gas-fired resources in disadvantaged communities, the CAISO needs the locations of the disadvantaged communities to properly model the electrical impacts. These policy matters should be communicated by the Commission rather than deferring the analysis to CAISO.

ORA's opening comments state that the Commission should

request that the CAISO plan for meeting the current 50% RPS target using the Default and the 42 MMT Scenario portfolios as guides. ORA makes this request because the CAISO 2017-2018 TPP considers procuring out-of-state wind for meeting the state's 50% RPS target, which is inconsistent with the Commission results for the 50% RPS Default Case. The cost of additional transmission needed to access this out-of-state wind ranges between approximately \$2 to \$5 billion with additional required upgrades expected.¹⁴

ORA's comments seem to suggest that the CAISO is unilaterally contemplating out-of-state wind at a 50% RPS target. The CAISO clarifies that this analysis was conducted as a special study within the TPP and will not be used to authorize additional transmission upgrades. The CAISO notes that requests in this proceeding to rely more heavily on special studies tends to perpetuate this kind of confusion by conflating analyses in the TPP that have cost allocation and planning consequences versus one-off special studies that are provided by informational purposes. Rather than requesting additional special studies, the Commission should transmit portfolios that will be considered as reliability or policy preferred (which can be a sensitivity to delay action on planning approval) to reflect the policy direction of the state. CAISO therefore disagrees with SDGE's request to allow CAISO to make "evidence-based adjustments" to a portfolio after the Commission has transmitted it to the CAISO.¹⁵

¹³ SCE Opening Comments, p. 35.

¹⁴ ORA Opening Comments, p. 11.

¹⁵ SDGE Opening Comments, p. 19.

14. Do you support the staff recommendation for how LSEs should utilize the GHG Planning Price in preparing their individual LSE IRPs? Why or why not?

The CAISO agrees with SCE's comments urging the Commission to determine a mass-based GHG emission target for the LSEs to be used in developing the LSE plans.¹⁶ As other commenters have noted, the GHG Planning Price does not seem to be aligned with CARB cap-and-trade prices, including the Allowance Price Containment Reserve.¹⁷

The CAISO appreciates that interested parties conducted additional RESOLVE modeling and is concerned that when the GHG target constraint is removed and the GHG Planning Price is imposed, the resulting portfolio leads to almost 4,000 MW of resources incremental to those identified in the Reference System Plan.¹⁸ The CAISO echoes concerns that the GHG Planning Price is well above the California Air Resources Board's cap-and-trade allowance price containment reserve and does not align well with other Commission proceedings.¹⁹

15. Do you support the staff recommendation for how LSEs should utilize the Reference System Portfolio in preparing their individual LSE IRPs? Why or why not?

The CAISO agrees with SCE's comments that the IRP should also include state goals to ensure system and local reliability.²⁰ The CAISO is encouraged to see the inclusion of production cost modeling into the IRP process.

23. Should the Commission initiate activities with the CAISO or others to investigate further development of out-of-state wind?

a. Why or why not?

b. If so, what specific steps should be taken?

¹⁶ SCE, p. 36.

¹⁷ See, for example, Calpine, ORA, PG&E, SDGE, and SCE.

¹⁸ See, for example, PGE, p. 31 and Appendix 3; SCE, p. 40.

¹⁹ See, for example, CalCCA Opening Comments, p. 25; Calpine Opening Comments, p. 12; ORA Opening Comments, p. 12; PGE Opening Comments, p. 31 and Appendix 3; SDGE Opening Comments, p. 20; and SCE Opening Comments, p. 40.

²⁰ SCE Opening Comments, p. 39.

c. Should out-of-state wind be included in a special study or as part as a policy-driven scenario for TPP? Why or why not?

Several parties have requested that the CAISO conduct special studies in the TPP.²¹ As detailed in the CAISO's response to Question 11 above, additional special studies are not needed at this time. Instead, the Commission should leverage existing work or, as CAISO outlined in its opening comments, load serving entities (LSEs) should conduct a requests for offers/interest to gauge commercial interest.²²

24. Should the Commission utilize the GHG Planning Price as an input to the IDER avoided cost calculator, as described in this ruling?

a. Why or why not?

b. Do you have specific recommendations for the appropriate methodology for use of the GHG Planning Price in IDER or other demand-side resource proceedings/activities? Describe in detail.

The CAISO agrees with parties that expressed concern that DERs are not currently optimized in RESOLVE and therefore the GHG Planning Price may not reflect a true GHG shadow price.²³ The CAISO further agrees with ORA that including the GHG Planning Price in IDER relies on circular reasoning "i.e., using values from IDER for IRP, then IRP values for IDER."²⁴ This issue, including whether to use a GHG Planning Price, requires further discussion.

28. Please comment any aspect on the staff proposal included as Attachment E to this ruling. Explain the reasoning behind any recommended revisions. Please organize your comments according to the major topics of the proposal.

The CAISO agrees with party comments supporting additional production cost modeling to inform LSE plans.²⁵ The CAISO hopes that the production cost modeling will address CEJA/SC's and other party concerns by assessing the impact of a solar-heavy portfolio on grid reliability and emissions from gas-fired resource cycling.²⁶ The CAISO reiterates our request for

²¹ For example, ORA, PG&E, and SCE Opening Comments.

²² CAISO Opening Comments, p. 16.

²³ See, for example, PG&E, SCE and SDGE Opening Comments.

²⁴ ORA Opening Comments, p. 24.

²⁵ See opening comments of CEJA/SC, ORA, NRG, and SDGE.

²⁶ See CEJA/SC opening comments.

the Commission to articulate a process that allows parties to enter their modeling into the evidentiary record and sufficient time to vet the models and model results. To facilitate this, the CAISO requests the Commission provide documentation (similar to the Assumptions and Scenarios document) with sufficient granularity and detail so that parties can replicate the SERVVM model outputs.

The CAISO agrees with CLECA that there is inconsistent treatment of behind-the-meter PV between the IRP and resource adequacy proceedings. More discussion and coordination is needed between the proceedings.

III. Conclusion

The CAISO appreciates this opportunity to provide reply comments and looks forward to further refining the IRP and the Reference System Plan.

Respectfully submitted,

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