

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



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Order Instituting Rulemaking to Continue
Electric Integrated Resource Planning and
Related Procurement Processes.

Rulemaking 20-05-003
(Filed May 7, 2020)

**OPENING COMMENTS ON ADMINISTRATIVE LAW JUDGE'S RULING SEEKING
COMMENTS ON PROPOSED PREFERRED SYSTEM PLAN OF THE CALIFORNIA
INDEPENDENT SYSTEM OPERATOR CORPORATION**

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I. Introduction

The California Independent System Operator Corporation (CAISO) provides opening comments on the *Administrative Law Judge’s Ruling Seeking Comments on Proposed Preferred System Plan* (Ruling). The CAISO appreciates the opportunity to provide opening comments.

II. Discussion

The CAISO appreciates the Commission and Energy Division staff efforts to collaborate with the CAISO on various aspects of this proceeding, including busbar mapping, to ensure a smooth transition from the integrated resource planning (IRP) to the CAISO’s transmission planning process (TPP). The CAISO also appreciates the time and effort Energy Division staff devoted to reconciling the baseline and existing resources and validating the resource projects contracted for, in development, and planned. This accounting is critical to developing a common understanding amongst all parties and for modeling purposes (both reliability and transmission planning). The CAISO strongly supports continued reliability and requests that sensitivity portfolios also pass reliability modeling prior to being studied in the TPP, because all portfolios studied in the TPP must be reliable as a starting point.

With respect to the questions posed in the Ruling, the CAISO highlights the need to align procurement and transmission planning. The CAISO strongly urges the Commission to guide procurement to areas with existing or planning transmission capacity. Otherwise, generation projects may move forward—potentially based on “least cost” without transmission considerations—while inadvertently triggering additional, unplanned transmission expansion. This is critical as the CAISO’s reliability modeling shows that the 38 MMT Core Portfolio is

reliable but only provides about 500 MW of effective capacity above the level necessary to meet reliability targets in 2026. Consequently, any delays in meeting the procurement targets, reductions to the baseline generation resources, or other system changes beyond the 500 MW margin could reduce system reliability.

The CAISO supports the Commission’s efforts to plan and study high-level policy goals—such as a high electrification scenario—but cautions that meaningful analysis will require both sufficient data for powerflow modeling and defensible assumptions that are comparable with the base case. For example, load growth must be appropriately mapped to the correct busbar, otherwise the powerflow analysis may provide results inconsistent with the base case. This could indicate a need for transmission upgrades that otherwise would not exist.

A. Responses to Ruling Questions

In the subsections below, the CAISO reproduces the questions posed in the Ruling prior to providing the CAISO’s responses.

Question 3: Comment on the appropriateness of the scenarios and sensitivities developed in RESOLVE to be considered as the preferred portfolio. Suggest any alternative sensitivities or changes to the analysis.

See response to Question 8.

Question 4: Comment on the SERVVM analysis and results of the 38MMT Core Portfolio.

The CAISO studied the 38 MMT Core Portfolio using both stochastic and deterministic production cost modeling. Based on this analysis, the 38 MMT Core Portfolio meets the 0.1 loss-of-load expectation (LOLE) standard. However, the CAISO's assessment determined the 38 MMT Core Portfolio provides only about 500 MW of effective capacity above the level necessary to meet the 0.1 LOLE in 2026. Consequently, any delays in meeting the procurement targets, reductions to the baseline generation resources, or other system changes beyond the 500 MW margin could increase the LOLE above the standard. The Commission should ensure that procurement occurs as planned and that load-serving entities (LSEs) appropriately contract for existing resources to maintain the current baseline. The CAISO provides its full modeling results at the following site: <http://12.200.60.146:990>. Please contact e-recipient@caiso.com for detailed access instructions.

Question 6: Comment on whether the load forecast assumptions should be adjusted to include higher load, particularly related to EV adoption or high electrification more broadly.

See response to Question 8.

Question 8: Comment on the proposed policy driven sensitivity portfolio for the TPP based on the 30 MMT GHG limit in 2030 with the high electrification load assumptions. Suggest any additional or alternative scenarios that should be analyzed as policy driven sensitivities.

The CAISO provides technical comments on the 30 MMT GHG sensitivity and any other potential sensitivities to ensure sufficient data and modeling requirements for meaningful TPP analysis. Meaningful analysis requires both sufficient data for powerflow modeling as well as defensible, comparable assumptions. In addition, the Commission should only transmit reliable portfolios, *e.g.* meeting LOLE targets, regardless of the driver or firmness of intent to pursue the portfolio resources. Unless and until such data is available, the transmission planning level analysis will not provide probative information.

The Commission typically provides the CAISO with a base portfolio and one or more sensitivity portfolios for study in the TPP. The CAISO utilizes the base portfolio in its reliability, policy-driven, and economic assessments to identify the need for transmission development. The Commission primarily uses sensitivity portfolios for informational purposes. Despite the different drivers and intent behind studying the base and sensitivity portfolios, the CAISO uses the same process to study both portfolios. Both portfolios require the same level of modeling detail and data granularity to accurately study. In addition, all portfolios should both be reliable to produce meaningful powerflow results and identify transmission needs. In other words, all portfolios should meet the 0.1 LOLE as a minimum starting point.

The CAISO understands the underlying high electrification load assumption in the proposed 30 MMT sensitivity portfolio is not derivative of, nor compatible with, the load forecast from the California Energy Commission's (CEC's) Integrated Energy Policy Report (IEPR). To date, all of the load forecasts in every IRP portfolio transmitted to the CAISO have been derivative of the CEC's IEPR. The CEC's IEPR forecast provides detailed and internally consistent assumptions for a variety of load modifiers such as behind-the-meter photovoltaic

(PV) generation, transportation electrification, and energy efficiency. Much like the busbar mapping exercise Energy Division staff conducts for supply-side resources, the CEC staff maps load modifiers, such as additional achievable energy efficiency and fuel substitution, to individual busbars. The demand forecasts at each busbar location is specific, with individual load modifiers tied to specific busbars.

The CEC derives the busbar demand forecasts from its IEPR forecasting methodology, which has been vetted with stakeholders. The load modifier mapping is critical for TPP analysis, because it provides geographically granular data regarding future demand increases and/or decreases. This busbar level data allows the CAISO powerflow analysis to determine where reliability upgrades are needed. For example, growth in light-duty transportation electrification will impact different physical locations than growth in port electrification. Forecasted load growth due to high electrification cannot be spread evenly across the CAISO system as a simplifying assumption. If load growth is not appropriately mapped to the correct busbar, the powerflow analysis may provide overly optimistic or overly conservative results. For example, the powerflow analysis may indicate the need for transmission upgrades based on an incorrect busbar demand mapping.

If the Commission transmits a sensitivity portfolio for CAISO analysis in the TPP, it must have the same demand forecast geographic granularity as the base portfolio. Because the PATHWAYS forecast is not a CEC product, it may not have compatible underlying assumptions and drivers. The CAISO understands the CEC staff will not be able to conduct busbar mapping analysis using the PATHWAYS high electrification demand forecast, but may be able to do so using a high electric vehicle scenario from the IEPR forecast.

Finally, transmitting an additional “sensitivity” with an underlying load forecast change would require the CAISO to create entirely new powerflow cases for analysis. In other words, the CAISO will not be able to use the base portfolio, which uses the IEPR forecast, as a starting point to model this sensitivity. The CAISO will need to dedicate time and resources to develop entirely new powerflow cases using the PATHWAYS high electrification load forecast, essentially doubling the CAISO’s work load.

Question 9: Comment on whether and how the Commission should act to encourage specific non transmission alternatives to be built, if identified as part of the CAISO TPP process, both for the two specific projects identified in the 2020 - 2021 TPP, as

well as in general for future such opportunities.

The CAISO agrees that it would be prudent for the Commission to encourage the specific non-transmission alternatives identified in the 2020-2021 TPP, as well as in general for future such opportunities. This will result in efficient alignment of procurement and transmission planning that supports state policies.

See also response to Question 20 for a different but interrelated concern about aligning procurement with transmission planning.

Question 11: Comment on the busbar mapping approach.

As noted in response to Question 8, busbar mapping for both load modifiers and resources are critical to meaningful modeling in the TPP.

The CAISO greatly appreciates coordination with Energy Division staff on resource busbar mapping, as such mapping is critical to addressing reliability needs by ensuring new resources are directed at appropriate locations. Furthermore, the CAISO will leverage the recent Senate Bill (SB) 100 implementation planning document to ensure that the resource busbar mapping reflects land use that is aligned with state goals and policies.¹

See also response to Question 9.

Question 12: Comment on whether the Commission should require the procurement of resources contained in the individual IRP filings and have LSEs face penalties and/or backstop procurement requirements with cost allocation arrangements, similar to those for D.19-11-016 and D.21-06-035.

The CAISO supports directing backstop procurement if LSEs do not successfully procure long lead-time and/or large projects necessary to maintain reliability. Currently, penalties are not necessarily encouraging more procurement.² For example, the CAISO has over 400 MW of reliability must run (RMR) resources under contracts, which were required to prevent the resources from retirement or mothballing. Yet, the September 2021 resource adequacy filings were approximately 400 MW deficient. Ensuring there is sufficient supply is critical because (as

¹ California Energy Commission, California Public Utilities Commission, California Independent System Operator, *SB100 Implementation Planning for SB100 Resource Build*, Docket #: 21-SIT-01, September 13, 2021, pp. 8-9.

² Penalties for resource adequacy year 2022 will increase. California Public Utilities Commission, Decision, *Decision Adopting Local Capacity Obligations for 2022-2024, Flexible Capacity Obligations for 2022, and Refinements to the Resource Adequacy Program*, R.19-11-009, June 24, 2021.

noted in response to Question 4) there is only a small effective capacity margin of 500 MW in 2026 to maintain the 0.1 LOLE.

Question 15: Comment on whether and how much procurement required in D.21-06-035 should be accelerated to 2023 and/or suggest additional actions to facilitate additional resources in response to the Governor’s Proclamation from July 30, 2021.

The CAISO has proposed for the Commission to (1) set an additional system resource adequacy requirement to meet the net demand peak period with a sufficient reserve margin; and (2) increase the existing planning reserve margin from 15% to 17.5%, at a minimum.³ The net demand peak period is when demand is relatively high but resource availability is limited, primarily due to the unavailability of solar resources. The 8:00 p.m. hour serves as a proxy for the net demand peak period.

The Commission should expedite procurement required in D.21-06-035 to the extent necessary to meet the net demand peak obligation and an increased 17.5% planning reserve margin.⁴ For example, the Commission should accelerate August 2023 authorized procurement to June 2023, and accelerate 2024 procurement to 2023. Based on the CAISO’s calculations, if there had been a system resource adequacy requirement at the net demand peak period in 2021, the resource adequacy showings were 3,017 MW and 2,862 MW deficient in August and September, respectively.⁵

Question 20: Comment on whether the Commission should take any initial actions on geographically targeted procurement, particularly with respect to Aliso Canyon, or more broadly, and respond to the factors discussed in Section 12 of this ruling.

The CAISO strongly urges the Commission to act to guide procurement towards where

³ Opening Testimony of the California Independent System Operator Corporation, *Order Instituting Rulemaking to Establish Policies, Processes, and Rules to Ensure Reliable Electric Service in California in the Event of an Extreme Weather Event in 2021*, R. 20-11-003, September 1, 2021. Opening Brief of the California Independent System Operator Corporation, *Order Instituting Rulemaking to Establish Policies, Processes, and Rules to Ensure Reliable Electric Service in California in the Event of an Extreme Weather Event in 2021*, R. 20-11-003, September 20, 2021, pp. 8-9.

⁴ Opening Brief of the California Independent System Operator Corporation, *Order Instituting Rulemaking to Establish Policies, Processes, and Rules to Ensure Reliable Electric Service in California in the Event of an Extreme Weather Event in 2021*, R. 20-11-003, September 20, 2021, pp. 8-9.

⁵ Reply Brief of the California Independent System Operator Corporation, *Order Instituting Rulemaking to Establish Policies, Processes, and Rules to Ensure Reliable Electric Service in California in the Event of an Extreme Weather Event in 2021*, R. 20-11-003, September 27, 2021, p. 3.

transmission capacity exists or where expansion will occur through integrated resource and transmission planning processes. This is critical given the large generation buildout in recent portfolios. Currently there is a disconnect between new resource contracting and transmission planning where LSEs may contract with developers for system resources without regard to the interconnection location of these resources. Large volumes of new capacity (and the unique characteristics of such capacity) will have different powerflow impacts on the grid. In order for the transmission plan results to be effective and inform policy makers, the Commission must ensure that procurement occurs in the locations where the transmission plan has studied the buildout. Otherwise, generation projects may move forward (potentially based on “least cost” without transmission considerations) and inadvertently trigger additional, unplanned transmission expansion at potentially greater cost, delay, and out of synch with state land use and other policies. The Commission should signal to LSEs that portfolios adopted by the Commission recognize and prioritize the geographical locations of new capacity to align with transmission expansion, especially if the transmission expansion is based on portfolios transmitted by the Commission.

See also response to Question 9 for a different but interrelated concern about aligning procurement with transmission planning.

With regard to Aliso Canyon, the CAISO has noted in prior comments that a more holistic assessment is needed which involves understanding generation retirement and replacement in the Los Angeles Basin (LA Basin).⁶ In the interim, parties should consider the CAISO’s local capacity study analysis on charging capability in local capacity areas⁷ and the forthcoming analysis in the CAISO’s 20 Year Transmission Outlook, which considers natural gas-fired generation retirement in the LA Basin pursuant to Aliso Canyon closure.⁸

Question 21: Comment on whether and how the Commission should act to preserve transmission deliverability rights in the central coast area that could be utilized for

⁶ See, for example: Comments of the California Independent System Operator on Aliso Canyon OII Phase 3 – Workshop #2, *Order Instituting Investigation pursuant to Senate Bill 380 to determine the feasibility of minimizing or eliminating the use of the Aliso Canyon natural gas storage facility located in the County of Los Angeles while still maintaining energy and electric reliability for the region*, I. 17-02-002, April 20, 2021, p. 6.

⁷ California Independent System Operator, 2022 Local Capacity Technical Study Final Report and Study Results, April 30, 2021. Available at: <http://www.caiso.com/InitiativeDocuments/Final2022LocalCapacityTechnicalReport.pdf>

⁸ California Energy Commission, California Public Utilities Commission, California Independent System Operator, *SB100 Implementation Planning for SB100 Resource Build*, Docket #: 21-SIT-01, September 13, 2021, p. 5.

offshore wind or other resources.

The CAISO notes its interconnection process is an open access framework as set out in its FERC approved tariff. The interconnection process applies to all active generation interconnection projects who are eligible to seek an allocation or who want to retain an allocation. The Commission should consider the interconnection process in determining whether and how to try to preserve transmission deliverability rights.

Question 23: Comment on whether and how the Commission should act to support the development of OOS renewables/wind and the transmission to deliver it. Be as concrete and specific as possible in your recommendations.

Unlike in-state resources, the current policy-driven approach where the Commission develops RESOLVE portfolios may not apply for out-of-state (OOS) resources that require incremental transmission to deliver energy into the CAISO footprint. OOS resources will inherently involve the participation of and coordination with OOS entities and additional flexibility is needed to engage in such a process. Instead of additional modeling, LSEs can conduct requests for offer to solicit OOS resource bids and the CAISO can analyze the transmission buildout to support the winning contracts.

Question 24: Comment on specific actions the Commission can take to ensure retention of existing resources needed both for reliability and/or GHG emissions purposes.

As noted in response to Question 12, the CAISO currently has over 400 MW of capacity under RMR contract, essentially backstopping for resources that were not successful in obtaining a resource adequacy contract while LSEs are not meeting their procurement obligations and the CAISO is requested to conduct additional backstop.⁹ The CAISO strongly urges the Commission to direct procurement for both existing and new resources to ensure the baseline and incremental needs, respectively, are met to ensure reliability.

⁹ Joint Letter from the CPUC President Marybel Batjer and CEC Chair David Hochschild to the California ISO CEO Elliot Mainzer, June 29, 2021. Available at: <http://www.caiso.com/Documents/CapacityProcurementMechanismSignificantEvent-JointStatementandLetter.pdf>

III. Conclusion

The CAISO appreciates the opportunity to submit comments and looks forward to working with the Commission and parties.

Respectfully submitted

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