

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

Order Instituting Rulemaking to
Oversee the Resource Adequacy
Program, Consider Program Reforms
and Refinements, and Establish
Forward Resource Adequacy
Procurement Obligations.

Rulemaking 23-10-011

**COMMENTS OF THE
CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION
ON INPUTS AND ASSUMPTIONS IN THE RESOURCE ADEQUACY LOSS OF LOAD
EXPECTATION STUDY**

Roger E. Collanton
General Counsel
William H. Weaver
Assistant General Counsel
Marissa Nava
Counsel
California Independent System
Operator Corporation
250 Outcropping Way
Folsom, CA 95630
Tel: 916-608-1225
Fax: 916-608-7222
Email: mnav@caiso.com

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I. Introduction

The California Independent System Operator Corporation (CAISO) submits comments pursuant to the California Public Utilities Commission’s (Commission) December 18, 2023 *Assigned Commissioner’s Scoping Memo and Ruling* (Ruling) and March 26, 2024 *Email Ruling Extending Deadline for Comments on Inputs and Assumptions in Resource Adequacy Loss of Load Expectation Study* extending the time for filing comments to April 2, 2024.

The CAISO appreciates the Energy Division’s developing and vetting inputs and assumptions behind its reliability modeling with parties in the resource adequacy (RA) proceeding.¹ The CAISO and other parties previously supported the Energy Division establishing a process to review modeling inputs and assumptions in the RA proceeding, similar to the Modeling and Advisory Group process in the Integrated Resource Plan (IRP) proceeding.² This review process will allow parties to better understand and validate the results of Energy Division’s analyses.

¹ Energy Division, Proposed Inputs and Assumptions, March 18, 2024: <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M527/K361/527361341.PDF> (Inputs and Assumptions Document).

² R.21-10-002, Comments of the California Independent System Operator Corporation on Resource Adequacy Phase 3 Workshop and Proposals, February 24, 2023.

In these comments, the CAISO recommends that Energy Division remain flexible to update approaches to calculating resource forced outages and modeling resource availability as discussions regarding resource outage rates evolve at both the Commission and at the CAISO.

The CAISO also responds to Energy Division’s proposal to analyze the impacts of priority wheeling-throughs on Path 26. First, the CAISO already publishes related to resource needs north and south of Path 26 in annual Local Capacity Technical Studies. Second, in response to Energy Division concerns about “oversubscription” of Path 26, the CAISO tests internal constraints in advance of determining the amount of available transmission capacity (ATC) to release to support priority wheeling throughs and conducted an assessment on Path 26 published earlier this year. Lastly, if Energy Division will move forward with its assessment of priority wheeling through impacts on Path 26, Energy Division should not use 2023 priority wheeling through registrations, which were released under the CAISO’s previous policy that has since been replaced.

II. Discussion

A. Energy Division Should Continue Refining Approaches to Calculating Resource Forced Outage Rates and Modeling Resource Availability.

To calculate generator forced outage distributions, Energy Division uses Generating Availability Data System (GADS) data. However, GADS does not contain outage data for storage resources. To estimate storage forced outage rates, Energy Division proposes to “analyze CAISO bidding and curtailment data to calculate approximate equivalent forced outage rates (EFOR) as defined in GADS.”³ In this approach, Energy Division proposes to filter out certain outages types reported to the CAISO.⁴

The CAISO notes that several discussions regarding outage data and coordination of outage rate calculations have taken place recently in both the Commission’s RA proceeding and in CAISO’s RA Modeling and Program Design (RAMPD) Working Groups.⁵ These discussions

³ Inputs and Assumptions Document, p. 34.

⁴ Inputs and Assumptions Document, p. 35.

⁵ See Opening Comments on Track 1 Proposals: Department of Market Monitoring of the California Independent System Operator Corporation Opening Comments, p. 2; CalCCA Opening

have primarily centered around the Commission and the CAISO coordinating methodologies and data sources on developing an unforced capacity (UCAP) counting methodology. However, this coordination between the Commission and CAISO also is relevant to modeling inputs and assumptions, and updates to CAISO's default counting rules and planning reserve margin (PRM).

Additionally, several parties recently commented in the Commission's RA proceeding on storage outages and availability in recent years and the need for further discussion on the nature of storage outages and availability.⁶ In light of these evolving discussions, Energy Division should remain flexible to refine its approaches for calculating generation forced outage rates and modeling resource availability. Energy Division should remain flexible to update its approaches as discussion on methodologies and data coordination progress in the Commission's RA proceeding and in CAISO RAMPD working groups.⁷ The CAISO plans to provide additional analysis on outages reported to the CAISO in future RA working groups. For storage in particular, as parties learn more about the nature of storage forced outages types reported to the CAISO and interactions with the CAISO's market model, Energy Division should consider updating its storage availability assumptions.

Separately, the Energy Division should publish final EFOR values so parties can evaluate results, similar to how Energy Division reported ambient derate statistics in the Inputs and Assumptions Document.⁸

Comments, p. 19; Cal Advocates Opening Comments, p. 6; Microsoft Opening Comments, p. 14; Terra-Gen Opening Comments, p. 7; Calpine Opening Comments, p. 2.; Also see CAISO RAMPD Working Group meetings: CAISO, *Resource Adequacy Modeling and Program Design Working Group*, pp. 19-80: <https://www.aiso.com/InitiativeDocuments/Presentation-ResourceAdequacyModeling-ProgramDesignWorkingGroup-Jan162024.pdf>; CAISO, *Resource Adequacy Modeling and Program Design Working Group*, pp. 22-77: <https://www.aiso.com/InitiativeDocuments/Presentation-ResourceAdequacyModeling-ProgramDesignWorkingGroup-Feb132024.pdf>.

⁶ See Opening Comments on Track 1 Proposals: Department of Market Monitoring of the California Independent System Operator Corporation Opening Comments, p. 5; California Energy Storage Alliance Reply Comments on Track 1 Proposals, p. 12; Terra-Gen Reply Comments on Track 1 Proposals, p. 4.

⁷ [Presentation-ResourceAdequacyModeling-ProgramDesignWorkingGroup-Jan162024.pdf](https://www.aiso.com/InitiativeDocuments/Presentation-ResourceAdequacyModeling-ProgramDesignWorkingGroup-Jan162024.pdf) (caiso.com), p. 63.

⁸ Inputs and Assumptions Document, p. 30.

B. Path 26 Stress Test and Priority Wheeling Through Sensitivities

1. The CAISO Publishes Zonal Capacity Needs North and South of Path 26 in Annual Local Capacity Technical Studies.

In Track 1 Proposals, Energy Division proposed that “Staff will conduct LOLE modelling during Track 2 of the current RA proceeding and will assess Path 26 path rating. This study may inform a further proposal to re-impose the Zonal RA limits, which were previously a part of RA compliance rule.” Energy Division explained it will perform a Path 26 stress test for 2026 to consider the impact of north-to-south wheel-throughs on LOLE expectations.⁹

The CAISO analyzes resource needs in zones north of Path 26 (NP26) and south of Path 26 (SP26), and publishes these results in annual Local Capacity Technical Studies.¹⁰ It is not clear what additional information Energy Division’s analysis will provide or whether Energy Division’s results will align with the CAISO’s existing assessments. Energy Division should coordinate with the CAISO on this type of analysis to avoid producing redundant or conflicting information.

2. The CAISO Analyzes the Impacts of Internal Constraints in Advance of Releasing Available Transmission Capacity to Support Priority Wheeling Throughs.

Energy Division states “In the past few years the number of wheel-throughs flowing North to South over Path 26 have steadily increased. Staff is concerned that oversubscription of Path 26 may increase the planning reserve margin for CPUC LSEs – increasing the reliability cost to meet a 0.1 LOLE standard.”¹¹ Energy Division proposes to “perform a Path 26 stress test for study year 2026 while also looking into the constraints that are imposed on Path 26 because of NW to SW wheel throughs.”¹²

First, Energy Division’s proposal does not take into account that the CAISO implemented a new process for entities to request priority wheeling-throughs in January 2024, effective for

⁹ Inputs and Assumptions Document, p. 41.

¹⁰ *For example, see* CAISO Final 2023 Local Capacity Technical Report, p.30: <https://www.aiso.com/InitiativeDocuments/Final-2024-Local-Capacity-Technical-Report.pdf>.

¹¹ Inputs and Assumptions Document, p. 43.

¹² Inputs and Assumptions Document, p. 41.

priority wheeling through requests starting June 1, 2024 and beyond.¹³ The CAISO’s prior interim high priority wheeling through framework did not establish a limit on the volume of priority wheeling-throughs across CAISO interties. The CAISO’s new framework establishes limits based on the amount of ATC wheeling entities can reserve at a given intertie after first setting side transmission capacity for native load, existing transmission commitments, and a transmission reliability margin. Although priority wheeling-through volumes increased between 2021 and 2023 under the interim framework, Energy Division should recognize that the CAISO’s new priority wheeling-through framework limits the ATC available at CAISO interties and thus priority wheeling-throughs available at each intertie.

Additionally, in advance of releasing ATC to support priority wheeling-throughs, the CAISO analyzes internal transmission constraints and the ability support priority wheeling-throughs. Before releasing ATC for June 2024 forward, the CAISO analyzed the impact of north to south wheels through Malin on Path 26. The CAISO analyzed two scenarios under summer peak conditions with flows across Path 26 and up to 1,300 MW of wheels from the Bonneville Power Administration balancing area to the Arizona Public Service balancing area. The CAISO found it could effectively support Path 26 flows and priority wheeling-throughs under both scenarios.¹⁴

3. The CAISO Analyzes the Impacts of Internal Constraints in Advance of Releasing Available Transmission Capacity to Support Priority Wheeling-Throughs.

Energy Division proposes “To model this sensitivity, Staff is using historical data from CAISO that appears to illustrate a firm wheel-through arrangement from August 2023 posted on CAISO’s reliability requirements website.”¹⁵ If Energy Division performs a Path 26 priority wheeling-through stress test, Energy Division should not use 2023 data. As discussed above, the CAISO implemented a new priority wheeling through framework in 2024 that now limits the

¹³ Transmission Service and Market Scheduling Priorities Phase 2 FERC Order, October 30, 2023: <https://www.caiso.com/Documents/Oct30-2023-OrderAcceptingSubjecttoComplianceFiling-WheelingThroughTariffAmendment-ER23-2510.pdf>

¹⁴ CAISO, Transmission Service and Market Scheduling Priorities: Monthly ATC Values Review for June 2024 and Beyond, January 17, 2024, Slide 22.

¹⁵ Inputs and Assumptions Document, p. 43.

amount of priority wheeling-throughs entities can request at any inertia. By using August 2023 data, Energy Division will likely overestimate the impacts of priority wheeling-throughs because the prior interim wheeling through policy still applied in August 2023.

Energy Division's proposed test would assume 1,050 MW of priority wheeling-throughs from northern CAISO inertias (Malin and Malin/NOB) from August 2023.¹⁶ However, ATC at these inertias for August 2024 are currently limited to 731 MW.¹⁷

III. Conclusion

The CAISO appreciates the opportunity to provide comments on the Inputs and Assumptions Document.

Respectfully submitted

By: /s/ William H. Weaver

Roger E. Collanton

General Counsel

William H. Weaver

Assistant General Counsel

Marissa Nava

Counsel

California Independent System

Operator Corporation

250 Outcropping Way

Folsom, CA 95630

Tel: 916-608-1225

Fax: 916-608-7222

Email: bweaver@caiso.com

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¹⁶ Inputs and Assumptions Document, p. 43.

¹⁷ 731 MW is derived from public CAISO data as of March 27, 2024. It is the sum of priority wheeling throughs for August 2024 (97 MW at MALIN500 and 378 MW at NOB, see <https://www.caiso.com/Documents/PriorityWheelingThroughTransactionsData.xlsx>) and the remaining available transfer capacity (65 MW at MALIN500 and 191 MW at NOB), see <https://www.caiso.com/Documents/AvailableTransferCapacityForWheelingThroughPriorityReservations.xlsx>).