

**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

**OPENING COMMENTS OF THE
CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION
ON TRACK 2 PROPOSALS**

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: 916-963-0521
Fax: 916-608-7222
Email: mnav@caiso.com

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I. Introduction

Pursuant to the California Public Utilities Commission’s (Commission) December 18, 2023 *Assigned Commissioner’s Scoping Memo and Ruling* (Ruling), May 2, 2024 *Administrative Law Judge’s Ruling modifying Track 2 Schedule*, and June 26, 2024 *Administrative Law Judge’s Ruling Modifying Track 2 Schedule*, the California Independent System Operator Corporation (CAISO) submits opening comments on Track 2 proposals.

The CAISO’s comments focus on ensuring resource adequacy (RA) program requirements meet a 0.1 loss of load expectation (LOLE). Specifically, the Commission should adopt a 0.1 LOLE as the reliability target for the RA program. The Commission should conduct LOLE studies regularly as key assumptions in these studies may change significantly year over year, impacting planning reserve margin (PRM) calculations. Key assumptions including the demand forecast, hydro conditions, and assumptions about resource availability may change before 2027, so the Commission should not set the PRM for 2027 at this time.

The CAISO recommends that the Commission continue to assess the PRM impacts of storage resource modeling and availability. The CAISO’s comments also encourage coordination with the CAISO in developing an unforced capacity (UCAP) framework. Finally, the CAISO urges the Commission to retain local requirements.

On August 6, 2024, Administrative Law Judge Debbie Chiv issued an *E-mail Ruling on Energy Division’s Slice of Day Calibration Tool* (Ruling) in this proceeding to notify parties that

Energy Division expects to publish a revised Slice of Day PRM calibration tool and LOLE study results by the end of August.¹ Following the release of these revisions, the Commission will provide parties an opportunity to comment on the revised tool and study results.² The CAISO plans to comment on the revised study results, including the appropriateness of the PRM stress testing methodology, the translation of the annual LOLE study results to the Slice of Day framework, and the resulting PRM, pursuant to the forthcoming comment schedule.

II. Discussion

A. The Commission Should Adopt a 0.1 LOLE as a Reliability Target for the RA Program.

The Western Power Trading Forum (WPTF) proposes that the Commission formally adopt a 0.1 LOLE as the reliability target for the RA program. WPTF also proposes that the Commission adopt stress tests as a part of the process to set the PRM to ensure that the resulting PRMs achieve the desired level of reliability across the compliance year.³ The CAISO supports WPTF's proposals.

The Commission should adopt a 0.1 LOLE as a reliability target for the Commission RA program. A 0.1 LOLE reliability target is an industry-accepted measure of supply sufficiency and can help prevent capacity shortfalls. In Commission Decision (D.) 24-02-047, the Commission adopted a 0.1 LOLE as part of the Integrated Resource Plan (IRP) reliability framework to determine resource needs.⁴ The Commission should also adopt 0.1 LOLE as a reliability target for the RA program to better align RA requirements with resource planning in the IRP proceeding.

The Commission could also consider whether alternative measures of reliability such as expected unserved energy (EUE) or loss of load hours (LOLH) are viable reliability targets.⁵ EUE and LOLH metrics provide information about the reliability of the RA portfolio that is

¹ Ruling, pp. 2-3.

² *Id.*, p. 2.

³ WPTF Track 2 Proposals, R. 23-10-011, June 14, 2024, p. 3.

⁴ *Decision Adopting 2023 Preferred System Plan and Related Matters, and Addressing Two Petitions for Modification (D. 24-02-047)*, February 15, 2024, p. 110.

⁵ EUE is an estimate of the MWh of unserved energy in a year. LOLH is the estimated hours of the projected loss of load events. Both are outputs of the SERVVM model that the Commission uses in its LOLE studies.

complementary to the LOLE metric. While LOLE estimates *whether* form load shed will occur, EUE estimates the *amount* of unserved load and LOLH estimates the *duration* of load shed.

Before the Commission adopts the PRM for a given RA year, the Commission should also stress test the PRM to ensure it meets a 0.1 LOLE across the year. Stress testing is critical to confirm the PRM achieves a reliable RA portfolio. The Commission should formally adopt such stress testing as part of its process to set the PRM for the RA program.

B. The Commission Should Establish a Regular Cadence for Performing LOLE Studies to Set the PRM in the RA Program.

The CAISO appreciates Energy Division staff’s efforts to develop the Loss of Load Expectation Study for 2026 (LOLE Study).⁶ The Commission has used LOLE studies in the past to inform the PRM adopted in RA proceedings, but these studies occurred irregularly.

LOLE studies rely on inputs that can materially affect the calculation of the PRM, including the California Energy Commission’s (CEC) demand forecast, RA counting rules, assumptions about hydro conditions, and assumptions about new resources on the CAISO system. These inputs change regularly, therefore the Commission should regularly update its LOLE studies.

Other parties have proposed that the Commission adopt a regular schedule for performing LOLE studies.⁷ The CAISO agrees that the Commission should establish a regular cadence for performing studies so that the inputs and assumptions reflect current conditions and Commission-adopted resource counting rules. Ideally, Energy Division will produce a new LOLE study annually, aligning with updates to the CEC’s demand forecast. The CAISO recognizes that these studies are work-intensive, therefore the Commission should consider a schedule that balances the benefits of updated inputs with demands on staff resources.

⁶ Energy Division, *Loss of Load Expectation Study for 2026 Including Slice of Day Tool Analysis*, July 19, 2024: <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M536/K273/536273741.PDF>.

⁷ Middle River Power, Track 2 Proposals, R. 23-10-011, June 14, 2024, p. 19; WPTF, Track 2 Proposals, R. 23-10-011, June 14, 2024, p.4; Vistra Track 2 Proposals, R. 23-10-011, June 14, 2024, p. 4.

C. The Commission Should Not Set the PRM for 2027 at This Time.

The December 18, 2023 *Assigned Commissioner's Scoping Memo and Ruling* states that Track 2 will include “consideration of a revised LOLE Study and PRM for the 2026 and 2027 RA compliance years...”⁸

At this time, the Commission should only use the PRM derived from the LOLE Study to set the PRM for 2026. As described above, the inputs and assumptions used in LOLE studies may change regularly, which will affect the resulting PRM. Therefore, it is premature to set the PRM for 2027.

A key input to the LOLE Study is the CEC demand forecast. The LOLE Study describes how shifts in the CEC demand forecast impact LOLE study results.⁹ Before 2027, the CEC will produce two updated demand forecasts with scheduled adoption in early 2025 and early 2026. As such, if there are shifts in future vintages of the CEC demand forecast, the results of the LOLE Study may no longer be appropriate for 2027.

Changes in resource counting rules used in the Slice of Day PRM translation process, such as the exceedance methodology for solar and wind resources under Slice of Day, may also affect the results of the LOLE Study. As the first binding year of the Commission's novel Slice of Day framework progresses, parties may identify and propose changes to resource counting rules for future years. Such changes will impact the Slice of Day PRM translation process. For these reasons, the Commission should not set the PRM for 2027 at this time.

D. The Commission Should Continue to Assess the PRM Impacts of Storage Resource Modeling and Availability.

1. The Commission Should Assess Whether Changes in Storage Resource Modeling Would Yield Substantially Different PRMs.

The LOLE Study includes an updated approach to determining storage outage rates modeled in the Strategic Energy and Risk Valuation Model (SERVM). The CAISO understands that storage modeling assumptions are evolving, and the CAISO looks forward to continued coordination with Energy Division staff in this area.

⁸ *Assigned Commissioner's Scoping Memo and Ruling* (R.23-10-011), December 18, 2023, p. 5.

⁹ Energy Division, *Loss of Load Expectation Study for 2026 Including Slice of Day Tool Analysis*, July 19, 2024, p. 10.

The LOLE Study uses historic CAISO outage data from 2018 through 2022 to determine the outage rates entered into SERVUM.¹⁰ Energy Division then divides outage rates by two, to account for a SERVUM modeling constraint. Commission staff explains this adjustment is necessary because SERVUM applies a single outage rate to both the charging and discharging ranges of storage resources.¹¹ However, historic CAISO outage data used in the LOLE Study only reflects outages on the storage discharge range. In other words, the LOLE Study assumes an outage rate as determined by historic discharge outages, applied to both the charge and discharge ends of a storage resource. This simplified assumption may not reflect the actual historic availability of storage. Additionally, storage resources may have separate de-rates to charging capability.

SERVUM also models storage resources as being able to discharge 100 percent of their nameplate capacity during stressed system conditions. The Commission’s Inputs and Assumptions document states that “battery storage is modeled with a 90 percent of nameplate discharge range, except during scarcity hours when full discharge is allowed.”¹² By relaxing this constraint when loss of load is most likely to occur, SERVUM’s loss of load events are likely to be less frequent, impacting the PRM.

To determine the impact of these modeling conventions on the PRM and refine storage modeling assumptions over time, the Commission should develop sensitivity analyses with varying assumptions about storage availability. The CAISO is willing to work with Energy Division staff to aid in such analyses, such as sharing additional data on storage outages and operations.

2. The Commission Should Continue to Monitor Trends in Storage Outage Rates and Availability.

The LOLE Study models storage resource outages stochastically based on outage rates derived from historical CAISO outage data. The weighted average of the historical outage rates is 8.6 percent. This rate differs from storage outage rates identified in other recent studies. For

¹⁰ *Id.*, p. 21.

¹¹ *Id.*, p. 21.

¹² Energy Division, *Proposed Inputs and Assumptions*, March 18, 2024: <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M527/K361/527361341.PDF>, p. 34.

example, Lumen Energy Strategy’s (Lumen’s) study using CAISO outage data from 2022-2023 determines an outage rate of 11.5 percent.¹³

The Commission should continue to monitor the trends in storage outage rates and availability to determine whether they remain appropriate. To support the Commission and parties in this assessment, the CAISO plans to analyze storage availability and hold discussions in future stakeholder processes to identify potential improvements to storage outage reporting.

E. The Commission Should Coordinate with the CAISO to Develop a UCAP Framework.

Vistra Corp. (Vistra) proposes that the Commission develop a UCAP process to quantify qualifying capacity for the Commission’s RA program.¹⁴ Vistra also proposes a timeline for UCAP implementation milestones that results in UCAP adoption in 2028.

The CAISO appreciates Vistra’s careful consideration of the timeline and necessary steps to implement a UCAP process at the Commission. The CAISO will begin its own stakeholder process to consider a UCAP framework for establishing net qualifying capacity. This stakeholder process will provide a venue for input from entities, including the Commission’s Energy Division as well as other local regulatory authorities in the CAISO balancing authority area.

Vistra proposes that the Commission hold workshops to develop a UCAP process. If the Commission adopts Vistra’s proposal, the Commission should ensure close coordination with the CAISO’s stakeholder process. The CAISO will work closely with Energy Division staff to best align any potential UCAP framework between the CAISO’s RA process and the Commission’s RA process.

F. The Commission Should Retain Local Requirements to Ensure Reliability in Local Areas.

In its Track 2 proposal, the Alliance for Retail Energy Markets (AReM) proposes that the Commission should consider eliminating local RA requirements.¹⁵ AReM explains that “in the

¹³ Lumen Energy Strategy, *Scaling Up and Crossing Bounds: Energy Storage in California*, July 18, 2024: https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/energy-storage/2024-05-01_lumen_scaling-up-and-crossing-bounds-reportfinal.pdf, p. 28.

¹⁴ Vistra Track 2 Proposals, R. 23-10-011, June 14, 2024, p. 7.

¹⁵ AReM Track 2 Proposals, R. 23-10-011, June 14, 2024, p. 6.

current market conditions, there is little need to assign or discriminate between system and local RA requirements” because “resources providing local reliability are expected to be procured to meet system needs.”¹⁶

System requirements only consider whether sufficient resources exist to meet requirements for the entire CAISO footprint; system requirements do not function with enough geographical granularity to ensure sufficient resources are available in local capacity areas. To avoid the risk of a capacity shortfall, the Commission should not eliminate local requirements. Local requirements are necessary to ensure there is adequate capacity to meet reliability needs in local areas. Continuing to enforce full local requirements is critical to maintaining reliability. Enforcing full local requirements is also important to encourage new development in local areas requiring additional capacity.

III. Conclusion

The CAISO appreciates the opportunity to comment on party proposals.

Respectfully submitted

By: /s/ Marissa Nava

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: 916-963-0521

Fax: 916-608-7222

Email: mnav@caiso.com

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¹⁶ *Id.*