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**BEFORE THE ENERGY COMMISSION
OF THE STATE OF CALIFORNIA**

Energy System Reliability

21-ESR-01

I. Introduction

The California Independent System Operator (CAISO) submits comments on the November 16, 2023 *Assembly Bill 209 Publicly Owned Utility Planning Reserve Margin Workshop*.

The CAISO appreciates the California Energy Commission’s (Energy Commission) work and thoughtfulness on this important topic, and looks forward to continued collaboration with the Energy Commission on developing recommended approaches to developing planning reserve margins (PRMs) for publicly-owned utilities (POUs).

The CAISO emphasizes the importance of obtaining dependable, timely and accurate assessments of resource adequacy (RA) requirements across the CAISO balancing authority area (BAA) to ensure load is served in a cost-effective and reliable manner. Given the changing nature of the resource fleet, load, climate impacts on grid operations, and the greater integration of regional energy markets, the CAISO supports the Energy Commission’s efforts in this proceeding as we work together on improving these RA assessments. This year, the CAISO launched an important stakeholder effort to consider improvements in the CAISO’s own assessments of RA on its system, rooted in stochastic analysis to meet a 1-in-10 loss of load expectation (LOLE) target. The CAISO looks forward to working through the CAISO and Energy Commission’s concurrent efforts collaboratively to improve RA assessments across the CAISO footprint.

II. Background

The CAISO’s comments review the CAISO’s role in administering and operationalizing the RA program and emphasize the importance of ensuring local regulatory authority (LRA) programs produce a reliable RA fleet. The CAISO also comments on the importance of

publishing transparent information of the sufficiency of the RA fleet in the CAISO BAA. The CAISO also supports the Energy Commission’s proposal to study a CAISO-BAA wide PRM using stochastic analyses, which captures interdependencies across the CAISO system. Lastly, the CAISO emphasizes the importance of robust LRA forward resource planning.

III. Discussion

A. The CAISO’s Role in the RA Program

During the November 16 workshop, the CAISO described its role in administering and operationalizing the RA program in the CAISO BAA. The Energy Commission’s 1-in-2 coincident peak demand forecast sets system-wide and load-serving entity (LSE) system RA requirements. The CAISO uses the Energy Commission’s demand forecast to establish local capacity and flexible capacity requirements that the CAISO then allocates to LRAs and LSEs in the CAISO footprint.

The CAISO’s tariff defers to LRAs to set qualifying capacity rules and PRMs. LSEs and suppliers make RA showings to the CAISO on a year-ahead and month-ahead basis to meet system, local, and flexible RA requirements. The CAISO primarily relies on LRA RA programs to ensure sufficient LSE contracting and showings will produce a reliable RA fleet capable of meeting daily operational needs.

If the LSEs do not meet the LRA-established RA requirements, the CAISO has authority to procure additional capacity to cure RA deficiencies. To assess system RA sufficiency and determine if backstop procurement is needed to cure a system RA deficiency, the CAISO currently measures shown RA against LSE coincident peak demand based on the Energy Commission’s 1-in-2 forecast, plus relevant LRA PRMs given LRA counting rules. The CAISO also has backstop procurement authority to cure local and flexible RA capacity deficiencies, issue Exceptional Dispatches to non-RA capacity, and address significant events.¹ RA resources shown to the CAISO are also subject to must-offer obligations, bid insertion, outage substitution, and RA availability incentive rules.

¹ The CAISO Tariff defines a “Significant Events” as: A substantial event, or a combination of events, that is determined by the CAISO to either result in a material difference from what was assumed in the resource adequacy program for purposes of determining the Resource Adequacy

LRA RA requirements, in aggregate, should target meeting at least a 1-in-10 LOLE. Resources not contracted and not shown as RA are not subject to CAISO's RA rules and incentives, and may serve demand in other BAAs. Thus, it is critical for system reliability that LRA RA requirements and the combination of LRA PRMs and counting rules ensure that LSEs will contract with and show sufficient RA capacity for the CAISO to operationalize each day.

B. Public Transparent Information on the Sufficiency of the Resource Adequacy Fleet in the CAISO BAA is Critical to Support a Viable, Dependable RA Program.

The CAISO strongly supports the Energy Commission publishing transparent information on the RA portfolio needed to meet minimum reliability targets. This information is invaluable to inform both PRM levels for POU's and policy direction to bridge any gaps between LRA RA requirements and reliability targets. Publishing the results of resource sufficiency analyses provides stakeholders with a common understanding of the resources and PRM that the CAISO BAA needs to meet at least a 1-in-10 LOLE.

The CAISO recently launched its Resource Adequacy Modeling and Program Design (RAMPD) working groups. In these public working groups, the CAISO is exploring reforms to CAISO RA rules, requirements, processes, and incentive mechanisms. A highly critical area of focus in these working groups is producing consistent, transparent, and timely information on the sufficiency of the RA fleet in the CAISO BAA. The CAISO is considering enhancements to its RA-focused modeling and analyses to provide the CAISO and stakeholders with a common understanding of resource sufficiency in the CAISO footprint.

The CAISO sees the Energy Commission's efforts as complementary to the work the CAISO is developing in the RAMPD working groups. Given the parallels with analyses the Energy Commission is contemplating under this effort, the CAISO will coordinate very closely with Energy Commission staff on analysis design, inputs, and assumptions. The

Capacity requirements, or produce a material change in system conditions or in CAISO Controlled Grid operations, that causes, or threatens to cause, a failure to meet Reliability Criteria absent the recurring use of a non-Resource Adequacy Resource(s) on a prospective basis.

CAISO will also work to leverage knowledge and information gained through the respective processes to further both important efforts.

C. The CAISO Supports Studying a CAISO BAA-Wide PRM Using Stochastic Analyses.

The CAISO supports the Energy Commission’s proposed approach to start with studying a PRM at the CAISO BAA level. As stated in the Energy Commission slides, this approach captures the interdependency of the CAISO system and more accurately accounts for the reliability of the system as a whole.² As Energy Commission staff noted, PRMs developed via a BAA-wide approach will likely be lower than if calculated at the individual POU level because the BAA-wide approach takes into account diversity benefits across the system.

The CAISO also agrees with Energy Commission staff that the approach to start with a CAISO BAA-wide PRM is beneficial because this approach creates consistency in inputs and assumptions in the study by analyzing all entities at once.³ This approach is also more adaptable to changing study inputs and assumptions, creating more consistency and confidence in results year over year. Although the CAISO supports analyzing the whole CAISO BAA as a starting point, the CAISO recognizes that different LRAs may be uniquely situated based on resource compositions and demand profiles, and these characteristics should inform the appropriate PRM levels for different LRAs.

D. Robust LRA Forward Resource Planning and Procurement are Critical to Maintain Reliability and Meet State Policy Goals.

During the November 16 workshop, panelists discussed how LRAs plan for reliability in future years and how to enhance RA market liquidity in light of the RA market’s tight conditions and high prices. The CAISO believes robust LRA forward resource planning and procurement are critical parts of planning efforts to meet state clean energy goals reliably and cost-effectively and alleviate challenges in the RA market.

Workshop panelists discussed that reforms to the CAISO’s interconnection and deliverability processes could enhance market liquidity. As noted in the workshop, the CAISO is currently pursuing significant reforms to its interconnection processes through its

² Energy Commission, *Proposed Options for Setting PRMs*, November 16, 2023, Slide 43.

³ *Id.*

Interconnection Process Enhancements (IPE) stakeholder initiative. The CAISO also plans to comply fully with the Federal Energy Regulatory Commission Order 2023, which directs independent system operators/regional transmission organizations and transmission owners to make significant interconnection process reforms. The CAISO is also evaluating changes to deliverability rules and processes through its Generation Deliverability Methodology Review stakeholder process. Although the CAISO is considering certain changes to its deliverability methodology, deliverability remains a key attribute of RA capacity and the CAISO must continue to ensure RA resources can reliably serve demand across the CAISO system when the grid is most stressed. Beyond interconnection and deliverability enhancements, the will also consider enhancements to other RA-related CAISO rules and processes, such as bid insertion rules, capacity availability incentives, and outage substitution rules, in its RAMPD working group.

While enhancements to the CAISO's interconnection, deliverability, and RA rules and processes can help unlock supply of eligible RA capacity, the CAISO emphasizes the importance of robust LRA forward resource planning and procurement to ensure new projects are identified and procurement is initiated well in advance of the need. In recent years, the Energy Commission's demand forecast has indicated a significant increase in demand over the next 10+ years due to electrification, particularly in the transportation sector. The California Public Utilities Commission's latest resource portfolios developed in its Integrated Resource Plan proceeding show a significant need for new capacity in forward years, accounting for the Energy Commission's demand forecast as well as targets to meet state greenhouse gas reduction goals. The CAISO has also identified a need for a significant amount of new transmission due to increasing demand forecasts and new resource build.

Planning and process enhancements in various venues are needed to facilitate the new resource and infrastructure build required to meet reliability and state policy goals. In addition to reforms to CAISO rules and processes, enhancements include streamlining infrastructure permitting processes and exploring alternative funding opportunities for infrastructure projects. Additionally, all LRAs in the CAISO footprint should establish forward resource planning several years out. LRAs should also order new procurement on a predictable basis. Programmatic planning and procurement well ahead of projected needs serve several key functions, including: (1) supporting cost certainty; (2) ensuring sufficient

time to complete all necessary processes including procurement, interconnection, permitting, and construction; and (3) providing LSEs sufficient time to consider all procurement options, including new resources. The CAISO believes robust LRA forward resource planning and procurement are critical parts of planning efforts to meet state clean energy goals reliably and cost-effectively and alleviate challenges in the RA market.

IV. Conclusion

The CAISO appreciates the opportunity to provide comments on the November 16 workshop and looks forward to working with the Energy Commission and parties on this important effort.

Respectfully submitted,

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