

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

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

Rulemaking 19-11-009
(Filed November 7, 2019)

**CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION
COMMENTS ON TRACK 3B.2 PROPOSALS**

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Date: March 23, 2021

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REPLY COMMENTS ON TRACK 3B.2 PROPOSALS**

Pursuant to the December 11, 2020 *Assigned Commissioner's Amended Track 3.B and Track 4 Scoping Memo and Ruling* (Amended Scoping Memo) the California Independent System Operator Corporation (CAISO) submits its reply comments on the final Track 3B.2 proposals. Track 3B.2 of this proceeding considers potential broader structural changes to the Commission's resource adequacy program.

I. Introduction

The Commission should adopt the CAISO's Unforced Capacity (UCAP) Proposal, which is compatible with bilateral procurement and is based on sound principles that facilitate more efficient and reliable procurement that will benefit load serving entities and ratepayers. The CAISO is committed to providing updated outage information to inform this proposal but this alone should not delay Commission action. The Commission should also adopt the Southern California Edison/California Community Choice Association (SCE/CalCCA) Joint Proposal as a general framework for the resource adequacy program so that parties can direct efforts in the next phase of this resource adequacy proceeding to develop implementation details. The CAISO's UCAP Proposal is compatible with the SCE/CalCCA Joint Proposal and together they provide a strong foundation for a modernized resource adequacy program.

II. Discussion

**A. The CAISO's Unforced Capacity (UCAP) Proposal is Compatible with a
Bilateral Market.**

The CAISO's proposed unforced capacity (UCAP) construct is superior to the existing paradigm, which incorporates a static, system-wide forced outage rate into the planning reserve

margin (PRM). A central tenet of the UCAP proposal is to analyze actual resource availability during tight resource adequacy supply conditions and, based on this analysis, ensure load-serving entities (LSEs) procure sufficient resource adequacy capacity upfront to cover anticipated forced outages. This greatly improves the current practice whereby LSEs must secure substitute capacity at the last minute, assuming such capacity is even available, if their resource adequacy capacity incurs a forced outage. Unlike the current approach, the UCAP paradigm incentivizes units to minimize their forced outage rates and maximize their UCAP value through improved maintenance and better outage planning as explained below. It provides transparency to load-serving entities about the reliability and dependability of resources they procure. In fact, it is unclear what forced outage rate percentage the current planning reserve margin reflects. Moving to a UCAP paradigm will better ensure reliability by automatically adjusting system resource adequacy requirements to account for the expected forced outage rate and maintain a more consistent reliability standard over time.

The CAISO disagrees with parties claiming the UCAP proposal (1) might increase ratepayer cost,¹ (2) might be incompatible with a bilateral market,² (3) does not address energy sufficiency,³ or (4) does not contemplate the generator may schedule planned outages at times when tight supply condition could potentially occur.⁴ First, the UCAP paradigm will facilitate load serving entities' efforts to procure the most reliable resources. By incorporating both availability and deliverability into the CAISO's net qualifying capacity, UCAP will provide a consistent counting measure across units. One megawatt (MW) of UCAP will have the same deliverability and availability per unit of capacity regardless of resource. Today's counting framework provides no information on a unit's reliability.

Consider the following example of two resources, Unit A and Unit B, each with a 100 MW net qualifying capacity value. Unit A has a 10% forced outage rate, while Unit B has a 35% forced outage rate. Under the current framework, these resources would count equally toward meeting resource adequacy requirements, despite providing very different reliability benefits. Under UCAP, Unit A would be worth 90 MW and Unit B would be worth 65 MW.

¹ Public Advocates Office at the California Public Utilities Commission (Cal Advocates) Opening Comments, p. 4.

² Middle River Power Opening Comments, p. 22.

³ San Diego Gas & Electric Opening Comments, p. 6.

⁴ Protect Our Communities Foundation Opening Comments, p. 9.

The UCAP approach provides load serving entities transparency to better gauge individual resource reliability benefits and to negotiate capacity contracts accordingly. This promotes more efficient procurement. Otherwise, ratepayers may over-pay for poor performing units. Lack of transparency allows load serving entities procuring less reliable/dependable resources to lean on others procuring more reliable/dependable resources.

UCAP can also improve market liquidity by decreasing the incentives for load serving entities to withhold surplus capacity from the resource adequacy market. The resource adequacy availability incentive mechanism (RAAIM) would be discontinued under the UCAP proposal and load serving entities would have less need to retain capacity for substitution to avoid RAAIM penalties.⁵ The additional capacity available in the market could help reduce potential capacity cost increases.

Second, the UCAP proposal is based on a proven, effective model, and it is compatible with bilateral markets. Although several independent system operators and regional transmission operators with centralized capacity markets use UCAP, centralized capacity markets are not necessary to implement an effective UCAP paradigm. For example, the Midcontinent Independent System Operator (MISO) uses UCAP and allows LSEs to procure capacity through bilateral contracting or a voluntary capacity market.⁶ Many contracts today contemplate annual and/or monthly changes in the resource's net-qualifying capacity value. Because most contracts are set at the dollar per MW of net qualifying capacity, any changes in a resource's net qualifying capacity value through the UCAP paradigm will change the capacity payments paid to that resource.⁷ This will incentivize generators to minimize forced outages to keep their capacity payments high. Additionally, the CAISO will update UCAP values annually with enough time for entities to modify their portfolios to account for any variation in a contracted resource's

⁵ Although the CAISO anticipates that under the UCAP approach RAAIM will be unnecessary, it is possible that an alternative form or performance incentives are compatible and necessary under the UCAP proposal to ensure resources are available when needed for reliability. The Commission should allow the opportunity to continue to explore these options in future resource adequacy framework as discussed in Part D below.

⁶ Draft Final Proposal – Phase 1 and Sixth Revised Straw Proposal, December 17, 2020, p. 73. Available at: <http://www.caiso.com/InitiativeDocuments/DraftFinalProposal-SixthRevisedStrawProposal-ResourceAdequacyEnhancements.pdf>

⁷ Draft Final Proposal – Phase 1 and Sixth Revised Straw Proposal, December 17, 2020, p. 88. Available at: <http://www.caiso.com/InitiativeDocuments/DraftFinalProposal-SixthRevisedStrawProposal-ResourceAdequacyEnhancements.pdf>

UCAP value.

Third, although the UCAP proposal does not address energy sufficiency on its own, it can facilitate establishing more realistic net qualifying energy values if adopted in conjunction with the SCE/CalCCA Joint Proposal.⁸ Together, the two proposals can address energy sufficiency while ensuring a more reasonable estimate of the energy contribution of each unit, especially under tight system conditions.

Finally, to address concerns generators may still schedule planned outages during tight supply conditions, the CAISO is taking proactive steps in its Resource Adequacy Enhancements stakeholder initiative to require generators provide substitute capacity for all planned outages, which helps mitigate this concern.⁹ Further, the CAISO will not allow resources to extend outages without substitute capacity, thus addressing a concern identified in the Final Root Cause Analysis.¹⁰ Additionally, the UCAP methodology considers forced outages under tight resource adequacy system conditions and penalizes resources for being on forced outage during these hours. This will better incentivize resources to employ effective and robust maintenance practices to avoid forced outages during periods of critical grid needs, which would degrade their UCAP value and thus their future capacity payments.

B. The CAISO Is Actively Working to Provide Updated Outage Data to Inform Its UCAP Proposal.

In their current configurations, the CAISO's Outage Management System (OMS) and Customer Interface for Resource Adequacy (CIRA) systems do not provide the level of detail necessary to provide unit specific forced outage rates. These systems are not currently configured to calculate fleet wide forced outage rates, resource adequacy supply cushion, or resource-specific UCAP values. The CAISO is resolving these data issues and plans to provide stakeholders with hourly resource adequacy fleet forced outage rates and a sample of resource-

⁸ SCE, Second Revised Track 3B.2 proposals, February 26, 2021, p. 8. Available here: <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M369/K286/369286358.PDF>

Net-Qualifying Energy is defined as "the possible energy output from the resources to meet energy needs."

⁹ Resource Adequacy Enhancements, Phase 1. <https://stakeholdercenter.caiso.com/StakeholderInitiatives/Resource-adequacy-enhancements>

¹⁰ Final Root Cause Analysis Mid-August 2020 Extreme Heat Wave, p. 82. January 13, 2021. Available at: <http://www.caiso.com/Documents/Final-Root-Cause-Analysis-Mid-August-2020-Extreme-Heat-Wave.pdf>

specific UCAP values.

The UCAP methodology will be a marked improvement over today's RAIM methodology. The CAISO's analysis shows RAIM is ineffective at encouraging scheduling coordinators to provide substitute capacity for forced outages¹¹ and can cause entities to withhold excess capacity from the bilateral market to serve as substitute capacity for forced outages of their shown resource adequacy resources. Further, because incentive payments to other resources in a supplier's portfolio can offset the penalty payments of underperforming resources in a scheduling coordinator's resource adequacy portfolio, RAIM may not be particularly effective on a portfolio basis. UCAP, on the other hand, essentially guarantees substitute capacity up front because it accounts for the expected forced outage rate of the fleet and promotes good maintenance practice to keep forced outage rates low, so resources can maintain high UCAP values.

Most parties acknowledge the need for additional workshops to examine the details of the proposals being considered in Track 3B.2. The CAISO requests the Commission support further development of the UCAP proposal, in conjunction with SCE/CALCCA proposals, and to allow time for the CAISO to provide stakeholders with the requested analytics. Upon implementation, UCAP values of resources will be based on resource-specific forced outage rates under tight resource adequacy system conditions. Current data quality issues, which the CAISO is addressing, should not prevent the Commission from supporting adoption of the CAISO's UCAP proposal. The CAISO will continue to work with the Commission and stakeholders on implementation details and integrating the UCAP proposal with other proposals under consideration in this proceeding.

C. The Commission Should Reject Cal Advocates' Proposal to Adjust Summer Net Qualifying Capacity Values for Thermal Resources.

Cal Advocates' proposal to adjust the net summer qualifying capacity values for thermal resources is unclear.¹² If the Cal Advocates' proposal is to reflect an estimated amount of

¹¹ Draft Final Proposal – Phase 1 and Sixth Revised Straw Proposal, page 123-125. December 17, 2020. Available at: <http://www.caiso.com/InitiativeDocuments/DraftFinalProposal-SixthRevisedStrawProposal-ResourceAdequacyEnhancements.pdf>

¹² Cal Advocates' Opening Comments, p. 8.

ambient derates for thermal resources during the summer months, this is already happening. Currently, scheduling coordinators for generators can request a thermal ambient derate adjustment to their unit's net qualifying capacity value recognizing high temperatures generally negatively impact thermal performance.¹³ However, this static derate does not account for forced outages other than estimated ambient derates and ambient derates that exceed this static value, and it does not incentivize proper maintenance practices to ensure low forced outage rates.

On the other hand, if the Cal Advocates is proposing to reflect all historical forced outage rates for thermal units during the summer months directly in the net qualifying capacity value, then there are two additional concerns. First, reflecting real-time thermal outages in the net qualifying capacity value double counts the outages because there would still be a forced outage component in the PRM. Second, Cal Advocates' proposal only addresses thermal resources even though forced outages are not limited to a single generator type. On the other hand, UCAP is a non-discriminatory methodology to value properly the expected availability of all resources.

D. The Commission Should Adopt SCE/CalCCA's Joint Proposal as a General Framework for the Resource Adequacy Program.

The CAISO continues to support the SCE/CalCCA Joint Proposal as a general framework for the resource adequacy program. The Commission should adopt the Joint Proposal at a conceptual level and direct further efforts in the next phase of its resource adequacy proceeding to develop implementation details. For example, the CAISO agrees with parties¹⁴ that the SCE/CalCCA Joint Proposal does not yet address temporal issues and energy needs across the day or how to account for use-limited resources. Under the current resource adequacy framework, procurement of use-limited resources is capped by the maximum cumulative capacity (MCC) buckets to ensure such resources are not over-procured and load serving entities do not lean on each other. Resource adequacy resources generally also have a 24 hours a day, seven days a week must-offer obligation, which allows the CAISO to optimize resources to meet the energy needs across the day, including ramping needs and high loads after sunset to address a

¹³ CAISO Tariff Section 40.4.2.

¹⁴ SCE Opening Comments, p. 6; Pacific Gas and Electric Opening Comments, p. A1-2; CalCCA Opening Comments, p. 2; California Environmental Justice Alliance and Sierra Club Opening Comments, p. 7; and Calpine Opening Comments, p. 1.

variety of system needs such as generation or transmission outages. This bridges the monthly resource adequacy construct with daily operational needs and demonstrates the importance of a broad must-offer obligation so the CAISO can maintain reliability through a variety of operational and changing scenarios. Therefore, as noted in prior comments, the CAISO opposes proposals that unnecessarily and arbitrarily limit the must-offer obligation to a “slice of day.”¹⁵ Additionally, due to significant revisions that would be needed to the CAISO tariff to accommodate a “slice of day” proposal, the CAISO reminds the Commission that implementing such a design would not be feasible by the 2023 resource adequacy year. Furthermore, such a market design is highly problematic from a CAISO tariff perspective and would unduly restrict other local regulatory authorities. The CAISO cannot manage multiple and widely disparate resource adequacy frameworks across local regulatory authorities.

III. Conclusion

The CAISO appreciates the opportunity to submit reply comments on the Track 3B.2 proposals.

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¹⁵ CAISO Opening Comments, pp. 2-3.