California Independent System Operator Corporation

March 3, 2026

The Honorable Debbie-Anne A. Reese
Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

**Re: California Independent System Operator Corporation**
**Docket No. ER26-____-000**

**Tariff Amendment to Implement Resource Adequacy Modeling and Program Design Initiative**

Dear Secretary Reese:

The California Independent System Operator Corporation (CAISO) submits this tariff amendment to implement elements of its Resource Adequacy Modeling and Program Design Initiative.[1] The initiative is exploring comprehensive updates to the CAISO tariff provisions relating to California's resource adequacy (RA) program.[2] This filing represents the first of several planned tariff amendment filings arising from the Resource Adequacy Modeling and Program Design Initiative.

The CAISO proposes new default rules for the planning reserve margin (PRM) and capacity accreditation. As is the case today, these rules would apply only if a local regulatory authority (LRA) fails to establish a planning reserve margin for its jurisdictional load serving entities (LSE) or if no LRA has established a capacity value for a resource.

[1] The CAISO submits this filing pursuant to section 205 of the Federal Power Act (FPA), 16 U.S.C. § 824d, and Part 35 of the Commission's Regulations, 18 C.F.R. Part 35. Capitalized terms not otherwise defined herein have the meanings set forth in Appendix A to the CAISO tariff, and references herein to specific tariff sections are references to sections of the CAISO tariff unless otherwise specified.

[2] This filing encompasses Track 1 and Track 3A of this initiative. More information about this stakeholder initiative is available on the CAISO's website: https://stakeholdercenter.caiso.com/StakeholderInitiatives/Resource-adequacy-modeling-and-program-design.

The CAISO also proposes new informational reporting obligations for RA-eligible capacity that has not been shown as RA capacity. Scheduling coordinators for such resources will be required to report on why that capacity was not shown as RA capacity. This information will better inform CAISO operational decisions, particularly the CAISO's exercise of its discretionary backstop capacity procurement authority.

Finally, the CAISO proposes retiring a legacy informational reporting obligation regarding the dispatch of non-RA capacity. Whatever value these reports may still hold is outweighed by the administrative burden of producing the reports.

The three elements of this filing are discrete, severable, and not interdependent with the other elements. The CAISO thus asks for the Commission evaluate the justness and reasonableness of each element separately.

The CAISO respectfully requests that the Commission issue an order accepting the proposed tariff revisions by May 11, 2026. A Commission order by this date is particularly important for the amendments relating to the default rules because they are an important factor guiding the year-ahead RA process for 2027, which begins in summer 2026. Having certainty regarding the defaults before the process starts will be beneficial for all parties. The CAISO requests that these amendments become effective upon seven business days' prior notice to the Commission, with the understanding the three elements of this filing may have different effective dates.[3]

## I. Background

### A. California's Resource Adequacy Program

California's RA program, which the CAISO administers in coordination with the California Public Utilities Commission (CPUC) and other LRAs in the CAISO balancing authority area (BAA), seeks to secure enough capacity to support the safe and reliable operation of the CAISO grid. The Commission has recognized the RA program "is intended to ensure that there is sufficient capacity when and where needed to reliably operate the system."[4]

[3] The CAISO has included an effective date of 12/31/9998 for the tariff records submitted in this filing. The CAISO will notify the Commission of the actual effective date of these tariff records seven business days' prior to implementation in an eTariff submittal using Type of Filing code 150 – Report.

[4] *West-Wide Must-Offer Requirements*, 154 FERC ¶ 61,110, at P 10 (2016).

Under the RA program, LSEs show compliance with their RA requirements through both year-ahead and month-ahead RA plans.[5] The RA plans list the resources the LSE has obtained to meet its requirements. Generators submit corresponding supply plans on the same schedule. These plans confirm the resources that will provide RA capacity. Under CAISO tariff rules, LSEs and suppliers may change their plans between submission of the annual and the monthly plans.[6] The CAISO does not know which resources will be RA resources for a month until the month-ahead deadline, which is 45 days before the month. Even then, LSEs and suppliers may change their monthly plans under certain circumstances during a 15-day cure period that ends at 30 days before the month.

An LSE's capacity requirement is based on its forecasted load for a month plus a percentage of that load. That additional percentage is the PRM. Each LRA sets the PRM for its jurisdictional LSEs. The CAISO tariff has a default PRM of 15 percent that applies for LSEs whose LRA has not established a PRM.[7] LRAs also hold a role in determining how much RA capacity a resource can provide. A resource's qualifying capacity (QC) value marks the upper bound of how much capacity a resource can provide. LRAs calculate the QC values for the resources their jurisdictional LSEs procure based on each individual LRA's methodology for a resource technology type.[8] As with the PRM, the CAISO tariff has default methodologies for each resource type to calculate the QC if no LRA has calculated that value for a resource.[9]

The CAISO tariff also has authority, under its capacity procurement mechanism (CPM), to procure backstop capacity "to address a [RA showing] deficiency or supplement resource adequacy procurement by LSEs, as needed, to maintain grid reliability."[10] The CAISO may designate CPM capacity only

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[5] Through the RA program, LSEs procure two main categories of RA capacity: generic capacity and flexible capacity. The description in this section applies only for generic capacity because this filing does not directly address topics related to flexible resource adequacy capacity.

[6] The CAISO tariff rules on the RA program are set forth in existing tariff section 40, *et seq.* For the sake of clarity, this transmittal letter distinguishes between existing tariff provisions (*i.e.*, provisions in the current CAISO tariff), new tariff provisions (*i.e.*, new provisions the CAISO proposes to add in this filing), revised tariff provisions (*i.e.*, existing tariff provisions the CAISO proposes to revise in this filing), and deleted tariff provisions (*i.e.*, existing tariff provisions the CAISO proposes to delete in this filing).

[7] Existing tariff section 40.2.2.1(b).

[8] Under existing tariff section 40.4.1, if multiple LRAs establish a QC for the same resource, the CAISO utilizes the highest of the multiple values.

[9] Existing tariff section 40.8.

[10] *Cal. Indep. Sys. Operator Corp.*, 153 FERC ¶ 61,001, at P 2 (2015). The CPM is contained in existing tariff section 43A, *et seq.*

under certain circumstances specified in the tariff.[11] Resources designated under the CPM are treated as RA resources and have a must-offer obligation.[12] Resources voluntarily submit bids into CPM competitive solicitations and must accept a designation if awarded. Where insufficient capacity has been offered into the CPM competitive solicitations to meet the reliability need, the CAISO can offer CPM designations to capacity not offered into the competitive solicitation if that capacity can meet the need.

### B. The CAISO's Resource Adequacy Modeling and Program Design Initiative

The CAISO began the Resource Adequacy Modeling and Program Design Initiative on September 22, 2023, with publication of an initial discussion paper.[13] The discussion paper introduced the CAISO's launch of a stakeholder-guided working group process to collaborate on enhancements to the RA program to improve California's power system reliability amid a changing energy landscape that includes greater reliance on variable renewables, climate-driven stressors, fragmentation of LSEs, and evolving regional reliability frameworks. The goal of the working group process was to develop a "Resource Adequacy Action Plan," containing recommendations for the next phase in which stakeholders and the CAISO will engage in policy development to address the problem statements. Over the next ten months, the CAISO convened meetings with stakeholders to define the problem statements that the initiative would address once the process moved into the policy phase.

The CAISO transitioned from the working group process to the policy development phase with publication of a discussion paper and final recommendation plan, the final draft of which was posted on July 26, 2024. The working group process suggested the CAISO should develop policy on three parallel tracks:

- *Track 1* – System modeling, resource counting, and reserve margins.
- *Track 2* – Outage substitution and availability incentives.
- *Track 3* – Backstop procurement reform and procurement of capacity to cure CAISO BAA failures of the EDAM resource sufficiency evaluation.

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[11] Existing tariff section 43A.2.

[12] Existing tariff section 43A.5.1.

[13] Detailed information about the stakeholder initiative is available on the initiative website at: https://stakeholdercenter.caiso.com/StakeholderInitiatives/Resource-adequacy-modeling-and-program-design.

The CAISO has been working with stakeholders over the past 18 months to explore enhancements in each area. This filing reflects the first tranche of these enhancements. Work on the other elements continues. Stakeholders generally support the elements in this filing, although some question the need for the new informational reporting obligations for RA-eligible capacity that has not been shown as RA capacity given the administrative burden they may pose for market participants. The CAISO addresses stakeholder comments on its proposals below in section II of this transmittal letter.

## II. Proposed Tariff Revisions

### A. Track 1 Amendments – Default Planning Reserve Margin and Capacity Accreditation

#### *1. Issues with the Current Default Rules*

The default PRM and accreditation methodologies have not changed since the start of the RA program. The default accreditation rules have never actually been used and the default PRM has been invoked in a few limited instances. Still, the default provisions have informational value and the CAISO understands some parties view the default approaches as a helpful benchmark for LRAs to use in setting their values. Even with their limited direct application, the CAISO and stakeholders concluded it was prudent to review the existing default rules and consider changes.

Through the working group process, the CAISO and stakeholders identified a key shortfall of the existing default PRM. A static value of 15 percent will not necessarily meet the industry-standard reliability benchmark of a 0.1 loss of load expectation (LOLE), or one loss-of-load event every ten years. Several potential accreditation approaches use the 0.1 LOLE as an input to the capacity calculation to account for the relative contribution of different resource categories, and the individual resources in those categories, to maintaining reliability across the CAISO balancing authority area.

The working group process concluded with the goal of ensuring the default PRM methodology complements the default accreditation methodologies to help create a coherent set of RA standards. The purpose of enhancing both sets of default rules is to ensure that if all LRAs in the CAISO BAA adopted them, then the resulting portfolio of shown RA capacity reasonably could be expected to meet at least a 0.1 LOLE.

### *2. Updating the Default Planning Reserve Margin*

#### *a. Policy Proposal – Default Planning Reserve Margin*

The CAISO proposes to remove the longstanding default PRM and replace it with a month-specific PRM based on an annual probabilistic reliability study to ensure the modeled CAISO portfolio would meet a 0.1 LOLE. The monthly default PRM would equal the additional MW of Qualifying Capacity above the peak demand forecast in the CAISO BAA for that month needed to meet a 0.1 LOLE as a percent of the peak CAISO BAA demand forecast for that month.

The reliability studies would leverage the methodologies used for the CAISO's existing Summer Loads and Resources Assessment (Summer Assessment). The CAISO conducts this study each spring to give a near-term reliability snapshot. The studies are intended to reflect changing system conditions and resource portfolios accurately. The CAISO anticipates conducting a new PRM study on an annual cadence after completing the Summer Assessment process.

Setting a default PRM based on a probabilistic reliability study will align the default PRM with industry accepted reliability standards and is necessary to link the PRM to a LOLE value that accounts for probable supply and demand situations on a specific system. This approach recognizes these inputs are dynamic and may require a PRM that is higher in one month than in another month. With a default set at the value determined by this study, the CAISO and stakeholders will have greater confidence that if the default applied, then the LSEs meeting the default PRM would provide a quantity of RA capacity that would contribute proportionately to system reliability.

#### *b. Tariff Revisions – Default Planning Reserve Margin*

CAISO tariff section 40.2.2.1(b) provides for a fixed default PRM of 15 percent. To implement the new default PRM provisions, the CAISO proposes to amend section 40.2.2.1(b) and the definition in Appendix A of the term "Reserve Margin," which is the defined term in the tariff that refers to the PRM.

The current definition of the Reserve Margin term refers generally to the amount of RA capacity that an individual scheduling coordinator must maintain as required in tariff section 40. To provide a more clear description of the PRM concept, the CAISO proposes to amend the term to be the "percentage of a Load Serving Entity's peak Demand Forecast for which the Scheduling Coordinator for that Load Serving Entity must demonstrate procurement of Resource Adequacy Capacity, in addition to procurement of Resource Adequacy Capacity in the

amount of that peak Demand Forecast." This definition clarifies that the reserve margin is a percent above and beyond the forecasted load.

The revisions to section 40.2.2.1(b) then describe how the CAISO will calculate that percentage in cases where an LRA has not provided a PRM. The default PRM for a month will be the "additional quantity of Qualifying Capacity above the peak Demand Forecast in the CAISO BAA for that month needed to meet a 1-day-in-ten-years loss of load expectation standard as a percent of the peak Demand Forecast in the CAISO BAA for that month." The revisions then state the CAISO will determine that additional quantity "based on an annual probabilistic reliability analysis conducted consistent with accepted industry practices that models system conditions and considers potential variability in relevant underlying factors, such as production from wind and solar units, Forced Outages, and forecasted consumption patterns from Load." Further details of the study will be provided in the business practice manual.

The study will involve highly technical details intended to evolve over time as better techniques and improved modeling software becomes available. Deferring the specific details to the business practice manual will provide the CAISO and its stakeholders needed flexibility to evolve the study process over time. This approach of deferring the details of the reliability study to the business practice manual meets the Commission's rule of reason, which provides "only those practices that affect rates and services significantly [and] that are realistically susceptible of specification" must be in a tariff.[14] Importantly, the proposed tariff revisions do not merely require the CAISO to *support* its PRM determination with a probabilistic study.[15] Here, the CAISO's duty to conduct a probabilistic reliability analysis, the objective of that study, the key considerations of the study, and how the CAISO will use the results to calculate the PRM are all specified in the tariff.[16] These are the core aspects of how the default PRM will be calculated. The particular methods the CAISO will use to derive the inputs to that methodology are implementation details that are not subject to precise specification because they involve complex computational steps that will vary based on available technology.

[14] *City of Cleveland v. FERC*, 773 F.2d 1368, 1376 (D.C. Cir. 1985).

[15] *Am. Elec. Power Serv. Corp. v. S.W. Power Pool*, 184 FERC ¶ 61,207, P 33 (2023) ("the rule of reason requires that SPP include further detail in its Tariff to adequately explain how SPP uses the results of the Loss of Load Expectation study to determine the Planning Reserve Margin").

[16] Specifically, proposed tariff section 40.2.2.1(b) directly states the PRM will be the level of capacity needed as determined by the study as a percent of the peak demand forecast for the month.

### *3. Updating the Default Capacity Accreditation Rules*

#### *a. Policy Proposal – Default Capacity Accreditation*

The CAISO also proposes to update the default capacity accreditation methodologies set forth in its tariff. The CAISO ideally would adopt a single methodology applicable universally to all resource technologies. Unfortunately, the specific features of the various technology types make adoption of a single method challenging because the particular attributes of the various resource types are too diverse. The CAISO and stakeholders, however, identified two methodologies – average effective load carrying capability (ELCC) and unforced capacity (UCAP) – that can be used for most of the capacity in the CAISO resource fleet.

##### *i. ELCC Methodology*

The ELCC methodology will use probabilistic modeling to measure resources' contribution to maintaining reliability. This methodology is appropriate for energy-limited resources and the CAISO proposes to apply it to wind, solar, storage, run-of-river hydroelectric, and dispatchable hydroelectric resources. The CAISO proposes to calculate a resource's monthly capacity value based on a percentage discount from its Pmax using a sequential four-step methodological process.

- *ELCC Step One (Base Case)* – The first step establishes a base case for how many MWs of capacity each resource class would provide the CAISO in a probabilistic reliability analysis that maintains a 0.1 LOLE.

- *ELCC Step Two (Preliminary Class Discount)* – The second step determines a preliminary class-based discount based on how many MWs of "perfect capacity" would be needed to replace the MWs of capacity provided by that class of resource, holding all other resource types constant. In this context, perfect capacity is capacity from a hypothetical resource that is fully available at all times. The MWs of perfect capacity as a percentage of the base case MWs is the percent of pmax from a resource that would be considered reliably available for this step, with that percent subtracted from 1 representing the percent discount.

- *ELCC Step Three (Final Class Discount)* – The third step calculates a final class-based discount that accounts for the interactive effects among the resource classes subject to ELCC. With ELCC, the total system benefit for all resources subject to ELCC can be greater or lesser than the sum of its parts. Maybe the various resource types

subject to ELCC are usually unavailable simultaneously in the reliability analysis. In those cases, using the discount from step two would overstate the contribution to reliability from ELCC resources. But if there is little overlap in the availability, then the value from step two would represent an excessive discount from pmax. To account for these possibilities, the CAISO returns to the base case calculations and replaces all MWs provided from resources subject to ELCC with "perfect capacity." This essentially treats all resource types subject to ELCC as if they were a single category of resource. If the MWs of perfect capacity as a precent of the MWs provided by all ELCC resources is higher than the preliminary class-based discount of a class, then the CAISO reduces the discount for that class accordingly, and vice versa.

- *ELCC Step Four (Historical Performance Adjustment)* – In the fourth step, the CAISO calculates a resource-specific adjustment to the final class-based discount. This final change accounts for the reality that the resources in a category have different availability levels. The CAISO will make this adjustment by comparing an individual resource's three-year historical performance to the overall three-year historical performance of the resource class and adjust the resource's capacity value based on whether it performed better or worse than the category. The resource-specific adjustments do not create a net change in the total qualifying capacity for a resource class; the adjustments only shift capacity among resources within a class. Wind, solar, and run-of-river hydroelectric generators will have their performance based on capacity factors during the at-risk hours during that period that are calculated for UCAP. These resource types are presumed to have an incentive to produce to their maximum capabilities most of the time, so the CAISO considered their capacity utilization during at-risk hours to appropriately capture their performance in times of system need. Storage resources and dispatchable hydroelectric generators will have their performance assessed based on forced outages rates (excluding transmission-induced forced outages). The forced outage rate is more appropriate for these units because they are more likely to participate in the market economically, in which case their output does not necessarily capture their performance and capabilities relative to other members of their class.

The following provides an example of how the four steps work together for a hypothetical solar resource with a nameplate capacity of 200 MW.[17] Assume

[17] The example is summarized in Table 1.

that the base case model shows that solar resources provided 15,000 MW of capacity and all ELCC resources provided 30,000 MW of capacity. That is *step 1* of the analysis. In the *step two* analysis, the CAISO would consider how many MWs of perfect capacity would be needed to replace those 15,000 MW of solar, holding all other resource types constant. If the CAISO needed 3,000 MW of perfect capacity to replace the 15,000 MW of solar from the base case, then the step two analysis would show that solar resources would keep 20 percent of their pmax value and see an 80 percent discount.[18] The CAISO would then need to apply the *step three* analysis to assess how many MWs of perfect capacity would be needed to replace the 30,000 MWs provided by all ELCC resources compared to the sum of the perfect capacity needed to replace each ELCC resource class individually. Assume the CAISO would need 9,000 MW of perfect capacity to replace those 30,000 MWs if all ELCC resources were a single resource class. That value of 9,000 MW needs to be compared to how much perfect capacity would be needed from the step 2 analysis for all ELCC resources. Assume that sum is 10,000 MW. The result of the step three analysis is that all ELCC resources get an additional 10 percent cut from their step 2 discount.[19] For solar, this means the final class discount is 18 percent. This reflects a ten percent discount from the preliminary result in which solar would keep 20 percent of nameplate capacity.[20] The *step four* analysis then considers the individual resource relative to class performance. Assume that solar performed at 40 percent as a class during the at-risk hours for the given month and further assume this hypothetical resource performed at 45 percent over the same period. This resource thus performed 12.5 percent better than the class and receives a corresponding increase in the percent of its nameplate capacity that it keeps as qualifying capacity.[21] The final discount for this resource is 79.75 percent and its keeps 20.25 percent of its nameplate capacity as qualifying capacity.[22] In the end, this hypothetical 200 MW resource would have a qualifying capacity value of 40.5 MW.

[18] 3,000/15,000 = 20%

[19] (10,000 - 9,000)/10,000 = 10%

[20] .2 – (.2*.1) = 18%

[21] (.45-.40)/.4 = 12.5%

[22] .18 + (.18*.125) = 20.25%

**Table 1 – ELCC Example for hypothetical 200 MW solar resource**

| | Outcome | Assumptions |
|---|---|---|
| **Step 1** | 15,000 MW of solar in LOLE study | LOLE study shows 15,000 MW of solar and 30,000 MW of total capacity from ELCC-based resources. |
| **Step 2** | Solar keeps 20% of nameplate capacity | System needs 3,000 MW of perfect capacity to replace the 15,000 MW of solar in LOLE study. |
| **Step 3** | Solar keeps 18% of nameplate capacity | System needs 9,000 MW of perfect capacity to replace 30,000 MW of ELCC resources if all ELCC resources were a single resource class. Step 2 sum for all ELCC resource classes is 10,000 MW of perfect capacity. |
| **Step 4** | Hypothetical solar resource keeps 20.25% of nameplate | Solar as a class is 40% available and hypothetical resource has been 45% available. |
| **Final Result** | 40.5 MW of qualifying capacity for hypothetical resource | Hypothetical resource has nameplate capacity of 200 MW |

Applying ELCC as a default for wind, solar, storage, run-of-river hydroelectric, and dispatchable hydroelectric resources recognizes the energy-limited aspects of these resources whose effectiveness at meeting system needs is highly dependent on dynamic, system-wide conditions that are not necessarily predictable solely from plant performance. The CAISO's proposed ELCC methodology appropriately captures the contribution these resources provide towards maintaining reliability. The step 2 discounts capture the uncertainty faced by how an overall resource type likely will contribute towards maintaining reliability. The step 3 discounts reflect how ELCC resources overall contribute to reliability in the probabilistic scenario and captures the interactive effects among the ELCC resource types to ensure they are not discounted either too much or too little. Finally, the resource-specific adjustment creates an individually tailored approach that appropriately recognizes each resource within a class is still an individual generating unit subject to its own strengths and limitations.

*ii. UCAP Methodology*

In the case of dispatchable resources that are not subject to short-term energy limitations, an unforced capacity methodology will assess resource availability accurately. The CAISO's methodology will use a resource's historic forced outage rate during tight system conditions as a proxy for its capacity value. For each season of each year, the CAISO will calculate a UCAP discount based on the capacity from the resource not on forced outage as a percent of the capacity that would have been available from the unit if it had no forced outages. The UCAP calculation will not consider a forced outage if the outage is induced by a transmission outage. The CAISO also will calculate the UCAP discount based only on forced outages that occurred during the at-risk hours on the at-risk days during the evaluation period.

The *at-risk hours* will be based on projected system conditions during the period that would be covered by the resulting qualifying capacity value, whereas the *at-risk days* will be based on historic system conditions that occurred during the period during which the forced outages occurred. The at-risk hours will be based on forward projections because the tightest hours that occurred historically may not prevail in the future. For example, during the historical period used for evaluating UCAP, the tightest hours of the day may have been 3 PM to 6 PM and a given resource may have had a high forced outage rate in those hours. But if the CAISO projects that going forward during the period for which the qualifying capacity value would apply, the most critical hours will be 6 PM to 9 PM, then it is more sensible to review the resource's forced outage rate during those three hours and not the three hours from 3 PM to 6 PM. The at-risk days will be based on historical performance on the tightest days because that is a good predictor of how the resource will perform on future tight days. In the historical period the tightest days may have been Tuesday through Thursday, whereas the CAISO may believe the tightest days going forward may be Friday through Sunday. The CAISO, however, would not be served well by calculating the qualifying capacity based on forced outages that occurred on Friday, Saturday, and Sunday because performance on a tight day, regardless of what day of the week it may have been, is a more reliable predictor of future performance on tight days. Put another way, a resource's past performance for a given hour in a season is a reliable predictor of future performance in that hour of that season. But a resource's performance on Mondays during a particular season, without understanding prevailing system conditions on those Mondays, does not predict future performance on tight days.

Once the CAISO calculates a seasonal UCAP discount for a resource in a given year, the CAISO then determines the resource's final UCAP value by taking a weighted average of the seasonal UCAP discount for the three prior years. Under the weighting, the CAISO would give the highest weight to the most recent year (45 percent), with lower weights for the year two years and three years before (35 percent and 20 percent, respectively).

Applying UCAP to dispatchable resources is appropriate because, unlike the resources subject to the proposed ELCC methodology, performance of an individual resource is generally independent of the composition of the fleet or system conditions. UCAP offers a direct, transparent, and accurate way to assess individual resource availability. For this reason, there is less need to account for interactive effects in availability between individual resources within a technology type or between all types of dispatchable resources. A resource's forced outage history, while imperfect, is the best available predictor of its future outage rate, especially during stressed grid conditions. At the same time, the CAISO was concerned that looking at too narrow of a period could give an unfairly critical, or optimistic, view of a resource's likely future performance and create a UCAP discount for a resource that is too severe or too generous. The

CAISO proposal accounts for that concern by creating a weighted average that blends performance over the three prior years.

*iii. Other Accreditation Methodologies*

For resources not covered by UCAP or ELCC, the CAISO has not proposed material changes to the existing tariff default methodologies. The only substantive change for other resource types is that for demand response resources the CAISO will now calculate the performance of a demand response provider's entire fleet of resources and apply the proper performance adjustment to resources based on the portfolio's performance. As is the case now, the calculation will be based on three years' of data. This change to calculating performance across an entire provider's portfolio reflects the fact that the composition of individual demand response resources tends to change regularly, with many individual resource ID codes lasting only for a year. On the other hand, the identity of the demand response providers and their performance tendencies is relatively stable from year to year. This makes a provider-level, rather than resource-level, calculation more appropriate in determining three-year performance.

*b. Tariff Revisions – Default Capacity Accreditation*

The current default accreditation rules are provided in tariff section 40.8 and its subsections. To implement the new approaches described above, the CAISO proposes substantial revisions to this tariff section. Revised section 40.8 is organized as follows:

- *Section 40.8.1* – Explanation of when default accreditation methodologies apply.
- *Section 40.8.2 and subparts* – Description of the accreditation methodologies, including UCAP, ELCC, and the existing methodologies.
- *Section 40.8.3 and subparts* – Statement of which methodologies apply to which resource classes.

The approach taken in proposed section 40.8.3 is similar to the one the Commission recently approved for the Midcontinent Independent System Operator.[23] In that matter, as here, an independent system operator proposed

[23] *Midcontinent Indep. Sys. Operator, Inc.*, 190 FERC ¶ 61,147 (2025) (denying rehearing on claim MISO filing did not meet rule of reason); *Midcontinent Indep. Sys. Operator, Inc.*, 189 FERC ¶ 61,065, PP 235-256 (2024) (order approving accreditation proposal as meeting rule of reason).

tariff revisions with detailed methodological steps in the tariff that would determine resources' capacity accreditation, while recognizing the precise modeling is an implementation detail that can be specified in other documentation. There, as here, the tariff has the practices that significantly affect rates and that are "realistically susceptible of specification."

*i. Section 40.8.1 – When the Default Rules Apply*

The CAISO proposes to delete a statement that would terminate the default accreditation provisions if the CPUC overturned two foundational decisions for the RA program. This tariff statement had relevance when the RA program began. However, terminating the default resource adequacy provisions if the CPUC were to reverse these prior orders, which are now final and non-appealable, no longer makes sense and runs counter to the purpose of having the default provisions. If the CPUC's program and rules were suddenly overturned, that is exactly when section 40.8 would need to apply.

*ii. Section 40.8.2 – Defining the Default Methodologies*

Section 40.8.2 provides a detailed description of the accreditation methodologies, starting with ELCC and UCAP. Section 40.8.2.1 defines the ELCC methodology, laying out the four-step process described in Section II.A.3.a of this transmittal letter. Similarly, section 40.8.2.2 defines the UCAP methodology.

Both sections 40.8.2.1 (ELCC) and 40.8.2.2 (UCAP) defer some details to the business practice manual. For calculating ELCC, a critical component will be the probabilistic studies that determine how capacity from a given resource class is needed to maintain a 0.1 LOLE and also how much perfect capacity would be needed to substitute for that capacity. As with the details of the PRM study itself, the tariff provides the objective of the studies with the detailed steps provided in the BPM. For calculating UCAP, the tariff refers to separate UCAP values for seasons defined in the business practice manual. This phrasing conforms with the rule of reason because it clearly implies that there will be several different seasonal values, with the exact make-up of those seasons to be determined.[24] The CAISO expects that it initially will calculate two seasonal UCAP values for summer and winter. But it may become beneficial to create additional seasons or change the period covered by each season based on experience with UCAP, changes in system need, or underlying changes in CAISO market structures or procedures.

[24] *Hecate Energy Greene Cnty. 3 LLC v. FERC*, 72 F.4th 1307, 1314 (D.C. Cir. 2023) ("specifiable practices that significantly affect rates need not be included if they are clearly implied by the tariff's express terms").

Section 40.8.2.2 also specifies that UCAP values will be based on forced outages "during one of the at-risk hours on at-risk days for that season, as further specified in the BPM." The CAISO also explains the general methodology that will guide how it will determine the at-risk hours and at-risk days for a season. It will benefit the CAISO and its stakeholders to have the flexibility to adjust the at-risk hours and at-risk days over time based on ongoing studies. Nevertheless, the reference in section 40.8.2.2 to "the at-risk hours on at-risk days" conforms with the rule of reason because it clearly implies that the UCAP analysis will be based on select and limited subset of hours and further the tariff section explains in general terms how the CAISO will determine that subset of hours and days for a season.[25]

Sections 40.8.2.3, 40.8.2.4, and 40.8.2.5 describe three approaches for accrediting different classes of resources. The substance of these sections tracks the existing tariff but are rewritten to conform with the new overall organization of section 40.8.

#### *iii. Section 40.8.3 – Application of Methodologies to Resource Classes*

Section 40.8.3 creates a separate sub-part for each resource class and states which accreditation methodology applies to that class. This section specifies dispatchable thermal resources and pumped storage hydroelectric are subject to UCAP,[26] whereas wind, solar, storage, and hydroelectric resources (other than pumped storage) are subject to ELCC.[27] The balance of section 40.8.3 restates existing language for the remaining resource types.

### *4. Stakeholder Issues and CAISO Responses*

The CAISO proposals on revising the default PRM and accreditation methodologies were the subject of significant stakeholder feedback. Often, that feedback resulted in changes to the proposal. Stakeholder feedback fell in four broad areas:

1. Details on applying the UCAP methodology.
2. Consistency with CPUC accreditation methodologies.
3. Accounting for ambient derates.
4. Interdependencies with other RA issues.

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[25] *Id.*

[26] New tariff sections 40.8.3.1 (thermal) and 40.8.3.4 (pumped storage hydroelectric).

[27] New tariff sections 40.8.3.3 (wind and solar), 40.8.3.6 (storage), and 40.8.3.4 (hydroelectric).

*a. Details on Applying the UCAP Methodology*

Details on how the CAISO will calculate UCAP values was the topic of significant comment.

The initial CAISO proposal for determining times of system need to assess resources' forced outage rates looked at outages in the subset of hours where the CAISO faced the tightest supply/demand conditions. Some stakeholders criticized this approach, called the "supply cushion equation," for misrepresenting system need due to the influence of planned outages. They also pointed out a lack of connection between the supply cushion equation and the hours at risk of loss of load produced by CAISO's modeling. Based on this feedback, the CAISO is proposing to pursue an alternative approach of making a retrospective determination of "at-risk hours," set for each month of the year, using the LOLE modeling results. This approach addresses the stakeholder concerns and stakeholders expressed support for this change in approach.

Stakeholders also expressed concerns with the choice of which forced outage types would be exempt from the resource-specific forced outage rate for the default UCAP calculation. The CAISO first proposed excluding from the UCAP calculation outages that are deemed "outside management control" under NERC guidelines. As the process evolved, the CAISO tailored the exemption more directly to generation outages induced by transmission outages. The CAISO reframed the exemption in terms of this specific outage because it made the exemption clearer and because such outages do not reflect the generator's performance.[28]

*b. Consistency with CPUC Accreditation Methodologies*

Several CPUC-jurisdictional LSEs expressed a desire for alignment between the CPUC's capacity accreditation methodologies and the CAISO's default methodologies. This was particularly so with UCAP, which is under active development at the CPUC. One issue stakeholders would particularly like to see aligned is the scope of forced outages that are exempt from the UCAP calculation. Consistency between the CPUC's rules for its jurisdictional LSEs and the rules embedded in the CAISO tariff can be an important principle to pursue. However, in the case of setting the default PRM and accreditation rules, consistency for its own sake is not absolutely necessary. Conforming the defaults to the CPUC's rules would have the effect of allowing the CPUC to set the defaults applicable to the other LRAs within the CAISO BAA. Nevertheless, where possible, the CAISO will work to evolve its rules to ensure alignment with any CPUC rules pertaining to the default UCAP calculation.

[28] This same rationale explains why the forced outage adjustment in ELCC will exclude generation outages induced by transmission outages.

*c. Accounting for Ambient Derates*

In the initial policy development stages, the CAISO proposed accounting for resources' derates due to ambient temperature as a proxy for resource capabilities during peak conditions. This adjustment would have applied universally to all resources regardless of whether the CAISO default accreditation approaches applied to the resource. Several stakeholders opposed this proposal and others found it was worth developing further. In response to stakeholder concerns, the CAISO removed this element from its policy proposal and will engage this issue in the CPUC's UCAP development process. If appropriate, the CAISO will revisit this element of its default rules in a subsequent stakeholder process.

*d. Interdependencies with Other RA issues*

Some stakeholders identified potential interdependencies between the new tariff defaults and other issues, such as the RA availability incentive mechanism (RAAIM) and the RA must-offer obligations. These commenters suggested the default rules be developed with reforms in these other areas. The CAISO acknowledges the interrelatedness of the topics within this overall initiative. However, to keep the initiative manageable and to ensure continued progress, the CAISO has had to break the initiative into various tracks. The other topics mentioned remain under discussion in the CAISO's stakeholder process. The CAISO recognizes that reforms to RAAIM likely will also need to be aligned with the CPUC's UCAP design and counting methodologies ultimately adopted by other LRAs.

## B. Resource Visibility

### *1. Issues with the Current Lack of Visibility Over Contractual Status of Capacity*

The CAISO currently does not have visibility into the contractual status and availability for CPM of RA-eligible capacity not shown as RA. To the extent all RA-eligible capacity were offered into the CPM competitive solicitations, this would not be an issue. However, offers to the competitive solicitations are voluntary and there are many reasons a resource's scheduling coordinator may choose not to offer the capacity. Further, the volume of bids submitted in that process has been limited.[29]

[29] The question of how the CAISO can increase participation in the competitive solicitations for CPM is a topic that will be explored in further tracks of the stakeholder initiative.

Additional information will help the CAISO administer its CPM process more effectively. When competitive solicitation offers are insufficient to meet the CPM procurement need in a given year or month the CAISO does not know what additional capacity may be available. For example, a resource may have not submitted an offer to the competitive solicitation expecting that it would secure a contract to sell its capacity outside of the CAISO. If it is unsuccessful, then it may become willing to accept a CPM designation, if offered. But under the current processes, the CAISO does not have a systematic way of knowing the availability of that resource and others similarly situated. The imperfect visibility from competitive solicitation offers means that when a CPM is necessary and cannot be met with standing offers, the CAISO must reach out to entities and solicit available capacity.[30] This outreach is an inefficient process that makes it harder for the CAISO to issue CPM designations and takes the CAISO away from its responsibilities. Even worse, the need for a CPM designation suggests there are stressed grid conditions, which is a particularly bad time for undertaking a manual, time-consuming search for available capacity.

Outside of directly administering the CPM process, this limited visibility makes it harder to identify potential drivers of long-term trends with the CAISO's CPM process. The CAISO has observed that capacity offered to the CPM process has been declining but does not have an explanation for why. That lack of understanding has implications for reliability planning. If offers are declining because more resources are under RA contract to LSEs in the CAISO BAA but are not being shown because they will be used for substitution or due to risk of unavailability, the decline in offers to the competitive solicitation may not reflect a reliability risk. But if, for example, more eligible capacity is being sold for reliability services outside the CAISO BAA, the decline in offers may correspond to a meaningful decline in resources available to serve the CAISO BAA.

### *2. Policy Proposal – Resource Visibility*

To address the current lack of visibility, the CAISO proposes to impose annual and monthly reporting requirements for all RA-eligible capacity not shown as RA. The enhanced visibility created by these reports will help the CAISO and its customers by allowing the CAISO to better assess system reliability needs and target outreach to potential backstop procurement more efficiently. The information gathered may also inform future updates to the CPM structure.

[30] Example of outreach: CPM Significant Event - Intent to Solicit and Designate Capacity - Continued Effort and Reminder, available at https://www.caiso.com/documents/cpmsignificantevent-intent-solicit-designatecapacity-continuedeffort-reminder-082321.html; Capacity Procurement Mechanism Significant Event - Intent to Solicit and Designate Capacity; Informational Call 7/2/21, available at https://www.caiso.com/Documents/CapacityProcurementMechanismSignificantEvent-Intent-Solicit-DesignateCapacity-070121.html.

The new requirements will apply to all RA-eligible resources located inside the CAISO BAA that appear on the CAISO's annual net qualifying capacity (NQC) list.[31] Framing the requirement in this way means that several categories of resources will not be subject to the reporting requirement: (1) resources not appearing on the NQC list credited for RA by LRAs; (2) energy-only resources that have not been studied for, or do not have, deliverability to the aggregate of CAISO load; (3) resources that have not yet reached commercial operation. The reporting requirement will fall on the scheduling coordinator for each resource and they must report on the same timeline that applies for submitting year-ahead or month-ahead supply plans; and (4) intertie resources.[32] This means that by the year-ahead and month-ahead RA submission deadlines, every MW of RA-eligible capacity (other than such capacity not in the CAISO balancing authority area) either will be shown as RA capacity by its scheduling coordinator or will be covered by the new visibility requirements.

In developing the proposal, it was important to the CAISO that the reports provide usable data for the CAISO in a way that reduces the burden on scheduling coordinators. To meet these two objectives, scheduling coordinators will report non-RA capacity under one of several pre-defined categories. This approach will give the CAISO uniform data to analyze without having to categorize or parse free text explanations for why RA-eligible capacity was not shown as RA. For scheduling coordinators, the reporting interface will have drop-down menus or check boxes to make reporting simple.

A major issue in developing the reporting was deciding what categories to provide for reporting. The CAISO proposes five categories that will provide needed visibility:

1. *Sold outside the CAISO* – Capacity not shown because it has been sold to entities outside the CAISO BAA.

2. *Reserved for substitution* – Whether contracted or not, capacity not shown in anticipation of being used as substitute capacity for RA capacity on outage.

3. *Potential unavailability* – Whether contracted or not, capacity not shown due to reported or expected outages that would make the capacity unavailable.

[31] A resource's NQC is the amount of RA capacity a resource is available to provide in the RA process. The NQC value is based on the LRA-determined capacity value, which is then adjusted for deliverability. The CAISO posts an annual NQC list for RA-eligible resources.

[32] Year-ahead plans are due the last business day of October of the year preceding the RA year. Month-ahead plans are due 45 days before the start of the RA month.

4. *Contracted but not shown* – Capacity under capacity contract with a CAISO LSE or owned by an LSE and is not shown for reasons other than those covered in other categories.

5. *Not contracted* – Capacity that is not under a capacity contract and does not fit into the categories above.

The scheduling coordinator's choice of one category over another does not bind that party's future capacity activities. The report is intended to be a good-faith statement of the scheduling coordinator's understanding at a point in time. For example, if a scheduling coordinator reported in the month-ahead process that it was not shown as RA capacity because it was reserved for substitution, that reporting would not preclude the resource from receiving a CPM designation if, for whatever reason, the capacity is available and can meet the reliability need driving the CPM designation. As long as parties are reporting in good faith and exercising due diligence to ensure the information is accurate at the time of reporting, the CAISO understands and accepts that circumstances may change between the time of reporting and the need for the CAISO to exercise its CPM authority. The Commission should accept this new reporting requirement because it provides needed visibility to the CAISO that will help it run the grid reliably while minimizing the burden on participants.

### *3. Tariff Revisions – Resource Visibility*

Tariff section 4.6.7.1 requires generators to "provide to the CAISO such information and maintain such records as are reasonably required by the CAISO to plan the efficient use and maintain the reliability of the CAISO Controlled Grid." Receiving the information covered by the new submissions about the status of RA-eligible capacity will help the CAISO plan effectively and maintain reliability. The CAISO first considered imposing the new reporting requirements under this existing tariff authority.[33] Two factors suggested to the CAISO that explicit tariff language on this topic was appropriate. First, the scope of the reporting duty on scheduling coordinators is not trivial and the CAISO determined it would be preferable to cover this matter through a full stakeholder process followed by a tariff filing with the Commission. Second, the CAISO intends to apply rules of conduct penalties for scheduling coordinators that fail to submit timely reports. Under tariff section 37.6.1, scheduling coordinators are penalized $500 per day for every day tariff-required information is late. Where the CAISO is creating a new requirement that creates exposure to sanctions under the CAISO's rules of conduct, it is generally preferrable to have the tariff requirement be more developed than the open language of section 4.6.71.

[33] The fact that the new reporting structure could be implemented under existing tariff authority that already has been approved as just and reasonable bolsters the proposition that the proposed addition of tariff section 40.4.7 is also just and reasonable.

To fully reflect the new reporting requirements in the tariff, the CAISO proposes to amend section 40.4.7. This section has the requirements for scheduling coordinators representing RA resources to submit year-ahead and month-ahead supply plans. Because the new status reports will be required on the same timeline as the RA supply plans, the CAISO determined section 40.4.7 was the proper location to add the new requirement. The requirements are added to new sub-section 40.4.7.4. This section proposes to require scheduling coordinators for RA-eligible resources that "are not shown as Resource Adequacy Capacity or Flexible Resource Adequacy Capacity for their full" values to "provide a report to the CAISO on why the resource was not shown for its full capacity."

The reports must be made "using the categories and processes defined in the BPM." This sentence reflects that the categories for reporting will be determined in the business practice manual. Leaving the category definitions for the business practice manual will allow flexibility over time if the CAISO determines it could benefit from more granular information through additional categories or if a category no longer was useful. The CAISO does not believe minor additions of new categories would make compliance more difficult because it will be configured with drop down options. A proliferation of categories would not be in the CAISO's interest because too many categories would start creating confusion and raise the possibility that different resources in the same circumstances would be reported under different categories. That would undermine the usefulness of the data. This approach is similar to how the CAISO approaches outage reporting. The duty to report outages is in tariff section nine but that section then defers the definition of the nature of work categories to the business practice manual.[34]

Finally, proposed tariff section 40.4.7.4 states the reports "must represent a good-faith submission of the Scheduling Coordinator's intentions at the time it submits the report." This sentence provides a direct statement of what the submission is meant to represent and what duty of care the CAISO expects scheduling coordinators to exercise in making their submissions.

### *4. Stakeholder Issues and CAISO Responses*

The CAISO's proposed reporting requirements for RA-eligible capacity drew stakeholder reaction on three general topics:

[34] Existing tariff section 9.3.3(2) (outages must be reported "using the nature of work categories described in the Business Practice Manual").

1. Administrative burden of the new reporting requirement.
2. Clarifying performance obligations for non-RA capacity.
3. Public access to aggregated information.

*a. Administrative Burden of the New Reporting Requirement*

Two stakeholders expressed concern about the administrative burden these new requirements would pose for scheduling coordinators representing RA-eligible resources. One expressed outright opposition to the proposal, whereas the other recommended the CAISO include fewer reporting categories. Others generally suggested it would be enough to require the reporting only for the summer months.

The CAISO acknowledges that the proposed reporting requirements will require additional time and effort from scheduling coordinators. The CAISO will develop the specific reporting interfaces to impose the minimum burden consistent with the CAISO gaining the enhanced visibility called for under the proposal. Over time, the CAISO will evaluate and potentially adjust the reporting categories. But at this point, it believes the five categories identified are sufficient to obtain this visibility. The CAISO also understands the logic of only requiring reporting in the summer months. Historically that is when most CPM designations have occurred. The resource fleet in the CAISO BAA, however, continues to evolve and the CAISO is uncertain those patterns will hold.

*b. Clarifying Performance Obligations for non-RA Capacity*

During the stakeholder process, some parties expressed concern about how the information in the new reports would be used. Some were concerned the CAISO might impose new availability requirements or offer obligations on non-RA capacity identified in the reports. The CAISO emphasized that it was not seeking any such authority. The proposed reporting requirements will evolve alongside the RA program more broadly. With changes in the RA program, the non-RA status of RA-eligible capacity may become relevant in new ways. For example, part of the ongoing stakeholder initiative involves consideration of a pool of capacity from which the CAISO or others can procure substitute capacity when RA capacity goes on outage. Any relationship between operation of that potential substitution pool and the new information provided pursuant to the CAISO's reporting categories would require additional stakeholder discussion and likely new filings with the Commission. The reporting proposed in this filing is for visibility only and would impose no new requirements on the capacity subject to the reports.

*c. Public Access to Aggregated Information*

Several parties asked the CAISO to provide access to the information it will collect under this proposal. Due to confidentiality and commercial sensitivity concerns, the CAISO is not proposing to share resource-specific responses. The CAISO, however, committed to provide aggregated responses to provide the stakeholder community meaningful information about why RA-eligible capacity is not shown as RA capacity. The CAISO will undertake this transparency measure through regular communications with stakeholders and market participants.

## C. Remove Reporting on Commitment of non-Resource Adequacy Capacity

The CAISO also proposes in this filing to retire a legacy informational reporting obligation. Under existing tariff section 43A.6.3 the CAISO must post a monthly report on market and non-market (*i.e.*, exceptional dispatches) commitments of non-RA capacity. This requirement, along with several other related reporting requirements, was first added to the CAISO tariff in 2008 as part of implementing prior backstop capacity procurement authority.[35] The memo to the CAISO Board of Governors seeking approval of the underlying policy explained that the reporting obligations were needed "to ensure [backstop] procurement is transparent to the market and that a 'feedback loop' is established to provide information to stakeholders and regulators on how well RA resources, by themselves, are meeting the various operational needs of the CAISO. It is expected that this feedback loop would, over time, lead to improvements in the RA programs and result in less reliance on [backstop] procurement."[36]

In the approximately 17 years the CAISO has been posting this monthly report on non-RA commitments, no stakeholder has cited this report in raising potential RA program improvements to the CAISO. Neither is the CAISO aware of stakeholders using this report for other purposes. Also, the premise that energy commitments of non-RA resources would identify gaps in the RA program is questionable because it begins to blur the lines between capacity and energy. That the CAISO market concluded a non-RA resource were more economic than an RA resource in a particular interval does not necessarily speak to whether it would have been more efficient or enhance reliability to have obtained the non-RA resource as RA capacity. Because exceptional dispatches to non-RA

[35] *Cal. Indep. Sys. Operator Corp.*, Interim Capacity Procurement Mechanism, FERC Docket Nos. ER08-556-000 & ER06-615-000 (Feb. 8, 2008) (ICPM filing). The requirement became effective on April 1, 2009, at the same time the CAISO introduced its nodal market.

[36] CAL. INDEP. SYS. OPERATOR CORP., PROPOSAL TO BOARD OF GOVERNORS FOR INTERIM CAPACITY PROCUREMENT MECHANISM TARIFF FILING 6 (Jan. 18, 2008) (included as Attachment C to ICPM filing).

capacity trigger CPM designations, reports on non-market commitments theoretically could identify issues with RA procurement. That information, however, is provided separately through the tariff-required market notice and CPM designation report required for all CPM designations[37] and through reporting the CAISO makes under tariff section 6.5.16 as directed by Commission Order No. 844.[38]

Producing and posting this report on a recurring basis also creates an administrative burden on CAISO staff. CAISO does not have means to automate this process so it involves manual efforts. Developing automated tools would create new costs and require an investment of staff resources. Further, automated tools still need human review and intervention where issues arise. The burden of creating this report combined with its limited utility suggests it would be appropriate to retire this report. Based on these factors, it is appropriate to delete the content of existing tariff section 43A.6.3 and retire the non-RA commitment report.

The CAISO raised this issue for stakeholder feedback.[39] During a stakeholder meeting, one party explained the report had provided useful information in resolving a bilateral contractual dispute. In later written comments, several parties opposed retiring this report, claiming it contributes to market transparency and that the CAISO did not provide enough justification for its elimination. The CAISO supports transparency. However, this report was created to increase transparency over the RA program and specifically use of the CAISO's backstop procurement activities. The connection between the information in this report and those topics is tenuous. Finally, although the CAISO's proposal for scheduling coordinators to report on the reason they are not showing RA-eligible capacity as RA is severable from the proposal to remove the report in tariff section 43A.6.3, the CAISO has committed to provide aggregated information on the reasons RA-eligible capacity is not being shown as RA capacity. If the Commission accepts this new reporting requirement, then there will be an even greater justification for removing the section 43A.6.3 report because the CAISO will begin providing a new source of public information much more directly relevant to RA and CPM.

[37] Existing tariff sections 43A.6.1 (market notice) and 43A.6.2 (designation report).

[38] *Uplift Cost Allocation & Transparency in Markets Operated by Reg'l Transmission Organizations & Indep. Sys. Operators*, 163 FERC ¶ 61,041 (2018)

[39] This topic was raised in several iterations of the Track 3A policy papers but the CAISO does not deem it to be part of the Track 3A policy. It was included in those papers for administrative and logistical purposes.

## III. Effective Date(s)

The CAISO requests the three sets of tariff revisions presented herein become effective upon seven business days' prior notice to the Commission. The CAISO expects the three elements may have different effective dates. Specifically, the CAISO likely would seek to make its default PRM and resource accreditation rules effective in May 2026, before the start of the year-ahead processes for 2027 resource adequacy year. The CAISO is targeting an effective date for the new reporting requirements for RA-eligible capacity not shown as RA in spring 2027. The CAISO would seek to make the revisions to section 43A.6.3 effective as soon as possible.

Because the tariff revisions may become effective more than 120 days after this filing, the CAISO respectfully requests the Commission grant waiver of its notice requirement to permit their respective effective dates.[40] The reporting requirements for RA-eligible capacity not shown as RA is the only element of this filing likely to become effective beyond 120 days of filing. The software updates to the CAISO's RA software needed to implement this element are bundled as part of a larger enhancement to that software. Good cause exists to grant the waiver because regulatory certainty well ahead of time will ensure more efficient workflows. At the same time, it is possible the CAISO can identify ways to enhance the existing software to facilitate earlier implementation. That would happen before spring 2027 but likely would still be beyond 120 days. A waiver would thus also maintain the CAISO's ability to explore such alternative implementation approaches.

As to the other two elements of this filing, keeping the ability to delay implementation beyond 120 days will provide the CAISO and its stakeholders beneficial flexibility if unexpected events materialize. Good cause exists to grant the waiver as to these aspects of the filing because it will provide the CAISO that flexibility and avoid burdening the Commission with future waiver filings to accommodate any unexpected delays.

The CAISO respectfully requests that the Commission issue an order accepting the proposed tariff revisions by May 11, 2026. A Commission order by this date is particularly important for the default PRM and resource capacity accreditation tariff revisions because they are an important factor guiding the year-ahead RA processes for 2027, which begin in May 2026. It will be beneficial for all parties to have certainty about the default procedures before that process begins.

[40] Specifically, under Section 35.11 of the Commission's regulations, 18 C.F.R. § 35.11, the CAISO respectfully requests waiver of the notice requirement in section 35.3(a)(1) of the Commission's regulations, 18 C.F.R. § 35.3(a)(1), to allow the first and second sets of tariff revisions to go into effect more than 120 days after submittal of this filing.

## IV. Communications

Under Rule 203(b)(3),[41] the CAISO respectfully requests that all correspondence and other communications about this filing be served upon:

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## V. Service

The CAISO has served copies of this filing on the CPUC, the California Energy Commission, and all parties with scheduling coordinator agreements under the CAISO tariff. In addition, the CAISO has posted a copy of the filing on the CAISO website.

## VI. Contents of this filing

Besides this transmittal letter, this filing includes these attachments:

| | |
|---|---|
| Attachment A | Clean CAISO tariff sheets |
| Attachment B | Redlined CAISO tariff sheets |
| Attachment C | Track 1 Final Proposal |
| Attachment D | Track 1 Board of Governors Memo |
| Attachment E | Track 3A Final Proposal |
| Attachment F | Track 3A Board of Governors Memo |

[41] 18 C.F.R. § 385.203(b)(3).

## VII. Conclusion

For the reasons set forth in this filing, the CAISO respectfully requests that the Commission issue an order accepting the tariff revisions in this filing by May 11, 2026, effective as of the dates specified herein. An order by that date will provide all parties important information as the year-ahead resource adequacy processes for 2027 get started.

Respectfully submitted,

***/s/ David S. Zlotlow***
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**Attachment A – Clean Tariff Sheets**

**Tariff Amendment – Resource Adequacy Modeling and Program Design Initiative**

**California Independent System Operator Corporation**

**March 3, 2026**

## Section 40

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### 40.2 Information Requirements for Resource Adequacy Programs

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#### 40.2.2 Non-CPUC Load Serving Entities and CPEs

##### 40.2.2.1 Reserve Margin

(a) The Scheduling Coordinator for a Non-CPUC Load Serving Entity must provide the CAISO with the Reserve Margin(s) adopted by the appropriate Local Regulatory Authority or federal agency for use in the annual Resource Adequacy Plan and monthly Resource Adequacy Plans listed as a percentage of the Demand Forecasts developed in accordance with Section 40.2.2.3.

(b) For the Scheduling Coordinator for a Non-CPUC Load Serving Entity for which the appropriate Local Regulatory Authority or federal agency has not established a Reserve Margin(s) or a CPUC Load Serving Entity subject to Section 40.2.1(b), the Reserve Margin for each month is the additional quantity of Qualifying Capacity above the peak Demand Forecast in the CAISO BAA for that month needed to meet a 1-day-in-ten-years loss of load expectation standard as a percent of the peak Demand Forecast in the CAISO BAA for that month. As further specified in the BPM, the CAISO determines that quantity of additional Qualifying Capacity needed based on an annual probabilistic reliability analysis conducted consistent with accepted industry practices that models system conditions and considers potential variability in relevant underlying factors, such as production from wind and solar units, Forced Outages, and forecasted consumption patterns from Load. The CAISO provides stakeholders an opportunity to provide feedback on the proposed results of the analysis and key inputs to the analysis before

finalizing the results and also provides transparency regarding the final results.

* * * * *

### 40.4.7 Submission of Supply Plans and Reports on Capacity Status

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#### 40.4.7.4 Reports on Capacity Status

Scheduling Coordinators of resources with NQC or EFC that are within the CAISO Balancing Authority Area and are not shown as Resource Adequacy Capacity or Flexible Resource Adequacy Capacity for their full NQC or EFC values, respectively, must provide a report to the CAISO on why the resource was not shown for its full capacity.

The report must be provided using the categories and processes defined in the BPM. The report must be made in both the year-ahead and month-ahead timeframes by the submission deadlines established for submission of the annual and monthly Supply Plans, respectively. The information provided in the report must represent a good-faith submission of the Scheduling Coordinator's intentions at the time it submits the report. Scheduling Coordinators are not required to update the report based on changes in the resource status following submission.

* * * * *

## 40.8 CAISO Default Qualifying Capacity Criteria

### 40.8.1 Applicability of Default Criteria

The criteria in this Section 40.8 apply when the CPUC or Local Regulatory Authority has not established and provided to the CAISO criteria to determine the types of resources that may be eligible to provide Qualifying Capacity and for calculating Qualifying Capacity for such eligible resource types.

### 40.8.2 General Qualifying Capacity Methodologies

As further specified in Section 40.8.3, the CAISO applies the following methodologies to various classes of resources. Where a methodology calls for 36 months' of historical data for an individual resource but there is no resource-specific data for part of that period, then the CAISO substitutes the missing periods of data with class average data.

#### 40.8.2.1 Effective Load Carrying Capability

The effective load carrying capability (ELCC) methodology calculates a resource's monthly Qualifying Capacity based on a percentage discount from its PMax utilizing a sequential four-step conceptual process.

Step one identifies the quantity of capacity provided to the CAISO Balancing Authority Area from each resource technology class in a probabilistic reliability analysis conducted consistent with accepted industry practices, as further specified in the BPM, that maintains a 1-day-in-ten-years loss of load expectation standard.

Step two determines a preliminary class-based discount based on the quantity of perfect capacity that would be needed to replace the capacity provided by that class of resource in the probabilistic reliability analysis as a percent of the capacity provided by that class of resource technology in the probabilistic reliability analysis. For purposes of this Section 40.8.2.1, perfect capacity is capacity from a hypothetical resource that is fully available at all times.

Step three calculates a final class-based discount. The final class-based discount scales the preliminary class-based discount based on the quantity of perfect capacity that would be needed to replace the capacity provided by all resource classes subject to ELCC in the probabilistic reliability analysis as a percent of the capacity provided by all resource classes subject to ELCC in the probabilistic reliability analysis.

Step four calculates a resource-specific adjustment to the final class-based discount. The resource-specific adjustment is based on a resource's performance over the 36-month default Qualifying Capacity evaluation period defined in the BPM compared to the performance in that period of all resources of that resource type, as further specified in the BPM.

#### 40.8.2.2 Unforced Capacity

The unforced capacity (UCAP) methodology calculates a resource's monthly Qualifying Capacity based on a percentage discount from its PMax. The CAISO creates a separate resource-specific UCAP discount for seasons, with those seasons defined in the BPM.

For each season, the CAISO calculates a UCAP discount based on the quantity of capacity from the resource that was not on Forced Outage as a percent of the quantity of capacity that would have been available from the unit if it never had any Forced Outages. The CAISO calculates this percentage based only on Forced Outages during one of the at-risk hours on at-risk days for that season, as further specified in the BPM. The at-risk hours are the individual hours of the day during that season where reliability risks are greatest in an individual hour as determined based on projected system conditions during the period that would be covered by the resulting Qualifying Capacity value. The at-risk days are the days during that season where reliability risks were greatest across the day based on historic system conditions with the tightest supply/demand balance. The UCAP calculation does not consider a Forced Outage reported in a nature of work category relating to Generation Outages induced by transmission Outages, as further specified in the Business Practice Manual.

The UCAP discount from PMax of a resource for a year is the average of the seasonal UCAP discounts from the three prior years, weighted in the following proportions: 45 percent for seasonal UCAP from one year prior; 35 percent for seasonal UCAP from two years prior; and 20 percent for three years prior.

#### 40.8.2.3 Average Generation

The average generation methodology calculates a resource's monthly Qualifying Capacity based on historic hourly performance in that month of the year over the 36-month default Qualifying Capacity evaluation period defined in the BPM.

#### 40.8.2.4 Performance to Dispatch

The performance to Dispatch methodology calculates a resource's Qualifying Capacity, which is static for each month of a year, based on the average energy output during each hour a resource had a Dispatch over the 36-month default Qualifying Capacity evaluation period defined in the BPM as a percentage of the average hourly Dispatch value over those 36 months. For purposes of this calculation, a resource's energy output in an hour cannot exceed its hourly Dispatch value. The CAISO calculates a resource's

Qualifying Capacity under this methodology based on the aggregated performance of all resources under the same SCID.

#### 40.8.2.5 Reduction in Demand Per Dispatch

The reduction in demand per Dispatch methodology calculates a resource's Qualifying Capacity, which is static for each month of a year, based on the resource's average reduction in demand on a per-Dispatch basis over the 36-month default Qualifying Capacity evaluation period defined in the BPM.

### 40.8.3 Default Criteria for Specific Resource Classes

#### 40.8.3.1 Nuclear and Dispatchable Thermal

Nuclear and dispatchable thermal Generating Units, other than Qualifying Facilities with Existing QF Contracts addressed in Section 40.8.3.11 below, must be a Participating Generator or a System Unit. The CAISO calculates the Qualifying Capacity of nuclear and dispatchable thermal units, other than Qualifying Facilities addressed in Section 40.8.3.11, using the UCAP methodology described in Section 40.8.2.2.

#### 40.8.3.2 Non-Dispatchable Thermal

Non-dispatchable thermal Generating Units, other than Qualifying Facilities with Existing QF Contracts addressed in Section 40.8.3.11 below, must be a Participating Generator or a System Unit. The CAISO calculates Qualifying Capacity of non-dispatchable thermal units, other than Qualifying Facilities addressed in Section 40.8.3.11, using the average generation methodology described in Section 40.8.2.3.

#### 40.8.3.3 Wind and Solar

As used in this Section, wind units are those wind Generating Units without backup sources of Generation and solar units are those solar Generating Units without backup sources of Generation. Wind and solar units, other than Qualifying Facilities with Existing QF Contracts, must be Participating Intermittent Resources or subject to availability provisions of Section 40.6.4. The CAISO calculates the Qualifying Capacity of all wind or solar units, including Qualifying Facilities, using the ELCC methodology described in Section 40.8.2.1. For wind and solar units, the resource-specific adjustment for performance in the ELCC methodology is based on capacity factors during the at-risk hours determined pursuant to Section 40.8.2.2.

#### 40.8.3.4 Hydroelectric – Dispatchable, Run-of-River, and Pumped Storage

Hydroelectric Generating Units, other than Qualifying Facilities with Existing QF Contracts, must be either Participating Generators or System Units. The CAISO calculates the Qualifying Capacity of Hydroelectric Generating Units irrespective of status as a Qualifying Facility status. The CAISO calculates the Qualifying Capacity of Pumped-Storage Hydro Units using the UCAP methodology described in Section 40.8.2.2. The CAISO calculates the Qualifying Capacity of all other types of Hydroelectric Generating Units using the ELCC methodology described in Section 40.8.2.1. For dispatchable Hydroelectric Generating Units, the resource-specific adjustment for performance in the ELCC methodology is based on all Forced Outages, excluding Forced Outages reported in a nature of work category relating to Generation Outages induced by transmission Outages, as further specified in the Business Practice Manual. For Run-of-River Resources, the resource-specific adjustment for performance in the ELCC methodology is based on capacity factors during the at-risk hours determined pursuant to Section 40.8.2.2.

#### 40.8.3.5 Non-Generator Resources

Non-Generator Resources must be either Participating Generators or System Units to qualify as Resource Adequacy Capacity. The CAISO calculates Qualifying Capacity of Non-Generator Resources using the ELCC methodology described in Section 40.8.2.1. For Non-Generator Resources, the resource-specific adjustment for performance in the ELCC methodology is based on all Forced Outages, excluding Forced Outages reported in a nature of work category relating to Generation Outages induced by transmission Outages, as further specified in the Business Practice Manual.

#### 40.8.3.6 Proxy Demand Resources

A Proxy Demand Resource must have the ability to (i) be dispatched for at least twenty-four hours per month, (ii) be dispatched on at least three consecutive days, and (iii) respond for at least four hours per dispatch in order to qualify as Resource Adequacy Capacity. The CAISO calculates the Qualifying Capacity of Proxy Demand Resources using the performance to Dispatch methodology described in Section 40.8.2.4.

#### 40.8.3.7 Participating Loads

The CAISO calculates the Qualifying Capacity of Participating Loads using the reduction in demand per

Dispatch methodology described in Section 40.8.2.5. Loads of Participating Loads must be available at least 48 hours, and if the Loads can only be dispatched for a maximum of two hours per event, then only 0.89 percent of a Scheduling Coordinator's portfolio may be made up of such Loads.

#### 40.8.3.8 Unit-Specific Contracts

Unit-specific contracts with Participating Generators or System Units will qualify as Resource Adequacy Capacity subject to the verification that the total MW quantity of all contracts from a specific unit do not exceed the total Net Qualifying Capacity (MW) consistent with the Net Qualifying Capacity determination for that unit.

#### 40.8.3.9 Qualifying Facilities

Qualifying Facilities must be subject to an effective Participating Generator Agreement or Net Scheduled Participating Generator Agreement or must be System Units, unless they have an Existing QF Contract. Except for hydro, wind, and solar Qualifying Facilities addressed pursuant to Sections 40.8.3.3 and 40.8.3.4, the Qualifying Capacity of Qualifying Facilities under Existing QF Contracts, will be based on historic monthly Generation output during the hours of noon to 6:00 p.m. (net of Self-provided Load) during a three-year rolling average.

#### 40.8.3.10 System Resources and Pseudo-Ties

##### 40.8.3.10.1 Dynamic System Resources and Pseudo-Ties

Dynamic System Resources and Pseudo-Ties of Generating Units to the CAISO Balancing Authority Area shall be treated similar to resources within the CAISO Balancing Authority Area, except with respect to the deliverability screen under Section 40.4.6.1 and with respect to the limitation on the Qualifying Capacity of wind and solar resources set forth in Section 40.8.3.3. However, eligibility as a Resource Adequacy Resource is contingent upon a showing by the Scheduling Coordinator that the Dynamic System Resource or Pseudo-Tie of a Generating Unit to the CAISO Balancing Authority Area has secured transmission through any intervening Balancing Authority Areas for the Operating Hours that cannot be curtailed for economic reasons or bumped by higher priority transmission and that the Load Serving Entity for which the Scheduling Coordinator is submitting Demand Bids has an allocation of import capacity at the import Scheduling Point under Section 40.4.6.2 that is not less than the Resource Adequacy Capacity provided by the Dynamic System Resource or Pseudo-Tie of a Generating Unit to the

CAISO Balancing Authority Area.

#### 40.8.3.10.2 Non-Dynamic System Resources

For Non-Dynamic System Resources, the Scheduling Coordinator must demonstrate that the Load Serving Entity for which the Scheduling Coordinator is scheduling Demand has an allocation of import capacity at the import Scheduling Point under Section 40.4.6.2 that is not less than the Resource Adequacy Capacity from the Non-Dynamic System Resource. The Scheduling Coordinator must also demonstrate that the Non-Dynamic System Resource is covered by Operating Reserves, unless unit contingent, in the sending Balancing Authority Area. Eligibility as Resource Adequacy Capacity is contingent upon a showing by the Scheduling Coordinator of the System Resource that it has secured transmission through any intervening Balancing Authority Areas for the Operating Hours that cannot be curtailed for economic reasons or bumped by higher priority transmission. With respect to Non-Dynamic System Resources, any inter-temporal constraints, such as multi-hour run blocks, must be explicitly identified in the monthly Resource Adequacy Plan, and no constraints may be imposed beyond those explicitly stated in the plan.

#### 40.8.3.11 Reliability Demand Response Resources

The Qualifying Capacity of a Reliability Demand Response Resource, for each month, will be based on the resource's average monthly historic demand reduction performance during that same month during the Availability Assessment Hours, as described in Section 40.9.3, using a three-year rolling average. For a Reliability Demand Response Resource with fewer than three years of performance history, for all months for which there is no historic data, the CAISO will use a monthly megawatt value as certified and reported to the CAISO by the Demand Response Provider; otherwise, where available, the CAISO will use the average of historic demand reduction performance data available, by month, for a Reliability Demand Response Resource.

#### 40.8.3.12 Distributed Generation Facilities

(a) Distributed Generation Facilities that meet the applicable requirements in Section 4.6 qualify as Resource Adequacy Capacity.

(b) The CAISO will determine the Net Qualifying Capacity of each Distributed Generation Facility for each Resource Adequacy Compliance Year consistent with similar resource

classifications connected to the transmission system, as provided in Section 40.4.6.1.

(c) The Scheduling Coordinator for individual Distributed Generation Facilities, with the same resource type and PMax values less than 0.5 MW, that seek to operate as a combined Distributed Generation Facility, must submit to the CAISO a request that the initial Net Qualifying Capacity be determined and approved as a combined Distributed Generation Facility.

**40.8.3.13 Facilities under Construction**

The Qualifying Capacity for facilities under construction will be determined based on the type of resource as described elsewhere in this Section 40.8. In addition, the facility must have been in commercial operation for no less than one month to be eligible to be included as a Resource Adequacy Resource in a Scheduling Coordinator's monthly Resource Adequacy Plan.

**40.8.3.14 Jointly-Owned Facilities**

A jointly-owned facility must be either a Participating Generator or a System Unit. The Qualifying Capacity for the entire facility will be determined based on the type of resource as described elsewhere in this Section 40.8. In addition, the Scheduling Coordinator must provide the CAISO with a demonstration of its entitlement to the output of the jointly-owned facility's Qualified Capacity and an explanation of how that entitlement may change if the facility's output is restricted.

**40.8.3.15 Hybrid Resources**

The default Qualifying Capacity of a Hybrid Resource is the sum of the individual Qualifying Capacity values for each component, not to exceed the facility's Interconnection Service Capacity.

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**Section 43A**

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**43A.6.3 [Not Used]**

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## Appendix A

**- Reserve Margin**

The percentage of a Load Serving Entity's peak Demand Forecast for which the Scheduling Coordinator for that Load Serving Entity must demonstrate procurement of Resource Adequacy Capacity, in addition to procurement of Resource Adequacy Capacity in the amount of that peak Demand Forecast.

**Attachment B – Redlined Tariff Sheets**

**Tariff Amendment – Resource Adequacy Modeling and Program Design Initiative**

**California Independent System Operator Corporation**

**March 3, 2026**

## Section 40

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### 40.2 Information Requirements for Resource Adequacy Programs

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#### 40.2.2 Non-CPUC Load Serving Entities and CPEs

##### 40.2.2.1 Reserve Margin

(a) The Scheduling Coordinator for a Non-CPUC Load Serving Entity must provide the CAISO with the Reserve Margin(s) adopted by the appropriate Local Regulatory Authority or federal agency for use in the annual Resource Adequacy Plan and monthly Resource Adequacy Plans listed as a percentage of the Demand Forecasts developed in accordance with Section 40.2.2.3.

(b) For the Scheduling Coordinator for a Non-CPUC Load Serving Entity for which the appropriate Local Regulatory Authority or federal agency has not established a Reserve Margin(s) or a CPUC Load Serving Entity subject to Section 40.2.1(b), the Reserve Margin for each month is the additional quantity of Qualifying Capacity above the peak Demand Forecast in the CAISO BAA for that month needed to meet a 1-day-in-ten-years loss of load expectation standard as a percent of the peak Demand Forecast in the CAISO BAA for that month. As further specified in the BPM, the CAISO determines that quantity of additional Qualifying Capacity needed based on an annual probabilistic reliability analysis conducted consistent with accepted industry practices that models system conditions and considers potential variability in relevant underlying factors, such as production from wind and solar units, Forced Outages, and forecasted consumption patterns from Load. The CAISO provides stakeholders an opportunity to provide feedback on the proposed results of the analysis and key inputs to the analysis before

finalizing the results and also provides transparency regarding the final results.~~shall be no less than fifteen percent (15%) of the LSE's peak hourly Demand for the applicable month, as determined by the Demand Forecasts developed in accordance with Section 40.2.2.3.~~

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**40.4.7 Submission of Supply Plans and Reports on Capacity Status**

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**40.4.7.4 Reports on Capacity Status**

Scheduling Coordinators of resources with NQC or EFC that are within the CAISO Balancing Authority Area and are not shown as Resource Adequacy Capacity or Flexible Resource Adequacy Capacity for their full NQC or EFC values, respectively, must provide a report to the CAISO on why the resource was not shown for its full capacity.

The report must be provided using the categories and processes defined in the BPM. The report must be made in both the year-ahead and month-ahead timeframes by the submission deadlines established for submission of the annual and monthly Supply Plans, respectively. The information provided in the report must represent a good-faith submission of the Scheduling Coordinator's intentions at the time it submits the report. Scheduling Coordinators are not required to update the report based on changes in the resource status following submission.

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**40.8 CAISO Default Qualifying Capacity Criteria**

**40.8.1 Applicability of Default Criteria**

The criteria in this Section 40.8 ~~shall~~ apply ~~only: (i) where~~ when the CPUC or Local Regulatory Authority

has not established and provided to the CAISO criteria to determine the types of resources that may be eligible to provide Qualifying Capacity and for calculating Qualifying Capacity for such eligible resource types. ~~and (ii) until the CAISO has been notified in writing by the CPUC of its intent to overturn, reject or fundamentally modify the capacity-based framework in CPUC Decisions 04-01-050 (Jan. 10, 2004), 04-10-035 (Oct. 28, 2004), and 05-10-042 (Oct. 31, 2005). The types of resources specified in this Section 40.8.1 will be eligible to provide Qualifying Capacity to the extent they meet the criteria for each type of resource set forth in this Section 40.8.1.~~

**40.8.2 General Qualifying Capacity Methodologies**

As further specified in Section 40.8.3, the CAISO applies the following methodologies to various classes of resources. Where a methodology calls for 36 months' of historical data for an individual resource but there is no resource-specific data for part of that period, then the CAISO substitutes the missing periods of data with class average data.

**40.8.2.1 Effective Load Carrying Capability**

The effective load carrying capability (ELCC) methodology calculates a resource's monthly Qualifying Capacity based on a percentage discount from its PMax utilizing a sequential four-step conceptual process.

Step one identifies the quantity of capacity provided to the CAISO Balancing Authority Area from each resource technology class in a probabilistic reliability analysis conducted consistent with accepted industry practices, as further specified in the BPM, that maintains a 1-day-in-ten-years loss of load expectation standard.

Step two determines a preliminary class-based discount based on the quantity of perfect capacity that would be needed to replace the capacity provided by that class of resource in the probabilistic reliability analysis as a percent of the capacity provided by that class of resource technology in the probabilistic reliability analysis. For purposes of this Section 40.8.2.1, perfect capacity is capacity from a hypothetical resource that is fully available at all times.

Step three calculates a final class-based discount. The final class-based discount scales the preliminary class-based discount based on the quantity of perfect capacity that would be needed to replace the capacity provided by all resource classes subject to ELCC in the probabilistic reliability analysis as a

percent of the capacity provided by all resource classes subject to ELCC in the probabilistic reliability analysis.

Step four calculates a resource-specific adjustment to the final class-based discount. The resource-specific adjustment is based on a resource's performance over the 36-month default Qualifying Capacity evaluation period defined in the BPM compared to the performance in that period of all resources of that resource type, as further specified in the BPM.

#### 40.8.2.2 Unforced Capacity

The unforced capacity (UCAP) methodology calculates a resource's monthly Qualifying Capacity based on a percentage discount from its PMax. The CAISO creates a separate resource-specific UCAP discount for seasons, with those seasons defined in the BPM.

For each season, the CAISO calculates a UCAP discount based on the quantity of capacity from the resource that was not on Forced Outage as a percent of the quantity of capacity that would have been available from the unit if it never had any Forced Outages. The CAISO calculates this percentage based only on Forced Outages during one of the at-risk hours on at-risk days for that season, as further specified in the BPM. The at-risk hours are the individual hours of the day during that season where reliability risks are greatest in an individual hour as determined based on projected system conditions during the period that would be covered by the resulting Qualifying Capacity value. The at-risk days are the days during that season where reliability risks were greatest across the day based on historic system conditions with the tightest supply/demand balance. The UCAP calculation does not consider a Forced Outage reported in a nature of work category relating to Generation Outages induced by transmission Outages, as further specified in the Business Practice Manual.

The UCAP discount from PMax of a resource for a year is the average of the seasonal UCAP discounts from the three prior years, weighted in the following proportions: 45 percent for seasonal UCAP from one year prior; 35 percent for seasonal UCAP from two years prior; and 20 percent for three years prior.

#### 40.8.2.3 Average Generation

The average generation methodology calculates a resource's monthly Qualifying Capacity based on historic hourly performance in that month of the year over the 36-month default Qualifying Capacity evaluation period defined in the BPM.

**40.8.2.4 Performance to Dispatch**

The performance to Dispatch methodology calculates a resource's Qualifying Capacity, which is static for each month of a year, based on the average energy output during each hour a resource had a Dispatch over the 36-month default Qualifying Capacity evaluation period defined in the BPM as a percentage of the average hourly Dispatch value over those 36 months. For purposes of this calculation, a resource's energy output in an hour cannot exceed its hourly Dispatch value. The CAISO calculates a resource's Qualifying Capacity under this methodology based on the aggregated performance of all resources under the same SCID.

**40.8.2.5 Reduction in Demand Per Dispatch**

The reduction in demand per Dispatch methodology calculates a resource's Qualifying Capacity, which is static for each month of a year, based on the resource's average reduction in demand on a per-Dispatch basis over the 36-month default Qualifying Capacity evaluation period defined in the BPM.

~~**40.8.1.1 [Not Used]**~~

~~**40.8.1.2 Nuclear and Thermal**~~

~~Nuclear and thermal Generating Units, other than Qualifying Facilities with Existing QF Contracts addressed in Section 40.8.1.8 below, must be a Participating Generator or a System Unit. The Qualifying Capacity of nuclear and thermal units, other than Qualifying Facilities addressed in Section 40.8.1.8, will be based on net dependable capacity defined by NERC Generating Availability Data System information.~~

~~**40.8.1.3 Hydro**~~

~~Hydroelectric Generating Units, other than Qualifying Facilities with Existing QF Contracts, must be either Participating Generators or System Units. The Qualifying Capacity of a pond or Pumped-Storage Hydro Unit, other than a QF, will be determined based on net dependable capacity defined by NERC GADS minus variable head derate based on an average dry year reservoir level. The Qualifying Capacity of a pond or Pumped-Storage Hydro Unit that is a QF will be determined based on historic performance during the hours of noon to 6:00 p.m., using a three-year rolling average.~~

~~The Qualifying Capacity of all run-of-river hydro units, including Qualifying Facilities, will be based on net dependable capacity defined by NERC GADS minus an average dry year conveyance flow, stream flow, or canal head derate. As used in this section, average dry year reflects a one-in-five year dry hydro~~

scenario (for example, using the 4th driest year from the last 20 years on record).

**40.8.1.4 Unit-Specific Contracts**

Unit-specific contracts with Participating Generators or System Units will qualify as Resource Adequacy Capacity subject to the verification that the total MW quantity of all contracts from a specific unit do not exceed the total Net Qualifying Capacity (MW) consistent with the Net Qualifying Capacity determination for that unit.

**40.8.1.5 Contracts with Liquidated Damage Provisions**

Firm Energy contracts with liquidated damages provisions, as generally reflected in Service Schedule C of the Western Systems Power Pool Agreement or the Firm LD product of the Edison Electric Institute pro forma agreement, or any other similar firm Energy contract that does not require the seller to source the Energy from a particular unit, and specifies a delivery point internal to the CAISO Balancing Authority Area entered into before October 27, 2005 shall be eligible to count as Qualifying Capacity until the end of 2008. A Scheduling Coordinator, however, cannot have more than twenty-five percent (25%) of its portfolio of Qualifying Capacity met by contracts with liquidated damage provisions for 2008.

**40.8.1.6 Wind and Solar**

As used in this Section, wind units are those wind Generating Units without backup sources of Generation and solar units are those solar Generating Units without backup sources of Generation. Wind and solar units, other than Qualifying Facilities with Existing QF Contracts, must be Participating Intermittent Resources or subject to availability provisions of Section 40.6.4.

The Qualifying Capacity of all wind or solar units, including Qualifying Facilities, for each month will be based on their monthly historic performance during that same month during the hours of noon to 6:00 p.m., using a three-year rolling average. For wind or solar units with less than three years operating history, all months for which there is no historic performance data will utilize the monthly average production factor of all units (wind or solar, as applicable) within the TAC Area, or other production data from another area determined by the CAISO to be appropriate if the unit is not within a TAC Area, in which the Generating Unit is located.

**40.8.1.7 Geothermal**

Geothermal Generating Units, other than Qualifying Facilities with Existing QF Contracts addressed in

~~Section 40.8.1.8, must be Participating Generators or System Units. The Qualifying Capacity of geothermal units, other than Qualifying Facilities addressed in Section 40.8.1.8, will be based on NERC GADS net dependable capacity minus a derate for steam field degradation.~~

**~~40.8.1.8 Treatment of Qualifying Capacity for Qualifying Facilities~~**

~~Qualifying Facilities must be subject to an effective Participating Generator Agreement or Net Scheduled Participating Generator Agreement or must be System Units, unless they have an Existing QF Contract. Except for hydro, wind, and solar Qualifying Facilities addressed pursuant to Sections 40.8.1.3 and 40.8.1.6, the Qualifying Capacity of Qualifying Facilities under Existing QF Contracts, will be based on historic monthly Generation output during the hours of noon to 6:00 p.m. (net of Self-provided Load) during a three-year rolling average.~~

**~~40.8.1.9 Participating Loads~~**

~~The Qualifying Capacity of Participating Loads shall be the average reduction in Demand over a three-year period on a per Dispatch basis or, if the Load does not have three years of performance history, based on comparable evaluation data using similar programs. Loads of Participating Loads must be available at least 48 hours, and if the Loads can only be dispatched for a maximum of two hours per event, then only 0.89 percent of a Scheduling Coordinator's portfolio may be made up of such Loads.~~

**~~40.8.1.10 Jointly-Owned Facilities~~**

~~A jointly-owned facility must be either a Participating Generator or a System Unit. The Qualifying Capacity for the entire facility will be determined based on the type of resource as described elsewhere in this Section 40.8.1. In addition, the Scheduling Coordinator must provide the CAISO with a demonstration of its entitlement to the output of the jointly-owned facility's Qualified Capacity and an explanation of how that entitlement may change if the facility's output is restricted.~~

**~~40.8.1.11 Facilities under Construction~~**

~~The Qualifying Capacity for facilities under construction will be determined based on the type of resource as described elsewhere in this Section 40.8. In addition, the facility must have been in commercial operation for no less than one month to be eligible to be included as a Resource Adequacy Resource in a Scheduling Coordinator's monthly Resource Adequacy Plan.~~

~~**40.8.1.12 System Resources and Pseudo-Ties**~~

~~**40.8.1.12.1 Dynamic System Resources and Pseudo-Ties**~~

~~Dynamic System Resources and Pseudo-Ties of Generating Units to the CAISO Balancing Authority Area shall be treated similar to resources within the CAISO Balancing Authority Area, except with respect to the deliverability screen under Section 40.4.6.1 and with respect to the limitation on the Qualifying Capacity of wind and solar resources set forth in Section 40.8.1.6. However, eligibility as a Resource Adequacy Resource is contingent upon a showing by the Scheduling Coordinator that the Dynamic System Resource or Pseudo-Tie of a Generating Unit to the CAISO Balancing Authority Area has secured transmission through any intervening Balancing Authority Areas for the Operating Hours that cannot be curtailed for economic reasons or bumped by higher priority transmission and that the Load Serving Entity for which the Scheduling Coordinator is submitting Demand Bids has an allocation of import capacity at the import Scheduling Point under Section 40.4.6.2 that is not less than the Resource Adequacy Capacity provided by the Dynamic System Resource or Pseudo-Tie of a Generating Unit to the CAISO Balancing Authority Area.~~

~~**40.8.1.12.2 Non-Dynamic System Resources**~~

~~For Non-Dynamic System Resources, the Scheduling Coordinator must demonstrate that the Load Serving Entity for which the Scheduling Coordinator is scheduling Demand has an allocation of import capacity at the import Scheduling Point under Section 40.4.6.2 that is not less than the Resource Adequacy Capacity from the Non-Dynamic System Resource. The Scheduling Coordinator must also demonstrate that the Non-Dynamic System Resource is covered by Operating Reserves, unless unit contingent, in the sending Balancing Authority Area. Eligibility as Resource Adequacy Capacity is contingent upon a showing by the Scheduling Coordinator of the System Resource that it has secured transmission through any intervening Balancing Authority Areas for the Operating Hours that cannot be curtailed for economic reasons or bumped by higher priority transmission. With respect to Non-Dynamic System Resources, any inter-temporal constraints, such as multi-hour run blocks, must be explicitly identified in the monthly Resource Adequacy Plan, and no constraints may be imposed beyond those explicitly stated in the plan.~~

**40.8.1.13 Proxy Demand Resources**

A Proxy Demand Resource must have the ability to (i) be dispatched for at least twenty-four hours per month, (ii) be dispatched on at least three consecutive days, and (iii) respond for at least four hours per dispatch in order to qualify as Resource Adequacy Capacity. The Qualifying Capacity of a Proxy Demand Resource, for each month, will be based on the resource's average monthly historic demand reduction performance during that same month during the Availability Assessment Hours, as described in Section 40.9.3, using a three-year rolling average. For a Proxy Demand Resource with fewer than three years of performance history, for all months for which there is no historic data, the CAISO will utilize a monthly megawatt value as certified and reported to the CAISO by the Demand Response Provider; otherwise, where available, the CAISO will use the average of historic demand reduction performance data available, by month, for a Proxy Demand Resource. Where a Proxy Demand Resource uses the load-shift methodology to calculate its Demand Response Energy Measurements, its Qualifying Capacity will exclude demand reduction performance from the consumption Resource ID.

**40.8.1.14 Reliability Demand Response Resources**

The Net Qualifying Capacity of a Reliability Demand Response Resource, for each month, will be based on the resource's average monthly historic demand reduction performance during that same month during the Availability Assessment Hours, as described in Section 40.9.3, using a three-year rolling average. For a Reliability Demand Response Resource with fewer than three years of performance history, for all months for which there is no historic data, the CAISO will use a monthly megawatt value as certified and reported to the CAISO by the Demand Response Provider; otherwise, where available, the CAISO will use the average of historic demand reduction performance data available, by month, for a Reliability Demand Response Resource.

**40.8.1.15 Distributed Generation Facilities**

(a) Distributed Generation Facilities that meet the applicable requirements in Section 4.6 qualify as Resource Adequacy Capacity.

(b) The CAISO will determine the Net Qualifying Capacity of each Distributed Generation Facility for each Resource Adequacy Compliance Year consistent with similar resource

~~classifications connected to the transmission system, as provided in Section 40.4.6.1.~~

~~(c) The Scheduling Coordinator for individual Distributed Generation Facilities, with the same resource type and PMax values less than 0.5 MW, that seek to operate as a combined Distributed Generation Facility, must submit to the CAISO a request that the initial Net Qualifying Capacity be determined and approved as a combined Distributed Generation Facility.~~

~~**40.8.1.16 Non-Generator Resources**~~

~~(a) Non-Generator Resources must be either Participating Generators or System Units to qualify as Resource Adequacy Capacity.~~

~~(b) The CAISO will determine the Net Qualifying Capacity of each Non-Generator Resource based on the CAISO testing of the resource's sustained output over a four-hour period; however, the Net Qualifying Capacity shall not exceed the resource's maximum instantaneous discharge capability.~~

**40.8.3 Default Criteria for Specific Resource Classes**

**40.8.3.1 Nuclear and Dispatchable Thermal**

Nuclear and dispatchable thermal Generating Units, other than Qualifying Facilities with Existing QF Contracts addressed in Section 40.8.3.11 below, must be a Participating Generator or a System Unit. The CAISO calculates the Qualifying Capacity of nuclear and dispatchable thermal units, other than Qualifying Facilities addressed in Section 40.8.3.11, using the UCAP methodology described in Section 40.8.2.2.

**40.8.3.2 Non-Dispatchable Thermal**

Non-dispatchable thermal Generating Units, other than Qualifying Facilities with Existing QF Contracts addressed in Section 40.8.3.11 below, must be a Participating Generator or a System Unit. The CAISO calculates Qualifying Capacity of non-dispatchable thermal units, other than Qualifying Facilities addressed in Section 40.8.3.11, using the average generation methodology described in Section 40.8.2.3.

**40.8.3.3 Wind and Solar**

As used in this Section, wind units are those wind Generating Units without backup sources of Generation and solar units are those solar Generating Units without backup sources of Generation. Wind and solar

units, other than Qualifying Facilities with Existing QF Contracts, must be Participating Intermittent Resources or subject to availability provisions of Section 40.6.4. The CAISO calculates the Qualifying Capacity of all wind or solar units, including Qualifying Facilities, using the ELCC methodology described in Section 40.8.2.1. For wind and solar units, the resource-specific adjustment for performance in the ELCC methodology is based on capacity factors during the at-risk hours determined pursuant to Section 40.8.2.2.

**40.8.3.4 Hydroelectric – Dispatchable, Run-of-River, and Pumped Storage**

Hydroelectric Generating Units, other than Qualifying Facilities with Existing QF Contracts, must be either Participating Generators or System Units. The CAISO calculates the Qualifying Capacity of Hydroelectric Generating Units irrespective of status as a Qualifying Facility status. The CAISO calculates the Qualifying Capacity of Pumped-Storage Hydro Units using the UCAP methodology described in Section 40.8.2.2. The CAISO calculates the Qualifying Capacity of all other types of Hydroelectric Generating Units using the ELCC methodology described in Section 40.8.2.1. For dispatchable Hydroelectric Generating Units, the resource-specific adjustment for performance in the ELCC methodology is based on all Forced Outages, excluding Forced Outages reported in a nature of work category relating to Generation Outages induced by transmission Outages, as further specified in the Business Practice Manual. For Run-of-River Resources, the resource-specific adjustment for performance in the ELCC methodology is based on capacity factors during the at-risk hours determined pursuant to Section 40.8.2.2.

**40.8.3.5 Non-Generator Resources**

Non-Generator Resources must be either Participating Generators or System Units to qualify as Resource Adequacy Capacity. The CAISO calculates Qualifying Capacity of Non-Generator Resources using the ELCC methodology described in Section 40.8.2.1. For Non-Generator Resources, the resource-specific adjustment for performance in the ELCC methodology is based on all Forced Outages, excluding Forced Outages reported in a nature of work category relating to Generation Outages induced by transmission Outages, as further specified in the Business Practice Manual.

**40.8.3.6 Proxy Demand Resources**

A Proxy Demand Resource must have the ability to (i) be dispatched for at least twenty-four hours per

month, (ii) be dispatched on at least three consecutive days, and (iii) respond for at least four hours per dispatch in order to qualify as Resource Adequacy Capacity. The CAISO calculates the Qualifying Capacity of Proxy Demand Resources using the performance to Dispatch methodology described in Section 40.8.2.4.

**40.8.3.7 Participating Loads**

The CAISO calculates the Qualifying Capacity of Participating Loads using the reduction in demand per Dispatch methodology described in Section 40.8.2.5. Loads of Participating Loads must be available at least 48 hours, and if the Loads can only be dispatched for a maximum of two hours per event, then only 0.89 percent of a Scheduling Coordinator's portfolio may be made up of such Loads.

**40.8.3.8 Unit-Specific Contracts**

Unit-specific contracts with Participating Generators or System Units will qualify as Resource Adequacy Capacity subject to the verification that the total MW quantity of all contracts from a specific unit do not exceed the total Net Qualifying Capacity (MW) consistent with the Net Qualifying Capacity determination for that unit.

**40.8.3.9 Qualifying Facilities**

Qualifying Facilities must be subject to an effective Participating Generator Agreement or Net Scheduled Participating Generator Agreement or must be System Units, unless they have an Existing QF Contract. Except for hydro, wind, and solar Qualifying Facilities addressed pursuant to Sections 40.8.3.3 and 40.8.3.4, the Qualifying Capacity of Qualifying Facilities under Existing QF Contracts, will be based on historic monthly Generation output during the hours of noon to 6:00 p.m. (net of Self-provided Load) during a three-year rolling average.

**40.8.3.10 System Resources and Pseudo-Ties**

**40.8.3.10.1 Dynamic System Resources and Pseudo-Ties**

Dynamic System Resources and Pseudo-Ties of Generating Units to the CAISO Balancing Authority Area shall be treated similar to resources within the CAISO Balancing Authority Area, except with respect to the deliverability screen under Section 40.4.6.1 and with respect to the limitation on the Qualifying Capacity of wind and solar resources set forth in Section 40.8.3.3. However, eligibility as a Resource Adequacy Resource is contingent upon a showing by the Scheduling Coordinator that the Dynamic

System Resource or Pseudo-Tie of a Generating Unit to the CAISO Balancing Authority Area has secured transmission through any intervening Balancing Authority Areas for the Operating Hours that cannot be curtailed for economic reasons or bumped by higher priority transmission and that the Load Serving Entity for which the Scheduling Coordinator is submitting Demand Bids has an allocation of import capacity at the import Scheduling Point under Section 40.4.6.2 that is not less than the Resource Adequacy Capacity provided by the Dynamic System Resource or Pseudo-Tie of a Generating Unit to the CAISO Balancing Authority Area.

**40.8.3.10.2 Non-Dynamic System Resources**

For Non-Dynamic System Resources, the Scheduling Coordinator must demonstrate that the Load Serving Entity for which the Scheduling Coordinator is scheduling Demand has an allocation of import capacity at the import Scheduling Point under Section 40.4.6.2 that is not less than the Resource Adequacy Capacity from the Non-Dynamic System Resource. The Scheduling Coordinator must also demonstrate that the Non-Dynamic System Resource is covered by Operating Reserves, unless unit contingent, in the sending Balancing Authority Area. Eligibility as Resource Adequacy Capacity is contingent upon a showing by the Scheduling Coordinator of the System Resource that it has secured transmission through any intervening Balancing Authority Areas for the Operating Hours that cannot be curtailed for economic reasons or bumped by higher priority transmission. With respect to Non-Dynamic System Resources, any inter-temporal constraints, such as multi-hour run blocks, must be explicitly identified in the monthly Resource Adequacy Plan, and no constraints may be imposed beyond those explicitly stated in the plan.

**40.8.3.11 Reliability Demand Response Resources**

The Qualifying Capacity of a Reliability Demand Response Resource, for each month, will be based on the resource's average monthly historic demand reduction performance during that same month during the Availability Assessment Hours, as described in Section 40.9.3, using a three-year rolling average. For a Reliability Demand Response Resource with fewer than three years of performance history, for all months for which there is no historic data, the CAISO will use a monthly megawatt value as certified and reported to the CAISO by the Demand Response Provider; otherwise, where available, the CAISO will use the average of historic demand reduction performance data available, by month, for a Reliability

Demand Response Resource.

**40.8.3.12 Distributed Generation Facilities**

(a) Distributed Generation Facilities that meet the applicable requirements in Section 4.6 qualify as Resource Adequacy Capacity.

(b) The CAISO will determine the Net Qualifying Capacity of each Distributed Generation Facility for each Resource Adequacy Compliance Year consistent with similar resource classifications connected to the transmission system, as provided in Section 40.4.6.1.

(c) The Scheduling Coordinator for individual Distributed Generation Facilities, with the same resource type and PMax values less than 0.5 MW, that seek to operate as a combined Distributed Generation Facility, must submit to the CAISO a request that the initial Net Qualifying Capacity be determined and approved as a combined Distributed Generation Facility.

**40.8.3.13 Facilities under Construction**

The Qualifying Capacity for facilities under construction will be determined based on the type of resource as described elsewhere in this Section 40.8. In addition, the facility must have been in commercial operation for no less than one month to be eligible to be included as a Resource Adequacy Resource in a Scheduling Coordinator's monthly Resource Adequacy Plan.

**40.8.3.14 Jointly-Owned Facilities**

A jointly-owned facility must be either a Participating Generator or a System Unit. The Qualifying Capacity for the entire facility will be determined based on the type of resource as described elsewhere in this Section 40.8. In addition, the Scheduling Coordinator must provide the CAISO with a demonstration of its entitlement to the output of the jointly-owned facility's Qualified Capacity and an explanation of how that entitlement may change if the facility's output is restricted.

**40.8.3.15 Hybrid Resources**

The default Qualifying Capacity of a Hybrid Resource is the sum of the individual Qualifying Capacity values for each component, not to exceed the facility's Interconnection Service Capacity.

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## Section 43A

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**43A.6.3 [Not Used]~~Non-Market and Repeated Market Commitment of Non-RA Capacity~~**

~~Within ten (10) calendar days after the end of each month, the CAISO shall post a report to the CAISO Website that identifies for the prior month:~~

~~(1) Any non-market commitments of non-Resource Adequacy Capacity (irrespective of whether the capacity comes from a resource that has no Resource Adequacy obligation or has a pre-existing partial Resource Adequacy commitment); and~~

~~(2) All market commitments of non-Resource Adequacy Capacity.~~

~~The CAISO will provide a Market Notice of the availability of this report. The report will not include commitments of RMR Generation capacity, Resource Adequacy Capacity or designated CPM Capacity. The report shall include the following information:~~

~~(a) the name of the resource;~~

~~(b) the IOU Service Area and Local Capacity Area (if applicable);~~

~~(c) the maximum capacity committed in response to the event (MW);~~

~~(d) how capacity was procured (for example, by RUC or Exceptional Dispatch);~~

~~(e) the reason capacity was committed; and~~

~~(f) information as to whether or not all Resource Adequacy Resources and previously designated CPM Capacity were used first and, if not, why they were not.~~

* * * * *

## Appendix A

**- Reserve Margin**

~~The amount of Resource Adequacy Capacity that a Scheduling Coordinator is required to maintain in accordance with Section 40.~~The percentage of a Load Serving Entity's peak Demand Forecast for which

the Scheduling Coordinator for that Load Serving Entity must demonstrate procurement of Resource Adequacy Capacity, in addition to procurement of Resource Adequacy Capacity in the amount of that peak Demand Forecast.

**Attachment C – Track 1 Final Proposal**

**Tariff Amendment – Resource Adequacy Modeling and Program Design Initiative**

**California Independent System Operator Corporation**

**March 3, 2026**

# Resource Adequacy Modeling and Program Design (RAMPD)

## Modeling and Default Rules (Track 1)
## Final Proposal

September 26, 2025

# Contents

# 1. Executive Summary

This final proposal seeks to update CAISO's default methodologies for qualifying capacity (QC) and planning reserve margin (PRM) by incorporating the capabilities and characteristics of the evolving resource fleet. These default methodologies may be used by Local Regulatory Authorities (LRAs) that have not developed their own approaches. While the proposed framework is available for voluntary adoption by any LRA within the CAISO balancing authority area, it does not alter the existing authority of LRAs to establish their own counting rules and planning reserve margins. The framework was developed through a transparent stakeholder process, ensuring it reflects broad and inclusive input.

CAISO's Resource Adequacy Modeling and Program Design (RAMPD) stakeholder working group scoping and prioritization meetings identified questions about whether CAISO's default RA rules meet the industry-standard reliability benchmark of a 0.1 loss of load expectation (LOLE), or one loss-of-load event every ten years. As a metric, LOLE allows capacity portfolios to be evaluated using a consistent and widely accepted probabilistic standard informed by transparent inputs and assumptions. Based on this feedback, the proposal removes the longstanding default planning reserve margin of 15 percent and replaces it with a margin that CAISO will periodically update based on probabilistic reliability studies to ensure the resulting portfolio would meet a 0.1 LOLE. These studies are modeled after CAISO's Summer Loads and Resources Assessment (Summer Assessment), a study that CAISO has produced each spring to give a near-term reliability snapshot. The studies are intended to accurately reflect changing system conditions and resource portfolios.

Similarly, the proposal updates the default methodology for qualifying capacity, which can be used to accredit resources for Load Serving Entities (LSE) showings, by adopting average effective load carrying capability (ELCC) or unforced capacity (UCAP) as the primary accreditation approaches. ELCC incorporates both capacity and energy contributions through probabilistic modeling, measuring energy limited resources' contribution to reliability. For dispatchable resources that aren't subject to short term energy limitations, UCAP accurately captures the resource availability by using historic forced outage rates during tight system conditions as a proxy for capacity value.

Overall, this proposal represents a strategic evolution in CAISO's default resource adequacy framework that better reflects the capabilities and characteristics of the current and evolving resource fleet.

## 2. Background

Section 40 of the CAISO tariff[1] establishes requirements for LSE subject to the jurisdiction of the California Public Utilities Commission or other LRAs. These requirements specify the amount of capacity LSEs must procure, expressed as a reserve margin percentage above each LSE's forecasted load. The requirements also define how much capacity an RA resource counts toward meeting that forecasted demand plus reserve margin. This contribution is determined by qualifying capacity criteria, which specify methods of RA accreditation.

**The LRA-determined reserve margins and QC values, respectively, are inputs into CAISO's RA processes, which include validating LSE RA plan submissions and determining resources' NQC values. The CAISO tariff also specifies a default PRM of 15% and default QC criteria, which apply if LRAs do not specify QC values or reserve margins for their jurisdictional LSEs (see Table 1). Although CAISO has never implemented these default rules, it remains essential to periodically review and update them to reflect the changing resource mix, evolving grid needs, and the objectives of the Resource Adequacy (RA) program. Some LRAs have indicated that they rely on the CAISO default rules when developing their own requirements. These rules have not been revisited or significantly updated since they were established approximately 20 years ago. The RAMPD working groups hosted by CAISO in 2023-2024 published problem statements indicating the need to update these rules.**

Stakeholders and CAISO have reviewed the current purpose of the default rules: LRA representatives continue to highlight their authority and responsibility to determine their own RA qualifying capacity rules and PRM. The proposed default RA rules in this initiative will remain binding only if LRAs do not provide QC criteria (i.e., accreditation methodologies) or a reserve margin.

[1] https://www.caiso.com/documents/section-40-resource-adequacy-demonstration-for-scheduling-coordinators-in-the-caiso-balancing-authority-area-as-of-jun-3-2025.pdf

**Table 1: Overview of the Current CAISO Default QC Methodologies**

| Resource type | Current CAISO Default Qualifying Capacity Methodology |
|---|---|
| Wind & Solar | Based on monthly historic performance over a three-year rolling average from noon to 6pm. These hours were intended to represent gross peak hours, i.e., the peak energy demand in the CAISO BAA. Today, these hours of the day do not correspond with the system's net peak hours |
| Energy Storage | Based on CAISO testing of a resource's sustained output over a four-hour period (and not to exceed that resource's maximum instantaneous discharge capability) |
| Thermal | Based on "net dependable capacity" defined by NERC Generating Availability Data System information (GADS) |
| Dispatchable Hydro | Based on net dependable capacity defined by NERC GADS minus variable head derated based on an average dry year reservoir level |
| Demand Response | Based on a resource's average monthly historic demand reduction performance during that same month during the RAAIM Availability Assessment Hours |
| Participating Load | Average reduction in demand over a three-year period on a per-dispatch basis |

# 3. Stakeholder Feedback, ISO Clarifications and Refinements

Numerous stakeholders provided feedback on the CAISO straw proposal[2] and draft final proposal[3]. Comment topics ranged from discussing the default QC methodologies themselves, providing input on the PRM-setting process, and LRA jurisdictional and coordination concerns. CAISO has provided clarification on several key issues and indicated where the proposal has changed in response to feedback.

*The details of UCAP, the proposed default QC methodology for dispatchable thermal, nuclear, and pumped storage hydro resources, was the subject of numerous stakeholder comments throughout the process. Several stakeholders, including CESA, PG&E, Six Cities, Middle River Power, and Rev Renewables, expressed concern with elements of the initial proposed method for determining times of system need to assess resources' forced outage rates. Stakeholders criticized the method, referred to as the "supply cushion equation," for misrepresenting system need due to the influence of planned outages. They also pointed out a lack of connection between the supply cushion equation and the hours at risk of loss of load produced by CAISO's modeling.*

- CAISO response: to determine hours of system need for UCAP, the supply cushion equation has been replaced with a retrospective determination of "at-risk hours," set for each month of the year, using the LOLE modeling results. Stakeholders expressed support for this change during the September 17 workshop and in written comments received after that workshop.

*Stakeholders also expressed concerns with the selection of which forced outage natures of work were included in the resource-specific forced outage rate for the default UCAP calculation. While the draft final proposal contained a list of natures of work that was based on those used in the Summer Assessment, stakeholders felt this list was not based on any stated principle. CESA indicated that the forced outage rate should not reflect outages used to ensure an accurate dispatch of a resource operating within its design specifications. Rev Renewables and SDG&E recommended excluding the "Technical Limitations not in Market Model" nature of work from the UCAP forced outage rate. In general, the California Energy Storage Association, San Diego Gas & Electric, and other stakeholders continue to debate which kinds of forced outages should be included in the forced outage rate that is a basis for UCAP.*

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[2] https://www.caiso.com/notices/resource-adequacy-modeling-and-program-design-virtual-working-group-track-1-workshop-on-6-11-25

[3] https://www.caiso.com/notices/resource-adequacy-modeling-and-program-design-working-group-tracks-1-2-and-3a-on-8-28-25

- CAISO response: though the straw proposal stated that forced outages that were "outside management control" should be excluded from the UCAP forced outage rate, the final proposal reinforces the connection between a key Track 1 objective established in the November 2024 issue paper. This objective states that the counting rules included in the CAISO tariff should reflect the relative contribution of different resource types – and individual resources – to maintain BAA-wide and local reliability. With this objective in mind, the final proposal includes all forced outage natures of work during the at-risk hours in the UCAP forced outage rate except for transmission induced generator outages.

*On the topic of consistency with the CPUC's RA program, several CPUC-jurisdictional LSEs indicated a desire for alignment between the CPUC's QC methodologies and CAISO's default methodologies. Regarding UCAP, which is in development at the CPUC per the June 2025 CPUC RA decision, stakeholders also supported CAISO and CPUC's designs being coordinated. CalCCA suggested CAISO revisit its default UCAP design after the CPUC finalizes its QC methodology, since the two processes are on different timelines.*

- CAISO response: The details of the default UCAP QC methodology will be revisited as necessary based on future developments at the CPUC. In particular, the nature of work for forced outages that are included in the forced outage rate used to develop a UCAP methodology will be revisited with CAISO stakeholders at a later date. CAISO remains supportive of coordination with the CPUC.

*PG&E, Alliance for Retail Energy Markets, and Middle River Power have raised several issues that they see as interconnected with the Track 1 proposal, namely the ISO's RA availability incentive mechanism and capacity resource must offer obligations.*

- CAISO response: While changes to these provisions are not in the scope of Track 1, they are being considered in the ISO's concurrent Track 2 effort of the Resource Adequacy Modeling & Program Design initiative. Other issues will be scoped into a future Track 3B initiative. CAISO recognizes that the Track 2 RAAIM reforms will likely need to be aligned with the CPUC's UCAP design and counting methodologies ultimately adopted by other LRAs.

*Finally, stakeholders weighed in on an element included in the initial straw proposal related to changing the NQC process to account for ambient derates as a proxy for resource capabilities during peak conditions. Stakeholders were split in their support for the concept. NCPA, DMM, and SDG&E were interested in further developing the concept. Six Cities indicated opposition to moving it forward. Several stakeholders representing LSEs and RA suppliers indicated they did not support the modification of the CAISO's NQC process to address the problem of capturing resource capability.*

- CAISO response: This element of the proposal was removed—it does not exist in the Track 1 final proposal, which does not include any proposed changes to the NQC process. At a high level, CAISO and stakeholders still see merit in ensuring the RAMPD Working Group's relevant problem statement that led to this proposal is addressed. However, CAISO plans to continue to engage with the CPUC's UCAP proposal development, which is scoped to include a mechanism that may address this CAISO problem statement for a significant majority of the thermal resource fleet. CAISO is considering scoping this proposal into future RA initiatives, depending on stakeholder feedback and the progress of the CPUC's UCAP proposal, to ensure the relevant problem statement is addressed.

# 4. Final Proposal

## 4.1 Problem Statements

As a part of the 2023-2024 RA Modeling & Program Design working groups, the following sub-issues were identified as a part of the larger RA problem statement:

- *There is a need for additional information regarding the sufficiency of the LRA RA programs to meet 0.1 LOLE.*
- *The CAISO default PRM should be assessed considering changes in the RA resource mix and evolving reliability needs within the CAISO BAA. CAISO's default PRM and default counting rules should meet at least a 0.1 LOLE at the CAISO BAA level.*
- *A stakeholder initiative should evaluate how well current LRA-established PRMs and counting rules reflect forced outage rates, performance, and availability. In response to potentially changing regulatory structures at the California Public Utilities Commission (including the scoping of UCAP), CAISO has an opportunity to establish alternatives to the current resource counting design and eliminate/redefine availability and performance incentives while acknowledging LRA authority to establish counting rules.*

## 4.2 Objectives

In updating the default RA qualifying capacity and planning reserve margin methodology in the tariff, CAISO seeks to model counting rules and a PRM that balance the following objectives:

- Counting rules included in the CAISO tariff should reflect the relative contribution of different resource types—and individual resources—to maintain BAA-wide and local reliability.
- The PRM methodology in the CAISO tariff should be designed alongside such counting rules to create a coherent set of RA standards.
- If these standards were adopted by all LRAs within the BAA, the resulting compliant LSE capacity portfolios could reasonably be expected to meet at least a 0.1 LOLE.

## 4.3 Proposal

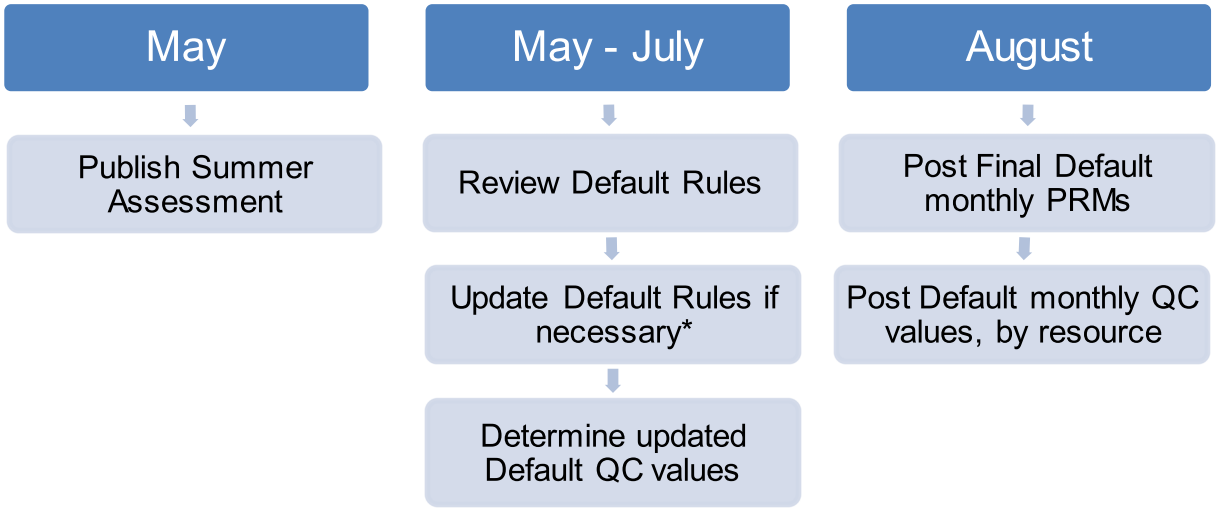
This proposal puts forth an updated set of default qualifying capacity methodologies and a corresponding default planning reserve margin calculation methodology. The following proposed methodologies were developed:

- Based on stakeholder feedback outlined in the previous section
- In accordance with the principles developed by the RAMPD working group
- With the goal of meeting the objectives stated in the 2024 RAMPD issue paper[4]

CAISO recognizes that this set of default rules will need to be revisited and revised based on changes in the generation fleet, the dynamics of regional reliability across the West, and input from local regulatory authorities.

The current CAISO tariff contains a 15% default planning reserve margin. This proposal would revise the default PRM after running a periodic LOLE study process with the best available, stakeholder-guided input and assumptions. This process will be aligned with the annual Summer Assessment (see Figure 1) study process. Due to this, CAISO proposes not including a numeric default PRM in the tariff itself but instead allowing for recurring LOLE studies to inform the default PRM and ELCC values based on the methodology in this proposal and update them, as necessary.

**Figure 1: Proposed Annual Review Process Timeline**




*Some updates to the published Default Rules may need tariff changes or BPM updates

[4] https://stakeholdercenter.caiso.com/InitiativeDocuments/Issue-Paper-Resource-Adequacy-Modeling-and-Program-Design-Nov-07-2024.pdf

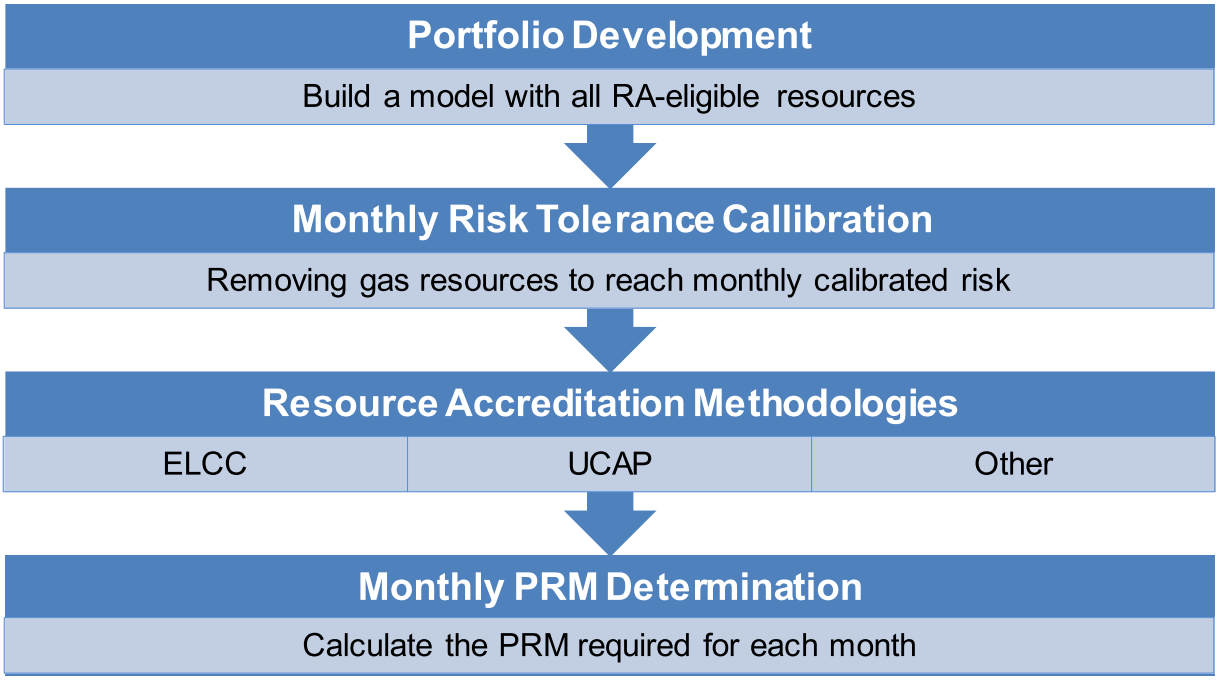
This process would ensure the default PRM will be set based on a modeled portfolio that meets a 1-in-10 loss of load expectation, consistent with the RAMPD working group principles. It will also allow LRAs, as a part of such a recurring process, to adopt class-based and resource-specific QC values based on CAISO's default methodologies (and corresponding PRM) for their capacity accreditation program if they want to utilize the CAISO default QC methodologies as a part of their annual engagement in the current tariff Section 40.4 NQC list process, CAISO can provide the calculated default QC values if requested by LRAs.

CAISO proposes to move forward with the following steps:

1. Update CAISO Tariff Section 40.8, which currently specifies the default PRM and default qualifying capacity methodologies.
2. Establish a CAISO process which will, annually or as necessary, allow stakeholders to provide feedback into inputs and assumptions for the loss of load expectation study process to be used to produce the default PRM and default QC values.

Figure 2 summarizes the overall analysis process that will be used to assess RA, establish QC values, and set default PRM.

**Figure 2: Process to Establish Monthly QC Values and PRM**



### 4.3.1 Model Design

CAISO will use its Summer Assessment[5] PLEXOS model in the development of the default PRM and QC for ELCC resources. The Summer Assessment evaluates the surplus or shortfall of the available resources to serve load, frequency response (headroom), regulation up, spinning, or non-spinning reserves. Shortfalls of regulation down, load following up, or load following down reserves do not contribute to loss of load. Table 2 provides information on how reserves are modeled. The LOLE reported is the expected number of days per year where the modeled resources are insufficient and represents the risk of entering an Energy Emergency Alert (EEA) Watch condition or needing to call on emergency measures, rather than actual loss of firm load.

**Table 2: Modeled Reserve Products and Contribution to LOLE**

| Priority | Modeled Reserves | Description | Included in LOLE |
|---|---|---|---|
| 1 | Unserved Energy (USE) | Unserved Energy is load that could not be met due to a shortage in generation and/or transmission capacity | Yes |
| 2 | Regulation up reserves | Jan - Mar (2025 requirements)<br>Apr – Dec (2024 requirements) | Yes |
| 3 | Regulation down reserves | Jan - Mar (2025 requirements)<br>Apr – Dec (2024 requirements) | No |
| 4 | Frequency response reserve | 376 MW. Used to mimic the need for replacement reserve capacity frequency response | Yes |
| 5 | Spinning reserves | 3% of load | Yes |
| 6 | Supplemental or non-spinning reserves | 3% of load | Yes |
| 7 | Load following (up/down) | Used to address intra hour differences in load | No |

[5] 2025 Summer Assessment Technical Appendix, May 5, 2025: https://www.caiso.com/documents/2025-summer-loads-and-resources-assessment-technical-appendix.pdf

For these analyses, CAISO plans to modify the Summer Assessment model in four ways. First, utility demand response resources that are not included in the NQC list will be removed. As those resources will not be given a QC value, they are excluded in the default PRM calculation. The model will then be recalibrated to a LOLE of 0.1, showing a 430 MW surplus across the year.

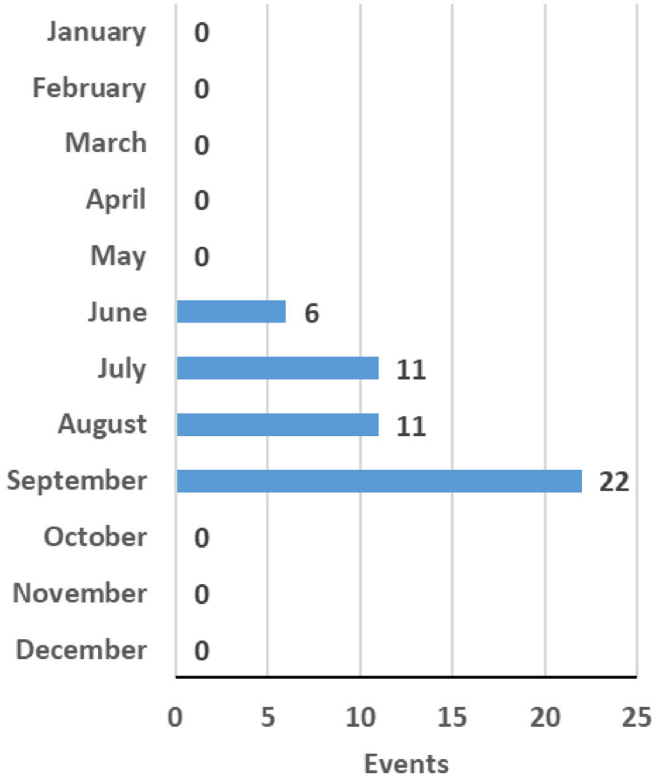
Second, the Summer Assessment model will be updated to use the total installed capacity from December for all months of the year, see Table 3 for the updated installed capacity by fuel type used in the current modeling. Total energy storage increased by over 2,000 MW through the year in the SA model.

**Table 3: Installed Capacity by Fuel Type**

| Fuel Type | Installed Capacity (MW) |
|---|---|
| Natural Gas | 26,374 |
| Hydro | 10,877 |
| Nuclear | 2,280 |
| Other | 176 |
| Geothermal | 1,267 |
| Biofuel | 485 |
| Battery Storage | 12,391 |
| Hybrid | 2,170 |
| Solar | 16,920 |
| Wind | 6,316 |
| **Total** | **79,256** |

Third, the distribution of unserved energy events may be revised. Consistent with the 2025 Summer Assessment, the risk distribution is focused in the months July through September. While most CAISO historical peaks have been in these months, June has also hosted the peak hour. Targeting zero risk in June discounts the risk that is still present and would increase the procurement needed for that month more than is desired. As a result, CAISO shifted six events from September to June for the current model, shown in Figure 3.

**Figure 3: Loss of Load Event Distribution**




The total number of unserved energy events to reach a 0.1 LOLE system is 50 events since the model uses five hundred samples. This unserved energy event distribution and total count will be revisited for each update to the QC and PRM values. The distribution used will be informed by the number of samples used in the model, the events observed in each month from the annual calibration, the peak load levels, and the load uncertainty in each month.

Finally, planned outages will be removed from the model. CAISO RA program requires LSEs to provide substitute capacity for any planned outages. Since substitution is required, planned outages should not be accounted for in the QC for resources or the resulting PRM. The removal of the planned outages does increase the overall reliability of the model, lowering the total number of events observed. The monthly model calibration will be used to readjust the results to match the loss of load events in Figure 3.

### 4.3.2 Monthly Model Calibration

This revised model must then be calibrated to include the minimum amount of capacity needed to reach the target loss of load events. This will be done by the removal of gas plants from the model and adding back in capacity until the desired number of events is achieved. Removal of gas capacity for calibration allows the process to use a portfolio that could be shown for system RA and makes it possible to calibrate all months to the desired level of risk tolerance. This calibration approach will generally account for local reliability requirements.

The calibration process using gas plant removal has the following steps:

1. Gas plants considered for calibration will be ranked by their Pmax values, from smallest to largest, separately for the PG&E regions and the combined SCE/SDG&E region in the model. These sorted lists will then be merged to maintain approximately equal capacity removal in the PG&E regions and the SCE/SDG&E regions.
2. All gas plants in this list will be removed from the model.
    a. If the desired loss of load events is reached or exceeded with all gas plants removed, adjustments will be made to the import limit until that target is reached with the minimum capacity and gas plants will not be added back into the model.
3. Gas plants will be added back into the model from the largest plants to the smallest plants until the desired loss of load events is reached or exceeded. Each iteration will increase the reliability of the modeled resource mix.
4. The last gas plant added to the model will be removed, and gas plants will then be added back in from the smallest plant to the largest plant until the loss of load event target is reached.
    a. If the capacity added from the smallest plant upward exceeds the capacity of the last gas plant added in step 3, the gas plant capacity from step 3 will be used.
5. If, after all gas plants are added back into the model, the loss of load event target has not been reached, adjustments will be made to the import limit to increase reliability.
6. The specific plants removed and any adjustments to the import limit will be saved for use in the ELCC model simulations.

Steps 2-5 will be repeated each month individually.

For the current model, after shifting six events from September to June, the calibration of September to 22 events requires all available gas plants and a 197 MW increase in the import limit only for September. This reflects and decrease in the surplus from 430 MW annually, to 233 MW only for September.

### 4.3.3 Default Qualifying Capacity Methodologies

The proposed suite of CAISO default QC methodologies are:

- Based on stakeholder feedback outlined in this proposal, and
- In accordance with the goals developed by the RAMPD working group

CAISO recognizes that there are multiple sets of counting methodologies that could meet the objective "Counting rules included in the CAISO tariff should reflect the relative contribution of different resource types—and individual resources—to maintain BAA-wide and local reliability". As such the proposal ensures that each resource type's methodology best accounts for its relative reliability contribution.

Based on the feedback of market participants, we are proposing a hybrid counting approach that includes both ELCC and UCAP methodologies. CAISO's proposed new hybrid set of default QC methodologies are summarized by resource type in Table 4. In designing this hybrid set of default QC methodologies, CAISO has chosen to apply average ELCC to several resource classes but not all due to the distinct reliability characteristics of each resource type. Within the CAISO Balancing Area, thermal resources exhibit outage rates that are less correlated with extreme events, making their performance more predictable and better suited to a UCAP methodology. This choice also aligns with other regional programs like CPUC's proposed new QC methodology and the Western Resource Adequacy Program's qualifying capacity criteria for thermal resources. This provides jurisdictional consistency that stakeholders requested. UCAP is transparent and predictable when assessing the specific contribution to reliability of individual resources. This is attributable to the use of a defined formula factoring in specially defined outage types and periods in calculating availability of an individual resource.

**Table 4: Proposed CAISO Default QC Methodologies**

| Resource type | Proposed CAISO Default QC Methodology |
|---|---|
| Wind & Solar | Average effective load carrying capability (ELCC) – includes solar thermal resources. Resource-specific adjustments based on generation during critical periods. ELCC values will be monthly. |
| Energy storage | Average ELCC (applies to standalone limited energy storage resources, hybrid, and co-located resources). Resource-specific adjustments based on forced outage rates (FOR). ELCC values will be monthly. |
| Thermal | Resource-specific UCAP based on three years of historic outage data (applies to pumped storage hydro resources, nuclear resources, and *dispatchable* thermal resources of all fuel types, including gas, biomass, and geothermal resources). UCAP values will be assigned for Winter (November – April) and Summer (May – October) seasons. |
| Non-dispatchable Thermal, excluding Nuclear | Monthly average generation based on three years of historic performance data. |
| Hydro – Dispatchable and Run-of-River (RoR) | Average ELCC with assumed average hydro year conditions. Resource specific adjustments for dispatchable hydro are based on FOR and those for RoR hydro are based on generation during critical periods. ELCC values will be monthly. |
| Demand Response | For each DR provider (DRP), CAISO will provide an annual performance factor that should be multiplied by the DRP's claimed capacity value for its resources. |
| Participating Load | Average reduction in demand over a three-year period on a per-dispatch basis (current tariff default QC methodology). |

Additionally, the value of demand response, non-dispatchable thermal, and participating load resources is not determined by fixed characteristics, but rather by constraints such as contractual obligations, site-level demand, or other operational factors. A UCAP value based on forced outage rates is also ineffective in representing their availability, as forced outages are not the primary limitation on their operation.

While CAISO considered applying UCAP more broadly, particularly for energy storage, we concluded UCAP does not sufficiently capture the contribution to reliability for all resource types due to variable profiles and energy limitations. Particularly given the

stakeholder objective of CAISO's default methodologies producing a single monthly value (as opposed to, say, a "24 hours per month" construct that might account for charging needs and variable output of resources in different hours). Similar to run-of-river hydro, dispatchable hydro, solar and wind, CAISO has determined that an Average ELCC better captures the reliability contribution of energy storage resources in the single monthly value showing process currently implemented in CAISO. For thermal and pumped storage hydro resources, however, UCAP offers a transparent and predictable default accreditation approach.

Further explanation of the distinctions in these resource classes and detailed justification for the chosen methodologies indicated in Table 4 is provided in this section.

### *Average ELCC*

Average ELCC is proposed for accreditation of batteries, dispatchable hydro, run-of-river hydro, solar, and wind resources since it incorporates time dependent capacity and energy contributions, as well as operational limitations of different resources into a single monthly value through probabilistic modeling. A class average approach characterizes the entire resource type's contribution to reliability. This is more appropriate for the CAISO's near-term (year-ahead and month-ahead) showings processes than a marginal ELCC approach, which instead captures the incremental value that *new* resources provide on top of the existing system resources.

Effective Load Carrying Capability (ELCC) refers to the extent to which system load can increase proportionally with the addition of a resource without compromising reliability. As energy-limited resources like storage become more integrated into CAISO's capacity portfolio, ELCC can be used to reflect how well these resources support the system during periods of high demand considering their operational limitations.[6] Resource characteristics, such as energy limits and outages, are accounted for in the Summer Assessment model.[7] The average ELCC at the resource class level will be determined by replacing the total capacity of the resource type with "perfect" capacity (a modeled capacity resource that is always 100% available to meet energy needs) needed to

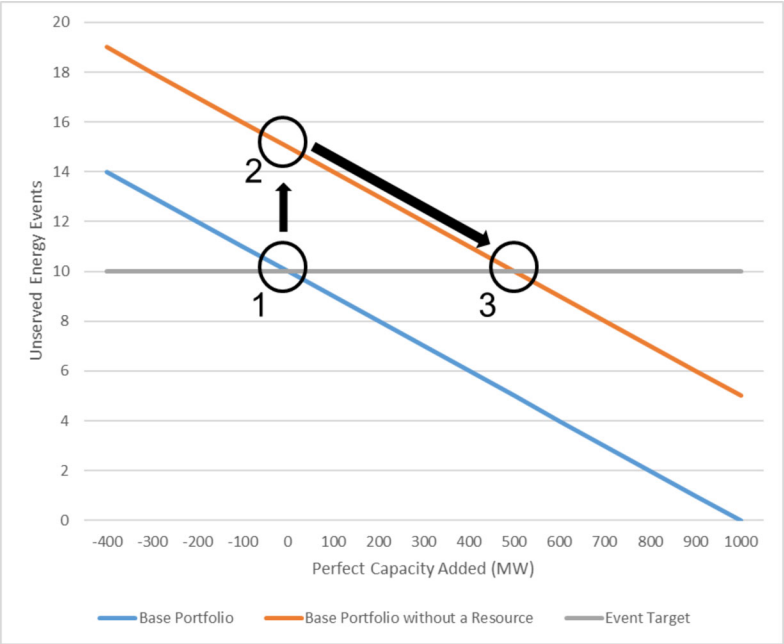
[6] Resource Adequacy Philosophy: A Guide to Resource Adequacy Concepts and Approaches, EPRI, Palo Alto, CA, 2022

[7] 2025 Summer Loads and Resources Assessment report and technical appendix:
https://www.caiso.com/documents/2025-summer-loads-and-resources-assessment.pdf
https://www.caiso.com/documents/2025-summer-loads-and-resources-assessment-technical-appendix.pdf

achieve the same system reliability. This will be done on a monthly basis. The process is shown in Figure 4 for a month that has ten outage events in the base resource mix.

1. Start with the base resource mix.
2. Remove the capacity associated with a particular resource type (e.g., all wind resources) on the NQC list, which increases the number of unserved energy events.
3. Add "perfect" capacity to the system until the number of unserved energy events returns to the initial number of events. The added perfect capacity is the PCAP value of the entire resource type.

**Figure 4: Illustration of average effective load carrying capability calculation process for a single resource type**




This "PCAP" value will be found for each ELCC-based resource (at a class level) individually. Figure 5 shows key steps in the overall process for calculating the average ELCC of each of the four ELCC-based resources. After establishing the class-average PCAP values for each resource type individually, the process will be repeated for all ELCC based resource classes together as a whole. This last step of removing all solar, wind, batteries, and hydro in a single simulation set enables the calculation of a PCAP value for the full set of assessed resources. The purpose of this final calculation is to account for interactive effects between different ELCC resources. To achieve this, the modeled PCAP value of each resource type will be scaled such that the individual QC values do not exceed the PCAP value of all the ELCC resources combined.

**Figure 5: Overview of the process for calculating average ELCC**


This will be done by calculation of a scaling factor, specifically $\alpha$:

$$\alpha = \frac{PCAP_{solar} + PCAP_{wind} + PCAP_{LESR} + PCAP_{dispatchable\,hydro} + PCAP_{RoR\,hydro}}{PCAP_{ELCC}}$$

Then the individual ELCC of each resource class will be calculated in the following manner, using solar as the example:

$$ELCC_{solar} = \frac{PCAP_{solar}}{\alpha \cdot ICAP_{solar}}$$

Where:

$$PCAP_{ELCC} = the\ total\ PCAP\ from\ all\ ELCC\ resources$$

$$\alpha = scaling\ factor$$

$$PCAP_{solar} = Perfect\ capacity\ needed\ to\ replace\ the\ solar$$

$$ICAP_{solar} = Installed\ capacity\ of\ Solar$$

$$ELCC_{solar} = Effective\ load\ carrying\ capability\ of\ solar$$

Finally, for each of these resource types, the average ELCC value will be suballocated based on resource-specific adjustments to differentiate individual generators that are more or less reliable than that resource's class average. This adjustment was added to this proposal based on stakeholder feedback in support of resource-specific adjustments to any class-wide methodology (in this case, ELCC). Such an adjustment will ensure that generators performing better or worse than the class average will receive a higher or lower default accreditation value, respectively. For batteries and dispatchable hydro, this adjustment will be based on the forced outage rate (FOR) of the resource compared to the capacity-weighted average. All forced outages from the past three years, except for transmission induced forced outages, will be incorporated. Allocations are calculated seasonally for Summer (May - October) and Winter (November - April).

$$ELCC_{resource} = ELCC_{average} \times \frac{(1 - FOR_{resource})}{(1 - FOR_{aggregate})}$$

Where,

$$ELCC_{average} = Battery\ class\ average\ ELCC$$

$$FOR_{resource} = Forced\ outage\ rate\ for\ the\ individual\ resource$$

$$FOR_{aggregate} = Forced\ outage\ rate\ for\ all\ batteries$$

For wind, solar, and run-of-river hydro resources, this adjustment will be based on capacity factors during critical periods, informed by the Summer Assessment. In the formulas below, hours ending 17 – 22 PT are used. New resources will not receive an adjustment to the average ELCC value until they have sufficient operational history to indicate past performance.

$$ELCC_{specific} = ELCC_{average} \times \frac{CF_{specific}}{CF_{agg}}$$

Where,

$$ELCC_{average} = Resource\ class\ average\ ELCC$$

$$CF_{specific} = \frac{\sum_{i=17}^{22} Gen_{specific,i}}{6 \times ICAP_{specific}}$$

$$\sum_{i=16}^{21} Gen_{specific,i} = sum\ of\ generation\ from\ specific\ unit\ from\ hours\ ending\ 17-22\ PT$$

$$ICAP_{specific} = Installed\ capacity\ of\ the\ specific\ unit$$

$$CF_{agg} = \frac{\sum_{i=17}^{22} Gen_{agg,i}}{6 \times ICAP_{agg}}$$

$$\sum_{i=16}^{21} Gen_{agg,i} = sum\ of\ generation\ from\ the\ resource\ class\ from\ hours\ ending\ 17-22\ PT$$

$$ICAP_{agg} = The\ aggregated\ installed\ capacity\ of\ the\ resource\ class$$

### *Hybrid Resources*

Individual components of hybrid resources will be modeled separately in the ELCC analysis. Hybrid resource comprised of two or more resources credited with ELCC values will receive QC values based on the sum of their individual components using class average ELCC values and the installed capacity of each resource type. The total QC for a hybrid resource will not exceed the interconnection limit for the facility.

$$QC_{hybrid} = \min\left[\left(QC_{type\,1} + QC_{type\,2}\right), (Interconnection\ Limit)\right]$$

Where,

$$QC_{hybrid} = qualifying\ capacity\ assigned\ to\ the\ hybrid\ resource$$

$$QC_{type\,i} = qualifying\ capacity\ of\ resource\ type\ i, using\ the\ class\ average\ ELCC$$

$$Interconnection\ Limit = the\ interconnection\ limit\ on\ the\ hybrid\ resource$$

### *UCAP*

A resource-specific UCAP is proposed as the default QC methodology for nuclear, dispatchable thermal, and pumped storage hydro resources. UCAP values will be calculated for Summer (May-October) and Winter (November-April) seasons, considering the outages during at-risk hours in the top ten net load days of each month over the last

3 years. At-risk hours will be informed by the risk hours observed in the Summer Assessment modeling conducted annually. At-risk hours used in the current analysis are hours ending 17-22 PT for the Summer season and hours ending 6-9 and 17-22 PT for the Winter season.

The resource-specific UCAP values will be calculated for each season for each of the past three years, with heavier weighting towards the most recent year.

$$UCAP = 0.45\left(UCAP_{y-1}\right) + 0.35\left(UCAP_{y-2}\right) + 0.20\left(UCAP_{y-3}\right)$$

Where the resource-specific UCAP value for each year will be determined by the following equation:

$$UCAP_{year} = P_{max} \cdot \left(1 - \frac{1}{n}\sum_{i=1}^{n}\frac{\left(P_{out,i}\right)}{P_{max}}\right)$$

Where,

$$n = Total\ number\ of\ at\ at\ risk\ hours$$

$$P_{out,i} = Average\ capacity\ unavailable\ (on\ forced\ outage)\ during\ hour\ i$$

$$P_{max} = Installed\ capacity$$

Forced outage data will be sourced from CAISO's outage management system (OMS). Unavailable capacity includes both partial derates and full outages. For the UCAP calculation, outages that are outside of management control, as defined by NERC, are excluded from the unavailable capacity.[8] For example, transmission induced outages would *not* be considered unavailable capacity for the UCAP calculation.

In general, this proposal attempts to include outages that result in counting rules that best reflect the relative contribution of different resource types—and individual resources—to maintain BAA-wide and local reliability. A UCAP design in particular can both act to reasonably predict future performance and to provide an incentive for availability in the current year. In some situations, historical forced outages might not reflect future performance of individual resources, such as if major maintenance or capital updates were made to improve resource performance. If these are acute situations, the impacts will flow into resource-specific UCAP values within a few years via the annual weighting mechanism.

[8] NERC's Generating Availability Data System, Data Reporting Instructions, Appendix K. effective January 1, 2025. https://www.nerc.com/pa/RAPA/gads/DataReportingInstructions/2025_GADS_DRI.pdf

The primary purpose of this proposal is to closely capture the actual forced outage rate of the resources during resource constrained periods; ensure the UCAP values reflect the availability and reliability of the RA fleet; and to minimize forced and urgent outages during times of system need.

### *Three-Year Average Generation for Non-dispatchable Thermal Units*

An average of the monthly generation over three years is planned to set the qualifying capacity for non-dispatchable thermal units, excluding nuclear. These units are self-reported to the CAISO as non-dispatchable, and primarily consist of biomass, geothermal, cogeneration, and QF (or FERC qualifying facilities) resources. The availability of capacity from these resources may be impacted by fuel availability, resource productivity, or host needs. Given the limited ability of the CAISO to dispatch the capacity from these resources to meet system needs, it is more appropriate to establish the QC values for these resources based on what they actually supply to the bulk electricity system. The QC for these resources will be determined with the following equation:

$$QC_{month} = \frac{Gen_{month,year1} + Gen_{month,year2} + Gen_{month,year3}}{Hours_{month,year1} + Hours_{month,year2} + Hours_{month,year3}}$$

$$Gen_{month,year1} = Total\ generation\ from\ the\ resource\ in\ the\ month\ and\ year1$$

$$Hours_{month,year1} = Total\ number\ of\ hours\ in\ the\ month\ and\ year1$$

### *Performance-based UCAP for Demand Response*

A performance-based default accreditation is proposed for supply side demand response (DR) resources. This will apply to DR resources that are included on the NQC list. This methodology ensures that capacity values for demand response resources reflect their load curtailment capabilities at the appropriate granularity. The UCAP proposed for dispatchable thermal resources focuses on determining capacity based on forced outages that result from equipment failure and other limitations of a power plant. This approach is not a sufficient indicator of availability and performance for demand response resources as their ability to respond is more dependent on demand when called and participant's willingness and ability to respond when called, rather than equipment failure or plant design. Instead, measuring energy output during each hour a DR resource is called and comparing it to the dispatch value provides a more straightforward assessment of how these resources can perform.

Performance factors will be calculated at the DR provider level to discourage changing or creating new resource IDs to reset an aggregation's qualifying capacity calculation. It will also ensure greater availability of an accurate historic performance record, which could

be difficult at the resource level because of the nature of the demand response registration process. For any DR provider that lacks significant historic dispatch data during the assessment period, CAISO will utilize a class average or similar stand-in for a performance factor.

The DRP performance factor will be calculated using historical performance over the prior three years:

$$DRP\ Performance\ Factor = \frac{\sum \min\ (dispatch,\ meter)_{resource,hour}}{\sum dispatch}$$

Energy output is capped at the dispatch instruction of each resource in each hour, so if a resource produces more than was called for in each hour it will receive a maximum 100% rating in that hour for the DRP performance calculation.

*New Resource Types*

As new resource types with distinct operational characteristics enter service and seek to participate in the resource adequacy framework, CAISO will expand the default qualifying capacity rules. The development of a new method, or revisions to existing methods, to better incorporate resource attributes will be discussed with stakeholders as part of the recurring stakeholder process outlined in Figure 1.

### 4.3.4 Default Planning Reserve Margin Determination

The default planning reserve margin is proposed to be measured against the 1-in-2 managed peak load from the modeled load distributions for each month. CAISO's proposal includes month specific PRMs to account for the monthly load and resource variability as well as the resources needed in each month to meet the target loss of load events for that month. Allowing the PRMs to vary by month ensures the PRM is right sized to the specific month. In contrast, an annual PRM would be driven by the total resource need in the tight months. Using that annual PRM in months with lower peak loads may set the QC need below the actual need if the load and resource variability is greater in those months despite lower peak loads.

The PRM for each month will be a function of the QC from resources included in the model for that month. The set of monthly PRMs, along with the QC values, will result in a set of monthly capacity portfolios that could achieve a 0.1 LOLE threshold across the year.

$$PRM_{month} = \left(\frac{Total\ QC\ of\ the\ monthly\ portfolio}{Peak_{month}} - 1\right) \times 100\%$$

Where,

$$Peak_{month} = \ 1 - in - 2\, peak\ load\ from\ the\ modeled\ load\ distribution$$

$$Total\ QC\ of\ the\ monthly\ protfolio = the\ QC\ for\ all\ the\ resources\ included\ in\ the\ model$$

$$PRM_{month} = The\ planning\ reserve\ margin\ for\ the\ month$$

Additional materials on the details of the loss of load expectation study process such as the model inputs, assumption, and settings can be found on CAISO's seasonal assessments webpage.[9] The annual modeling process that informs the proposed assessments will be based on the most recent Summer Assessment model.

[9] See: https://www.caiso.com/library/seasonal-assessments

# 5. Governing Body Role

CAISO staff believe that this initiative should be presented only to the CAISO Board of Governors (the Board) for decision, because any proposed tariff amendments will be limited to CAISO's balancing authority area's resource adequacy rules. For these reasons, the initiative falls outside the scope of authority of the Western Energy Markets (WEM) Governing Body.

The WEM Governing Body has primary authority over any proposal to change or establish any CAISO tariff rule(s) applicable to the Extended Day Ahead Market (EDAM) or Western Energy Imbalance Market (WEIM) Entity balancing authority areas, EDAM or WEIM Entities, or other market participants within the EDAM or WEIM Entity balancing authority areas, in their capacity as participants in either the WEIM or EDAM. This scope excludes from primary authority, without limitation, any proposals to change or establish tariff rule(s) applicable only to the CAISO balancing authority area or to the ISO-controlled grid. Charter for WEIM and EDAM Governance § 2.2.1 indicates that none of the tariff rule changes contemplated in this initiative would be "applicable to WEIM/EDAM Entity balancing authority areas, WEIM/EDAM Entities, or other market participants within WEIM/EDAM Entity balancing authority areas, in their capacity as participants in the WEIM/EDAM." Rather, the proposed tariff rules would be applicable "only to the ISO balancing authority area or to the ISO-controlled grid." Accordingly, the matters scheduled for decision fall outside the scope of primary authority.

While the WEM Governing Body "may provide advisory input over proposals to change or establish tariff rules that would apply to the real-time market but are not within the scope of primary authority," no aspects of this initiative would establish rules for the real time market. Accordingly, this initiative falls outside of the WEM Governing Body's advisory role as well.

No feedback on the approach was received after the June 2025 straw proposal or the August 2025 draft final proposal.

# 6. Next Steps

The final proposal will be presented to the California ISO Board of Governors on October 30, 2025. CAISO proposes to revise portions of Section 40 of the CAISO tariff that currently defines the default Planning Reserve Margin (PRM) and qualifying capacity methodologies. Additionally, CAISO proposes to establish a recurring process—annually or as needed—that enables stakeholders to provide input into the loss of load expectation study, including its assumptions and data inputs, which will inform the development of default PRM and qualifying capacity values.

**Attachment D – Track 1 Board Memo**

**Tariff Amendment – Resource Adequacy Modeling and Program Design Initiative**

**California Independent System Operator Corporation**

**March 3, 2026**

# Memorandum

**To:** ISO Board of Governors

**From:** Anna McKenna, Vice President, Market Design and Analysis

**Date:** October 22, 2025

**Re:** **Decision on Resource Adequacy Modeling and Program Design Track 1: Modeling and Default rules**

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***This memorandum requires ISO Board of Governors action.***

## EXECUTIVE SUMMARY

Management proposes updating the ISO tariff's default resource adequacy rules to best reflect the capabilities and characteristics of the evolving resource fleet. These proposed changes will modernize the ISO's default qualifying capacity criteria and planning reserve margin rules, aligning them with current best practices in reliability planning. These proposed default methodologies only apply where local regulatory authorities have not established their own methodologies for providing input into the ISO's resource adequacy program and preserves the autonomy of local regulatory authorities to set their own rules. However, it is imperative that the ISO's default resource adequacy rules remain effective if called upon, and they may serve as a reference for local regulatory authorities seeking to revise their own resource adequacy program rules.

The ISO's current default resource adequacy rules, established in 2006, do not reflect the latest reliability assessment techniques that have evolved to account for the changing resource fleet and their operational characteristics. The proposed updates provide local regulatory authorities with access to more accurate and transparent information on the reliability contributions of various resource types and individual resources. With this proposed framework, Management seeks to ensure that, if applied by all local regulatory authorities within the ISO's balancing authority area, the ISO balancing authority area would meet an industry-standard reliability benchmark.

Management's proposed changes comprise Track 1 of the ISO's broader Resource Adequacy Modeling and Program Design initiative, which the ISO initiated in response to stakeholder concerns about the lack of transparent information on the reliability impact of the current default resource adequacy rules -- particularly regarding whether they meet current industry practices.

The ISO's default resource adequacy framework includes a planning reserve margin, which defines the additional generating capacity that load serving entities should procure above the forecast peak demand to ensure reliability. The default rules also include qualifying capacity criteria that determine how much of a resource's capacity can be counted towards the default resource adequacy capacity procurement requirement.

Management proposes revising both the default qualifying capacity rules and process for establishing the planning reserve margin to more accurately reflect the relative contributions of different resource types and individual resources to maintaining ISO balancing authority area reliability and how resources work together to meet the total system need. In support of the proposed changes the ISO will implement an annual, transparent modeling process that allows stakeholders to review and provide input on the assessments.

Management recommends the ISO Board of Governors approve the proposed updates to the default qualifying capacity criteria and planning reserve margin as described in this memorandum. These updates will enhance the accuracy of reliability assessments within the ISO balancing authority area, while maintaining the autonomy of local regulatory authorities in setting their own resource adequacy rules.

***Moved, that the ISO Board of Governors approves the Resource Adequacy and Program Design Track 1 final proposal as described in the memorandum dated October 22, 2025; and***

***Moved, that the ISO Board of Governors authorizes Management to make all necessary and appropriate filings with the Federal Energy Regulatory Commission to implement the changes proposed in this memorandum, including any filings that implement the overarching initiative policy but contain discrete revisions to incorporate Commission guidance in any initial ruling on the proposed tariff amendment.***

## BACKGROUND

Resource Adequacy in the ISO Balancing Authority Area

The ISO tariff includes a resource adequacy near-term default planning process for load serving entities in the ISO balancing authority area that do not have explicit resource adequacy requirements established by their local regulatory authority to help ensure sufficient generation supply to meet electricity demand under reasonably expected conditions. The California Public Utilities Commission (CPUC) is the largest local regulatory authority that regulates resource adequacy requirements for the load serving entities under its jurisdiction, which collectively serve the majority of load in the ISO

balancing authority area. The remaining local regulatory authorities in the ISO balancing authority area also establish their own resource adequacy requirements.

As part of the near-term resource adequacy planning process:

- The California Energy Commission provides monthly forecasts of median peak electricity demand for the following year.
- The CPUC and other local regulatory authorities set the planning reserve margin to which their jurisdictional load serving entities must procure. The planning margin is the percentage of additional capacity that must be procured above the forecast peak demand to ensure reliability.
- Local regulatory authorities also define the qualifying capacity criteria, which determine how much of a resource's capacity can be credited towards meeting a load serving entity's procurement obligation. Qualifying capacity criteria, the term used in the ISO tariff, is also sometimes referred to as counting rules or accreditation methodology.

All capacity procured under the resource adequacy programs of local regulatory authorities are subject to must-offer rules in the ISO day-ahead and real-time markets, which the ISO manages through the market systems. Together, these resource adequacy processes and requirements ensure that the capacity is committed to the ISO when and where it is needed to maintain reliable system operations.

Currently, when the local regulatory authority has not defined its own planning reserve margin and qualifying capacity criteria, the ISO applies a default planning reserve margin of 15 percent and default qualifying capacity defined in tariff Section 40.8.

Resource Adequacy Modeling and Program Design Working Group

In October 2023, the ISO launched a stakeholder-driven working group process with the objective of collaboratively enhancing the ISO's resource adequacy tariff provisions in response to an evolving generation mix, increasing supply variability, and changes in local regulatory authority resource planning frameworks within the ISO balancing authority area. Through a series of collaborative meetings, the working group developed consensus on key problem statements and priorities as part of the Resource Adequacy Modeling and Program Design initiative.

Through that process, the working group reviewed the ISO tariff default qualifying capacity criteria and planning reserve margin, which apply only when local regulatory authorities have not set their own resource adequacy program rules. Stakeholders expressed concerns about whether current planning reserve margins and the qualifying criteria established by the local regulatory authorities accurately reflect critical reliability factors -- such as forced outage rates, performance, and availability.

The working group found that the ISO's default rules, last updated nearly 20 years ago, were outdated and inconsistent with current resource adequacy best practices. The working group recommended that the ISO update these rules to ensure that, if adopted by all local regulatory authorities within the ISO balancing authority area, the resulting load serving entity capacity portfolios would be expected to achieve an acceptable reliability standard.

Track 1 of the Resource Adequacy Modeling and Program Design Initiative

The problem statements developed during the working group process served as the foundation for Track 1 of the Resource Adequacy Modeling and Program Design initiative. This track focused on leveraging the ISO's reliability modeling capabilities to update the default qualifying capacity criteria and default planning reserve margin outlined in the ISO tariff. The objective was to ensure that if these default rules were adopted by all of the local regulatory authorities, the ISO balancing authority area would meet the 1-in-10 year loss of load expectation (LOLE) criteria, a widely accepted industry target. ISO analysis determined that the existing default qualifying capacity criteria and planning reserve margin do not accurately reflect the relative reliability contribution of different resource types and are likely inadequate to enable the ISO to meet the 1-in-10 year LOLE.

## PROPOSAL

Annual Process to Update Default Values

Management proposes updating the ISO's default qualifying capacity criteria and default planning reserve margin tariff provisions. Rather than hardwiring specific values into the tariff, the updated tariff provisions would prescribe an annual framework for establishing qualifying capacity and the planning reserve margin values. The framework will consist of a process and methodologies that are robust and resilient to changing circumstances. The proposed qualifying capacity criteria is designed to more accurately reflect the reliability contributions of various resource types and individual resources in the current fleet to maintaining balancing authority area reliability.

Management is committed to working with stakeholders during this annual process to ensure they have the opportunity to provide input into the assessments and that the results are transparent.

The ISO would conduct an annual process with three critical steps:

1. *Model development*: Build a probabilistic model with a capacity portfolio that includes enough resource adequacy-eligible resources in the balancing authority area to achieve a level of system reliability that meets a 1-in-10 year LOLE target.

2. *Default qualifying capacity value development*: Apply the default qualifying capacity criteria to develop qualifying capacity values either on a unit-specific basis or as an average for a resource class.
3. *Determination of monthly default planning reserve margins*: Sum the qualifying capacity values from step 2 and divide by the month's median peak load forecast to calculate the monthly default planning reserve margin.

Default Qualifying Capacity Criteria

Management proposes differentiated default qualifying capacity criteria for use in step 2 that best represents the relative contribution of a resource type to system reliability. These proposed methodologies, summarized in Table 1 alongside the current ISO tariff default qualifying capacity criteria, would produce either resource-specific values[1] or class-average values applicable to all resources within a given category and more accurately reflect the reliability contribution of each resource type that measures energy availability to supply load at critical hours. This method is well-suited to account for the ISO balancing authority area's diverse resource mix, historical reliability risks, and anticipated future trends.

Incorporating the development of values based on these default qualifying capacity criteria into the annual process described above will enable local regulatory authorities to adopt class-average and resource-specific qualifying capacity values (as well as the ISO default planning reserve margin) as a part of their capacity accreditation programs, if they choose to do so. If requested, these values will be shared with local regulatory authorities each year to facilitate their integration into the local regulatory authorities' annual participation in the ISO's existing resource adequacy accounting processes.

[1] Local regulatory authorities may elect to use these resource-specific values to provide incentives for individual resource owners to ensure that their unit is available to generate during times of system need.

**Table 1: Overview of the Current and Proposed CAISO Default Qualifying Capacity Criteria**

| Resource type | Current CAISO Default QC Criteria | Proposed Default QC Criteria and resource specific adjustments |
|---|---|---|
| Wind & solar resources | Based on monthly historic performance over a three-year rolling average from noon to 6pm. These hours were intended to represent gross peak hours, i.e., the peak energy demand in the ISO balancing authority area. Today, these hours of the day do not correspond with the system's net peak hours | Average effective load carrying capability (ELCC) and based on unit's generation during net peak periods. |
| Energy storage resources | Based on CAISO testing of a resource's sustained output over a four-hour period (and not to exceed that resource's maximum instantaneous discharge capability) | Average ELCC and based on unit's forced outage rate. |
| Pumped storage hydroelectric, nuclear, and dispatchable thermal resources | Based on "net dependable capacity" defined by NERC Generating Availability Data System information (GADS) | Unforced Capacity (UCAP): Resource-specific based on three years of historic outage data, one each for Winter (November – April) and Summer (May– October) seasons. |
| Hydro resources | Based on net dependable capacity defined by NERC GADS minus variable head derated based on an average dry year reservoir level | Average ELCC for dispatchable hydro and based on unit's forced outage rates.<br>Average ELCC for run-of-river hydro and based on unit's generation during critical periods. |
| Demand response resources | Based on a resource's average monthly historic demand reduction performance during that same month during the Resource Adequacy Availability Incentive Mechanism (RAAIM) Availability Assessment Hours | For each demand response (DR) provider, the ISO will issue an annual performance factor, which will be applied to the provider's claimed capacity value for its DR resources. |
| Participating Load | Average reduction in demand over a three-year period on a per-dispatch basis | Average demand reduction per dispatch event, calculated over a three-year historical period, consistent with the current default qualifying capacity criteria in the ISO tariff. |

*Average Effective Load Carrying Capability (ELCC)*

Management proposes using average effective load carrying capability (ELCC) methodology as the default qualifying capacity criteria for wind, solar, run-of-river hydroelectric, dispatchable hydroelectric, and energy storage resources. ELCC incorporates both capacity and energy contributions by quantifying the effectiveness of a resource type to meet system needs through probabilistic modeling that accounts for the capabilities of those resources. Average ELCC quantifies the reliability contribution of a class of resources to the grid. It expresses a resource's reliability contribution as a percentage of its maximum capacity and the actual values vary depending on system conditions. This approach is particularly appropriate for availability-limited and energy-limited resources because their reliability value depends on dynamic system-wide interactions, which ELCC captures effectively. Also, availability and energy-limited resources' ability to serve load during times of system need is dependent on the makeup of the rest of the generation fleet. This dependency could be due to variable, non-dispatchable energy production capabilities (in the case of wind, solar, and run-of-river hydro) or the need to manage energy within an operational timeframe (in the case of dispatchable hydro and storage). Average ELCC represents how effective that resource is compared to a fleet of perfect, fully reliable resources. For example, solar resources contribute to reliability only when their generation aligns with unmet system demand or when energy can be stored and shifted to periods of need.

*Unforced Capacity (UCAP)*

Management proposes to use unforced capacity (UCAP) as the default qualifying capacity criteria for dispatchable thermal, nuclear, and pumped storage hydroelectric resources. UCAP reflects a resource's contribution to system reliability, adjusted for its historical forced outage rate. The resources' qualifying capacity is determined by calculating their historic forced outage rates during the at-risk hours for the system over the past three years. This method offers a direct, transparent, and accurate way to assess individual resource performance. Applying an average ELCC to these types of resources can misrepresent their true reliability contribution, especially during critical hours. Unlike availability and energy limited resources, the availability of thermal, nuclear and pumped storage hydro resources is generally independent of the composition of the fleet or system conditions. Therefore, average ELCC fails to reflect the actual value of thermal resources in maintaining system reliability. In addition, UCAP is more appropriate for these types of resources because their availability is not significantly restricted by energy limitations and they exhibit outage rates that are less correlated with extreme system events.

This also aligns with other regional programs such as the Western Resource Adequacy Program's UCAP qualifying capacity criteria for thermal resources and the CPUC's proposed new UCAP methodology, providing the jurisdictional consistency requested by stakeholders.

*Average Generation*

For non-dispatchable thermal units (excluding nuclear), Management proposes using the average monthly generation over the past three years as the default qualifying capacity methodology. These resources are self-reported to the ISO as non-dispatchable, and the ISO has limited ability to control their output to meet system needs. Given these constraints, it is appropriate to base their qualifying capacity on actual historical generation, as neither ELCC nor UCAP methodologies adequately capture the unique operational characteristics of these resources.

*Performance Factor Based on the Average Actual Load Curtailment*

For supply-side demand response resources, Management proposes a performance-based default qualifying capacity criteria. Demand response providers would receive a performance factor based on the average actual load curtailment compared to the dispatched curtailment across all their resources. This factor, applied to the demand response provider's claimed load curtailment capability, would determine the qualifying capacity.

Given the demand response registration process, aggregating at the demand response provider level ensures a greater availability of an accurate historic performance record.

*Average Demand Reduction Per Dispatch Event*

Management also recommends maintaining the current default methodology in the tariff for participating load, which is based on the average demand reduction per dispatch event, calculated over a three-year historical period.

## STAKEHOLDER FEEDBACK

Following the working group's scoping and prioritization process, which concluded in summer 2024, the ISO published the Resource Adequacy Modeling and Program Design issue paper and held a series of meetings through late 2024 and early 2025 to explore policy solutions. In June 2025, the ISO released a Track 1 straw proposal to revise the default qualifying capacity methodology and planning reserve margin.

Stakeholders provided extensive feedback throughout the summer, offering feedback on proposed default qualifying capacity criteria, the portfolio modeling process, and coordination with local regulatory authorities. Local regulatory authorities -- including the CPUC, Northern California Power Agency, and the Six Cities -- consistently reaffirmed their authority to set their own methodologies. While the ISO's current default resource adequacy rules have never had to be called on, stakeholders indicated that they use them as reference points. The proposed rules, based on transparent modeling inputs, will continue to serve as a reference for local regulatory authorities developing their own resource adequacy rules and are valuable tools for assessing reliability across the ISO balancing authority area, which is consistent with the working group's objectives.

Local regulatory authorities' representatives raised concerns about the proposed annual process timelines, suggesting that frequent changes to default planning reserve margins and qualifying capacity values could create uncertainty. Local regulatory authorities are not required to adopt these default values and may continue setting their own values under their own approaches. Though the actual values may change over time, the proposed approach provides more accurate assessments of reliability requirements on the system, consistent with industry accepted methodologies. How local regulatory authorities factor this information into their resource adequacy program design will be a separate issue that will be addressed by each local regulatory authority.

Stakeholders encouraged alignment of the ISO's default methodologies with the UCAP framework the CPUC is currently considering for 2028 implementation in its pending proceeding. The California Community Choice Association suggested revisiting the ISO's default UCAP design once the CPUC finalizes its process. PG&E and the CPUC Energy Division also indicated concerns regarding the timing of the approval of the ISO proposal and questioned whether seeking board approval would effectively limit the opportunity for continued collaboration on UCAP design. While Management's proposed UCAP design provides an effective framework for establishing default resource qualifying capacity values, we recognize that continued coordination will remain important both to ensure the CPUC develops an effective UCAP structure for its jurisdictional LSEs and the ISO is utilizing best practices in our calculations. Management remains committed to collaboration and will seek opportunities to align inputs and assumptions where appropriate. In addition, the ISO will continue to evaluate industry best practices in reliability modeling and qualifying capacity criteria as the ISO develops the details of the UCAP methodology, which will be transparent to stakeholders and memorialized in the Business Practice Manuals.

The California Energy Storage Alliance, San Diego Gas & Electric, and other stakeholders debated which kinds of forced outages should be included in the forced-outage rate that is a basis for the UCAP methodology and questioned alignment with the CPUC's approach. Management's proposed approach for UCAP includes a broad set of forced outages and is based on the principle that first, it should reflect the relative contribution of different resources to meet the ISO's reliability needs and second, a resource's forced outage rate is a proxy for its unavailability to serve load. The exception, which was supported by stakeholders, is the transmission-induced generation outage nature of work. This outage type is excluded because it does not represent the generator's unavailability directly since the generator is available, but the transmission line is out of service.

Numerous stakeholders, including the California Energy Storage Alliance and Middle River Power, also expressed concerns about a previous version of the proposed default UCAP qualifying capacity criteria. The previous design utilized a methodology called the "supply cushion equation" to determine the historic periods when resources' forced outage rates should be assessed to determine times of system need. Management's proposal replaces this part of the design with a methodology to determine system need

that is informed by the ISO's reliability modeling. Stakeholders supported the revised design.

Finally, Pacific Gas & Electric, Middle River Power, and the CPUC Energy Division have raised several issues they see as interconnected with this proposal, namely the ISO's current processes including the existing resource adequacy availability incentive mechanism. CPUC Energy Division staff emphasized that the ISO processes need to consider highest hours at risk, not just the peak hour, as the resource mix and demand shapes continue to evolve.

While changes to these provisions are not in the scope of Track 1, they are being considered in the ISO's concurrent Track 2 and 3 efforts of the Resource Adequacy Modeling and Program Design initiative. We recognize that the Track 2 reforms to our resource adequacy availability incentives design will need to work in harmony with the evolving local regulatory authority programs, including the CPUC's UCAP design. While the default rules (planning reserve margin and qualifying capacity criteria) are critical in the event local regulatory authorities do not adopt their own resource adequacy rules, not all entities actually adopt these default rules. As stakeholders and the ISO proceed with changes to the availability and performance rules, they should do so with these proposed default rules in mind and the recognition that not all local regulatory authorities have uniform rules, nor choose the ISO's default rules. The revised performance and availability rules will have to take this into consideration. We agree with the CPUC Energy Division that future reforms to our programs should examine holistically whether we have the right set of program requirements based on the evolving reliability needs, and can consider, for example, whether an evaluation of net-peak sufficiency and energy sufficiency is needed as those tracks proceed.

## CONCLUSION

Management recommends that the ISO Board of Governors approve the proposed updates to the ISO's default qualifying capacity criteria and default planning reserve margin. These updates will improve the accuracy of ISO balancing authority area reliability assessments and provide a reliable resource adequacy reference without altering the autonomy of local regulatory authorities to set their own resource adequacy rules.

**Attachment E – Track 3A Final Proposal**

**Tariff Amendment – Resource Adequacy Modeling and Program Design Initiative**

**California Independent System Operator Corporation**

**March 3, 2026**


# Re e deq a y M deling and P g am De ign

## T a k 3 : Re e Vi ibility

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## Executive Summary

This final proposal aims to enhance the California Independent System Operator's (ISO) resource adequacy processes by improving visibility into resources available for procurement through the ISO's backstop measures.[1] It is part of a broader stakeholder effort, the Resource Adequacy Modeling and Program Design (RAMPD) initiative, that was launched to consider comprehensive changes to the ISO's resource adequacy processes. Following the guidance from the RAMPD working group, this proposal was prioritized for its ease of implementation and its potential to enhance the ISO's ability to maintain grid reliability.

Currently, the ISO lacks visibility into the contractual status of Resource Adequacy (RA)-eligible capacity not shown as RA. Obtaining this information will better inform the ISO's year-ahead, month-ahead, and intra-month Capacity Procurement Mechanism (CPM) processes. Improving visibility into resource status is a crucial first step in a multi-phase effort to enhance the effectiveness of the ISO's backstop processes.

The ISO's backstop procurement authority works alongside local regulatory authority RA programs to ensure reliability in the CAISO balancing authority area (BAA) through specific tariff-defined actions. The ISO can procure additional capacity through its CPM when RA deficiencies or grid circumstances require more capacity than supplied by the RA program. To exercise its CPM authority, the ISO must identify capacity that is available and willing to accept a voluntary CPM designation.

This final proposal includes annual and monthly reporting requirements for all RA-eligible capacity in the CAISO BAA that is not shown as RA. These reporting requirements will provide visibility without imposing new availability requirements on the reported capacity. Enhanced visibility into RA-eligible capacity will allow the ISO to better assess system reliability needs and target outreach to potential backstop procurement more efficiently. The information gathered may also inform future updates to the CPM structure. This final proposal also recommends eliminating the monthly Section 43A.6.3 Report of Non-Resource Adequacy Capacity.

In response to stakeholder feedback on the draft final proposal, this final proposal clarifies that the ISO intends to make available to stakeholders an aggregated version of the information collected through the recommended reporting requirements. This final proposal also clarifies that in the year-ahead report, scheduling coordinators may categorize resource status based on information available at that time, which may or may not use all categories of resource status options.

[1] In this final proposal the California Independent System Operator is referred to as "the ISO" except in cases referring to the California Independent System Operator Balancing Authority Area, where it is referred as "CAISO" as part of the abbreviation "CAISO BAA."

## Introduction

Track 3A is the first step in the ISO's Track 3 reforms of its backstop procurement programs. Track 3A is focused on identifying and accessing information that will allow the ISO to carry out its existing backstop procurement programs more effectively. Track 3A focuses on the first of the four problem statements the RAMPD working group identified for backstop procurement reform:

1. The ISO lacks visibility into the contract and availability status of resources not shown as RA, preventing the ISO from efficiently and reliably running its current CPM processes.
2. Some stakeholders note they lack visibility into the ISO's CPM decision making processes.
3. In the current tight RA market, the ISO's CPM may not be producing all of its intended results particularly given the frequent lack of bids into its Competitive Solicitation Processes.
4. As grid reliability needs evolve (e.g. to address changing needs for battery storage) the ISO's CPM process may need to evolve to obtain specific attributes necessary for reliability.

This final proposal identifies the contractual status of RA-eligible capacity not shown as RA as information that would improve the effectiveness of the Capacity Procurement Mechanism (CPM), the ISO's primary backstop procurement program. The final proposal outlines a new set of reporting requirements for this information that will apply to scheduling coordinators of RA-eligible capacity located inside the CAISO BAA that appears on the ISO's Net Qualifying Capacity (NQC) list. These reporting requirements are within the ISO's existing authority under tariff section 4.6.7.1, but the ISO will seek tariff changes to incorporate this specific information into the tariff for the sake of clarity.

Later in 2025 the ISO is scheduled to begin the stakeholder process for Track 3B. Track 3B will focus on structural review and potential reform of the backstop programs, and will consider potential policy changes related to problem statements two through four. It will be the vehicle for stakeholder suggestions on how to improve the ISO's backstop processes and some of the ISO's processes around the Extended Day-Ahead Market resource sufficiency evaluation. The conversation in Track 3B may be informed by the information gathered through the requirements recommended in this final proposal.

## Background on the Capacity Procurement Mechanism (CPM) and the Competitive Solicitation Process (CSP)

The CPM is a core part of the ISO's backstop procurement authority designed to work in harmony with the forward local regulatory authority (LRA)-administered RA programs. When there is a deficiency in load serving entity (LSE) RA plans or in specific extenuating grid circumstances, the ISO has the tariff authority to conduct backstop procurement to fill the gap and maintain grid reliability. This authority to designate capacity under the CPM covers six tariff-defined circumstances. [2] Four of the designations correspond to different types of RA deficiencies while the significant event and exceptional dispatch designations address extenuating grid circumstances.

Operation of the CPM relies on capacity willingly offered to the ISO by scheduling coordinators (SCs). The CSP is the ISO's primary process for identifying capacity available for a CPM designation. Through

[2] Tariff section 43A.2 describes the six sets of circumstances, or designations, under which the ISO has CPM procurement authority.

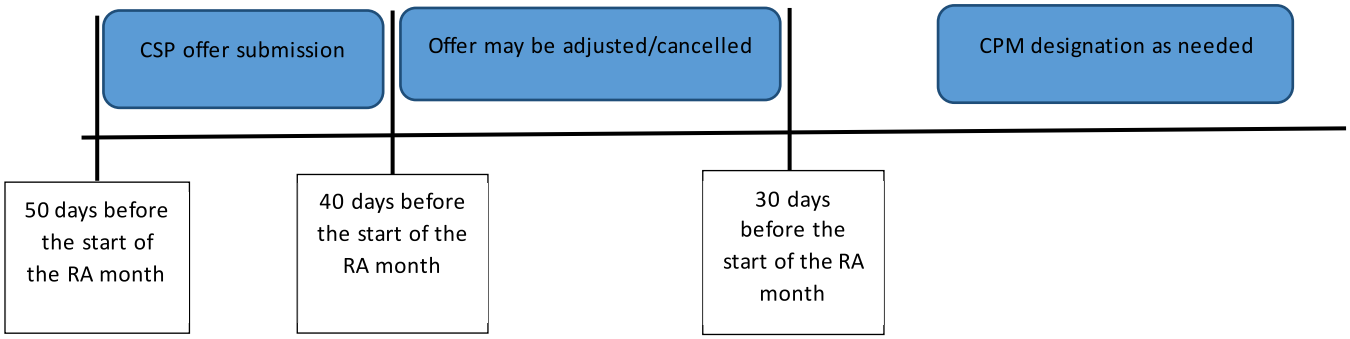
the CSP, SCs may voluntarily offer capacity that has not already been shown as RA for a CPM designation. CSPs are run on three recurring timeframes: annual, monthly, and intra-monthly.[3] These correspond to the types of CPM designations, providing a pool of up-to-date offers on the timelines appropriate to the ISO decision-making on each type of designation (Figure 1). However, capacity is not required to have come through the CSP in order to receive and accept a CPM designation if it is otherwise eligible. If there are insufficient offers into a CSP to meet the ISO's operational need, the ISO may offer a CPM designation to capacity that was not offered to the CSP.

**Figure 1: CSP Timeframes and the CPM Designation Decisions they support**[4]

| Timeframe | CPM event covered in a CSP |
|---|---|
| **Annual** | • Insufficient cumulative local capacity in RA plans<br>• Insufficient cumulative system capacity in RA plans<br>• Insufficient cumulative flexible capacity in RA plans<br>• Collective deficiency in local area |
| **Monthly** | • Insufficient cumulative local capacity in RA plans<br>• Insufficient cumulative system capacity in RA plans<br>• Insufficient cumulative flexible capacity in RA plans<br>• Insufficient cumulative system capacity due to planned outages |
| **Intra-monthly** | • Significant event<br>• Exceptional dispatch |

All CSP iterations follow a standardized timeline documented in the ISO's Business Practice Manual for Reliability Requirements. In the monthly timeframe for example, CSP offers may be submitted in CIRA up to 40 days before the start of the RA month and adjusted down in price or quantity up to 30 days before the start of the RA month. At that point all offers are finalized and may not be withdrawn until the ISO has completed the CPM process and awarded designations to the selected resources (Figure 2).[5]

**Figure 2: Timeline for monthly Competitive Solicitation Process**




In all iterations of the CSP, SCs may offer their capacity to the ISO at prices up to a soft offer cap, currently set at $7.34/kW-month, or a resource-specific cost-based price approved by FERC.[6]

[3] The term "year-ahead" is synonymous with "annual" when describing CSP processes. Similarly, "month-ahead" and "monthly" are synonymous.
[4] Business Practice Manual for Reliability Requirements, Version 74, October 5, 2023. Section 5.1, page 48.
[5] Id at 51.
[6] See tariff section 43A.4.1.1.1.

In theory, all available capacity not shown as RA can be offered into the CSP. If this was done, the CSP offer list would provide transparency into the full pool of resources available for CPM procurement. However, offering capacity into the CSP is voluntary, and there are reasons why a supplier might choose not to.

One reason articulated by stakeholders is loss of flexibility. Once CSP offers are finalized, suppliers may not withdraw them until the current CPM designation cycle is complete. If an offer is selected to receive a CPM designation the SC may not turn it down, and the resource acquires a must offer obligation equivalent to that of an RA resource for a minimum of 30 or 60 days depending on the type of CPM designation.[7] This prevents capacity offered into the CSP from being committed elsewhere until the offer is released (if not selected) or the CPM designation term expires (if it is selected). Suppliers wishing to use capacity for other purposes, such as RA substitution within the ISO's RA program or reliability services in a market outside the CAISO BAA, may choose not to offer that capacity into the CSP to maintain flexibility to use the capacity for those other purposes. In practice then, CSP offers usually represent only a subset of CSP-eligible capacity, and the CSP process gives no visibility into how much CSP-eligible capacity is not offered and for what reasons.

This limits the ISO making backstop procurement decisions. First, it limits visibility into what additional capacity may be available if CSP offers are insufficient to meet the CPM procurement need in a given year or month. For example, a resource that did not offer to the CSP in hopes of selling its capacity outside the CAISO BAA may have been unsuccessful. That resource may now be willing to accept a CPM designation, if offered, but the ISO does not know that resource is still available. This is a growing concern given the decline in CSP offers since 2020, discussed further in the following section.

The limited pool of CSP offers also makes it harder to identify potential drivers of long-term trends in CSP results. The ISO can see that the amount of capacity being offered has been declining but not why, and this ambiguity has implications for reliability planning. If offers are declining because more resources are under RA contract to CAISO BAA load serving entities but not being shown due to substitution needs or due to risk of unavailability, the decline in CSP offers may not be indicative of a reliability risk. But if, for example, more CSP-eligible capacity is being sold for reliability services outside the CAISO BAA, the decline in CSP offers may correspond to a meaningful decline in resources available to serve the CAISO BAA. The CSP process therefore creates only part of the visibility the ISO needs to make effective backstop decisions in today's changing energy landscape.

## The Role of Visibility

Identifying when backstop procurement is necessary and finding resources to procure both rely on the ISO having adequate visibility into the entire RA-eligible resource fleet. As discussed in the RAMPD working group, improved visibility into the resources internal to the CAISO BAA could help explain recent trends in CPM solicitation results, improve functioning of the CPM program, and potentially point to policy improvements.

The ISO's current source of year-ahead and month-ahead resource visibility is shown RA. The year-ahead and month-ahead showings of LSEs and the corresponding RA supply plans scheduling coordinators file with the ISO document a pool of committed capacity designed to be sufficient to meet projected load.

[7] Id at 167.

Resources shown as RA can still experience outages or derates that affect their actual availability within any given month, but overall RA resources are the portion of the resource fleet the ISO has visibility into on a year-ahead and month-ahead basis.

The ISO does not have the same visibility into RA-eligible resources not shown as RA. The ISO has limited visibility into the status of this portion of the RA-eligible fleet on a year ahead and month-ahead basis. This affects CPM implementation because resources not shown as RA form the pool of potential CPM capacity. Conducting efficient and effective backstop procurement requires understanding what capacity is available after accounting for all RA-shown resources. The CSP is designed to provide this understanding. However, as shown in Figure 3 below, bids into the CSP solicitations have dropped sharply since 2020.

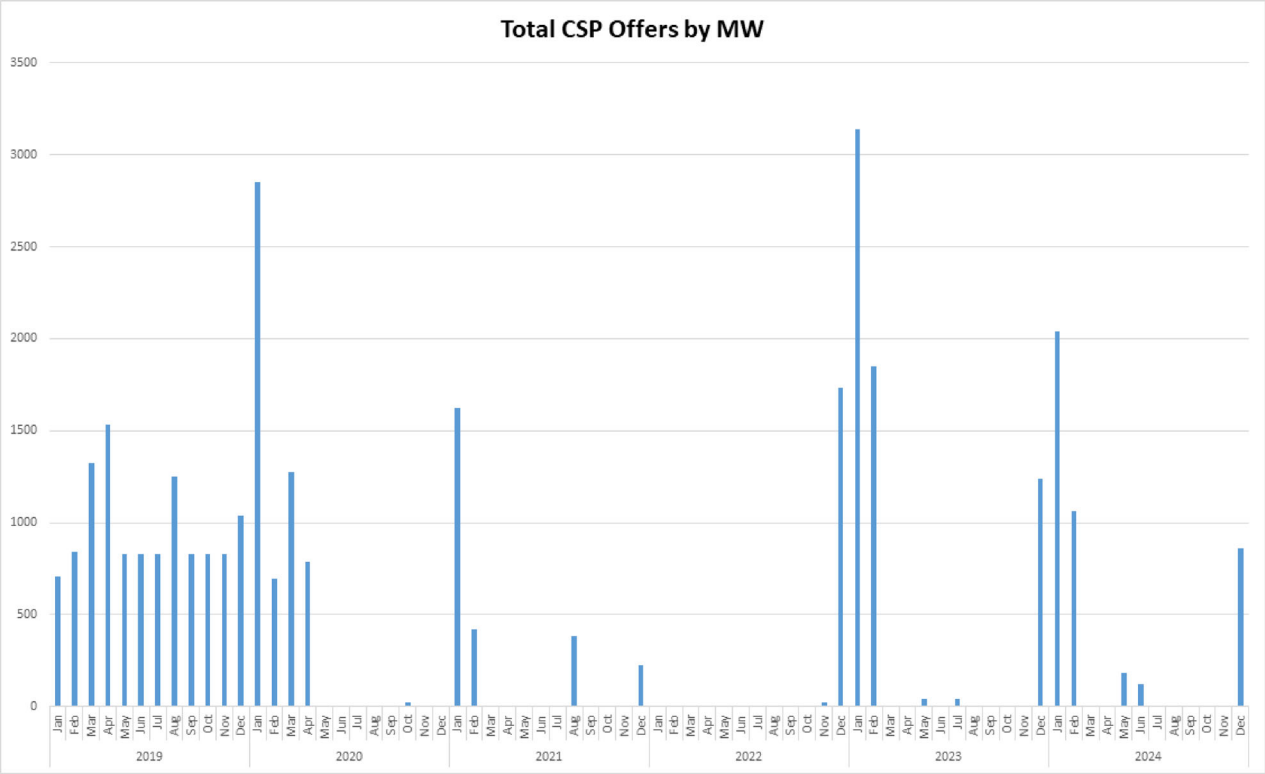
When the offer pool is small enough, instances can and have occurred where not enough capacity is offered to meet the ISO's need for CPM procurement.[8] In such cases, ISO personnel have had to reach out to suppliers in an attempt to identify capacity that is available for CPM procurement. Given the lack of visibility into RA-eligible capacity not shown as RA, the ISO currently cannot effectively identify what RA-eligible capacity is available or unavailable, and targeting of the outreach is not as efficient as it could be with additional information.

The CAISO BAA resource fleet and market landscape have both evolved rapidly, and it is possible that the drop in bids is related to a broader trend in capacity commitments. High prices in the bilateral RA market make it more likely that RA-eligible capacity previously bid into the CSP might be sold as RA instead. More capacity may be held back for substitution or sold outside the CAISO BAA. Such trends have implications for reliability planning and policy, but the ISO must be able to see these trends in order to take them into account.

Better visibility into the status of RA-eligible capacity not shown as RA will help the ISO conduct existing backstop processes more effectively and understand how any emerging trends should be incorporated into backstop program design.

[8] See, for example, the ISO's requested action to suppliers for addition capacity offers outside the CSP process in August 2021.

**Figure 3. Capacity Bid into the Competitive Solicitation Process, 2019-2024 (MW)**




## Review of the Draft Final Proposal

To address the need for greater visibility into the portion of the RA-eligible CAISO BAA resource fleet not shown as RA, the ISO issued a draft final proposal in August 2025 with new annual and monthly reporting requirements for RA-eligible capacity not shown as RA.[9] Specifically, the ISO proposed that scheduling coordinators for generating resources report to the ISO the quantities of RA-eligible capacity located inside the CAISO BAA that fall into each of the following categories:

- **Sold outside the CAISO BAA.** This refers to RA-eligible capacity that has been sold as capacity outside of the CAISO BAA. As the Western RA Program and potentially other RA programs develop across the western US, there will be increasing opportunities for capacity inside the CAISO BAA to contract with entities outside the BAA. This is important information for the ISO to be aware of for both backstop and reliability planning reasons. Being contracted outside the BAA may affect a resource's ability to fulfill the obligations of a CPM contract, so outside contracting can affect the pool of capacity available for backstop procurement. Outside contracting also has implications for reliability studies, because resources located inside the CAISO BAA are considered available to help meet CAISO BAA load in most instances. Knowing which resources are committed elsewhere can improve the accuracy of reliability studies by avoiding overestimation of the resources actually available to meet CAISO BAA load.

[9] This reporting requirement would fall under the ISO's existing tariff authority in Section 4.6.7.1.

- **Not shown due to being reserved for substitution.** This refers to RA-eligible capacity, whether contracted or not, that is not shown to the ISO in order to ensure compliance with RA substitution rules. The ISO notes that this category may evolve alongside substitution rule changes adopted in Track 2 of this initiative. However, in the context of the current substitution paradigm this category includes capacity associated with resource A in the following scenarios:
    - The SC for resource A was contracted to serve as substitute capacity for resource B, controlled by a different SC.
    - The same SC controls both resources A and B so there is no contract, but resource A is being used as substitute capacity for resource B.
    - The SC for resource A is planning to sell resource A as substitute capacity for a resource controlled by another SC but does not have a contract in place yet.
- **Not shown due to potential unavailability.** This refers to RA-eligible capacity that, whether contracted for RA or not, is not shown to the ISO due to anticipated ambient derates or other outage events that suppliers believe might prevent it from operating. This includes known outages already reported in the Outage Management System (OMS).
- **Contracted to a CAISO BAA LSE but not shown**. This refers to RA-eligible capacity that is contracted to a CAISO BAA LSE but not shown as RA and does not fit under any of the categories above.
    - RA-eligible resources owned by an LSE and not shown as RA should also be reported in this category unless they fall under the "Not shown due to being reserved for substitution" or "Not shown due to potential unavailability" categories.
- **Not contracted.** This refers to RA-eligible capacity that is not under any kind of capacity contract and does not fit into any of the categories above.

The draft final proposal envisioned that this reporting would be done on the same timelines as the year-ahead and month-ahead RA showing processes, with the understanding that some capacity may change status intra-month. The format of the reporting template would allow SCs to report status on a daily granularity, so SCs would be able to accurately represent intra-month status changes known at the time of reporting. Each report was meant to be a good-faith snapshot in time, with the understanding that outreach from ISO personnel to inquire about available capacity for the CPM may yield updated information compared to the most recent report. The proposed reporting was meant to provide ISO personnel with additional visibility that could help them more effectively assess the reliability needs of the system and efficiently identify available capacity in months where the CSP offers are insufficient to meet the ISO's CPM procurement need.

The ISO anticipated that these reporting requirements would be implemented in the CIRA platform alongside current RA reporting. The goal of that implementation approach was to make the reporting as easy as possible for SCs by leveraging a platform that is already familiar.

In response to feedback on the straw proposal published in May 2025, the draft final proposal clarified that these requirements would apply only to RA-eligible resources located inside the CAISO BAA and appearing on the ISO's NQC list. This means that resources credited for RA by LRAs but not on the ISO's NQC list, energy-only resources, and pre-COD resources are not included in these requirements.

Several stakeholders had expressed concern in previous RAMPD working group conversations and comments about whether reporting the status of non-shown capacity would impose any new availability

requirements or offer obligations on that capacity. The draft final proposal emphasized that it would not. The draft final proposal stated that the proposed reporting requirements would evolve alongside the RA program more broadly and could at some point in the future be used in additional ways, such as collecting offers into the substitution pool approach being discussed in Track 2. While these additional uses could carry obligations, they would be policy changes in their own right and fully stakeholdered before adoption. The reporting proposed in the draft final proposal was for visibility only and would not impose any new requirements on the capacity whose status was being reported.

Finally, the draft final proposal recommended eliminating the monthly Section 43A.6.3 Report of Non-Resource Adequacy Capacity.

## Stakeholder Perspectives

The ISO received stakeholder comments on the draft final proposal on September 12, 2025. Stakeholders overall supported of the proposal with the following questions and suggestions.

- The Alliance for Retail Energy Markets (AreM), the California Community Choice Association (CalCCA), the California Department of Water Resources (CDWR), Microsoft, Southern California Edison (SCE), and Pacific Gas & Electric (PG&E) support or accept the new reporting requirements as proposed in the draft final proposal.
- The Department of Marketing Monitoring (DMM) notes that the CPM is infrequently used, but does not see this as a reason not to proceed and is overall supportive of the proposal.
    - **ISO Response**: The ISO agrees with the DMM's perspective that the relatively infrequent use of the CPM is not a reason not to move forward with the proposed requirements. While the CPM is not used every month, its use correlates with the most taxing grid conditions under which effective backstop processes are most important for maintaining grid reliability.
- Middle River Power (MRP) and San Diego Gas & Electric (SDG&E) express concerns about the administrative burden for scheduling coordinators of complying with these requirements, and MRP does not support the Track 3A draft final proposal on these grounds. SDG&E encourages the ISO to consolidate the number of capacity status categories from five to the three used in the summer 2025 data request, and to consider requiring the information only in a subset of months.
    - **ISO Response**: The ISO acknowledges that the proposed reporting requirements will require additional time and effort from SCs. While the proposed reductions in reporting categories and months would reduce this time and effort, the ISO sees value in the timeline presented in the straw proposal. While some months have historically been less likely to see a CPM designation than others, the resource fleet in the CAISO BAA continues to evolve and such patterns may not hold in the future. Similarly, each of the status categories in the straw proposal is distinct in the ISO's view. However, the ISO understands that in the year-ahead timeframe scheduling coordinators may not yet know the amount of capacity that will be unavailable or used for substitution. If this is the case, scheduling coordinators may use the remaining three categories only in the year-ahead report.

- AreM, CalCCA, Microsoft, and the Western Power Trading Forum (WPTF) request that the ISO publish an aggregated version of the information collected through the proposed reporting requirements.
    - **ISO Response**: The ISO intends to make available to stakeholders an aggregated version of the information collected through these new reporting requirements.
- AreM, MRP, and PG&E oppose the retirement of the Non-RA Capacity Report on the basis that it contributes to market transparency and/or insufficient justification has been provided for its elimination.
    - **ISO Reponse**: The ISO has not found significant evidence of the Non-RA Capacity Report being used and providing value. Additionally, the reporting requirements proposed in this final proposal will create a new source of market transparency around non-RA resources that stakeholders will have access to through the ISO's publishing of aggregated results.

# Final Proposal

## Visibility Into the Status of RA-Eligible Capacity Not Shown as RA

After considering feedback on the draft final proposal, the ISO finds that the draft final proposal remains the best solution for improving the ISO's visibility into the status of RA-eligible resources not shown as RA while minimizing administrative burden for SCs, and provides some additional clarifications as requested by stakeholders. The five categories of capacity status from the draft final proposal are repeated here for clarity:

- **Sold outside the CAISO BAA.** This refers to RA-eligible capacity that has been sold as capacity outside of the CAISO BAA.
- **Not shown due to being reserved for substitution.** This refers to RA-eligible capacity, whether contracted or not, that is not shown to the ISO in order to ensure compliance with RA substitution rules. The ISO notes that this category may evolve alongside substitution rule changes adopted in Track 2 of this initiative. However, in the context of the current substitution paradigm this category includes capacity associated with resource A in the following scenarios:
    - The SC for resource A was contracted to serve as substitute capacity for resource B, controlled by a different SC.
    - The same SC controls both resources A and B so there is no contract, but resource A is being used as substitute capacity for resource B.
    - The SC for resource A is planning to sell resource A as substitute capacity for a resource controlled by another SC but does not have a contract in place yet.
- **Not shown due to potential unavailability.** This refers to RA-eligible capacity that, whether contracted for RA or not, is not shown to the ISO due to anticipated ambient derates or other outage events that suppliers believe might prevent it from operating. This includes known outages already reported in the Outage Management System (OMS).
- **Contracted to a CAISO BAA LSE but not shown**. This refers to RA-eligible capacity that is contracted to a CAISO BAA LSE but not shown as RA and does not fit under any of the categories above. It also includes RA-eligible capacity that is owned by a CAISO BAA LSE but not shown as RA in the given year or month.

    - RA-eligible resources owned by an LSE and not shown as RA should also be reported in this category unless they fall under the "Not shown due to being reserved for substitution" or "Not shown due to potential unavailability" categories.
- **Not contracted.** This refers to RA-eligible capacity that is not under any kind of capacity contract and does not fit into any of the categories above.

As described in the draft final proposal, this reporting will take place on the same annual and monthly timelines as supply plans and is to be completed by the scheduling coordinators responsible for the eligible resources. In each report, the sum of capacity reported across all five categories should equal all NQC controlled by the scheduling coordinator that has not been shown as RA in the corresponding year-ahead or month-ahead supply plan. These requirements will apply only to RA-eligible resources located inside the CAISO BAA and appearing on the ISO's NQC list. This means that resources credited for RA by LRAs but not on the ISO's NQC list, energy-only resources, and pre-COD resources are not included in these requirements.

For the year-ahead report, the ISO has heard the feedback that scheduling coordinators may not yet know the amount of capacity that will be unavailable or used for substitution. If this is the case, scheduling coordinators may use the remaining three categories only in the annual report.

The ISO intends to make available to stakeholders an aggregated version of the information collected through these new reporting requirements.

These requirements and the specific capacity status definitions may evolve over time, including to complement changes adopted in Tracks 1 and 2 of the RAMPD initiative. However, under the current framework the ISO finds this to be the structure best suited to facilitating more effective implementation of the ISO's backstop processes.

### Retirement of the Non-Resource Adequacy Capacity Report

The ISO also proposes to eliminate the monthly Section 43A.6.3 Report of Non-Resource Adequacy Capacity. As described above, the ISO has not found significant evidence of the Non-RA Capacity Report being used and providing value. Additionally, the reporting requirements proposed in this final proposal will create a new source of market transparency around non-RA resources that stakeholders will have access to through the ISO's publishing of aggregated results.

## Next steps

The ISO thanks stakeholders for their engagement with Track 3A and the ideas that have been proposed and discussed. These proposed reporting requirements are already supported by authority granted in section 4.6.7.1 of the existing tariff. However, because the ISO is proposing a new ongoing process, the ISO sees benefit in documenting in in greater detail in the tariff. In light of this, the ISO will seek approval for such tariff revisions from the ISO Board of Governors in October 2025 and through a subsequent filing with FERC.

## Decisional Classification

Track 3A of this initiative concerns resource visibility; the final proposal would create new annual and monthly reporting requirements for scheduling coordinators with RA-eligible capacity that is not being

shown as RA in the given month or year. As explained above, the ISO plans to seek approval for the proposed changes from the ISO Board of Governors (the Board).

The WEM Governing Body has primary authority over any proposal to change or establish any CAISO tariff rule(s) applicable to the EDAM or WEIM Entity balancing authority areas, EDAM or WEIM Entities, or other market participants within the EDAM or WEIM Entity balancing authority areas, in their capacity as participants in either the WEIM or EDAM. This scope excludes from primary authority, without limitation, any proposals to change or establish tariff rule(s) applicable only to the ISO balancing authority area or to the ISO-controlled grid. Charter for WEIM Governance § 2.2.1. None of the requirements contemplated in this draft final proposal would be "applicable to WEIM Entity balancing authority areas, WEIM Entities, or other market participants within WEIM Entity balancing authority areas, in their capacity as participants in WEIM." Rather, the proposed tariff rules would be applicable "only to the ISO balancing authority area or to the ISO-controlled grid." Accordingly, the matters scheduled for decision fall outside the scope of primary authority.

While the WEM Governing Body "may provide advisory input over proposals to change or establish tariff rules that would apply to the real-time market but are not within the scope of primary authority," no aspects of this initiative would establish rules for the real time market. Accordingly, this initiative falls outside of the WEM Governing Body's advisory role as well.

No feedback on the approach was received after the August 2025 draft final proposal.