

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

Order Instituting Rulemaking to Continue  
Electric Integrated Resource Planning and  
Related Procurement Processes.

Rulemaking 20-05-003  
(Filed May 7, 2020)

**COMMENTS OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR  
CORPORATION ON ADMINISTRATIVE LAW JUDGE'S RULING**

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Dated: March 26, 2021

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**I. Introduction**

The California Independent System Operator Corporation (CAISO) hereby provides comments in response to the *Administrative Law Judge’s Ruling Seeking Feedback on Mid-Term Reliability Analysis and Proposed Procurement Requirements* (Ruling), its attachments and questions.

**II. Discussion**

The Commission should take immediate action to address retirement of the Diablo Canyon Power Plant (Diablo Canyon) and once-through cooling (OTC) resources as well as changes in the resource fleet and capabilities and climate change challenges. Based on the CAISO’s analyses, the Commission should immediately initiate procurement for a minimum of 10,000 MW of incremental effective capacity to be online during the mid-term (2023 to 2026) period. Critically, this capacity should be effective after sunset. Additional reliability-based modeling is needed to validate the total need above this minimum amount.

Given the significant capacity and energy needs, additional resource procurement is a least-regrets option. The system is at a critical juncture where all existing resources are necessary to maintain reliability. For example, the CAISO’s Board of Governors recently authorized almost 300 MW of system reliability-must run (RMR) backstop contracts to retain resources requesting to mothball or retire.<sup>1</sup> At this point, all existing resources—including existing thermal resources—will continue to be needed for reliability purposes unless there are

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<sup>1</sup> CAISO Board of Governors, Decision on Kingsbury Cogen Reliability Must-Run Designation, March 24, 2021; Decision on Reliability Must-Run Designations, December 17, 2020; Decision on Conditional Approval to Extend Reliability Must-Run Contracts, October 1, 2020.

sufficient incremental resources to provide adequate replacement capacity and energy. The CAISO supports accelerated procurement, starting with at least 3,150 MW of incremental capacity by August 1, 2023 to ensure OTC units can retire at the end of 2023 as planned.

The Ruling asks several important questions about managing through greater risk and variability in the future. The CAISO believes the best available tools to assess such risks is via a stochastic and deterministic production cost analysis. However, current analyses are conducted based on a 0.1 loss of load expectation (LOLE), which explicitly accepts resource insufficiency issues once every 10 years on average. At the next available opportunity, the Commission must decide whether the 0.1 LOLE threshold is acceptable; whether model assumptions used by Energy Division staff can reflect the desired threshold; and whether to adopt a more conservative standard to address extreme weather events, which are likely to be more frequent and intense due to climate change.

In the subsections below, the CAISO provides responses to selected questions from the Ruling.

#### **A. Planning Standards**

- 1. Please comment on the appropriateness of a 20.7 percent PRM, which includes additional operating reserves, for purposes of the mid-term reliability analysis included in this ruling. If relevant, propose alternatives and explain your rationale.**

The Commission should adopt a planning reserve margin (PRM) that establishes an acceptable level of reliability performance. The Commission should consider loss of load expectations (LOLE) through more detailed modeling. In addition, the PRM should be recalibrated more frequently when the resource fleet's characteristics are changing rapidly or dramatically. Considering these basic principles, the CAISO agrees with adopting a PRM higher than the current 15% level to address the numerous uncertainties and challenges in meeting mid-term reliability.

The Commission may validate the exact PRM level based on additional reliability modeling, but the CAISO strongly agrees with the Ruling's observation regarding the need to reconsider the PRM in the context of the changing resource fleet. Specifically, the Ruling notes "changes to California's physical power system since the 15-17 percent PRM was adopted, most notably the increasing prominence of variable and dispatch-limited resources on the grid and the growth of behind-the-meter resources" justifies a more conservative PRM, especially in light of

the challenges experienced in 2020 and upcoming resource retirements.<sup>2</sup> The CAISO supports using the 20.7% PRM as an interim measure and as a minimum level to initiate necessary mid-term procurement. As the CAISO explains below in response to Question 4, the current procurement proposed under the Mid-Need scenario tied to the 20.7% PRM is insufficient to address demand needs after sunset. *See also* responses to Questions 4 and 7.

**2. Comment on the appropriateness of a 20.7 percent PRM for long-term planning purposes for IRP in general. If relevant, propose alternatives and explain your rationale.**

*See* response to Question 4.

**3. Comment on the appropriateness of a 1-in-2 weather forecast for the electricity demand forecasts for purposes of the mid-term reliability analysis.**

*See* response to Question 4.

**4. Comment on whether the proposed increase to the PRM sufficiently addresses the likelihood of increasing frequency and intensity of extreme weather events, or whether this risk should be incorporated directly into a reliability-based planning standard (such as, for example, the use of a 1-in-5 or 1-in-10 forecast or incorporating climate models).**

The question assumes an increase in the PRM alone can sufficiently address concerns over extreme weather events. More broadly, the question implies a stack analysis can effectively analyze a wide range of risk factors by simply adjusting the demand forecast. As noted in response to Question 1 and explained more fully below, manually increasing the PRM or changing the demand forecast are interim measures that will uncover the minimum level of need but should not replace more comprehensive reliability analysis.

The Commission can effectively use a stack analysis to direct minimum incremental procurement to meet immediate needs, but the CAISO continues to support using a production cost reliability analysis to accurately determine the PRM for the mid-term. A stack analysis can provide insight into a minimum level of need because such analyses typically only study a narrow, specific scenario (*i.e.*, a single hour). An LOLE analysis, on the other hand, is more comprehensive and given the same assumptions as a stack analysis will be able to uncover

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<sup>2</sup> Ruling, pp. 5-6.

additional needs. The Commission and modeling parties should conduct an LOLE analysis to validate the stack analysis findings.

The CAISO regularly conducts stochastic analyses that include extreme weather events in a random distribution to stress test a given portfolio. These stochastic analyses determine portfolio LOLE and, if necessary, the capacity needed to decrease the LOLE to 0.1.<sup>3</sup> The resulting resource fleet, including the capacity added to bring the LOLE to 0.1, is an *output* of the modeling exercise and determines the PRM.

Although stack analyses are intuitive and informative, production cost-based stochastic analyses are better capable of testing how various resources interact together to provide reliable service and the system's vulnerability to extreme weather events. A stack analysis may reflect some extreme weather peaks by using a higher than average (*i.e.*, a 1-in-5 or 1-in-10) demand forecast; however, the California Energy Commission (CEC) currently only produces hourly forecasts based on the 1-in-2 average demand. For all other demand forecast variants, the CEC currently only produces the single peak hour of demand. The CEC's current hourly load shape for the 1-in-2 demand forecast may not capture potentially higher loads in critical hours after the peak for above average demand days, or during multi-day heat waves that tend to drive sustained air conditioning load (versus a normal cool down during the evening). A 1-in-2 average demand forecast may be appropriate if paired with an allowance for higher than average load during the peak and net demand peak periods. Focusing only on the peak period, however, will not address current and mid-term reliability needs. *See also* response to Question 7.

Lastly, the Ruling asks several important questions about managing through greater risk and variability in the future. The CAISO believes the best available tools to assess such risks is via a stochastic and deterministic production cost analysis. However, current analyses are conducted based on a 0.1 LOLE, which explicitly accepts resource insufficiency issues once every 10 years on average. At the next available opportunity, the Commission must decide whether the 0.1 LOLE threshold is acceptable; whether model assumptions used by Energy Division staff can reflect the desired threshold; and whether to adopt a more conservative standard to address extreme weather events, which are likely to be more frequent and intense due to climate change.

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<sup>3</sup> *See* for example: CAISO, Attachment A to *Comments of the California Independent System Operator Corporation*, R.20-05-003, October 23, 2020.

- 5. Comment in general on your preferred method for setting an IRP long-term reliability-based planning standard. Explain your rationale.**

*See response to Question 4.*

## **B. Analysis of Need**

- 6. Comment on whether you agree with the approach proposed here for determining need, which corresponds to the “Need Determination – Reliability – Option 3” in Section 6.5.2 of the Procurement Framework Staff Proposal. If you have an alternative proposal, describe it in detail and/or identify whether it is one of the other options included in the Procurement Framework Staff Proposal.**

The CAISO does not oppose Option 3 as an interim measure. *See response to Question 4.*

- 7. Comment on whether you agree with the recommended Mid-Need scenario, explaining why or why not. If you have an alternative proposal, describe it in detail. Also note that Section 6.6 of the Procurement Framework Staff Proposal includes recommendations for need determination during the current IRP cycle (referred to as Phase 1). Comment on whether you agree with those recommendations, to the extent not already addressed by your responses to the questions above, in the context of the procurement proposed in this ruling and/or related to the remainder of this IRP cycle**

Based on the CAISO’s analysis, the need is closer to 10,000 MW of incremental effective capacity by 2026. The CAISO conducted two analyses to determine the 2026 need. The first is a production cost-base stochastic analysis of the 46 million metric ton (MMT) greenhouse gas (GHG) target portfolio the Commission originally proposed for use in the CAISO’s 2021-2022 transmission planning process.<sup>4</sup> In that analysis, the CAISO found that the Commission’s portfolio needed another 2,602 MW of effective capacity to reach a 0.1 LOLE in 2026, bringing the total portfolio need to 12,400 MW. Aside from the effective capacity added to the portfolio, the remainder of the capacity is comprised of the original Commission proposed portfolio of approximately 8,150 MW of in-front-of-the-meter batteries, 650 MW of pumped storage, 600 MW of demand response, and 400 MW of wind based on the 15% ELCC value from the Energy Division staff’s Surface Model. Netting out the 3,300 MW already procured under D.19-11-016 results in 9,100 MW of incremental procurement by 2026 based on the 2019 IEPR

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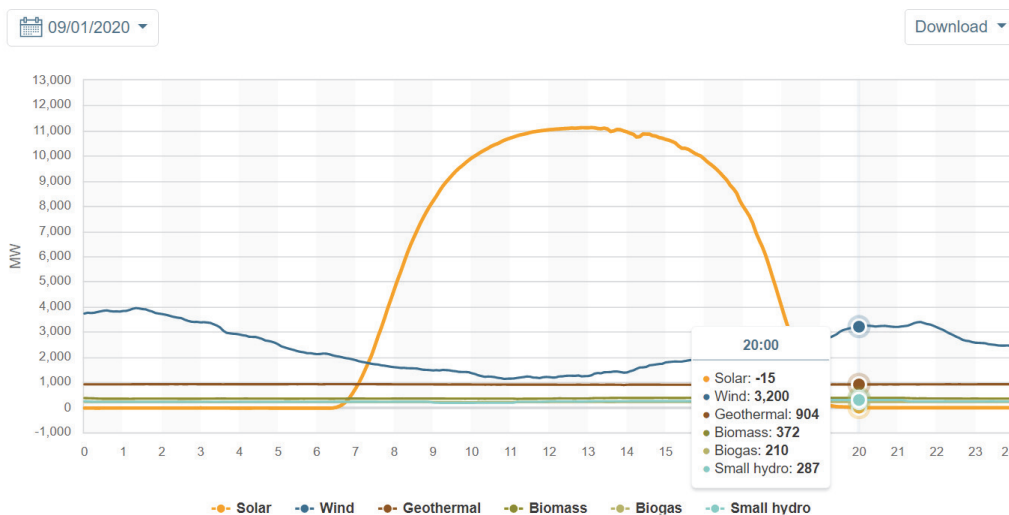
<sup>4</sup> Proposed Decision R.20-05-003, January 7, 2021. The portfolio from the Proposed Decision was subsequently modified with capacity manually added outside of the RESOLVE model and adopted in Decision D.21-02-008, February 11, 2021. Since there was no rerun of the RESOLVE model, there was insufficient information to conduct production cost modeling of the new portfolio.

forecast. However, as noted in Table 2, the peak demand in the 2020 IEPR is 1,122 MW higher. The CAISO’s production cost analysis has not been recalculated with the 2020 IEPR forecast but with this increase in load, the expected incremental need is approximately 10,000 MW by 2026.

This proceeding’s schedule and availability of modeling information did not allow the CAISO to conduct a full analysis and make the modeling backup available to parties, as is typically the CAISO’s practice. However, the CAISO used the same process, methodology, and general assumptions as described in its October 23, 2020 production cost analysis and only replaced the portfolio.<sup>5</sup>

Separately, the CAISO re-evaluated Energy Division staff’s stack analysis to evaluate the system surplus or shortfall based on a critical hour of need after sunset. The CAISO selected hour ending 8 p.m. Pacific Daylight Time (PDT) to conduct this analysis because it typically occurs after the forecasted peak hour in September (*i.e.*, the annual peak of the year), when demand remains high but solar generation has ceased. Figures 1 and 1A below show actual solar output from September 1 and September 30, 2020.

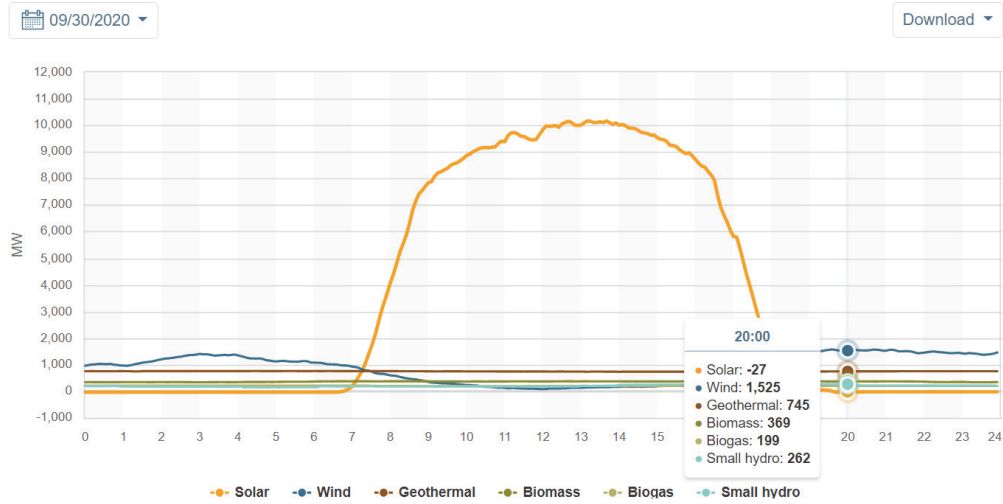
**Figure 1: September 1, 2020 Solar Output**



<sup>5</sup> CAISO, *Comments of the California Independent System Operator Corporation*, R.20-05-003, October 23, 2020.



**Figure 1A: September 30, 2020 Solar Output**



In reviewing the Energy Division staff’s stack analysis for 2021 through 2026, the CAISO found the analysis did not consider that the peak demand hour shifts later in the day, eventually settling at 8 p.m. PDT. Table 1 below compares the time of peak in the 2019 and 2020 Integrated Energy Policy Report (IEPR). Energy Division staff’s analysis uses the 2019 IEPR vintage, but the CEC recently approved the 2020 IEPR demand forecast.<sup>6</sup> Based on the 2019 IEPR, the peak hour occurs at hour ending 8 p.m. PDT in 2024 whereas in the 2020 IEPR forecast the peak hour shifts to 8 p.m. PDT in 2023.

**Table 1: IEPR Forecasted Peak Hour 2021-2026 (Hour Ending in Pacific Daylight Time)**

	2021	2022	2023	2024	2025	2026
IEPR 2019	7 p.m.	7 p.m.	7 p.m.	8 p.m.	8 p.m.	8 p.m.
IEPR 2020	6 p.m.	7 p.m.	8 p.m.	8 p.m.	8 p.m.	8 p.m.

Table 2 compares the peak and load forecasts. The 2020 IEPR vintage is higher than the 2019 IEPR vintage in every year and by 1,122 MW in 2026. As discussed, the peak hour shifts to hour ending 8 p.m. in 2023 in the 2020 IEPR. As a result, the peak demand is the same as the load in hour ending 8 p.m. from 2023 forward in the 2020 IEPR (these values are highlighted in blue in Table 2).

<sup>6</sup> California Energy Commission, *Adoption of the 2020 Energy Policy Report Update*, Docket No. 20-IEPR-01. March, 17, 2020.

**Table 2: Forecasted Load (MW) at Peaks and 8 p.m. PDT**

	2022	2023	2024	2025	2026
2019 IEPR Peak Demand	45,280	45,447	45,610	45,827	46,011
2020 IEPR Peak Demand	45,448	45,826	46,452	46,758	47,133
IEPR 2020 Load at Hour Ending 8 p.m. PDT	45,343	45,826	46,452	46,758	47,133

Next, the CAISO removed all stand-alone solar from the stack but retained all other assumptions from the Mid-Need scenario stack analysis, including the PRM, and recalculated the surplus or shortfall. Table 3 below compares Energy Division staff’s Mid-Need scenario against the CAISO’s recalculated analysis based on the same scenario. The analysis shows adjusting the Mid-Need scenario for a later peak hour when solar generation is zero, results in shortfalls up to 10,033 MW in 2026.

**Table 3: Projected Surplus and Shortfalls of CPUC and CAISO Scenarios**

	Surplus (Shortfall)				
	2022	2023	2024	2025	2026
Energy Division Staff Mid-Need Scenario	853	1,090	(4,146)	(7,097)	(7,410)
Mid-Need Scenario Adjusted	(924)	(862)	(6,568)	(9,564)	(10,033)

The CAISO recommends the Commission immediately initiate procurement for a minimum of 10,000 MW of incremental effective capacity to be online during the mid-term (2023 to 2026) timeline. Critically, this capacity should be effective after sunset. Additional reliability-based modeling is needed to validate the total need above this minimum amount.

**C. Timing of Procurement.**

**8. Comment on the total annual capacity requirements recommended. If you would make any adjustments, explain your rationale.**

The Commission should direct mid-term procurement to be online before 2026, and ideally by mid-2025, because Diablo Canyon will be offline before the end of 2025. The last of the OTC units in the CAISO footprint are expected to retire by the end of 2023, so the initial tranche of incremental procurement should be online by mid-2023 to replace these units. Therefore, the accelerated procurement options are the most appropriate for addressing mid-term

needs. Table 4 below is similar to Table 2 from the Ruling<sup>7</sup> showing the minimum system resource need determinations by year from 2023 through 2026.<sup>8</sup>

**Table 4: Minimum Procurement Need Based on Adjusted Mid-Need Scenario by June 1 of Each Online Year (MW NQC)**

Need Determination and Required NQC	2023 (Aug 1)	2024	2025	2026	Total
System Resource Adequacy Need (cumulative)	862	6,568	9,564	10,033	10,033
System Resource Adequacy Need (annual additions)	862	5,706	2,996	469	10,033
Accelerated capacity requirement (approx. 40% by prior year)	3,144	4,622	1,985	282	10,033
Accelerated capacity requirement, conversion to round numbers (recommendation)	3,150	4,650	2,300		10,100

Table 4 shows a minimum need for approximately 3,150 MW of incremental capacity by August 1, 2023 to ensure OTC units can retire and additionally address the first Diablo Canyon unit retirement in 2024. The Commission should adopt the CAISO-adjusted annual procurement requirements in Table 4 as minimum requirements to be validated by production cost modeling by Energy Division staff and modeling parties.

**D. Resources Eligible to Meet Identified Need**

**10 The process of identifying resource types and amounts that are cost-effective, and can potentially fulfill a procurement need, but have market or other barriers to procurement, is explored in Section 6.5.4 of the Procurement Framework Staff Proposal. Comment on the approach described in this ruling, with reference to the Staff Proposal and/or other approaches you recommend.**

The CAISO recommends the Commission adopt the market test described in Option 1 paired with the approach in Option 2.<sup>9</sup> The CAISO strongly supports the Commission directing and/or requesting multiple load serving entities to conduct request for offers to better understand current market conditions and “help confirm cost and other key assumptions, but also contribute

<sup>7</sup> Ruling, Table 2: Need Determination by June 1 of Each Online Year (MW NQC), p. 16.

<sup>8</sup> Table 4 follows the same steps as Table 2 in the Ruling but uses the CAISO-adjusted Mid-Need scenario from Table 3 above (see response to Question 7).

<sup>9</sup> Procurement Framework Staff Proposal, pp. A-46-A-47.

qualitative insights associated with the supply chain, development, and other risks of procuring large, long lead-time resources.”<sup>10</sup> This exercise would be informative and valuable, but it is unlikely the information received will neatly fit into a modeling framework necessary to produce an “optimized” solution. Rather than using the solicitation outcomes to conduct more sensitivities, the CAISO strongly urges the Commission to “develop a decision-making approach for determining what emerging technologies should be included in the analysis of which large, long lead-time resources can satisfy the identified reliability and GHG-based needs.”<sup>11</sup>

**11. Comment on whether the suggested amount of geothermal and/or long-duration storage resources should be required to be procured as part of the mid-term procurement requirements.**

The CAISO supports the benefits of resource diversity. These benefits will be more apparent and transparent in the course of stochastic production cost modeling versus a stack analysis. *See also* response to Question 4.

**12. Describe the risks you see, if any, in relying on specific resource types to fill the proposed procurement need, as well as provide suggestions for how they could be mitigated. For example, there could be some type of identified future juncture where LSEs and/or the Commission could evaluate risks prior to moving forward fully with procurement. As part of this, describe any challenges you see (for example, supply chain issues, siting challenges) that may impact the ability to come online with the timing and amounts proposed.**

The CAISO commits to working collaboratively with the Commission on transmission planning and interconnection analysis. To that end, the CAISO strongly supports Action 5 from the IRP Framework, which would establish “a permitting preassessment process that aims to avoid the ordering of procurement of resources that rely on the development of transmission that is later blocked by the permitting process.”<sup>12</sup> The most critical aspect of this permitting preassessment process is establishing a defined need to interconnect resources *a priori*. The CAISO can study and approve transmission solutions to meet the Commission-defined need and the Commission’s own permitting processes should consider the Commission-defined need as the starting point for its permitting processes. The solution to achieve the Commission-defined

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<sup>10</sup> Procurement Framework Staff Proposal, p. A-46.

<sup>11</sup> Procurement Framework Staff Proposal, p. A-47.

<sup>12</sup> Procurement Framework Staff Proposal, p. A-48.

need may vary and the Commission may consider alternatives in its permitting review, but it should not reconsider a previously identified need.

**13. Comment on the proposal for all LSEs to engage in joint procurement of geothermal and/or long-duration storage, with the potential for IOUs to be required to backstop such procurement. This suggestion corresponds to Section 7.2.2 of the Procurement Framework Staff Proposal. If you have an alternative proposal, describe it in detail and/or identify whether it is one of the other options included in the Procurement Framework Staff Proposal. In addition, comment on whether identifying need for backstop procurement in 2023 would allow sufficient time to contract for and build these resources by 2025, and, if not, how you would propose to address this timing issue.**

The CAISO supports directing backstop procurement in 2023 if LSEs do not successfully procure long lead-time and/or large projects necessary to maintain reliability. The CAISO strongly encourages the Commission to consider imports as a viable backstop option because these resources already exist. *See also* response to Question 15.

**15. Comment on whether firm imports should be allowed to count towards the required capacity proposed in this ruling, and if such resources should be required to be committed to California via pseudo-ties or dynamic scheduling. Include any other limitations you would propose.**

The CAISO supports allowing pseudo-tie and dynamically scheduled imports to count toward the procurement requirements directed in this proceeding because they are comparable to internal resources. The CAISO supports also counting non-dynamic resource-specific imports consistent with its proposal in the resource adequacy proceeding.<sup>13</sup> Specifically, qualifying import resources should have the following attributes (1) firm transmission to the CAISO border, (2) a minimum of 16 hours per day, seven days a week (16x7) availability, and (3) attestation and source specification sufficient to show underlying resources dedicated to serving CAISO load.<sup>14</sup>

**E. Need for Backstop Procurement and Associate Cost Allocation**

**20. If the IOUs are required to act as central procurement entities, for geothermal, long-duration storage, or backstop procurement in general, what requirements should be associated with the operating arrangements for those resources?**

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<sup>13</sup> CAISO, *California Independent System Operator Corporation Comments on Track 3B.1 Proposals*, R.19-11-009, March 12, 2021. (CAISO, Track 3B.1 Proposal)

<sup>14</sup> *Id.*, pp. 7-12.

**Comment on issues and options explored in Section 7.2 of the Procurement Framework Staff Proposal.**

The CAISO encourages contracts, such as tolling agreements, that would ensure energy and capacity availability and provide more control over economic bidding. The CAISO also encourages including operational flexibility to ramp up and down quickly to meet grid needs.

**F. Methods of Compliance**

**25. Comment on whether marginal or average ELCCs should be used for counting LSEs' procurement and assessing compliance with the procurement requirements proposed.**

Marginal ELCC values are best used to send long-term planning signals to load serving entities. See also response to Question 32.

**27. Comment on how imports should be treated for counting and compliance purposes for the procurement proposed in this ruling.**

Imports that meet the minimum requirements set forth in the CAISO's resource adequacy import proposal should fully count toward procurement requirements. *See also* response to Question 15.

**28. Comment on whether you think that any fields in the baseline generator list need to be kept confidential when staff updates it with new in-development resources identified from the Resource Data Templates in LSE plans, as proposed to serve as the baseline for the procurement proposed in this ruling.**

The CAISO urges the Commission to set clear and specific data confidentiality guidelines to provide consistent information and facilitate accurate counting for the baseline generator list. The baseline generator list is critical for accurate modeling in the CAISO's transmission planning process and other planning and modeling processes at the CAISO and the Western Electricity Coordinating Council. At minimum, the CAISO requests the Commission classify the following data as non-confidential: (1) resource type; (2) MW size and duration if applicable (in the case of hybrid resources the MW size should include the individual resource information as well as the total combined); (3) expected commercial online month and year; (4) CAISO/Participating Transmission Owner interconnection queue number if the resource is in the queue; (5) locational description such as county; and (6) utility footprint.

## **G. Penalties for Noncompliance**

- 29. Comment on whether CONE is an appropriate penalty for capacity that LSEs fail to procure, in addition to backstop procurement. This is a combination of “Enforcement – Option 1” and “Enforcement – Option 2” in Section 9.2.2 of the Procurement Framework Staff Proposal. Suggest any alternative compliance and enforcement options.**

The CAISO supports Option 1 to allow the central procurement entity to conduct just-in-time backstop procurement if an LSE fails to meet its procurement milestone. Given the significant procurement need in the near- to mid-term, the CAISO does not believe a penalty structure alone is sufficient to ensure reliability. As noted above, the CAISO is already taking definitive action to retain system resources needed for reliability through RMR contracting.

## **H. Relationship with Potential Procurement emanating from Preferred System Portfolio**

- 32. Parties are invited to comment on or propose alternative compliance regimes to the proposals in this ruling to address the longer-term system reliability requirements identified in the IRP context.**

In discussing alternative compliance regimes, the Ruling specifically requests parties to comment on “whether it would be more straightforward to address the longer-term capacity requirements ... through modifications to the resource adequacy program requirements.”<sup>15</sup> The CAISO recommends the Commission retain mid- and long-term procurement in the IRP proceeding because it has a longer planning horizon than either the resource adequacy proceeding or the expedited summer 2021 procurement proceeding.<sup>16</sup> The multi-year forward procurement discussions in the resource adequacy proceeding look out three years at most.<sup>17</sup> This is insufficient to address mid-term concerns that also affect the longer term outlook. The expedited summer 2021 procurement proceeding is, as the name suggests, an expedited effort to address pressing needs. It should not be a substitute for longer-term planning.

As the Ruling notes, the Commission is considering whether to meet a 38 MMT GHG target, which could result in additional procurement that overlaps with the mid-term procurement already presented. This overlap, and the complexity of interactions with the baseline and future

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<sup>15</sup> Ruling, p. 34.

<sup>16</sup> *Order Instituting Rulemaking to Establish Policies, Processes, and Rules to Ensure Reliable Electric Service in California in the Event of an Extreme Weather Event in 2021*, R. 20-11-003.

<sup>17</sup> See for example: Powerex Corp., *Comments of Powerex Corp. on Track 3.B Scope*, R.19-11-009, August 7, 2020.

procurement vintages, supports retaining all of this activity in the IRP proceeding (but coordinating with other efforts).

The IRP proceeding has been and should remain the proceeding to address reliability-related modeling because such modeling needs to reflect the longer-term expectations of the Commission and other proceedings downstream should align with these expectations and modeling assumptions and outputs. For example, the IRP proceeding provides important long-term insights into the fleet such as the marginal ELCC value of wind, solar, and batteries under different portfolios.<sup>18</sup> These values should drive longer-term procurement even if average ELCC values are used in the near-term contracting overseen by the resource adequacy proceeding. Similarly, the expedited procurement for this summer should inform the baseline used in the IRP but it should be the IRP proceeding that determines whether the 0.1 LOLE threshold is sufficient to address reliability and establish the resultant PRM from reliability-based modeling.

### III. Conclusion

The CAISO appreciates the opportunity to submit comments and looks forward to working with the Commission and other stakeholders to meet evolving system reliability needs.

Respectfully submitted

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<sup>18</sup> The CAISO proposed to also evaluate demand response under an ELCC methodology. See: CAISO, Track 3B.1 Proposal, R.19-11-009, January 28, 2021, pp. 18-22.