

**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 on May 7, 2020)

**COMMENTS OF THE CALIFORNIA ENERGY STORAGE ALLIANCE ON THE  
ADMINISTRATIVE LAW JUDGE'S RULING SEEKING FEEDBACK ON MID-TERM  
RELIABILITY ANALYSIS AND PROPOSED PROCUREMENT REQUIREMENTS**

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In accordance with the Rules of Practice and Procedure of the California Public Utilities Commission (“Commission”), the California Energy Storage Alliance (“CESA”) hereby submits these comments on the *Administrative Law Judge’s Ruling Seeking Feedback on Mid-Term Reliability Analysis and Proposed Procurement Requirements* (“Ruling”), issued by Administrative Law Judge (“ALJ”) Julie Fitch on February 22, 2021. In an E-Mail Ruling issued by ALJ Fitch on March 12, 2021 that granted the deadline extension for opening and reply comments submission, CESA is timely filing and serving these opening comments on March 26, 2021.

**I. INTRODUCTION.**

Over the past several years, the state has undergone significant levels of just-in-time procurement to address near-term reliability shortfalls with seemingly just 2-4 years to proceed from solicitation to commercial online date (“COD”). Some of these reliability shortfalls, such as in the case of scheduled resource retirements of once-through-cooling (“OTC”) generation facilities, could have been avoided with sufficient forward planning and timely least-regrets procurement orders; while others, such as the extreme heat-storm events in August and September

2020 and moratorium on the Aliso Canyon natural gas storage facility, were more difficult to anticipate. Coming out of this recent experience, CESA was impressed with the energy storage industry’s ability to respond to many of these just-in-time procurement opportunities and needs, proving that energy storage is a commercially-ready asset class. However, this just-in-time procurement model will likely not be sustainable or scalable in the long term, especially as the state faces record buildout rates through 2030 and 2045 to achieve the Senate Bill (“SB”) 350 and SB 100 decarbonization goals. Looking squarely at energy storage, for example, depending on the scenario, the state faces the prospect of needing to annually build between 0.8 GW to 2.0 GW of energy storage through 2045.<sup>1</sup>

With this in mind, the Commission’s latest just-in-time procurement process poses a risk to the state’s ability to procure resources needed to provide replacement capacity to address near-term and mid-term reliability needs and consistently stay ahead of the curve in addressing resource needs beyond 2026 for maintaining reliability and meeting long-term decarbonization goals. The Commission must get back on track with long-term procurement and establish a long-term procurement schedule that sends the appropriate procurement signals. Specifically, the Commission should strive to allow for lead times of at least seven years, which will allow time for any necessary transmission upgrades and larger, more complicated projects to come online with greater certainty and feasibility; a seven-year timeframe, as a rule of thumb, accounts for supply chain considerations, interconnection and construction timelines, and infrastructure upgrade needs. To this end, CESA finds the *Staff Proposal for Resource Procurement Framework in Integrated Resource Planning* (“Procurement Framework Staff Proposal”) published on November 18, 2020 to represent a step in the right direction that aims to get the procurement track of the Integrated

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<sup>1</sup> 2021 SB 100 Joint Agency Report at 101-102.  
<https://efiling.energy.ca.gov/EFiling/GetFile.aspx?tn=237167&DocumentContentId=70349>

Resource Planning (“IRP”) process back on a sustainable trajectory. The focus of the IRP process to date has more heavily focused on calibrating the IRP process itself and in improving modeling design, assumptions, and outcomes, which in many ways is important and necessary, but at this point, CESA believes that the IRP proceeding must be re-balanced to focus on procurement and infrastructure development, as informed by the modeling results and sensitivities, to get the state out of this perpetual cycle of just-in-time procurement.

CESA thus appreciates the opportunity to respond to the questions included in the Ruling and provide feedback on the planning and execution of the proposed mid-term reliability procurement process. CESA generally supports the analysis and conclusions presented by the Commission in the Ruling yet considers that several elements of the Ruling merit closer consideration, particularly those related to the revision of the planning reserve margin (“PRM”), the determination of need, and the preferred resource characteristics for curing said need. CESA’s comments can be summarized as follows:

- The PRM used within the IRP proceeding should be revised to reflect the probability of extreme weather events, whereas more substantial and sustainable modifications to the PRM should be deferred to the RA proceeding.
- Given short lead times to 2024-2026, an expedited stack analysis is viable and prudent for the purposes of the mid-term reliability needs analysis and basis for procurement; however, loss-of-load expectation (“LOLE”) studies should be incorporated into the procurement framework going forward.
- To mitigate procurement and extreme-weather risks and align with significant long-term resource buildout needs, the high-needs scenario should be used as the basis for directing 2024-2026 reliability procurement.
- Accelerated timelines for eligible resources should be established as a preference rather than a requirement.
- The 1,000 MW minimum procurement target for long-duration energy storage (“LDES”) is prudent and should be affirmed, but the 1,000 MW minimum procurement target for geothermal should be broadened to allow LSEs to meet this

target with geothermal, LDES resources, or other forms of flexible resources not constrained by fuel or use availability.

- Unless hybridized or repowered with energy storage and incremental to the baseline, incremental fossil-fuel capacity should not be eligible for the mid-term reliability procurement.
- Due to lead times and risks associated with significant procurement and project development, non-IOU LSEs should be allowed to upfront opt-out of self-providing their share of new capacity and the trigger for IOU backstop procurement should occur by February 2022.
- The use of a Tier 2 advice letter process, especially with clear upfront procurement parameters and demonstration requirements in place, is reasonable and balances the need to ensure timely approvals that balance stakeholder due process rights while positioning projects to reasonably meet COD timelines.
- LSEs should be encouraged to procure for resources to meet both System and Local RA requirements to provide enhanced ratepayer value on resource investments and be able to count their procurement toward IRP procurement compliance if bid into the Central Procurement Entity (“CPE”) RFO.
- A focus on deferring new resource procurement for reliability needs through 2030 to the RA Program is wholly inadequate, where a subsequent Preferred System Portfolio needs analysis and procurement signal is needed from the Commission to get the state back on track with an orderly procurement schedule.

## **II. RESPONSES TO QUESTIONS ON PLANNING STANDARDS.**

In the Ruling, the Commission highlights that the PRM and the average weather year (*i.e.* 1-in-2) assumptions are the most important planning standard variables behind the stack analysis.<sup>2</sup> CESA agrees with this conclusion, and appreciates the opportunity to provide feedback on the Commission’s formulation of these factors. Specifically, CESA recommends the use of stricter weather assumptions, the development of more detailed modeling for the planning track of the IRP

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<sup>2</sup> Ruling at 5.

proceeding, and the deferral on the adoption of a long-term PRM to the RA proceeding to better align IRP and RA processes.

**Question 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 details how the PRM used for IRP purposes is set at 15% of the annual peak load based on a 1-in-2 weather year assumption.<sup>3</sup> The Ruling proposes modifying the PRM for the purposes of the mid-term reliability analysis and associated IRP procurement, specifically increasing the proportion of the PRM that includes the current 4.5% operating reserves requirement to a higher 6% align the PRM it to the California Independent System Operator’s (“CAISO”) interpretation of the Western Electricity Coordinating Council (“WECC”) standards.<sup>4</sup>

CESA finds these modifications to the PRM for the purposes of mid-term reliability stack analysis and procurement to be reasonable. As CESA understands it, this would constitute an “effective” increase to the PRM to determine the underlying reliability need to determine procurement targets and ranges, whereas the PRM is used in the RA Program to determine overall RA need, which is disaggregated into RA showing requirements for each load-serving entity (“LSE”). As a basis to direct procurement in relatively short order to ensure sufficient lead time ahead of 2024-2026 COD, CESA believes this effective PRM approach represents a reasonable safeguard against capacity shortfalls, with supply capacity margins that account for well-rationed uncertainties and WECC requirements.

As such, CESA supports the adoption of these PRM requirements for the specified period. A short-term effective period, where a higher PRM used to guide new IRP-related resource

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<sup>3</sup> *Ibid.*

<sup>4</sup> *Ibid.*

procurement than the PRM used to set RA requirements and compliance, may even support the transition to preferred and energy storage resources, considering the current RA market is tight and could benefit from RA supply at some level of excess relative to RA requirements.

**Question 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.**

For long-term purposes, CESA recommends that revisions to the PRM within the IRP proceeding be done in a coordinated fashion with the RA proceeding, particularly since the latter is expected to be substantially reformed in R.19-11-009, where some Track 3B.2 proposals have also called for robust studies to calculate an appropriate PRM. This is relevant considering the time-scale inconsistencies in the formulation of the PRM for IRP versus RA purposes. During the March 10, 2021 workshop held regarding the mid-term reliability analysis, Commission staff explained that a key difference between the PRM formulation for IRP versus RA purposes relates to the time granularity of each requirement. While the PRM is set on an annual basis within the IRP, it is a monthly value in the RA program. This inconsistency could be addressed more permanently with the present Ruling; however, CESA recommends against permanently revising the PRM at this time for IRP procurement purposes until the Commission provides clarity on the future structure of the RA program. Currently, parties to R.19-11-009 are evaluating a series of reforms that would substantially amend the RA program, including its compliance assumptions (e.g., frequency of showings and core planning variables). As a result, any long-term modification of the IRP's PRM that is undertaken today could become obsolete with regards to its alignment with RA. Thus, CESA recommends revisiting this question after the scheduled June 2021 RA Decision.

Overall, longer-term alignment of the IRP PRM and RA PRM will likely be necessary as well to ensure that LSEs have the incentive to show new RA resources in their supply plans. Unless

aligned, there will be risk that procured and contracted RA resources in excess of their LSE-specific RA requirements may not be included in their RA supply plans. Despite this caveat, regarding the immediate Staff Proposal, CESA does support permanently aligning the operating reserve requirement to the CAISO's interpretation of WECC standards (*i.e.*, 6%). This modification is warranted as it will ensure the optimal selection of resources within the planning track, prioritizing assets with characteristics more closely aligned with the operating requirements of California's evolving grid.

**Question 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.**

The Commission should begin to utilize more strict forecasts (*i.e.*, 1-in-10) for the purposes of the IRP planning track to reflect the increased likelihood of extreme weather events. The August and September heat wave events of 2020 and, to some degree, the energy crisis related to the Texas and Southern USA polar vortex in February 2021, demonstrate the relevance of accounting for extreme weather condition when planning for a reliable and resilient electric system. It is worth nothing that the probability of said events is currently unknown as it is affected by the effects of anthropogenic climate change. In fact, even the 1-in-10 forecasts might underestimate the likelihood of adverse solar conditions or abnormally high temperatures in previously cold periods, as demonstrated by the August and September heat wave events of 2020 in California, which was identified in the Joint Agency Final Root Cause Analysis Report as representing a 1-in-30 weather event. As the grid increasingly relies on weather-sensitive generation, the Commission must consider the potential for unfavorable weather as to effectively plan for a reliable and resilient system. Whether these considerations result in a revision of the PRM must be considered in coordination with the RA proceeding.



**Question 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).**

In general, the IRP PRM can address uncertainty related to extreme weather events in two ways: (1) by increasing the PRM requirement; or (2) by utilizing more conservative or stricter weather forecasts. These two modifications can be done in combination so that a relatively lower PRM requirement with more strict weather forecasting can provide a similar level of reliability as the one provided by a relatively higher PRM requirement with more lax weather forecasting. This principle of the trade-offs was articulated quite clearly by the Public Advocates Office (“CalPA”) in the Commission’s RA Track 3B.1 Workshop, held on February 25, 2021.<sup>5</sup>

In this context, CESA recommends modifying the IRP’s PRM for mid-term reliability procurement purposes in two ways: (1) using 1-in-10 weather forecasts; and (2) setting the operating reserves requirement to 6%. CESA does not comment on whether an increased PRM requirement of 20.7% directly addresses the long-term concerns of extreme weather events since the long-term definition of the PRM should be primordially aligned with the RA structure. As a result, in order to ensure the Commission properly reflect the likelihood of extreme weather events within its IRP planning processes, a revision of the weather forecasts is warranted and reasonable. This modification will directly account for the aforementioned probabilities while allowing the IRP program to retain the ability to align its PRM formulation to the outcomes of RA reform.

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

Please refer to CESA’s answer to Question 4.

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<sup>5</sup> See CalPA, “Planning Reserve Margin Presentation” presented in February 2021 at 29.

### **III. RESPONSES TO QUESTIONS ON ANALYSIS OF NEED.**

CESA recommends that the mid-term reliability analysis consider the diminishing need for inflexible resources in a grid supplied mainly by variable energy resource (“VER”) generation. Considering the most recent results from the long-term planning process and the SB 100 Joint Agency Report, California will mainly rely on a VRE grid. Assuming this large amount of VRE generation, it is expected that the need of baseload and inflexible generation is reduced, and the need for flexible ramping resources and energy storage increases.<sup>6</sup> In this context, the needs for the future grid are not baseload but rather flexibility and energy storage resources of both short and long durations. Specifically, CESA recommends that the Commission consider the technical resource characteristics required for the future electrical grid. CESA highlights the need for flexible generators and energy storage to satisfy the increasing ramping needs and zero-carbon goals.

**Question 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.**

CESA understands that the proposed stack analysis methodology was selected based on precedence for its use in directing procurement in D.19-11-016 for 2021-2023 System RA needs and on the grounds that it would support expediency in needs analysis and timely procurement orders and direction. In the face of potential near- and mid-term shortfalls, CESA supports the Commission staff’s proposal to use an approach that can expedite the deployment of necessary assets, where 2024-2026 is quickly approaching. That being said, it is worth noting that, in the

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<sup>6</sup> See CAISO *et al.* “Planning for reliability and resource adequacy under SB 100” available at <https://efiling.energy.ca.gov/getdocument.aspx?tn=232217>

future, a more complete and robust loss-of-load expectation (“LOLE”) study would be preferable as a long-term instrument to identify and cure potential capacity deficiencies, which could inform the probabilistic risk of need and identify the type of resource characteristics and attributes needed to support reliability and decarbonization goals.

While CESA supports the general methodology utilized in the Ruling, CESA is concerned by the Commission’s hesitation to use stricter 1-in-10 weather forecasts to inform, at the very least, the High Need Scenario included in the Ruling. The usage of stricter weather forecasts is warranted as explained in our responses in Section II and due to the recent Summer 2020 emergency events. The Final Root Cause Analysis, developed jointly by the Commission, the CAISO, and the California Energy Commission (“CEC”), highlighted the extreme weather events of August and September 2020 were 1-in-30 and 1-in-70 weather-year events, respectively.<sup>7</sup> As a result of these anomalous weather conditions, both events resulted in higher-than-expected load. The Final Root Cause Analysis highlights the fact that extreme weather events like these ones are becoming more frequent and unpredictable due to anthropogenic climate change. As such, the Commission should evaluate additional capacity needs under a 1-in-10 weather-year assumption.

CESA is also in favor of using a stricter weather forecast approach in order to better identify the resource characteristics that are better suited to address the needs of a grid served mainly by renewables. This is fundamental to consider, as this Ruling’s analysis and associated procurement are not occurring in isolation to California’s overarching climate and policy goals. Both this proceeding and the Joint Agency SB 100 Report have noted that, in order to comply with California’s environmental goals, the state’s grid will be primarily served by VERs, with solar

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<sup>7</sup> See CAISO, *et al*, “Final Root Cause Analysis: Mid-August 2020 Extreme Heat Wave”, January 2021, available at <http://www.caiso.com/Documents/Final-Root-Cause-Analysis-Mid-August-2020-Extreme-Heat-Wave.pdf>

capacity alone counting for 69.4 GW by 2045.<sup>8</sup> As a result of the penetration of VERs, resources capable of shifting generation and/or rapidly respond to supply variations will become instrumental.

Such findings and takeaways were affirmed in a recent study separately commissioned by CESA: “Long Duration Energy Storage for California’s Clean, Reliable Grid.”<sup>9</sup> The report modeled the future California grid using the same assumptions that the current IRP proceeding (e.g., California state goals, transmission constraints, load forecast) but considering multi-day storage balancing decisions. As a result of this considerations, the report concludes that California will require between 45 GW and 55 GW of energy storage by 2045, a figure which includes assets with different operating characteristics and durations.<sup>10</sup> This report showed that California’s future grid will be able to manage an extremely adverse weather week with a combination of flexible VER and storage assets (both short and long-duration).<sup>11</sup> Under this condition, CESA’s study found that even in extreme weather events (i.e., low solar and low wind generation), California can meet most of the demand utilizing flexible assets and a diverse portfolio of storage.

*Figure 1: Resulting electricity dispatch and total load during the worst weather week ( Base Case)<sup>12</sup>*

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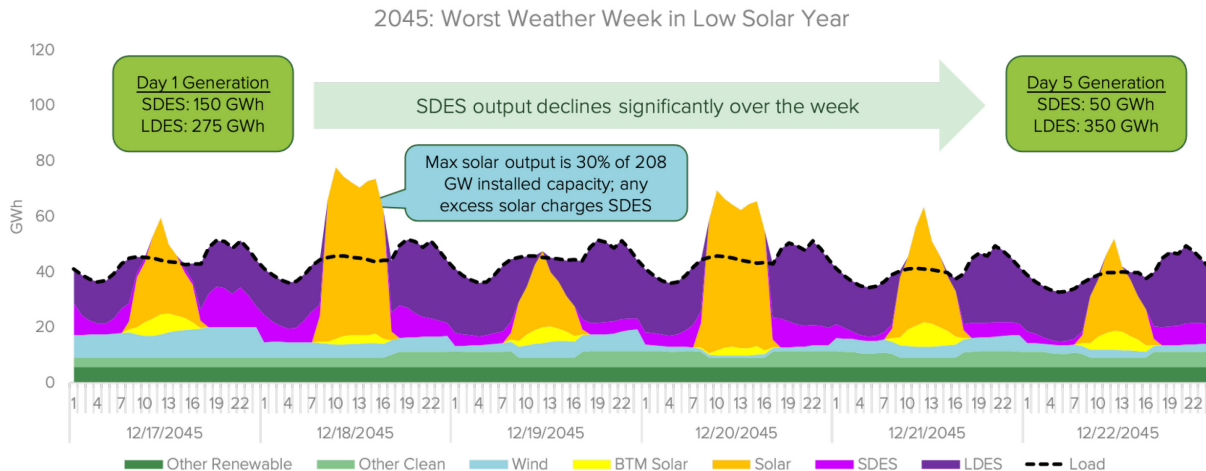
<sup>8</sup> See Joint Agency Report, “2021 SB 100 Joint Agency Report” available at <https://efiling.energy.ca.gov/EFiling/GetFile.aspx?tn=237167&DocumentContentId=70349>

<sup>9</sup> See Strategen *et al*, “Long Duration Energy Storage for California’s Clean, Reliable Grid” available at [https://www.storagealliance.org/pr\\_long-duration](https://www.storagealliance.org/pr_long-duration)

<sup>10</sup> See CPUC *et al*, “2019-20 IRP: Proposed Reference System Plan” available at [https://www.cpuc.ca.gov/uploadedFiles/CPUCWebsite/Content/UtilitiesIndustries/Energy/EnergyPrograms/ElectPowerProcurementGeneration/irp/2018/2019%20IRP%20Proposed%20Reference%20System%20Plan\\_20191106.pdf](https://www.cpuc.ca.gov/uploadedFiles/CPUCWebsite/Content/UtilitiesIndustries/Energy/EnergyPrograms/ElectPowerProcurementGeneration/irp/2018/2019%20IRP%20Proposed%20Reference%20System%20Plan_20191106.pdf)

<sup>11</sup> The extreme weather event utilized was constructed based on 5 days of consecutive low solar generation.

<sup>12</sup> “Other Renewable” includes small hydro, geothermal, and biomass. “Other clean” includes hydro, nuclear, and demand response.



Based on the above result, CESA’s believes that the stack analysis tackles the problem for expediency; however, consideration of 1-in-10 weather forecasts is warranted. Using stricter weather forecasts would: (1) capture the oversights that led to the August and September heat-wave-related outages; and (2) provide insights regarding the characteristics of the resources needed to ensure the reliable operation of the electric grid.

**Question 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.**

As noted above in responses to previous questions, CESA supports the inclusion of extreme weather events in the formulation of the PRM for the purposes of the Ruling’s analyses and associated procurement. CESA recommended in responses included in Section II to account for extreme weather events via the use of stricter, 1-in-10 weather-year forecasts. Given this recommendation, CESA is pleased to see the Commission has included an increase in the PRM to reflect the effects of a one-degree Celsius temperature increase due to climate impacts over the

next decade within the high-needs case.<sup>13</sup> CESA supports the Commission’s consideration of the effects of climate change on the PRM and, in turn, the capacity shortfall facing California. As a result, considering the use of more strict weather assumptions is not widespread in the planning processes of the state, CESA supports the adoption of the high-needs case as a least-regrets means to ensure sufficient capacity is available for the 2024-2026 period. At the same time, to better justify the high-needs scenario, CESA seeks further clarification on how the one-degree Celsius assumption for higher weather temperatures translate to a 2% increase in the assumed PRM for the high-needs scenario.

#### **IV. RESPONSES TO QUESTIONS ON TIMING OF PROCUREMENT.**

Staff proposes to have 40% of the capacity identified as being needed in each year to be required to be procured at least one year ahead to account for risks of right-sizing procurement to the year of need, especially as staff views the electric supply situation as being “tight.”<sup>14</sup> While understanding of this logic and reason, CESA instead recommends that accelerated timelines for eligible resources be established as a preference rather than a requirement.

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

As explained above, CESA supports the Commission issuing a procurement order based on the high-needs scenario from staff’s stack analysis. Procuring to a high-needs scenario will address any risks of capacity shortfalls related to the “tight” market conditions that the Commission fears and that serves as the basis for accelerating procurement timelines. With LSEs procuring to a high-needs scenario, some of the risks of shortfalls to address year-by-year needs

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<sup>13</sup> Ruling at 12.

<sup>14</sup> Ruling at 15.

will be mitigated. In aggregate, for example, with more capacity being directed for procurement in 2024, there will be less risk that the actual 2024 need will be unmet by right-sizing procurement for a specific year's need and/or due to project failures and delays.

CESA believes this approach of high-needs procurement is preferable than accelerating procurement timelines due to the lead times required for resources:

- Bid solicitation, bid review, and contract negotiations as part of competitive solicitation processes can take between 3-6 months in CESA's experience.
- Contract review and approval by the Commission in the case of investor-owned utility ("IOU") procurement can take between 4-6 months, depending on whether contract approval is submitted through a Tier 1, 2, or 3 advice letter process, and can take much longer (9-18 months) under an application process.
- Unless a project qualifies for an independent study, projects must proceed through queue cluster interconnection study processes, which can take 2-3 years if just entering the interconnection queue.
- Construction of transmission upgrades, if needed due to limited available deliverability to allocate on the existing transmission system, to support deliverability for projects can take anywhere from 3-6 years depending on the location and upgrade needed.

As shown in the illustrative timelines above,<sup>15</sup> there are certain lead times needed to support new resource buildout, where the Commission should assume a four- to seven-year timeline as a rule of thumb in directing and requiring procurement by certain dates. The above timelines also do not account for potential supply chain issues, particularly for certain long-duration energy storage technologies that cannot quickly access robust and diverse global supply chains as in the case for lithium-ion batteries. Consequently, not only is this Ruling timely to support a final

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<sup>15</sup> Granted, some of these timelines may be overlapping, and certain projects may be positioned with shorter lead times by either leveraging existing deliverability (*e.g.*, from existing solar or thermal generation sites or at locations where excess deliverability is available), by being far along in the interconnection study process, and/or by already being online as a merchant resource but seeking an off-take contract. However, the scope of such projects may be more limited.

procurement order soon thereafter (ideally by May 2021), but also an accelerated procurement timeline may be infeasible for many projects. To meet 2026 COD, new projects will likely already need to be the CAISO interconnection queue or, at minimum, have plans to enter the upcoming April 2021 queue cluster window. Instead, CESA recommends that the Commission direct annual capacity procurement requirements based on the high-needs scenario, such that accelerated procurement should be set as a preference rather than a requirement. In other words, LSEs should be encouraged to procure on an accelerated timeline but not be subject to such timelines as requirements and/or be subject to compliance risk pursuant to such a procurement order.

Finally, CESA does not recommend an accelerated procurement timeline as a requirement because it could lead to higher costs, as developers submit bids into competitive solicitations that account for resulting higher project development risks, just-in-time equipment purchase orders, etc. In addition, a requirement to have an accelerated procurement timeline may reduce the pool of eligible bidders, which could also result in higher costs. Especially with record levels of resource buildout in years ahead, where tens of billions of dollars will need to be invested to achieve our 2045 goals from a total resource cost perspective,<sup>16</sup> the Commission should be cognizant of these costs and not increase costs on a per-project basis with accelerated timeline requirements.

**Question 9: Should the Commission consider requiring additional capacity, to account for contingencies such as contract delay or failure? If so, how much, and on what basis?**

Yes, CESA believes it is prudent for the Commission to pursue “additional capacity” to account for contracting-, procurement- and deployment-related contingencies, such as contract delay or failure. To realize these ends, CESA believes that any “overprocurement” margin can be

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<sup>16</sup> SB 100 Joint Agency Report at 86.



conservatively achieved by directing the procurement requirements in accordance with the high-needs scenario for 2024-2026 mid-term reliability needs.

To our knowledge, establishing an overprocurement margin to address such contingencies based on observed project failure rates may be limited by the sparse, inconsistent, or stale data that is currently available. Since project failure rates must be accounted in Renewable Portfolio Standard (“RPS”) Procurement Plans to establish the statutorily-required minimum margin of procurement for the purposes of assessing RPS compliance risk,<sup>17</sup> trends and data from these procurement plans and activities could be leveraged, but we have struggled to find comprehensive and aggregate data and/or non-redacted assumptions to these ends to support failure rate assumptions for RPS-paired storage projects, which will likely represent a substantial portion of procurement capacity to meet the mid-term reliability needs based on 2021-2023 System RA procurement results.<sup>18 19 20</sup> Considering energy storage has represented the predominant new incremental capacity resource type, the Commission may look at project success and failure rates for energy storage procurements, where Commission staff in R.15-03-011 have previously calculated a less than 7% project cancellation rate.<sup>21</sup> However, at this point, such project failure rate data for energy storage procurements are already many years old and do not represent the attrition rates that might more accurately reflect recent procurements.

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<sup>17</sup> PU Code Section 399.13(a)(4)(D).

<sup>18</sup> 2020 California Renewables Portfolio Standard Annual Report published by the California Public Utilities Commission in November 2020 at 9. See [https://www.cpuc.ca.gov/rps\\_reports\\_data/](https://www.cpuc.ca.gov/rps_reports_data/).

<sup>19</sup> *Decision on 2020 Renewables Portfolio Standard Procurement Plans*, D.21-01-005, issued on January 14, 2021 in R.18-07-003 at Conclusion of Law (“COL”) 27 and Ordering Paragraph (“OP”) 25.

<sup>20</sup> See, e.g., PG&E 2020 RPS Procurement Plan filed on February 19, 2021 at 42.

<sup>21</sup> “Energy Storage Market Survey and Recommendations,” Commissioner briefing provided by Gabe Petlin, Rachel McMahon, and Kari Smith on October 24, 2018 in compliance with OP 5 of D.18-01-003 at 5.

Given the lack of adequate data to establish a procurement margin to account for these project failure or delay risks, the more prudent approach is to issue a procurement order to meet a high-needs scenario, which will account for these risks but is also justified on many other grounds – *i.e.*, extreme-weather risks, year-by-year needs, etc. Yet, if the Commission insists on a mid-need scenario to be used, a conservative 25% procurement margin could be established to account for all of project development risks.

#### V. **RESPONSES TO QUESTIONS ON RESOURCE ELIGIBILITY.**

Other than the Commission potentially opening the door for fossil eligibility by way of its questions in the Ruling, CESA generally supports staff’s thinking on resource eligibility issues, which focus on the need for resource diversity and ask questions about the resource attributes needed to effectively replace retiring capacity. In the short term for the purposes of this mid-term reliability procurement order, CESA supports this simplified approach, but as explained above, the long-term approach must evolve to identify and justify the resource attributes and characteristics needed on a more granular level to support long-term reliability and electric-sector decarbonization. With more robust probabilistic modeling, modernization of planning assumptions (*e.g.*, extreme-weather conditions, contingencies), and granular locational considerations, CESA believes that some of these questions of resource diversity will become evident in the planning process and subsequent procurement signals. In the interim, absent such changes, CESA supports staff’s all-source procurement order, with 1,000 MW of resource-specific targets for LDES; however, we recommend that the “geothermal bucket” be broadened to direct the procurement of either LDES or other flexible resources that are not limited by fuel or use availability.

**Question 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.**

CESA generally supports the categorization of resource types and their procurement barriers as “routine” versus “non-routine” to capture how procurement barriers may exist for long lead-time, large-scale, and/or emerging technologies and projects. This is a helpful framing to address some of the gaps in the current planning constructs and compliance mechanisms, where a narrow focus on lowest-cost or routine resources may overlook other opportunities for diversity, contingency mitigation, or other externalities or factors that are not yet sufficiently quantified or reflected (*e.g.*, energy in the tank for storage technologies, resiliency value). In this way, resource-specific targets for resources like for LDES is a smart approach in the interim until regular planning and compliance frameworks incorporate these additional benefits and risk factors.

**Question 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.**

CESA supports the resource-specific procurement targets but recommends modifications to allow LDES resources to be procured by 2026, with a preference toward projects that can achieve an earlier COD. Since LDES resources are also uniquely new to be procured by LSEs for non-pilot purposes and interconnected onto the CAISO grid, there may need to be some flexibility to allow LDES resources to come online by 2028 without penalties to the LSE, especially if the high-needs scenario is pursued, which affords some level of procurement margin. LSEs should strive to procure the 1,000 MW procurement minimum by 2026 and have to justify any resources with later CODs, while creating a preference (not a requirement) for LDES resources that can come online earlier (*e.g.*, 2025). This will support the greatest level of commercial viability for LDES resources to support mid-term reliability needs but also to align with long-term

decarbonization goals as identified in 2019-2020 Reference System Portfolio (*i.e.*, around 1,673 MW of LDES by 2030).

In addition, while staff proposes separate resource-specific minimum targets of 1,000 MW for LDES and 1,000 MW for geothermal resources due to staff's assessment of the need for greater resource diversity and for replacement capacity that is similarly firm in nature, this recommendation should be modified to target at least 1,000 MW and up to 2,000 MW from LDES resources, whereby the 1,000 MW target for geothermal resources could be met by LDES resources. LDES, which represents a subset of energy storage capabilities, consists of many technology types that provide the diversity that is being sought and is both firm and flexible in nature.

Furthermore, the geothermal resource category could be broadened to allow other clean resources that are not limited by fuel availability but are also dispatchable to meet this need. According to staff at the March 10, 2021 workshop, one of the justifications for establishing these resource-specific targets is tied to the fact that calibration was needed to the 2019-2020 Reference System Portfolio to address reliability shortfalls resulting between the RESOLVE and SERVUM model runs, leading staff to add 2,000 MW of generic "perfect" capacity to bring the portfolio within the 0.1 LOLE standards for reliability. However, what this calibration fails to capture is the resource characteristics and attributes that could be procured to meet the 0.1 LOLE standard. That is, rather than generic perfect capacity, the calibration exercise did not assess whether more baseload-like resources or longer-duration energy storage resources could similarly meet this need.<sup>22</sup> Granted, the Commission may have been constrained by time, resources, and processes to

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<sup>22</sup> For example, rather than 24x7 firm and dispatchable capacity, staff has not analyzed whether firm and dispatchable resource that has availability of 90%, 80%, 70%, etc. compared to a generic perfect capacity resource could also similarly achieve the 0.1 LOLE standard.

more granularly calibrate replacement capacity resource needs, but a more refined resource-specific procurement target to add resource diversity and approximate this generic perfect capacity could be pursued, if there was the luxury of time.

Importantly, CESA is not convinced that perfect or baseload capacity represents the resource characteristic that must be procured to align with the analyzed mid-term reliability need. CESA's modeling beyond 2030 has indicated that flexible, not baseload, capacity is needed.<sup>23</sup> As noted previously, both this proceeding and the Joint Agency SB 100 Report have highlighted that, in order to comply with California's environmental goals, the state's grid will be primarily served by VERs, with solar capacity alone counting for 69.4 GW by 2045.<sup>24</sup> As a result of the penetration of VERs, resources capable of shifting generation and/or rapidly respond to supply variations will become instrumental. Moreover, CESA's LDES study observed that, during summer days in 2045, there is no real need for baseload assets,<sup>25</sup> but there is a strong need for flexible storage that can ramp-up while solar generation goes down, as shown in the figure below.<sup>26</sup> On an extreme-weather scenario, CESA observed similar results, where most of the future electrical demand can be met with flexible assets (short and long-duration storage) – albeit with higher durations, reaching over 10 hours. This can be seen in the figure below.

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<sup>23</sup> Appendix A of *Notice of Ex Parte Communication of the California Energy Storage Alliance* filed on October 25, 2017 in R.16-02-007 at 8.

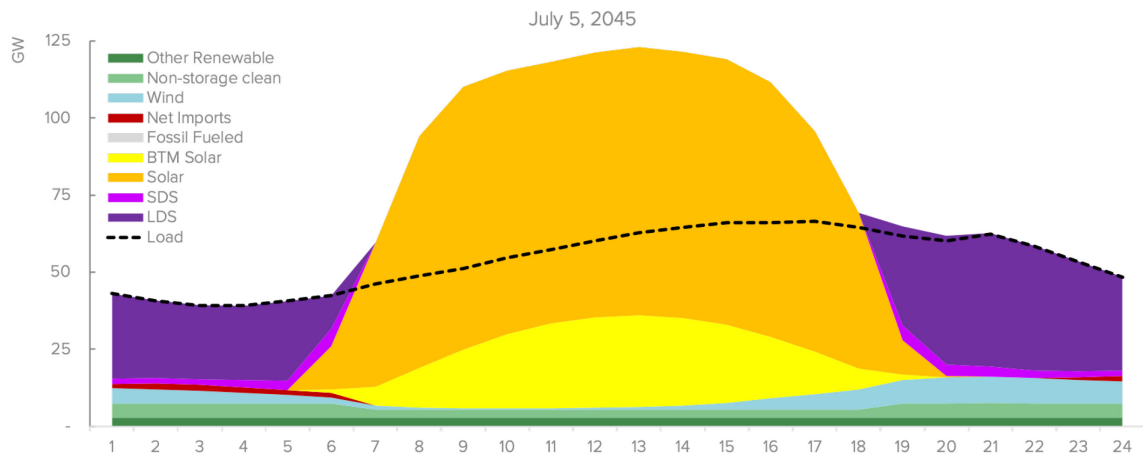
<https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M199/K321/199321253.PDF>

<sup>24</sup> See Joint Agency Report, "2021 SB 100 Joint Agency Report" available at <https://efiling.energy.ca.gov/EFiling/GetFile.aspx?tn=237167&DocumentContentId=70349>

<sup>25</sup> See Strategen *et al.*, "Long Duration Energy Storage for California's Clean, Reliable Grid" at 8.

<sup>26</sup> "Other Renewable" includes small hydro, geothermal, and biomass. "Other clean" includes hydro, nuclear, and demand response.

Figure 2: Resulting dispatch for a hot-July day and total load demand (black-dashed line) during the worst weather week for the LDES base case scenario



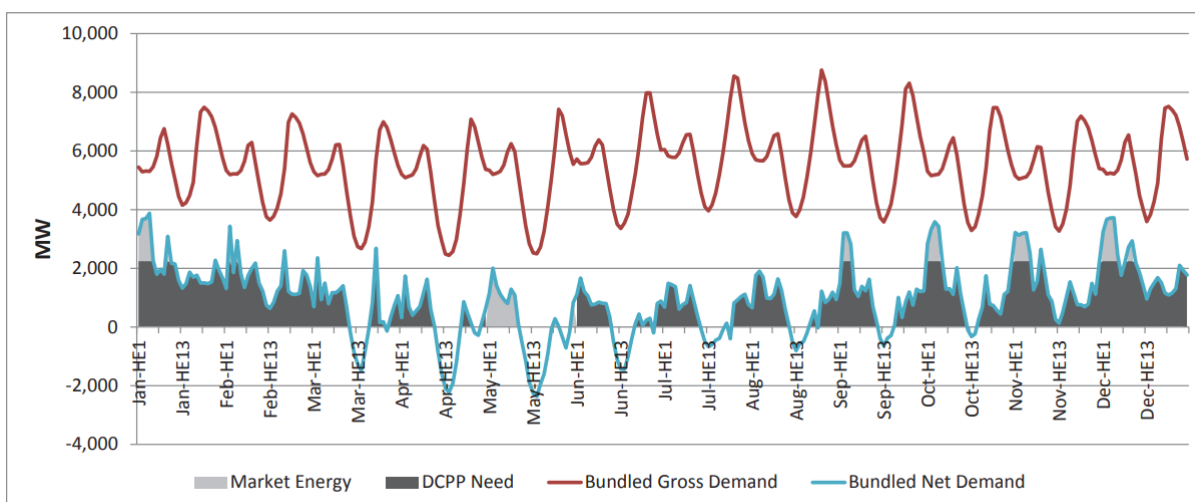
As shown above, the scale of need for flexible assets capable of shifting renewable generation to the hours of most value is considerably greater to the need for other renewable or clean assets that operate as baseload. This trend is dependent on the reliance of the system on VERs for energy and, as a result, it will only be exacerbated as California nears completion of its SB 100 goals.

Additionally, when the closure of Diablo Canyon Power Plant (“DCPP”) was authorized with Decision (“D.”) 18-01-022 in 2018, the Commission declined to evaluate a portfolio of resources that could be brought online to maintain grid reliability and minimize supply disruptions. Instead, the Commission opted to utilize its long-term planning venue, the IRP proceeding (R.16-02-007), to identify an optimal and cost-effective portfolio via the issuance of D.19-04-040.<sup>27</sup> DCPP contributes 2,280 MW of System RA generation capacity that is inflexible and baseload in nature, but one of the key reasons for not pursuing relicensing of DCPP was the forecasted lack of

<sup>27</sup> D.18-01-022 at Finding of Fact (“FOF”) 4 and Conclusion of Law (“COL”) 2-3. *See, e.g.*, explanations in D.18-01-022 at 22: “Overall, practical and policy reasons indicate that it is better for potential replacement procurement issues to be addressed in the Commission’s IRP process, rather than addressing it in a more piecemeal fashion in this proceeding. Accordingly, the need for and authorization of any replacement procurement should be addressed in the IRP proceeding.” <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M205/K423/205423920.PDF>

considerable need for baseload resources in light of the growing penetration of VERs and energy storage assets. As explained by Pacific Gas and Electric Company (“PG&E”) in filing A.16-08-006 in the first place, “[as] more solar generation comes on line with output peaks in the middle of the day, there is less room on the electric system for energy from baseload resources such as Diablo Canyon. Instead, what is needed are resources that are flexible and dispatchable, that can quickly ramp up and down to support integrating renewables onto the grid and meet the remaining utility bundled demand.”<sup>28</sup>

Figure 3: Representative hourly DCPD generation needed by month for PG&E’s customers in 2030<sup>29</sup>



The baseload and inflexible nature of nuclear facilities meant that there could be many periods where the facility would be losing considerable revenues in the CAISO market in that they are unable to respond to flexible ramping needs and/or nimbly start and stop as their generation is not needed at different times of the day. It would also drive significant levels of renewable curtailment – a lost opportunity if more energy storage is procured to charge that energy and deliver

<sup>28</sup> Chapter 2: Diablo Canyon Power Plant Need Analysis (Witness Janice Y. Frazier-Hampton) at 17 of PG&E Prepared Testimony filed on August 11, 2016 in A.16-08-006.

<sup>29</sup> *Ibid* at 18.

to periods of need, including the net load peak periods where reliability shortfalls are being identified. In reaffirming this conclusion, the Commission’s modeling resulted in a Reference System Portfolio that includes close to 1 GW of LDES resources but no incremental geothermal assets.<sup>30</sup>

Finally, even for local capacity areas, where LDES could be procured to meet both System and Local RA needs, the CAISO is finding a need for longer durations of energy storage resources, ranging between 7 and 16 hours to replace local gas units, but not necessarily baseload units.<sup>31</sup> This could represent an opportunity for the Commission to further those reliability conditions as highlighted by the ISO to accelerate the decarbonization of constrained areas while procuring flexible assets which system-wide modeling has already selected as optimal.

Taken together, CESA supports the 1,000 MW minimum procurement target for LDES resources but recommends that the 1,000 MW minimum procurement target for geothermal be broadened such that it can be met with LDES resources, as well as geothermal. As staff indicated, some resource diversity is prudent to direct procurement and the resource-specific targets are generally consistent with the 2019-2020 Reference System Portfolio. However, in addition to the 1,000 MW minimum procurement target for LDES resources, LSEs should be directed to meet a 1,000 MW minimum procurement target of LDES or geothermal, in alignment with the future needs of the state as noted by modeling performed by the Commission, the CEC, CAISO, and stakeholders such as CESA. What is needed is not necessarily baseload generation but flexible and dispatchable resources that have relatively greater energy and use availability, such as LDES.

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<sup>30</sup> CPUC, Decision (“D.”) 20-03-028, “2019-2020 Electric Resource Portfolios to Inform Integrated Resource Plans and Transmission Planning”, issued under Rulemaking (“R.”) 16-02-007 on April 6, 2020, at 41.

<sup>31</sup> See Appendix G: 2030 Local Capacity Technical Study of the Draft 2020-2021 Transmission Plan at 22-24. <http://www.aiso.com/Documents/AppendixG-Draft2020-2021TransmissionPlan.pdf>



**Question 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.**

Like any other generation or storage resource, LDES faces the same risks related to procurement, contract approval, interconnection, permitting, project construction, and transmission upgrade construction. These risks are not unique to LDES. In certain but not all cases, LDES resources may require some incremental lead time relative to other generation or storage resources given that they cannot rely on a robust and liquid supply chain to procure materials and equipment and ramp up manufacturing on an accelerated timeline. Hence, while strongly supportive of the 1,000 MW LDES procurement target, CESA believes that some flexibility should be allowed for LDES resources to meet a 2026 COD, which will come at a time when DCPD is fully retired and aligns with recent COD targets stipulated in a Joint Community Choice Aggregator (“CCA”) Long-Duration Storage Request for Offers (“RFO”) issued in Summer 2020. This RFO was targeted toward adhering to the adopted 2019-2020 Reference System Portfolio, which identified LDES need in 2026, where many bidders and developers may be negotiating and have made investment plans to bring their LDES capacity online within that timeframe. Taking into account these factors, CESA reiterates our comments on making accelerated procurement timelines a preference rather than a requirement, where the 1,000 MW LDES procurement is targeted toward a 2026 COD while encouraging LSEs to favor resources that can meet a 2025 COD. In this way, the feasibility of fully achieving the LDES need is higher and could come at lower costs.

Other than certain LDES technologies such as pumped hydro storage (“PHS”), most LDES technologies are not limited by siting considerations. They can be flexibly deployed in many locations and generally have the added benefit of providing greater energy density per square footage or kilometer of land – an important factor in constrained local/urban areas and/or in cases where land and real estate costs to site projects can be expensive. As CESA understands it, this stands in contrast to geothermal projects, which have specific siting constraints, where there may be questions whether the technical potential or the project feasibility of geothermal resources to meet their own separate 1,000 MW target can be achieved. As discussed in our response to Question 11 above, not only is the basis for the resource-specific target for geothermal potentially limiting, but the siting limitations of geothermal projects may also support the case for broadening resource eligibility for this category of procurement to include LDES and other resources with greater energy and use availability.

**Question 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.**

CESA agrees with the Procurement Framework Staff Proposal that there may be cases where joint procurement can help LSEs overcome the barriers of procuring large, infrastructure projects that any one LSE may not be able to procure or bear the costs alone, or of procuring emerging technologies that any one LSE may not wish to bear the costs or risks of being a first mover with a particular technology. However, with many Northern and Central California CCAs recently forming a joint powers authority in California Community Power, any Commission-

directed action may not be necessary to support procurement of such resources. With such pooled buying power from LSEs, whether through California Community Power or through the IOUs as central procurement entities, CESA believes that the entities are in place to overcome some of the procurement barriers identified in the Procurement Framework Staff Proposal.

On the other hand, CESA does have a concern with staff's proposed procurement process for mid-term reliability needs, whereby IOUs would bear the backstop procurement responsibility starting in 2023 if LSEs are unable to meet their allocated procurement requirements. Due to lead time constraints even with procurement initiated in 2021, CESA believes that the pool of eligible preferred and energy storage resources and their project feasibility would be significantly hampered if backstop procurement is triggered in 2023, as proposed by staff. A one- to three-year lead time starting in 2023 would make it very challenging for preferred and energy storage resources to address the unmet 2024-2026 need. Especially with CESA advocating for no incremental fossil capacity to be eligible for this procurement order, the Commission must position preferred and energy storage resources to successfully be procured to the greatest degree feasible, which would require an earlier backstop trigger in 2022 at latest, as well as maintaining the LSE opt-out provision (as discussed later).

**Question 14: Comment on how fossil-fueled resources should be treated for purposes of compliance with the procurement requirements proposed in this ruling. Include responses to the potential limitations suggested above and/or propose additional restrictions, if you feel that fossil generation should count but be subject to limits.**

CESA opposes the eligibility of fossil-fueled resources to meet mid-term reliability needs pursuant to this Ruling. First, to replace DCPD capacity, the Commission has explicitly committed to replacing DCPD with GHG-free resources as part of the IRP proceeding<sup>32</sup> – a determination that

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<sup>32</sup> D.18-01-022 at 50: “Deferring consideration to the IRP proceeding of the GHG impacts of Diablo Canyon replacement procurement does not reject a commitment to procurement of greenhouse gas-free energy.”

should not be reversed. The very reason that A.16-08-006 did not explicitly address and direct the replacement portfolio mix was that the Commission planned on using the modeling tools and stakeholder process in the imminent IRP proceeding (R.16-02-007) to identify the optimal resource mix, so a deviation from this previous Commission determination would not only reverse this commitment but also do a disservice to stakeholders in A.16-08-006 who put faith in the Commission and IRP process to deliver a GHG-free resource portfolio to replace DCPD capacity. Second, unlike the near-term nature of the procurement directed as part of D.19-11-016 to address 2021-2023 system reliability needs or as it relates to Summer 2022 needs as part of D.21-02-028, the Commission has incrementally more (though not significant) lead time to address 2024-2026 reliability needs, such that there is no need to give LSEs the option to contract with fossil capacity, even on a short-term basis. With a sufficiently high procurement order and with certain modifications to the procurement process as recommended by CESA, there is greater feasibility and likelihood for new preferred and energy storage resources to meet the 2024-2026 need.

At the same time, the Commission should affirm the eligibility for the procurement of energy storage capacity that is hybridized with or repowering existing fossil generation sites, as done in D.19-11-016 and so long as this represents incremental capacity to the baseline resource list. This is consistent with the IRP's decarbonization goals and supports the transition from the current fossil-heavy fleet to one comprised of preferred and energy storage resources.

**Question 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.**

CESA generally supports the inclusion of firm imports, so long as they are subject to the same RA requirements as in-state RA resources. This would increase the possibility of out-of-state energy storage resources that are pseudo-ties into the CAISO balancing authority – an area where

the CAISO recently provided a technical bulletin providing clarifications on their market participation.<sup>33</sup>

## **VI. RESPONSES TO QUESTIONS ON NEED ALLOCATION.**

CESA does not have a position on need allocation to LSEs at this time. We look forward to reviewing parties' comments and may provide reply comments.

**Question 16: Comment on the appropriate way to handle allocation of responsibility to LSEs for purposes of the reliability capacity needs identified in this ruling. The approach proposed here corresponds to "Need Allocation – Specific – Option 2" in Section 7.1 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 Staff Proposal.**

CESA has no comment at this time.

**Question 17: Comment on the best way to handle load migration during the period of a Commission order and the online dates proposed in this ruling. If you support the concept of using a PCIA approach, what vintage dates should apply?**

CESA has no comment at this time.

## **VII. RESPONSES TO QUESTIONS ON BACKSTOP PROCUREMENT.**

CESA generally does not have a particular preference or perspective on backstop procurement processes or entities, but the determination on this matter may need to take into account the procurement timeline for resources, where success to deliver on the mid-term reliability need may be of greater importance than ensuring that, as a policy and principle, LSEs fulfill their procurement obligations to serve load.

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<sup>33</sup> "Storage as Pseudo-Tie Resources: Responses to Frequently Asked Questions," published by the CAISO in July 2020.

<http://www.caiso.mobi/Documents/Storage-Pseudo-TieResources-Responses-FrequentlyAskedQuestions.pdf>

**Question 18: Comment on the proposal that non-IOU LSEs may not opt out of self-providing their share of new capacity found to be needed for long-term reliability. This corresponds to the “Procurement Entity – Self Provision – Option 2” in 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 Staff Proposal.**

At least for the purposes of the mid-term reliability procurement allocation and order, CESA recommends that the Commission maintain the ability for non-IOU LSEs to be able to opt out of self-providing their share of new capacity. Upfront opt-out should be allowed so that the IOUs can immediately begin backstop procurement for the opt-out LSEs, which is necessary given the short lead times to 2024-2026 COD for reliability resources. Otherwise, as proposed, CESA is concerned that any backstop procurement that is triggered at a later time, such as 2023, due to failed or insufficient procurement by non-IOU LSEs runs the risk of the underlying procurement need not being met at all. Based on the experience with the procurements related to D.19-11-016, we may see limited procurement options from preferred and energy storage resources in that limited time period between the backstop procurement period being triggered and the 2024-2026 COD for the residual needs. Especially as some non-IOU LSEs are newer, may not have the ability (e.g., procurement experience, staff) to procure substantial levels of resources, and/or may not have the ability to procure emerging or large infrastructure resources, retaining this optionality may be beneficial and increase the likelihood of success in meeting these mid-term reliability needs.

On a going forward basis, the Commission may pursue a different policy when commercial realities of getting projects online in time that meet both reliability and decarbonization objectives is not a binding constraint. Alternatively, if the Commission is intent on not allowing for LSEs to opt out of self-providing for their share of new capacity requirements for the purposes of this mid-term reliability need, we urge the Commission to ensure that this decision to self-provide or defer

to the IOU be made at an early enough point (*i.e.*, February 1, 2022) to ensure that sufficient time is available for the solicitation and development process.

**Question 19: Comment on the proposed mechanism for backstop procurement, which corresponds to “Procurement Entity – Type – Option 1” in 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 Staff Proposal.**

According to the Procurement Framework Staff Proposal, Option 1 would involve having some central procurement entity conduct front-stop procurement when the need determination identifies large, long lead-time resources that can provide mutual benefit to all LSEs. At this time, the IOUs will most likely represent this entity, where such front-stop procurement need could be immediately signaled with LSEs opting out of self-procurement. CESA thus supports the opt-out ability of LSEs for the purposes of the mid-term reliability procurement need.

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

According to the Procurement Framework Staff Proposal, some of the issues and options explored include the size of the resource, complexity of the development process, etc. Notably, to specifically support the successful procurement of LDES resources, CESA believes that longer-term agreements need to be required, which may lead to the need for front-stop procurement from the IOUs as a central procurement entity in cases where LSEs are unable to take on such long-term contracts. As a newer technology class but also as generally long-lived assets (*e.g.*, 25-50 year lifetimes depending on technology), LDES likely need 20-year minimum contract term lengths to support the bankability of these projects (*e.g.*, access to lower capital costs), beyond the 10-year

contract term minimums required in D.19-11-016 that are minimally required to support more widely deployed lithium-ion battery storage projects.

Furthermore, many LDES technology providers and developers have expressed the need for tolling agreements to support LDES procurement and project development, where LSE procurement of RA Only contracts may present a barrier to their successful procurement. Typically, CESA does not take positions on requirements regarding contract types, where there are merits and tradeoffs to different contract structures depending on the benefit-cost impacts and risk allocation of revenue streams between buyers and sellers. However, for LDES projects, where the greater value of these technologies are in energy shifting across longer time horizons (as compared to the short-term energy arbitrage opportunities that lithium-ion battery storage technologies can better take advantage of), RA Only contracts may limit the competitiveness and viability of LDES projects. To this end, CESA recommends that the Commission encourage LSEs to procure LDES projects in tolling agreements. If pursuing tolling agreements for LDES projects is incompatible with a non-IOU LSE's procurement strategy or abilities, then this may serve as an additional basis to upfront opt-out of their procurement needs for LDES procurement targets and defer to the IOUs, with appropriate cost allocation accordingly.

**Question 21: Section 7.2 of the Procurement Framework Staff Proposal puts forward Commission staff recommendations for procurement and operating entity direction during Phase 1. Comment on whether you agree with the recommendations, to the extent not already addressed by your responses to the questions above, in the context of the procurement proposed in this ruling.**

CESA has no further comment at this time. See our responses to Questions 18, 19, and 20 above.

**Question 22: Comment on whether the D.19-11-016 modified CAM proposed cost allocation is sufficient for purposes of the backstop procurement**



**proposed in this ruling, or if you recommend a different approach, fully describe it along with your rationale.**

CESA has no comment at this time.

#### **VIII. RESPONSES TO QUESTIONS ON APPROVAL PROCESS.**

Despite the additional lead time as compared to the Summer 2021-2022 procurement pursuant to D.21-02-028 and the 2021-2023 System RA need pursuant to D.19-11-016 that established more expedited advice letter processes for Commission review and approval of contracts, CESA stresses that the lead time is not significant enough to pursue lengthy application review processes, which can take up to 12-18 months to proceed to a final, unappealable Commission decision. CESA thus recommends a streamlined Commission review and approval process for contracts via a Tier 2 advice letter process, or minimally, via a Tier 3 advice letter process. Since CESA is advocating for ineligibility of new incremental fossil capacity to meet this mid-term reliability procurement order,<sup>34</sup> the use of an advice letter process is reasonable and balances the need to ensure timely approvals that balance stakeholder due process rights while positioning projects to reasonably meet COD timelines. Aforementioned procurement timeline risks are mitigated through streamlined review processes as well. With clearer upfront showing and demonstration requirements, the Commission can also facilitate more expedited review that provides parties with an understanding of the procurement parameters by which the IOUs would have to demonstrate compliance for any resulting contracts.

**Question 23: Comment on the approval process that should be used for the IOU procurement that would be required as suggested in this ruling, which corresponds to “Procurement Approval – Option 2” in Section 8.2 of the Procurement Framework Staff Proposal. If you have an**

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<sup>34</sup> If fossil capacity were eligible, CESA believes that more extensive application review processes would be necessary in order to avoid locking in fossil capacity on a mid- or long-term basis, contrary to the state’s decarbonization goals.

**alternative proposal, describe it in detail and/or identify whether it is one of the other options included in the Staff Proposal.**

Yes, CESA supports Option 2 from the Procurement Framework Staff Proposal that would establish a Tier 3 advice letter process for contract review and approval. Despite longer lead time relative to the procurement directed through D.19-11-016, this mid-term reliability procurement is still urgent and requires streamlined review.

**Question 24: Section 8 of the Procurement Framework Staff Proposal puts forward staff recommendations for the procurement approval processes during Phase 1. Comment on whether you agree with the recommendations, to the extent not already addressed by your response to the question above, in the context of the procurement proposed in this ruling.**

CESA generally supports the Phase 1 recommendations, except the requirement that applications be required for long lead-time or large-scale projects to meet mid-term reliability needs. This category of projects is nebulously defined and differentiation of review processes, for example, three 500-MW projects to meet mid-term reliability needs via Tier 3 advice letter processes as compared to a single 1,500-MW project via an application process appears to be arbitrary and unnecessary. Given the path to approval, CESA is concerned that these requirements would tilt the balance toward multiple smaller-scale projects, even if LSEs collectively or individually evaluated project bids and found a single larger-scale project to be more economic and the least-cost, best-fit solution. By virtue of the competitive solicitation process, LSEs should be able to identify whether multiple smaller projects or fewer large-scale projects are the optimal resource selections. In either case, as demonstrated in the Joint Agency SB 100 Report, significant resource investments are needed, regardless of the number of projects that constitute that portfolio. CESA recommends an even playing field via an advice letter approval process for all project types, so long as they meet whatever upfront procurement requirements are established and represent

preferred and energy storage resources, consistent with long-term decarbonization goals, as identified in the 2019-2020 Reference System Portfolio.

**IX. RESPONSES TO QUESTIONS ON COMPLIANCE.**

To support expedited contract review and assess for LSE compliance, CESA recommends that the Commission establish clear upfront procurement parameters. For example, based on previous Resolutions approving 2021-2023 System RA contracts for energy storage, the Commission should determine that GHG emissions impact analysis is not a prerequisite for approval of energy storage contracts, deeming them compliant since they have been modeled as being needed to support reliability and decarbonization objectives, pursuant to the modeling results in the Reference System Portfolio. In addition, for any backstop procurement done by the IOUs, the Commission should explicitly outline the cost tracking and allocation mechanisms to be used, which will expedite review of contracts when costs are being allocated across multiple benefiting LSEs – a common source of disagreement for any such procurement. Other demonstration requirements, if necessary, should be clearly outlined to avoid situations where the Commission staff need to solicit further information from the IOUs.

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

CESA supports consistent approaches and alignment between RA counting in the IRP and RA processes. With the RA Program counting RA from VREs using average ELCC values, similar approaches should be used for evaluating LSE procurement for compliance with the procurement requirements.

**Question 26: Comment on the proposed minimum ten-year contract requirement for new resources.**

See our response to Question 20 above regarding how LDES projects will require higher minimum contract term lengths of at least 20 years. For all other resources, CESA generally supports the 10-year contract term minimum, though longer terms should be encouraged.

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

CESA has no comment at this time.

**Question 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.**

CESA has no comment at this time.

**X. RESPONSES TO QUESTIONS ON NON-COMPLIANCE PENALTIES.**

CESA does not have a proposal or position on any specific non-compliance penalties, but we generally support the need to ensure compliance with the procurement need. Generally, it may be important to delineate compliance related to minimum procurement requirements to ensure reliability versus compliance related to the full procurement target that accounts for project-related contingencies and margins, where some flexibility with the COD may be reasonable. Since some of the overprocurement can still count toward longer-term 2030 needs and beyond,

**Question 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.**

CESA has no comments at this time.

**Question 30: Section 9 of the Procurement Framework Staff Proposal puts forward staff recommendations for compliance, monitoring, and enforcement during Phase 1. Comment on whether you agree with the recommendations, to the extent not already addressed by your**

**responses to the questions above, in the context of the procurement proposed in this ruling.**

CESA has no comments at this time.

**XI. RESPONSES TO QUESTIONS ON CENTRAL PROCUREMENT ENTITY.**

CESA recommends that the Commission encourage LSEs to procure for resources to meet both System and Local RA requirements, which present opportunities to save on investment costs for ratepayers by addressing multiple needs from the same resource, as opposed to pursuing siloed and duplicative procurement for System and Local RA needs separately. Considering Local RA procurement can also facilitate local gas retirements, such “stacked value” procurement should be encouraged to the greatest extent possible.

**Question 31: Comment on the suggested clarification to counting of capacity sold or shown to the CPE for local resource adequacy purposes.**

CESA agrees with the Ruling that counting of capacity that is sold or shown to the Central Procurement Entity (“CPE”) for Local RA purposes requires additional clarification. According to D.20-12-006, the counting appears clearer when resources are shown and selected to the CPE, whereby the LSE retains the System RA attributes even though the Local RA attributes are spread across all LSEs in a local capacity area. Since LSEs would fully retain System RA attributes in this case, the Commission can more clearly and obviously count this procurement toward their IRP procurement obligations. However, if resources are bid and selected by the CPE, CESA understands that the CPE would fully retain both System and Local RA attributes, leading to counting complexities for System RA resources that will not be shown in the LSE-specific supply plan. While additional clarification or correction to this understanding may be needed, CESA supports staff’s proposal to still count the procurement of resources that are bid into and selected

by the CPE to the procuring and off-taking LSE, even as they are not directly credited for System RA in their supply plans. Such LSE-specific new resource procurement should be incentivized.

## **XII. RESPONSES TO QUESTIONS ON PREFERRED SYSTEM PORTFOLIO.**

CESA supports the Commission keeping an eye on any procurement needed as a result of their analysis of the IRP plans submitted by LSEs to generate a Preferred System Portfolio, which could identify additional procurement needs through 2030 to meet reliability requirements and decarbonization objectives. However, a focus on deferring new resource procurement for reliability objectives to the RA Program is wholly inadequate, as the RA Program is not designed to direct new resource procurement and is better characterized as a short-term reliability accounting and compliance mechanism.

**Question 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 the Ruling, staff discusses how they are in the process of analyzing whether additional procurement will be required to meet reliability and environmental goals through 2030.<sup>35</sup> CESA supports this analysis process and strongly recommends against the Commission deferring to potential modifications in the RA Program requirements to address longer-term capacity requirements. The IRP is the space where new resource procurement and compliance with new resource buildout needs for reliability and decarbonization purposes is assessed and directed. Even if the RA Program undergoes reforms to the PRM or the LOLE standard, or undertake broader reforms in Track 3B.2, this will impact short-term compliance and ensure that LSEs contract for the portfolio to meet those specific showing requirements. Instead, the IRP and RA processes and

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<sup>35</sup> Ruling at 33.

requirements should be coordinated where new resource procurement pursuant to IRP directives with a longer-term lookahead are aligned with RA compliance on a shorter-term basis – *i.e.*, currently three forward years for Local RA and just one forward year for System and Flexible RA.

Rather, CESA believes that the Commission needs to get on a sustainable procurement schedule that cannot be achieved through the RA Program or through any of the program modifications considered in R.19-11-009. In a subsequent procurement assessment and decision later this year, CESA urges the Commission to assess the residual need and reliability risk factors while accounting for ongoing procurement related to D.19-11-016, D.21-02-028, and the mid-term reliability decision. Understandably, tracking all of these procurements will be challenging, but a further lookahead to 2026-2030 needs will help get the state on course to then establish regular procurement schedules and cycles.

**Question 33: Comment on any other aspects of the Phase 1 recommendations in the Procurement Framework Staff Proposal not already addressed in your responses to prior questions.**

CESA has no further comments at this time.

**XIII. CONCLUSION.**

CESA appreciates the opportunity to submit these comments to the Ruling and looks forward to working with the Commission and stakeholders in this proceeding.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Jin Noh', written in a cursive style.

Jin Noh  
Policy Director  
**CALIFORNIA ENERGY STORAGE ALLIANCE**

Date: March 26, 2021