BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

FILED
02/06/26
02:47 PM
R2506019

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COMMENTS OF THE CALIFORNIA ENERGY STORAGE ALLIANCE ON ADMINISTRATIVE LAW JUDGE'S PROPOSED DECISION REQUIRING 2029-2032 ELECTRIC RESOURCE PROCUREMENT AND TRANSMITTING PORTFOLIOS FOR 2026-2027 TRANSMISSION PLANNING PROCESS

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February 6, 2026

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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 ("ALJ") *Proposed Decision Requiring 2029-2032 Electric Resource Procurement and Transmitting Portfolios For 2026-2027 Transmission Planning Process* ("Proposed Decision"), issued on January 14, 2026.

I. INTRODUCTION

While CESA supports the Commission's determination that a 6,000 MW Net Qualifying Capacity ("NQC") procurement order is necessary to address forecasted reliability shortfalls through 2032, it strongly opposes the Proposed Decision's 50% cap on energy storage procurement. The 50% cap lacks a factual basis in the record, would be detrimental to ratepayer affordability, and undermine system reliability. Furthermore, CESA urges the Commission to direct staff to improve Effective Load Carrying Capability ("ELCC") formulations, particularly for Long-Duration Energy Storage ("LDES"), as the current arbitrary LDES multipliers will result

in Load-Serving Entities ("LSEs") valuing LDES resources lower than their actual reliability value, harming system reliability and affordability.

- Discussed further in ***Section II***, the proposed 50 percent cap on energy storage procurement is arbitrary, undermines reliability and affordability, and lacks a factual basis in the record.

- Discussed further in ***Section III***, the Commission must direct staff to improve the ELCC formulations for LDES to accurately reflect their reliability value in this procurement.

II. THE PROPOSED 50 PERCENT CAP ON ENERGY STORAGE PROCUREMENT IS ARBITRARY, UNDERMINES RELIABILITY AND AFFORDABILITY, AND LACKS A FACTUAL BASIS IN THE RECORD

The Proposed Decision incorrectly adopts a 50 percent cap on storage resources for the 2030 and 2032 procurement tranches. This restriction, based on a variation of a proposal by Pacific Gas and Electric Company ("PG&E"), is intended to avoid technology over-reliance. It will instead lead to adverse reliability outcomes and higher costs for ratepayers by arbitrarily restricting LSE procurement activities. Solar and energy storage procurement remains one of the most cost-effective ways to meet California's reliability and greenhouse gas ("GHG") reduction goals. Forcing a 50 percent generation requirement in this procurement order will ultimately prevent LSEs from procuring the optimal, cost-effective resource mix identified by the capacity expansion models over the long-run.

A. The Energy Storage Procurement Cap is Arbitrary and Undermines Reliability

The 50 percent storage procurement cap is an arbitrary constraint divorced from the reliability modeling driving the need determination, which could cause worse reliability outcomes

due to its imprecise foundation. The Commission's SERVM analysis identified a need for 6,000 MW NQC-ELCC total through 2032, but provided no reliability-based justification for limiting storage to 3,000 MW NQC-ELCC of that total. The Commission should always strive to base its procurement orders (and any limitations) on robust modeling and analysis. Such modeling must include a robust set of candidate resource technologies and associated costs to ensure accurate results towards cost-effectively meeting the State's overarching reliability and GHG reduction objectives.[1]

The Proposed Decision adopts the storage cap as "a variation on the proposal PG&E put forward" without conducting independent analysis.[2] PG&E based its proposal on its own Loss of Load Expectation ("LOLE") study observations and an observation about ELCC saturation.[3] As CESA noted in its reply comments at the time, the observation about ELCC saturation does not justify a going-forward procurement concern as the ELCCs themselves are sending the right market signals.[4] Further, CESA showed that co-located, solar, and wind resource contracting activity currently outpaces standalone storage by a factor of over 2 to 1 in 2029-2032, based on the available interconnection queue data.[5] The Proposed Decision fails to acknowledge these rebuttals to PG&E's proposal. The decision states only that storage should be capped "to help avoid over-reliance on storage and support developing the resources that can adequately charge the storage on the system for reliability purposes." There is no evidence that LSEs would over-rely

[1] To this end, the Commission must continue to increase its energy storage candidate resource optionality in the IRP model, as many resources that provide similar reliability services have different cost structures.
[2] Proposed Decision, Section 2.3.2
[3] Opening Comments Of Pacific Gas And Electric Company (U 39 E) On The Administrative Law Judge's Ruling Seeking Comments On Electricity Portfolios For 2026-2027 Transmission Planning Process And Need For Additional Reliability Procurement, pgs. 17-22
[4] Reply Comments Of The California Energy Storage Alliance On The Administrative Law Judge's Ruling Seeking Comments On Electricity Portfolios For 2026-2027 Transmission Planning Process And Need For Additional Reliability Procurement, Section II.A
[5] *Id.*, pgs. 6-7

on storage in this procurement in the record. Furthermore, the cap would arbitrarily limit the amount of dispatchable Pmax that will be available to the grid in the stressed period after sunset. CESA cautions that any intervention that would cause procurement activities to deviate from the needed procurement reflected through appropriately calculated marginal ELCC values would negatively disrupt actual reliability outcomes. Furthermore, the cap would limit the storage procurement to a value much less than the 18.4 GW of nameplate energy storage capacity the TPP Proposed Base Case is planning to be online by 2031 to meet reliability requirements at least-cost.[6]

B. The Energy Storage Procurement Cap Lacks a Factual Basis in the Record

The Proposed Decision cautions against overreliance on battery storage or any other particular technology and makes the following observation regarding the Mid-Term Reliability procurement that took place earlier this decade: "…LSEs found battery storage to be a very attractive resource, both because of its declining costs, as well as its modular nature and ability to be developed and brought online quickly."[7] The Proposed Decision also recognizes that "Federal tariff policy may be having a negative impact on the battery storage market, due to the rising cost of components. In addition, the resource adequacy [Slice-of-Day] requirements and the other RPS requirements would tend to encourage LSEs to procure more energy-generating resources naturally instead of more battery storage."[8] Nonetheless, the Proposed Decision still caps the amount of capacity that can come from storage resources at 50 percent of the ordered procurement.[9]

[6] Proposed Decision, Table 6.
[7] Proposed Decision, Section 3.2.3
[8] *Id.*
[9] *Id.*

The cap is based on the Proposed Decision's following Finding of Fact: "Energy storage, especially battery storage, has made up a large proportion of the resources procured to meet MTR and Supplemental MTR requirements, both due to its declining costs, its modularity, and its fast average development timelines."[10] This Finding of Fact leads to the following Conclusion of Law: "The Commission should avoid over-reliance on storage resources by imposing a cap such that no more than 50 percent of the capacity otherwise eligible to be procured in response to this decision may come from storage. Thus, at least half of the procurement will be from generation resources that are otherwise eligible."[11]

Conclusion of Law #8, stating that the Commission should avoid over-reliance on storage resources, is not supported by the facts because the Proposed Decision has not established the fact that the observed level of past storage procurement has presented reliability or affordability issues, or would present reliability or affordability issues going forward. In fact, cost-effective storage procurement has markedly improved system reliability since the Mid-Term Reliability orders were established. Such procurement was exactly what the system needed at the time, aligned with their reliability value and cost. Furthermore, the Commission's own Integrated Resource Planning ("IRP") cost data as well as indicative Effective Load Carrying Capability ("ELCC") values support an opposing conclusion going forward: that non-storage resources such as solar and wind will tend to take a larger share of procurement activity than they have in the past.

The Proposed Decision reflects a concern that observations of past procurement activities – specifically the high proportion of energy storage – will continue in the future. In light of the

[10] Proposed Decision, Findings of Fact #11
[11] Proposed Decision, Conclusion of Law #8

following facts, many of which are found in the record, this concern is highly speculative and therefore cannot justify Conclusion of Law #8.

First, energy storage reliability value (as reflected through marginal ELCCs) is declining, solar reliability value is increasing, and the IRP data shows that energy storage costs are anticipated to remain approximately 2.5 times higher than solar costs on a nominal levelized cost of energy ("LCOE") basis by 2032.[12] The decline in energy storage ELCC values are well-documented and the ELCC values are anticipated to be less than or equal to 37 percent by 2029[13]. At the same time, solar ELCC values are projected to rise to greater than or equal to 16 percent by 2029 due to its synergistic reaction as more storage is added to the grid.[14] This means that LSEs would have to pay two and a half times as much to procure storage relative to solar and receive only twice the compliance value at most; a result that currently leans in favor of solar procurement and will lean further in favor of solar at the completion of staff's new ELCC analysis due on July 31, 2026.

Second, procurement conditions are significantly different today than they were at the beginning of the decade. The most simple evidence is the massive reduction in energy storage ELCC values in the record, from close to 77 percent[15] to now likely less than 37% by 2029 and the increase in solar ELCC values from 6.6 percent[16] to now likely greater than 16% by 2032. Furthermore, energy storage now faces different cost pressures than solar; for example, the weighted average tariff for utility-scale solar is 70 percent, while battery storage (lithium-ion) faces a staggering 122 percent tariff. This cost disparity is why the Commission's own RESOLVE

[12] CPUC IRP Resource Costs and Build Workbook - 2026-2027 TPP, Nominal LCOE ($/MWh). Solar LCOE is between $59-$67/MWh in 2032, while storage LCOE is $163/MWh (and increasing) in 2032.
[13] The Commission even referenced this fact in the ALJ's September 30, 2025 Ruling, Question #14.
[14] R.20-05-003, Energy Division Staff Proposal: Reliable and Clean Power Procurement Program, pg. 24
[15] Incremental ELCC Study for Mid-Term Reliability Procurement (January 2023 Update), Table 1
[16] *Id.*

model optimally selects a massive buildout of solar—up to 47.3 GW by 2036 in the Least-Cost Comparison Portfolio—while selecting significantly less incremental storage.

Third, although storage benefits from federal Investment Tax Credit ("ITC") availability through 2034, the ITC Prohibited Foreign Entity ("PFE") material assistance restrictions (which are projected to lead to increased costs) increase annually for all projects that achieve start construction in 2026 or after. This dynamic should encourage the Commission to support additional storage procurement in the near-term, to maximize storage project cost-effectiveness towards its Preferred System Plan portfolio.

Fourth, LSEs procure resources to meet a multitude of regulatory requirements and generally try to minimize their cost in meeting those requirements by selecting resources that meet multiple regulatory requirements. The Resource Adequacy Slice-of-Day framework is a new construct that was not in place at the time the prior Mid-Term Reliability orders were established. The Resource Adequacy Slice-of-Day requirements and the other RPS requirements tend to encourage LSEs to procure more energy-generating resources naturally rather than energy storage.[17]

C. The Energy Storage Procurement Cap Introduces Equitability and Affordability Issues

The storage procurement cap would result in inequitable outcomes among LSEs and fails to target the actual reliability concern. The cap operates at the individual LSE level, not systemwide. An LSE with abundant generation resources in its existing portfolio would be forced forgo procuring additional storage needed to meet net load peaks and procure additional generation

[17] The Proposed Decision recognizes this in Section 3.2.3

resources it does not need, while an LSE failing to procure sufficient charging energy for its overall portfolio could still comply with the procurement order by procuring up to the 50 percent storage cap.

The additional restriction reduces each LSE's flexibility in meeting its specific portfolio needs and will directly drive up overall costs for California ratepayers. The Commission's fundamental obligation in procurement decisions is to ensure reliability while minimizing ratepayer costs. The Proposed Decision confirms this priority stating that "[e]ach year, the Commission studies a portfolio of resource attributes that the state could develop to cost-effectively and reliably serve load and meet state GHG emissions reduction goals, which the CAISO studies in its annual TPP cycle for least-cost system planning for incremental transmission needs."[18] It also affirms the Commission's concerns related to ratepayer costs, stating that "[the Commission] are also concerned about impacts on ratepayer costs."[19] A uniform procurement cap ignores the unique composition of individual LSE portfolios. LSEs require the flexibility to procure the "least-cost, best-fit" resources tailored to their specific load shapes and existing resource gaps. By imposing a one-size-fits-all restriction, the Commission prevents LSEs from optimizing their portfolios; for instance, an LSE that has already invested heavily in energy-generating resources may find that additional storage is the most reliable and affordable way to balance its portfolio, yet the cap would force them to procure redundant and more expensive generation.

The Commission should clarify that procurement of energy storage resources in a paired procurement is not capped. Modern hybrid and co-located projects effectively address charging

[18] Proposed Decision, Section 3.2.2
[19] *Id.*, Section 2.1.2

concerns by pairing generation with storage. The Proposed Decision acknowledges this by allowing such projects to qualify,[20] yet Ordering Paragraph #1 could be interpreted to require that the 50 percent cap applies to paired resource storage components as well. This would be an internal contradiction that would further limit least-cost best-fit procurement activities. Furthermore, regardless of whether generating resources and storage resources are paired behind a particular point-of-interconnection or not makes no difference relative to the Commission's concern to ensure procurement of sufficient charging energy, both arrangements would achieve the Commission's goal.

Finally, the Commission should clarify that demand response resource procurement is eligible to meet this procurement order, if non GHG-emitting and/or eligible for the RPS program. Otherwise, the Commission's decision risks embedding a bias toward utility-scale resources and away from behind-the-meter capacity that can reduce distribution stress, accelerate deployment, and decrease overall transmission/distribution upgrade costs. Demand response resources should be counted under the appropriate ELCC based on the supporting behind-the-meter technology/resource. For instance, if the demand response resource is backed by energy storage,[21] it should count using the ELCC for energy storage.

III. THE COMMISSION MUST DIRECT STAFF TO IMPROVE ELCC FORMULATIONS FOR LDES TO ACCURATELY REFLECT THEIR RELIABILITY VALUE IN THIS PROCUREMENT

The Commission must direct staff to improve ELCC formulations, as the current methods vastly undervalue Long-Duration Energy Storage ("LDES"). The current modeling uses arbitrary

[20] Proposed Decision, Section 2.2.2
[21] All energy storage technologies should be eligible, including lithium-ion batteries and thermal energy storage.

"LDES multipliers" and does not yet fully incorporate features necessary for the accurate reflection of the reliability value of LDES, inclusive of various available durations of energy storage (i.e., 8-, 10-, 12- and 24-hour) and multi-day storage technologies. This undervaluing creates a significant barrier for LDES, hindering the procurement of the diverse resource mix the Commission seeks and is very likely to result in under-procurement of the most cost-effective resources to achieve reliability, as outlined by the large need for LDES called for in the TPP Proposed Base Case.[22] Further, the modeling assumptions used by CPUC to develop the TPP Proposed Base Case likely understate the overall need for LDES in both the short- and long-term horizons.[23]

Accurate ELCC accreditation is crucial because it captures interactive effects between resource types and recognizes the value of adding complementary resources that enhance reliability. As it stands, the "multiplier" or simplified accreditation approaches often fail to account for the unique benefits LDES provides during multi-day reliability events. Improving these formulations will better allow the market to naturally signal when more energy-providing resources are needed to charge storage, rather than relying on arbitrary procurement caps.

LDES resources are an important element of ensuring that California can meet its GHG reduction goals at least cost, yet they are not accurately reflected in the IRP process. Energy and Environmental Economics ("E3"), Form Energy, and the California Energy Commission recently completed a study[24] that included longer duration candidate resources accurately reflected the impact of multi-day weather events and modeled multi-day inter-temporal effects within the resource selection optimization. The study found that LDES, including intra-day and multi-day

[22] Proposed Decision, Table 6
[23] CESA Opening Comments (R.20-05-003; 5/24), Section II: https://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=532265693
[24] "Assessing the Value of Long-Duration Energy Storage in California" prepared by Energy and Environmental Economics (E3), Form Energy, and the California Energy Commission ("CEC"), January 29, 2024.

storage, could play an essential role in cost-effectively decarbonizing California's electric grid – with between 5 to 37 GW of LDES anticipated to be needed by 2045, depending on the depth of decarbonization.

The TPP Proposed Base Case calls for 11.6 GW of incremental LDES resource capacity, made up of 8-hour and 12-hour duration resources, to be in service on the system by 2031.[25] As discussed above, in order to get this amount of capacity procured and on-line, this decision must have updated and accurate ELCC values that will incentivize buildout of these resources. Absent these signals there is very little chance that appropriate or even significant quantities of long duration energy storage will be procured and available for use on the system by 2032.

The TPP Proposed Base Case portfolio is designed to specifically include a least cost mix of resources that will provide reliable energy outcomes and keep the state on track for decarbonization goals. If actual procured portfolios are significantly different than those called for in these mixes, outcomes will be less efficient and more expensive – ultimately increasing ratepayer costs, and may threaten reliability. Building significantly less LDES than called for in the TPP Proposed Base Case will result in these outcomes. Therefore, it is critical that the Commission develop appropriate procurement mechanisms to incentivizes these outcomes.

CESA requests a robust ELCC analysis for LDES, but based on staff's development efforts over the years, we have serious doubts on whether that will happen. Other parties have also raised concerns about the accuracy of staff's recent ELCC modeling.[26] If more appropriate ELCC values will not be ready by July, steps must be taken to ensure a diversified resource mix that more

[25] Proposed Decision, Table 6
[26] ACP-CA Comments on ALJ's September 30, 2025 Ruling, filed October 22, 2025, pg. 26, "While ACP-California has broader questions regarding the accuracy of such a steep decline…"

accurately reflects LDES contribution to system reliability. Furthermore, even if appropriate ELCC values are available by midyear, the long lead-time nature of LDES in addition to expiring federal incentives and loans means targeted action on LDES may be appropriate for the unique circumstances of the interim procurement order, particularly given longer timeframes associated with designing the Reliable and Clean Power Procurement Program and reforming the Resource Adequacy program.

It is essential that the ELCC values for LDES resources be accurately calculated for this procurement order.

IV. CONCLUSION

CESA appreciates the opportunity to comment on the Proposed Decision and urges the Commission to remove the energy storage procurement cap and prioritize improving ELCC formulations for LDES to ensure a reliable and affordable transition to a clean energy grid.

Respectfully submitted,

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