

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

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

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

**COMMENTS OF THE CALIFORNIA ENERGY STORAGE ALLIANCE ON THE
PROPOSED DECISION AND ALTERNATE PROPOSED DECISION REQUIRING
PROCUREMENT TO ADDRESS MID-TERM RELIABILITY (2023-2026)**

Jin Noh
Policy Director

Sergio Dueñas
Senior Regulatory Consultant

CALIFORNIA ENERGY STORAGE ALLIANCE
2150 Allston Way, Suite 400
Berkeley, California 94704
Telephone: (510) 665-7811
Email: cesa_regulatory@storagealliance.org

June 10, 2021

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

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

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

**COMMENTS OF THE CALIFORNIA ENERGY STORAGE ALLIANCE ON THE
PROPOSED DECISION AND ALTERNATE PROPOSED DECISION REQUIRING
PROCUREMENT TO ADDRESS MID-TERM RELIABILITY (2023-2026)**

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 Proposed Decision (“PD”) and Alternate Proposed Decision (“APD”) requiring procurement to address mid-term reliability, issued by the Administrative Law Judge (“ALJ”) Julie Fitch and Commissioner Clifford Rechtschaffen, respectively, on May 21, 2021.

I. INTRODUCTION.

CESA recognizes the efforts of the Commission in considering the feedback provided by parties to this proceeding with regards to the Ruling on mid-term reliability. Given the potential for capacity deficiencies in the 2023-2026 period, the Commission has the complex task of preserving the continued reliability of the state’s grid while ensuring the suite of resources developed to do so align with California’s goals to decarbonize its electric sector. As we approach on 2030 to meet Senate Bill (“SB”) 350 goals and as 2045 looms on the horizon to meet ambitious SB 100 zero-carbon electricity goals, the determinations of the Commission regarding this upcoming procurement will be essential to ensure that California is on track to reduce greenhouse gas (“GHG”) emissions and transition to a cleaner grid.

In this context, CESA applauds the Commission’s leadership in recognizing the significance of this procurement order. CESA is pleased with the Commission’s consideration of stakeholder input regarding the magnitude and timing of need, resulting in the proposal to revise the total minimum incremental capacity required to 11.5 GW by 2026 – a reasoned and smart decision to address climate-related reliability risks and other macro factors cited in the PD/APD

and steadily move away from just-in-time procurement practices.¹ In addition, CESA strongly supports the Commission’s commitment to utilize this procurement order to accelerate the development of long-duration energy storage (“LDES”) resources, a class of assets that have been identified through Integrated Resource Planning (“IRP”) models to be required to maintain reliability and enable decarbonization. The additional lead time for LDES resources with 2026 COD and options for 2028 COD extensions are positive steps to support their project viability.² These changes address some of CESA’s concerns expressed in comments to the Ruling, driving our calls for frontstop procurement options and earlier backstop procurement triggers – though the Commission should be aware that not all LDES resources are long lead-time (“LLT”) resources.³ Finally, CESA also appreciates and supports the broadening of the previous geothermal procurement requirement to include a description of attributes for zero-emission firm resources.⁴

While the Commission has made significant progress with these PD and APD in evaluating the magnitude, timing, and characteristics of the need, certain topics require further consideration. Thus, CESA’s comments can be summarized as follows:

- The Commission should streamline contract approval processes with clear upfront showing or demonstration requirements and consistently use Tier 3 advice letter for LDES procurement conducted by the investor-owned utilities (“IOUs”).
- The Commission should clarify the methodology, scope, and application of the referenced effective load carrying capability (“ELCC”) values for energy storage, hybrid, and LDES resources.
- The Commission should allow for storage hybridization of fossil-fueled assets located in disadvantaged communities (“DACs”) within the APD.

In addition to the above areas of clarification and modification, CESA appreciates the suggestion that the Commission will soon issue a separate decision on the Preferred System Plan (“PSP”) based on the 38 million metric ton (“MMT”) GHG limit by 2030 once staff has completed

¹ See PD at 19 and 23.

² See PD at 34.

³ Some LDES developers have indicated that they are capable of delivering projects prior to the 2026 COD requirement.

⁴ See PD at 35.

the aggregation of the individual IRPs submitted by various load-serving entities (“LSEs”).⁵ Presumably, taking into account the magnitude and timing of the procurement order in the present PD/APD, the Commission will issue a subsequent procurement order to meet 2030 objectives for resources with CODs in the 2027-2030 timeframe. Timely issuance of a decision related to 2027-2030 resource procurement prior to the end of this year is needed to ensure sufficient lead time of all resources especially for LLT resources and avoid just-in-time procurement in general. With the California Independent System Operator (“CAISO”) reporting record queues and looking at potential delays in the interconnection study process, timely procurement orders are also needed for the 2027-2030 timeframe.

II. THE COMMISSION SHOULD STREAMLINE CONTRACT APPROVAL PROCESSES WITH CLEAR UPFRONT SHOWING OR DEMONSTRATION REQUIREMENTS AND CONSISTENTLY USE TIER 3 ADVICE LETTER FOR LDES PROCUREMENT CONDUCTED BY THE INVESTOR-OWNED UTILITIES.

In the PD and the APD, the Commission determines that it will maintain a Tier 3 advice letter requirement for all procurement associated with this order.⁶ Notably, the Commission highlights two exceptions to this determination: (1) the procurement of any fossil-fueled resources (including green hydrogen/fossil assets, in the case of the APD) by the IOUs; and (2) the procurement of LDES resources, also by the IOUs. For these exceptions, the Commission directs the use of a full application process.⁷

While Tier 2 advice letter pathways are preferred, particularly for “routine” resources such as battery energy storage, CESA does not oppose the use of Tier 3 advice letters, which have generally worked well for the contracts executed in response to Decision (“D.”) 19-11-016 to balance efficiency and timely approval of contracts for preferred and energy storage resources with the Commission’s and stakeholder’s due process rights and need for time to review contract details. With additional lead time between the issuance date of this procurement order and the required 2023-2026 commercial online dates (“COD”) as compared to those related to D.19-11-016, the choice of Tier 2 or 3 advice letter contract approval processes is less impactful to the viability of

⁵ See PD at 19.

⁶ See PD at 64 and APD at 65.

⁷ *Ibid.*

getting projects online by the contracted COD. Yet, the Commission and the IOUs should not be complacent with the longer lookahead of this mid-term reliability procurement order since deployment timelines are still tight and aggressive for projects with 2023/2024 CODs. Timely and efficient contract submissions by the IOUs and contract approvals by the Commission are still needed to give developers the certainty needed to secure financing, procure equipment and battery supplies, and begin construction of contracted projects.

To this end, based on experience from the contract approval processes related to D.19-11-016, the Commission should also outline clear upfront procurement parameters and demonstration requirements, building off findings and determinations already made by the Commission.⁸ In this way, CESA hopes to avoid inefficient back-and-forth between the Commission staff and IOUs in procuring additional information, as well as to avoid relitigating issues, which can delay review and contract approval.

In responses to the Ruling pursuant to this directive, CESA did not recommend the Commission consider incremental fossil-fueled capacity eligible for meeting the procurement order. Expanding on this position, CESA noted that if fossil capacity were eligible, a 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.⁹ Consistent with this position, CESA does not oppose the use a full application process for the fossil-fueled resources the IOUs will procure.

With regards to LDES assets, however, the case in favor of a full application process is not substantiated, and in our review, was not addressed by parties in comments to the ALJ’s February 22, 2021 Ruling, highlighting the lack of record evidence to require a full application process for LDES resources. In its justification for this exception, the Commission highlights that it is likely LDES projects will “raise other environmental issues besides GHG emissions and local air quality impacts and will likely represent new technologies or configurations that will require additional

⁸ See, e.g., Resolutions E-5100, E-5101, E-5117, E-5139, E-5140, and E-5142. For example, these Resolutions repeatedly addressed treatment of different contract types, applicability of multiple-use application (“MUA”) rules, and inapplicability of GHG demonstration requirements for energy storage contracts.

⁹ CESA’s Comments on the Administrative Law Judge’s Ruling Seeking Feedback on Mid-Term Reliability Analysis and Proposed Procurement Requirements at 33.

scrutiny and deliberation.”¹⁰ CESA disagrees with this characterization of LDES assets. Today, a wide array of technologies can comply with the characteristics the Commission has outlined for LDES resources. These encompass mechanical, electrochemical, and thermal storage methods, and include technologies that are currently being developed and others that have reached commercial maturity. The PD/APD even acknowledge how LDES is a resource-neutral designation that can be met by a number of technologies,¹¹ where a statement that LDES as a resource class will likely raise environmental issues is sweeping, contradictory, and glosses over differences in individual resource characteristics, including many technologies that would not trigger any environmental issues. Yet, the PD/APD would subject LDES contracts to extensive review via a full application, which is typically a 12- to 18-month process to receive Commission approval. Considering LDES resources are granted additional lead time with a 2026 COD and flexibility for LSEs to seek extensions through 2028 if good-faith efforts are demonstrated, CESA finds the procedural pathway for approval of LDES contracts via full application to counteract the intended purpose of giving LDES additional lead time.

Furthermore, when the PD/APD raise “other” environmental issues besides GHG emissions and local air quality impacts, CESA assumes that this is referring to land use, wildlife, or other local ecosystem impacts. As CESA understands it, these environmental considerations are typically outside the purview of the Commission and covered by other regulatory agencies, such as the Bureau of Land Management (“BLM”) and Federal Energy Regulatory Commission (“FERC”). So long as the appropriate permits and licenses are included as documentation and attachments to the contracts submitted for approval, the Commission should be able to assess and review the reasonableness of the procurement of resources, trusting that these other agencies have done their due diligence on other environmental issues.

In sum, the inclusion of a provision to have IOUs go through a full application process could hinder the speed at which the procurement could be finalized. This is particularly important considering the IOUs would be required to provide backstop procurement if other LSEs fail to timely procure their share of the total LDES requirement. Thus, for the reasons expressed above,

¹⁰ See PD at 64 and APD at 65.

¹¹ See PD at 34 and APD at 35.

CESA recommends the Commission use Tier 3 advice letter for the approval of the LDES procurement that shall be conducted by the IOUs.

Finally, for LLT resources, CESA is concerned that the Commission's limited definition of what activities constitute a good-faith procurement effort may dissuade LSEs from considering new technologies and bringing them to the Commission for consideration. If the Commission provides LSEs an option to seek an extension to comply with the LLT resource procurement requirements, it should clarify that evidence of an executed contract should be sufficient to demonstrate good-faith efforts. Certain criteria as outlined in Ordering Paragraph ("OP") 4 such as site control, an interconnection agreement, and a notice to proceed are evidence of advanced project development and would likely represent the reasons to seek extensions as part of good-faith efforts to complete these additional project development activities for contracts executed with LLT resources.

III. THE COMMISSION SHOULD CLARIFY THE METHODOLOGY, SCOPE, AND APPLICATION OF THE REFERENCED EFFECTIVE LOAD CARRYING CAPABILITY VALUES FOR ENERGY STORAGE, HYBRID RESOURCES, AND LONG-DURATION ENERGY STORAGE.

In both the PD and the APD, the Commission finds that it is reasonable to utilize marginal ELCC values to calculate the individual resource contributions to the required capacity.¹² Commission staff will thus be asked to complete a marginal ELCC study by August 31, 2021. This study will analyze energy storage at various durations, solar, solar-plus-storage of various durations and configurations, and wind in various regions.

The ELCC of a generating resource is a measurement of that resource's ability to produce energy when the grid is most likely to experience electricity shortfalls. Calculating ELCC values requires determining how much "perfect capacity" would be required to substitute a resource (or resource class) across a range of probabilistic simulations. This process has been undertaken by the Commission before; in fact, CESA has previously expressed concerns with the methodology and assumptions used to derive storage ELCC values for the purposes of the IRP Planning Track. In this context, to minimize the risk of divergent methodologies to estimate the reliability contributions of energy storage assets, CESA requests the Commission prioritize alignment

¹² See PD at 70 and APD at 71.

between the RA and IRP proceedings. Moreover, CESA recommends that, if an ELCC study for storage in the context of this procurement order is to be conducted, key shortcomings that CESA has highlighted previously be addressed and a transparent process that allows stakeholders to vet inputs and assumptions and substantially contribute to its development be conducted.

Aligning investment signals across proceedings is essential to ensure desired outcomes are achieved. In the PD and the APD, the Commission generally use counting methods that are consistent with those used for the purposes of the RA Program. Conventional resources are counted using their NQC methodology and intermittent resources are counted with an ELCC methodology.¹³ This, however, is not the same for standalone energy storage or hybrid/co-located resources. Even though the Commission has noted that the IRP characteristics of an asset are distinct from its RA characteristics,¹⁴ it is important to recognize that RA is an essential revenue stream for assets and a pressing requirement for buyers. As such, the Commission would be amiss if it tried to further complicate the issue of energy storage counting prior to the various long-term reforms being adopted as part of Track 3B.2 in R.19-11-019 and before refining the RA value for LDES resources. The existence of different, often disconnected counting rules across proceedings, can lead to confusion and risk aversion, potentially hindering the expedited procurement the Commission is requesting of market participants. CESA expects the complexity around aligning capacity counting methodologies will be alleviated by the Commission's guidance with regards to Track 3B.2 of the RA proceeding. In this context, the Commission should strive to agree on a common methodology that provides insights regarding future value and acknowledges the benefits of assets with diverse operating characteristics.

As noted above, CESA has previously offered several comments to the Commission highlighting that the IRP's storage ELCC curve has significant limitations as it does not account for the variations related to the availability of renewable energy (it is based on the 2022 expected resource mix) and those due the duration of the storage assets.¹⁵ Accounting for the future

¹³ It is important to note that, although the RA program uses an average ELCC and the IRP proposes to use a marginal ELCC, these are intrinsically related and would be equal over time. In short, the average ELCC is a function which tends towards the marginal ELCC.

¹⁴ This is covered in the section related to the Central Procurement Entity in both the PD and the AD.

¹⁵ CESA, *Comments of the California Energy Storage Alliance on the Administrative Law Judge's Ruling Seeking Comment on Proposed Reference System Portfolio and Related Policy Actions*, filed under Rulemaking ("R.") 16-12-007 on December 17, 2019, at 6-7.

availability of renewable generation, particularly solar PV, has a profound effect on the ELCC of storage assets. The National Renewable Energy Laboratory (“NREL”) has pointed out that the peaking capacity of storage assets is primarily influenced by the penetration of storage technologies and the penetration of solar generation, with higher solar penetration increasing the magnitude of four-hour energy storage that can be added at 100% ELCC.¹⁶ Figure 1 below shows this relationship for California. As it can be observed in Figure 1, NREL’s analysis concludes that, for California, a system with 35% PV penetration and 0% wind penetration could have over 8 GW of 100% ELCC four-hour storage.¹⁷

Figure 1: Potential for 4-hour storage in California as a function of PV penetration (NREL, 2019)

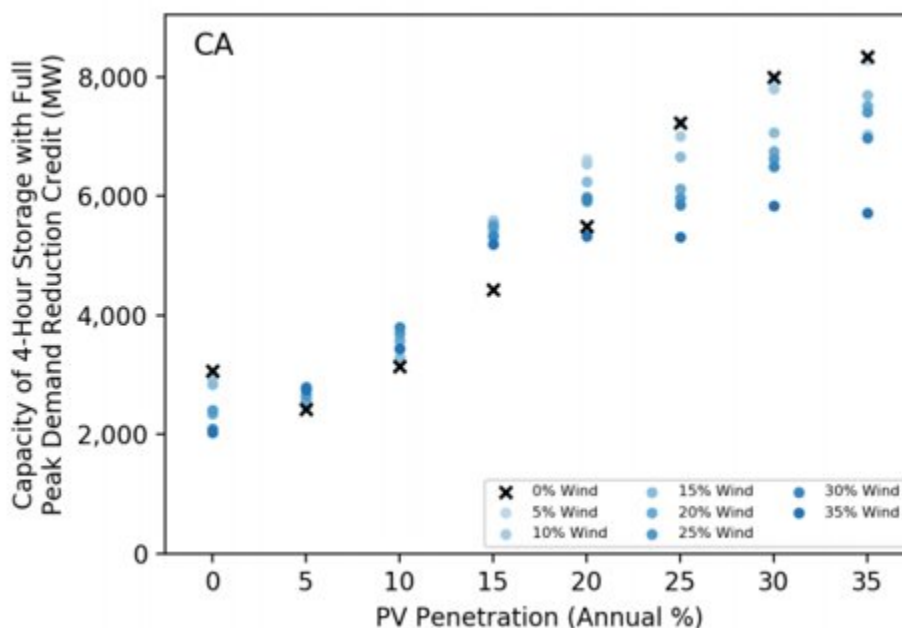


Figure 1 shows that the methodological shortcomings of the ELCC curve used in the IRP Planning have substantial implications on the value of four-hour storage. Considering the 2021 SB 100 Joint Agency Report (“2021 SB 100 JAR”) concludes California will need to add approximately 70 GW of utility-scale solar by 2045,¹⁸ bringing solar penetration to about 40%, inclusion of this factor into the ELCC methodology is warranted. If the Commission decides to

¹⁶ See NREL, *The Potential for Battery Energy Storage to Provide Peaking Capacity in the United States*, available at <https://www.nrel.gov/docs/fy19osti/74184.pdf>

¹⁷ *Ibid*, at 20.

¹⁸ California Energy Commission (“CEC”) *et al*, *2021 SB 100 Joint Agency Report*, at 75.

update the ELCC methodology used for storage assets, CESA urges the Commission to commit to a transparent process that allows stakeholders to substantially contribute to its development so as to minimize oversights as the one described above. This process may require time for workshops and comments, so the stakeholder process should be launched immediately to meet the August 31, 2021 deadline.

IV. THE COMMISSION SHOULD ALLOW FOR ENERGY STORAGE HYBRIDIZATION OF FOSSIL-FUELED ASSETS LOCATED IN DISADVANTAGED COMMUNITIES WITHIN THE ALTERNATE PROPOSED DECISION.

Recognizing the threat of unreliable service to the state’s long-term decarbonization goals, the PD/APD both require the procurement of fossil-fueled resources by the IOUs. The core difference between the PD and the APD centers around the eligibility of and authorization for fossil-fueled resources. Beyond the magnitude of the authorized procurement, the PD and the AD diverge on the subject of fossil-fueled assets located within disadvantaged communities (“DACs”). In the PD, fossil-fueled resources located in DACs can be procured provided they abide by a series of conditions dependent on the type of project. In contrast, the APD notes that neither the 500 MW of conventional fossil-fueled generation nor the 300 MW of green hydrogen/fossil generation can be located in a DAC.

First, rather than a requirement, even if a small percentage of the overall need determination and MW target and even as the PD/APD appropriately subject these contracts to a full application process, CESA advocates for fossil-fueled resource procurement to be an authorized amount instead of a requirement since nothing in the record has demonstrated why a combination of preferred, battery storage, hybrid/co-located resources, and LDES resources could not achieve the same or comparable levels of reliability as fossil-fueled resources.

Second, CESA requests that the Commission consider the benefits of storage hybridization in fossil-fueled plants located in DACs and incorporate the provisions the PD has regarding these upgrades into the AD. Overall, CESA generally supports the Commission’s focus on reduced GHG emissions and pollutant impacts when contracting for fossil-fueled assets and agrees with the policy direction of the APD. Furthermore, CESA shares the Commission’s commitment to minimize the environmental burden of the state’s marginalized populations, where DACs have a disproportionate share of fossil-fueled power plants: almost 40% of conventional generators are

located within DACs while only 25% of the population live in DACs.¹⁹ In this context, limiting the potential for storage hybridization to the plants located outside DACs would deny the benefits of these investments, particularly those related to the decreased GHG and criteria pollutants emissions in the state's most vulnerable populations.

The consideration of gas-hybrids has been recommended by CESA previously in the IRP process. In January 2019, within R.16-02-007, CESA strongly urged the Commission to update its proposed IRP methodology to include hybridization of existing gas-fired resources as a candidate resource.²⁰ Since then, CESA has highlighted that hybrid gas-plus-storage resources are not a hypothetical future technology: it has been installed and is currently operating at multiple locations on California's grid. Moreover, CESA has provided analysis which demonstrates the potential of these solutions. On December 20, 2018, CESA shared its own independent analysis with the Commission, which modeled the effects of hybrid gas-plus-storage resource deployment on California's system. The model optimized long-term capacity expansion decisions in a manner very similar to RESOLVE. At a high level, the modeling inputs were nearly identical to the 2017-2018 IRP inputs, the ones applicable at the time, except that 1,100 MW of existing gas resources were made eligible for hybridization with battery storage. The results showed that every single one of the candidate resources made eligible for hybridization was ultimately selected under the economically optimal scenario.²¹

To address this omission, CESA recommends incorporating some considerations of the PD within the APD. In particular, the Commission should modify the APD so that the 500 MW of conventional fossil-fueled generation that the IOUs have been directed to procure could be located in a DAC if the project is Category 2 (uprates/upgrades) and the resource commits to include

¹⁹ CPUC, 2019. "Proposed Preferred System Portfolio for IRP 2017-18: System Analysis and Production Cost Modeling Results." Available at:

https://www.cpuc.ca.gov/uploadedFiles/CPUCWebsite/Content/UtilitiesIndustries/Energy/EnergyPrograms/ElectPowerProcurementGeneration/irp/2018/Attachment%20A_Proposed%20Preferred%20System%20Portfolio%20for%20IRP%202018_final.pdf

²⁰ CESA, *Comments of the California Energy Storage Alliance to the Administrative Law Judge's Ruling Seeking Comments on Inputs and Assumptions for the Development of the 2019-2020 Reference System Plan*, filed under R.16-02-007 on January 4, 2019, at 16.

²¹ See Attachment 1 of CESA, *Comments of the California Energy Storage Alliance to the Ruling of Assigned Commissioner and Administrative Law Judge Seeking Comment on Policy Issues and Options Related to Reliability*, filed under R.16-02-007 on December 20, 2018.

hybridization by adding energy storage using existing or expanded interconnection capacity. In addition to these requirements, these resources would have an obligation to show that the project will reduce its GHG emissions and increase its NQC value, per the PD's language.²²

V. **CONCLUSION.**

CESA appreciates the opportunity to submit these comments on the PD and the APD 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: June 10, 2021

²² PD at 45.