BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

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Order Instituting Rulemaking to Oversee the Resource Adequacy Program, Consider Program Reforms and Refinements, and Establish Forward Resource Adequacy Procurement Obligations	Rulemaking 25-10-003

JOINT PARTIES' ENERGY ONLY RESOURCE CHARGING SUFFICIENCY PROPOSAL

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The California Energy Storage Alliance, the Large-scale Solar Association, the Solar Energy Industries Association, and the California Wind Energy Association ("Joint Parties"), hereby submit this Track 1 Party Proposal ("Proposal") pursuant to the scope[1] and schedule[2] in the *Assigned Commissioner's Scoping Memo And Ruling* ("Ruling") filed on December 12, 2025. This joint filing is submitted by CESA, which is authorized to file on behalf of the undersigned Joint Parties.

I. INTRODUCTION

The Joint Parties appreciate the opportunity to provide this proposal to allow Energy Only ("EO") resources to be used in the charging sufficiency test for deliverable energy storage resources located in the same Transmission Planning Study Area ("Study Area"). This proposal would unlock the inherent value of the planned fleet of resources in the Slice-of-Day ("SOD") Resource Adequacy ("RA") framework.

[1] Ruling, Section 2.1.8
[2] Ruling, Section 4

The scale of upcoming EO resource deployment makes this proposal critical for the state's energy transition. According to the 2025-2026 Transmission Planning Process ("TPP") public policy portfolio, the volume of EO capacity is expected to grow significantly, with over 15 GW of EO resources projected to be online by 2035 and over 31 GW online by 2040. This will be complemented by 31 GW of energy storage online by 2035 and over 36 GW by 2040. These resources are selected by the Commission's capacity expansion models because they represent the most economic path toward meeting reliability and greenhouse gas reduction goals.

Recognizing the reliability benefits of EO resource development is critical for ratepayer affordability. The current requirement to use only deliverable resources for charging sufficiency adds unnecessary costs for RA compliance and resource procurement, and may result in an overbuilt system. If the Commission does not allow the vast amounts of expected EO resources to charge expected energy storage, the state will be forced to build even more deliverable solar and wind capacity than is currently planned in the Preferred System Plan ("PSP"), along with more extensive network upgrades to make new solar and wind facilities fully deliverable to load, resulting in much higher total costs.

Finally, the current charging sufficiency rules are hindering stand-alone storage development. Stand-alone storage offers California significant grid benefits, as these resources are more flexible on siting compared to paired storage and can be located near load pockets where dispatchable capacity is needed. Stand-alone storage also helps absorb excess renewable energy across the system, provides critical grid reliability and ancillary services, and can enable the retirement of aging gas peaker plants in load centers. Allowing EO resources to contribute to charging sufficiency within a Study Area can reflect the reality of storage charging today, unlock additional sources of energy to charge storage, and ensure these requirements are met efficiently

and economically, maintaining affordability for California ratepayers while achieving state climate goals.

II. BACKGROUND

The current SOD RA framework, established in Decision ("D.") 23-04-010, generally requires that energy used to meet charging sufficiency for deliverable storage resources must be deliverable to the "aggregate of load," including during evening hours when flows on the grid are highest. This standard, which is the baseline for CAISO Deliverability Assessment studies, mandates that energy be deliverable to system load across the entire grid during those evening peak hours. The Commission did provide one exception to this rule: EO resources paired with deliverable storage resources at the same Point of Interconnection ("POI") could be used to support the charging sufficiency of the paired storage resource. Joint Parties have increasingly viewed the CAISO's current deliverability metric as an inaccurate and overly conservative standard for charging sufficiency.

In the past, the Commission determined, and parties agreed,[3] that the exception for paired EO/storage resources was reasonable because the paired energy storage device can be charged from the EO resource in the same location without using the transmission system. As for extending the exception to the system-level, a few parties noted that there would be no guarantee that EO resources can deliver generation to charge storage facilities because it would require use of the transmission system.[4] Notably, the proposal at the time was to allow an EO resource to be sufficient to charge any storage resource on the system. Ultimately, the Commission found it reasonable to allow EO resources to be used in the storage resource charging sufficiency test

[3] D.23-04-010, pg. 37, AES, Cal Advocates, CalCCA, CAISO, CESA, NRDC, PG&E, and SEIA
[4] D.23-04-010, pg. 37, CAISO and CalCCA

behind the same POI because it would not require the use of the transmission system. The Commission did not extend the treatment beyond the POI at that time.

III. PROPOSAL DESCRIPTION

A. Proposal Overview

The Joint Parties propose the SOD RA framework be enhanced to allow EO resources to be used for deliverable storage charging sufficiency in a wider area than allowed today. This proposal recognizes that resources providing charging energy must reasonably be deliverable to energy storage resources, rather than to "the aggregate of load," in the hours when storage is likely to be charging. It also includes a reasonable guardrail against broad deliverability concerns by allowing an EO resource to count towards deliverable storage resource charging sufficiency only if both are located in the same Study Area. These Study Areas are used for reliability planning and interconnection studies today. Furthermore, this proposal recognizes that resources used for charging sufficiency should be required to offer energy to the CAISO markets consistent with the rules for similarly situated RA resources.

Unless Joint Parties' proposal is adopted, more deliverable solar and wind will need to be built than the Commission anticipates in the Preferred System Plan ("PSP"), at much higher total cost, so that LSEs can meet their RA requirements. According to the 2025-2026 TPP public policy portfolio, there will be over 15 GW of Energy Only resources online by 2035 and over 31 GW online by 2040.[5] These EO resources will be complemented by 31 GW of energy storage online by 2035 and over 36 GW by 2040.[6] The Commission's Integrated Resource Planning ("IRP") capacity expansion model selects this resource mix because it is the most economic way to meet

[5] CAISO Presentation on its 2025-2026 Transmission Planning Process, November 19, 2025, slide 30.
[6] *Id.*

the state's reliability and Greenhouse Gas ("GHG") reduction objectives at minimum cost. The Commission's IRP models allow EO resources to be used to charge anticipated deliverable energy storage, regardless of location. If instead the IRP model did not use EO resources to provide charging energy, it would not be able to meet reliability and GHG reduction targets as cost-effectively.

The importance of this proposal has been magnified by recent CAISO changes to the resource interconnection process. Projects seeking deliverability to load can only enter the queue at limited locations where there is deliverability available. Tying up this valuable attribute just to enable solar and wind resources to count for charging deliverable storage anywhere on the system will unnecessarily restrict queue entry for resources that really need deliverability to load to be economically and commercially viable, such as dispatchable stand-alone storage.

Specifically, the Joint Parties propose the RA framework be enhanced to:

- Allow EO resources to contribute to charging sufficiency for deliverable storage resources in the same Study Area.
- Require those EO resources used in an LSE RA Plan supporting charging sufficiency to have a regulatory obligation to bid into the CAISO markets and not be used to support priority exports, consistent with the must-offer obligation for deliverable RA resources.

Energy Division would implement this proposal by creating a new Master Resource Database ("MRD") field representing the resource's CAISO Transmission Planning Study Area and updating the resource charging sufficiency summation grouping to occur based on the Study Area, rather than at the POI as is done today.

B. Resources Providing Charging Energy Do Not Need To Be Deliverable

Except in the case of EO resources paired behind the same POI as deliverable storage, the RA program currently requires charging energy to be deliverable to the "aggregate of load" during evening hours when energy flows on the system are highest – the standard used in CAISO Deliverability Assessment studies. This metric is the wrong deliverability metric for charging sufficiency and adds unnecessary RA compliance and resource procurement costs, for the reasons described below.[7]

First, the current deliverability requirement focuses on the wrong time of day. The CAISO's On-Peak Deliverability Assessment Methodology assesses deliverability at times of peak flows on the system. Because of the increased penetration of on-site solar generation, those peak flows increasingly occur in the early evening hours, which are low solar production hours when storage is typically discharging, not charging. Thus, EO resources will not be charging storage during net peak load periods.

Second, it is reasonable to allow EO resources to charge deliverable resources beyond the same POI because, for the most part, during lower-load off-peak periods when EO resources are highly likely to be providing charging energy, they will actually be deliverable to the aggregate of load including storage facilities. CAISO's assessments, as documented in its Public Queue Report, show that nearly 12,000 MW of EO resources deemed not deliverable on-peak would be deliverable off-peak.[8,9] "Off-peak deliverable" means that the resource is generally deliverable to

[7] The Joint Parties are not proposing any changes to the CAISO deliverability studies, nor are they proposing a new study. The Joint Parties find it reasonable to allow EO resources in the same TPP Study Areas to charge deliverable storage in the Commission's charging sufficiency test.
[8] See the CAISO's Public Queue Report at https://www.caiso.com/library/public-queue-report. Using the Excel file, filter the contents for Energy Only Projects and Off-Peak Deliverability, for active and withdrawn projects.
[9] Further, CAISO's off-peak deliverability studies do not generally include storage, which would further enable deliverability.

the aggregate of load. These results are consistent with how the transmission system operates, in which transmission lines are lightly loaded during off-peak periods, allowing all types of generators to support the aggregate of load. The Joint Parties recognize that this fact may not fully assuage broad deliverability concerns related to EO resources providing charging energy, so this proposal includes reasonable zonal guardrails described in ***Section III.C***.

For these reasons, the Commission can find it reasonable to allow EO resources to charge deliverable storage resources more broadly than behind the same POI, and this proposal posits that this change would align with the Commission's reliability, GHG reduction, and affordability objectives.

C. Limiting the Energy Only Resource Charging Sufficiency Contributions to Within Transmission Planning Study Areas is a Reasonable Guardrail For Deliverability Concerns

Instead of limiting charging energy to resources that have deliverability status based on the CAISO's On-Peak Deliverability Assessment Methodology, the Commission should allow an EO resource to count towards the charging sufficiency requirements of deliverable energy storage capacity if it is located within the same Study Area. This charging will likely take place outside of on-peak periods when CAISO studies have shown that significant deliverability exists.

In the past, some parties have been concerned that a resource that has been deemed not deliverable on-peak (i.e., Energy Only) cannot transmit its generation at lower load levels since the generation was determined to be undeliverable by CAISO at peak load periods (High System Need and/or Secondary System Need periods). As explained above, these concerns are not well-founded because storage is likely to be charging from EO resources during off-peak periods when EO resources are able to deliver to the aggregate of load.

The CAISO developed its Study Areas over many years as geographically and electrically distinct zones. They are stable and used for many purposes in CAISO studies, including transmission planning (at the system level and for Local Capacity Technical Studies), resource interconnection studies and, more recently, in the resource interconnection intake process. CAISO's 2025-2026 Transmission Planning Process Unified Planning Assumptions and Study Plan describes 15 study areas as shown on the map below.

Figure 2.3-1: Approximated geographical locations of the study areas

Study Area boundaries, defined by CAISO engineers, are typically based on stressed (system peak) conditions when transmission constraints may occur between zones. Within a study zone, there are no serious constraints, even during on-peak hours. To a lesser extent, the Study Areas reflect county and regional boundaries, alignment with utility service territories and proximity to resource-rich zones (e.g. solar in the Central Valley or offshore wind in Humboldt and Morro Bay). These characteristics make them natural boundaries for assessing whether EO resources can charge storage locally in the same Study Area.

Using Study Areas as a proxy for RA charging sufficiency also supports the zonal planning approach adopted through a Memorandum of Understanding between CAISO, the Commission and the California Energy Commission ("CEC") in December of 2022. This Memorandum explicitly endorsed an approach where the Commission encourages procurement of resources consistent with the transmission planning conducted by CAISO. Allowing EO resources to charge storage within the same Study Area supports the joint agency approach, and will signal to developers to site additional storage in areas with high volumes of EO resources (and perhaps vice versa). Additionally, allowing EO resources to charge local storage will further allow those renewable resources that have full deliverability to focus on charging stand-alone storage in other areas that are located closer to load. Stand-alone storage near load centers is critical for reliability and grid flexibility (as well as future retirement of remaining gas-fired resources), but the current limitation on charging sufficiency discourages these non-paired resources because large-scale renewable energy that could charge them is difficult to site in those areas. Finally, this proposal will encourage developers to site projects of both types in the places where they will benefit reliability.

In summary, leveraging Study Areas as a proxy for RA charging sufficiency aligns regulatory frameworks with practical transmission planning and resource siting in California. This approach not only supports the collaborative, zonal transmission planning model established by CAISO, the Commission, and the CEC, but also incentivizes the development of EO resources close to available storage, and vice versa. It also encourages renewable resources with full deliverability to focus on charging stand-alone storage located in other zones and near loads. By adopting this framework, the Commission can ensure that charging sufficiency requirements are met efficiently and economically, without imposing unnecessary constraints or costs on resource

procurement. Ultimately, this strategy will help California achieve its reliability and greenhouse gas reduction goals while maintaining affordability for ratepayers.

If the proposed Study Area-based approach is adopted by the Commission, the Joint Parties encourage further development of this framework to allow EO resources in one Study Area to also count for charging sufficiency to storage in other Study Areas.

D. Energy Only Resources Should Only Be Counted for RA Purposes in the Charging Sufficiency Test

Under this proposal, EO resources could only be counted in the RA program to support the ability of deliverable storage resources in the same Study Area to provide RA. LSEs will continue to need to meet load obligations using only deliverable resources. That is, EO resources could not be counted directly toward LSE RA requirements (i.e., its load obligation plus planning reserve margin). This aligns with the current RA program design, where EO resources are only used for charging sufficiency of deliverable resources at the same POI.

E. Implementation Considerations

The Energy Division's current RA Plan Template allows EO resources behind the same POI as deliverable storage to count towards the charging sufficiency of that storage by summing the excess energy from the EO resources and including it in the deliverable storage resource state-of-charge. The Joint Parties recommend leveraging this same approach, but broadening the summation to include all EO resources that are on the RA Plan within the same Transmission Planning Study Area. This would require updating the MRD to include a field representing each resource's Transmission Planning Study Area and updating the template's summation to group resources according to this new field, rather than the POI. If a Study Area does not have enough

EO resource energy to charge storage in the same zone, it would require deliverable energy to meet the remaining storage charging sufficiency requirement.

This proposal also requires revisiting how to allocate charging sufficiency value. Under current RA rules, when an EO resource is paired with storage behind the same POI, the charging sufficiency value is automatically assigned to that storage. If multiple off-takers are involved, the value is allocated pro rata based on each off-take arrangement's NQC.[10] If potential pairings can now span an entire Study Area rather than being limited to a single POI, the current automatic proration rule is no longer appropriate, as it becomes unclear which storage resource should receive the charging energy.

Acknowledging and clearly assigning the charging sufficiency value is essential as pairing rules expand, ensuring that this attribute is properly accounted for and that allocations remain transparent and aligned with contractual rights. The Commission may consider several options. The most straightforward approach, with the least administrative burden, would be to require that EO resources be listed on an LSE's RA Plan only if the LSE has a contract with the EO resource, the same approach used for RA Resources generally. The Commission could go further, requiring contractual proof or a senior official attestation, though the Joint Parties do not consider this to be necessary. The Commission could use the same approach used currently to identify and resolve conflicts (e.g., where two RA Plans claim the same EO resources for charging-sufficienty purposes).

The Joint Parties currently understand this implementation to be fairly straightforward, with relatively low effort, especially compared to proposals requiring additional processes/studies

[10] Decision Adopting Local Capacity Obligations for 2025-2027, Flexible Capacity Obligations for 2025, and Program Refinements, dated June 26, 2024, p. 49.

or wholly new methodologies. The Joint Parties look forward to engaging with Energy Division and other parties regarding any implementation concerns that may arise.

IV. CONCLUSION

The Joint Parties appreciate the opportunity to submit this proposal and look forward to working with other parties in this proceeding to enhance the Commission's RA program.

Respectfully submitted,

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