

PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

ENERGY DIVISION

Item #25 (Rev. 1)
Agenda ID #23581
RESOLUTION E-5403
July 24, 2025

R E S O L U T I O N

Resolution E-5403. Pacific Gas and Electric. Amendment to Contract with Energy Vault to Develop a Clean Substation Microgrid Project.

PROPOSED OUTCOME:

- Extends the initial delivery date for the Calistoga Clean Substation Microgrid Project to June 1, 2025, and the guaranteed initial delivery date to September 1, 2025.
- Makes clarifying changes to the contract language to reflect the development of the project. Specifically, clarifies in the contract that Energy Vault can operate the infrastructure during normal grid conditions when that does not interfere with their obligations to provide resiliency.

SAFETY CONSIDERATIONS:

- The project involves the trucking and storage of hydrogen fuel, and the development of a substation-level microgrid, which may present safety risks. This resolution presents no significant changes to those risks, which were reviewed in Resolution E-5261.

ESTIMATED COST:

- This Resolution allows a previously approved project to move forward, with some reduced cost due to project delay damages. The use of the original project funds was approved in D.21-01-018 and then further clarified in Resolution E-5261.

By Advice Letter 7552-E, Filed on April 1, 2025.

SUMMARY

This Resolution approves Pacific Gas and Electric Company's (PG&E) Advice Letter (AL) 7552-E without modification. In Decision (D.) 21-01-018 and Resolution E-5261, the Commission directed PG&E to develop a Clean Substation Microgrid (CSM) pilot project to mitigate Public Safety Power Shutoff (PSPS) events. PG&E selected the Calistoga substation for this project, entering into a contract with Energy Vault to develop a hybrid battery energy storage and hydrogen fuel cell microgrid to provide 48 hours of backup power. Through AL 7552-E, PG&E requests Commission approval to amend the contract with Energy Vault to (1) extend the project delivery milestones to reflect updated construction schedules and (2) clarify that Energy Vault may operate the microgrid in "Blue Sky" (non-islanded) mode during normal grid conditions, so long as such operations do not interfere with backup service obligations. No parties protested the timeline extensions. While the Public Advocates Office protested the clarification regarding Blue Sky operations, this Resolution finds that the clarification is consistent with the original intent and context of the CSM pilot as set forth in D.21-01-018 and Resolution E-5261. Blue Sky operations were anticipated and encouraged as a way to better utilize project resources without introducing new ratepayer costs. This Resolution finds that PG&E's proposed amendments are reasonable, do not introduce new ratepayer risks, and are supportive of broader Commission goals for clean energy and resiliency. Accordingly, AL 7552-E is approved.

BACKGROUND

On April 1, 2025, Pacific Gas and Electric (PG&E) submitted Advice Letter (AL) 7552-E requesting California Public Utilities Commission (Commission) approval of an amendment to its procurement contract with Energy Vault, Inc. for development of the Calistoga Clean Substation Microgrid (CSM) pilot project. The request is made in relation to Ordering Paragraph 2 of Commission Resolution E-5164, which directed PG&E to file a Tier 3 advice letter detailing the development of a Clean Substation Microgrid pilot project, as required under Decision (D.) 21-01-018.

Prior Commission Direction and PG&E's Original Filing

Decision 21-01-018 established guidelines for utility use of temporary generation to mitigate Public Safety Power Shutoff (PSPS) events, including a requirement that utilities pursue at least one clean substation microgrid pilot project.¹ In compliance with

¹ Decision 21-01-018, Page A-4.

that directive, PG&E filed AL 6808-E on December 30, 2022, requesting approval of a 10.5-year procurement contract with Calistoga Resiliency Center, LLC, a wholly owned subsidiary of Energy Vault. The project proposed a hybrid hydrogen fuel cell and battery energy storage system to power a microgrid at the Calistoga substation.

On May 3, 2023, the Commission approved AL 6808-E via Resolution E-5261, authorizing PG&E to proceed with the contract. The resolution approved a June 1, 2024 Initial Delivery Date (IDD) and a November 30, 2024 Guaranteed Initial Delivery Date (GIDD), along with day-for-day extensions under certain circumstances as defined in the contract.

Reasons for the Current Advice Letter

Despite substantial progress in construction and equipment procurement, PG&E and Energy Vault have encountered delays that render the originally approved delivery timelines infeasible. Specifically, Energy Vault did not achieve operation of the project by the GIDD.² AL 7552-E seeks Commission approval to amend the contract by extending the IDD to June 1, 2025, and the GIDD to September 1, 2025. According to PG&E, the revised dates reflect a more realistic schedule for safe and reliable completion and commissioning of the CSM pilot project.³

In addition to timeline adjustments, the proposed amendment clarifies provisions related to operational flexibility, including the ability of the system to operate in non-islanded mode (exporting electricity to the broader grid), subject to interconnection requirements. The amendment also updates various definitions and technical specifications to reflect final project design.

Contractual and Ratepayer Considerations

PG&E notes that the amended contract continues to protect customer interests by preserving provisions for delay damages. Under the proposed changes, PG&E customers would continue to receive compensation from Energy Vault for delays beyond the updated IDD, providing financial accountability for project delivery timelines.⁴

² AL 7552-E at 1.

³ AL 7552-E at 1.

⁴ AL 7552-E at 2.

PG&E further indicates that the proposed clarifications and revisions are the result of collaborative negotiations with Energy Vault and are necessary to align the contract with the practical realities of the project's implementation phase.

Confidentiality and Procedural Matters

PG&E has submitted two confidential attachments to the Advice Letter—(1) the amended contract and (2) a summary of contract amendment negotiations and outcome—with a request for confidential treatment pursuant to Decisions D.06-06-066, D.08-04-023, D.21-11-029, and relevant CPUC rules. PG&E has also provided a proposed protective order to govern access to confidential materials.

To expedite the project and support grid resiliency during the 2025 fire season, PG&E requests Commission approval of the amended contract via resolution effective by June 1, 2025.

NOTICE

Notice of AL 7552-E was made by publication in the Commission's Daily Calendar. Pacific Gas and Electric states that a copy of the Advice Letter was mailed and distributed in accordance with Section 4 of General Order 96-B.

PROTESTS

PG&E's Advice Letter 7552-E was timely protested by the Public Advocates Office (Cal Advocates) on April 14, 2025. Energy Vault submitted a response in support of the Advice Letter on April 14, 2025.

PG&E responded to the protest of Cal Advocates on April 21, 2025.

Cal Advocates Protest – April 14, 2025

In its protest, Cal Advocates raises three principal objections to the proposed amendment in AL 7552-E:

1. **The Relief Requested is Not Authorized by Prior Commission Orders** – Cal Advocates argues that PG&E's request to allow Energy Vault to operate the Calistoga Clean Substation Microgrid (CSM) in non-islanded mode is not authorized under Resolution E-5261 or Decision (D.) 21-01-018. The protest

emphasizes that while the Commission encouraged PG&E to explore the possibility of using the project during normal grid conditions, the operative contract approved by the Commission explicitly excluded non-islanded operations from its scope. Cal Advocates asserts that PG&E is now seeking to substantively revise that contract under the guise of a “clarifying” amendment, without supporting analysis or formal stakeholder review. Cal Advocates also notes that PG&E does not confirm that it met with Energy Division regarding this issue, as required by Resolution E-5261.

2. **Material Omissions in Analysis and Data** – Cal Advocates claims that AL 7552-E does not present the necessary facts or modeling to demonstrate that allowing Energy Vault to export to the grid during normal grid operations will benefit ratepayers or avoid undue cost and operational risks. Specifically, the protest raises concerns about whether non-islanded operation could compromise the project’s ability to provide critical backup power during PSPS events due to possible battery depletion.
3. **The Requested Relief is Unjust and Unreasonable** – Cal Advocates contends that PG&E’s amendment could create new ratepayer risks, such as potential conflicts between export operations and emergency backup obligations, without clearly defined ratepayer benefits. The protest requests that the Commission deny PG&E’s request to authorize non-islanded operations through this Advice Letter. Instead, it recommends that PG&E be required to file a separate Tier 3 advice letter dedicated solely to non-islanded operations, supported by specific operational plans and cost-benefit analyses.

Cal Advocates also objected to PG&E’s request for a shortened protest period, citing PG&E’s own delayed filing and limited disclosure of contract revisions. Cal Advocates asserts that it did not receive the confidential materials supporting AL 7552-E until April 4, 2025—days after Energy Division had granted the shortened protest period—thereby limiting stakeholders’ ability to evaluate the full implications of the proposed amendment.

Energy Vault Response – April 14, 2025

Energy Vault submitted a response supporting PG&E’s Advice Letter. The company states that the proposed extension of the delivery deadlines, together with updated

provisions for delay damages and clarifying language regarding non-islanded operation, ensures that the Clean Substation Microgrid pilot can be completed in a cost-effective and reliable manner. Energy Vault urges the Commission to approve AL 7552-E and to expedite the review process so that the amendment can be finalized ahead of the proposed June 1, 2025 Initial Delivery Date.

PG&E Reply – April 21, 2025

In its reply, PG&E urges the Commission to reject the protest from Cal Advocates and approve the amendment as filed. PG&E provides five primary counterarguments:

1. **The CSM Contract was Never Intended to Procure nor Prohibit Output During Blue Sky Conditions, and No Amendment Changes That** – Citing the original decision authorizing this pilot project and subsequent Advice Letters, Protests, Replies and Resolutions, PG&E argues that the Commission clearly understood that the Calistoga CSM Contract would neither procure Blue Sky products, nor would prohibit the facility from producing Blue Sky products separately. The Commission in fact encouraged stakeholders to facilitate the ability of the Calistoga CSM to provide Blue Sky products outside of the DGEMS contract.
2. **Non-Islanded Operations Were Always Permissible Under the Existing Contract** – PG&E argues that the original CSM contract approved under AL 6808-E did not prohibit non-islanded operations; rather, it simply did not address them explicitly because the contract's core purpose was to provide Distributed Generation-Enabled Microgrid Services (DGEMS) during PSPS events. However, this was left unclear because, at that time, the project was "not currently intended to (nor is currently being studied to) export energy during normal grid conditions," but rather "only intended to generate and island the substation circuits during grid outages."⁵ The proposed amendment, PG&E maintains, merely clarifies that Energy Vault may export during normal grid conditions if those services do not interfere with its islanded-mode obligations and comply with applicable tariffs.
3. **The Amendment Does Not Create New Ratepayer Risk** – PG&E contends that any risks identified by Cal Advocates, such as battery depletion from export

⁵ Advice Letter 6808-E, p. 15.

operations, are already addressed through contractual requirements. Energy Vault is required to maintain readiness and meet dispatch obligations with sufficient notice, and would face penalties or default if it fails to do so.

Practically, PG&E also notes that the battery can fully recharge in five hours—well within the 48-hour dispatch window used for PSPS notification.

4. PG&E Fulfilled Commission Directives to Consult with Energy Division –

PG&E asserts that it has met with Energy Division staff on multiple occasions to discuss Blue Sky operation of the Calistoga CSM, thereby fulfilling the requirement in Resolution E-5261 that it meet with Energy Division to discuss operation during normal grid conditions.

5. A Separate Advice Letter is Unwarranted – PG&E argues that it is not proposing a new procurement arrangement for Blue Sky services, but merely clarifying that such services are not precluded under the existing contract. PG&E notes that no separate contract for these services exists, and that if one is negotiated in the future, it would be submitted to the Commission via a separate Advice Letter. PG&E states that requiring an additional Tier 3 Advice Letter for Blue Sky operations would create uncertainty for Energy Vault and its investors, potentially delaying construction and jeopardizing the project's ability to provide resiliency services during the 2025 fire season.

PG&E concludes that AL 7552-E complies with all applicable decisions and Commission direction and should be approved without further modification or delay.

DISCUSSION

The Commission has reviewed the Advice Letter, the protest submitted by Cal Advocates, and PG&E's reply. We find that the proposed amendment to the Calistoga Clean Substation Microgrid (CSM) contract is reasonable and should be approved without modification.

We address two central issues below: (1) the extension of the Initial Delivery Date (IDD) and Guaranteed Initial Delivery Date (GIDD), and (2) the clarification of terms allowing non-islanded ("Blue Sky") operations by Energy Vault.

1. No Protests Were Submitted Regarding the Main Request: the Timeline Extension

No party protested the proposed extension of the IDD and GIDD for the Calistoga CSM project. As PG&E notes in its filing, the requested schedule extensions are necessary to reflect updated construction timelines, preserve the integrity of the project, and help ensure its availability ahead of the 2025 fire season. The Advice Letter includes new provisions to protect ratepayers, such as damages for additional delay. We find the timeline extensions reasonable and consistent with the objectives of D.21-01-018 and Resolution E-5261.

2. Clarifying Language on Blue Sky Operations

Cal Advocates' protest focuses exclusively on the contract clarifications regarding Blue Sky operations—specifically, that Energy Vault may export energy to the grid under normal operating conditions as long as it continues to meet its primary obligations under the CSM contract and complies with standard interconnection tariffs.

We find that the clarifying language proposed in AL 7552-E does not constitute a new procurement or a material deviation from the original contract, but instead reflects the intended and permissible scope of the contract under relevant Commission decisions.

A. The Proposed Changes Fit Within the Original Intent and Context of the Project Approval

The Calistoga CSM project was approved in Resolution E-5261 to fulfill PG&E's obligation under D.21-01-018 to pursue at least one Clean Substation Microgrid pilot project. That Decision defined the CSM requirement as focused on delivering Distributed Generation-Enabled Microgrid Services (DGEMS) during Public Safety Power Shutoff (PSPS) events, but also included the following provision:

“The project may be capable of export during normal conditions, but it is not required to do so.”⁶

PG&E thus issued an RFO that allowed projects to independently provide Blue Sky services. PG&E then requested approval for the original procurement contract with Energy Vault, with the understanding that:

⁶ D.21-01-018, Appendix A, Section 2.4.iv.

“The Calistoga CSM is not currently intended to (nor is currently being studied to) export energy during normal grid conditions. The CSM pilot project is only intended to generate and island the substation circuits during grid outages.”⁷

Resolution E-5261 then approved the project, but explicitly encouraged export during normal grid conditions, stating that:

“PG&E should encourage Energy Vault to utilize the project battery energy storage system during normal grid conditions.”⁸

Taken together, the decision and resolution demonstrate a clear Commission interest in allowing Blue Sky operations where feasible, not prohibiting them. The Calistoga CSM contract, as approved, was silent on Blue Sky operations but not opposed to them. PG&E stated during the AL 6808-E process that it did not object to Energy Vault independently pursuing such services.⁹

Even though the original contract did not explicitly allow Blue Sky operations, the proposed changes fit with a larger context including Commission Orders that encouraged these operations as a separate use-case for the project infrastructure. Therefore, the proposed contract changes to explicitly allow Blue Sky operations should be considered clarifications. They make the implicit allowance for Blue Sky operations demonstrated above explicit and clear, but still leave the operations themselves outside the scope of this contract. The clarifying language proposed in AL 7552-E reflects a permissible and previously contemplated use of the project facilities, not a new request for authority. No new cost-recovery mechanisms, procurement commitments, or tariff deviations are included in the changes.

B. There Are Reasonable Safeguards Against Conflict Between DGEMS Services and Normal Grid Operations

Cal Advocates asserts that there could be a risk of conflict between Energy Vault’s non-islanded operation and providing reliable DGEMS services. However, as PG&E notes in its reply, the contract already includes ratepayer protections if Energy Vault fails to provide DGEMS services. More practically, PSPS events also come with 48 hours of

⁷ Advice Letter 6808-E, pg. 15.

⁸ Resolution E-5261, Ordering Paragraph 4.

⁹ PG&E Comments to Draft Resolution E-5261, pg. 2.

advance notice, which is more than sufficient time to fully charge depleted battery reserves.

The existing protections and the practical infeasibility of the conflict between these two modes of operation occurring provide sufficient material facts and analysis showing that DGEMS services will not be adversely affected by operating the CSM project during normal grid conditions.

C. There is No Change in Procurement Scope or Ratepayer Risk

Cal Advocates contends that PG&E is improperly expanding the contract and introducing new ratepayer risk without appropriate analysis. However, as PG&E explains in its reply, the proposed amendment does not alter the terms under which PG&E procures DGEMS. The contract continues to require Energy Vault to meet its emergency service obligations under PSPS conditions, and includes penalties and enforcement provisions should Energy Vault fail to do so.

The ability to export energy during normal conditions—if done in compliance with applicable tariffs and without compromising DGEMS delivery—is consistent with Energy Vault’s ownership of the asset and its financial investment in the project. PG&E is not proposing to procure Blue Sky products, nor is it modifying its contract to compensate Energy Vault for those services. The Commission has not required PG&E to execute a separate Blue Sky services contract as a precondition for clarifying the permissibility of such operations.

We find that Energy Vault’s ability to participate in energy markets using the same infrastructure, when available, does not expose ratepayers to new costs and may offer system-wide benefits. Blue Sky operations allow greater utilization of installed capacity, including the battery energy storage system, which otherwise may remain idle for the significant majority of its useful life when not providing resiliency services.

D. No Need for a Separate Tier 3 Advice Letter

We reject Cal Advocates’ recommendation that PG&E be required to submit a separate Tier 3 Advice Letter solely to address Blue Sky operations. As established above, no new procurement is being proposed. The proposed clarification ensures alignment between the parties’ contractual understanding and the Commission’s prior guidance. Requiring a new advice letter would introduce unnecessary delay and project

uncertainty. The Commission may evaluate any future Blue Sky procurement separately, should PG&E or Energy Vault choose to pursue such arrangements.

3. Procedural Concerns

Cal Advocates raises procedural concerns regarding the notice period and the timing of confidential disclosures. While we understand the importance of ensuring sufficient review time, we note that PG&E complied with General Order 96-B procedures, and that Energy Division approved the shortened protest period in this instance.

COMMENTS

Public Utilities Code section 311(g)(1) provides that this resolution must be served on all parties and subject to at least 30 days public review. Please note that comments are due 20 days from the mailing date of this resolution. Section 311(g)(2) provides that this 30-day review period and 20-day comment period may be reduced or waived upon the stipulation of all parties in the proceeding.

The 30-day review and 20-day comment period for the draft of this resolution was neither waived nor reduced.

This Resolution was mailed on June 19, 2025. Comments were timely filed on or before July 9, 2025 by Pacific Gas and Electric (PG&E).

PG&E expressed support for the Resolution and recommended it be approved without modification.

FINDINGS AND CONCLUSIONS

1. No party objected to the requested extensions of the contract delivery dates, extending the initial delivery date from June 1, 2024 as approved in Resolution E-5261 to June 1, 2025 and the guaranteed delivery date from November 30, 2024 to September 1, 2025.

2. Allowing Energy Vault to export electricity to the larger grid when the Calistoga Clean Substation Microgrid is not required for islanded service is consistent with D.21-01-018 and Resolution E-5261, and does not represent a new request for authority.
3. The proposed amendments introduce no new cost-recovery mechanism, procurement commitment, or tariff deviation.
4. Energy Vault's ability to participate in energy markets using the microgrid infrastructure, when available, does not expose ratepayers to new costs and may offer system-wide benefits.
5. Without allowing for operations during normal grid conditions, the battery energy storage system would likely be idle for most of its useful life.
6. Contractual provisions and operational protocols adequately protect ratepayers against any reliability risk from operating the microgrid during normal grid conditions.
7. Requiring a second Tier 3 advice letter would introduce unnecessary delay and jeopardize timely resiliency benefits.

THEREFORE IT IS ORDERED THAT:

1. The request of Pacific Gas and Electric to amend its procurement contract with Energy Vault as requested in Advice Letter 7552-E is approved.

This Resolution is effective today.

The foregoing resolution was duly introduced, passed and adopted at a conference of the Public Utilities Commission of the State of California held on July 24, 2025; the following Commissioners voting favorably thereon:

Commissioner Signature blocks to be added
upon adoption of the resolution

Dated July 24, 2025, at San Francisco, California