

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

Application of Pacific Gas and Electric  
Company (U 39-E) for Approval of its 2018  
Energy Storage Procurement & Investment  
Plan.

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Application 18-03-001  
(Filed March 1, 2018)

**PROTEST OF THE CALIFORNIA ENERGY STORAGE ALLIANCE  
TO THE APPLICATION OF PACIFIC GAS AND ELECTRIC COMPANY (U 39-E)  
FOR APPROVAL OF ITS 2018 ENERGY STORAGE PROCUREMENT AND  
INVESTMENT PLAN**

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In accordance with Rules of Practice and Procedure of the California Public Utilities Commission (“Commission”), the California Energy Storage Alliance (“CESA”)<sup>1</sup> hereby submits this protest to the *Application of Pacific Gas and Electric Company (U 39-E) for Approval of its 2018 Energy Storage Procurement and Investment Plan* (“Application”), filed by Pacific Gas and Electric Company (“PG&E”) on March 1, 2018.

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<sup>1</sup> 8minutenergy Renewables, Able Grid Energy Solutions, Advanced Microgrid Solutions, AltaGas Services, Amber Kinetics, American Honda Motor Company, Inc., Axiom Exergy, Brenmiller Energy, Bright Energy Storage Technologies, BrightSource Energy, Brookfield Renewables, Centrica Business Solutions, Consolidated Edison Development, Inc., Customized Energy Solutions, Demand Energy, Doosan GridTech, Eagle Crest Energy Company, East Penn Manufacturing Company, Ecoult, EDF Renewable Energy, ElectrIQ Power, eMotorWerks, Inc., Energport, Energy Storage Systems Inc., EnerNOC, ENGIE Energy Storage, E.ON Climate & Renewables North America, Fluence Energy, GAF, Geli, Greensmith Energy, Gridscape Solutions, IE Softworks, Ingersoll Rand, Innovation Core SEI, Inc. (A Sumitomo Electric Company), Iteros, Johnson Controls, Lendlease Energy Development, LG Chem Power, Inc., Lockheed Martin Advanced Energy Storage LLC, LS Power Development, LLC, Magnum CAES, Mercedes-Benz Energy, NantEnergy, National Grid, NEC Energy Solutions, Inc., NextEra Energy Resources, NEXTracker, NGK Insulators, Ltd., NRG Energy, Inc., Ormat Technologies, Parker Hannifin Corporation, Pintail Power, Qnovo, Range Energy Storage Systems, Recurrent Energy, Renewable Energy Systems (RES), Semptra Renewables, Sharp Electronics Corporation, SNC Lavalin, Southwest Generation, Sovereign Energy, STOREME, Inc., Sunrun, Swell Energy, True North Venture Partners, Viridity Energy, Wellhead Electric, and Younicos. The views expressed in these Comments are those of CESA, and do not necessarily reflect the views of all of the individual CESA member companies. (<http://storagealliance.org>).

## **I. INTRODUCTION.**

CESA continues to support the procurement of energy storage resources to meet the targets set forth under the Assembly Bill (“AB”) 2514 framework, while also supporting continued learning on how to incorporate energy storage capabilities and values in modeling and evaluation, developing procurement best practices for energy storage resources, and gaining operational experience with energy storage resources to provide grid services. PG&E has made progress in this regard, including with the 2014 and 2016 Energy Storage Request for Offers (“RFOs”).

PG&E has thus supported the market transformation for the energy storage industry but still requires additional energy storage procurement in the 2018 cycle to meet its biennial procurement target. While supportive of PG&E’s progress, CESA is somewhat concerned about several contracts being procured and terminated, including 30 MW of energy storage contracts from the 2014 Energy Storage RFO. CESA understands that the outcome of these contracts may be due to developers not meeting their development milestones and not the actions of PG&E, but it still may warrant further investigation and evaluation to identify how the Energy Storage Procurement Framework could be improved to ensure timely and successful outcomes. Ultimately, PG&E must provide financeable contract terms that yield real and timely projects in order to comply. This goal cannot be endangered.

Furthermore, D.17-04-029 determined that energy storage programs and investments pursuant to AB 2868 should be included and implemented in the existing biennial energy storage application and plans process. Specifically, AB 2868 authorized each of the investor-owned utilities (“IOUs”) to propose up to 166.66 MW of programs and investments for distributed energy

storage<sup>2</sup> – incremental to what is required under AB 2514 – with a focus on disadvantaged communities and public-sector customers and in compliance with several key statutory goals.<sup>3</sup> Pursuant to AB 2868, PG&E filed its Application that proposed four conceptual distribution-connected in-front-of-the-meter (“IFOM”) energy storage contracts that provide some combination of reliability, capacity, or resiliency. No MW targets are specified for these investments, but PG&E indicated that it will provide further details at a later time and it may propose more AB 2868 programs and investments in a subsequent application. However, PG&E was more specific in proposing a behind-the-meter (“BTM”) thermal storage incentive program, with a particular focus on supporting customers in the San Joaquin Valley.

CESA appreciates PG&E’s proposal that expands the use of energy storage resources to provide various reliability and resiliency services, though we wish that more details were provided in the application. So, while CESA is generally supportive of the proposal concepts, we find that the proposed investments fall short of all of the statutory objectives laid out in AB 2868. Particularly, in this protest, CESA believes that PG&E did not make an effort to minimize overall costs and failed to provide non-utility enterprises a reasonable opportunity to compete and potentially minimize ratepayer costs by defaulting to utility-owned investments and by not declaring its intent to conduct an active solicitation for third-party-owned energy storage solutions. CESA emphasizes that it is supportive of competition and all business and ownership models, including utility-owned projects, so long as utility-owned projects do not harm competition in the overall energy storage market and third-party-owned projects are also solicited in a competitive

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<sup>2</sup> AB 2868 defines distributed energy storage systems as an energy storage system with a useful life of at least 10 years that is connected to the distribution system or on the customer side of the meter and that has an “energy storage management system”.

<sup>3</sup> According to AB 2868 Section 2838, programs and investments must achieve ratepayer benefits, reduce GHG emissions, meet air quality standards, reduce dependence on petroleum, minimize overall costs, prioritize public-sector and low-income customers, and do not unreasonably impair non-utility enterprises.

and transparent procurement process to determine the most cost-competitive solution to address the identified grid need.

So, though CESA is generally supportive of the proposal concepts in PG&E's Application, we find that the proposed investments fall short of the statutory objectives laid out in AB 2868. CESA's main concern is around default utility ownership of the proposed distribution-connected IFOM investments pursuant to AB 2868.

## **II. PG&E SHOULD SEEK TO ENSURE SUCCESS OF THE AB 2514 ENERGY STORAGE SOLICITATIONS.**

PG&E has focused its procurement of energy storage resources pursuant to AB 2514 on its biennial energy storage applications. A significant step toward compliance with AB 2514 was made in the announcement of 165 MW of energy storage contracts in its 2016 Energy Storage RFO, with the majority of executed contracts structured to have procured energy storage resources provide Resource Adequacy ("RA") capacity. Notably, in the 2016 Energy Storage RFO, PG&E also procured a 20-MW energy storage project for an innovative use case where distribution deferral is provided under a purchase-and-sale agreement while allowing the resource to also participate in the wholesale market to generate revenues that would offset the distribution revenue requirement. PG&E proposed a pilot ratemaking mechanism to explore and manage cost recovery from such multiple-use resources that provide both generation and distribution services,<sup>4</sup> which CESA strongly supports.

While PG&E achieved a major milestone in transforming the market for energy storage resources in its 2016 Energy Storage RFO, CESA has some concerns that previously procured projects in the 2014 Energy Storage RFO were terminated, possibly due to failure to meet project

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<sup>4</sup> *Pacific Gas and Electric Company Results of 2016 Energy Storage Solicitation Prepared Testimony*, filed on December 1, 2017, p. 1-3.

development milestones. PG&E should hold procured projects to be accountable for meeting contractual requirements, but CESA also recommends that PG&E seek to ensure the success of the procured contracts to the degree possible, as the energy storage solicitations are important to transforming the market. For example, Resolution E-4909 set the parameters for procurement in its 2018 Local Sub-Area Energy Storage RFO to address reliability needs in the Moss Landing and South Bay areas tied to several reliability must-run (“RMR”) contracts to include accelerating projects from its 2016 Energy Storage RFO.<sup>5</sup> If this is feasible and cost-effective and supports an urgent grid reliability need, PG&E may wish to consider accelerating these 2016 projects. As the state has witnessed in the past with the Aliso Canyon emergency solicitation for energy storage resources, resources that have been solicited and procured can offer significant ‘option value’ for meeting critical grid challenges and furthermore support the successful deployment of energy storage resources pursuant to AB 2514.

Overall, CESA supports PG&E’s proposed 2018 Energy Storage RFO, which is targeting a December 1, 2018 launch and is a relatively open-ended solicitation for energy storage projects across all three domains, for all types of ownership models, and for all types of use cases.<sup>6</sup> PG&E indicated that it is not specifically targeting energy storage procurements aimed at addressing RA, but will count RA value for procured resources. Although the open-ended nature of the solicitation focus allows for creative and innovative solutions, CESA has some concerns around the June 1, 2024 online date requirement – the absolute latest PG&E would need to have energy storage resources online to be compliant with AB 2514. By selecting a 2024 online date, there is also a

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<sup>5</sup> *Resolution E-4909: Authorizing PG&E to procure energy storage or preferred resources to address local deficiencies and ensure local reliability*, issued on January 12, 2018, p. 7.

<sup>6</sup> *PG&E Energy Storage Requests for Offers Solicitation Protocol, Attachment A*, issued on March 1, 2018, p. 3.

risk that there may not be enough time to procure replacement energy storage resources due to ‘failed’ project development and deployment, leading to PG&E fall short of AB 2514 requirements. In addition to the compliance risk in bringing energy storage capacity online at the last possible minute, CESA believes that this timeline does not value potential near-term learning around energy storage procurement and operations.

CESA thus recommends that PG&E, to the degree possible, provide additional information and potentially consider a preference for projects that come online much sooner than 2024, which may be tied to a near-term grid need or policy learning objective. If the need for RA capacity is not the issue, then PG&E should creatively explore how energy storage resources could be procured in these RFOs to meet other grid needs and to provide new, less-tested use cases such as distribution deferral, as was done in the 2016 Energy Storage RFO. Some of this work appears to already be done in considering and identifying potential project sites and use cases for the AB 2868 programs and investments, so PG&E may wish to just leverage some of this preliminary work.

### **III. AB 2514 ENERGY STORAGE PROCUREMENT SHOULD CONSIDER HYBRID AND ALTERNATIVE ENERGY STORAGE TECHNOLOGIES.**

In the upcoming 2018 Energy Storage RFO as well as in future solicitations, CESA recommends that PG&E consider the eligibility of hybrid energy storage and alternative energy storage technologies. Solicitations by PG&E have generally been concentrated in standalone lithium-ion battery storage resources or solar-paired lithium-ion battery storage resources, but CESA also recommends that eligibility to compete, as represented through the consideration of their different capabilities and/or through differentiated *pro forma* contracts, for hybrid energy storage (*e.g.*, wind-plus-storage, gas-paired-storage) and alternative energy storage technologies (*e.g.*, thermal storage, compressed air energy storage) be accommodated.



**IV. PG&E SHOULD NOT DEFAULT TO UTILITY-OWNERSHIP FOR AB 2868 INVESTMENTS AND SHOULD CONDUCT COMPETITIVE SOLICITATIONS FOR THIRD-PARTY-OWNED PROJECTS TO COMPETE WITH UTILITY-OWNED PROJECTS TO DELIVER INTENDED RESILIENCY SERVICES.**

PG&E does not propose any specific investments at this time, but has articulated some of its early conceptual ideas for four distribution-connected IFOM energy storage investments that would be procured through RFOs and favor utility-owned energy storage projects with engineering, procurement, and construction (“EPC”) contracts.<sup>7</sup> PG&E further indicated that it is currently identifying projects within the four categories and evaluating their viability and will seek approval of specific investments by September 27, 2018. The four categories of investments include:

- **Customer & Community Resiliency:** PG&E will prioritize facilities with critical operations that require higher levels of resiliency due to climate change impacts, are located in low-income communities, and have high penetrations of renewable generation. PG&E will consider energy storage projects between 1 MW and 20 MW per site.
- **Local Capacity Requirements (“LCR”) Investments:** PG&E will target constrained load pockets to avoid RMR situations and defer/avoid traditional investments to provide local capacity, with secondary market participation. Target sites will include those with tight capacity margins, present difficulties in siting transmission upgrades, are connected to older and less efficient generating assets, are located in low-income communities, and can be sited within or on PG&E land/substations.
- **Storage to Improve System Reliability:** PG&E said it will target radial transmission lines with low reliability ratings, where customers are subject to potentially prolonged outages and disruptions. Even as certain lines meet established reliability standards and California Independent System Operator (“CAISO”) best practices, PG&E will consider how to use energy storage to improve transmission lines that have experienced lower system performance. PG&E is identifying sites based on lowest-performing transmission lines ranked by customers served (low-income, DAC), number of outages, etc.
- **Transportation Electrification Support:** PG&E is seeking IFOM energy storage investments as alternative to defer distribution upgrades, with a focus on electric

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<sup>7</sup> *Pacific Gas and Electric Company 2018 Assembly Bill 2868 Energy Storage Investments and Programs Prepared Testimony Volume 3 of 3*, filed on March 1, 2018, Chapter 2, p. 5.

vehicle use cases where there is little flexibility in available charging time and/or where there are high-power requirements (e.g., transit bus, public DC fast charging).

CESA generally supports each of the above energy storage investment use cases, as they appear to meet many of the AB 2868 statutory objectives, though more details are needed on how PG&E selected specific sites for investments to determine AB 2868 compliance with more certainty. However, PG&E critically fails to meet two of its statutory objectives: to minimize overall costs and to not unreasonably impair non-utility enterprises. In its selection criteria for AB 2868 investments, PG&E indicated that it will add a preference for utility-owned projects because such projects would minimize overall costs and allow for better control of project deployment. PG&E adds that the relatively small size of the AB 2868 investments as compared to the overall system grid need ensures that non-utility enterprises are not unduly impaired.<sup>8</sup>

First, CESA disagrees with PG&E that the statutory objective to minimize overall costs for ratepayers is met by pursuing utility ownership of these proposed investments because it is impossible for the Commission to determine whether the most cost-effective resource was selected if only utility-owned projects are solicited. While a competitive solicitation engineering, procurement, and construction (“EPC”) contracts will produce the most cost-effective utility-owned energy storage project, the Commission will be restricting its cost-effectiveness assessment to one type of contracting mechanism, without being able to determine whether other ownership models and contracting mechanisms can achieve the same resiliency objectives and meet the same statutory goals at a lower cost to the ratepayer.

Second, by limiting the proposed investment to one type of ownership model and contracting mechanism, CESA argues that non-utility enterprises are in fact unduly impaired, as

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<sup>8</sup> *Ibid*, Chapter 2, pp. 4-5.

third-party-owned distribution-connected projects or behind-the-meter (“BTM”) customer-sited energy storage projects could achieve the same objectives and statutory goals as a utility-owned EPC project. For example, a third-party-owned distribution-connected energy storage project located on adjacent available land but not on utility-owned property could potentially deliver the intended distribution deferral, increased transmission line reliability, and/or added grid resiliency. Alternatively, a suite of BTM energy storage systems could be sited at customer premises for the targeted location to deliver the intended service while also providing customer bill savings. Potentially, the most cost-effective solution to the ratepayer could be a combination of utility-owned, third-party-owned distribution-connected, and customer-sited energy storage projects. But without a competitive solicitation for other ownership and contracting mechanisms, it is impossible to tell.

Third, PG&E conflates the overall system-wide need as identified in the Integrated Resources Planning (“IRP”) process as providing third parties with sufficient opportunity to serve the various grid needs, when in fact, the issue at hand is whether non-utility enterprises are unduly impaired in providing any specific grid need, pursuant to AB 2868. For any identified grid need, it is the role of PG&E, Commission, and stakeholders to determine whether the procured resource or solution for any given grid need is the most cost-effective, best-fit resource and is in the best interest of ratepayers. The fact that there is a large system-wide grid need for energy storage does not mean that any specific grid need that is subject to a competitive solicitation should be defaulted to a utility-owned solution.

Finally, CESA points to previous Commission decisions that confirm that utilities must make a showing that holding a competitive solicitation for non-utility-owned generating resources is not feasible. In D.07-12-052, the Commission established an important principle regarding the

electric utilities' procurement of generating resources and expressed its preference for competitive approaches in a specific requirement:<sup>9</sup>

“We want to make it clear that we continue to believe in a “competitive market first” approach. As such we believe that all long-term procurement should occur via competitive procurements, rather than through preemptive actions by the IOU, except in truly extraordinary circumstances.” [emphasis in original]

“Because the Commission has a strong preference for competitive solicitation, in all cases, if an IOU proposes an UOG outside of a competitive RFO, ***the IOU must make a showing that holding a competitive RFO is infeasible.***” [emphasis added]

The Commission reaffirmed this policy in D.08-11-004.<sup>10</sup>

In sum, CESA reiterates its support for competition and transparency and believes that utility-owned energy storage and generating projects have a role in supporting the reliability and resiliency of California's electricity grid. However, to ensure the most cost-effective resource is procured, competition is promoted, and regulatory precedent/guidance is adhered to, PG&E should conduct a competitive and transparent procurement process that includes third-party-owned projects to meet the identified objective for each of the four use cases. Only after the competitive solicitation reveals that there is a lack of viable technical and commercial alternatives to utility-owned projects and that the utility-owned project is the most cost competitive (*i.e.*, in the best interest of ratepayers) should the Commission approve a utility-owned project.

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<sup>9</sup> *Opinion Adopting Pacific Gas and Electric Company's, Southern California Edison Company's, and San Diego Gas and Electric Company's Long-Term Procurement Plans*, D.07-12-052, issued on December 21, 2007, pp. 209-211.

<sup>10</sup> *Decision Granting Motion to Dismiss of Western Power Trading Forum/The Alliance for Retail Energy Markets and the Independent Energy Producers Association*, D.08-11-004, filed on November 12, 2008, p. 24.

V. **SPECIFIC ‘SERVICE REQUIREMENTS’ TO SUPPORT THE SOLICITATION OF THIRD-PARTY-OWNED PROJECTS SHOULD BE PROVIDED WHEN PG&E PROVIDES ADDITIONAL DETAILS ON EACH USE CASE.**

A competitive solicitation for energy storage projects of all ownership types and different contracting mechanisms is needed to identify the solution that would confirm whether PG&E has procured the energy storage resource that meets the resiliency objective while also minimizing overall costs. By specifically defining the grid-service need (*e.g.*, the minimum duration requirement during an outage, distribution capacity delivery for deferral), third parties can understand how to configure their proposed solutions and submit offers for projects that deliver the target grid services, which may be delivered by siting on non-PG&E-owned land. This information is needed to benefit ratepayers via competition from third parties on a level playing field. This information will enable third parties to propose effective energy storage solutions that meet the identified need. Without this information, PG&E would only see competition amongst utility-owned solutions without adequate consideration of third-party-owned energy storage projects.

PG&E is still in the phase of screening and identifying candidate project use cases and locations. As develops these concepts further, CESA requests that PG&E clearly define the service requirements and propose contracting mechanisms and operational parameters for third-party-owned energy storage projects to potentially compete and provide the needed grid service.

VI. **PG&E SHOULD COORDINATE ITS PROPOSED THERMAL ENERGY STORAGE PROGRAM WITH PILOT PROPOSALS IN R.15-03-010.**

CESA generally supports PG&E’s proposed BTM Thermal Energy Storage Program that establishes a goal of reducing peak load by 5 MW by 2025 using smart electric water heaters and/or smart control devices. With a \$6.4-million program budget through 2025, the proposed program will launch in a pilot phase in 2020 (with full program roll-out in 2021) and will support up to 2

MW of deployments annually. CESA supports the use of a pay-for-performance incentive for customers to operate existing electric water heaters during non-peak hours as well as a pay-for-performance incentive targeting low-income customers to replace propane water heaters with electric resistance water heaters or hybrid heat pump water heaters, especially for customers in San Joaquin Valley.<sup>11</sup>

While not active in the San Joaquin Valley proceeding (R.15-03-010), CESA understands that pilot proposals are being proposed in that proceeding to provide cleaner and more affordable energy options to a select number of disadvantaged communities. Several pilot proposals have been submitted in that proceeding, including one that provides energy efficiency retrofit savings and supports energy storage installations. Once developed, CESA recommends that coordination of these pilot proposals with PG&E's proposed BTM Thermal Energy Storage Program, as close coordination will support customer outreach, avoid duplicating efforts, and encourage synergies with using multiple technologies to support disadvantaged communities in the San Joaquin Valley to access affordable energy technologies.

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<sup>11</sup> *Ibid*, Chapter 7, pp. 5-7.

**VII. CONCLUSION.**

CESA appreciates the opportunity to submit this protest to the Application and looks forward to working with the Commission and PG&E going forward in this proceeding.

Respectfully submitted,



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