

July 19, 2018

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**Re: Response of the California Energy Storage Alliance to
Advice Letter 5322-E of Pacific Gas and Electric Company**

Dear Sir or Madam:

Pursuant to the provisions of General Order 96-B, the California Energy Storage Alliance (“CESA”)¹ hereby submits this response to the above-referenced Advice Letter 5322-E of Pacific Gas and Electric Company (“PG&E”), *Energy Storage Contracts Resulting from PG&E’s Local Sub-Area Requests for Offers Per Resolution E-4909* (“Advice Letter”), submitted on June 29, 2018 pursuant to *Resolution E-4909: Authorizing PG&E to procure energy storage or preferred resources to address local deficiencies and ensure local reliability* (“Resolution E-4909”).

¹ 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, Brookfield Renewables, Carbon Solutions Group, Centrica Business Solutions, Consolidated Edison Development, Inc., Customized Energy Solutions, Dimension Renewable Energy, Doosan GridTech, Eagle Crest Energy Company, East Penn Manufacturing Company, Ecoult, EDF Renewable Energy, ElectrIQ Power, eMotorWerks, Inc., Enel, Energport, ENGIE, E.ON Climate & Renewables North America, esVolta, Fluence Energy, GAF, General Electric Company, Greensmith Energy, 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., Parker Hannifin Corporation, Pintail Power, Primus Power, Range Energy Storage Systems, Recurrent Energy, Renewable Energy Systems (RES), Sempra Renewables, Sharp Electronics Corporation, SNC Lavalin, Southwest Generation, Sovereign Energy, Stem, STOREME, Inc., Sunrun, Swell Energy, True North Venture Partners, Viridity Energy, Wellhead Electric, and Younicos. The views expressed in this Response are those of CESA, and do not necessarily reflect the views of all of the individual CESA member companies.

I. BACKGROUND AND INTRODUCTION.

Resolution E-4909, issued on January 12, 2018, ordered PG&E to, within 90 days, solicit energy storage and/or preferred resources to address two local sub-area capacity deficiencies in the Pease and South Bay-Moss Landing sub-areas, and to manage a high voltage issue in the Bogue sub-area. Several parameters guided this solicitation. PG&E was directed to procure resources of sufficient magnitude to be online and operational between 2019 and 2022 to obviate the need for an extension of reliability must-run (“RMR”) contracts for the Feather River Energy Center, Yuba City Energy Center, and Metcalf Energy Center. In addition, resources procured in this solicitation were required to be at a reasonable cost to ratepayers, taking into account the parameters of this procurement, the costs of similar and/or previous energy storage projects, and the cost of the specific RMR contracts.² PG&E thus filed Advice Letter 5322-E on June 29 seeking approval from the California Public Utilities Commission (“Commission”) for four energy storage projects totaling 567.5 MW (2,270 MWh) coming online in late 2019 or 2020.

CESA recommends that the Commission approve the four energy storage contracts proposed in PG&E’s above-referenced Advice Letter. There is ample basis for such an approval. PG&E has identified a portfolio of energy storage solutions that not only supports the state’s decarbonization and grid modernization goals, but also obviates the need for above-market costs of RMR agreements for the aforementioned three gas plants, which serves to benefit ratepayers. PG&E further takes major strides in its compliance with D.13-10-040,³ which directs procurement for 580 MW by PG&E by 2020. This latter effort ensures that this single procurement effort provides major cost-savings to ratepayers – *i.e.*, it is a ‘two-for-one’ procurement.⁴

Finally, CESA strongly supports PG&E’s competitive solicitation and contracts submitted for Commission approval. CESA commends the Commission for exploring how the viable alternative of energy storage can deliver local capacity needs per Resolution E-4909.

II. DISCUSSION.

The Commission is tasked with major planning roles for the electric grid in its oversight of California’s investor-owned utilities (“IOUs”). As such, the Commission must ensure a suite of grid resources exist and operate to support electric system reliability and affordability. Generally, a reliance on out-of-market or ‘backstop’ tools for ensuring grid reliability (*e.g.*, the CAISO’s RMR tool) indicate market inefficiencies. Resolution E-4909 thus smartly directs considerations

² Resolution E-4909, Orders 1-8.

³ Prior to this solicitation, PG&E had procured only approximately 202 MW of energy storage pursuant to the procurement targets set by D.13-10-040, according to CESA’s count of energy storage procurement by PG&E.

⁴ In D.15.11-041, focusing on local capacity in the broader Los Angeles region following the unavailability of the San Onofre Nuclear Generating Station (SONGS), Southern California Edison (SCE) similarly procured energy storage to address a key local need while also complying with energy storage procurements.

of solutions to address grid needs with an eye towards also reducing undue reliance on backstop solutions.

Energy storage is a special resource class that can be deployed to address multiple grid needs. In this case, energy storage can address local sub-area grid needs, and may also mitigate other grid challenges, such as the optimization of renewable energy, flexibility to the grid, and expanding our toolkit to meet changing and sometimes unexpected grid conditions. Resolution E-4909 recognized as such by discussing how energy storage “can be fast-responding, reliable” and “can be constructed in a short timeframe”.⁵

In reviewing the Advice Letter and competitive solicitation results, CESA believes that the Commission has more than sufficient basis to approve the resulting contracts from the 2018 Local Sub-Area RFO. CESA responds further below.

A. Energy storage contracts resolve both short-term local capacity needs as well as long-term LCR forecasts

Looking ahead, PG&E has observed in the CAISO’s 2023 LCR Report, that the South Bay-Moss Landing sub-area shows a forecasted LCR need of 1,977 MW by 2023, even after accounting for the approved transmission projects.⁶ This is in addition to near-term transmission solutions identified in the 2017-2018 Transmission Plan to ease reliability constraints in the area. Specifically, these economic-driven transmission projects should reduce the near-term capacity needs in that sub-area by 400 to 500 MW beginning in 2019.⁷ In addition, PG&E notes that the Metcalf plant is only the first of several thermal generation plants that face risks of economic retirements in this local sub-area, which makes these energy storage contracts a prudent investment now to deliver the added capacity needed. Thus, similar RMR backstop procurement may occur but for the near-term effects of the PG&E storage procurement.⁸ The CAISO has echoed these sentiments as well.⁹

The Commission expressed its intent to avoid backstop procurement not only through Resolution E-4909 but also in other venues such as the Resource Adequacy (“RA”) proceeding (R.17-09-020). RA reforms are currently being discussed in Commission regulatory venues to address some of these near-term backstop procurement issues as the state faces changing economic and policy conditions that give rise to these types of situations where the state must prolong the life of uneconomic assets at high cost to ratepayers to maintain grid reliability. Although the goal of proposed RA reforms is to address these resource planning and economic issues, these reforms would be put into

⁵ Resolution E-4909, Findings 7-8.

⁶ Advice Letter, pp. 13-14.

⁷ CAISO 2017-2018 Transmission Plan, issued on March 22, 2018, pp. 262-263.
http://www.caiso.com/Documents/BoardApproved-2017-2018_Transmission_Plan.pdf

⁸ Advice Letter, p. 22.

⁹ Advice Letter, Appendix J.

effect by the 2020 RA year, at earliest. As a result, some regulatory risks could exist due to timing of potential RA reforms, given the complexity of the issues involved. The Commission is already facing this issue. For example, to avoid further backstop procurement, SCE was recently directed to bilaterally contract with the Ellwood Generating Station and one of the generating units at Ormond Beach to avoid RMR designation of these units, which declared its intention to retire within the year but were identified by the CAISO as being needed to meet LCR needs in the Big Creek-Ventura sub-area.¹⁰ A similar type of situation could be avoided in the South Bay-Moss Landing sub-area with the deployment of the four energy storage projects proposed in PG&E's Advice Letter.

CESA thus strongly recommends that the Commission approve these contracts as a just and reasonable procurements that both address need and that reasonable hedge against a likely future where the fast-response and flexibility of energy storage are not only needed but also where economic retirement risks of thermal generators are increasing and regulatory risks of whether timely RA reforms will be implemented to minimize backstop procurement outcomes are present.¹¹ These contracts represent reasonable and cost-effective risk management tools.

B. Energy storage contracts are cost-effective

PG&E reports that the market valuations of the four energy storage projects are all positive.¹² While the actual net market value and costs are not made available to parties like CESA, the reported cost-effective nature of the contracts should justify the approval of these projects not only to obviate future above-market RMR agreements but also to comply with the energy storage procurement required under AB 2514, which PG&E is obligated to do regardless of specified local reliability need. In addition, PG&E conducted a robust solicitation that received 29 offers with 100 total variations, with PG&E seemingly selecting projects that were the least-cost, best-fit offers from a highly competitive marketplace.

¹⁰ *Decision Adopting Local Capacity Obligations for 2019 and Refining the Resource Adequacy Program*, D.18-06-030, issued on June 21, 2018, pp. 35-36.

¹¹ While strongly supportive of the four energy storage contracts included in the Advice Letter, CESA also observes that additional 'hedge value' could be achieved through energy storage procurement in the Pease sub-area. PG&E explained that it did not select any offers for energy storage projects in the Pease sub-area because the South of Palermo transmission project would address the Contingency B outage (Advice Letter p. 14; 2017-2018 Transmission Plan, p. 327). However, the Contingency C outage is not mitigated, which "may be addressed with the previously approved Pease 115/60 kV Transformer Addition along with a low cost effective transmission solution such as a Remedial Action Scheme (RAS)" that is expected to be in service by December 2019 (Advice Letter, p. 14; 2017-2018 Transmission Plan, p. 114, 117). CESA seeks additional clarification and justification from PG&E on why energy storage projects were not selected in the Pease sub-area.

¹² Advice Letter, pp. 22-23.

Parties should note the PG&E’s shrewd cost-minimizing strategy. But for these projects, PG&E would still face substantial procurement obligations for energy storage, pursuant to D.13-10-040. PG&E’s procurements pursuant to Resolution E-4909 thus provide an especially unique and valuable ‘two-for-one’ benefit for ratepayers. As mentioned, the other IOUs have similarly sought ‘two-for-one’ procurements to benefit ratepayers where applicable in past energy storage procurements – e.g., to meet the LCR needs identified in Track 4 of the Long-Term Procurement Planning (“LTPP”) proceeding. When adding these benefits with the reliability benefits and other value-streams (e.g., RA capacity), the benefits of the four storage projects are very favorable.

C. Energy storage contracts support the state’s decarbonization and other goals

Deploying more energy storage on the system is a good thing. Energy storage remains a *de minimus* part of the CAISO’s grid.¹³ Even including long-standing pump-hydro storage resources in the state, energy storage comprises less than 5% of the fleet capability in the CAISO’s footprint.¹⁴

State planning solutions show beneficial roles for energy storage in meeting climate goals. The Integrated Resources Planning (“IRP”) proceeding, focused on optimizing the state’s resource portfolio to achieve an aggressive greenhouse gas (“GHG”) emissions reduction goal, identified (in the Reference System Plan for the ‘mid-case’ goal) over 2,000 MW of energy storage needed by 2030.¹⁵ When more stringent electricity-sector GHG reductions were modeled in the IRP, significantly more energy storage resources were selected.¹⁶ Furthermore, given the objective of the IRP to reduce pollutant impacts to disadvantaged communities (“DACs”), energy storage serves as a viable alternative to gas-fired generation that was observed as being disproportionately located in disadvantaged communities.

Separately, in its economic special study as part of the 2018-2019 TPP to assess alternatives to gas-fired generation, the CAISO recognized the DAC focus of the IRP by including a criterion for study prioritization on local areas and sub-areas where such resources are located in disadvantaged communities.¹⁷ Energy storage thus supports the

¹³ CAISO, “What are we doing to green the grid?”

<http://www.caiso.com/informed/Pages/CleanGrid/default.aspx>

¹⁴ “Grid Operations During Eclipse to Leverage Energy Storage Solutions,” PRNewsWire.com, published on August 15, 2017: <https://www.prnewswire.com/news-releases/grid-operations-during-eclipse-to-leverage-energy-storage-solutions-300504830.html>

¹⁵ *Decision Setting Requirements for Load Serving Entities Filing Integrated Resource Plans*, D.18-02-018, issued on February 13, 2018.

¹⁶ *Administrative Law Judge’s Ruling Seeking Comment on Proposed Reference System Plan and Related Commission Policy Actions: Attachment A*, issued on September 19, 2017, pp. 53-55.

¹⁷ *Local Capacity Requirements Potential Reduction Study*, CAISO stakeholder call presentation presented on April 18, 2018, p. 10. <http://www.caiso.com/Documents/Presentation-LocalCapacityRequirementReductionStudy.pdf>

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state in achieving its decarbonization goals while supporting disadvantaged communities as a viable alternative to gas-fired generation in these communities.

CESA recognizes that decarbonization was not an explicit objective in Resolution E-4909, but it is helpful to remember one of the broader state policy objectives is to transition California's electric resource portfolio to a cleaner one. Energy storage supports that transition, in addition to serving as a viable reliability and economic alternative to potential uneconomic gas plants.

III. CONCLUSION.

CESA appreciates the opportunity to submit this response in support of the four energy storage contracts submitted for Commission approval in PG&E's Advice Letter.

Respectfully submitted,



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cc: Erik Jacobson, PG&E (PGETariffs@pge.com)
Service lists: R.15-03-011 and R.17-09-020