BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Application of Pacific Gas and Electric Company for Approval of the Retirement of Diablo Canyon Power Plant, Implementation of the Joint Proposal, And Recovery of Associated Costs Through Proposed Ratemaking Mechanisms (U 39 E)	Application 16-08-006 (Filed August 11, 2016)

RESPONSE OF THE CALIFORNIA ENERGY STORAGE ALLIANCE TO THE APPLICATION OF PACIFIC GAS AND ELECTRIC COMPANY FOR APPROVAL OF THE RETIREMENT OF DIABLO CANYON POWER PLANT, IMPLEMENTATION OF THE JOINT PROPOSAL, AND RECOVERY OF ASSOCIATED COSTS THROUGH PROPOSED RATEMAKING

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Pursuant to the Rules of Practice and Procedure of the California Public Utilities Commission ("Commission"), the California Energy Storage Alliance ("CESA")[1] hereby submits this response to the *Application of Pacific Gas and Electric Company for Approval of the Retirement of Diablo Canyon Power Plant, Implementation of the Joint Proposal, and Recovery of Associated Costs Through Proposed Ratemaking*, submitted on August 11, 2016 ("Application").

[1] 1 Energy Systems Inc., Adara Power, Advanced Microgrid Solutions, AES Energy Storage, Amber Kinetics, Aquion Energy, Bright Energy Storage Technologies, Brookfield, California Environmental Associates, Consolidated Edison Development, Inc., Cumulus Energy Storage, Customized Energy Solutions, Demand Energy, Eagle Crest Energy Company, East Penn Manufacturing Company, Ecoult, Electric Motor Werks, Inc., ElectrIQ Power, ELSYS Inc., Enphase Energy, GE Energy Storage, Geli, Gordon & Rees, Green Charge Networks, Greensmith Energy, Gridscape Solutions, Gridtential Energy, Inc., Hitachi Chemical Co., Ice Energy, Innovation Core SEI, Inc. (A Sumitomo Electric Company), Invenergy LLC, Johnson Controls, K&L Gates, LG Chem Power, Inc., Lockheed Martin Advanced Energy Storage LLC, LS Power Development, LLC, Mercedes-Benz Research & Development North America, Nature & PeopleFirst, NEC Energy Solutions, Inc., NextEra Energy Resources, NGK Insulators, Ltd., NRG Energy LLC, OutBack Power Technologies, Parker Hannifin Corporation, Powertree Services Inc., Qnovo, Recurrent Energy, RES Americas Inc., Saft America Inc., Samsung SDI, Sharp Electronics Corporation, Skylar Capital Management, SolarCity, Sovereign Energy, Stem, SunPower Corporation, Sunrun, Swell Energy, Trina Energy Storage, Tri-Technic, UniEnergy Technologies, Wellhead Electric, 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.

In this response, CESA generally supports Commission approval of the Pacific Gas and Electric Company's ("PG&E's") Application for retirement of the Diablo Canyon Power Plant ("DCPP"), as the beginning of a public stakeholder process to determine the appropriate procurement plans for replacement resources, and the importance of including emphasis on energy storage in any proposed procurement plans.

CESA generally supports planning steps that can allow for the orderly retirement of the DCPP. PG&E's forward planning and efforts to transition affected workers and communities are appropriate and should factor into any ultimate DCPP retirement plan. Retirement of the DCPP is reasonable, given the decreasing need for baseload generation in California's clean energy future where 50% of electricity generation will come from renewable sources by 2030 and how "the California electric system will need more flexible resources to integrate renewable energy" as the state should expect more overgeneration events throughout the year.[2]

CESA believes the Commission should also develop a process for determining the replacement capacity and energy in concert with steps taken to address ramping and other needs. This approach would best address how, despite the removal of a large baseload resource, there may still be impacts on system ramping.[3] CESA thus recommends that the Commission ensure the solutions work for the problem at hand, and that robust stakeholder input be considered. If immediate progress on the three tranches proposed in the Application is deemed needed, progress should be timed so that actions that are ultimately unnecessary are avoided.

[2] Application, p. 6.
[3] Application, Attachment A: Joint Proposal, p. 8.

Lack of explicit inclusion of energy storage in the Application signals that some of the challenge associated with renewable resource integration and DCPP retirement are insufficiently addressed. The Application notes that it is "not intended to specify everything that will be needed to ensure the orderly replacement of Diablo Canyon with GHG free resources,"[4] but given the stated purposes of each tranche, CESA believes that it is necessary to include energy storage in any procurement plan for replacement resources.

Energy storage has the ability to provide the grid with ramping flexibility and has the ability to start and stop multiple times per day based on real-time grid conditions. There are also many types of energy storage technologies that have varying performance and operational attributes, ranging from bulk energy storage that is capable of handling large ramping needs, to behind-the-meter energy storage that can be easily sited in different locations. Yet, the Application only grants energy storage the status of a "complementary resource" rather than an integral resource to address the flexibility issues at the heart of the DCPP retirement.[5]

II. THE COMMISSION SHOULD APPROVE PHASED RETIREMENT OF THE DIABLO CANYON NUCLEAR POWER PLANT AND SEEK ROBUST PUBLIC STAKEHOLDER INPUT ON THE APPROPRIATE PROCUREMENT PLANS FOR REPLACEMENT RESOURCES.

CESA believes that the phased retirement of DCPP to be reasonable in view of the justifications provided in the Application. These reasons include: (a) uncertainty of PG&E's bundled electricity sales with increasing levels of energy efficiency, distributed generation, and departing customers to community choice aggregators ("CCA") and direct access ("DA") providers; (b) decreasing need for baseload generation and increasing challenges associated with

[4] Application, Attachment A: Joint Proposal, p. 2.

[5] Prepared Testimony, Chapter 1 Policy and Overview Attachment A: Summary Report of Joint Proposal Public Workshop and Public Meetings, p. 8.

renewable overgeneration; and (c) high ongoing costs for DCPP. CESA agrees that these market and regulatory trends justify the need to retire DCPP. More importantly, the Application's economic and operational analyses also point to a need to shift resource planning and procurement processes to focus on flexible resources as California advances toward achieving its energy and environmental goals.

While it is prudent for PG&E to take a phased approach to procurement of replacement resources, which will take years, CESA is concerned that the Application was negotiated by the Joint Parties and did not include many key stakeholders. Perhaps as a result, the Application proposes a replacement resource mix that does not include energy storage or other resources that could address the grid ramping and flexibility issue at the core of the DCPP retirement.

By contrast, a prime example of a robust and collaborative process was the 2012 Long-Term Procurement Plan ("LTPP") Track IV process, which engaged multiple parties to model and assess a total resource mix that would sufficiently replace nuclear generation from the San Onofre Nuclear Generation Station ("SONGS") closure. A similar process should be applied to the DCPP closure to ensure the right resource mix is procured to replace the DCPP generation. The Application's tranches should therefore not be automatically used as a starting point for DCPP capacity and energy replacement proposals.

CESA thus recommends that the Commission immediately approve the concept of phased retirement of the DCPP but commence a robust public stakeholder process to identify the appropriate resource mix to replace the DCPP generation. Approval of the Application would provide guidance for what needs to be replaced to meet grid needs, but the Commission should stop short of prematurely determining the right mix replacement resources by simply approving the entire Application in its present form.

III. ENERGY STORAGE RESOURCES SHOULD BE INCLUDED IN ANY PROCUREMENT PLAN FOR REPLACEMENT RESOURCES.

The Application does not explicitly include energy storage in any of the three proposed tranches despite recognizing the need for additional energy storage to provide grid flexibility and ramping. If the tranches as proposed are used, CESA recommends that a separate track in the first tranche be developed and proposed in revised Application to include minimum energy storage procurement commitments to address grid flexibility needs stemming from DCPP retirement. Related additional energy storage procurement commitments could also be addressed in a separate track in the Integrated Resource Planning (R.16-02-007) or Energy Storage proceeding (R.15-03-011).

Whatever procedural forum the Commission finds to be best path forward to consider energy storage procurements related to DCPP retirement, the key is that energy storage is needed provide dynamic balancing of supply-load conditions on the grid. In any event, the proposed tranches should be optimized by the inclusion of energy storage and allow for PG&E and its customers to address the core issue surrounding the retirement of DCPP – the need for clean, cost-effective, and flexible generation resources to meet the state's energy and environmental goals while ensuring grid reliability.

Tranche 1 is intended to achieve 'early action' greenhouse gas ("GHG") emission savings prior to the DCPP retirement in 2024 and 2025. PG&E's Prepared Testimony points to the state's historical experience with energy efficiency, potential for further energy efficiency, and market forces in a competitive solicitation as reasons for why the 2,000 gross GWh target for energy efficiency is possible during the 2018-2024 period. Tranche 1, however, is an energy efficiency only procurement. While energy efficiency provides substantial GHG savings in the immediate term by reducing electricity load overall to offset the eventual retirement of GHG-free

nuclear generation from DCPP, it does not necessarily reduce load to align with dynamic supply conditions or with California's high-renewables generation portfolio. By featuring energy storage in any Tranche 1 solicitation, however, PG&E may be able to focus on load shifting to better match load with supply and make the reduced demand more grid efficient. Furthermore, as demonstrated through the recent Aliso Canyon-related procurements, energy storage projects may be procured, installed, and operated on an expedited timeline to provide the early action GHG savings sought in Tranche 1. CESA accordingly believes explicit targets for energy storage should be set in Tranche 1 and that energy storage resources should also be eligible for a shareholder incentive mechanism, similar to the one proposed for energy efficiency.[6]

Tranche 2 has a goal to address the transition period after DCPP retirement and to provide certainty that GHG-free generation resources replace some of the DCPP output. In this tranche, PG&E plans to issue a series of all-source Request for Offers ("RFO") to procure 2,000 GWh/year of GHG-free energy resources or energy efficiency by June 2020, with deliveries between 2025-2030. Notably, this tranche does not consider standalone energy storage to be eligible since energy storage by itself is "not a source of electricity," and the Application is unclear on if this energy efficiency is incremental to the energy efficiency requirements established in Senate Bill 350. PG&E states, however, that energy storage may be considered eligible if combined with another resource that provides GHG-free energy or energy savings, and defers consideration of additional energy storage to R.16-02-007.

Tranche 2 thus should have more explicit authorizations for the role of energy storage. By this change, renewable generation can better match load conditions by pairing it with energy storage resources, which can be achieved through explicit targets or by adding greater weight in

[6] Prepared Testimony, Chapter 4 Tranche #1 – Energy Efficiency, p. 10.

the evaluation criteria in the RFO process, such as through Time of Delivery ("TOD") factors, to incentivize renewable solutions integrated with energy storage. In procuring GHG-free resources to replace the DCPP output, CESA believes that PG&E must ensure that generation aligns with demand conditions to address the need for more grid flexibility to avoid or reduce overgeneration and curtailment events.

In addition, CESA finds the exclusion of energy storage in Tranche 2 based on how energy storage is not a 'generation resource' to be reflective of the potentially disjointed approach of the Application. While CESA appreciates the importance of energy-related renewable and energy efficiency goals and recognizes that there may be fewer local-capacity concerns related to DCPP retirement,[7] energy storage resources are being used to address generation shortfalls in Southern California Edison's ("SCE") 2013 Local Capacity Requirements ("LCR") RFO and its 2016 Aliso Canyon Energy Storage ("ACES") RFO, so the lack of an energy-storage related goal in this instance seems incongruous. In the 2013 LCR RFO, SCE procured over 260 MW of energy storage resources to replace nuclear generation from the SONGS closure.

SCE's procurement related to SONGS demonstrated that energy storage resources could be a viable replacement for a generation resource – *i.e.*, a generation resource does not necessarily have to be replaced by another generation resource. Likewise, in response to the Aliso Canyon related generation restrictions, the Commission identified energy storage systems as one potential solution for this grid reliability issue because they can be fast-responding, firm, and dispatchable. The Commission subsequently issued Resolution E-4791 in May 2016 to authorize SCE to conduct an expedited competitive energy storage procurement solicitation.

[7] Prepared Testimony, Chapter 2 Diablo Canyon Power Plant Need Analysis, p. 21.

IV. CONCLUSION.

CESA appreciates the opportunity to submit this response to the Application and looks forward to working with the Commission, PG&E, and other parties.

Respectfully submitted,

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