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**PG&E Comments on the Lead Commissionerâ€™s Workshop on  
Clean Energy Alternatives for Reliability**

*Additional submitted attachment is included below.*



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California Energy Commission  
Vice Chair Siva Gunda  
Deputy Director David Erne  
Energy Assessment Division, Energy System Reliability  
Docket Number 21-ESR-01  
517 P Street  
Sacramento, CA 95814

**Re: Pacific Gas and Electric Company's Comments on the Lead Commissioner's Workshop on Clean Energy Alternatives for Reliability (Docket Number 21-ESR-01)**

Dear Vice Chair Gunda and Director Erne,

Pacific Gas and Electric Company (PG&E) appreciates the important work undertaken by all state agencies, including the California Energy Commission (CEC) and the California Public Utilities Commission (CPUC), and other key stakeholders in support of electric grid reliability and the CEC's efforts to identify and discuss clean energy resources to serve California's electric needs and transition the electric sector to a decarbonized grid.

PG&E supports the CEC's efforts to evaluate the cost effectiveness and feasibility and to establish a preliminary list of clean energy resources, as presented on slide 53, to replace Diablo Canyon Power Plant (DCPP) for the longer-term.<sup>1</sup> The preliminary list appears to be an appropriate starting point. However, PG&E recommends categorizing the options as California Independent System Operator Corporation (CAISO) Market Participating and Non-CAISO Market Participating instead of using Supply and Demand categories. Clean energy resources required (or not required) to participate in the CAISO's energy markets have distinct operational requirements. As a result, there may be a need to clearly distinguish which resources should (or should not) require CAISO energy market dispatchability and visibility.

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<sup>1</sup> Lead Commissioner's Workshop on Clean Energy Alternatives for Reliability, CEC Presentation: <https://efiling.energy.ca.gov/GetDocument.aspx?tn=247061>.

PG&E looks forward to continuing discussions with all stakeholders at the appropriate venues to ensure the State meets its reliability and climate goals. Section I of PG&E's comments highlights the importance of determining the need, while Section II considers criteria for meeting that need.

### **I. New Load Forecasting Methodologies Need to be Considered Given that Climate Change is Expected to Increase the Frequency and Length of Extreme Weather Events**

The CEC should ensure that DCP's eventual retirement does not negatively impact state policy goals and must account for expected electricity load growth in California. Due in large part to decades of California's leadership on energy efficiency, including from the CEC, California has experienced a lengthy period of relatively flat load growth. However, loads are likely to grow more quickly than in the past, and recent reliability events may be indicative of the increasing electricity loads that California will see in the future. A variety of emerging forces have contributed to this trend, including (1) increased load due to transportation and building electrification, (2) increased load due to air conditioning, and (3) increased volatility in temperature and weather.

While there is significant uncertainty associated with the pace of climate change, electric vehicle adoption, and building electrification, ensuring that these uncertainties do not hamper system planning efforts will require careful development of new load forecasting methodologies and coordination with the myriad of planning processes involved.

Coordination between supply and load planning is also important. On the load management side, this includes a combination of rate designs to appropriately shape loads, energy efficiency programs to reduce overall kilowatt-hours and peak demand, and demand response and demand flexibility that can provide a wider range of grid services across all hours of the day, rather than a sole focus on peak load reduction. In addition, increasing building electrification, among other factors, may result in further shifts in net peak load beyond the August to October season and into the winter months. These future changes in load, and the seasonal nature of certain supply resources, should be considered when planning for future needs.

### **II. It is Important for the CEC to Account for DCP's Operating Attributes and its Benefits When Considering Clean Energy Alternatives**

While each resource type in the preliminary list can be evaluated based on its individual merits, it is important that resources prioritized to replace DCP be thoughtfully and holistically planned as an overall portfolio in order to serve identified system and reliability needs and meet California's policy goals.

More concisely, PG&E recommends that the CEC and other stakeholders ensure that the portfolio of resources selected provides the same, or substantively similar, beneficial operating attributes that California receives from DCP. PG&E outlines some of DCP's benefits below.

1) Contribution to Reliability: DCPD is a firm, non-seasonal, clean energy resource that generates about nine percent of California’s energy, or about 18,000 gigawatt-hours (GWh), on an annual basis. This generating profile provides a significant contribution to grid reliability because it generates consistently, even when other resource types are outside their peak generating period. Crucially, DCPD is a *generating* resource. Thus, while energy storage can serve as a clean energy alternative to DCPD for some periods of time, it is critical that energy storage be paired with a generating resource of sufficient size and with a suitable generating profile, both across a single day and across seasons, to ensure the storage provides energy both at the time of need and for the duration of the need for grid reliability. The CPUC took a similar view in establishing procurement targets in the Integrated Resource Plan (IRP) proceeding.<sup>2</sup>

2) Contribution to Decreased Greenhouse Gas (GHG) Emissions: It is increasingly apparent that DCPD plays a significant role in helping California meet its climate and environmental goals as DCPD’s GHG-free power displaces the use of greenhouse gas (“GHG”) emitting natural gas resources.<sup>3</sup> This benefit should serve as one of the central evaluation metrics when determining which resources are best-suited to replace DCPD.

PG&E also notes that because DCPD is a GHG-free resource, evaluation of alternatives to replace it should consider the impact of GHG-emissions from construction of new resources. PG&E requests additional information regarding the attribute of “cleanliness,” how it will be assessed, if it will incorporate build emissions (i.e., Scope 2 emissions), and how costs attributed to all GHG-emissions will be determined.

3) Cost-Effectiveness: While reliability and climate goals are understandably paramount, California must also balance customer affordability with longer-term policy. Decisions made to replace DCPD’s clean, safe, and reliable capacity should not unduly exacerbate rising costs. The extended life cost of DCPD is expected to be lower than the development of a “portfolio” of new clean energy resources that will eventually replace this single resource. Customer affordability should be a valuable metric against which to compare other resources.

### **III. Conclusion**

PG&E highlights a potential risk that the new clean energy resources required to address GHG-reduction goals and support reliability will not be online in a timely manner. The CPUC’s Preferred System Plan adds over 40 gigawatts (GW) of incremental new nameplate capacity by 2030 and over 50 GW of incremental new nameplate capacity by 2035. The ongoing supply chain issues, competition from other states/nations/industries for lithium-ion batteries and interconnection issues will continue to pose challenges for bringing new resources online.

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<sup>2</sup> See CPUC Decision 21-06-035.

<sup>3</sup> See *An Assessment of the Diablo Canyon Nuclear Plant for Zero-Carbon Electricity, Desalination, and Hydrogen Production* at

[https://energy.stanford.edu/sites/g/files/sbiybj9971/f/diablocanyonuclearplant\\_report\\_11.19.21.pdf](https://energy.stanford.edu/sites/g/files/sbiybj9971/f/diablocanyonuclearplant_report_11.19.21.pdf).

PG&E is encouraged by the number of stakeholders involved in evaluating how to replace DCP's generating capacity expeditiously and effectively, while simultaneously expanding overall system capacity to meet expected load growth and shifts in demand. Coordination and collaboration are important to ensure the State avoids finding itself in a similar situation by the end of DCP's extended operations period, in which reliability and emissions targets cannot be met without further extending the life of DCP.

PG&E appreciates the opportunity to comment on the CEC's workshop on clean energy alternatives for reliability and looks forward to working with the CEC and other state agencies. Please reach out to me with any questions.

Sincerely,

Licha Lopez