

July 21, 2020

CPUC Energy Division Tariff Unit
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Re: Response of the California Energy Storage Alliance to Advice Letter 4243-E, et al. Regarding Southern California Edison Company, San Diego Gas & Electric Company, and Pacific Gas and Electric Company’s ELCC Study Submission

Dear Sir or Madam:

Pursuant to the provisions of General Order 96-B, the California Energy Storage Alliance (“CESA”) hereby submits this Response to the above-referenced Advice Letter 4243-E of Southern California Edison Company (“SCE”), Advice Letter 3560-E of San Diego Gas and Electric Company (“SDG&E”), and Advice Letter 5868-E of Pacific Gas and Electric Company (“PG&E”), *Southern California Edison Company, San Diego Gas & Electric Company, and Pacific Gas and Electric Company’s ELCC Study Submission* (“Advice Letter”), submitted jointly by the investor-owned utilities (“IOUs”) on July 1, 2020.

I. INTRODUCTION & BACKGROUND.

The Commission issued Decision (“D.”) 19-09-043 on September 26, 2019 that adopted the modeling requirements to calculate the effective load carrying capability (“ELCC”) values for Renewable Portfolio Standard (“RPS”) procurement, using the Strategic Energy Risk Valuation Model (“SERVM”). Notably, among other use cases, the decision included modeling guidance and requirements for the IOUs to study one-, two-, or four-hour storage pairings with RPS resources. In comments leading up to and in response to this decision, CESA was strongly supportive of these modeling requirements as it would inform not only procurement but also provide additional information on RPS-paired storage resources, which represented a gap in the landscape of planning analyses done in California and elsewhere.

CESA appreciates the work of the IOUs and Astrapé Consulting for this first report, which analyzes the ELCC of solar and wind hybrid resources paired with equally sized four-hour energy storage assets. The results of this report highlight the incremental value of energy storage as well as the role it shall play in the path to decarbonizing the electric sector. In this Response, CESA offers the following observations and comments:

- The study results should inform not only IOU procurement plans but also other sourcing mechanisms, such as feed-in tariff programs for RPS-eligible resources.
- While the study does not directly impact policy, it should be considered as supporting evidence in other Commission proceedings to inform policy decisions.
- The second report in December 2020 should follow-up on the observations made by Astrapé Consulting.

CESA is supportive of this first report and recommends its approval. We look forward to reviewing the second report to be submitted in December 2020, where the IOUs and Astrapé Consulting will evaluate the ELCC of hybrids paired with one- and two-hour storage assets.

II. DISCUSSION.

A. The study results should inform not only IOU procurement plans but also other sourcing mechanisms, such as feed-in tariff programs for RPS-eligible resources.

CESA agrees with Astrapé's finding which states that, assuming solar and four-hour storage hybrid resources have equal capacities, a solar hybrid facility would provide an ELCC value near the maximum output of the storage facility since solar energy is consistently able to fully charge the connected batteries prior to the daily net load peak. This information shows that California's levels of solar irradiation and its load shape are conducive to these assets. Based on these results, the Commission and the IOUs should consider how storage pairings can be eligible, recognized, and incentivized in other RPS-eligible sourcing mechanisms, such as the Renewable Market Adjusting Program ("ReMAT") and other feed-in tariff or shared renewables programs.

B. While the study does not directly impact policy, it should be considered as supporting evidence in other Commission proceedings to inform policy decisions.

Given the limited modeling conducted to date on hybrid generation and storage resources (as we are aware), these study results advance the conversation around the capacity contributions of hybrid and co-located generation resources with storage and provide supporting evidence that should be used to inform policy-making in other Commission proceedings. CESA agrees with the IOUs that the study results should only be used for procurement evaluation purposes at this time,¹ but there are some key

¹ Advice Letter at 4.

takeaways from the study process and results as supporting evidence that could inform how the Commission should prioritize and approach issues in policy-making proceedings. For example, CESA raises the following questions and makes the following observations:

- **The study processes and results raise questions as to whether ELCC should be the methodology used for capacity valuation of hybrid and co-located resources:** As evidenced by the delay in the modeling completion and the difficulties in capturing certain granularities (*e.g.*, geographic), the Advice Letter may highlight how the use of ELCC methods may not be sustainable to capture and properly incentivize optimal resource configurations for capacity purposes. While ELCC modeling may make it feasible to achieve the granularity desired, it is complex and time-consuming to capture all the variations; By contrast, portfolio-wide or resource-class-specific ELCC values may not accurately capture resource differences, which may become clearer with the results from the second report. Even in this first report, the modeling was only able to capture the ELCC values for 1:1 storage-to-generation sizing ratios. As a result, the many iterations of paired storage configurations appears to be too challenging to capture in an ELCC assessment approach, whereby the Commission should consider the appropriate role for ELCC approaches and whether alternative approaches could be considered for project-specific RA counting and procurement purposes.
- **The study provides some supporting evidence against premature capacity derates in the near to medium term:** CESA notes that the reliability contributions of 1:1 solar hybrids remains almost perfect (approximately 93%) into 2030, when battery storage penetration reaches 3,431 MW and pumped hydro storage sits at 1,832 MW. This signals that the effects of penetration on hybrid capacity contributions, while existing, are minimal for the next 10 years. Similar results were identified in calculating the ELCC derate curve for standalone four-hour storage.
- **The study highlights the benefits of project-specific capacity attributions rather than the distribution of storage diversity benefits:** Given the material reliability benefits in pairing storage with renewables, the Commission should avoid approaches to apportion the diversity benefit of storage to all renewables and incentivize pairing of storage with solar and other renewables to encourage these pairings, as done in D.19-06-026.² CESA recognizes that RA capacity value and RPS procurement-

² See Appendix A of D.19-06-026, *Decision Adopting Local Capacity Obligations for 2020-2022, Adopting Flexible Capacity Obligations for 2020, and Refining the Resource Adequacy Program*, issued on July 5, 2019 in R.17-09-020.

based capacity value is different, but there should minimally be alignment in terms of how capacity assessments are applied on a project-specific basis to recognize the value of pairing storage.

Though the disposition of the Advice Letter is not the forum to address the above matters, the above considerations should be discussed in the appropriate policy-making proceedings, such as R.19-11-009, R.18-07-003, and R.20-05-003.

C. The second report in December 2020 should follow-up on the observations made by Astrapé Consulting.

CESA supports the observations made by Astrapé regarding the robustness of out-of-state (“OOS”) wind profiles. As noted in the report, external wind profiles exhibit unrealistically positive correlation with California load suggesting the quantified ELCCs for those resources are too high. In order to mitigate the risks related to this misestimation, CESA recommends that the Energy Division prioritize the reevaluation of OOS wind profiles as they relate to the Integrated Resource Planning (“IRP”) proceeding.

III. CONCLUSION.

CESA appreciates the opportunity to submit this Protest in response to the Joint Advice Letter and looks forward to collaborating with the Commission and PAs to better enable program participation from LTES projects pursuant to D.19-08-001.

Respectfully submitted,



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