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**Re: Response of the California Energy Storage Alliance to Advice Letter 4382-E,  
Advice Letter 3665-E, and Advice Letter 6041-E**

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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 4382-E of Southern California Edison Company (“SCE”), Advice Letter 3665-E of San Diego Gas and Electric Company (“SDG&E”), and Advice Letter 6041-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 Second Effective Load Carrying Capability Study Submission* (“Advice Letter”), submitted jointly by the investor-owned utilities (“IOUs”) on December 29, 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 second report, which analyzes the ELCC of solar and wind hybrid resources paired with shorter-duration energy storage assets as well as updating the previous study results in smart ways. The results of this report highlight the tremendous added capacity/reliability value that could be provided from all durations of storage when paired with standalone wind or solar resources, especially when optimizing the resources to provide both energy and ancillary services. In this Response, CESA offers the following observations and comments:

- The study results should inform the development of contracts and procurement of RPS resources paired with storage that can be optimized for capacity and reliability.
- While the study does not directly impact policy, its results should inform not only IOU procurement plans but also other sourcing mechanisms, such as feed-in tariff programs for RPS-eligible resources, and should be considered as supporting evidence in other Commission proceedings to inform policy decisions.

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 the development of contracts and procurement of RPS resources paired with storage that can be optimized for capacity and reliability.**

CESA supports and appreciates the IOUs' adjustments and updates to the ELCC modeling to allow for the provision of both energy and ancillary services and to modify the charging heuristics to optimize for delivering services during the net load peak periods. These adjustments resulted in higher ELCC values across the board, including for shorter-duration energy storage pairings with either solar or wind,<sup>1</sup> and are reasonable because the provision of ancillary services helps to free up other generation capacity to not have to be committed as operating reserves in loss-of-load events. Given these results and the added value to any RPS procurement to not only provide energy and Renewable Energy Credit ("REC") benefits but also reliability benefits, the Commission and the IOUs should focus on ways (*e.g.*, RPS contracts) to enable the ancillary services to be provided from hybrid and co-located resources, and we should seek ways to work with the California Independent System Operator ("CAISO") to develop market participation pathways that enable as such. Lastly, whether through time-of-delivery ("TOD") factors or other means, contracts should be pursued that incentivize the type of charging schedules that incentivize the delivery of RPS generation during the highest net load periods to realize the modeled value.

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<sup>1</sup> Joint IOU Advice Letter at 2 and 4 and Appendix A: Joint IOU ELCC Study Report 2 at 12 and 15.

**B. While the study does not directly impact policy, its results should inform not only IOU procurement plans but also other sourcing mechanisms, such as feed-in tariff programs for RPS-eligible resources, and should be considered as supporting evidence in other Commission proceedings to inform policy decisions.**

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. Additionally, 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,<sup>2</sup> but there are some key 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:** Due to the difficulties in capturing certain granularities (*e.g.*, geographic) and all the variations, the use of ELCC methods may not be sustainable to capture and properly incentivize optimal resource configurations for capacity purposes. The Commission should thus consider the appropriate role for ELCC approaches, such as directional Integrated Resource Planning (“IRP”) guidance, and pursue alternative approaches for project-specific RA counting and procurement purposes. This must be considered within the IRP proceeding, where hybrid resources have not been modeled comprehensively and the Commission still relies on approximate cost structures to estimate the economic effect of hybridization.<sup>3</sup> Due to the commercial interest and need for hybrid configurations, CESA recommends the Commission use these results to inform the modeling of the capacity contributions of hybrids within the IRP process.
- **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 (at least 90%) into 2030, when battery storage penetration reaches 3,431 MW

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<sup>2</sup> Joint IOU Advice Letter at 5.

<sup>3</sup> *Inputs & Assumptions: 2019-2020 Integrated Resource Planning* prepared by Energy Division on February 2020 at 60.

and pumped hydro storage sits at 1,832 MW.<sup>4</sup> Despite the potentially “stale” underlying portfolio assumptions used, 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. As CESA has noted within R.19-11-009, the Resource Adequacy (“RA”) framework must be updated to include counting methodologies that consider all hybrid configurations and use cases.<sup>5</sup> The current counting rules focus solely on hybrid and co-located configurations set to charge solely from on-site generation, omitting other possible configurations.<sup>6</sup> Working off this limited scope, the Commission adopted a hybrid counting methodology in D.20-06-031, which does not reflect the reliability gains highlighted in this Advice Letter. Hence, these results should inform further analysis relative to the development of a methodology to calculate the reliability contributions of hybrid and co-located assets within R.19-11-009, as they could greatly contribute to the Commission’s understanding and valuation of these projects.

- **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.<sup>7</sup> CESA recognizes that RA capacity value and RPS procurement-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.

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.

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<sup>4</sup> At the same time, since any ELCC analysis is conditional on the underlying resource portfolio assumed, the study results may be outdated with observed procurements in contrast to the 2017-2018 Preferred System Portfolio used for this analysis (see Joint IOU Advice Letter Appendix A: Joint IOU ELCC Study Report 2 at 5). Specifically, the ELCC results may be overstating the capacity contributions to a certain degree since the 2019-2020 Reference System Portfolio assumes over 10,000 MW of energy storage through 2030 and recent procurements pursuant to D.19-11-016 will bring over 3,000 MW of new incremental battery storage online in the 2021-2023 timeframe, already exceeding the amount assumed through 2030. As a result, the ELCC ‘boost’ attributed to the provision of ancillary services may be more limited.

<sup>5</sup> *Resource Adequacy Track 3 Proposals of the California Energy Storage Alliance* filed in R.19-11-009 on August 7, 2020 at 14-15.

<sup>6</sup> See D.20-06-031 at 30-31.

<sup>7</sup> 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.

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**III. CONCLUSION.**

CESA appreciates the opportunity to submit this response to the Joint Advice Letter and looks forward to collaborating with the Commission and IOUs on how these study results could inform RPS procurement and programs.

Respectfully submitted,



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