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**Comments of the California Energy Storage Alliance Regarding
July 22, 2021 Senate Bill (SB) 100 Next Steps Workshop**

Additional submitted attachment is included below.

August 11, 2021

Email to: docket@energy.ca.gov

Docket Number: 21-SIT-01

Subject: Senate Bill 100 Resource Build – Transmission

**Re: Comments of the California Energy Storage Alliance Regarding July 22,
2021 Senate Bill (SB) 100 Next Steps Workshop**

Dear Sir or Madam:

The California Energy Storage Alliance (“CESA”) appreciates the opportunity to comment on the Senate Bill (“SB”) 100 Transmission Resource Build Workshop held on July 22, 2021. CESA recognizes the leadership of the California Energy Commission (“CEC”), the California Public Utilities Commission (“CPUC”), and the California Air Resources Board (“CARB”) in assembling a vast group of stakeholders and listening to their concerns and proposals regarding the challenges the state will face in its transition to a zero-carbon electric grid by 2045.

CESA is a 501(c)(6) organization representing over 100 member companies across the energy storage industry. CESA is involved in a number of proceedings and initiatives in which energy storage is positioned to support a more reliable, cleaner, and more efficient electric grid. Moreover, CESA has actively engaged in first-in-class modeling studies to better understand the need and opportunity for energy storage given SB 100 targets. As such, our background and experience providing technical and policy insights are of particular relevance to this subject.

I. INTRODUCTION & SUMMARY.

CESA appreciates the Joint Agencies hosting this workshop after finalizing and preparing the first of many SB 100 Reports. In discussing implementation and next steps, this report will not just “sit on the shelf” but may actually be used to support Joint Agency coordination efforts, more detailed roadmapping, and other actions necessary to realize the resource procurement and buildout necessary to meet the state’s long-term decarbonization goals. While recognizing the directional nature of these reports, these reports are helpful to inform longer-term planning through 2045 and identify key barriers and issues that may require Joint Agency coordination to resolve. For example, the resource buildout rates identified in the SB 100 Report to achieve our 2045 goals have anchored and calibrated the discussion regarding new resource procurement, transmission infrastructure buildout, and long lead-time resource development, which may be overlooked in 10-year forward planning processes such as the CPUC’s Integrated Resource Planning (“IRP”) process and the CAISO’s Transmission Planning Process (“TPP”).

As a result, CESA finds these SB 100 Reports to be extremely valuable to inform the individual Joint Agency proceedings, dockets, and initiatives where direct action will be undertaken, and thus offers comments to continue to improve upon this important directional study. Our comments are focused on the following areas:

- The Joint Agencies should aim to increase the geographical resolution of the modeling tools as it will provide more insightful guidance for the transmission expansion and resource location.
- SB 100 modeling should explore alternatives to new transmission corridors.

II. COMMENTS.

Overall, CESA is generally pleased with the material and perspectives shared during the Joint Agency workshop held on July 22, 2021. We agree with the sentiments from many stakeholders that transmission and optimal/strategic resource locations are key to reach California carbon targets.

1. The Joint Agencies should aim to increase the geographical resolution of the modeling tools as it will provide more insightful guidance for the transmission expansion and resource location.

Many stakeholders at the workshop expressed a common understanding of the importance of new transmission to reach SB 100 goals¹ and presented on how new transmission corridors projects in California will allow for additional power flow for zones with high electrical demand. Furthermore, the latest study results from the IRP, TPP, and SB 100 processes found that not only will California need new in-state transmission but also inter-state transmission to allow the access of out-of-state renewable energy generation (mainly wind and solar). To validate and affirm these modeling results, the transmission assumptions used in the state's capacity expansion modeling should be closely assessed.

Currently, the RESOLVE model assumes the interconnection between seven electrical nodes, with five located under the California footprint and two located in out-of-state zones. As CESA understands it, RESOLVE optimizes the interaction between each node using the existing cumulative thermal capacity connecting each zone and installs the capacity required in each zone to reach the minimum system cost. As the state begins to more deeply explore new transmission infrastructure, the modeling simplifications of the load zones start to stand out. Thus, as a process improvement going forward, CESA recommends that the Joint Agencies consider refining the RESOLVE model to provide more

¹ "New transmission" could be interpreted as either new transmission investments or expanding existing transmission infrastructure to accommodate additional capacity.

granular geographical resolution, which will more adequately select new transmission corridors where they are truly required and optimize the resource buildout and location.

The increased spatial resolution is not just required to analyze new transmission expansion but also to capture the power dynamics across different zones. While increasing the additional load zones might increase the complexity of the model (and thus the run time) and would require additional information from each balancing authority under the WECC, CESA see this change as an important modeling enhancement to more accurately assess and calibrate new in-state and out-of-state transmission needs.

2. The SB 100 modeling should explore alternatives to new transmission corridors.

In similar long-term resource planning studies under deep decarbonization scenarios, such as those studied in the LA100 Study, CESA has observed tradeoffs among new transmission investments, long-duration and seasonal energy storage, and/or zero-carbon generation (*e.g.*, thermal generation using hydrogen fuel).² In the same vein, in order to more comprehensively understand different plausible pathways to reach the state's goals, CESA recommends that the Joint Agencies study and contrast investments in new transmission corridors with alternative scenarios that explore different futures. For example, the Joint Agencies could also explore other futures with lower cost assumptions for long-duration storage and green hydrogen production and/or storage. Proposing alternative scenarios to transmission will strengthen the results of the modeling and provide a menu of pathways on the investments needed and policy actions required. Transmission alternatives, such as energy storage technologies, could reduce the need of transmission if properly located, or some optimal combination of transmission and storage could be identified to reduce curtailment and resource overbuild.

CESA supports and understands the importance of transmission buildout to achieve the state's reliability objectives and decarbonization goals. Even with relatively longer lead times and maintenance-related considerations, some combination of in-state/out-of-state transmission infrastructure investments and energy storage resources will be needed. However, our understanding of the workshop presentations is that the Joint Agencies may not be adequately incorporating transmission alternatives in the SB 100 and other associated modeling efforts to assess the optimal level of transmission investments needed. In addition to improving the geographical resolution of the RESOLVE model, CESA also recommends exploring transmission alternatives, including energy storage resources but particularly previously unmodeled candidate technologies (*e.g.*, many LDES technologies) that may become commercially available and deployed in a near future.

² For example, the LA100 Study looked at a specific "Transmission Renaissance" scenario and compared those modeling results with other scenarios to identify these tradeoffs. We note that the results were unique to the transmission-constrained Los Angeles Basin area.

III. CONCLUSION.

CESA appreciates the opportunity to provide these comments and feedback on the SB 100 Next Steps workshop. We look forward to collaborating with the CEC, CPUC, CARB, and other stakeholders in this docket.

Respectfully submitted,



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