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**CEERT Comments SB 100 Draft Results**

*Additional submitted attachment is included below.*



September 15, 2020

California Energy Commission  
Docket No. 19-SB-100

**Written Comments of The Center for Energy Efficiency and Renewable Technologies (CEERT)  
Regarding the SB 100 Draft Results Workshop**

CEERT commends the SB 100 Modeling Team for its tireless work and effort on the presented SB 100 Draft Modeling Results. Furthermore, CEERT applauds the California Energy Commission (CEC) on the success of the September 2, 2020 Draft Results workshop, which provided an open platform for constructive critique of the SB 100 Results and facilitated a robust and productive discussion of SB 100 implementation strategies. Going forward, CEERT sincerely hopes that all planning efforts across the Joint Agencies follow suit. Effective and accessible collaboration is the only path forward to get California back on track to meet its climate and clean energy goals, including those outlined in SB 100. CEERT greatly appreciates the opportunity to provide feedback in the form of both oral and written comments.

As CEERT's Executive Director V. John White stated in his oral comments at the September 2<sup>nd</sup> workshop, there are severe limitations with the RESOLVE model. These limitations include inaccuracies in gas emission data, narrow inputs with low granularity, and discrepancies between the model and actual CAISO grid operations. CEERT recommends that the Modeling Team and Joint Agencies look more in depth at independent modeling efforts, such as those of the National Renewable Energy Laboratory (NREL) and Los Angeles Department of Water and Power's (LADWP's) LA 100 Study. Analysis of independent modeling, including both production cost models and capacity expansion models such as are being used in the LA 100 Study, is imperative to the successful implementation of SB 100 as it will provide a more comprehensive, holistic view of California's grid needs.

Regardless of modeling approach, the implementation of SB 100 must focus on the orderly and just transition away from gas generation. CEERT recognizes and appreciates the important role that modeling plays in guiding California's clean energy transition. However, as the Modeling Team stated, the modeling results are directional and are not intended to be prescriptive. Other factors not modeled in these results, such as the harmful effects of natural gas generation on surrounding communities, must play an equal role to factors such as cost-effectiveness. As Elena Krieger with PSE Healthy Energy highlighted in her remarks, the State must make sure that it is not investing in pathways that inadvertently lead to higher emissions. More granular modeling, based in both locational and temporal analysis, is essential in ensuring that the State's clean energy transition is just and equitable. Furthermore, CEERT encourages the Modeling Team to ground-truth the gas emission assumptions used in the RESOLVE model to account for emissions resulting from gas plant starts. In addition, the Modeling Team should guarantee that the model accurately reflects gas system prices, including cost run-ups from pipeline maintenance.

CEERT also cautions against relying so heavily on modeling assumptions regarding which resources are commercially viable. As supported in the SB 100 modeling and in the CPUC's IRP, California needs a technologically and geographically diverse resource mix to reach its clean energy goals. CEERT

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recognizes that this balanced, robust resource portfolio must be developed without jeopardizing reliability. Especially in light of the recent grid stress events, the Joint Agencies must take a serious look at the resource adequacy (RA) assumptions used in their modeling. The current RA structure is antiquated; a paradigm formed around an inflexible grid dominated by gas and coal plants. RA must be reimagined and reinvented to reflect current economic and resource constraints on the grid, and the role that zero carbon resources can play in meeting local and system capacity requirements.

The SB 100 High Flexibility Scenario Draft Results highlight the necessity of the RA structure's urgent adaptation to the transitioning grid's composition. As presented in the Draft Results, the high flexibility scenario reduces costs compared to the SB 100 Core Scenarios. The flexibility scenario also provides additional benefits, including the reduction of 6 GW of RA capacity requirement and an additional 3.3 GW in economic gas retirements. CEERT supports Bernadette Del Chiaro's comments that market mechanisms and effective policies must be in place to unlock the benefits that these resources bring to the grid. This includes accurate valuation of distributed energy resources (DERs) for RA capacity.

In addition, CEERT encourages the Joint Agencies to include more long duration storage in the modeling to facilitate the development of these essential technologies. As the modeling results favor energy storage, long duration storage in particular can help provide base load energy to ensure reliability during long-term weather events and seasonal uncertainties, which are only predicted to become more frequent and of greater magnitude in the face of climate change. The important role of long duration storage is highlighted in the Zero Carbon Firm Resources scenario, which reduces capacity requirements by *about 70 GW* compared to the SB 100 Core scenario, while also reducing greenhouse gas emissions, land use requirements, and costs. We urge the joint agencies to explore this scenario further, including utilizing zero carbon firm and dispatchable resources to also displace the assumed ongoing dependence on most existing fossil gas plants for resource adequacy and striving to achieve zero carbon emissions across the electricity sector in its entirety. Furthermore, we encourage state agencies to take additional steps to support deployment of innovative long duration energy storage technologies, and other zero-carbon firm and dispatchable resources, to help bring down costs of these resources to realize these tremendous economic and emissions benefits. This can be done through planning, demonstration projects, and targeted procurement policies.

The High Flexibility and Zero Carbon Firm Resources Scenarios highlight the importance of the Joint Agencies using a "least cost, best fit" approach to facilitate California's clean energy transition rather than the "least cost" approach seemingly utilized thus far. In this regard, to make up for past failures to consider "best fit" in renewable procurement, Governor Newsom should direct the California Resources Agency and Energy Commission to develop a geothermal procurement initiative, whereby state agencies, including the Department of Water Resources, work together to support several hundred megawatts of new geothermal development in the Salton Sea region. Moreover, developing an effective and robust resource mix must take into account values such as community health, ancillary services, and environmental impacts, in addition to economic factors. Therefore, CEERT supports Commissioner McAllister's recommendation to include more load flexibility, such as demand response, in the modeling.

Finally, CEERT believes that the Joint Agency Report mandated by SB 100 should be produced more frequently than every four years. As presented in the Draft Results, meeting California's clean energy goals with the resources available today will require record-setting build-out. Therefore, the Joint Agencies must revisit modeling and planning more frequently, not only to help facilitate better transmission planning to bring resources online, but to also take into account the various technologies that are projected become more economically viable in the next few years. If the Joint Agencies wait to

re-evaluate this plan only every four years, the modeling will consistently trail behind the true commercial availability of new technologies, and therefore hinder market development for cutting-edge resources that are essential in completing California's reliable, clean energy portfolio.

CEERT thanks the SB 100 Modeling Team and Joint Agencies for their dedicated work in facilitating California's clean energy transition. California has historically been among the most ambitious in the country for its climate and clean energy goals. We must now ensure that the momentum to implement these goals is maintained to again, set a precedent for the country and be successful in our visionary endeavors.

Sincerely,



V. John White  
Executive Director



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