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STATE OF CALIFORNIA ENERGY RESOURCES CONSERVATION  
AND DEVELOPMENT COMMISSION

In the Matter of:  
SB 100 Joint Agency Report

Docket No. 23-SB-100

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**COMMENTS OF THE INDICATED PUBLIC POWER BALANCING AUTHORITY  
AREAS AND THE CALIFORNIA MUNICIPAL UTILITIES ASSOCIATION ON THE  
OCTOBER 31, 2023 SENATE BILL 100 ANALYTICAL FRAMEWORK WORKSHOP**

**I. INTRODUCTION**

The Indicated Public Power Balancing Authority Areas<sup>1</sup> (“POU BAAs”) and the California Municipal Utilities Association (“CMUA”) (together “Joint Commenters”) provide these written comments on the California Energy Commission (“CEC” or “Commission”) Senate Bill (“SB”) 100 Analytical Framework Workshop, held October 31, 2023 (“Workshop”).

In prior Comments on the 2021 Joint Agency Workshops on Transmission<sup>2</sup>, on the 2021 Joint Agency Workshops on Non-Energy Benefits, Social Costs, and Reliability<sup>3</sup>, and on the SB 100 Kickoff Workshop<sup>4</sup>, we emphasized the need to maintain grid reliability and affordability of electricity rates while striving to meet the state’s decarbonization goals. These Comments on the Analytical Framework Workshop focus on reliability modeling issues covered at the Workshop.

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<sup>1</sup> Balancing Authority of Northern California (“BANC”), Imperial Irrigation District (“IID”), Los Angeles Department of Water and Power (“LADWP”) and Turlock Irrigation District (“TID”).

<sup>2</sup> *Comments of the Joint Publicly Owned Balancing Authority Areas on the July 22, 2021 Joint Agency Workshop on the Next Steps to Plan for Senate Bill 100 Resource Build – Transmission*, Cal. Energy Commission (Aug. 11, 2021), <https://efiling.energy.ca.gov/GetDocument.aspx?tn=239273&DocumentContentId=72723>. (Docket No. 21-SIT-01, TN# 239273.)

<sup>3</sup> *Comments of the Joint Publicly Owned Balancing Authority Areas on the November 1, 2021 Joint Agency Workshop on Planning for Senate Bill 100 Analysis of Non-Energy Benefits, Social Costs, and Reliability*, Cal. Energy Commission (Nov. 23, 2021), <https://efiling.energy.ca.gov/GetDocument.aspx?tn=240701&DocumentContentId=74058>. (Docket No. 19-SB-100, TN# 240701.)

<sup>4</sup> *Comments of the Publicly Owned Balancing Authority Areas and the California Municipal Utilities Association on the August 22, 2023 Senate Bill Kickoff Workshop*, Cal. Energy Commission (Sept. 15, 2023), <https://efiling.energy.ca.gov/GetDocument.aspx?tn=252293&DocumentContentId=87307>. (Docket No. 23-SB-100, TN# 252293.)

## II. COMMENTS

### A. The Lack of Power Flow Modeling as Part of the SB 100 Study Process Remains a Concern.

In order to be complete for the purposes of the SB 100 Report (“Report”), portfolio modeling efforts must include several outputs, including identification of resource mixes that can meet SB 100 targets, expected cost of production, whether the portfolio will contain the appropriate attributes to maintain grid reliability, and whether the transmission grid will be able to deliver the energy based on generation location and transmission topology. The Joint Commenters do not believe there is any debate regarding what modeling is needed, but rather what can be accomplished within the scope of the Report.

Joint Commenters are concerned that, while the proposed modeling approach for this study cycle includes capacity expansion and production cost modeling, it will not include power flow and proposed modeling will, at best, only look at the transmission system at a zonal level.<sup>5</sup> This is a concern because the objective of this study cycle, as described at the August 21, 2023 SB 100 Kickoff Workshop, is to evaluate the tradeoffs of different resource scenarios with respect to reliability, affordability, and non-energy benefits, among other criteria, for purposes of informing policymakers. Without incorporating power flow modeling, the Report will not provide a full picture of the reliability risks and benefits associated with different scenarios.

To reach SB 100 goals and support the clean energy transition, power grid modeling is crucial. Market participants rely on grid modeling to make investment and procurement decisions. Specifically, network reliability modeling can provide detailed simulations of the

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<sup>5</sup> SB 100 Analytical Framework Workshop, Cal. Energy Commission (Oct. 31, 2023), <https://efiling.energy.ca.gov/GetDocument.aspx?tn=252852&DocumentContentId=87974>. (Docket No. 23-SB-100, TN# 252852.)

transmission network to ensure that systems function properly and can handle contingencies, such as facility outages.<sup>6</sup>

As California considers retirement of thermal resources in load pockets,<sup>7</sup> and relies increasingly on intermittent resources relatively distant from load, the importance of understanding the impact and resulting needs on the transmission system becomes even more critical. Grid resilience will depend upon the ability to withstand outages to critical facilities, which in turn should shape the location and resource mix selected in the portfolio. The CEC's workshop discussed the importance of resource diversification and the advancements in procurement and technology for zero-carbon resources. If the Report cycle does not model the ability of the new resource to serve all areas of the grid, gaps in the analysis will almost certainly occur, and poor resource choices will be made, and reliability jeopardized.

B. The Portfolio Must be Flexible Enough to Meet Grid Needs and Ensure NERC Compliance. This Must be Studied.

In addition, any Balancing Authority Area must be able to respond to variability in its BAA and meet basic measures of reliability, such as Area Control Error, and other applicable North American Electric Reliability Corporation (“NERC”) Reliability Standards. These standards have been designed to reduce the likelihood and severity of future system disturbances and to improve the reliability of the bulk power system in North America.<sup>8</sup> The load and resource portfolios modeled must be tested to ensure that the system can respond to resource and load variability and ramping requirements inherent in certain resource types. NERC's August

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<sup>6</sup> Mark Specht, *Grid Modeling Overview: Four Types of Models Guiding the Transition to Clean Electricity*, Union of Concerned Scientists (Apr. 25, 2022), <https://blog.ucsusa.org/mark-specht/grid-modeling-overview-four-types-of-models-guiding-the-transition-to-clean-electricity/>.

<sup>7</sup> Already, retirement of in-basin gas units has been delayed due to the lack of viable options to ensure reliability. The retirement of three existing natural gas-fired plants in California (Alamitos, Huntington Beach, and Redondo Beach) was extended for three years to maintain grid reliability.

<sup>8</sup> *Compliance Assurance*, North Am. Electric Reliability Corp., <https://www.nerc.com/pa/comp/Pages/AboutComplianceOperations.aspx> (last visited Nov. 14, 2023).

2023 reliability report found that energy policy can be a risk factor and that ensuring reliability during and after policy decisions needs to be a key consideration. As a result, the analytical framework must consider how the fleet can meet these requirements. The need for inclusion of these factors in future SB 100 studies is underscored by NERC’s most recent Reliability Risk Priorities Report,<sup>9</sup> which for the first time includes energy policy, including its implementation timelines, among key risk factors affecting the reliability of the bulk power system. The report finds that, as the resource mix continues to rapidly evolve, new approaches are needed to assess and ensure energy sufficiency throughout the year, as well as additional study regarding the aggregate behavior of distributed energy resources (“DERs”). Similarly, recognizing the need for additional study of and potential for reliability impacts associated with the growth of inverter-based resources (“IBRs”), FERC’s Order 901 directs NERC to develop reliability standards for IBRs that address model validation, planning and operational studies, and performance requirements.<sup>10</sup> These study needs must be recognized as part of the CEC’s approach to reliability modeling.

C. The Joint Commenters Suggest Convening Balancing Authority (“BA”)-Led Working Groups to Consider Modeling Options.

The Joint Commenters do not have all the solutions on how to best maximize modeling resources in the time needed to inform and complete the Report in this study cycle. As we have suggested in prior comments,<sup>11</sup> we urge the immediate formation of modeling Working Groups

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<sup>9</sup> 2023 ERO Reliability Risk Priorities Report, National Energy Reg. Commission (Aug. 17, 2023), [https://www.nerc.com/comm/RISC/Related%20Files%20DL/RISC\\_ERO\\_Priorities\\_Report\\_2023\\_Board\\_Approved\\_Aug\\_17\\_2023.pdf](https://www.nerc.com/comm/RISC/Related%20Files%20DL/RISC_ERO_Priorities_Report_2023_Board_Approved_Aug_17_2023.pdf).

<sup>10</sup> *E-2-RM22-12-000*, Fed. Energy Reg. Commission (Nov. 17, 2022), <https://www.ferc.gov/media/e-2-rm22-12-000>.

<sup>11</sup> *Comments of the Publicly Owned Balancing Authority Areas and the California Municipal Utilities Association on the August 22, 2023 Senate Bill Kickoff Workshop*, Cal. Energy Commission (Sept. 15, 2023), <https://efiling.energy.ca.gov/GetDocument.aspx?tn=252293&DocumentContentId=87307>. (Docket No. 23-SB-100, TN# 252293.)

led by the agencies and the BAAs in collaboration with stakeholders to scope a work plan for the assessment of reliability modeling (e.g. inverter-based resource (“IBR”) related studies at NERC and the Western Energy Coordinating Council (“WECC”)) in the Report. This will allow reviewing and reporting on what is happening in other forums and what can be accomplished within the time allotted, while providing a vehicle for collaboration on this critical and complex topic which is expressly called out in statute.<sup>12</sup> The SB 100 process may not allow the time to accomplish all that we may wish to do. Similarly, Joint Commenters may not individually have the study capability needed. One way to potentially augment resources would be to leverage other forums and industry groups that are looking into similar issues, such as Western Interconnection Compliance Forum (“WICF”), North American Transmission Forum (“NATF”), and WECC. The WECC has implemented this working group approach for many years, and the CEC has participated in many of these groups.

D. Specific Other Issues

1. Western Electricity Coordinating Council (“WECC”) Data Set Usage

While the WECC Anchor Data Set is referenced in the presentations as inputs for the models, we are concerned this data set may not be sufficient for these purposes. Several of the POU BAAs have had the opportunity to engage in Western studies of grid and market structures and observe that generally available data sets may miss key elements of grid transformation, particularly portfolio changes of utilities as included in their respective Integrated Resource Plans (“IRPs”). These assumptions can be very important, change quickly, and may not be captured in WECC data sets just because of timing. It is valuable to have the best IRP data fully incorporated into the current resource plans scenario. This is another issue that may benefit from

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<sup>12</sup> Cal. Pub. Util. Code § 454.53 (2023).

vetting in a technical Working Group to assess the benefits and burdens of seeking more specific and best available data for the modeling purposes.

## 2. Treatment of Imports

This issue requires further discussion. Imports into California are not an amorphous cloud of unknown resources. Many are under contract to or owned by California load entities. There is an opportunity to improve accuracy than simply attribute system energy carbon attributions to imports, or other non-specific mechanisms that do not reflect the actual control and operation of specific resources. Assumptions regarding the availability of import energy to meet California ramping requirements should also be examined because of several factors; (1) load growth external to California which can reduce available surplus energy during afternoon ramps; (2) changes in resource commitments in other parts of the West due to developments such as the Western Resource Adequacy Program (“WRAP”); (3) resource portfolio changes, and other factors. The assessment of imports must also consider the status and development of the underlying transmission facilities that support such imports. A few recent developments demonstrate this – 1) the Pacific Northwest (“PNW”) export derate by Bonneville Power Administration (“BPA”) last summer during the regional heat wave, 2) the Pacific Gas and Electric Company (“PG&E”) de-rates of multiple 500-kV lines; and 3) the aging of the transmission lines of 1960 and 1990 vintage requiring significant maintenance and replacement activity and in general increased vulnerability to unplanned outages – which is often overlooked or uses overly simple availability assumptions in broad scope modeling. As part of the geographic diversification scenario discussed in the workshop, there was a recommendation to increase interactions between California and the rest of the WECC. Again, Joint Commenters may have visibility into these issues that the Joint Agencies lack. We recommend the Working

Groups mentioned above discuss how imports are treated in the models for SB 100 studies and reports.

### **III. CONCLUSION**

The Joint Commenters appreciate the opportunity to provide these comments and look forward to continuing to work with the Joint Agencies in this proceeding.

Dated: November 16, 2023

Respectfully submitted,

*/s/ Tony Braun*

Tony Braun

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