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SDG&E and SoCalGas Joint Comments, SB 100 Joint Agency Report October 31 Workshop

Additional submitted attachment is included below.

November 14, 2023

California Energy Commission
Docket No. 23-SB-100
715 P Street
Sacramento, CA 95814

Subject: Comments on the October 31 Joint Agency Workshop on the SB 100 Analytical Framework

Dear Vice Chair Gunda:

San Diego Gas & Electric Company (SDG&E) and Southern California Gas Company (SoCalGas) appreciate the opportunity to provide comments in response to the October 31, 2023, Joint Agency Workshop on the Senate Bill (SB) 100 Analytical Framework ("Workshop"). California Energy Commission (CEC) staff's presentation offered helpful perspectives on their proposed approach to develop the important 2025 SB 100 report.

Clean, reliable, and affordable resources are foundational to an effective SB 100 framework. As staff noted in the initial SB 100 Kickoff Workshop, all of the scenarios must be evaluated with threshold criteria identifying whether the respective portfolio: (1) aligns with State clean energy policy objectives of 100 percent Renewable Portfolio Standard (RPS) and zero-carbon resources; (2) meets the threshold reliability assessment criteria; and (3) facilitates an equitable decarbonization transition by mitigating significant increases in energy bills.

SDG&E and SoCalGas recognize that reliability modeling is a significant undertaking. We emphasize the importance of the work by the CEC, California Public Utilities Commission (CPUC), and California Air Resources Board (CARB) [collectively referred to herein as "Joint Agencies"] to focus on energy system reliability and resiliency as part of the clean energy transition and 2025 SB 100 Report process.

We respectfully offer the following feedback and considerations with the intent of informing the Joint Agencies' approach in refining inputs that will be used in initial modeling efforts. SDG&E and SoCalGas look forward to additional engagement as development of specific modeling inputs and assumptions continues in 2024.

Electricity Sector Modeling Approach

SDG&E and SoCalGas generally support the approach presented in the Workshop for completing capacity expansion, resource adequacy, and system dispatch modeling using the REGEN and PLEXOS models.

The PLEXOS model is capable of performing capacity expansion, production cost modeling, and reliability analysis within the same database and software, thereby helping reduce the likelihood of inconsistencies or mistakes in modeling relative to using an approach that relies on different software for each modeling step. SDG&E recently recommended the universal use of the PLEXOS model in integrated resource planning processes to align with processes adopted by the California Independent System Operator (CAISO) and other utilities.[1]

REGEN produces initial expansion results at the regional level which are then used as an input into PLEXOS as a starting point for additional stages of modeling. While a more accurate starting point decreases the overall problem size, reducing solving time required in later stages, this additional work and time must be considered when evaluating methodology efficiency and accuracy overall.

To the extent that completing initial capacity expansion modeling with REGEN facilitates a more accurate and faster PLEXOS capacity expansion modeling process, this additional step seems reasonable. However, SDG&E cautions against the use of multiple models and manual steps in other modeling stages.

CEC staff acknowledged during the workshop that the modeling process is time-consuming and there may be limited ability to re-run models if such a need arises. Understanding this limitation emphasizes the importance of a robust public process so that inputs to the models accurately reflect the array of potential scenarios to be explored.

I. Understanding how the proposed SB 100 modeling approaches compare to those taken in other key agency proceedings (e.g., CPUC Preferred System Plan, CAISO Transmission Planning Process, CARB Scoping Plan) will be necessary to inform the appropriate use cases of modeling outputs.

During the Workshop, Vice Chair Siva Gunda raised a question highlighting the importance of understanding how these modeling approaches compare to ones used by CARB and the CPUC. State energy planning processes do not, and cannot, happen in a silo. Understanding how the modeling proposed for the 2025 SB 100 report aligns with approaches taken in other proceedings is critical for identifying the potential use cases for the outputs from the SB 100 modeling. Further, as the Joint Agencies refine their modeling approach, consideration should be given to interactions with and outcomes from the CPUC's ongoing discussion regarding 2023 Preferred System Plan development.

II. Clarification is needed on the methodology for resource adequacy modeling based on a failure condition of "significantly exceeding planning standards."

In prior 2021 SB 100 comments, SDG&E and SoCalGas recommended robust reliability analysis and specifically proposed using a 1 event in 10 years (1-in-10) loss of load

[1] Comments Of San Diego Gas & Electric Company (U 902 E) Regarding Preferred System Portfolio Ruling. https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M409/K928/409928738.PDF

expectation (LOLE), in alignment with the National Electric Reliability Corporation (NERC) reliability industrywide standard. We are appreciative that the 2024 SB 100 analysis will include hourly reliability modeling via PLEXOS. CEC staff's presentation during the workshop noted that the PLEXOS Resource Adequacy modeling would use a failure condition that "significantly exceed[s]" planning standards, but did not specify what the standard will be. Clarification of the referenced failure condition assumption is necessary to obtain crucial stakeholder feedback.

At the August 22, 2023, SB 100 Kick-Off workshop, CARB Chair Liane Randolph raised the question as to whether a 1-in-10 LOLE was sufficient to support a California economy that is increasingly electricity-dependent. Chair Randolph suggested that ratepayers may require less risk and that a higher standard may be necessary. As was discussed during the August workshop, a higher LOLE planning target and a climate-informed load forecast are two methods to reduce reliability risk.

Using a more aggressive modeling approach is likely to result in a higher amount of resources needed, thereby increasing the cost of the scenario portfolios since electric utilities would incur higher procurement costs. However, modeling to a higher planning standard also underscores the criticality of firm, zero-carbon, and dispatchable resources like clean, renewable hydrogen that can be used by electric generation customers to ramp up and down to meet electric demand during peak load hours and extreme weather events.

Further, the Joint Agencies should consider how, if at all, incorporation of more recent climate-driven trend analyses within the demand forecast process might address the identified SB 100 interest in exploring a more aggressive planning standard. Incorporating recent climate-driven trend analyses enhances accuracy by providing a more precise forecast of current and future climate conditions and estimates for demand. Such an approach enables proactive identification of potential challenges stemming from climate change and informing resilience strategies. Additionally, it facilitates adaptation by allowing planners to manage infrastructure, supply chains, and resource allocation for safe and reliable service, even during changing climate conditions.

For these reasons, SDG&E and SoCalGas see value in tailoring an updated approach for the forecast, and believe that aligning the forecast and SB 100 is reasonable. However, the Joint Agencies should evaluate whether additional stringency on planning standard assumptions is needed in addition to the modified forecast approach that will be incorporated in the 2025 SB 100 Report.

Resource Scenario Development

III. SB 100 resource scenario development will benefit from referencing other publicly available assessments, reports, policies and programs.

SDG&E and SoCalGas support the CEC's interest in identifying publicly available, reputable sources that may help inform the underlying inputs for modeling. A number of specific references were identified in the presentation for various technologies. SDG&E

and SoCalGas agree that the 2022 Scoping Plan and its appendices provide helpful starting points for identifying potential data points that could be considered in the SB 100 modeling process, given the plan's incorporation of key energy policy drivers.[2] It is important to note, however, that the 2022 Scoping Plan analysis for the electric sector did not incorporate electric reliability modeling.

We anticipate that SB 100's inclusion of critical electric reliability modeling will identify an increased amount of clean energy resources required to achieve decarbonization goals as compared to the 2022 Scoping Plan. SDG&E and SoCalGas reliability assessments reached similar conclusions.[3] Relative to the Scoping Plan, the SDG&E and SoCalGas studies found that diverse resource portfolios with a more substantial amount of clean generation resources require increased amounts of flexible and dispatchable clean fuels[4] to maintain electric sector reliability.

IV. Resource cost projections should incorporate additional granularity and consider how federal and state funding sources might impact the economics of a given technology.

The 2021 SB 100 Report included categories for generic zero-carbon resources, noting constraints in available pricing data as a factor for such an approach. Since the adoption of the 2021 report, however, a considerable amount of analysis has occurred on technologies like hydrogen, offshore wind, natural gas paired with carbon capture and storage, and the infrastructure needed to deliver power from these resources. For the 2025 SB 100 Report, SDG&E and SoCalGas strongly recommend that the CEC and Joint Agencies to revise the "generic" categories to instead identify the specific resources being considered to enhance accuracy and transparency in the analysis.[5]

In addition, as the CEC and Joint Agencies identify appropriate inputs to inform resource cost projections, consideration should be given to how the availability of federal infrastructure funding through the Infrastructure Investment and Jobs Act (IIJA) or Inflation Reduction Act (IRA), or state budget funding could impact the economics of various resources. State agencies and stakeholders are pursuing funding opportunities with the intent of reducing the cost of the energy transition. While it is not certain California projects will receive the entirety of funding pursued, successful funding awards could lower the cost of technology implementation within the State.

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[2] The 2022 Scoping Plan for Achieving Carbon Neutrality and associated technical appendices are available on the California Air Resources Board website at: https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents.

[3] SDG&E's Path to Net Zero reliability assessment is available at https://www.sdge.com/netzero. SoCalGas' Clean Fuels Reliability Assessment is available at: https://www.socalgas.com/sustainability/clean-fuels.

[4] "Clean fuels are defined in this analysis as alternative fuels that have a net zero carbon footprint. Hydrogen, biogas, synthetic natural gas (syngas), biofuels and several synthetic gaseous and liquid fuels fall in that category as long as their production process and their end use do not lead to net-positive CO_2 emissions." https://issuu.com/stfrd/docs/cleanfuelsreliabilityreportjuly23?fr=sNDA4OTYwNzQ4NTk

[5] In previous comments, SDG&E and SoCalGas further asserted that providing greater specificity on definitions for zero-carbon resources – particularly seeking clarity on the inclusion of different hydrogen production pathways – would be important to consider in the 2025 SB 100 Report.

One clear example of anticipated pricing impact for a resource is the Alliance for Renewable Clean Hydrogen Energy Systems (ARCHES) California Hydrogen Hub project. The up-to $1.2 billion awarded to California should help improve the economics of California hydrogen projects, including hydrogen for combustion and fuel cell use for electric generation.

Considerations for Future Clarification

SDG&E and SoCalGas recognize that there will be significant discussions ahead regarding the details and assumptions of SB 100 modeling. We offer the below questions and points for CEC staff's consideration.

- Will the SB 100 modeling include all energy transmission, distribution, and transportation infrastructure costs? If so, what assumptions are being made around infrastructure needed to support resource delivery – and how do those align with the recently adopted 2023 CAISO Transmission Plan?

- SDG&E and SoCalGas appreciate CEC staff's clarification during the Workshop that hydrogen combustion is contemplated within various scenarios, except for the Combustion Resource Retirement Scenario. Both hydrogen fuel cells and hydrogen combustion will play important roles in providing clean solutions for electric generation across scenarios. These technologies will facilitate the integration of intermittent renewable and zero-carbon resources, thereby offering valuable reliability support when the electric grid needs it.

- The Combustion Resource Retirement Scenario should not preclude repowering or conversion of existing natural gas combustion turbines to utilizing clean fuels before 2045. During the Workshop, there was commentary from the dais that acknowledged Governor Gavin Newsom's direction to CARB to develop a plan for an energy transition that "avoids the need for new natural gas plants to meet our long-term energy goals while ensuring reliability and meeting growing demand for electricity."[6] The Governor's direction thus seeks to avoid the need for *new* natural gas plants. The repowering of existing natural gas plants with clean fuels like hydrogen and RNG should be eligible resources for SB 100 planning purposes.

Conclusion

Thank you for the opportunity to provide input on this important discussion. SDG&E and SoCalGas look forward to further engaging next year as more specific draft inputs and assumptions for modeling are presented. Please do not hesitate to contact us if you have any questions or should additional information be helpful. Thank you for your consideration of our comments.

[6] https://www.gov.ca.gov/wp-content/uploads/2022/07/07.22.2022-Governors-Letter-to-CARB.pdf?emrc=1054d6

Sincerely,

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