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SDG&E Comments on the Nov 1 SB 100 NEB, Social Costs, and Reliability Workshop

Additional submitted attachment is included below.

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November 12, 2021

California Energy Commission
Docket Office
1516 Ninth Street
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RE: San Diego Gas & Electric Company Comments on the SB 100 Joint Agency November 1, 2021 Workshop on Analysis of Non-Energy Benefits, Social Costs and Reliability; Docket No. 19-SB-100

Dear Vice-Chair Gunda, Commissioner Douglas, Commissioner Rechtschaffen, Commissioner Houck, and Commissioner Shiroma,

San Diego Gas & Electric Company (SDG&E) appreciates the opportunity to submit comments regarding the Senate Bill (SB) 100 November 1, 2021 Workshop on Analysis of Non-Energy Benefits, Social Costs and Reliability jointly hosted by the California Energy Commission (CEC) and California Public Utilities Commission (CPUC).

The goals set forth in SB 100 call for a complete transformation of the way energy is generated, delivered, and consumed. Decarbonizing California's grid will require new solutions, unprecedented build-out rates, and a massive infrastructure overhaul. SDG&E believes scenario creation, modeling, and analysis should be viewed from a lens that prioritizes SDG&E's three pillars of **reliability, flexibility /technology inclusivity, and energy affordability**. The August 2020 reliability events confirm the importance of the first two pillars that in order to preserve reliability we must assure an adequate and flexible energy supply consisting of a mix of technologies, routed to load centers by transmission, and clean fuels as we continue to shape the paths to achieve California's 100% zero-carbon electricity goals. Similarly, evidence of economic disparities, heightened by the recent pandemic, highlights pillar three, the need for energy affordability, especially for customers least able to afford it. It is critical that our decisions and actions uphold these three pillars as we push to achieve decarbonization.

SDG&E is committed to enabling and accelerating the transition to zero-carbon electricity on behalf of our customers and the communities we serve. We support the Joint

Agency SB 100 report, the California Air Resources Board's (CARB) 2022 Scoping Plan Update, the CPUC Integrated Resource Planning (IRP), and the California Independent System Operator's (CAISO) 20-Year Transmission Outlook efforts as they serve as starting points to provide high level estimations of the costs, multiple pathways, procurement planning, and evaluation of grid feasibility with the goal of achieving zero-carbon electricity. SDG&E agrees that Non-Energy Benefits (NEBs) need to be part of scenario analysis within SB 100 and the Scoping Plan.

SDG&E appreciates that agencies intend to address NEBs, social costs, and reliability as part of the 2024 SB 100 Report analysis and modeling, and supports the opportunity to be partners in the transparent process. The coordination between the CEC, CPUC, and SB 100 stakeholders is especially encouraging as this collaborative effort is critical to ensure that SB 100 scenarios result in a reliable, diverse, and an affordable grid whose clean resources are supported by transmission and pipelines that can deliver clean electricity and clean fuels to homes, businesses, and industry.

SDG&E also notes that the growing intersections of climate-related work done by the multiple California agencies goes beyond SB 100 and is thus creating an increased need for more inter-agency collaboration to avoid duplication, conflicts, or inefficiencies. Agency-specific regulations, programs, proceedings and expertise on important topics must be conducted such that timing and data flow supports the agencies' collective efforts to analyze, model and implement decarbonization solutions. To improve the timing and interaction of various agency deliverables such as the SB 100 Joint Agency Report, CARB's Scoping Plan, the CPUC's IRP proceeding, and the CAISO's Transmission Planning Process (TPP), SDG&E recommends that these processes synchronize their cycles such that each produces its final outcome in consecutive years. For example, CARB should finalize the Scoping Plan in 2022, the CPUC should release its Preferred System Plan in 2023, and the SB 100 report should be issued in 2024. This process would then repeat in 2025 with the Scoping Plan. In this way, each process can inform the next process in the series. Similarly, new directives on rate design, reliability analysis, technology changes and/or updates to cost curves can be incorporated annually by whichever proceeding is active in that year.

The remainder of SDG&E's comments attempt to answer these four questions posed at the workshop[1]:

1. What reliability questions do you have? (imports / exports…???)
2. What are the most important non-energy benefits (NEB) to consider, and how should they be incorporated into electricity supply models?
3. What recent and ongoing modeling work should we be referencing and engaging with?
4. How can we best foster engagement on the modeling and build trust?

1. What reliability questions do you have? (imports / exports…???)

[1] November 1 Joint Agency SB 100 Workshop at 67. Available at https://efiling.energy.ca.gov/GetDocument.aspx?tn=240187&DocumentContentId=73645

SDG&E's main questions and concerns about reliability are: (i) metrics used to measure reliability, (ii) completeness of reliability modeling for all selected scenarios, (iii) resiliency and deliverability, and (iv) reliability assumptions made in modeling.

(i) As SDG&E and other stakeholders[2] have reiterated before, the metric used in reliability modeling must include Loss of Load Expectation (LOLE) reliability assessments with a planning target of 0.1 days/year, or 1 day in 10 years, to ensure scenarios are reliable, and therefore feasible, while minimizing cost. LOLE studies are the industry-accepted approach traditionally used by resource planners to establish system resource need. Modeling efforts that attempt to take short-cuts such as using only a Planning Reserve Margin (PRM), may provide a false sense of security. LOLE studies address all 8,760 hours of the year and are thus able to assess the reliability contributions of all resource types including intermittent resources and use-limited 4-hour batteries. The CPUC recognizes that a 0.1 days/year LOLE is the "industry standard for probabilistic system reliability."[3] The CEC's recent Midterm Reliability Analysis also highlights the importance of LOLE studies, noting:

> "[R]eliability analysis is an essential component of electric sector planning. For the purposes of long-term planning and procurement, reliability need is typically assessed through loss of load expectation (LOLE) studies, which are stochastic analyses. . . . The typical standard of reliability for this analysis is to meet a loss of load event of no more than one day of unserved energy every 10 years.[4]"

Both the CPUC and CEC agree that LOLE is the standard with which to measure reliability, thus it is the standard that should be applied to SB 100 analysis to assess the reliability of each scenario. Rather than rely on a PRM that is moving target, SB 100 reliability modeling must conduct LOLE analysis for the SB 100 scenarios.

(ii) Mark Kootstra of the CEC mentioned that probabilistic production cost modeling for the purposes of reliability modeling may or may not be conducted for each resource portfolio. SDG&E is concerned about the possible implications of this comment and want to reaffirm its position that all SB 100 scenarios must undergo a full LOLE reliability assessment. To the extent there is insufficient time or resources to run full LOLE analysis for all scenarios, SDG&E recommends that the CEC shorten the list of scenarios such that all remaining scenarios receive their necessary LOLE reliability assessment. There is no benefit to analyzing a scenario without knowing if it meets the LOLE reliability target. The 2021 SB 100 Final Report already ran scenarios without the LOLE reliability metric; therefore, running additional scenarios in future SB 100 reports without that metric will provide little additional or meaningful information.

(iii) As California proceeds towards a clean energy future, it will be important to consider the deliverability and resiliency of a resource portfolio that meets LOLE standards. The resource portfolio necessary to supply clean reliable power will likely be sourced from areas with high

[2] Los Angeles Department of Water and Power's (LADWP) September 15, 2020 comments on SB 100 modeling draft results; Sacramento Municipal Utility District (SMUD) September 15, 2020 comments on SB 100 modeling draft results; Joint LSEs' December 18, 2020 comments on the draft SB 100 Report; Peninsula Clean Energy Authority December 18, 2020 comments on the draft SB 100 Report
[3] Slide 120 of the CPUC's September 1, 2021 IRP Workshop on Proposed Preferred System Plan Analysis
[4] Page 5 of the CEC's September 2021 Staff Report on Midterm Reliability Analysis; https://www.energy.ca.gov/sites/default/files/2021-09/CEC-200-2021-009.pdf

renewable generation that will need to be delivered into load centers. Thus, it will be important to site these new resources as close to load centers as possible. Locational consideration will ensure a resilient resource portfolio by ensuring that natural disasters (such as wildfires, earthquakes and others that have recently occurred in California) do not affect large amounts of generation connected to a single transfer path. Regarding the workshop question about electricity imports and exports, SDG&E's main concern is that import and export assumptions need to be supported with adequate transmission build-out to accommodate the electron flow associated with each scenarios' selected level of imports/exports.

(iv) The workshop final presentation on modeling did an excellent job differentiating the modeling characteristics and goals associated with the four planning horizons. As indicated by Mark Kootstra, the SB 100 10-25 year ahead modeling is full of unknowns and opportunities. SDG&E wants to emphasize the importance of making sound and logical assumptions in the SB 100 modeling effort whose long term horizon could amplify the effects of incorrect assumptions. In particular, SDG&E requests that every resource type is treated equitably when determining its capacity contributions to the grid. Inconsistent assumptions could result in an over or underbuilt system. An overbuilt system would be unduly expensive for customers and an underbuilt system would be unreliable. Thus, it is important to use reasonable, updated, and equitable assumptions for all resource types.

In short, the next SB 100 modeling approach requires reliability assessments for all of its scenarios in the form of a LOLE analysis, a greater consideration of reliability and deliverability, and equitable valuation of capacity contributions of different resource types.

2. What are the most important non-energy benefits (NEB) to consider, and how should they be incorporated into electricity supply models?

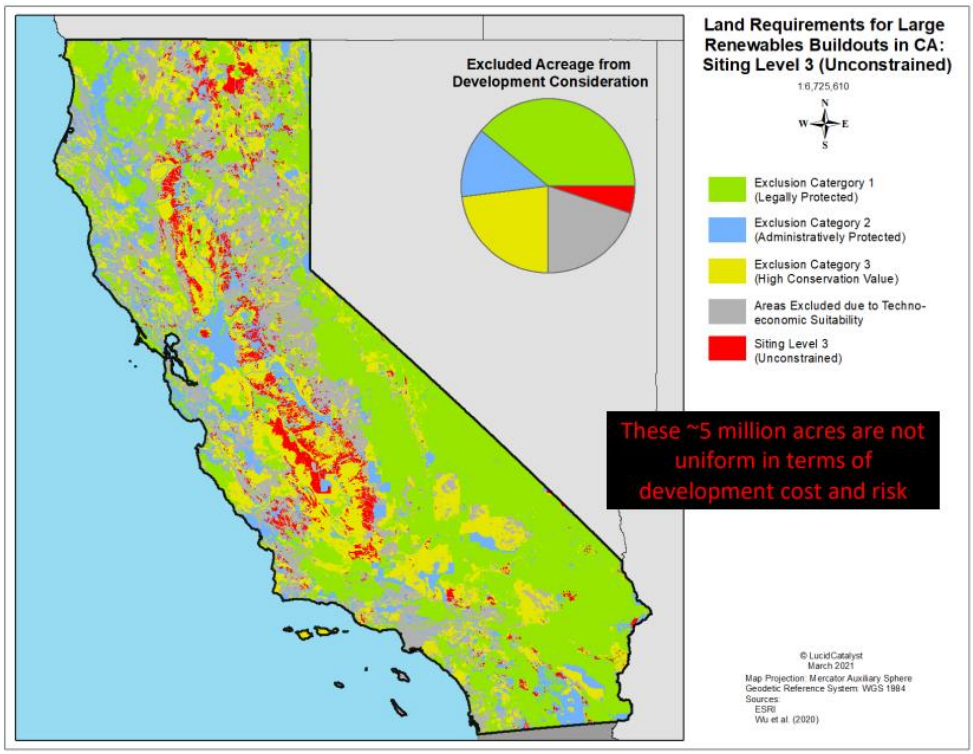
While SDG&E agrees that communities lacking resources or located in areas experiencing greater impacts will continue to be more adversely affected by climate hazards and that equity (more specifically climate equity) should be kept front and center when crafting policy initiatives and partnering with community stakeholders, SDG&E does not believe that monetizing NEBs belongs in electricity supply models. NEB costs/benefits are external to decision making in electricity dispatch relevant to SB 100, and further are not a part of electricity costs, thus NEBs should not be included in electricity supply modeling.

To the extent the Joint Agencies go beyond the legal authority established in SB 100 and decide to include externalities such as NEBs, then external costs such as fixed electricity costs and up-front electric vehicle (EV) and fuel switching costs must also be included for a holistic and complete incorporation of external costs and benefits.

3. What recent and ongoing modeling work should we be referencing and engaging with

SDG&E recommends that the CEC consult the work being conducted by the Environmental Defense Fund (EDF), the Clean Air Task Force (CATF) and the Nature Conservancy titled California Decarbonization Risk Management Project: Focus on Land Use for Generation and Transmission as was presented at the November 2, 2021 Scoping Plan workshop. SDG&E's takeaway from the collective work is that grid decarbonization is achievable, but there are

significant constraints that must be considered including limited available land for large renewable buildouts as shown in the red portions of the map below.[5] This is a serious and important constraint that will have to be considered when creating scenarios. Not only do scenarios need to be reliable, but their ability to be implemented must be grounded in reality. If there is not sufficient land to accommodate a scenario, that scenario should be discarded due to infeasibility regardless of other benefits from the scenario. Land availability needs to be a precursor to constructing scenarios as it will be beneficial and save time.



SDG&E also recommends that the SB 100 Joint Agencies[6] consult the three independent modeling teams' work on efforts conducted on the future of California's power system. The three separate modeling teams used independent models, all concluding that California needs a diverse set of resources that must include firm and dispatchable carbon-free electricity sources[7].

Further, SDG&E recommends inclusion of the results from CAISO's 20-Year Outlook study. This will be an important input, as it will attempt to identify the major transmission-related roadblocks in reaching our 2045 goals. CAISO's TPP-related load serving capability analyses that consider energy storage may also be a good study to reference. In this analysis, CAISO has

[5] From the November 2, 2021 Scoping Plan workshop presentation by EDF titled "Building a Zero Carbon California Grid: Moving From Models to an Implementable Plan"
[6] CEC, CPUC and CARB
[7] See "California needs clean firm power, and so does the rest of the world: Three detailed models of the future of California's power system all show that California needs carbon-free electricity sources that don't depend on the weather" at https://www.edf.org/sites/default/files/documents/SB100%20clean%20firm%20power%20report%20plus%20SI.pdf

taken a look at the ability of individual Local Capacity Requirement (LCR) areas to accommodate battery resources.

4. How can we best foster engagement on the modeling and build trust?

SDG&E believes that stakeholders and the SB 100 Joint Agencies would benefit from timely releases of modeling inputs and assumptions to stakeholders for independent analysis and feedback. The release and resulting public feedback should be captured in a comprehensive and public study plan that shows how the Joint Agencies will address stakeholders' major concerns. This transparency would instill trust, build credibility, and result in a true collaborative effort where all stakeholders can test and provide feedback on the models. Initially inviting more parties to the table will require more time, but the collaboration and increased scrutiny/testing/feedback is likely to result in a more credible and trusted outcome.

Conclusion

Reliability, flexibility/technology inclusivity, and energy affordability are essential to the success of decarbonizing California's electricity grid. SDG&E highlights the need to incorporate LOLE reliability assessments and land-use constraints within each SB 100 scenario. While not the focus of these comments, flexibility/technology inclusivity and energy affordability are equally important to consider in the SB 100 modeling and analysis. Including all three pillars (reliability, flexibility/technology inclusivity and energy affordability) plus land-use restrictions to gauge the feasibility of potential scenarios is critical to avoiding unrealistic or unachievable scenarios. Further, SDG&E encourages the SB 100 Joint Agencies to align the SB 100 modeling and reports with Scoping Plans and IRP deliverables. Finally, transparency of analysis and modeling, especially as it relates to electricity reliability modeling, is critical to the success and acceptance of the SB 100 work. SDG&E strongly believes that these considerations will help lead to an SB 100 2024 Report that can help California achieve its 2045 goals of zero-carbon electricity.

Sincerely,

/s/_ Chris A. Summers

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