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Comments on the June 23 Joint Agency Workshop on Resource Portfolio Assumptions for the Next CAISO 20-Year Transmission Outlook

Additional submitted attachment is included below.

July 7, 2023

California Energy Commission
Docket No. 21-SIT-01
715 P Street
Sacramento, CA 95814

Subject: Comments on the June 23 Joint Agency Workshop on Resource Portfolio Assumptions for the Next CAISO 20-Year Transmission Outlook

Introduction

On behalf of San Diego Gas & Electric Company (SDG&E) and Southern California Gas Company (SoCalGas), we respectfully submit the following comments in response to the June 23 Joint Agency Workshop on Resource Portfolio Assumptions for the Next California Independent System Operator (CAISO) 20-Year Transmission Outlook (Transmission Outlook).

In the coming years, California will need an unprecedented level of new renewable and storage resources, primarily driven by increased customer demand for clean energy and requirements to source electricity from renewable and zero-carbon resources. This transformation will also require significant transmission infrastructure to accommodate all the new generating capacity being added, which typically is installed long distances from load pockets.

SDG&E and SoCalGas appreciate that, in addition to its annual 10-year planning process, CAISO is working with the California Energy Commission (CEC) and California Public Utilities Commission (CPUC) [collectively referred to herein as "Joint Agencies"] to undertake a long-term 20-year Transmission Outlook to ensure that California has adequate time to plan for the new transmission needed to support California's future electric grid. The California Air Resources Board (CARB) stresses the importance of this type of coordination in its Scoping Plan, advocating for use of long-term planning processes "to support grid reliability and expansion of renewable and zero-carbon resource and infrastructure deployment."[1] The robust new infrastructure needed to meet the state's climate goals reinforces the need for an expanded planning horizon, as some projects are likely to require multiple years to plan, design, secure necessary regulatory approvals and environmental permits, and construct. Proper planning will help

[1] *See* CARB's *2022 Scoping Plan for Achieving Carbon Neutrality* at page 205: 2022 Scoping Plan Update (ca.gov).

accommodate the long lead times often required for new or expanded transmission and distribution infrastructure and potentially allow this infrastructure to be placed in-service over time, smoothing the cost impact.

As mentioned in the workshop, the Transmission Outlook process begins with the development of a unique 20-year scenario called the "Starting Point Scenario" that is built using the joint agency SB 100 report's Core Scenario as its baseline.[2] The Starting Point Scenario, meant solely for the purpose of the Transmission Outlook study, is independent, not intended to signal a new resource forecast, and is accordingly different from SB 100 modeling or CARB's Scoping Plan. For example, as shown on slide 30 of the workshop presentation, the Starting Point Scenario of CAISO's 2040 20-year Transmission Outlook (adopted in May 2022), contained more resources and more natural gas retirements than the 2021 SB 100 Report 2040 Core Scenario.[3] In developing written materials to inform the Transmission Outlook, the Joint Agencies should clearly articulate the intended use of the Starting Point Scenario and the reasoning for certain assumptions being made.

SDG&E and SoCalGas respectfully offer the feedback below to help inform the development of the Starting Point Scenario and further discussions on the resource portfolio assumptions proposed for the Transmission Outlook.

I. Without incorporating a reliability analysis, the resource portfolio assumptions for the Transmission Outlook may substantially underestimate the amount, type, and location of resources needed.

SDG&E and SoCalGas understand that the purpose of the assumptions used in the Transmission Outlook process is to plan the location, timing, and size of future transmission lines as a longer-term blueprint to chart the transmission planning horizon, and not a prescription for the resources that will ultimately utilize the future transmission infrastructure. However, SDG&E and SoCalGas note that on a stand-alone basis, the draft Transmission Outlook Starting Point Scenario lacks a diversity of resources and has not yet been qualified as a reliable portfolio.

To ensure that the Transmission Outlook evaluates infrastructure needed to support a reliable electric generation resource portfolio, SDG&E and SoCalGas respectfully urge the Joint Agencies to incorporate a loss of load expectation or other reliability assessment as an integral overlay in the resource portfolio assessment.

Testing a portfolio for reliability reveals shortcomings of a proposed resource mix and typically requires the addition of more resources, a different mix of resources, or both. Thus, a resulting portfolio that passes reliability assessments will generally be different from the original portfolio and is likely to require a different transmission solution. For this

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[2] The *2021 SB 100 Joint Agency Report* describes the detailed assumptions included in the Core Scenario: https://efiling.energy.ca.gov/EFiling/GetFile.aspx?tn=237167&DocumentContentId=70349.

[3] *See* CAISO's *20 Year Transmission Outlook*, adopted May 2022: 20-YearTransmissionOutlook-May2022 (caiso.com) and Slide 30 of the June 23, 2023 Presentation on the Joint Agency Staff Workshop on Resource Portfolio Assumptions for the Next CAISO 20-Year Transmission Outlook.

reason, SDG&E and SoCalGas believe that a reliability assessment is critical to producing a viable Transmission Outlook.

a. A diverse resource portfolio that includes clean fuels and carbon management solutions is needed to support electric reliability.

The Transmission Outlook scenario should clearly identify assumptions made regarding clean fuels and carbon management solutions. During the workshop, CPUC staff presented its proposed Transmission Outlook "Starting Point 2045 Scenario", derived from the suggested revisions to the 2045 SB 100 Resource Portfolio that includes a category for Generic Clean Firm/Long Duration Energy Storage resources. While SDG&E and SoCalGas recognize the important inclusion of these dispatchable resources to support electric reliability, the SB 100 report states that a reliability assessment was not included. Therefore, the resulting Starting Point scenario likely does not reflect a reliable portfolio that also meets emissions reduction and clean energy targets.

The 2022 Scoping Plan, alternatively, identifies the need for clean fuels, such as hydrogen, and carbon management solutions to support decarbonization of the electricity sector beyond what was included in the SB 100 report.[4] Specifically, the Scoping Plan calls for the replacement of natural gas with hydrogen and the use of carbon capture and storage paired with natural gas generation to achieve carbon neutrality. Further, the Environmental Protection Agency (EPA) is also relying on hydrogen and carbon capture to decarbonize the power sector while maintaining reliability. EPA's recently proposed Greenhouse Gas Standards and Guidelines for Fossil Fuel-Fired Power Plants limits emissions of natural gas power plants by either co-firing hydrogen with natural gas or requiring carbon capture sequestration of emissions from natural gas power plants.[5]

Both SDG&E and SoCalGas recently completed analyses that incorporate a 1-in-10 loss of load expectation (LOLE) reliability assessment as a key consideration in exploring decarbonization strategies for the electricity sector.[6] SDG&E's published analysis found that planning for electric reliability increased the need for resource diversity. SDG&E's results showed that more renewable energy, storage and clean fuels will be necessary to support electric reliability, underscoring the benefits of electric resource diversity and the value of clean, firm, dispatchable generation. SDG&E's analysis revealed the need for additional clean dispatchable generation capacity to meet the reliability standard and was consistent with CARB's Scoping Plan identifying the need for clean dispatchable electric generation facilities. SoCalGas' reliability study, whose results will be publicly available later this month, also shows a need for resource diversity and clean dispatchable resources. Both SoCalGas and SDG&E studies recommended the State consider policies to prioritize rapid deployment of clean, dispatchable generation, especially hydrogen

[4] *See* CARB's *2022 Scoping Plan for Achieving Carbon Neutrality* at page 15: https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp-appendix-h-ab-32-ghg-inventory-sector-modeling.pdf.

[5] https://www.epa.gov/stationary-sources-air-pollution/greenhouse-gas-standards-and-guidelines-fossil-fuel-fired-power

[6] For more information on SDG&E's *Path to Net Zero* assessment, visit https://www.sdge.com/netzero. Public release of SoCalGas' analysis is forthcoming.

resources, to maintain reliability as higher levels of renewables are anticipated to be added across energy portfolios.

II. The resource portfolio used in the Transmission Outlook should reflect the latest CAISO Board-approved Transmission Plan.

In May 2023, the CAISO Board approved the 2022-2023 Transmission Plan, which was developed through the CAISO's Transmission Planning Process (TPP) and includes ~$9 billion worth of transmission upgrades, some of which were designed to enable deliverability of resources in their respective deliverability-constrained areas.[7] Alignment of the resource portfolio used in the Transmission Outlook with the 2022-2023 TPP is necessary to ensure resources are effectively located in areas that can utilize newly approved transmission capacity. The historic scale of investments covered in this TPP relative to previous years may create risks if they are not adequately considered when developing the portfolio.

The Transmission Capability Estimates used to develop this resource portfolio via RESOLVE do not reflect the recently approved transmission projects from the 2022-2023 TPP. The projects approved in the 2022-2023 TPP will result in additional deliverability that is not represented in the Draft Resource Portfolio for the Transmission Outlook. Without incorporation of more recent data reflective of current capacities and costs, this is very likely to result in misallocation of resources due to outdated assumptions around deliverability-related transmission costs and inaccurate locating of capacity constraints.

III. Geographic resilience should be considered as part of the resource mapping process.

Currently, the resource planning process primarily relies on mapping future resources based on optimistic economic factors, but it does not analyze important challenges such as grid resiliency. Although this approach may seem cost-effective, it does not accurately account for all economic benefits and carries inherent risks. By concentrating the majority of new resources in select areas based on static optimistic economic factors, the grid increases its risk to wildfires or other natural disasters like earthquakes and storms. This vulnerability can lead to stranded assets and reliability challenges for the State. Additionally, the disproportionate siting of resources in a few localized economies results in inequitable distribution of both resources and jobs.

The geographic mapping of Generic Clean Firm resources in the draft resource portfolio for this Transmission Outlook highlights this issue. Slide 46 of the *Resource Portfolio Assumptions for the Next 20-Year Transmission Outlook* presentation shows that no Generic Clean-Firm resources were planned for the San Diego area. [8]

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[7] *See* CAISO's Board-Approved *2022-2023 Transmission Plan*: caiso.com/Documents/ISO-Board-Approved-2022-2023-Transmission-Plan.pdf

[8] *See* Presentation from the June 23 Joint Agency Workshop, at Slide 46: https://efiling.energy.ca.gov/GetDocument.aspx?tn=250717&DocumentContentId=85523

To address these resiliency concerns, the resource planning process should consider diversity in the location of resources as a crucial factor. This can be achieved by evaluating scenarios that strategically spread resources geographically and proportionately throughout the CAISO system, bringing them closer to load centers. By adopting this approach, the grid can become more resilient, reducing the risks associated with concentrated resource placement and ensuring a more equitable distribution of benefits across the state.

Conclusion

Thank you for the opportunity to provide input on this important discussion. SDG&E and SoCalGas look forward to continuing to work with the CEC, CPUC, and CAISO on honing the assumptions and approaches used in identifying a clean and reliable resource portfolio to inform future transmission planning studies. If you have any questions or would like to discuss these comments in greater detail, please do not hesitate to contact us.

Sincerely,

/s/ Sarah Taheri

Sarah Taheri
Regulatory Affairs Manager, SDG&E
STaheri@sdge.com / 916.708.7409

/s/ Adam Jorge

Adam Jorge
Regulatory Affairs Manager, SoCalGas
AJorge@socalgas.com / 916.980.9985