

California State Assembly
Committee on Utilities and Energy
Informational Hearing
Building Transmission for the Clean Energy Transition
Testimony of Estela de Llanos
Vice President, Energy Procurement and Sustainability
San Diego Gas & Electric Company
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Good afternoon Chairman Garcia, Vice Chairman Patterson, and Members of the Committee. My name is Estela de Llanos, and I am the Vice President of Procurement and Sustainability for San Diego Gas & Electric Company. I am pleased to appear before you today to provide SDG&E's perspective on Building Transmission for the Clean Energy Transition.

SDG&E is a regulated public utility that serves 3.7 million people in San Diego and southern Orange counties. Our service area spans over 4,000 square miles, and our system includes over 1,800 miles of electric transmission lines and over 17,000 miles of electric distribution lines.

We have extensive experience with planning, permitting, constructing and maintaining safe and reliable electric infrastructure throughout the communities we serve, which include some of the state's most fire-prone and environmentally sensitive areas.

A. California's Path to Carbon Neutrality Requires More Infrastructure

The climate-driven extreme heat events in 2020 and 2022, longer and worsening wildfire seasons, and losses of life and property make it plain that climate change is accelerating, and we have no time to waste. California has set ambitious climate goals to achieve economy-wide carbon neutrality by 2045. Attached to my testimony is a summary of key milestone dates illustrating that our collective attention is focused on getting to net-zero. To meet this goal, the State must decarbonize 4.5 times faster than it has over the past decade. SDG&E strongly supports these goals and in 2022, developed a roadmap that examines the implications of this transition for energy system reliability and resiliency.

As California reduces its dependence on fossil fuels in favor of clean electricity, we estimate that electric generation capacity will need to increase approximately four times the capacity that existed in 2020 to reliably meet the growing electricity demand. This increase stems largely from widespread electrification of vehicles, buildings, and select industrial processes. In order to meet our climate goals, unprecedented amounts of electricity must be delivered to customers and to do that, we must build the infrastructure needed faster than ever before.

B. The Scale of the Problem

The path to building transmission is long and complicated. It can take 10-15 years or longer to forecast customer demand, plan the system, and construct infrastructure.

We are encouraged by the recent MOU between CAISO, the CEC, and the CPUC to coordinate more closely on identifying and approving needed clean electricity infrastructure. Yet, the challenges the State faces for new transmission are unprecedented. CAISO's new Transmission Plan identifies 45 projects for system expansion and upgrades in the next 10 years—the largest tranche of new transmission

in CAISO’s planning history—and this does not account for the transmission needed over the longer term to access resources like offshore wind.

c. The Serious Challenges in Decarbonizing the State

SDG&E is grateful for the work being done by legislators at the state and federal level, the Governor’s Office, and across the various agencies that are responsible for planning and implementing California’s energy transition. Perhaps the biggest challenge in developing transmission infrastructure quickly is the complex and lengthy permitting and environmental review process, particularly for linear facilities, which often cross many jurisdictions.

We know this challenge well from building the Sunrise Powerlink, a 500 kV high voltage transmission line carrying 1,000 MW of power that runs approximately 120 miles across the state from our Imperial Valley substation into San Diego. The planning for the Sunrise Powerlink began in 2004 after a CEC study found that “transmission upgrades and expansions are critical to ensuring a robust and reliable electric system.” The process at CPUC required SDG&E to litigate the

need for the project before an Administrative Law Judge and to undergo a comprehensive environmental review. Ultimately, the Project underwent approximately 5 years of environmental review and permitting alone. The CPUC's Environmental Impact Report was approximately 11,000 pages and evaluated over 100 alternatives. The project required 70 different permits from over 28 different agencies. Our originally proposed northern route along an already existing transmission corridor was blocked due to siting constraints across state lands, adding significant delay and evaluation of additional routing options. Ultimately, the U.S. Forest Service approved the line through the Cleveland National Forest. Years of litigation in both state and federal court followed. The line took 21 months to construct and was eventually energized in 2012.

D. Further Action Is Needed to Achieve the State's Goals

SDG&E appreciates the various efforts underway to expedite and streamline the processes of planning and building electric transmission. Unfortunately, we worry that CAISO's 10-year plan will not be built within 10 years.

But we see opportunities to improve the process. These include:

- 1) leveraging the work done during the CAISO planning process to avoid duplicative “need” determinations by the CPUC;
- 2) streamlining CEQA review for designated “clean energy electrical infrastructure projects” and wildfire risk mitigation projects;
- 3) expediting the processes for natural resource conservation and species protection; and
- 4) expanding existing utility ROWs through State-owned lands to advance clean energy goals and to meet modern-day safety and reliability standards.

Just as the impacts of climate change continue to accelerate, so must we accelerate our review of clean energy projects. We see opportunities to promote a clean, safe, reliable energy future while protecting environmental resources and community values, and we stand

ready to work with you to achieve the State's goals for the benefit of future generations.

That concludes my testimony. Thank you again for the opportunity to appear before the Committee. I would be happy to take any questions you may have.

Climate Milestones Summary

| Milestone Date | Policy, Legal, or Regulatory Goal | Citation |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| 2023 | California Natural Resource Agency (CNRA) to establish Natural and Working Lands Climate Smart Strategy by July 1; CARB to establish carbon dioxide (CO ₂) removal targets for 2030 and beyond. | SB 27 (2021) |
| 2023 | California Energy Commission (CEC) to publish second biennial electric vehicle (EV) charging infrastructure assessment | AB 2127 (2018) |
| 2023 | California Public Utilities Commission (CPUC) to begin implementation of California Air Resources Board (CARB) regulation to reduce greenhouse gases (GHGs) from ride-hailing services | CARB Clean Miles Standard |
| 2024 | CARB to prepare: <ul style="list-style-type: none"> - policy recommendations regarding use of hydrogen, and specifically the use of green hydrogen, in California; - description of strategies supporting hydrogen infrastructure, including identifying policies that promote the reduction of GHGs and short-lived climate pollutants; - description of other forms of hydrogen to achieve emission reductions; an analysis of curtailed electricity; - estimate of GHG and emission reductions that could be achieved through deployment of green hydrogen through a variety of scenarios; - analysis of the potential for opportunities to integrate hydrogen production and applications with drinking water supply treatment needs; - policy recommendations for regulatory and permitting processes associated with transmitting and distributing hydrogen from production sites to end uses; - analysis of the life-cycle GHG emissions from various forms of hydrogen production; and - analysis of air pollution and other environmental impacts from hydrogen distribution and end uses. | SB 1075 (2022) |
| 2024 | CNRA, CARB and other agencies to determine range of targets for natural carbon sequestration and for nature-based climate solutions to reduce GHG emissions in 2030, 2038 and 2045. | AB 1757 (2022) |
| 2024 | 100% of high priority and federal fleet vehicle purchases are zero emissions vehicles; 50% of state and local government fleet vehicle purchases are zero emissions vehicles | CARB Advanced Clean Fleets (2023) |
| 2024 | 44% of retail sales of electricity from eligible renewable sources | SB 100 (2018) |
| 2025 | CARB to adopt regulations creating permitting application for CCUS and CDR projects (because Scoping Plan modeling reflects both CCUS and CDR contributions to achieve carbon neutrality) | SB 905 (2022) |
| 2025 | 250,000 electric vehicle chargers, including 10,000 DC fast chargers, to support 1.5 million EVs | EO B-48-18 |
| 2025 | State to issue updated SB 100 report | SB 100 (2018) |
| 2026 | Begin transitioning to zero-emission yard tractors and forklifts | CARB Cargo Handling Equipment regulation |
| 2027 | 100% of state and local agency fleet vehicles purchases are zero emissions vehicles | CARB Advanced Clean Fleets (2023) |

| Milestone Date | Policy, Legal, or Regulatory Goal | Citation |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| 2027 | 52% of retail sales of electricity from eligible renewable sources | SB 100 (2018) |
| 2027 | Next CARB Scoping Plan | AB 32 (2006) |
| 2030 | TBD target for natural carbon sequestration and nature-based climate solutions | AB 1757 (2022) |
| 2030 | 60% of retail sales of electricity from eligible renewable sources | SB 100 (2018) |
| 2030 | 30% of California's land and coastal waters conserved | EO N-82-20 |
| 2030 | Reduce short-lived climate pollutant methane emissions by 40%, hydrofluorocarbon gases by 40%, and anthropogenic black carbon by 50% below 2013 levels | SB 1383 (2018) |
| 2030 | Statewide GHGs 40% below 1990 levels | SB 32 (2006) |
| 2030 | Reduce GHG emissions in residential and commercial building stock by 40% below 1990 levels | AB 3232 (2018) |
| 2030 | 20 MMT CO2e carbon removed/captured | 2022 CARB Scoping Plan |
| 2030 | 100% zero-emission residential and commercial space and water heaters sold in California | 2022 CARB State Implementation Plan |
| 2030 | 5 million EVs | EO B-48-18; AB 2127 (2018) |
| 2030 | 1.2 million shared EV chargers | AB 2127 Report (CEC) |
| 2030 | 100% of passenger, switch, and industrial locomotives with original engine build dates of 2030 or later must be zero-emission | CARB In-Use Locomotive regulation |
| 2030 | 6 million heat pumps in buildings | 2022 CARB Scoping Plan |
| 2030 | 3 million climate-ready homes | 2022 CARB Scoping Plan |
| 2035 | 100% of new passenger vehicles sold are zero emissions | EO N-79-20; CARB Advanced Clean Cars |
| 2035 | 90% of retail sales of electricity from renewable and zero-carbon resources | SB 1020 (2022) |
| 2035 | 100% zero-emission drayage trucks | EO N-79-20; CARB Advanced Clean Fleet Rules |
| 2035 | 100% of off-road vehicles and equipment zero-emissions where feasible | EO N-79-20 |
| 2035 | 100% of line haul locomotives with engine build date of 2035 or later must be zero-emissions | CARB In-Use Locomotive regulation |
| 2035 | 7 million climate-friendly homes | 2022 CARB Scoping Plan |
| 2035 | 100% renewable and zero carbon energy to serve state agencies | SB 1020 (2022) |
| 2035 | Peak demand for CAISO forecasted to reach 55,117 MW (up from); Statewide electricity sales forecasted to be just under 302,000 GWh (up from 290,000 GWh in 2021) | 2022 CEC IEPR Update |
| 2035 | City of San Diego 2022 Climate Action Plan establishes a community-wide goal of net zero by 2035 | 2022 CAP Adopted by City Council and signed into law by SD Mayor Todd Gloria |

| Milestone Date | Policy, Legal, or Regulatory Goal | Citation |
|----------------|-----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| 2036 | 100% medium- and heavy-duty vehicles sold are zero emissions | EO N-79-20; CARB Advanced Clean Fleet and Advanced Clean Trucks |
| 2036 | 90% of cargo handling equipment is zero-emission | 2022 CARB State Implementation Plan; CARB Cargo Handling Equipment regulation |
| 2038 | TBD target for natural carbon sequestration and nature-based climate solutions | AB 1757 (2022) |
| 2040 | 95% of retail sales of electricity from renewable and zero-carbon resources | SB 1020 (2022) |
| 2040 | 100% zero-emission refuse trucks and local buses | CARB Resolution 20-19 |
| 2040 | 100% zero-emission-capable vehicles in utility fleets | CARB Resolution 20-19 |
| 2040 | 100% of medium- and heavy-duty vehicle sales are zero-emissions | CARB Advanced Clean Fleet |
| 2045 | Carbon neutrality/net zero GHG emissions as soon as possible, but no later than 2045; net negative GHG emissions thereafter | EO B-55-18 AB 1279 (2022) |
| 2045 | 100% medium- and heavy-duty vehicles zero-emission | EO N-79-20; CARB Advanced Clean Fleet and Advanced Clean Trucks regulations |
| 2045 | Statewide GHGs 85% below 1990 levels | AB 1279 (2022) |
| 2045 | 100% of electricity from renewable energy and zero-carbon resources | SB 100 (2018) |
| 2045 | 25,000 MW of offshore wind capacity | 2022 CARB Scoping Plan |
| 2045 | TBD target for natural carbon sequestration and nature-based climate solutions | AB 1757 (2022) |
| 2045 | 100MMT CO ₂ e carbon removed/captured | 2022 CARB Scoping Plan |