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**Comments on the June 21, 2022, IEPR Commissioner Workshop on
the Role of Hydrogen in California's Energy Future**

Additional submitted attachment is included below.



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California Energy Commission
Docket Unit, MS-4
Docket No. 22-IEPR-05
715 P Street
Sacramento, CA 95814-5512

**SUBJECT: Comments on the June 21, 2022, IEPR Commissioner Workshop on
Role of Hydrogen in California's Energy Future (Docket # 22-IEPR-05)**

Dear Vice Chair Gunda:

San Diego Gas & Electric Company (SDG&E) appreciates the opportunity to provide comments on the California Energy Commission's (CEC) Integrated Energy Policy Report (IEPR) Commissioner Workshop on the Role of Hydrogen in California's Clean Energy Future. The Workshop included 1) an exploration of statewide initiatives related to hydrogen and potential policies and longer-term opportunities for deploying hydrogen at scale; 2) a discussion of current hydrogen uses and near-term opportunities to expand its use in medium- and heavy-duty vehicles as well as in off-road and marine applications; and 3) a display of emerging projects and opportunities for hydrogen in economy-wide decarbonization. The CEC's recognition of the role that hydrogen will play in decarbonizing California's energy system is an important topic that should continue to be discussed as part of the 2022 IEPR Update proceedings.

In April 2022, SDG&E published *The Path to Net Zero: A Decarbonization Roadmap for California* (the Roadmap), an economy-wide greenhouse gas (GHG) study supported by leading third-party experts developed to inform our vision for achieving California's goal of net zero emissions by 2045 while ensuring a clean, reliable electric system. While the *Roadmap* recognizes uncertainties that require new, flexible approaches to technology and policy, it also highlights areas where the priorities are clear. These include the need to expand electrification and supplies of solar and wind power; invest in a diverse set of electric generation resources that will help ensure the electric grid is reliable; and lastly, utilize much larger volumes of clean fuels. The Roadmap envisions 20 GW of 100% clean hydrogen generation as a critical technology needed for the state to maintain

electric reliability while satisfying increased demand for carbon-free electricity. To serve this clean dispatchable generation, the Roadmap projects California will have an annual demand of 6.5 million metric tons (MMT) of clean hydrogen in 2045, of which 80% would be for the electric sector. Having clean, dispatchable resources that can provide carbon-free electricity when needed will be critical to help ensure a clean, reliable electric supply for a decarbonized California. Developing the necessary technology and infrastructure to enable clean dispatchable resources will be a tremendous, but important, undertaking.

In a global context that requires increasingly aggressive emission reduction targets, some hard-to-electrify sectors (like cement and steel production or heavy-duty transportation) will require clean fuels to achieve carbon neutrality. Likewise, seasonal storage will be necessary for the power sector to achieve a generation mix exclusively based on renewable energy and maintain grid reliability. In both cases, low-carbon hydrogen is ideally positioned to become a perfect complement to electrification in our challenging road to carbon neutrality. Innovations in hydrogen, particularly those enabling cost reductions in the production of green hydrogen (produced from renewable energy and water via electrolysis), will be essential for the energy sector.

SDG&E is leading in this work by implementing innovative projects like our hydrogen projects planned at the Palomar Energy Center and the Borrego Springs Microgrid. These projects will be critical to improving our technical capabilities in the emerging green hydrogen sector, working closely with all relevant stakeholders to shape the future hydrogen regulatory framework, and exploring new and exciting projects that will play a crucial role in creating the hydrogen economy.

At the Palomar Energy Center, an electrolyzer and solar panels will be installed to produce electrolytic hydrogen onsite. The Palomar Energy Center is a 565-megawatt power plant that serves hundreds of thousands of homes in the region. It is the perfect location to test multiple use cases for hydrogen. At Palomar, hydrogen will be blended with natural gas to produce electricity and used as a cooling gas in the combined cycle process. A hydrogen refueling station will also be installed to serve the first fuel cell vehicles in our fleet.

In addition to the hydrogen pilot project at the Palomar Energy Center, SDG&E will be piloting hydrogen as a long-duration energy storage system in Borrego Springs. At the Borrego Springs Microgrid, a new project will showcase hydrogen as long-duration energy storage in the power sector. Similar to our project at the Palomar Energy Center, hydrogen will be produced by an electrolyzer when solar energy is abundant, and then compressed and stored. A fuel cell will also be installed to produce electricity with the stored hydrogen when required by the grid. The project will be integrated with the existing Borrego Springs Microgrid and thus will also contribute to strengthening the reliability of this remote desert community.

The successful implementation of these pilot projects is a crucial step towards improving the adoption and integration of clean hydrogen into California's decarbonized economy. These projects have been designed and selected to allow SDG&E to test priority hydrogen use cases, including dispatchable carbon-free power generation and long-term energy storage. Learnings from these pilots will be vital to informing future hydrogen deployments for resilience, grid balancing, and decarbonized transport, and can be used more broadly to help inform California's hydrogen deployment strategy.

SDG&E is committed to advancing the beneficial use of hydrogen through continued pilots, testing, and analysis. Deployment of these pilots will improve SDG&E's ability to incorporate hydrogen into its operations and prepare to support the continued growth and scaling of the hydrogen industry in California. SDG&E looks forward to sharing more information about these efforts as our pilot projects progress.

If you have any questions or would like to learn more about SDG&E's work in this space, please contact Sarah Taheri at (916) 708-7409 or staheri@sdge.com.

Sincerely,

/s/ Victor Cervantes

Victor Cervantes
Director, Hydrogen Business Development