BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Application of Southern California Gas Company (U904G), San Diego Gas & Electric Company (U902), Pacific Gas and Electric Company (U39G) and Southwest Gas Corporation (U905G) to Establish Hydrogen Blending Demonstration Projects.	Application 22-09-006 (Filed September 8, 2022)

CALIFORNIA HYDROGEN BUSINESS COUNCIL TESTIMONY

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The California Hydrogen Business Council (CHBC) is the longest established and largest hydrogen trade association in the United States, comprised of over 100 companies, agencies, and organizations involved in the business of hydrogen. Our mission is to inform policymakers and stakeholders on the substantial benefits of hydrogen and support the commercialization of hydrogen and fuel cells in the energy and transportation sectors to achieve California's climate, air quality, and decarbonization goals.

CHBC submits these comments pursuant to the July 8 Assigned Commissioner's Email Granting Joint Motion Requesting Extensions of Time to Serve Prepared Testimony in the proceeding. The structure of our testimony will come in our answers to the questions presented in Commissioner Houck's June 12 Scoping Memo.

The issues on which CHBC will comment are:

1.c. Does each pilot project align with broader state energy and climate goals? If so, how?

2.b. How will the additional knowledge, contributed by each project, be useful to utility operators and state policy makers?

2.c. How is success defined and measured for each pilot project? How will pilot project's progress toward project success and desired outcome be reported to the Commission?

3.b. What specific benefits will gas ratepayers receive from investment in these pilot projects?

I. Re Question 1c: The Pilot projects align with California's broader state energy and climate goals.

California has set escalating greenhouse gas reduction goals over the past twenty years. AB 32 (Nunez, 2006)[1] set a goal of reducing California's greenhouse gas emissions to 1990 levels by 2020. SB 32 (Pavley, 2016)[2] set a goal of reducing California's greenhouse gas emissions 40% below the 1990 levels by 2030. Governor Brown signed Executive Order B-55-18[3] in 2018 to have California achieve carbon neutrality by 2045.

The California Air Resources Board developed a Scoping Plan in 2022 for Achieving Carbon Neutrality. This Scoping Plan calls for 20% hydrogen blending in the pipeline,[4] and an overall increase of about 1,700 times the amount of current

[1] See https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=200520060AB32
[2] See https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB32
[3] Executive Dept., State of California, "Executive Order B-55-18 To Achieve Carbon Neutrality" *available at:* https://www.ca.gov/archive/gov39/wp-content/uploads/2018/09/9.10.18-Executive-Order.pdf.
[4] https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp.pdf, page 78.

hydrogen supply to reach California's carbon neutrality goal.[5] The Scoping Plan calls for requirements for renewable hydrogen blended in pipelines to displace fossil gas at 7% energy (~20% by volume), ramping up between 2030 and 2040, and dedicated hydrogen pipelines constructed to serve certain industrial clusters in the 2030s. This could reduce carbon dioxide emissions in California by the equivalent of taking 1.52 million gasoline-powered passenger vehicles off the road.[6]

Blending hydrogen into the gas pipeline will build economies of scale in hydrogen production and help build a market in California, which will bring down the cost of hydrogen. This will help advance hydrogen as a decarbonization solution in hard to electrify markets including heavy duty transportation, ports, maritime, cement, steel, aluminum, aviation, and more.

California has also set several clean energy goals in the past twenty-plus years, culminating in SB 100 (De León)[7] in 2018. SB 100 sets a target for the California energy grid to run 60% on qualified renewables by 2030 and to be fully decarbonized by 2045. Hydrogen can be a zero-carbon energy source that improves grid reliability by diversifying power sources and buffering against the intermittency of renewables such as wind and solar, and offering long-duration, seasonal energy storage. California Energy Commission Vice Chair Siva Gunda noted this advantage at the July 2025 IEPR Commissioner Workshop on Firm Zero-Carbon Resources and Hydrogen when he stated "The thing that the SB 100 report has really established is both the need for temporal and technological diversity and the importance of firm resources especially over the next ten to fifteen years, as you have more deployment of intermittent resources."[8] Blending hydrogen can improve utility technical expertise and bring down its cost to better set up its use as a power and storage resource.

Governor Newsom recognized the cross-cutting importance of hydrogen in

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[5] https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp.pdf, page 8.

[6] Joint Amended Application of Southern California Gas Company (U 904 G), San Diego Gas & Electric Company (U 902 G). Pacific Gas and Electric Company (U 39 G) and Southwest Gas Corporation (U 905 G) to Establish Hydrogen Blending Demonstration Projects, March 1, 2024, page 11, FN 39.

[7] See https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180SB100.

[8] IEPR Commissioner Workshop on Firm Zero-Carbon Resources and Hydrogen, July 29, 2025 – see transcript.

August 2023 when he directed the Governor's Office of Business and Economic Development (GO-Biz) to develop California's Hydrogen Market Development Strategy. In his announcement, Governor Newsom proclaimed "California is all in on clean, renewable hydrogen – an essential aspect of how we'll power our future and cut pollution."[9]

Finally, in other proceedings, the CPUC has acknowledged the importance of hydrogen blending as a decarbonization strategy in line with California's climate and energy goals. In D.22-12-057, a Finding of Fact was that "The UC Riverside study comments that hydrogen blending can be an important decarbonization strategy for the energy and transportation sectors."[10]

II. Additional knowledge will be useful to the hydrogen production, delivery and offtake participants, which will grow the hydrogen market.

Hydrogen blending through pilot projects will provide knowledge that could lead to a hydrogen injection standard, after determining the safe levels appropriate for that standard. This would create demand for hydrogen that can reduce the cost of the resource. Ultimately, growth of the hydrogen market allows developers to deliver hydrogen to market wherever the resource can achieve greatest value. This includes, as mentioned above, hard-to-electrify sectors including heavy duty transportation, ports, maritime, cement, steel, aluminum, and aviation. Utility operators deliver energy to these applications as part of their role in the modern economy.

Blending hydrogen will then help other participants who produce and use hydrogen. Not only will utility operators benefit, but developers, offtakers such as transit agencies, and the full hydrogen market will advance due to this added knowledge and growth. Additionally, using natural gas pipelines as a carrier for hydrogen will expand the storage capacity for hydrogen, improving transportation and delivery capacity for the resource.

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[9] Office of Governor Gavin Newsom, "Governor Newsom Announces New Strategy to Develop a Hydrogen Economy of the Future" (August 8, 2023), *available at:* https://www.gov.ca.gov/2023/08/08/governor-newsom-announces-new-strategy-to-develop-a-hydrogen-economy-of-the-future/.

[10] D.22-12-057, Finding of Fact 17 at 56.

III. Re Question 2b: Additional knowledge will be useful to state policy makers to align with state environmental, energy and affordability goals.

Increasing the rate of hydrogen adoption through increased use – both in these pilots, but more significantly if it leads to a hydrogen injection standard – will unlock applications of hydrogen in energy and transportation that will help the State meet its climate and energy goals, as outlined above. As the market grows and policy makers see more hydrogen in use in California communities, this will offer the opportunity to align policy with the knowledge gained from hydrogen's use.

Hydrogen can be a resiliency solution, as its use as an energy source can counterbalance relying entirely on electricity to run a decarbonized grid. Hydrogen can be a reliability solution, as it can provide more options for power in the face of surging power demand in California. Hydrogen can be an air quality solution, not only because it serves as a clean alternative to diesel in heavy-duty transportation, but also because blending hydrogen into the existing natural gas system can help enable its delivery to strategically located refueling stations. By leveraging existing pipeline infrastructure, California can support the growth of hydrogen fueling networks for trucks and buses, reducing diesel emissions and improving air quality – especially in freight corridors and disadvantaged communities. And hydrogen can be an affordability solution, as relying entirely on electricity exposes the state to price spikes associated with a market reliant on a single commodity. Compared to a strategy of electrifying everything, blending hydrogen into the existing gas system also avoids the additional consumer cost of switching out appliances that run on gas at present and can thus lead to decarbonization of use of existing technologies. Moreover, it enables the continued use of California's underground gas storage reservoirs, which can store large amounts of energy across seasons. This seasonal storage capacity is critical for balancing intermittent renewable resources like solar and wind, helping to maintain grid reliability while advancing decarbonization goals. Blending hydrogen will help bring down hydrogen's overall cost and unlock these other applications for its use, and the CHBC urges the CPUC to take these significant co-benefits into account when considering hydrogen's overall benefit to California.

IV. Re Question 2c: Success will be defined as information to set a hydrogen injection standard.

The CHBC advocates support of the safe development of a California-wide hydrogen injection standard for our natural gas system. The blending pilots in the Joint Utilities' applications will test the idea whether one is feasible, and at what level it can safely be set.

The insights from California-based pilot projects under consideration in this proceeding can help determine how global research – already completed in countries such as the Netherlands, Germany, Canada, and elsewhere – can inform California's system. While international efforts show promise, California's unique pipeline materials, operating conditions, and regulatory landscape require localized validation through demonstration projects. Hydrogen blending can lead to a procurement mandate for hydrogen, which would build economies of scale to enable hydrogen cost reduction. This would thereby unlock hydrogen's decarbonization potential for use in the hard-to-electrify applications listed above and open these markets and applications to deliver the best value of hydrogen and improve affordability. Success for this proceeding will be defined as providing the information to set a hydrogen injection standard that can safely achieve hydrogen's decarbonization potential.

V. Re Question 3b: Ratepayers will benefit from limiting stranded assets in gas infrastructure.

A 2022 study published in *Nature* estimates global stranded assets could present over $1 trillion in future lost profits as a result of the low-carbon transition.[11] Furthermore, nearly $1 trillion worth of new natural gas pipelines are currently being planned globally, assets which could become obsolete as a result of electrification.[12] As of 2019, in the United States alone, planned investment in new gas power plants

[11] Gregor Semieniuk et al., "Stranded fossil-fuel assets translate to major losses for investors in advanced economies," Nature Climate Change 12, (May 2022): 532-538, https://www.nature.com/articles/s41558-022-01356-y.

[12] Matthew Kahn, "Who Pays the Price for Stranded Energy Assets?" Kleinman Center for Energy Policy, (October 2021), https://kleinmanenergy.upenn.edu/commentary/podcast/who-pays-the-price-for-stranded-energy-assets/.

and pipelines totaled over $100 billion.[13] Should these infrastructure investments lose their value overnight, not only will the broader economy take a hit, but the prior investments made by ratepayers to support California's clean energy transition will also be undermined – leaving utility consumers to bear rising costs to offset the losses.[14]

Hydrogen offers a solution to asset stranding. Whole gas pipelines can be retrofitted to transport hydrogen – as demonstrated in robust open loop trials across Europe, including the Netherlands' HyWay27 project by Gasunie[15] - the feasibility of doing so in California is still being evaluated. Hydrogen blending demonstration projects are thus essential in California: to assess technical compatibility, safety, and cost-effectiveness within the unique conditions of California's gas infrastructure and regulatory environment.

The Joint Utilities' pilots will test the safe levels of blending hydrogen into existing transmission and distribution pipelines. This will lead to the safe use of existing pipelines at whatever level the CPUC deems safe as the result of the knowledge gained from the pilots. As laid out above, this could also lead to a larger hydrogen market, with the possibility of dedicated hydrogen pipelines that could use pipes currently dedicated to natural gas only.

V. CONCLUSION

The CHBC expresses strong support for the Joint Utilities' Application and appreciates the opportunity to participate in this proceeding. Thank you for your consideration of this testimony.

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[13] Mark Dyson, "A Bridge Backward? The Risky Economics of New Natural Gas Infrastructure in the United States," Rocky Mountain Institute, (September 2019), https://rmi.org/a-bridge-backward-the-risky-economics-of-new-natural-gas-infrastructure-in-the-united-states/.

[14] Dyson.

[15] Malvin Delgado, "Stranded Assets: The Pipeline Industry's Looming Financial Crisis," Emissions and Energy Management, (October 2024), https://www.linkedin.com/pulse/stranded-assets-pipeline-industrys-looming-financial-crisis-delgado-gv7ue/

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