BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Continue Electric Integrated Resource Planning and Related Procurement Processes.	Rulemaking 20-05-003 (Filed May 7, 2020)

COMMENTS OF THE CALIFORNIA HYDROGEN BUSINESS COUNCIL ON THE STAFF PROPOSAL: RELIABLE AND CLEAN POWER PROCUREMENT PROGRAMS

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I. INTRODUCTION

The California Hydrogen Business Council (CHBC)[1] appreciates the opportunity to provide comments on the "Staff Proposal: Reliable and Clean Power Procurement Programs" (RCPPP Staff Proposal). The CHBC respectfully submits the following comments in line with the timeline laid out in Administrative Law Judge Fitch's May 14, 2025 "Email Ruling Granting

[1] The CHBC is comprised of over 100 companies and agencies involved in the business of hydrogen. Our mission is to advance the commercialization of hydrogen in the energy sector, including transportation, goods movement, and stationary power systems to reduce emissions and help the state meet its decarbonization goals**. The views expressed in these comments are those of the CHBC, and do not necessarily reflect the views of all of the individual CHBC member companies.** CHBC Members are listed here: http://members.californiahydrogen.org/directory

Request for Extension of Time."

II. DISCUSSION

The CHBC focuses our comments on Question 4 of Section 5.2.1 as posed by the RCPPP Staff Proposal. The section is titled "Approaches to greenhouse gas reduction" and Question 4 asks "Which zero-carbon resources should be eligible for the clean energy standard?" The CHBC proposes that hydrogen be eligible as a zero-carbon resource for the clean energy standard (CES). and recommends two ways the Commission could approach this.

A. Hydrogen should be explicitly eligible as a zero-carbon resource

There are multiple ways to produce hydrogen so that carbon does not emit into the atmosphere. This includes ways of powering an electrolyzer to separate hydrogen from oxygen in water that do not emit carbon (solar, wind, nuclear, hydropower), as well as hydrogen that is pulled from a biogenic source or natural gas that is paired with carbon capture and storage (CCS). Pyrolysis of methane also works in this analysis, as it creates a solid carbon that is easy to reuse. Notably, the California Air Resources Board (CARB) allows hydrogen paired with CCS to be eligible for its long-term phaseout of carbon for Low-Carbon Fuel Standard (LCFS) credits in the third and final 15-day amendments to the LCFS regulation.[2]

B. The CPUC could also use an approach based on carbon intensity

Alternatively, we support utilizing a carbon intensity score for all clean fuels that would challenge market participants to develop fuels that meet a specific, objective, and transparent standard which would foster innovation and competition among clean fuel producers, resulting in

[2] https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2024/lcfs2024/fro_atta-1.pdf, page 37.

lower costs and increased accessibility of clean fuels. The California LCFS provides a model that could be paralleled, as it sets an annually decreasing carbon intensity limit on fuels produced for transportation. The end result would be zero emissions by 2045, as it is in the LCFS program, and would align with SB 100's goals.[3]

C. Including hydrogen would unlock multiple benefits

Either approach would have the benefit of including hydrogen, which offers a diversified resource mix with environmental and job creation benefits for California. Arbitrarily setting the clean energy standard to exclude hydrogen would conversely increase consumer costs, limit compliance flexibility, and harm our efforts to meet the state's greenhouse gas and economic goals.

The hydrogen industry would benefit from the market signal sent by an explicit acknowledgement that hydrogen is eligible for zero emissions credits and/or that carbon intensity will drive the standards that the program sets for credits. Uncertainty about the standard for hydrogen that would be eligible zero emissions credits will reduce investment in hydrogen for clean power generation. Sending investment signals that encourage hydrogen production will help bring down the cost of hydrogen, which will help unlock its potential to be used in many sectors that are hard to electrify, including aviation, shipping, long-haul transportation, cement, steel, and aluminum – many of which would have benefit beyond the scope of this proceeding.

This approach would involve a longer set of time horizons than presented in either Option 1 or Option 2 of the staff proposal, which focus primarily on the next five years. Electricity planning typically engages with longer time horizons, and the most difficult target to meet in SB

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[3] See https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180SB100, Section 5, creating Public Utilities Code Section 454.53(a).

100 will be between achieving the 60% renewable energy target by 2030 and its 100% zero-carbon target by 2045. Hydrogen is an excellent long-term solution to this challenge.

D. Including hydrogen will have long-run cost savings

Including hydrogen will bring down the cost of meeting our zero-emissions targets in the long run. To better compare the total cost of electrification to the total cost of building out a hydrogen economy, a study published in *One Earth* in 2024 attempted to speak to this question by examining 25 potential decarbonization scenarios, each with a differing degree of electrification, hydrogen energy, and alternatives.[4] Using an advanced computational model, researchers concluded hydrogen deployment can reduce overall energy decarbonization costs by 15-22%.[5] The results of the study in table form can be seen in the figure on the next page.

[4] Paul Wolfram et al., "The hydrogen economy can reduce costs of climate change mitigation by up to 22%," One Earth 7, no. 5 (May 2024): 885-895, https://www.sciencedirect.com/science/article/pii/S2590332224002021#sec2
[5] Wolfram et al., 886.

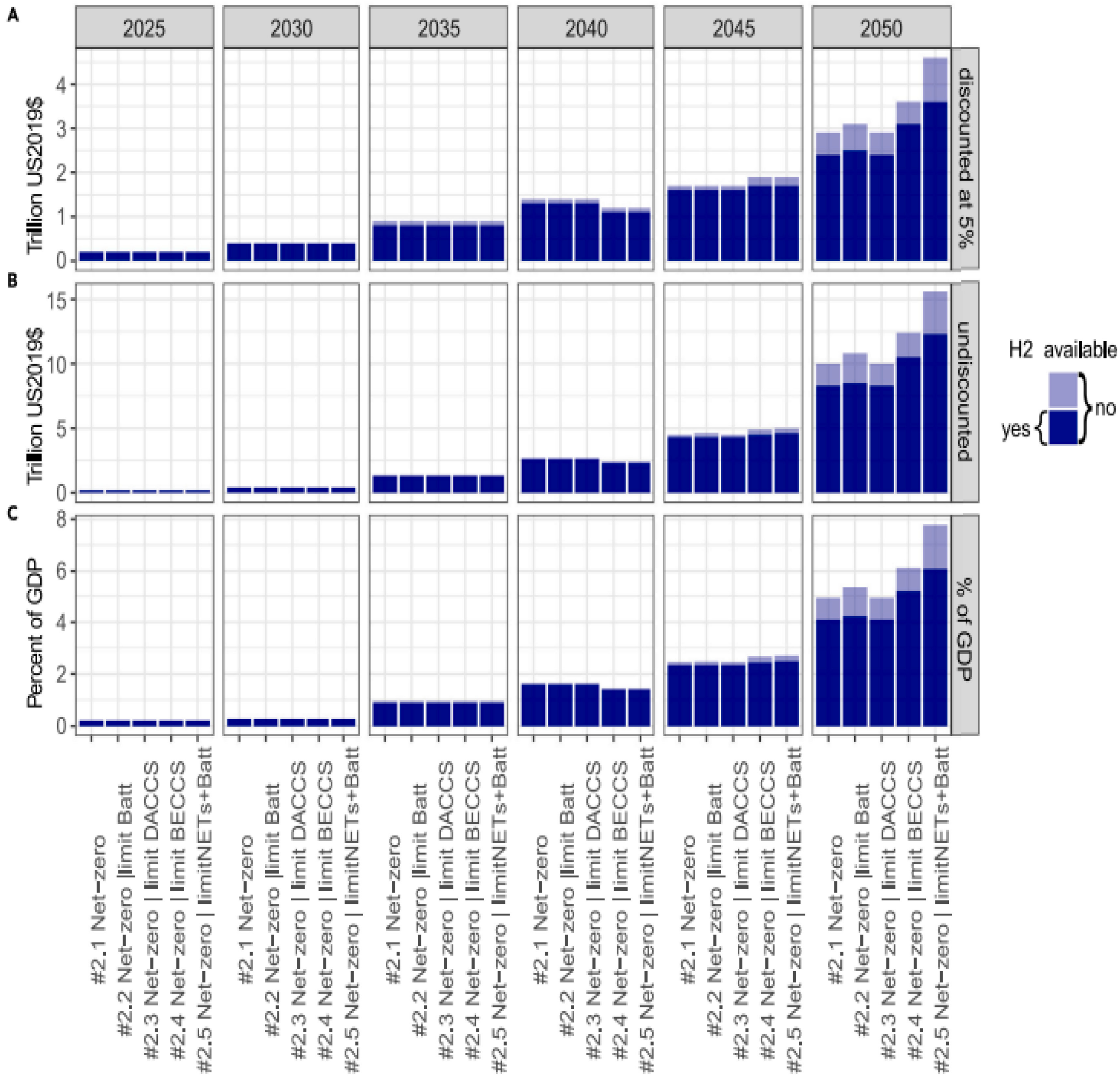

Figure 4. Cost of mitigating carbon dioxide with and without hydrogen technology available and across different scenarios

Shown are discounted costs (5% discount rate, A), undiscounted costs (B), and costs as a percentage of GDP (C). The dark blue part of the stacked chart represents costs with hydrogen availability, while the sum of the dark blue and light blue parts represents costs without hydrogen availability. BECCS, bioenergy with carbon capture and storage.

Existing research finds that hydrogen is both cost-effective when blended with natural gas, and also when construction of new hydrogen infrastructure is necessary. A study of the Angeles Link project proposed in California finds construction of a new 450-mile pipeline for transport of clean renewable hydrogen would be the most cost-effective means of delivering hydrogen at-scale to Central and Southern California.[6] The study compared hydrogen versus use case in power, mobility, and industrial use cases and found hydrogen to be superior to electrification as the alternative.

CHBC encourages the Commission to evaluate what the incremental cost savings are with and without hydrogen as eligible for zero-emission credits or with a carbon intensity approach with declining emissions goals. CHBC expects that either evaluation will show the last 5-10% of conversion will be incrementally more expensive if hydrogen is not included.

III. CONCLUSION

Thank you for the opportunity to submit comments at this time.

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Respectfully submitted,

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[6] Wood Mackenzie, "Angeles Link Phase 1 – High-Level Economic Analysis and Cost Effectiveness," SoCal Gas, (December 2024), https://www.socalgas.com/sites/default/files/alproject/Angeles-Link-Phase-1-Final-High-Level-Economic-Analysis-&-Cost-Effectiveness.pdf