

DOCKETED

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*Comment Received From: Sam Wade
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RNG Coalition Comments

Please see our comments attached.

Additional submitted attachment is included below.

September 22, 2023

Commissioner Patty Monahan
California Energy Commission
Docket Unit, MS-4
Docket No. 23-IEPR-06
715 P Street
Sacramento, California 95814-5512
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Re: RNG Coalition Comments on IEPR Commissioner Workshop on the Potential Growth of Hydrogen

Dear Commissioner Monahan,

The Coalition for Renewable Natural Gas (RNG Coalition) is a California-based nonprofit organization representing and providing public policy advocacy and education for the renewable gas industry.¹ We advocate for the sustainable development, deployment and utilization of renewable gas, so that present and future generations have access to domestic, renewable, clean fuel and energy in California and across North America.

In the context of Senate Bill (SB) 1075 (Skinner, 2022)² and the Integrated Energy Policy Report (IEPR) proceeding, RNG Coalition offers the following comments in response to the IEPR Commissioner Workshop on the Potential Growth of Hydrogen. The workshop was held on September 8, 2023 by the California Energy Commission (CEC).³

Opportunities For Renewable Hydrogen Production Include Hydrogen Derived from Biomass

While the workshop focused on the potential adoption of hydrogen to help decarbonize the electric generation and transportation sectors, presentations did not give justice to the opportunities in waste biomass to provide a major feedstock for that hydrogen. This was particularly evident in CEC staff presentations.⁴ In contrast, in the 2021 Integrated Energy Policy Report (IEPR) from CEC, the hydrogen section of Volume III also acknowledges that renewable organic waste feedstocks can be used to produce renewable hydrogen in a beneficial manner.⁵ Further, a 2020 report prepared by UC Irvine for CEC selected hydrogen from anaerobic digestion with reformation and hydrogen from gasification as

¹ For more information see: <http://www.rngcoalition.com/>

² https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220SB1075

³ Workshop details can be found here: [https://www.energy.ca.gov/event/workshop/2023-09/iepr-commissioner-workshop-potential-growth-hydrogen#:~:text=The%20California%20Energy%20Commission%20\(CEC,of%20the%202023%20IEPR%20proceeding](https://www.energy.ca.gov/event/workshop/2023-09/iepr-commissioner-workshop-potential-growth-hydrogen#:~:text=The%20California%20Energy%20Commission%20(CEC,of%20the%202023%20IEPR%20proceeding)

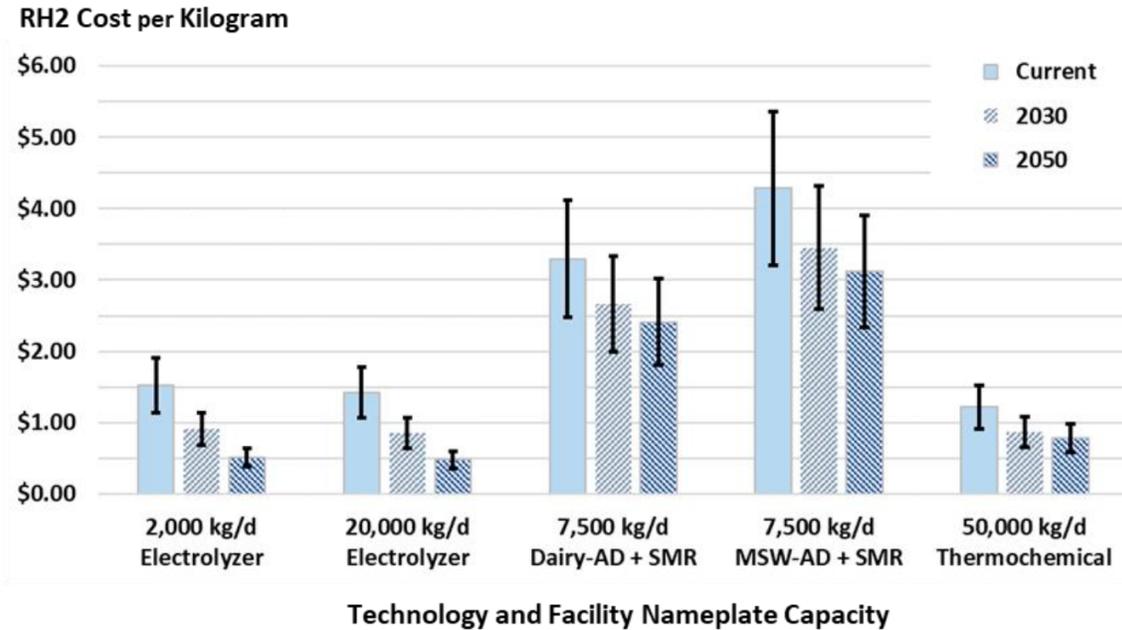
⁴ CEC Staff presentation on Hydrogen Analysis for Electricity Generation in the 2023 IEPR only references electrolysis as a hydrogen production method.

<https://efiling.energy.ca.gov/GetDocument.aspx?tn=252210&DocumentContentId=87216>

⁵ California Energy Commission, *2021 Integrated Energy Policy Report, Volume III: Decarbonizing the State's Gas System*. <https://efiling.energy.ca.gov/GetDocument.aspx?tn=242233>

two of three approaches – with electrolysis – expected to reach commercial availability this decade.⁶ Both technologies provide competitive costs and supply potential for the state.

Various reports suggest that hydrogen from waste biomass is cheaper to produce today than electrolysis of renewable electricity. Figures 1 and 2 below show that hydrogen derived from biomass is projected to achieve lower costs than electrolysis this decade.



Source: UCI APEP. AD = Anaerobic Digester, SMR = Steam Methane Reformation, MSW = Municipal Solid Waste

Figure 1. Renewable hydrogen production costs⁷

⁶ Jeffrey G. Reed, Emily E. Dailey, Brendan P. Shaffer, Blake A. Lane, Robert J. Flores, Amber A. Fong, G. Scott Samuelsen (University of California, Irvine, Advanced Power and Energy Program for CEC), *Roadmap for the Deployment and Buildout of Renewable Hydrogen Production Plants in California* (2020).

<https://efiling.energy.ca.gov/getdocument.aspx?tn=233292>

⁷ Ibid, pdf page 46. RH2 = renewable hydrogen

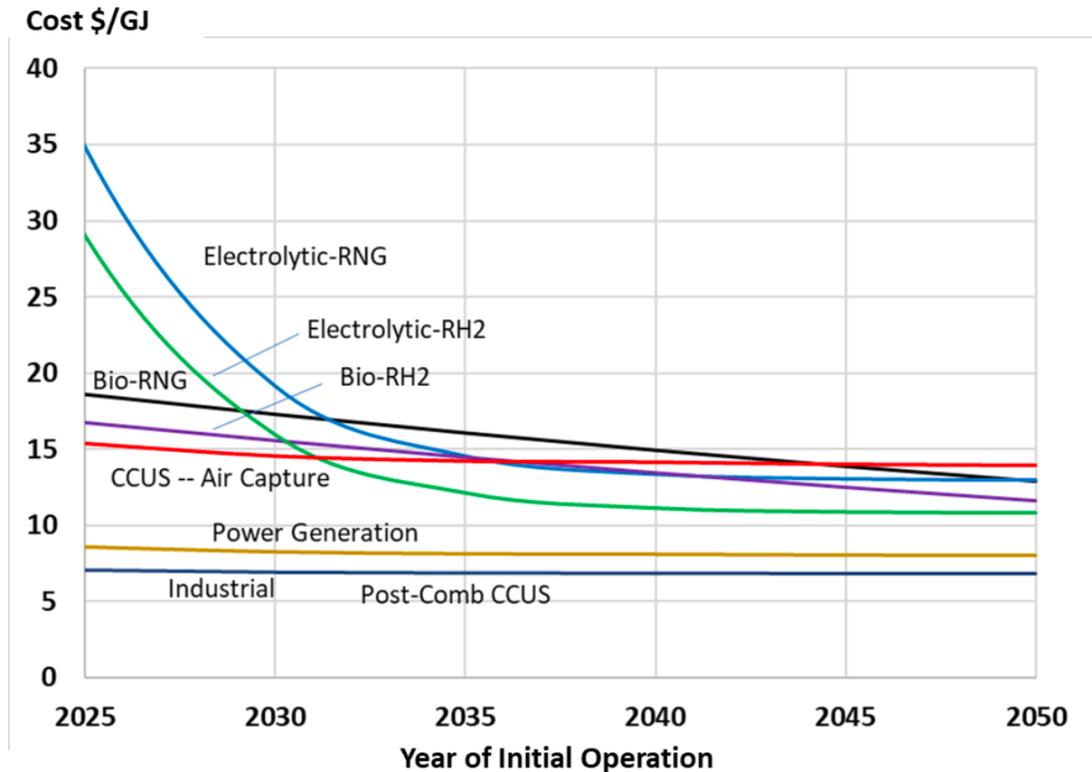


Figure 2. Projected Cost Projection for Renewable Hydrogen and Methane (2020 Constant Dollars). CCUS is carbon capture utilization and storage. RNG is renewable natural gas.⁸

As stated in the Environmental Defense Fund’s presentation⁹ in the first panel of the workshop, hydrogen production from waste biomass is beneficial to the climate. In 2022, 190.5 million diesel gallon equivalent of biomethane used in on-road vehicles in California displaced 4.3 million metric tons of carbon dioxide equivalent on a lifecycle basis.¹⁰ As shown in the *Roadmap for the Deployment and Buildout of Renewable Hydrogen Production Plants in California* written for CEC,¹¹ more waste biomass feedstock is available to produce hydrogen and decarbonize sectors such as heavy-duty transportation. Given the advanced readiness level of hydrogen derived from biomass against other types of hydrogen production methods, ignoring that production pathway could derail California’s efforts to meet its climate targets.

⁸ J. G. Reed, “Optimal Role of Renewable and Zero-carbon Gaseous Fuels in the Future Energy Economy – Transforming the Gas Grid,” 2021. [Online]. Available: <https://www.energy-proceedings.org/category/mitab2021/page/2/>

⁹ Environmental Defense Fund presentation, “Maximizing the climate benefits of hydrogen systems,” page 5. <https://efiling.energy.ca.gov/GetDocument.aspx?tn=252165&DocumentContentId=87168>

¹⁰ Natural Gas Vehicles for America and Coalition for Renewable Natural Gas, “Decarbonizing California with Renewable Natural Gas Transportation,” June 2023. <https://static1.squarespace.com/static/53a09c47e4b050b5ad5bf4f5/t/647f2855ce1d3863daa52da5/1686054997756/NGV+RNG+CA+Decarbonize+2023+FINAL.pdf>

¹¹ See Chapter 4 of *Roadmap for the Deployment and Buildout of Renewable Hydrogen Production Plants in California*

Conclusion

RNG Coalition thanks CEC for the opportunity to provide feedback on the IEPR Commissioner Workshop on the Potential Growth of Hydrogen. CEC should continue to consider all renewable hydrogen production methods—including biomethane-to-hydrogen, biomass-to-hydrogen, and electrolytic hydrogen—within the scope of hydrogen production and use in the IEPR and SB 1075 report in line with past IEPR work. We look forward to a robust IEPR and SB 1075 Report which recognize the full lifecycle greenhouse gas benefits and disbenefits of hydrogen supply chains.

Sincerely,

/S/

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