DOCKETED	
Docket Number:	19-ERDD-01
Project Title:	Research Idea Exchange
TN #:	237372
Document Title:	Green Hydrogen Coalition Comments - Comments of GHC on Hydrogen Blending into Existing California Natural Gas System
Description:	N/A
Filer:	System
Organization:	Green Hydrogen Coalition
Submitter Role:	Public
Submission Date:	4/2/2021 3:11:13 PM
Docketed Date:	4/2/2021

Comment Received From: Green Hydrogen Coalition
Submitted On: 4/2/2021
Docket Number: 19-ERDD-01

Comments of GHC on Hydrogen Blending into Existing California Natural Gas System

Additional submitted attachment is included below.

Comments of the Green Hydrogen Coalition (GHC)

on

Upcoming Solicitation Regarding Pilot Test and Demonstration of Hydrogen Blending into Existing California Natural Gas System

to

the California Energy Commission (CEC)
Docket # 19-ERDD-01
Research Idea Exchange

Green Hydrogen Coalition

Janice Lin, President
Zach Woogen, Policy Specialist

2150 Allston Way Suite 400
Berkeley CA 94704
Telephone: 510-665-7811
Email: regulatory@ghcoalition.org

Comments submitted via:

https://efiling.energy.ca.gov/Ecomment/Ecomment.aspx?docketnumber=19-ERDD-01

A. Introduction

The Green Hydrogen Coalition ("GHC")[1] is pleased to provide comments in response to the California Energy Commission ("CEC") Scoping Workshop on the Upcoming Solicitation Regarding Pilot Test and Demonstration of Hydrogen Blending into Existing California Natural Gas System held on March 18, 2021.

GHC is a California educational non-profit organization founded in 2019 to facilitate policies and practices to advance the production and use of green hydrogen at scale in all sectors to accelerate a carbon-free energy future. GHC defines green hydrogen as hydrogen that is not produced from fossil fuel feedstocks. Such pathways can include but are not limited to electrolysis of water, steam reforming, autothermal reforming, or pyrolysis of renewable gas, and thermochemical conversion of biomass. GHC believes that the prioritization of green hydrogen project deployment at scale is fundamental to reduce energy system costs and meet California's climate and carbon goals.

GHC appreciates and supports the CEC's continued consideration of green hydrogen as part of California's energy planning toolkit, including the incorporation of hydrogen blending in the 2020-2021 Natural Gas R&D Program Budget Plan.

B. Recommendations

GHC strongly supports the CEC's initiative to promote the pilot test and demonstration of hydrogen blending into California's existing natural gas system, as a sufficiently scaled demonstration could meaningfully advance hydrogen blending, for example in pursuit of a modest 5% by volume blending target by 2025, which could be established by the California Public Utilities Commission to advance hydrogen blending. The proposed demonstration of hydrogen blending is therefore a critical next step in advancing green hydrogen more broadly by scaling both supply and demand of green hydrogen to reduce the delivered cost. GHC

[1] https://www.ghcoalition.org/

recommends the CEC consider the following recommendations as it develops the solicitation for the upcoming Grant Funding Opportunity ("GFO"):

1) **Eligible "renewable hydrogen" for the GFO should include a broad set of green hydrogen production pathways.**

The GHC commends the CEC's intention to incorporate and prioritize renewable hydrogen for the upcoming GFO. GHC strongly recommends eligible "renewable hydrogen" for the purposes of this GFO not be limited to hydrogen produced only from Renewable Portfolio Standard ("RPS") eligible renewables. Limiting the definition to RPS-eligible renewables ignores the myriad of other available zero-carbon sources for electrolytic hydrogen, including curtailed wind and solar as well as large-scale hydro. These zero-carbon resources are abundant and should be utilized to help California achieve its decarbonization goals. For example, the state curtailed 1,587,497 MWh of wind and solar electricity in 2020, with more curtailments expected in the future.[2] Expanding eligible "renewable hydrogen" to include these other zero-carbon resources will help leverage otherwise curtailed electricity and closely align with the intent of SB 100, which considers a more expansive suite of decarbonization solutions in California's energy planning toolkit compared to the current RPS handbook.

Given the scale of the opportunity and the urgent need to decarbonize, GHC therefore strongly urges the Commission to ensure a broad set of green production pathways are considered eligible for the purposes of the GFO.

2) **The solicitation should be issued expeditiously and should be fully funded to ensure an appropriately-scaled demonstration.**

GHC recommends the solicitation for the GFO be released as soon as possible. Decarbonizing California's natural gas infrastructure and repurposing it to transport zero-carbon alternative fuels is essential to combating climate change. There is an urgent need to understand

[2] California Independent System Operator "Managing oversupply: Wind and solar curtailment totals by month" http://www.caiso.com/informed/Pages/ManagingOversupply.aspx#dailyCurtailment

and address the barriers to large-scale hydrogen production, distribution, and consumption. To this end, the hydrogen blending demonstration GFO will be a no-regrets investment towards the state's decarbonization goals established by SB 100 and SB 350. Along with an accelerated timeline, the GFO needs to be adequately funded to achieve the scale needed to bring down the cost of green hydrogen.

GHC notes there are several ongoing activities related to the study and demonstration of both green hydrogen blending as well as green hydrogen more broadly. SB 18, recently passed out of the California State Senate Energy, Utilities and Communications Committee, would direct the CEC to submit to the legislature a report on potential green hydrogen applications and scale by June 1, 2022. In addition, results from the UC Riverside study on hydrogen blending is anticipated to be released this fall. Meanwhile the timelines of the Joint Utilities Application for a Hydrogen Blending Demonstration Program and CEC EPIC Interim Investment Plan's Initiative #5: *The Role of Green Hydrogen in a Decarbonized California – A Roadmap and Strategic Plan* are not as certain. GHC believes these various studies and programs collectively begin to form a comprehensive portfolio of efforts to better understand green hydrogen. These efforts do not appear to be duplicative, as each serves a specific purpose and, most importantly, is to be conducted and assessed by a diverse set of stakeholders. The presence of both utility and third-party study/demo is incredibly valuable, as each perspective can help provide a more complete set of information and address certain natural gaps in understanding. GHC reiterates that these demonstrations and research initiatives are critical to advancing green hydrogen as a powerful decarbonization fuel, and recommends that each effort inform and reference one another, rather than occur in their own silos. Each must continue without delay, and further study may be needed in the future to augment and address any remaining gaps in the state's collective understanding of the potential for green hydrogen as a tool to combat climate change.

3) **Future CEC solicitations for hydrogen blending should focus on projects that procure 100% green hydrogen to advance hydrogen production and use at scale and accelerate a carbon-free energy future.**

GHC reiterates its support for the proposed hydrogen blending demonstration GFO. While this solicitation will be a key next step in advancing green hydrogen, GHC strongly recommends the CEC continue to provide funding to address gaps for achieving the green hydrogen economy. Specifically, additional funding will likely be needed in the future to develop infrastructure dedicated to 100% green hydrogen. While blending green hydrogen into existing gas infrastructure is critical to scale up production of green hydrogen and reduce the delivered cost of green hydrogen, we acknowledge that blending into existing gas infrastructure may only accommodate blends of up to 20-30% hydrogen.[3] As such, new supply infrastructure will need to be constructed, which presents significant economic and job opportunities for the state of California. Additionally, existing rights of way can be used to reduce the costs, project development timeline, and environmental impacts of hydrogen gas infrastructure. The CEC may have an important role to play in energy planning and RD&D related to dedicated green hydrogen pipelines.[4]

C. Conclusion

The GHC supports the CEC's efforts in the pre-solicitation workshop and development of the upcoming GFO as part of the 2020-2021 Natural Gas R&D Program Budget Plan. GHC believes the further exploration of green hydrogen through research and demonstration is warranted and will help California achieve its ambitious climate goals. However, GHC urges the CEC to recognize all pathways from green hydrogen as eligible for the GFO, not just hydrogen produced from RPS-eligible renewables. GHC also respectfully requests that CEC work quickly to develop and issue a solicitation, given the urgent need for decarbonization to combat climate change. GHC appreciates the opportunity to provide these comments and looks forward to collaborating with CEC and other stakeholders on this initiative.

Respectfully submitted,

JANICE LIN

[3] PG&E. 2018. *PG&E Gas R&D Innovation Whitepaper: Pipeline Hydrogen.* https://www.pge.com/pge_global/common/pdfs/for-our-business-partners/interconnection-renewables/interconnections-renewables/Whitepaper_PipelineHydrogen.pdf

[4] Note dedicated hydrogen pipelines do exist, including 15 miles of dedicated hydrogen pipelines in southern California operated by Air Products.