



**March 17, 2023**

**Docket Number: 23-IEPR-01**

**Re: GHC Comments on Draft Scoping Order for the 2023 Integrated Energy Policy Report**

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## **1. INTRODUCTION**

The Green Hydrogen Coalition (GHC)<sup>1</sup> is a California educational 501(c)(3) non-profit organization. GHC was formed in 2019 to recognize the game-changing potential of "green hydrogen" to accelerate multi-sector decarbonization and combat climate change. GHC's mission is to facilitate policies and practices that advance green hydrogen production and use in all sectors of the economy to accelerate a carbon-free energy future. Our sponsors include foundations, renewable energy users and developers, utilities, and other supporters of a reliable, affordable green hydrogen fuel economy for all.

The GHC would like to express our sincere appreciation to the California Energy Commission (CEC) for their ongoing commitment to understanding and advancing the role of hydrogen in decarbonizing California's energy system. We commend the CEC for their previous work on hydrogen, including their recognition of the potential benefits of green hydrogen in the 2021 and 2022 Integrated Energy Policy Report (IEPR), and for providing a forum for stakeholders to contribute to the development of comprehensive energy policies. Ultimately the GHC, a coalition of stakeholders invested in advancing the development and deployment of green hydrogen, appreciates the opportunity to provide these comments on the importance of hydrogen to California's clean energy future. The following sections detail our comments on the scoping proposal for the 2023 IEPR.

## **2. COMMENTS**

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<sup>1</sup> <https://www.ghcoalition.org/>



The GHC urges the CEC to conduct a comprehensive analysis of hydrogen's potential for growth and its role in decarbonizing both the electricity and transportation sectors in California as part of the 2023 IEPR. Hydrogen, a promising energy carrier, has the potential to significantly reduce greenhouse gas emissions in California since it can provide an alternative to more carbon-intense energy resources. Given hydrogen's potential, it is essential to develop a robust understanding of how it can best help the state achieve its decarbonization goals.

Therefore, to fully understand the system-wide impacts of hydrogen in the future, the GHC recommends that the 2023 IEPR prioritize the following four tasks when scoping the analysis of hydrogen: (a) conduct an assessment for hydrogen production using both the Renewable Portfolio Standards (RPS) and Senate Bill 100 (SB100), (b) assess potential social and environmental impacts, (c) evaluate the need for shared and scaled infrastructure, and (d) identify the support needed from California state agencies. To make the analysis of hydrogen as robust as possible, the GHC maintains that it is also important to analyze the interactions and overlap between each of the four tasks. By analyzing these efforts, the CEC can promote the growth of a green hydrogen market and pave the way to reaching the state's sustainability and decarbonization goals.

#### ***A) RPS and SB100 Resource Assessment for Hydrogen Production***

The CEC should conduct an assessment to evaluate the technical potential of using RPS and Senate SB100 eligible resources for the production of hydrogen. This evaluation should include the creation of detailed maps illustrating the geographical distribution of hydrogen production potential from renewable energy sources such as solar, wind, and biomass, as well as an accompanying description of the technical availability of these resources to meet future demand requirements in 2045.

The assessment should analyze the current and projected consumption of each energy resource in California, along with an estimate of the additional resources required to meet the expected demand for hydrogen in 2045. This will help to determine the feasibility and scalability of using RPS and SB100 eligible resources to produce hydrogen, and to identify any potential gaps or challenges that need to be addressed to ensure the long-term viability of this approach.



By conducting this assessment, the CEC can provide valuable insights and recommendations to other state agencies and industry stakeholders on how best to leverage California's abundant renewable energy resources for the production of hydrogen, helping to advance the state's clean energy goals and support the transition to a more sustainable and resilient energy system.

***B) Evaluate Social and Environmental Impacts***

To fully realize the potential benefits of hydrogen as an energy source, it is essential for the CEC to evaluate hydrogen's potential social and environmental impacts. To ensure that hydrogen can participate in the state's renewable energy transition in a just and equitable way, it is *crucial* to explore and assess the social and environmental consequences on historically disadvantaged communities (DACs). Additionally, since hydrogen has the potential to create many positive impacts, it is equally important to recognize the potential benefits of hydrogen in promoting equity, environmental sustainability, and energy justice. Specifically, the GHC recommends analyzing the following anticipated benefits: the reduction in greenhouse gas emissions, improvement to air quality, increases in energy security, and the creation of new jobs and economic opportunities. Analysis of this kind will also align at the federal level with the Justice40 Initiative and, subsequently, the Regional Clean Hydrogen Hubs program.<sup>2</sup> The CEC can look to the Justice40 Initiative for important metrics to guide its analysis.

***C) Evaluate the Need for Shared and Scaled Infrastructure***

For hydrogen to be instrumental in helping the state reach its decarbonization goals, infrastructure will be required. A recent analysis conducted by the GHC, as outlined in the HyBuild LA report,<sup>3</sup> highlights the importance of shared and scaled infrastructure, such as a dedicated green hydrogen pipeline connected to a geologic salt cavern storage resource, in achieving low delivered cost and widespread green hydrogen adoption. The end-to-end system vision from HyBuild LA estimates that the infrastructure required to produce, transport, store, and deliver mass-scale green hydrogen (as well as the local liquefaction and fueling infrastructure needed for mobility applications) will

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<sup>2</sup> [https://www.whitehouse.gov/wp-content/uploads/2022/07/Justice40-Covered-Programs-List\\_v1.1\\_07-15-2022.pdf](https://www.whitehouse.gov/wp-content/uploads/2022/07/Justice40-Covered-Programs-List_v1.1_07-15-2022.pdf)

<sup>3</sup> HyBuild LA Report will be publicly available in March 2023. See <https://www.gccoalition.org/>



cost about \$34 billion over ten years. Regional and federal government investments, alongside significant private sector investment, are expected to drive regional economic growth and stimulate infrastructure investment.

With the HyBuild LA findings in mind, and the need for infrastructure, the IEPR should analyze how hydrogen can rapidly integrate with California's energy system by considering implications for the state's electricity grid, natural gas infrastructure, and future hydrogen transport networks. Specifically, it should evaluate the potential for dedicated hydrogen pipeline transport and the transition from the existing natural gas network to 100% dedicated hydrogen pipeline infrastructure.

The CEC's analysis could be guided by the European Backbone Initiative,<sup>4</sup> which aims to build a dedicated network of hydrogen pipelines across Europe to transport renewable hydrogen at scale. California could learn from the European initiative and consider how such a dedicated network could be implemented in the state to support the growth of green hydrogen. The analysis should evaluate the benefits and challenges of implementing a similar initiative in California, including potential cost savings, increased reliability of supply, and reduced greenhouse gas emissions.

Overall, the HyBuild LA report highlights the critical importance of infrastructure in scaling up the production and use of green hydrogen. The IEPR should consider the findings of this report in its analysis of the role of hydrogen in California's energy system and evaluate the potential for dedicated hydrogen pipeline transport, integration with renewable energy sources, and decarbonization of transportation.

#### ***D) Identify the Support Needed from California State Agencies***

To ensure hydrogen can reach its full potential in California's electricity and transportation markets, the analysis should identify potential policy barriers and challenges that may arise for state agencies, such as limitations on funding or regulatory frameworks. The analysis should thoroughly explore ways to mitigate or overcome these barriers and challenges, providing a

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<sup>4</sup> See <https://ehb.eu/>



comprehensive roadmap for policymakers and stakeholders to promote the growth of hydrogen. This roadmap should include specific policy recommendations tailored to the needs of the state, along with funding needs and strategies to tackle potential obstacles, such as streamlining permitting processes, or creating financial incentives for private investment.

### **3. CONCLUSION**

The CEC's analysis of the system-wide benefits of hydrogen will provide valuable information for decision-making about the role of hydrogen in California's energy system. Conducting a comprehensive analysis of what is needed for hydrogen to reach its maximum potential growth rate and role in decarbonizing the electricity, gas, and transportation sectors in California is crucial to developing effective policies and strategies that are both sustainable and equitable. The CEC can provide valuable insights and recommendations that will accelerate the transition to a low-carbon economy by prioritizing these components in the 2023 Integrated Energy Policy Report.

The GHC appreciates the opportunity to submit comments on the Draft Scoping Order for the 2023 Integrated Energy Policy Report. We look forward to collaborating with the CEC and all other stakeholders in this matter.

Sincerely,

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