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Green Hydrogen Organisation (GH2) comments on the U.S. Department of Energy Clean Hydrogen Production Standard (CHPS) Draft Guidance

Secretary Granholm and Assistant Secretary Moreno,

The Green Hydrogen Organisation (GH2) respectfully submits these comments in response to the U.S. Department of Energy (DOE) request for comments on its proposal to implement provisions of Section 40315 of the Infrastructure, Investments, and Jobs Act (IIJA), Pub. Law No. 117-58, by adopting a Clean Hydrogen Production Standard (CHPS)¹.

GH2 is a not profit foundation under Swiss law. In addition to its office in Geneva it is present in London, Perth, and Sydney. The mission of GH2 is to dramatically accelerate the production and utilisation of green hydrogen across a range of sectors globally.²

GH2 commends the United States for its global leadership on green hydrogen. The combined impact of the IIJA and the 2022 Inflation Reduction Act is truly a “game changer” for green hydrogen both nationally and globally. The IRA’s preferencing of hydrogen production with the lowest greenhouse gas emissions is particularly important. It is vital that that the Clean Hydrogen Production Standard (CHPS) reinforces this approach, as the CHPS will undoubtedly influence the development of hydrogen standards in other jurisdictions. **Accordingly, to the extent practicable, the CHPS should support the development of the highest global standards in support on energy security and climate change goals.**

Globally, there has been a proliferation of hydrogen standards and certification schemes. These differ widely in terms of the boundaries of the greenhouse gas accounting system, the emission thresholds at which hydrogen is considered “clean”, “low-carbon”, “green” or “renewable”, and on whether other human rights and sustainability criteria should apply. These inconsistencies are undermining efforts to accelerate the production and use of green hydrogen. Accelerating green hydrogen production and consumption will depend on the development and acceptance of global standards and certification systems that guarantee the characteristics of hydrogen production. Green hydrogen producers and consumers need clarity and consistency in order to plan for the long term, including to secure offtake agreements, financing (equity, debt, insurance and investment guarantees) and to obtain government and community approval. Clear global standards will lower costs for producers and consumers and help build support and confidence in hydrogen markets.

The “Breakthrough Report 2022”³ co-authored by the International Energy Agency (IEA), the International Renewable Energy Agency (IRENA), and the UN Climate Change High-Level Champions has examined the policies required to support stronger international collaboration to drive faster reductions in global greenhouse gas emissions. While the report does not define a specific carbon intensity limit for low-carbon and renewable hydrogen, it states:

*“...both of these production routes will need to achieve verifiable low-carbon intensities **that trend towards near zero by 2030**. This implies that fossil-based hydrogen production must operate with high carbon capture rates applied to all streams containing carbon dioxide, and that the captured carbon is permanently stored underground to prevent its release into the atmosphere. Additionally, it is critical that methane leakage is minimised to near zero, if not*

¹ <https://www.energy.gov/eere/fuelcells/articles/clean-hydrogen-production-standard>

² www.gh2.org

³ International Renewable Energy Agency (IRENA), “Accelerating Sector Transitions Through Stronger International Collaboration,” available at: <https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2022/Sep/THE-BREAKTHROUGH-AGENDA-REPORT-2022.pdf>.

completely avoided. Rigorous measurement, reporting and verification of emissions will be necessary” (p. 56 emphasis added).

GH2 welcomes the DOE’s proposal on life cycle analysis, in particular the comprehensive treatment of methane emissions from grey and blue hydrogen projects. However, **a clean hydrogen production standard of 4.0 kgCO₂e/kgH₂ falls well short of the need for verifiable low-carbon intensities that trend towards near zero by 2030.** A threshold of 4.0 kg CO₂e/kgH₂ is too high to successfully differentiate and prioritize hydrogen production with the cleanest production pathways as provided for in the IRA and the IIJA. The proposed threshold undermines the credibility of truly renewable green hydrogen and risks locking in hydrogen production pathways that will considerably impact GHG emissions for decades.

GH2 recently launched the **Green Hydrogen Standard**⁴, following extensive consultation with government, industry and civil society stakeholders. It sets a high standard on greenhouse gas emissions, requiring that green hydrogen producers operate at <=1 kg CO₂e per kg H₂ (taken as an average over a 12-month period). The Green Hydrogen Standard also requires that the environmental, social and governance consequences of green hydrogen production are addressed. It is critically important that the industry manages water, land and human rights issues responsibly. We have a parallel project dedicated to green hydrogen contracting⁵ to help decision makers develop good contracting practices for green hydrogen projects. **We would welcome further collaboration on the development of global standards for certifying renewable / green hydrogen.** We highlight below two issues of particular importance: (1) the verification of emissions; (2) GH2’s approach to additionality.

1. Verification of emissions. GH2’s emission verification procedure places the onus on producers, with an independent verification process that maximizes transparency and encourages open stakeholder engagement. The Green Hydrogen Standard requires hydrogen producers to engage an Independent Assurance Providers (IAP) that consult with project operators and other stakeholders during GHG emission assessments. Draft reports generated by IAPs are then made available for public comment. This enhances the credibility of the process.

2. Additionality. Globally, a significant proportion of green hydrogen projects involve grid connection. These projects can strengthen energy systems and reduce greenhouse gas emissions. The integration of green hydrogen projects into national energy grids can catalyse additional investment in renewable energy generation and transmission, increase access to modern energy, enhance energy market stability and flexibility, and improve the efficiency of green hydrogen production. This is particularly important in developing countries and emerging economies. The GH2 Standard promotes an approach that addresses the direct impact of green hydrogen projects, the cumulative impact of the green hydrogen industry, and the wider enabling environment for renewable electrification. Green hydrogen producers may count electricity taken from the grid as fully renewable if they have concluded one or more power purchase agreements (PPAs) and make use of credible guarantee of origin certification schemes (or similar proofs) where available. Where the host government has established a formal additionality requirement, this must be respected. The Standard requires the project operator undertakes an evaluation of the project’s utilisation of electricity and the impact on the local energy market including, where applicable, network congestion, electricity prices and the impact of their operations on the greenhouse gas emissions from the electricity grid. The evaluation must consider whether the project operator has adopted technically feasible and cost-effective measures to mitigate the impact of their project. This approach provides the flexibility needed to accommodate differing local circumstances, as opposed to a “one size fits all” approach.

We would welcome further discussions with the DOE as it undertakes further work to develop the CHPS.

Sincerely

Jonas Moberg

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⁴ <http://www.greenhydrogenstandard.org/>

⁵ <https://gh2.org/green-hydrogen-contracting>