RENEWABLE HYDROGEN ALLIANCE

November 14, 2022

VIA EMAIL

Cleanh2standard@ee.doe.gov

U.S. Department of Energy
James V. Forrestal Building
1000 Independence Avenue SW
Washington, D.C. 20585

RE: Renewable Hydrogen Alliance Comments on the Federal Clean Hydrogen Production Standard (CHPS)

To Whom It May Concern:

Thank you for the opportunity to submit comments on the draft Clean Hydrogen Production Standard. The Renewable Hydrogen Alliance (RHA) is pleased to provide this response on behalf of our members.

RHA is a non-profit trade association based in Portland, Oregon representing over 75 diverse members including utilities, transportation and hydrogen related equipment manufacturers, clean energy and clean fuels advocacy groups, public transit agencies, tribes, project developers and industry ancillary service providers. RHA advocates at state legislatures in the Pacific Northwest for policies that advance the production and use of renewable hydrogen to displace and replace fossil fuel consumption across multiple economic sectors. RHA's mission is to promote the use of renewable energy resources to produce hydrogen and other climate neutral fuels.

Data and Values for Carbon Intensity

a. RHA supports the proposed target of 4.0 kgCO2e/kgH2

RHA supports this initial CHPS carbon intensity (CI) target as this will allow for the growth and acceleration of clean hydrogen production that can achieve near term carbon emission reductions and enable cost effective transition off of direct fossil fuel use in multiple sectors of the economy. This emissions level provides a reasonable target as the energy sector develops and brings more renewable energy generation online and, at least in the Pacific Northwest, move towards a 100% clean electricity grid; all of which takes time. As the hydrogen industry grows, production and use incentives should continue with the aim of reevaluating and gradually bringing down the maximum CI threshold for purposes of realizing cost effective, maximum, demonstrable and verifiable lifecycle emission reductions throughout the hydrogen ecosystem (production, distribution, storage, end use).

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b. Hydrogen leakage should not be incorporated into lifecycle emission analysis of hydrogen production

DOE notes that atmospheric modeling simulations have estimated hydrogen's indirect climate warming impact, although the methods used to estimate this impact are still in development. To the extent that DOE is considering incorporating leakage rates into the CHPS lifecycle analysis, RHA believes this is not appropriate to do so at this time. While RHA believes leakage is a valid concern, as already stated, the methods used to estimate and collect data on hydrogen leakage rates in commercial scale systems are not demonstrated nor deployed.

There are 1600 miles of dedicated hydrogen pipelines in the US and hydrogen has been moved, stored, and handled using well established safety and industry best practices for seven decades. Hydrogen leakage is a concern that can be addressed by utilizing best practices already in place, and adopting new demonstrated techniques when they become available that assure the integrity of hydrogen infrastructure which will be key to realizing its decarbonization potential.

Implementation

a. RHA supports the use of the GREET model to conduct lifecycle analysis of hydrogen produced

RHA believes the GREET model is an accurate and suitable tool for lifecycle analysis and is consistent with how the lifecycle greenhouse gas emissions of fuels in Washington, Oregon and California low carbon fuel standard programs are currently calculated. It is a model trusted by numerous stakeholders and provides flexibility to producers to either apply for a CI score based on the producer's specific hydrogen production pathway or adopt the CI of "typical" pathways already established.

However, RHA would also like to see the GREET model used in the CHPS aligned to models used in other hydrogen production contexts, i.e., by allowing those who already use the California GREET model to be deemed compliant with Argonne GREET without having to go through another certification.

b. The CHPS should allow the use of market-based mechanisms in determining lifecycle emissions

RHA supports the use of market-based lifecycle emission accounting methods, in particular to verify the CI of grid power and making it as easy as possible to demonstrate the CI of hydrogen produced using grid connected electrolysis. Examples of market based tracking mechanisms for verification could include the use of Renewable Energy Credits (RECs), the Midwest Renewable Energy Tracking System (M-RETS), and power purchase or virtual power purchase agreements (PPA or VPPA).

For additional assurance of the claimed environmental attributes of electricity used to produce hydrogen and to prevent double-counting, RHA would support adding temporal and geographic

granularity components such as monthly or quarterly matching of resources to load and have RECs, PPAs or VPPAs associated with projects within the same Balancing Area Authority.

The importance of the flexibility afforded by market based emissions verification mechanisms is borne out by a situation in Washington state where a municipal utility with a 98% clean electricity mix can only achieve a carbon intensity score of .56 kgCO2e/kg H2 produced. For purposes of the Inflation Reduction Act 45V production tax credit, that score is higher than the .45 maximum threshold to qualify for the full tax credit.

Suffice it to say that if a municipal utility in a hydroelectric dominant state power system cannot meet the lowest CI threshold for the full PTC, there is likely no other utility or producer of electrolytic hydrogen in the nation that will be able to without massive investment and decades long delays to build out directly connected renewable energy projects with significant land use impacts. Consequently, this risks significantly limiting the production of adequate supplies of truly clean hydrogen to decarbonize several key and emissions intensive sectors of our economy.

Furthermore, public and municipal utilities in the Pacific Northwest are looking to hydrogen production for portfolio diversity, grid resiliency and flexibility, system reliability, equipment O&M cost reduction and keeping electricity rates low for their customers. Many of these utilities have extremely low kgCO2e/kWh electricity systems and they are located in rural, low income disadvantaged communities that have the most to benefit from the availability of zero emitting hydrogen to reduce pollution and climate warming emissions.

As far as the 4.0 kgCO2e/kg H2 is concerned, in the Hydrogen Pathways Assumption spreadsheet, DOE seeks feedback on the technical and economic feasibility of electrolyzers being able to access "… predominantly clean energy (i.e. >85% clean energy, < 15% U.S. grid mix)…[expected] to enable achievement of the lifecycle target proposed in this draft guidance." Washington and Oregon's electricity generation systems are already 80% and almost 70% clean respectively and as noted above there are public utilities in the Pacific Northwest whose systems are nearly 100% clean now. RHA believes that electrolytic hydrogen producers in Washington and Oregon utilizing utility system level grid power will be able to meet the lifecycle target of 4.0kg CO2e/kg H2. With the ability to utilize PPAs and purchase RECs, RHA estimates that several utilities will be able to supply power that would enable hydrogen producers to meet the target.

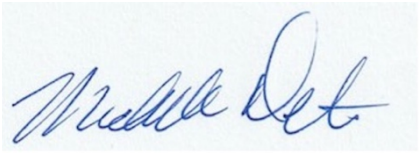
c. RHA supports Footnote 11 with respect to the lifecycle emissions target corresponding to a system boundary that terminates at the point at which hydrogen is delivered for end use

This addresses RHA's concern expressed in our comments responding to *Notice IRS-2022-0058 - Request for Comments on Credits for Clean Hydrogen and Clean Fuel Production* requesting clarification that the GREET model stops at hydrogen, i.e., the carbon intensity of further steps to produce ammonia, e-methanol or other fuels is not considered.

Please feel free to contact us for additional information or with any questions.

Thank you.

Sincerely,



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