MIDWEST ALLIANCE FOR CLEAN HYDROGEN

February 26, 2024

The Honorable Janet Yellen
Secretary of the Treasury
U.S. Department of the Treasury
1500 Pennsylvania Avenue N.W.
Washington, D.C. 20220

Subject: Requested Revisions to 45V Guidance

Dear Secretary Yellen,

The Midwest Alliance for Clean Hydrogen (MachH2), one of seven Regional Clean Hydrogen Hubs (H2Hubs) selected by the U.S. Department of Energy (DOE), strongly supports the Biden Administration's historic investment in clean energy – and specifically, the priority it has placed in accelerating the production and use of clean hydrogen. Clean hydrogen is critical for reducing emissions from hard-to-decarbonize sectors that represent large parts of the U.S. economy, including manufacturing, aviation, agriculture, and long-haul transportation, among others.

With the appropriate level of federal policy support, our hub's more than 70 public and private members are well-positioned to kickstart a national network of clean hydrogen producers, consumers, and connective infrastructure. MachH2 members are united in a shared vision to create a clean hydrogen economy in the Midwest and reduce emissions across multiple heavy emitting sectors. Our projects are estimated to reduce carbon emissions by approximately 3.9 million metric tons per year – equivalent to removing emissions from more than 867,000 gasoline powered cars annually[1] – improving air quality through avoided criteria pollutant emissions. In addition, MachH2 anticipates creating more than 10,000 clean energy jobs through our projects.

However, we are writing to encourage the U.S. Treasury Department to revise its proposed guidance on the hydrogen production tax credit (45V) in the Inflation Reduction Act. If implemented as written, Treasury's guidance will severely impact the viability of our hub projects and result in the cancellation of our nuclear hydrogen production project. It will also threaten the associated benefits to bringing flexible and affordable clean energy and improving the environmental quality in our local communities. We offer three specific, independent recommendations that can support the advancement of the Regional Clean Hydrogen Hubs program without threatening the greenhouse gas benefits of the program or the 45V tax credit.

First, the restrictive approach to 45V eligibility for existing carbon-free generation in Treasury's proposed rule would prevent nuclear participation in the MachH2 Hub. Congress clearly intended for electricity generated by existing nuclear plants to produce hydrogen, as the IRA explicitly links eligibility for the Section 45V tax credit with the Section 45U tax credit that is

[1] https://www.energy.gov/oced/regional-clean-hydrogen-hubs-selections-award-negotiations

available only to existing nuclear plants. For 45V to have its intended effect, Treasury must provide a clear and economically viable pathway for hydrogen produced using existing generation and credible emerging clean hydrogen pathways to qualify for the tax credit.

The proposed rule takes comment on several options for nuclear-powered hydrogen production, including 45V eligibility for a set percentage of existing output. This could be an administratively and economically feasible approach, but only if increased to an exemption for at least 10% of existing zero-carbon generation that is calculated on an enterprise-wide level. It is essential that the Administration recognize the scale required to make hydrogen economic at a nuclear station.

This moderate expansion of 45V eligibility would enable nuclear participation in our hub and provide the growth opportunity for a nascent industry without causing significant indirect emissions on the power grid. Careful consideration of the underlying economics and data suggest that an exemption of at least 10% of existing zero-carbon generation would be reasonable and conservative and would drive positive economic outcomes. The same EIA projections cited by Treasury predict retirements exceed 10% by 2033 and 20% by 2040, which is the period when most hydrogen supported by Section 45V will be produced. Furthermore, many nuclear units will not fully utilize the exception, especially those operated by vertically-integrated regulated utilities, so the aggregate amount of existing generation participating in the 45V program will be significantly lower than the maximum cap set in the rule, further reducing any potential for induced emissions.

Second, we seek a rules framework that enables clean hydrogen projects to secure financing and be economically competitive. Ensuring that rules do not change within the lifetime of a project's Production Tax Credit (PTC) is critical.

An example is a facility producing hydrogen from renewables. Under an annual matching framework, the project can guarantee that the end user will receive consistent and reliable hydrogen, according to their operational needs. The project can sign long-term (10+ years) Power Purchase Agreements (PPAs) for new-build renewables to power the facility. If the facility is then required to transition to hourly after 5 years of operation, the project can no longer fully utilize these 10+ year PPAs and will need to redesign the plant by adding storage, adding electrolyzer capacity, signing additional PPAs, and more. To minimize financing risk, the project would need to be designed and operated as an hourly facility from day one, significantly increasing costs and limiting operational flexibility. This will make it extremely challenging for any renewables-powered electrolytic hydrogen facilities to achieve the final investment decision (FID). Given these challenges, we seek grandfathering of rules for projects at Start of Construction (SOC) for the life of the tax credit. For projects SOC pre-2028, we seek an annual matching framework to enable projects to proceed. While studies[2,3] have shown that an annual

[2] Vargas, McNutt, and Seiple. "Green Hydrogen: what the Inflation Reduction Act means for production economics and carbon intensity." 14 March 2023. [https://www.woodmac.com/news/opinion/green-hydrogen-IRA-production-economics/]

[3] https://acore.org/wp-content/uploads/2023/04/ACORE-E3-Analysis-of-Hourly-and-Annual-GHG-Emissions-Accounting-for-Hydrogen-Production.pdf

matching framework creates demand for additional renewables and can reduce emissions on the grid, we acknowledge that a transition to hourly matching will occur. Upon that transition, we seek to match the hourly matching ambitions of the Federal Government itself. The Federal Sustainability Plan (Executive Order 14057) has established a goal of 50% hourly matched clean power by 2030. We seek 50% annual matching with 50% hourly matching for hydrogen projects having SOC pre-2030. Projects SOC post-2030 would then be subject to a 30% annual matching, 70% hourly mix.

Third, in order to maintain the large scale industrial decarbonization components of the hub, clear rules on "mass balancing" of Renewable Natural Gas (RNG) are essential. When explaining their intent to allow for use of indirect book accounting, Congressional leaders explicitly included pathways for use of biogas credits.[4] Failure to offer a mass balancing approach for RNG would be inconsistent with this clear statement and with the intent to establish a technology-agnostic and feedstock-agnostic tax credit. Following this logic, Treasury must include a system that enables the creation of low-emission certificates by RNG producers and retirement of those certificates by hydrogen producers.

Robust and transparent systems are already in place that should serve as models for use of RNG within the 45V tax credit. The Environmental Protection Agency (EPA) has administered the Renewable Fuel Standard (RFS) program for nearly 20 years, which enables the transportation market to mass balance RNG through the EPA Moderated Transaction System (EMTS).[5] This system tracks GHG emissions from RNG sources to a diverse group of consumers, including utilities, across the country. The EMTS would serve as a good model to allow the mass balancing of RNG into hydrogen production facilities on a "well-to-gate" basis. Moreover, these systems are regulated and audited to provide necessary compliance assurance.

In addition, the existing EMTS is widely accepted by the industry and provides an immediately available solution with EPA positioned to verify the volume and carbon intensity of any RNG used by a hydrogen producer. Similar to use of Energy Attribute Certificates (EACs) for electricity, the mass balancing approach used in the EMTS would provide a sound mechanism to establish contractual claims of RNG purchases. This would enable hydrogen producers to verify the purchase of RNG and the corresponding carbon intensity as part of the lifecycle greenhouse gas emission calculation for production of clean hydrogen via 45VH2-GREET.

A rapid transition to clean hydrogen is vital for America meeting its goal of net zero emissions by 2050, as President Biden noted when announcing the Treasury Department's selection of MachH2 and the other H2Hubs. Achieving this, however, hinges on robust, flexible, and technology-neutral tax credit guidance.

We urge the U.S. Treasury Department to revise its proposed guidance on 45V with the recommendations outlined herein. It is imperative that Treasury's final 45V regulations support

[4] S4165-4166 Congressional Record, August 6, 2022
[5] https://www.epa.gov/renewable-fuel-standard-program/renewable-identification-numbers-rins-under-renewable-fuel-standard

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the success of the MachH2 hub and expand opportunities to address and accelerate projects that will decarbonize our economies now and into the future. Thank you for your consideration.

Sincerely,

Dorothy R Davidson

Dorothy Davidson, PhD
Chief Executive Officer
Midwest Alliance for Clean Hydrogen (MachH2)

cc: The Honorable Jennifer Granholm, Secretary of Energy, U.S. Department of Energy
The Honorable David Crane, Under Secretary for Infrastructure, U.S. Department of Energy
Ms. Kelly Cummins, Acting Director, Office of Clean Energy Demonstrations, U.S. Department of Energy