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February 26, 2024

The Honorable Janet Yellen
Secretary
U.S. Department of the Treasury
Internal Revenue Service
1500 Pennsylvania Ave, NW
Washington DC 20220

Mr. John Podesta
Senior Advisor to the President for Clean Energy Innovation and Implementation
The White House
1600 Pennsylvania Avenue NW
Washington, DC 20500

RE: IRS REG–117631–23 Proposed Rule, Section 45V Credit for Production of Clean Hydrogen; Section 48(a)(15) Election To Treat Clean Hydrogen Production Facilities as Energy Property

Dear Secretary Yellen and Senior Advisor Podesta,

JCDREAM strongly agrees with the intent of the proposed Section 45V regulations to promote investment in new, carbon-free resources to support hydrogen production. In particular, we are aligned with the goal of displacing the incremental growth of fossil fuel combustion on the grid that may be necessary to meet increased electrolytic hydrogen loads. Our organization has an important stake in the hydrogen economy in Washington and Oregon, states which have enacted two of the most stringent clean energy standards for electric power delivery in the country.

Despite our alignment with the goal of the proposed regulations, we have concerns that the application of the "three pillar" approach would cause significant complications for electrolytic hydrogen development at scale in Washington and Oregon. Simply, the approach lacks a mechanism to account for the unique energy generation and balancing characteristics of our region, and the policy environment that hydrogen infrastructure owners and end-users must comply.

Washington and Oregon Clean Energy Policies: Suggestion for Closer Alignment with States Leading the Clean Energy Transformation

The policy environment for infrastructure owners and hydrogen end users in Washington and Oregon differs from that of operators in many other states. Specifically, hydrogen producers and consumers in Washington and Oregon must operate within the robust clean electricity and GHG emissions limitations of these states. Washington's Clean Energy Transformation Act (CETA) and Climate Commitment Act (CCA) act together to ensure that new loads will be served with clean

electricity sources and that overall emissions, including emissions from imported electricity, will not increase. Oregon's HB 2021 has similar restrictions, limiting GHG emissions associated with electricity from major providers, with no exception for new loads such as hydrogen production.

Broadly, these state policies are intended to decarbonize electric power delivery to ratepayers by the 2040s. The targets established in these laws are aggressive, and require that the region's electric utilities more than double current system capacity of non-emitting resources by 2030; and more than triple these resources by 2045.

The state policies focus on decarbonization at a grid level, and they place the onus on electric utilities and major industrial customers to pursue least-cost, policy-compliant resources that will benefit all utility ratepayers. The policies also tacitly assume that the region's abundant supply of private- and federally-operated hydropower power generation – which supplies approximately two-thirds of the region's power – will continue to support and shape electric power deliveries and the addition of new carbon-free resources on the grid.

As proposed by the U.S. Department of Treasury ("Treasury"), incrementality and temporal matching, specifically hourly matching, requirements do not recognize the contribution of abundant, carbon-free power in Washington and Oregon, and will drive over-build in the region that will result in project delays and substantial increases in the cost of producing hydrogen.

As it relates to cost, the sum impact of the "three pillar" approach is estimated to add significant cost to H2 projects. In addition to increased cost, projects will also face significant delays in the regional transmission queue, which currently averages four to six years for new projects. Delays of this magnitude in Washington and Oregon mean that a hydrogen producer is incentivized to cannibalize existing carbon-free projects in the transmission queue for use in qualifying Section 45V hydrogen generation – not for broader grid decarbonization.

Maintaining Our Competitive Advantage In the Global Clean Energy Supply Chain

Supporting H2-related manufacturing within the United States is critical to the sustainability of the hydrogen economy. But in their stringency, the proposed 45V requirements ultimately discourage the utilization of domestic and regional clean power grids – which may push project developers to opt for lowest-cost capital inputs and import technology from China. This shift poses a threat to our current competitive edge in the H2 sector. Expanding the proposed regulations to support regional H2 production is not only essential for maintaining technological leadership and supply chain security, but also for fully capitalizing on the economic opportunities presented by the energy transition.

In the global clean energy supply chain, China has systematically dominated key parts including solar PV, lithium-ion batteries, critical minerals like cobalt and graphite, rare earth elements, and other materials used in electricity generation and transmission technologies. Hydrogen is next in line. For now, the U.S. and allied countries still have a small competitive advantage in crucial advanced electrolyzer technology, which is key to producing clean hydrogen. While

China does possess 40% of the market share in electrolyzer capacity, this is mostly alkaline electrolysis; meanwhile, the U.S. and allies dominate in PEM and other advanced technology plus other key components.

The 45V regulations, along with other DoE policies, have the power to ensure continued investment in advanced electrolyzer technology and prevent the Chinese advantage in hydrogen production technology. However, the following considerations must be taken into account:

- In order for this to work, Treasury must provide a pathway for 45V tax credits to support the deployment of electrolyzers in regions where clean electrolytic hydrogen is almost-competitive but may need grid power to enable 24/7 operation and full capital asset utilization.
- If electrolytic hydrogen produced from the clean power grid in the PNW is not allowed to receive the maximum credit, these projects may fail.
- All regions focused on powering electolyzers with either renewables or existing clean power should be given extra flexibility in this area, in order to ensure wide deployment of the technology and expansion of expertise in this field.
- This is a necessary prerequisite to ensuring national competitiveness AND a pathway to lowered hydrogen costs, which will support our end-goal of market liftoff.

Suggested Amendments To The Proposed 45V Regulations

JCDREAM strongly suggests that Treasury consider a mechanism that accommodates hydrogen producers that operate in states with strong decarbonization policies. Under such an accommodation, producers would be deemed to have satisfied the ”three pillars”, if the project owner and its partnering suppliers (including electric utilities) meet the following conditions:

a) The state in which the Section 45V facility is located has enacted an enforceable 100% clean electricity standard;
b) That the date of such enforceable compliance standard is no later than 2050; and
c) Electricity used to meet the facility’s hydrogen production meets the tax credit carbon intensity requirement on an annual basis.

We also suggest two specific changes in addition to the recommendations above:

a) Allow Section 45V producers the ability to use the 45VH2-GREET model in effect at the beginning of construction for the entirety of the credit’s applicability or the model in effect the first day of the taxable year in which the hydrogen it produced. Locking in such certainty as to the credit’s value is critical. The model should also use statewide averages for carbon intensity, instead of interconnect-wide average values.
b) Utilize current FERC power markets as the basis for regional energy sources, instead of the NREL Transmission Study. The FERC power markets – specifically, the WECC in the Pacific Northwest region1 – provide a more suitable standard, as these regions more

accurately capture the market activities taking place in a region. In the Washington and Oregon, utilities and power purchasers regularly schedule energy delivery from more diverse geographic regions, where renewable generation capacity factors may align better with the load profile of end users.

Absent a mechanism that deems producers in states with strong, enacted decarbonization policies to have satisfied the requirements of the Section 45V's suggested three pillar approach, the tax policy proposed prevents the development of electrolytic hydrogen development at-scale and places hydrogen producers in direct competition with residential, commercial and industrial electric ratepayers in the region for the same carbon-free resources.

Better alignment of Section 45V with our region's aggressive carbon reduction policies will help provide the certainty that Washington and Oregon can participate in, and lead, the clean hydrogen economy. As such, we strongly urge the U.S. Treasury Department to reconsider and revise its proposed guidance on the hydrogen production tax credit. We thank you for your consideration on this important matter, and appreciate the opportunity to provide comments.

Sincerely,

Aaron Feaver, Executive Director
Joint Center for Deployment and Research in Earth Abundant Materials (JCDREAM)