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The Honorable Daniel Werfel
Commissioner
Internal Revenue Service
P.O. Box 7604
Ben Franklin Station
Washington, DC 20044

Re: Section 45V Credit for Production of Clean Hydrogen; Section 48(a)(15) Election to Treat Clean Hydrogen Production Facilities as Energy Property (REG-117631-23)

Dear Commissioner Werfel:

Thank you for this opportunity to provide comments on the proposed Section 45V Production Tax Credit (PTC) in the United States. Wood is one of the world's leading consulting and engineering companies operating across Energy and Materials markets with 36,000 professionals across 60 countries. About 7,000 of our employees are in the U.S. At Wood, we are particularly excited about the potential for hydrogen hubs, the emphasis on the promotion of diversity in feedstocks, industry, end-use, and geographical distribution throughout the U.S. We are especially eager to progress the development of world-class engineering and construction projects along the U.S. Gulf Coast, including key areas such as Houston, known as the Energy Capital of the World, North Dakota, the Ohio River Valley, the Rockies, the Permian Basin, the West Coast, and the Southeast. Drawing upon our extensive experience with hydrogen hubs such as the U.K.'s Net-Zero Teesside and Humber Zero, as well as various hubs across Australia, South America, and the U.S., along with our technological and operational expertise, we are confident that the U.S. market offers a unique opportunity to establish world-class hydrogen hubs and further the establishment of a commercially viable global clean hydrogen economy.

Wood provides engineering and consulting services to numerous clients planning to utilize Section 45V for the development of large-scale clean hydrogen projects in the U.S. Our clients are advancing projects that employ a diverse range of proven clean hydrogen production technologies, including electrolysis with clean energy sources, particularly renewables, and thermal conversion processes integrated with carbon capture to achieve commercial-scale clean hydrogen production.

We advocate for measures that will focus on reducing emissions and providing clean, affordable, secure energy sources for Americans. We are enthusiastic about the incentives for clean energy allocated in the Inflation Reduction Act (IRA) and believe that it will spur economic investment in the United States. We do, however, strongly encourage the Internal Revenue Service (IRS) to carefully examine these proposed regulations and verify that they are consistent with the congressional intent of the IRA. The outcome of these regulations could significantly impact – for good or bad – final investment determinations in the regions we operate in and play a pivotal role in unleashing the potential of our clean hydrogen economy. Investors, suppliers, developers, and consumers all have choice globally on where to make and use the new fuel, with all regions competing for the same capital, resources, and solutions. It is imperative that the U.S. stays ahead of the curve, ready to attract that CAPEX and talent needed to scale and commercialize clean hydrogen projects.

Three Pillars – Incrementality, Temporal Matching, and Deliverability

We kindly request that the "three pillars" – temporal matching, incrementality, and deliverability – prioritize flexibility and clarity for project developers. It is imperative to establish adaptable standards that accommodate various requirements of developers seeking regulatory certainty. Clear and concise regulations will empower developers to make informed decisions and invest confidently in clean energy technologies.

Incrementality

Firstly, in terms of incrementality (also described as additionality), the legislation's short 36-month window will most likely limit the eligibility of certain power plants (that is, new projects), as sources of power for clean hydrogen production. We recommend the inclusion of upgraded fossil fuel power plants, such as Natural Gas Combined Cycle (NGCC) plants with Carbon Capture and Sequestration (CCS) technology, in the eligibility criteria for Energy Attribute Certificates (EACs) when such plants are dedicated to clean hydrogen production. Additionally, expanding the timeframe for incrementality requirements could encourage a broader range of clean energy sources to participate in hydrogen production.

Temporal Matching

Secondly, the temporal matching requirement, while aiming to ensure alignment between hydrogen production and renewable energy generation, may pose technological challenges for project developers, as well as consumers. Thus, we request that the Treasury Department consider extending the annual matching requirement or implementing a monthly matching requirement until 2030. We also request clarification on the application of battery electric storage systems (BESS) and urge that such storage systems charged by renewable power, not be restricted by the temporal matching requirement. We caution that temporal matching may also lock out system wide benefits and investments. Hydrogen production equipment, such as electrolyzers, and the Balance of Plant can also provide market services such as demand response and frequency control. Furthermore, the system-level design around renewable energy supply, production, and storage (onsite and in pipelines) with the fuel production is the cheapest way to produce hydrogen. That is – focusing on operational design and production profiles of fuels to positively reduce the CAPEX of the full value chain costs to begin with – not only the cheapest renewable energy costs (which is >50% of OPEX costs on some projects). The current proposed rules do not support this type of design-level and system-level thinking in terms of correlation and additionality for some hydrogen plants, which could actually benefit the entire electrification of the grid and transport systems.

Deliverability

Finally, the deliverability pillar's reliance on specific regional sourcing may overlook opportunities for efficient energy transfer across regions. Exploring and availing of options for cross-regional cooperation or acknowledging the interconnected nature of energy grids could optimize the utilization of renewable energy for hydrogen production in such regions while maintaining environmental integrity. By refining these pillars, the legislation can better support the transition to cleaner hydrogen production methods and advance sustainable energy practices.

GREET Model

Lifecycle analysis plays a critical role in advancing low-carbon projects. Therefore, we advocate for 45VH2-GREET to operate flexibly in terms of input data and incentivize moves at effectively reducing greenhouse gas emissions. The current 45V GREET model relegates key variables to background data by leaving them fixed and unchangeable, but many of those parameters are critical in evaluating the carbon intensity of clean hydrogen, like upstream emissions data. Not all natural gas is created equal, for example. Some producers are using best available technology and actively monitoring and fixing leaks, which should be encouraged for ultimate emissions reductions. The rigidity of the current GREET model poses a risk to emissions reduction goals and impedes the development of clean hydrogen production facilities. Variables such as the distance of a natural gas pipeline, emissions linked to renewable natural gas and those associated with natural gas, and methane leakage rates should be regarded as foreground data, subject to adjustment based on project specifics. Under the proposed framework, producers lack incentives to invest in best available technologies lowering the carbon intensity of natural gas used for clean hydrogen production. Allowing certified lower-carbon intensity natural gas as foreground data under 45V can stimulate emission reduction efforts and promote the adoption of methane leakage prevention technologies. Such measures would complement and enhance the Environmental Protection Agency's efforts to reduce methane leaks.

Additionally, the "system expansion approach" employed by 45VH2-GREET for all co-products, while appropriate, unnecessarily limits steam co-product claims, especially for more efficient carbon capture technologies beyond assumed amine-based technologies. We urge the Treasury Department and the IRS not to restrict steam co-product for such technologies, fostering innovation and efficiency in carbon capture.

Provisional Emissions Rate (PER)

The proposed rule concerning the Provisional Emissions Rate (PER) offers a mechanism for taxpayers to determine the clean hydrogen production credit until the lifecycle greenhouse gas (GHG) emissions rate is established applying the latest GREET model mandated by the Department of Energy (DOE). The PER also mandates that applicants are only eligible to request emissions data from the DOE after completing a front-end engineering and design (FEED) study or demonstrating a comparable level of project maturity. However, the framework for PER applications presents a considerable challenge due to its misalignment with typical project delivery frameworks that we and other observe in major capital projects. For projects requiring substantial capital investments, stakeholders undergo extensive analysis and deliberation during the Pre-FEED phase, where specific technologies and facility designs are meticulously evaluated. The culmination of Pre-FEED generally qualifies and marks the transition to the FEED phase, characterized by the finalization of engineering details and the solidification of a project's scope. Requiring delays in PER applications until after FEED completion could potentially disrupt project progression, creating discrepancies with standard project assurance practices and timelines, thereby impeding seamless project advancement. Furthermore, in our experience, we believe a sufficient emissions rate can be calculated in the Pre-FEED phase and refined in subsequent project phases, thus expediting the investment in and completion of such projects.

Thank you for this opportunity to submit our comments on the proposed 45V rule, which reflects our shared dedication to advancing clean energy objectives. Your consideration of our perspectives is appreciated as we collaborate toward the realization of sustainable energy policies.

Respectfully,



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