December 3, 2022

Internal Revenue Service
CC:PA:LPD:PR (Notice 2022-47)
Room 5203
P.O. Box 5203, Ben Franklin Station
Washington, D.C. 20044

The Honorable Lily L. Batchelder
Assistant Secretary for Tax Policy
Department of the Treasury
1500 Pennsylvania Ave., NW
Washington, D.C. 20220

Mr. William M. Paul
Principal Deputy Chief Counsel and Deputy Chief Counsel (Technical)
Internal Revenue Service
1111 Constitution Ave., NW
Washington, D.C. 20224

RE: Request for Comments on Credits for Clean Hydrogen and Clean Fuel Production Under Section §45V and §45Z

(*Submitted electronically via www.regulations.gov;* Notice 2022-58)

To Whom It May Concern,

Mainstream Renewable Power (Mainstream) is pleased to provide the following comments regarding the Department of the Treasury (Treasury or Treasury Department) and the Internal Revenue Service's (IRS) *Request for Comments on Credits for Clean Hydrogen and Clean Fuel Production Under Section §45V and §45Z*. We commend Treasury and IRS for the expeditious solicitation of feedback that will stand to expedite the burgeoning green hydrogen market.

Introduction:

Mainstream Renewable Power is a leading pure-play renewable energy company, with wind and solar assets across global markets, including in Europe, Africa, Asia-Pacific, and the Americas. We have successfully delivered 6.5 GW of wind and solar generation assets to financial close-ready and have a global portfolio of more than 27 GW. The company is currently bringing forward multi-gigawatt scale developments of offshore wind assets in markets including Vietnam, South Korea, Japan, Norway, Ireland, the UK, and Sweden, and have a pre-development pipeline of opportunities in the US.

Hydrogen presents an unparalleled economic opportunity, with global production expected to increase by over 300% by 2050, or up to 500 million metric tonnes per year[1]. The projected growth is driven in large part by global decarbonisation trends, as hydrogen will play an essential role to decarbonise sectors that cannot be electrified. The hydrogen programs and incentives included in both the Infrastructure Investment and Jobs Act (IIJA) and Inflation Reduction Act (IRA) will be important drivers to create thousands of new jobs in the hydrogen economy and position the US as a leader in the global clean energy market. However, key to maximizing this opportunity will be a commitment to achieving a fully decarbonised product that the market will increasingly demand. To that end, Mainstream strongly supports the goal of the Hydrogen Production Credit (HPC), as well as the Department of Energy's (DOE) hydrogen programs, as enacted in the IRA and IIJA, to reduce the carbon intensity of standard hydrogen production. This ensures that the country achieves full lifecycle decarbonisation, and deconflicts the US supply to unlock the full economic potential of hydrogen required for global competitiveness.

Comments:

.01(1)(e)(ii) What granularity of time matching (that is, annual, hourly, or other) of energy inputs used in the qualified clean hydrogen production process should be required?

Achieving DOE's Hydrogen Shot goal of a reduction in the cost of clean hydrogen to $1 per kilogram within the next decade, and broader decarbonization efforts intended with the passage of the IRA, will require significant electrolyzer deployment, and in turn, an increase in electricity load. This load growth will require new, proximal generation to meet deliverability needs as well as supply adequate localized voltage support to sustain the grid. In accordance with the intent of the IIJA to produce hydrogen with near zero emissions, it is essential that local generation additions be renewable resources and be available on a time-matched basis to align with hydrogen production. Mainstream recommends that this requirement be included in the Treasury Department and IRS §45V guidance to avoid the need for carbon-emitting generation to serve local load, and to achieve a truly carbon-free hydrogen production lifecycle. Further, Mainstream encourages Treasury, IRS and DOE to initiate a stakeholder process to evaluate the tools and technologies best suited to perform and verify localized hourly matching of hydrogen production and renewable generation, as existing bundled and unbundled REC products are insufficient to capture the granularity of location and temporal accounting.

To make meaningful strides towards a fully scaled green hydrogen production fleet, industry must promptly begin deployment while new energy infrastructure is being developed in parallel. As localized renewable energy generation may not be available to the degree necessary in the near term, Mainstream supports a phase-in approach where facilities placed in service in 2027 must procure a percentage of its renewable electricity locally, with the proportion of localized electricity reaching 100% for any facility placed in service from 2030 onward. With clear dates and guideposts to provide certainty to industry, the industry can begin to take shape in short order, creating a runway for a fully decarbonised hydrogen economy.

[1] DNV, *Hydrogen Forecast to 2050*, 14 June 2022 https://www.dnv.com/focus-areas/hydrogen/forecast-to-2050.html

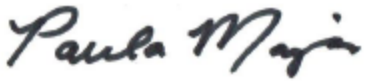
.01(4)(g) If indirect book accounting factors that reduce a taxpayer's effective greenhouse gas emissions, such as zero-emission credits or power purchase agreements for clean energy, are considered in calculating the § 45V credit, what considerations (such as time, location, and vintage) should be included in determining the greenhouse gas emissions rate of these book accounting factors?

The recommendation of hourly matching is supported by Princeton University, as noted in their analysis of multiple implementation measures for the recently enacted hydrogen PTC. The analysis found that, "requiring 100% Hourly Matching leads to near-zero additional emissions from hydrogen production, as long as hydrogen production and time-matched clean electricity resources are located in the same grid region."[2] The analysis also highlights the variances in grid conditions and the implication that has on determining what should constitute as a grid region. "[T]he […] grid is not divided neatly into well-connected zones, and transmission bottlenecks of varying severity exist at all spatial scales." For this reason, Mainstream recommends that in order to determine the threshold for how proximate generation must be to the hydrogen production load, Treasury, IRS and DOE should conduct an evaluation on a subregional basis in partnership with the National Renewable Energy Lab, ultimately to be published in the §45V guidelines.

Conclusion:

Mainstream Renewable Power thanks the Treasury Department and IRS for the consideration of these comments and recommendations. We are eager to contribute to the growth of this new industry and participate in Treasury, IRS and DOE's efforts to support its success.

Sincerely,



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[2] Princeton University Zero Lab, 20 Sept 2022, "Policy Memo: Cost and Emissions Impacts of Hydrogen Production Tax Credit Implementations" https://repeatproject.org/