GLOBAL CCS INSTITUTE

Comments on Docket ID No. REG–117631–23:

Section 45V Credit for Production of Clean Hydrogen; Section 48(a)(15) Election To Treat Clean Hydrogen Production Facilities as Energy Property

Submitted by the Global CCS Institute, February 06, 2024

The Global CCS Institute ("GCCSI") welcomes the opportunity to comment on the U.S. Department of Treasury ("the Treasury"), Internal Revenue Service, notice of proposed rulemaking for the Section 45V Credit for Production of Clean Hydrogen. GCCSI is an international non-profit think tank comprising over 200 members from governments, research institutions and industry. Our mission is to accelerate the deployment of carbon capture and storage (CCS) as one of the key technologies to address climate change.

To limit warming and avoid the worst impacts of climate change, we need to curtail global carbon dioxide (CO_2) emissions and reach net-zero by mid-century.[1] CCS is a pivotal technology that can significantly reduce CO_2 emissions at their source, including CO_2 generated by hydrogen and ammonia production.

Low-carbon energy carriers like hydrogen and ammonia are important alternatives to unabated fossil fuels for power generation, transportation, heat sources, and feedstock for industrial processes. Demand for clean hydrogen in the United States could grow to 10 million tonnes (Mt), 20 Mt, and 50 Mt per year by 2030, 2040, and 2050, respectively.[2]

To produce sufficient hydrogen to meet expected demand, the two significant challenges of 1) scale and 2) cost must be overcome. Today, CCS pathways are the lowest-cost option for producing clean hydrogen. However, scaling up the supply of clean hydrogen and ammonia will require targeted supportive policy, such as the 45V tax credit, to drive investment.

Hence, GCCSI welcomes the Treasury's proposed rulemaking for the Section 45V tax credit.

In defining requirements for clean hydrogen production, the Treasury's proposed rules for the 45V tax credit reference the following pathways with CCS:

---

[1] *Intergovernmental Panel on Climate Change, Special Report: Global Warming on 1.5°C. 2018.* https://www.ipcc.ch/sr15/; *Intergovernmental Panel on Climate Change, Sixth Assessment Report, Climate Change 2022: Mitigation of Climate Change, the Working Group III contribution. 2022.* https://www.ipcc.ch/report/sixth-assessment-report-working-group-3/

[2] *U.S. National Clean Hydrogen Strategy and Roadmap. 2023.* https://www.hydrogen.energy.gov/docs/hydrogenprogramlibraries/pdfs/us-national-clean-hydrogen-strategy-roadmap.pdf

info@globalccsinstitute.com
+1 202 895 2788
globalccsinstitute.com

2101 L St NW, Suite 300
Washington, D.C. 20037 United States
ACN: 136 814 465

- steam methane reforming (SMR) of natural gas with CCS,
- autothermal reforming (ATR) of natural gas with CCS,
- SMR of landfill gas with CCS,
- ATR of landfill gas with CCS,
- biomass gasification with CCS.

This list is not exhaustive. CCS is a versatile technology and can be applied to other processes and feedstocks. GCCSI welcomes the effort by the Treasury and DOE to acknowledge other pathways beyond those identified in the proposed rulemaking and provide the Provisional Emission Rate (PER) mechanism for their inclusion in the 45V tax credit rules. GCCSI encourages the Treasury to include approved PERs in the GREET model so that all new and viable pathways are regularly incorporated into the regulatory framework to accelerate deployment and foster competition.

While GCCSI recognizes the need to update the GREET model in line with the inclusion of new pathways and improved Life Cycle Analysis (LCA), such improvements may introduce uncertainties with respect to carbon intensity calculations required for the 45V tax credit. This uncertainty may complicate modelling and deter project investment. A balance can be struck by grandfathering investments which have achieved FID.

Implementation of the 45V tax credit and growth of clean hydrogen and ammonia production in the United States will be consequential and reverberate across global economies as other countries look to the 45V framework as an effective standard for regulation and production of low-carbon energy carriers.

Deployment of proven, available technologies – like CCS – in hydrogen and ammonia production, coupled with supportive policies like the 45V tax credit, will facilitate growing domestic clean hydrogen production and help kick-start the clean hydrogen economy.

Growth in hydrogen production and CCS deployment will require commensurate hydrogen and CO_2 transportation infrastructure, such as pipelines. The Institute encourages the U.S. government to consider this and facilitate a holistic approach to the timely development of necessary infrastructure.

Please feel free to contact the Institute with any follow-up questions. Many resources are publicly available on our website, including our Global Status of CCS Report.[3]

[3] *https://www.globalccsinstitute.com/; Global Status of CCS Report. 2023. https://status23.globalccsinstitute.com/*