



ALERTS

Treasury, IRS Release Guidance On Section 45V Hydrogen Production Tax Credit: Can The Agencies Balance Economic Practicality And Environmental Responsibility?

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Highlights

- On Dec. 22, 2023, the Treasury Department and the IRS released long-awaited proposed regulations for eligibility and implementation of the Section 45V hydrogen production tax credit
- Comments on the proposed rule are due by Feb. 26, 2024, and a public hearing has been scheduled for March 25, 2024
- Refinements will likely be needed to achieve the critical balance that aligns the economic viability and cost-effectiveness of hydrogen production with environmental preservation, and to fill gaps to ensure that the guidance is complete and that all stakeholders understand the requirements to qualify for the Section 45V tax credit

On Dec. 22, 2023, well after the deadline established by Congress, the U.S. Department of the Treasury and the Internal Revenue Service (IRS) released their [notice of proposed rulemaking on eligibility for the clean hydrogen production tax credit](#) (NPRM) that was created by Section

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13204 of the Inflation Reduction Act (IRA) and added to the Internal Revenue Code as [Section 45V](#). The same rule also includes guidance on Section 48(a)(15) elections to treat clean hydrogen production facilities as energy property.

Comments on the proposed rule are due by Feb. 26, 2024, and a public hearing has been scheduled for March 25. According to the NPRM, requests to speak and outlines of topics to be discussed at the public hearing must be received by March 4, 2024. If no outlines are received by then, the public hearing will be cancelled.

As reactions begin to roll in, indications are that there will be a considerable volume of comments, and some adjustments and gap-filling will be needed to achieve a workable balance in which hydrogen production can be both economically viable and environmentally sustainable.

Background to Proposed Guidance for Section 45V

For hydrogen production facilities [meeting the prevailing wage and registered apprenticeship requirements](#) of the IRA, the amount of the Section 45V hydrogen production tax credit (PTC) ranges from \$.60 per kilogram of hydrogen produced to \$3 per kilogram for producers with the lowest emissions. The four-tiered credit rates are based upon the lifecycle greenhouse gas emissions (GHG) of a hydrogen production process, which in turn are defined by reference to Clean Air Act Section 211(o)(1)(H):

“The term ‘lifecycle greenhouse gas emissions’ means the aggregate quantity of greenhouse gas emissions (including direct emissions and significant indirect emissions such as significant emissions from land use changes), as determined by the Administrator, related to the full fuel lifecycle, including all stages of fuel and feedstock production and distribution, from feedstock generation or extraction through the distribution and delivery and use of the finished fuel to the ultimate consumer, where the mass values for all greenhouse gases are adjusted to account for their relative global warming potential.”

The Treasury Department’s proposed regulations provide for determining lifecycle GHG emissions rates resulting from hydrogen production processes; petitioning for provisional emissions rates; verifying production and sale or use of clean hydrogen; preventing production of hydrogen in a manner that is wasteful; modifying or retrofitting existing qualified clean hydrogen production facilities; using electricity from certain renewable or zero-emissions sources to produce qualified clean hydrogen; and electing to treat part of a specified clean hydrogen production facility as property eligible for the energy credit under Section 45Q.

[According to the White House](#), this guidance “is part of the administration’s broader efforts to support hydrogen and other technologies that will enable the U.S. to cut emissions from so-called hardest-to-abate sectors of the economy, including heavy industry and long-haul transportation” and the NPRM:

“... represents a major step forward in achieving the Administration’s clean energy goals while creating new, good-paying jobs, driving the growth of an emerging industry, and positioning the United States as a leader in one of the key energy technologies of the future. The increased

availability of cost-competitive clean hydrogen enabled by this credit will catalyze both industrial growth and deep decarbonization by permitting a wide range of hydrogen projects to move forward while maintaining important environmental safeguards.”

Stringent Eligibility Requirements for Section 45V: Lightning Rod for Comments?

Given the financial and environmental implications of the proposed rule, and the potential impact it will have on the success of the [National Clean Hydrogen Strategy](#) and the administration’s program to [create seven regional clean hydrogen hubs \(H2Hubs\)](#) across the country, there is no shortage of issues that warrant comment. However, judging from initial reactions since the proposal [was first leaked in early December](#), the most significant divide is over the efficacy of the agencies’ controversial requirements to assure that only clean electricity can be used to produce green hydrogen that qualifies for the maximum Section 45V credit. The details and requirements of the three stringent clean energy pillars integrated into the proposed rule – additionality/incrementality, deliverability/regionality, and particularly time-matching – are likely to be a major focal point of the comments and associated lobbying.

The three pillars are intended to prevent the use of fossil-powered grid electricity, directly or indirectly, to produce green hydrogen. (The agencies’ release of their draft included a [letter from the EPA](#) that provides guidance confirming that “indirect greenhouse-gas emissions associated with increased demand for electricity from electrolytic hydrogen production constitute ‘significant indirect emissions’” to be accounted for by the Treasury Department in setting the parameters for Section 45V eligibility.)

According to the draft regulations, taxpayers will be required to show that they meet the criteria for these three pillars using energy attribute certificates (EACs), which demonstrate the purchase of clean power and qualification for a particular credit tier. [The Treasury Department summarizes these criteria](#), and the comments it is soliciting about them, as follows:

- **Additionality/Incrementality of New Clean Power:** Clean power generators that began commercial operations within three years of a hydrogen facility being placed into service are considered new sources of clean power. Generation resulting from a generator’s newly added capacity (uprates) are also considered new sources of clean power. The proposed rules request comments on approaches by which generation from existing clean power generators could be considered to meet the requirements for new clean power under certain circumstances.
- **Deliverability/Regionality of Clean Power:** Clean power must be sourced from the same region as the hydrogen producer, as derived from [the Department of Energy’s \(DOE’s\) 2023 National Transmission Needs Study](#). The proposed rules also request comment on how to consider transmission of clean power between regions.
- **Time-matching:** The proposed rule requires matching of hydrogen production to new deliverable clean power generated annually, with

a phase-in to hourly generation. EACs will generally need to be matched to production on an hourly basis – meaning that the claimed generation must occur within the same hour that the electrolyzer claiming the credit is operating. The proposed rules include a transition to allow annual matching until 2028 when hourly tracking systems are expected to be more widely available, and seek comment on this transition timeline. By way of comparison, the EU allows matching of renewable power to electrolyzer operation within a calendar month until 2030, a longer transition period. After that, the two must take place within a one-hour window.

The IRA and proposed regulation also require that to claim the credit, a taxpayer must have production and sale, or the use of clean hydrogen, verified by a qualified, unrelated third party. Upon qualification, the credit is available to the hydrogen producer for 10 years after the facility is placed into service.

Environmental groups and some hydrogen developers have praised the proposal as needed guardrails to ensure that green hydrogen eligible for the maximum credit is truly green. According to the [Clean Air Task Force](#), “These ‘Three Pillars’ help ensure that hydrogen production does not inadvertently increase high-emitting electricity generation, which would go against the plain language of 45V by increasing economy-wide emissions.”

Rachel Fakhry, the Natural Resources Defense Council's policy director for emerging technologies, said that the [proposed hydrogen tax credit rules are a win for climate, industry and electricity consumers](#):

“Anything less than the climate and consumer protections proposed today would be a giveaway to legacy energy companies eager to hijack hydrogen at the direct expense of the climate and consumers. Broad loopholes would be disastrous for the climate, kneecap our efforts to clean up the power grid, and harm the global potential of the U.S. clean hydrogen industry. Treasury must hold firm and finalize this strong guidance.”

Other industry groups and hydrogen developers view the proposal as contrary to the congressional intent to foster flexibility for hydrogen expansion and implement a balanced approach to spur economic development and create jobs while reducing carbon emissions. One industry group captured the [overall sentiment of these critics](#), stating that “these new restrictions will have a chilling effect on hydrogen investment, delay technological deployment and slow progress to reduce costs and address climate challenges.”

Some have been blunter, asserting that the proposed three pillar requirements for clean hydrogen are misguided insofar as they were not included in or consistent with the IRA, and will put the incentives out of reach. The [U.S. Chamber of Commerce](#) added that they will “stunt the growth of a critical industry before it has even begun.” Many of these initial reactions highlighted the need for more flexibility and more time for the transition from annual to hourly time-matching, to bring new renewable resources online, and to scale up hydrogen production.

Proposed Rule Omits or Defers Action on Key Issues

The proposed rule was also notable for what was missing entirely or deferred for future consideration. The proposal puts off a determination and solicits comment on whether existing nuclear reactors and hydropower facilities can take advantage of any aspect of Section 45V PTCs. Both of these groups of power sources reacted strongly to their omission from the draft, arguing that the rules as proposed would unfairly prevent the use of low-carbon power generation capacity that already exists to facilitate scaling of clean hydrogen production.

The Treasury Department will need to reconcile its current course with the DOE's recent inclusion of three hydrogen hubs that will use nuclear generation, at least in part, among the [seven selected to share \\$7 billion](#) to accelerate the large scale production and use of low-cost hydrogen as a clean energy replacement for fossil fuels.

While the Treasury Department characterizes Section 45V as a "technology-neutral credit" based on the emissions rate of the hydrogen production process, there is no guidance in the draft about the criteria for quantification and eligibility of natural gas and carbon capture and storage that is used to make blue hydrogen. Instead, the Treasury Department's requests for detailed comments and information on matters paralleling the analysis of green hydrogen in the proposed rule suggest that the potential application of Section 45V to blue hydrogen will be the subject of a separate or supplemental rulemaking:

"With regard to non-minimally emitting electricity generation, and fossil fuel-powered generation and biomass powered generation with or without CCS in particular, the Treasury Department and the IRS request comment on mechanisms to verify accurately real-world emissions related to hydrogen production. This includes mechanisms for, among other things, verification of the origin of the feedstock, rate of carbon capture, and other parameters that are relevant to accurate lifecycle analysis, as well as the ability of EAC instruments to represent accurately such attributes. The Treasury Department and the IRS also request comment on specific lifecycle GHG emissions considerations, including the use of counterfactual scenarios that should be considered in evaluating direct and indirect emissions associated with specific types of biomass and its consumption. The Treasury Department and the IRS also request comment on the extent and manner in which incrementality, temporal matching, and deliverability should be applied in accounting for existing or new electricity generation from biomass or fossil feedstock."

The Treasury Department is also soliciting feedback regarding the criteria for use of renewable natural gas (RNG) or methane from sources like coal mines and appropriate conditions for use of RNG and fugitive methane certificates to lower a blue hydrogen producer's emissions. Evaluation of information commenters provide in response to these blue hydrogen inquiries will need to account for the in-depth analysis in the DOE's [Hydrogen Shot Technology Assessment of Thermal Conversion Approaches](#) issued Dec. 5, 2023, which suggests that most blue hydrogen will still exceed the U.S.' target cost of \$1 per kilogram by 2031, and is unlikely to be clean enough to qualify for 45V tax credits.

Takeaways

The development of regulations for the Section 45V clean hydrogen production tax credit presents a complex and nuanced challenge:

navigating a delicate balance to align the economic viability and cost-effectiveness of hydrogen production with environmental preservation goals. On the one hand, it is critical to ensure that leveraging hydrogen as a cleaner fuel does not inadvertently result in a rise in emissions that contribute to global warming. On the other hand, promulgating requirements for tax credit eligibility that are so stringent that few hydrogen producers will be able to qualify could undermine the purpose of Section 45V, stymie development of the H2Hubs and hydrogen market, and substantially impair the prospects for successful implementation of the administration's strategy to achieve a carbon-free grid by 2035 and net-zero emissions by 2050.

From initial reactions, it appears that some refinements to the proposed Section 45V regulations may be needed to achieve this critical balance. At the same time, the Treasury Department and the IRS also need to fill the acknowledged gaps in the proposal – and account for nuclear and hydropower generation and other clean energy sources, as well as the eligibility of fossil fuel and biomass generation (with and without carbon capture and storage) – to ensure that the Section 45V guidance is complete and that all stakeholders understand the requirements to qualify for the tax credit. A substantial volume of comments is expected and it may be some time before the Section 45V rule is finalized.

For more information, please contact the Barnes & Thornburg attorney with whom you work or Bruce White at 312-214-4584 or bwhite@btlaw.com.

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