Business Roundtable

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

Docket IRS-REG-117631-23[1]
IRS-2023-0066

Introduction

Business Roundtable appreciates the opportunity to provide comments on the IRS's proposed regulations to implement the Inflation Reduction Act's section 45V credit for producing clean hydrogen and the section 48(a)(15) election to treat clean hydrogen production facilities as energy property.

Business Roundtable is an association of more than 200 chief executive officers (CEOs) of America's leading companies, representing every sector of the U.S. economy. Business Roundtable CEOs lead U.S.-based companies that support one in four American jobs and almost a quarter of U.S. GDP. Through CEO-led policy committees, Business Roundtable members develop and advocate directly for policies to promote a thriving U.S. economy and expanded opportunity for all Americans.

Business Roundtable recognizes that human activities are contributing to climate change and that climate change poses significant environmental, economic, public health and security threats around the world, including to the United States. Business Roundtable believes the United States should reduce greenhouse gas (GHG) emissions as rapidly as feasible while continuing to ensure reliable, affordable and resilient sources of energy to power its economy.[2] Clean hydrogen can make an important contribution to achieving these objectives and Business Roundtable strongly supports efforts to rapidly develop this industry.

[1] 88 Fed. Reg. 89220 (December 26, 2023).
[2] *See* Business Roundtable, *Addressing Climate Change: Principles and Policies* (Sept. 2020), available at: Business-RoundtableAddressingClimateChangeReport.September2020.pdf.

Accelerating the Hydrogen Economy is Essential for Meeting Our Climate & Economic Goals

America cannot reach its climate goals without adequate supplies of clean, domestically produced hydrogen.[3] Hydrogen has a vital role to play in reducing emissions across the economy—particularly in hard-to-abate sectors where few other options exist, including heavy industry, aviation and heavy-duty transportation.[4]

Clean hydrogen also can drive economic growth, create new high-skilled American jobs and extend U.S. leadership in innovative clean energy technologies.

To meet U.S. emissions goals and bolster American competitiveness in the energy transition, the foundation for clean hydrogen's growth must be laid today—not years from now. It is crucial government policy support be done right. Ensuring adequate financial support for this infant industry is essential to enable rapid growth and position the United States as a global leader in the energy transition.

Congress Intended to Accelerate the Production and Use of Clean Hydrogen

Congress recognized the important role of hydrogen in the Infrastructure Investment and Jobs Act (IIJA)[5] when it found that "(1) hydrogen plays a critical part in the comprehensive energy portfolio of the United States; (2) the use of hydrogen resources of the United States (A) promotes energy security and resilience; and (B) provides economic value and environmental benefits for diverse applications across multiple sectors of the economy."[6]

To help realize these benefits, Congress provided funding for new regional hydrogen research hubs; required development of a national clean hydrogen strategy; funded contracts and cooperative agreements for research, development and demonstration projects to advance new clean hydrogen production, processing, delivery and storage; and funded a clean hydrogen electrolysis program.

As Congress noted, one of the key purposes of these provisions is to "accelerate research, development, demonstration and deployment of hydrogen from clean energy sources."[7]

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[3] *See, e.g.,* Princeton University, *Net Zero America: Potential Pathways, Infrastructure and Impacts, Final Report (*(October 29, 2021), available at: Princeton NZA FINAL REPORT (29Oct2021).pdf.

[4] Department of Energy, *U.S. National Clean Hydrogen Strategy and Roadmap (*June 2023), available at: U.S. National Clean Hydrogen Strategy and Roadmap (energy.gov). *See also,* Department of Energy, *Pathways to Commercial Liftoff: Clean Hydrogen* (March 2023), available at: Pathways to Commercial Liftoff - Clean Hydrogen - March 20 - FINAL (energy.gov)

[5] Title III, Subtitle B, Pub. L. No. 117-58 (Nov. 15, 2021),

[6] *Id.*at Sec. 40311(a).

[7] *Id.*at Sec. 40311(b).

These efforts to jumpstart the production and use of clean hydrogen codified in the IIJA were followed by the tax incentives at issue here that were included in subsequent legislation.[8]

Taken together, these provisions evidence a clear Congressional recognition of the important role of hydrogen for meeting our decarbonization objectives and the intent to accelerate the deployment of this nascent technology, along with the jobs and economic activity it will bring.

The U.S. clean hydrogen industry is in its infancy, and it will take hundreds of billions of dollars in hydrogen-related investments to achieve the scale required to meet the nation's carbon reduction goals over the next 30 years.[9]

Despite clear Congressional intent, backed by billions of dollars of taxpayer investments designed to build a new clean hydrogen industry in the United States, the inflexibility of the proposed rules threatens to chill investment in U.S. manufacturing and new jobs, undermine the potential of the hydrogen hubs funded by the Department of Energy (DOE), and put American hydrogen production at a global disadvantage.

IRS' Proposed Rules for Collecting the 45V Credit are Overly Stringent and Will Stunt the Nascent Clean Hydrogen Industry

One of the most problematic parts of the proposed regulations concerns requirements that Congress did not address in the language of section 45V and which are at variance with the overall policy intent of Congress described above. In particular, the proposed regulations provide that, for purposes of determining a lifecycle emissions rate, "if a taxpayer determines a lifecycle GHG emissions rate for hydrogen produced at a hydrogen production using the most recent GREET model … then the taxpayer may treat such hydrogen production facility's use of electricity as being from a specific electricity generating facility rather than being from the regional electricity grid … only if the taxpayer acquires and retires qualifying EAC's [energy attribute certificates] … for each unit of electricity that the taxpayer claims from such source."[10] Qualifying EAC's are subject to incrementality, deliverability and temporal matching requirements, which require hourly matching beginning 2028.[11]

Business Roundtable appreciates and supports the goal of ensuring electric grid emissions do not increase because of clean hydrogen production, thus partially offsetting the positive climate benefits clean hydrogen can provide. However, we are concerned that the proposed requirements that clean hydrogen producers meet strict incrementality (additionality), deliverability, and hourly time matching requirements that are not currently feasible, threaten to severely limit the amount of investment flowing into this industry, and ultimately make it

[8] Pub. L. No. 117-169 (Aug. 16, 2022).
[9] DOE, *Pathways to Commercial Liftoff: Clean Hydrogen*, *supra* note 4 at 42-44.
[10] Proposed §1.45V-4(d)(1).
[11] Proposed §1.45V-4(d)(3)(i-iii).

more difficult to reduce GHG emissions in hard-to-decarbonize sectors. We urge Treasury to provide more flexibility with respect to these requirements and additional time to meet them to better balance the goals of ensuring grid emissions do not increase while also jumpstarting the clean hydrogen industry that will be essential to meet long-term climate goals.

Inflexible "Incrementality," or Additionality, Requirement Would Penalize the Clean Hydrogen Industry for Deficiencies in the Electricity Sector Permitting Process

The power sector is undergoing a fundamental transition to a low-carbon future. But this transition is more complicated than just adding cleaner sources of power to the system while retiring existing fossil fuel fired generators. Building significant new transmission, and upgrading existing transmission lines, is critical to building a more resilient, reliable and clean grid.

State resource mandates for cleaner sources of power, electricity buyer preferences and EPA proposed regulations under section 111 of the Clean Air Act that, if finalized, will accelerate the demand for both renewables and clean hydrogen, already are dramatically increasing the demand for zero-emissions sources of power. While renewables and zero-emitting resources will continue to grow rapidly as electric generation resources, constraints on how rapid this growth can be are already becoming apparent with respect to interconnection request queues,[12] supply chain disruptions[13] and permitting delays. Given these constraints, Treasury should not assume a new generator powering hydrogen production would not have come online but for the hydrogen sale. Because demand for clean energy is outpacing the ability to build and interconnect new generation across the country, hydrogen production alone will not change the amount of new clean generation coming online. Adding the proposed incrementality requirement will add even more demand without a reasonable prospect of satisfying this demand in the near or intermediate term because of the constraints described above.

Treasury relies on EPA's conclusion that an additionality requirement is needed to ensure that hydrogen production does not result in significant indirect emissions on the power grid.[14] EPA points to consideration of indirect emissions in land use as part of the agency's renewable fuels

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[12] Berkeley Lab, Lawrence Berkeley National Laboratory, *Queued Up: Characteristics of Power Plants Seeking Transmission Interconnection As of the End of 2022* (April 2023), available at: PowerPoint Presentation (lbl.gov). Key findings include: "over 10,000 projects representing 1,350 gigawatts (GW) of generator capacity and 680 GW of storage actively seeking interconnection; most (~1260 GW) proposed generation is zero-carbon; only ~21% of projects (14% of capacity) requesting interconnection from 2000-2017 reached commercial operations by the end of 2022; completion rates are even lower for wind (20%) and solar (14%); the average time projects spent in queues before being built has increased markedly. The typical project built in 2022 took 5 years from the interconnection request to commercial operations." *Id.* at 3.

[13] Challenges facing the offshore wind industry include delays and unanticipated cost increases which have resulted in cancellation of several large offshore projects in recent months.

[14] 88 Fed. Reg. 89228, note 12.

program as precedent, but it has engaged in none of the extensive modeling comparable to the land use modeling undertaken to evaluate indirect emissions in that program.[15]

Further, the additionality requirement is inconsistent with the language of section 45V, which clearly intended for 45U existing nuclear facilities to be an eligible power source for 45V facilities by expressly allowing the stacking of those two credits.

Overly strict regulations specifying that a qualifying EAC must meet incrementality or additionality requirements will dramatically limit the amount of clean hydrogen that can be produced to new sources of clean power generation, while failing to sufficiently utilize existing nuclear, wind and other zero-emitting generation resources. This requirement alone will dramatically limit the size of the clean hydrogen industry and make it impossible to achieve EPA's and DOE's goals for the hydrogen economy. We urge the final regulations to reflect less stringent incrementality requirements.

The "Deliverability," or Regionality, Requirement Exacerbates the Difficulty of Getting Clean Energy to Hydrogen Producers

The deliverability requirement will limit availability of clean sources of electricity to regions where clean hydrogen is intended to be produced. While each of these regions is geographically large, they are not equally endowed with wind and solar potential. Further, transmission constraints, under the best of circumstances, will take many years to resolve.

The deliverability requirement has little policy support if the objective is to accelerate decarbonization by maximizing the build out of clean sources of electricity wherever possible, recognizing there are regional differences to resource availability but no ultimate climate difference in where renewable electricity is generated.

The impact of the "deliverability" requirement would be to limit the deployment of clean hydrogen technology to only regions with reliable renewable energy generation and infrastructure. This is tantamount to picking geographic winners and losers in terms of which communities can benefit economically from investment in hydrogen energy, and which energy consumers have access to lower emissions hydrogen fuel and feedstocks. At a minimum, the final guidance should recognize EACs from regions that can deliver electricity into the region in which the electrolyzer is located.

The "Temporal Hourly Matching" Requirement is Infeasible and Assumes Technical Capabilities that Do Not Currently Exist in Most Markets

[15] EPA letter to The Honorable Lily Batchelder, (December 20, 2023) available at 45V-NPRM-EPA-letter.pdf (treasury.gov).

Hourly matching is not currently available or possible within many of America's electricity grids.[16] Although the hourly matching requirement will not become effective until 2028, whether it will be available is outside of the hydrogen industry's control.

Increased investment in smart grid infrastructure is needed to unlock capabilities like hourly matching and the integration of more intermittent renewable resources into the grid. But it is uncertain how long it will take for these technological capabilities to mature, scale and be deployed. Conditioning receipt of the credit upon a factor that the industry cannot control adds uncertainty and costs to investment decisions that will be required long before then. Waiting for hourly matching capabilities to be available where needed will add significant delays and prevent hydrogen from scaling at the pace needed to be cost competitive.

Moreover, in addition to hourly matching capabilities being generally unavailable, the intermittent nature of renewable generation makes temporal matching infeasible from an operational perspective unless these resources are over-sized or paired with adequate battery storage, which adds substantial additional costs, complexity, and time.

If the final regulations retain an hourly matching requirement, we urge the compliance date be extended until at least 2030 and that clean hydrogen projects entering commercial operation prior to that date be grandfathered from the requirement. An extended compliance deadline will provide greater certainty that the needed technologies will be able to be deployed at the scale necessary and in the meantime, will give clean hydrogen investors greater confidence in their ability to meet regulatory requirements.

The Requirement of Annual "All or Nothing" Calculation is Contrary to Congressional Intent in Creating a Production Tax Credit

As drafted, the guidance would require all clean hydrogen produced at a qualified facility to be calculated as part of an annual average for the taxable year, which may result in a carbon intensity at a level at which no credit is available. The draft guidance provides an "all or nothing" approach that when combined with the three pillars creates a major barrier to the ability of clean hydrogen producers to qualify. As drafted, the proposal would require producers to curtail production when sufficient clean electricity resources are not available, which is incompatible with safety and operational practices. Treasury should allow taxpayers to claim credit for any duration of clean hydrogen, not just an annualized average. The nature of a production tax credit, by design, should allow for taxpayers to separate production into qualified and non-qualified quantities.

[16] 88 Fed. Reg. 89233.

The Proposed Regulations are Not Feedstock or Technology Neutral, As Congress Intended

Congress intended the hydrogen production tax credit in section 45V to be feedstock and technology neutral. Congress did not disqualify any feedstock or technology from qualifying for the credit. Instead, Congress required the amount of the credit to vary based on the overall carbon intensity of the hydrogen produced. In doing so, Congress aimed to incentivize producers to take steps to reduce the carbon intensity of their feedstocks, and processes, and thus the resultant hydrogen.

The proposed regulations are not consistent with this expressed Congressional intent. Instead, the draft regulations prohibit producers from competing on the carbon intensity of the hydrogen they produce by impermissibly disadvantaging certain feedstocks and certain technology pathways.

The Final Rules Should Provide the Opportunity to Select Custom Upstream Emissions Rates for Natural Gas

Hydrogen produced from natural gas is an example of a feedstock that the proposed regulations disadvantage. The proposed rules require the use of a default value for upstream emissions associated with natural gas production and transport. This approach ignores the substantial investments being made by the U.S. natural gas industry to reduce both CO2 and methane emissions in natural gas production and the opportunities to provide verifiable emissions data for specific projects. This lack of flexibility undermines incentives for U.S. producers to continue to reduce those emissions and is contrary to the purpose of the statute.

To address this problem, the final guidance should permit the user to select a custom upstream emission rate for natural gas that has been produced with technologies and processes that minimize emissions to rates well below industry averages. EPA is in the process of developing rules to implement the methane fee established by law in 2022 which will require specific data to be provided for individual producers. Given that hydrogen producers can significantly reduce their emissions with low-emissions intensity natural gas, they should be permitted to customize these verified data in the final 45V GREET model. The certification of lower-carbon intensity natural gas should be viable through emissions monitoring, reporting, verification, and auditing. As with renewable natural gas, a book and claim system should be permissible for all natural gas inputs. The final regulations should permit these changes to the GREET model inputs.

The Final Regulations Should Recognize Additional Qualifying Technologies

In addition to disadvantaging certain hydrogen feedstocks, the proposed regulations also disadvantage certain technologies. For example, currently the GREET model does not recognize cryogenic fractionation technology for CO2 capture as a technology pathway to CCS. The model should allow this technology, and other proven technologies that may emerge, to be recognized as legitimate model modifications with appropriate verification of performance.

The Final Regulations Should Allow Book-and-Claim Accounting for Renewable Natural Gas

Renewable natural gas ("RNG") is the term used for upgraded biogas used as a replacement for fossil natural gas. RNG comes from a variety of sources, including landfills, livestock farms and waste treatment plants. RNG, as a renewable energy substitute for natural gas, has numerous benefits, including reducing greenhouse gas emissions by preventing vented methane emissions from agriculture, producing economic benefits for farmers and communities, and providing local air quality improvements. Critically, RNG can also provide a low carbon intensity feedstock for clean hydrogen production. The current proposal only includes eligibility for landfill biogas versus those produced from other feedstocks. While the proposal seeks to incorporate additional hydrogen production pathways from RNG, it would require RNG for any source to be the "first productive use" of that biogas in order to receive an emissions value consistent with biogas or otherwise risk being treated like fossil natural gas, thus undermining opportunities for new production pathways.

The proposed regulations should allow book-and-claim accounting for RNG without unduly burdensome restrictions. This approach is consistent with EPA's Renewable Fuel Standard ("RFS") and California's Low Carbon Fuel Standard ("LCFS"), overseen by the California Air Resources Board ("CARB"), which allow for book-and-claim accounting treatment of biogas (RNG) in its rules. There is already significant regulatory scrutiny of the "book-and-claim" system under the RFS and LCFS programs. The "book-and-claim" system under both programs is substantiated through commercial agreements, attestations (verified by third-party verifiers) and monthly reconciliations. In addition, EPA's biogas regulatory reform will come into effect in 2025, creating even more stringent requirements for RNG production and distribution and ensure high-quality accounting to reduce any risk of double counting of Renewable Identification Numbers ("RINs"). RINs are closely tracked in the EPA Moderated Transaction System ("EMTS").

The clear legislative intent of the statute was to provide incentives to promote a nascent market to a level needed for the U.S. to meet its decarbonization goals. These proposed regulations should create the market conditions to help grow and expand the hydrogen industry rather than prevent or significantly hinder its growth through unduly burdensome requirements such as "first productive use." The "book-and-claim" system exists today and is audited and strictly enforced by the EPA and CARB to prevent any fraud or abuse. In lieu of any national RNG database that does not exist today, taxpayers should be allowed to use existing policies that are heavily audited and scrutinized through regulatory agencies, such as EPA and CARB, to substantiate the carbon intensity of the RNG used for hydrogen production. Restrictions that prevent or hamper the use of "book-and-claim" for RNG would disrupt established processes with the EPA and CARB, prevent the use of very low carbon hydrogen pathways, and significantly delay and limit the development of an American clean hydrogen industry.

The Proposed Rules Imperil U.S. Competitiveness and Leadership in the Clean Energy Transition and Clean Hydrogen Technology Innovation

The U.S. is not alone in recognizing the importance of hydrogen for world-wide decarbonization efforts, or the jobs and economic activity the clean hydrogen build-out will bring. International investment in hydrogen hubs is accelerating.[17]

Europe has already adopted regulations that are less stringent than those proposed here.[18] If the U.S. makes it too difficult or uncertain to build out the clean hydrogen industry here, investment will flow to jurisdictions where requirements are less restrictive. The U.S. would lose the opportunity to build out an important new industry, with the associated high-paying manufacturing and other jobs that this industry will bring, that is essential to achieving our ambitious climate goals. Instead, the U.S. would end up importing clean hydrogen and hydrogen production technology from other countries that have recognized the potential of this critical industry and invested in it.

Conclusion

Clean hydrogen has a critical role to play in achieving our economy-wide decarbonization goals. Unfortunately, the proposed rules are overly inflexible and fail the efficacy test on both economic and climate grounds. Business Roundtable believes this is in direct conflict with Congressional intent, which recognizes the environmental, economic and climate leadership advantages a robust clean hydrogen industry will bring.

In terms of the economic implications, the "three pillars" regulations as currently proposed would severely limit the ability of this innovative industry to get off the ground and scale, thereby damaging U.S. global competitiveness in a leading-edge energy transition industry.

Specifically, we urge Treasury to eliminate the temporal matching and deliverability requirements from its final regulations because they have no demonstrable climate or policy rationale and, in fact, are likely to compromise our ability to grow the clean hydrogen industry so it can achieve the needed scale in key sectors of our economy. Requiring hourly matching is not only infeasible and unavailable in most electricity markets today, but it will also not result in more "clean" electrons produced on net. From a climate perspective, it should make no difference what hour a "clean" electron is produced or whether it is consumed within the same hour. The same is true of the proposed deliverability requirements. Global climate change is a global challenge, and a "clean" electron produced in one U.S. region provides the same climate benefit as one produced in another. If Treasury chooses to retain these requirements, we urge

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[17] International Energy Association, *Global Hydrogen Review 2023* (2023), available at: https://www.iea.org/reports/global-hydrogen-review-2023/executive-summary.

[18] European Parliament, EU rules for renewable hydrogen (April 2023), available at: https://www.europarl.europa.eu/RegData/etudes/BRIE/2023/747085/EPRS_BRI(2023)747085_EN.pdf.

a compliance date of no earlier than 2030, and that clean hydrogen projects entering commercial operation prior to then be grandfathered from these requirements. This would allow time for grid investments to help resolve interconnection and deliverability constraints and for hourly matching technology to become more widely available.

We also believe that the hydrogen industry would be unable to build and scale at anywhere near the pace required to meet our emissions goals and growing demand for lower carbon energy if subject to a strict additionality requirement. Simply put, constructing and connecting new renewable generation is infeasible for a nascent industry, given the current state of our nation's permitting processes and grid infrastructure. We urge the final regulations to reflect greater flexibility regarding incrementality.

We also urge adoption of the changes discussed earlier with respect to ensuring feedstock and technology neutrality; adopting "book-and-claim" accounting for renewable natural gas; and to significantly expand the definition of what "counts" as additional clean generation. These changes will have a meaningful impact on this nascent industry's ability to scale and provide no and low emissions fuel.

For further information about these comments, please contact:

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