February 26, 2024

U.S. Department of the Treasury, Internal Revenue Service
Office of Tax Policy
Ben Franklin Station
P.O. Box 7604, Room 5203
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**
Docket: REG-117631-23

WE ACT for Environmental Justice ("WE ACT") submits these comments to the U.S. Department of the Treasury and the Internal Revenue Service on the proposed rule for Section 45V Credit for Production of Clean Hydrogen; Section 48(a)(15) Election To Treat Clean Hydrogen Production Facilities as Energy Property.

WE ACT for Environmental Justice ("WE ACT") is a Northern Manhattan-based member organization whose mission is to advocate for and build healthy communities by ensuring communities of Color and low income communities lead in creating just and equitable environmental health laws, policies, and practices.[1] Since its founding in 1988, WE ACT has worked to organize and empower environmental justice communities across the country which have been and continue to be adversely affected by harmful infrastructure, pollution, and the inequitable enforcement of environmental laws.

We write to express our support for Treasury's incorporation of the three pillars and urge Treasury to ensure clean energy is defined appropriately and address potential loopholes for dirty energy with the necessary guardrails especially for environmental justice communities given its economic, health, and climate impacts for this generation and generations to come.

Background:

The importance of this guidance cannot be overstated as it will set the stage for the future of the US "clean" hydrogen industry. Moreover, whilst the 45V tax credit enacted by the Inflation Reduction Act was intended to lower greenhouse gases, the long-term nature of the program and uncapped public monies that will be funneled towards the lucrative tax credit can create perverse incentives for hydrogen producers. It is critical that the Treasury and IRS get this guidance right – for the sake of the climate and for communities who unduly bear health and safety burdens from industry and its associated infrastructure and experience the worst impacts of climate change.

WE ACT has long considered hydrogen a false solution to the climate crisis due to the danger it poses to frontline and fenceline communities and as an avenue of greenwashing for the fossil fuel industry that extends our dependence on oil and gas. However, hydrogen has the potential

[1] WE ACT for Environmental Justice, "Who we Are," WE ACT Website, Aug. 4, 2023, https://www.weact.org/whoweare/ourstory/.

to serve as a pathway to decarbonization in limited scenarios in which direct electrification is not an option. Hydrogen should never be blended with or as a substitute for natural gas. WE ACT does not support hydrogen production that involves the use of fossil fuels, and it should in no way be considered clean. This type of hydrogen production prolongs the detrimental impacts of fossil fuel extraction, transport, and use endured by environmental justice communities that live in the shadow of the oil and gas industry. The only way hydrogen is carbon free is if it is produced through electrolysis powered by renewable energy.

Hydrogen produced from natural gas increases the warming potential when compared burning the natural gas for power generation[2] and does nothing to alleviate the environmental justice impacts of said gas. Furthermore, when using existing clean energy for production, dirty fossil fuels may fill the energy demand, further perpetuating environmental injustices. Extensive energy use by electrolyzers also poses a risk to the affordability of energy across the nation which will undoubtedly disproportionately impact people of color low- and moderate-income households who experience high energy burden.[3]

Although hydrogen has been posed as a climate solution, it itself poses risk as a gas capable of driving increased warming. In fact, recent research finds hydrogen has 37 times the warming potential of carbon dioxide pound for pound over the first *twenty* years in the atmosphere.[4] The extent of hydrogen's impacts on air and water quality, and the well being of communities, especially environmental justice communities, depends on its production inputs and methods as well as end use.[5] Currently, fugitive emissions from methane – the largest component of natural gas – are a significant component of the United States annual greenhouse gas emissions. Hydrogen production with methane as a feedstock threatens to increase fugitive methane emissions. Hydrogen fugitive emissions pose a much greater challenge when compared to methane due to its small molecular size.

Given its twenty year warming potential, hydrogen impacts must be considered in both the near and long term and its full life cycle emissions must be accounted for. If not, hydrogen could accelerate the impacts of climate change, which is especially detrimental for environmental justice communities.[6] At each phase of the lifecycle – hydrogen production, transportation, and end use – there are climate, health, social, safety and environmental justice risks. Hydrogen is also explosive and requires comprehensive safety protocols throughout its lifecycle to minimize risk of fires and explosions in communities that host its infrastructure. Intentional hydrogen venting or purging during the production process must be also accounted for and not encouraged through this tax credit. As hydrogen is the smallest molecule, it is prone to leak throughout its lifecycle and these leaks must be also factored into emissions accounting. In cases where

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[2] Robert Howarth and Mark Z. Jacobson, 2021, "How green is blue hydrogen?", Energy science and Engineering https://doi.org/10.1002/ese3.956

[3] Drehobl, A., L. Ross, and R. Ayala. 2020. How High Are Household Energy Burdens? Washington, DC: American Council for an Energy-Efficient Economy.

[4] Leland, A. (2023, September 29). Oil and gas producers: This is their big moment for climate action. Environmental Defense Fund. https://www.edf.org/article/oil-and-gas-producers-their-big-moment-climate-action

[5] Just Solutions, "HYDROGEN ENERGY: A Critical Review to Ensure Community and Climate Benefits," https://justsolutionscollective.org/wp-content/uploads/2024/02/JS_EJframework_FNL2_Digital-1.pdf

[6] EPA. 2021. Climate Change and Social Vulnerability in the United States: A Focus on Six Impacts. U.S. Environmental Protection Agency, EPA 430-R-21-003.

hydrogen leakage is high, hydrogen has the potential to double the warming impact when compared with its fossil fuel counterparts.[7] When hydrogen leaks, it can act as an indirect greenhouse gas, reacting and extending the lifetime of pollutants, such as methane, in the atmosphere.[8] It also can impact ozone concentrations and generate water vapor in the atmosphere, increasing the greenhouse gas effect.[9]

The Treasury has the opportunity to shape the design and impact of the hydrogen industry through this tax credit which will determine whether hydrogen plays a limited role in decarbonization or locks in detrimental climate warming and associated health impacts for vulnerable communities. We urge the Treasury to use this opportunity to define clean hydrogen accordingly, with strong protections that take into consideration the impacts of hydrogen on environmental justice communities. The Treasury must act to address potential loopholes for the preservation of dirty energy that disproportionately harms overburdened communities and ensure hydrogen is defined with essential guardrails given its economic, climate and health impacts for this generation and generations to come.

The Three Pillars Importance for Environmental Justice Communities

WE ACT commends Treasury and the IRS for their incorporation of the three pillars: time matching, additionality, and regionality, into the guidance. The three pillars are crucial for supporting the production of electrolytic (green) hydrogen in a manner that avoids resource depletion and prevents disastrous increases in fossil fuel emissions. They serve a vital role for environmental justice communities in promoting equitable, sustainable, and environmentally friendly hydrogen production and are in line with the Principles of Environmental Justice which mandate "the right to ethical, balanced and responsible uses of land and renewable resources." [10]

Regulations that strongly account for the three pillars are of paramount importance as they help ensure that environmental justice communities are not subject to additional harms caused by the increased consumption of fossil fuels to produce electricity to power electrolytic hydrogen production. Incentivizing hydrogen production powered by burning fossil fuels would be a monumental climate disaster and would be out of line with the intentions of the Inflation Reduction Act by leading not to greenhouse gas reductions but instead to additional emissions in excess of hundreds of millions of tons of CO2 annually[11]. Additionally, those emissions would be accompanied with increases in other dangerous pollutants such as NOx and particulate matter throughout environmental justice communities. Using existing clean energy to power electrolyzers merely plays a shell game with the emissions accounting and leads to increased energy production from fossil fuels that only occurs due to the energy demands of hydrogen production. The only way to ensure that electrolytic hydrogen production does not result in

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[7] For hydrogen to be a climate solution, leaks must be tackled—Environmental Defense Fund. (n.d.). Retrieved February 26, 2024, from https://www.edf.org/blog/2022/03/07/hydrogen-climate-solution-leaks-must-be-tackled
[8]T.K. Blank, et al., "Hydrogen Reality Check #1: Hydrogen Is Not a Significant Warming Risk." RMI, May 9, 2022. https://rmi.org/hydrogen-reality-check-1-hydrogen-is-not-a-significant-warming-risk/
[9]Ibid.
[10] The Principles of Environmental Justice, https://www.ejnet.org/ej/principles.html, (October 24-27, 1991).
[11] Fakhry, R. (2023, June 20). New analysis: The 3 pillars will support large hydrogen deployment. NRDC. https://www.nrdc.org/bio/rachel-fakhry/new-analysis-3-pillars-will-support-large-hydrogen-deployment

further burning of fossil fuels is to require it be powered by additional clean energy sources as required by the three pillars.

In addition to the impacts listed above, hydrogen production without the three pillars is a threat to energy affordability throughout the nation. Electrolytic hydrogen production is incredibly energy intensive and if new capacity is not added to the grid alongside electrolyzer demand, energy prices would increase dramatically. The effects of the large growth of an industry with higher energy demands can be seen from the impacts of cryptocurrency mining. Energy demands from this industry have increased demand across the board which in turn has increased the price of energy for residents in states where these facilities are located.[12] Electrolytic hydrogen can avoid such a result if the regulations help shape an industry that is powered off new clean energy sources.

Opponents of the three pillars claim they are a burden that will stifle the growth of a nascent industry. Several studies have clearly shown this is a false claim[13,14,15] and that the three pillars are an important safeguard that does not prevent development of an electrolytic hydrogen industry. This is further evidenced by the support given to the three pillars by a large number of electrolytic hydrogen producers.[16] It is incredibly important that the final guidance retains the most stringent implementation of the three pillars or environmental justice communities will pay the price simply for increased industrial profits.

Non-Electrolytic Sources of Hydrogen Production

WE ACT does not support hydrogen created from fossil fuel feedstocks and other non-electrolytic methods. These sources of hydrogen production are inherently harmful to environmental justice communities and as such are not a solution to the climate crisis but rather a pathway for greenwashing natural gas and other dirty feedstocks. Although the proposed guidance considers some of these production methods as "qualified clean hydrogen" it is important to note that <u>these methods are not clean in a practical sense</u> and rely on unproven and dangerous technologies such as carbon capture and storage (CCS). Furthermore, production methods that rely on natural gas such as "blue" hydrogen threaten to continue harming front line communities who carry the disproportionate burden of pollution from the fossil fuel industry.

To the extent that these methods are addressed within the 45V guidance, the Treasury should enact strong accounting of the amount of greenhouse gases, including hydrogen itself, produced

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[12] Tigue, K. (2024, February 6). Cryptocurrency companies must now report their energy use to the Government. Inside Climate News. https://insideclimatenews.org/news/06022024/todays-climate-cryptocurrency-energy-information-administration-energy-use-climate-change/#:~:text=Expanding%20crypto%20operations%20also%20appear,temporarily%20ban%20the%20company%27s%20operations

[13] Esposito, D., Gimon, E., & O'Boyle, M. (n.d.). SMART DESIGN OF 45V HYDROGEN PRODUCTION TAX CREDIT WILL REDUCE EMISSIONS AND GROW THE INDUSTRY.

[14] Haley, B. (2023, June 12). 45V Tax Credit: Three-Pillars Impact Analysis. Evolved-Energy. https://www.evolved.energy/post/45v-three-pillars-impact-analysis

[15] Ricks, W., Xu, Q., & Jenkins, J. D. (2023). Minimizing emissions from grid-based hydrogen production in the United States. Environmental Research Letters, 18(1), 014025. https://doi.org/10.1088/1748-9326/acacb5

[16] Energy, H. S. (2023, December 20). Hydrogen Industry Support of Strong 45V Rules. Hy Stor Energy. https://hystorenergy.com/hydrogen-industry-support-of-strong-45v-rules/

and released through these production methods. The impacts from these methods have been shown to be underestimated.[17] Federal agencies must ensure that all efforts to accurately account for these greenhouse gas emissions, including the GREET model, are providing accurate and useful output. Relying on models that use outdated and incorrect assumptions about greenhouse gas emissions merely ensures that any output will not reflect reality and will serve to hinder efforts to address climate change. Or, as the modeling axiom more succinctly puts it: garbage in, garbage out.

Treasury must minimize harms to environmental justice communities and provide accountability mechanisms

Taxpayer dollars must not be used to fund false solutions, filling the pockets of polluting industry shareholders at the expense of environmental justice communities. The final guidance should not allow for the expansion of fossil fuel industry operations in overburdened communities under the guise of "clean" hydrogen.[18] Such false solutions, including blue hydrogen from methane gas, have grave implications for environmental justice communities who have historically and continue to be overlooked, effectively living in sacrifice zones. In the absence of stringent guardrails, hydrogen pollutes the air and water we rely on, simultaneously exacerbating health and safety risks for environmental justice communities.[19]

Transparency and accountability must be embedded within the final guidance. Communities must have access to meaningful information on projects proposed in their communities. Information on hydrogen producers, tax credit amounts, and accounting of emissions rates must be made accessible. Real time emissions monitoring paired with safety management processes are critical to ensure equitable, transparent and safe siting of hydrogen facilities.[20]

Conclusion

We appreciate the opportunity to comment on the 45V hydrogen tax credit and call on the Treasury to use this pivotal opportunity to define clean hydrogen, as the guidance is foundational to shaping the US "clean" hydrogen industry. The Treasury must define clean hydrogen in accordance with the intention of the Infrastructure Reduction Act - to reduce greenhouse gas emissions and limit devastating climate warming. True climate solutions must not further endanger frontline and fenceline communities who have experienced the brunt of environmental harms from the fossil fuel industry . This guidance must be aligned with the Biden Administration's commitments to climate action as well as environmental justice. Therefore, we request the Treasury to maintain the three pillars of hydrogen in the final guidance and to address guardrails discussed above to ensure there are no loopholes that serve as a greenwashing mechanism for the fossil fuel industry.

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[17] Sun, T., Shrestha, E., Hamburg, S. P., Kupers, R., & Ocko, I. B. (2024). Climate Impacts of Hydrogen and Methane Emissions Can Considerably Reduce the Climate Benefits across Key Hydrogen Use Cases and Time Scales. Environmental Science & Technology. https://doi.org/10.1021/acs.est.3c09030

[18] Fakhry, R. (2023, June 20). New analysis: The 3 pillars will support large hydrogen deployment. NRDC. https://www.nrdc.org/bio/rachel-fakhry/new-analysis-3-pillars-will-support-large-hydrogen-deployment

[19] Just Solutions, supra 3.

[20] Ibid.