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CC:PA:LPD:PR (REG–117631–23)
Room 5203
Internal Revenue Service
P.O. Box 7604
Ben Franklin Station
Washington, DC 20044

Re: REG-117631-23 45V Credit for Production of Clean Hydrogen: Section 48(a)(15) Election to Treat Clean Hydrogen Production Facilities as Energy Property

Dear Sir or Madam,

The Inflation Reduction Act[1] ("IRA") seeks to advance a lower carbon future. As intended and enacted by Congress, it incentivizes technology-neutral innovations to lower emissions across U.S. industries to achieve America's climate goals. A key component of the IRA is the section 45V[2] tax credit, Credit for Production of Clean Hydrogen, which is needed to catalyze supply of, and demand for, domestically produced clean hydrogen to affordably and meaningfully lower emissions in hard-to-decarbonize sectors.

ExxonMobil views the section 45V credit as critical for the creation of new energy technologies and an emerging hydrogen market needed to achieve a lower-carbon economy. We understand the Treasury Department ("Treasury") has attempted to take a principled approach to the recent IRS Notice of Proposed Rulemaking ("Proposed Regulations") to implement the section 45V credit and ensure the integrity of the production of clean hydrogen.[3] The approach taken by Treasury is important because

[1] Inflation Reduction Act of 2022, P.L. 117-169, 136 Stat. 1818 (Aug. 16, 2022).
[2] Unless otherwise stated, all section references are to the Internal Revenue Code of 1986, as amended (the "Code" or "I.R.C.").
[3] RIN 1545-BQ97, 88 Fed. Reg. 89220 (Dec. 26, 2023), https://www.govinfo.gov/content/pkg/FR-2023-12-26/pdf/2023-28359.pdf.

Congress intended the IRA to be equitably applied to any energy producer who meets carbon reduction objectives and takes substantive action to lower emissions.

In March 2022, ExxonMobil announced plans to construct a multi-billion dollar hydrogen facility at its integrated refining and petrochemical site at Baytown, Texas. ExxonMobil's Baytown hydrogen facility is expected to produce one billion cubic feet of low carbon intensity ("CI") hydrogen per day, making it the largest facility of its type anywhere in the world at planned startup in 2028.[4] We estimate that once fully operational it will produce a little less than ten percent of the Biden Administration's hydrogen goal.[5] The low CI hydrogen is expected to be used to deliver large-scale industrial decarbonization through fuel-switching within our own Baytown site and kick start a hydrogen market on the U.S. Gulf Coast through sales to other companies for their emission reduction efforts.

The Baytown hydrogen facility has been designed to deliver low CI hydrogen as a result of substantial investments throughout the supply chain. For example, the Baytown facility will benefit from low carbon natural gas from our Permian operations where we are investing significantly to reduce emissions. In 2021, we announced plans to achieve net zero Scope 1 and 2 greenhouse gas ("GHG") emissions from unconventional operated assets in the Permian Basin by 2030. These emissions reduction efforts in the Permian include electrifying operations with lower carbon power, continuing investments in methane mitigation and detection technology, eliminating routine flaring, and upgrading equipment. In addition to these efforts, we have invested in more efficient carbon capture technology that requires less energy to operate at our Baytown facility. We will cover this in more detail later in the letter. These investments in emissions reduction technologies are examples of industry efforts that must be incentivized by supportive policies, including the section 45V credit, if we are to achieve the goals of reducing emissions and a lower carbon future. If section 45V does not recognize and incentivize these emissions reducing investments, the cost of low CI hydrogen will be high, suppressing demand and making our project, and others, unviable – significantly undermining the objectives and ultimate impact of the IRA.

A properly implemented credit would help lower the cost of low CI hydrogen and, thus, lower the barrier to adoption. This would encourage more emitters to switch from their low cost but higher carbon fuel to a low CI hydrogen. Congress recognized this reality and designed section 45V so that all pathways and feedstocks would compete on a single criteria: the CI of the hydrogen produced. ExxonMobil supports Congress' intent to have section 45V be applied in a manner that is technology and feedstock-neutral and focuses solely on the CI of the hydrogen produced. This sole focus should be the only determinant of the level of credit provided under section 45V, with the maximum credit being available to any and all hydrogen that reaches the CI criteria, regardless of

[4] The Baytown hydrogen project is pending a final investment decision expected by year-end 2024, subject to policy and stakeholder support, regulatory permitting, and market conditions.
[5] The Administration has a goal of clean hydrogen production for domestic demand of ~10 MMTpa in 2030. The ExxonMobil Baytown facility is estimated to produce ~ 0.95 MMTpa. https://liftoff.energy.gov/clean-hydrogen/

method of production. If implemented appropriately, this credit would provide the best value for U.S. taxpayers, as it will incentivize the market to develop the lowest cost supply of clean hydrogen resulting in the lowest cost to customers and higher demand.

We support the reliance on Argonne National Lab's science-based lifecycle GHG emissions assessments for Renewable Natural Gas. We also agree a book-and-claim system based on physical connectivity is the right answer to support the efficient use of existing infrastructure, while also encouraging further investments. For power, we agree with applying the attributes of incrementality, temporal matching and deliverability for purchased power used in the production of clean hydrogen in order to ensure a net reduction in grid GHG emissions. Similarly, we support a technology-neutral Energy Attribute Certificate ("EAC") framework that would verify the direct and indirect emissions of purchased power, including low-emission retrofits on existing power generation facilities.[6]

We support not only the effort of Treasury to establish an accurate well-to-gate CI of hydrogen in the 45VH2-GREET model but also the use of actual data on the efficiency of the carbon capture process and the power and hydrogen yield as foreground data for all relevant pathways. Unfortunately, the 45VH2-GREET model and the Proposed Regulations currently do not accept the use of foreground data in two critical areas: natural gas and co-product steam. Our comments below will address these two issues and recommend revisions to the Proposed Regulations. In summary:

The Proposed Regulations and the accompanying 45VH2- GREET model provide disparate treatment, relative to other feedstocks, of hydrogen produced from low carbon natural gas by not allowing the actual CI of the natural gas feedstock, and thus the hydrogen produced, to be appropriately recognized for the section 45V credit. Hydrogen producers should be able to input the CI of their natural gas feedstock based on:

- Verifiable data that accurately reflects their specific GHG emissions; and
- Appropriate allocation of GHG emissions across natural gas production and all other products produced

In addition, hydrogen producers using natural gas and CCS should be able to utilize the actual efficiencies of their capture process and take into account co-product steam (subject to the appropriate restrictions) when determining the CI of their hydrogen produced.

[6] We support the ability of an existing fossil fuel electricity-generating facility that installs CCS or switches to low carbon intensity fuel, to be treated as a new source of minimal-emitting generation, and to meet the incremental generation criteria.

I. Allow hydrogen producers the flexibility to input verified carbon intensity data of their natural gas in the 45VH2-GREET model

The Proposed Regulations and the accompanying 45VH2-GREET model provide disparate treatment of hydrogen produced from natural gas by not accounting for the actual CI of the hydrogen produced for purposes of the section 45V credit. Contrary to the IRA objectives, under the regulations as proposed, hydrogen produced from natural gas does not take into account, and therefore incentivize, the significant investments companies have made, and continue to make, to lower GHG emissions across the supply chain and produce lower carbon natural gas. As proposed, hydrogen producers using natural gas feedstock are required to use a fixed, default value for the CI of natural gas with no opportunity to demonstrate or input the actual value into the 45VH2-GREET model. Treasury's rationale for locking the background data is that these are "parameters for which bespoke inputs from hydrogen producers are unlikely to be independently verifiable with high fidelity, given the current status of verification mechanisms."[7] We disagree with this rationale for exclusion and propose the following solution to address the concerns raised with respect to measurement and verification.

a. Accurate data and robust verification mechanisms for oil and gas emissions should be used to underpin CI of bespoke natural gas

The actual CI of natural gas should be based on both accurate and robustly verified data reported under the Environmental Protection Agency ("EPA") Greenhouse Gas Reporting Program ("GHGRP") Subpart W.[8] There are enhancements to Subpart W in progress that will further improve the accounting and validation of emissions, and there are robust verification mechanisms already in place that Treasury can confidently rely on to allow producers to input the CI of their bespoke natural gas. The EPA requires natural gas companies to provide their GHG emissions for reporting and compliance purposes,[9] as well as the administration of a methane fee mandated by the IRA.[10] The GHG emissions data reported through this program should be used to underpin the actual CI of the natural gas used to produce hydrogen and the corresponding qualification for the credit afforded by section 45V. Additionally, these GHG emissions reported under Subpart W must then be accurately allocated among all products (crude oil, natural gas liquids and natural gas).

The CI of natural gas is primarily measured by CO2 and methane emissions. Reporting of these GHG emissions from the oil and gas sector exists today and has been in

[7] RIN 1545-BQ97, 88 Fed. Reg. 89220 (Dec. 26, 2023), https://www.govinfo.gov/content/pkg/FR-2023-12-26/pdf/2023-28359.pdf.
[8] 40 CFR Part 98 Subpart W.
[9] *Id.*
[10] The EPA proposed regulations on January 26, 2024 to implement the IRA's statutory requirements of a methane fee. EPA-HQ-OAR-2023-0434, 88 Fed. Reg. 5318 (Jan. 26, 2024), Federal Register :: Waste Emissions Charge for Petroleum and Natural Gas Systems.

existence since 2010.[11] Specifically, the EPA's GHGRP Subpart W requires the oil and gas sector to report GHG emissions from petroleum and natural gas systems (onshore and offshore petroleum and natural gas production, onshore natural gas processing, onshore natural gas transmission compression, underground natural gas storage, LNG storage, LNG import and export equipment, natural gas distribution, onshore petroleum and natural gas gathering and boosting, and onshore natural gas transmission pipelines).[12] Current CO2 emissions monitoring is robustly measured, since these emissions are primarily from controlled energy inputs or monitored flaring, while estimates of methane emissions are more indirect (estimates based on emissions factors). However, as acknowledged in the DOE's User Manual for the 45VH2-GREET model ("DOE User Manual"), several enhancements to the EPA GHGRP Subpart W in the next year will improve the accounting and validation of emissions from the oil and natural gas sector and will move the reporting basis of methane emissions from factor-based to a measurement-based approach effective for 2025.[13]

One of the recent proposed enhancements to Subpart W was required by the IRA. The IRA mandates, under the Methane Emissions Reduction Program ("MERP"), the EPA to revise the requirements of Subpart W to ensure the reporting is based on empirical data and accurately reflects the total methane emissions from the applicable facilities.[14] In addition to addressing the IRA requirement, the EPA is also in the process of finalizing several updates in Subpart W to improve the quality and consistency of the data collected under the rule. The EPA's most recent proposed amendments[15] consist of four parts: (1) revisions to address potential gaps in reporting of emissions data for specific sectors to ensure the reporting reflects total methane emissions from the methane value chain (production, gathering and boosting, processing, transmission and storage); (2) revisions to add new emissions calculation methodologies or improve existing emissions calculation methodologies to ensure the reporting is based on empirical data; (3) revisions to reporting requirements to improve verification and transparency of the data collected; and (4) technical amendments, clarifications, and corrections. It is anticipated that all updates to the GHGRP Subpart W will be finalized in 2024. With all of these enhancements to the quality of the data reported under Subpart W, producers of natural gas will be reporting actual emissions for both CO2 and methane. This reporting data is what should be used by producers as the base data for the CI of its natural gas input into the 45VH2-GREET model.

Today and under future reporting, the reporter of the data must certify before submission, under penalty of law, that the data and information contained in the annual

[11] 75 FR 74488, Nov. 30, 2010.
[12] 40 CFR Part 98 Subpart W.
[13] Section 2.4.2 Upstream Methane, DOE Guidelines to Determine Well-to-Gate Greenhouse Gas (GHG) Emissions of Hydrogen Production Pathways using 45VH2-GREET 2023, (hereinafter referred to as the "DOE User Manual").
[14] Inflation Reduction Act of 2022, P.L. 117-169, Aug. 16, 2022, 136 Stat. 1818.
[15] EPA–HQ–OAR–2023–0234, 88 Fed. Reg. 50282 (Aug. 1, 2023), 2023-14338.pdf (govinfo.gov).

GHG report are true, accurate, and complete.[16] The reported data is verified by the government through electronic and manual checks.[17] The EPA itself notes, "Thousands of checks, both pre-submittal and post-submittal are used to evaluate annual GHG reports."[18] Thousands of checks should ensure the data is verified with high fidelity and provide Treasury the confidence needed to allow producers to use the data submitted to determine the CI of bespoke natural gas for input into the 45VH2-GREET model. Such an approach would be consistent with the verification process adopted by Treasury in the regulations under section 45Q, which relies on EPA's verification of Subpart RR Plans.[19]

b. Verified emissions data requires conversion for input into the 45VH2-GREET model

In order to input data into the GREET model, the GHG emissions data reported under EPA's GHGRP must be converted to emissions intensity. The emissions intensity should be based on an ISO specified methodology (e.g., ISO14067) to ensure consistency of approaches across producers for their individual feedstock supply.[20] For energy products associated with the production of oil and gas, it is most appropriate to use the energy allocation methodology for the specific natural gas supply chains (production, gathering and boosting, processing, transmission and storage) for input into the 45VH2-GREET model. The model then translates the emissions intensity data into the final, consistent, and verifiable carbon intensity for methane and CO2.

c. The actual CI of bespoke natural gas must be accounted in 45V to incentivize production and reach the nation's emission and climate goals

As intended by Congress, in order for all hydrogen pathways to compete in the marketplace on the basis of their CI, Treasury must allow clean hydrogen producers to enter GHG emissions intensity data into the 45VH2-GREET model. These data entries must be on an energy-allocated basis from bespoke natural gas supply chains (e.g. extraction, processing, midstream transmission). This can be implemented by simply moving the fixed, default, background data to foreground data in the 45VH2-GREET model. Additionally, the Proposed Regulations established a transition period to allow for technology to develop further in the power sector before requiring time matching on an hourly basis.[21] Significant strides are also being made to improve monitoring,

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[16] 40 CFR 98.4(e)(1).
[17] After the report is submitted, it is evaluated against an extensive array of electronic checks that will "flag" potential errors. These flags are manually reviewed to assess the cause of the flag and if found to be a potential error, EPA follows up with the reporter to correct any errors. Greenhouse Gas Reporting Program, Report Verification (epa.gov) https://www.epa.gov/sites/default/files/2017-12/documents/ghgrp_verification_factsheet.pdf
[18] *Id.*
[19] See Treas. Reg. § 1.45Q-3(b) (relating to requirements for secure geologic storage).
[20] ISO 14067: 2018. Greenhouse gases – Carbon footprint of products – Requirements and guidelines for quantification.
[21] 88 Fed. Reg. 89220; Prop. Treas. Reg. sec. 1.45V-4(d)(3)(ii)(B).

measurement, verification and reporting of GHG emissions. Treasury guidance should similarly reflect this by allowing producers to input the CI of natural gas after providing time for the verification process to be fully implemented. The section 45V regulations should be finalized, with the proposed revisions below, to include a transition period to allow producers to input the CI of natural gas into the 45VH2-GREET model when the enhancements to Subpart W are finalized in 2024 and empirical data for methane is reported starting in 2025. If the data provided through these reporting systems is rigorous and accurate enough for the government to charge a methane emissions fee, the data should be rigorous enough for Treasury to rely on when issuing tax credits.

Recommended addition and changes to the relevant provisions of the Proposed Regulations are reflected in *red* below.

§ 1.45V–1 Credit for production of qualified clean hydrogen.

(a)(8) Lifecycle GHG emissions.

(i) In general. Subject to section 45V(c)(1)(B) and paragraphs (a)(8)(ii) and (iii) of this section, and unless otherwise specified in the section 45V regulations, the term lifecycle GHG emissions has the meaning given the term lifecycle greenhouse gas emissions by 42 U.S.C. 7545(o)(1)(H), as in effect on August 16, 2022. For purposes of section 45V, lifecycle GHG emissions include emissions only through the point of production (well-to-gate), as determined under the most recent Greenhouse gases, Regulated Emissions, and Energy use in Transportation model (GREET model) developed by Argonne National Laboratory, or a successor model.

(ii) Most recent GREET model. Unless otherwise specified in the section 45V regulations, for purposes of the section 45V credit, the term most recent GREET model means the latest version of 45VH2–GREET developed by Argonne National Laboratory that is publicly available, as provided in the instructions to the latest version of Form 7210, Clean Hydrogen Production Credit, or any successor form(s), on the first day of the taxable year during which the qualified clean hydrogen for which the taxpayer is claiming the section 45V credit was produced. If a version of 45VH2–GREET becomes publicly available after the first day of the taxable year of production (but still within such taxable year), then the taxpayer may, in its discretion, treat such later version of 45VH2–GREET as the most recent GREET model.

(iii) Not-withstanding subparagraph (ii), in the case of clean hydrogen produced after 12/31/2025 and from a feedstock for which reporting is required under the Greenhouse Gas Reporting Program (GHGRP) of the Environmental Protection Agency (40 CFR Part 98 Subpart W), the taxpayer may enter in the most recent GREET model the carbon intensity of the feedstock supply based on GHG emissions data reported in accordance with GHGRP and in accordance with ISO 14067 Energy Allocation methodology, or any other reporting and verification procedure prescribed in guidance published in the Internal Revenue Bulletin.

§ 1.45V–4 Procedures for determining lifecycle greenhouse gas emissions rates for qualified clean hydrogen.

(b) Use of the most recent GREET model. For each taxable year during the period described in section 45V(a)(1), a taxpayer claiming the section 45V credit determines the lifecycle GHG emissions rate of hydrogen produced at a hydrogen production facility under the most recent GREET model separately for each hydrogen production facility the taxpayer owns. This determination is made following the close of each such taxable year and must include all hydrogen production during the taxable year. In using the most recent GREET model to calculate the lifecycle GHG emissions rate for purposes of determining the amount of the section 45V credit under section 45V(a) and § 1.45V–1(b), the taxpayer must accurately enter all information about its facility requested within the interface of 45VH2–GREET (as described in § 1.45V–1(a)(8)~~(ii))~~. Information regarding where taxpayers may access 45VH2–GREET and accompanying documentation will be included in the instructions to the Form 7210, Clean Hydrogen Production Credit, or any successor form(s).

II. Include valorized co-product steam in the well-to-gate LCA for all production pathways

Another area in which the Proposed Regulations should be modified to provide consistent treatment for hydrogen produced from natural gas concerns co-product steam. Hydrogen produced from natural gas creates steam, a usable, low carbon co-product, during the hydrogen production process. The Proposed Regulation and the 45VH2-GREET model assume that for hydrogen produced from natural gas with carbon capture, the steam created as part of the hydrogen production process is equal to the amount of steam needed to power the carbon capture equipment. As proposed, the regulations do not allow taxpayers to modify this assumption in the 45VH2- GREET model to account for more energy efficient processes.

a. Co-product steam is created inside the well-to-gate boundaries of hydrogen production

For clean hydrogen produced with natural gas, the 45VH2-GREET model currently includes hydrogen production pathways using steam methane reforming (SMR) and autothermal reforming (ATR), with and without CCS. Hydrogen produced with natural gas in both types of reforming facilities generate hydrogen and CO2, and can also generate valorized co-products, such as steam. When a production process produces more than one product, the CI of that process has to be allocated between the products it produces. The 45VH2-GREET model and the accompanying DOE User Manual acknowledge that co-product steam produced from reforming processes should be considered in the well-to-gate emissions for the hydrogen produced if the steam is

produced from process heat integral to the hydrogen production process.[22] The DOE User Manual also prescribes the system expansion method of accounting, up to a 17.6% restriction, be used to allocate the CI of the hydrogen production process between the hydrogen and co-product steam. We are supportive of the system expansion method prescribed and the restrictions put on the amount of co-product steam that can be accounted for. However, we see no justification for limiting the ability to take into account co-product steam to only certain reforming processes or pathways.

b. Co-product steam should be allowed to be taken into account for all production pathways

The Proposed Regulations, the 45VH2-GREET model and the DOE's User Manual currently allow only reforming pathways without CCS to account for any steam created in the well-to-gate emissions of the hydrogen produced. The 45VH2-GREET model does not currently allow any quantity of co-product steam to be accounted for if the hydrogen is produced using a reforming pathway with CCS. The reasoning provided in the DOE User Manual is that the 45VH2-GREET model currently assumes that reforming pathways with CCS does not create any co-product steam due to the assessment that any steam created as part of the hydrogen production process would equal, at most, the amount of steam needed to power the CCS equipment. Essentially, the 45VH2-GREET model assumes that for reforming processes with CCS all of the steam created is used, and there is no co-product steam to take into account. There are, however, existing reforming production pathways using CCS that create co-product steam today, which the DOE User Manual expressly acknowledges.[23]

One of the existing CCS technology pathways the 45VH2-GREET model does not recognize is the industry-proven cryogenic CO2 capture process, which uses refrigeration to liquefy a gas mixture so that CO2 is separated out and ready for sequestration. Cryogenic processes have higher overall efficiency and negligible steam requirements when compared to the amine-based processes included in the 45VH2-GREET model.[24] As the cryogenic system is powered via low carbon intensity electricity, it does not require the large amount of steam that an amine-based system requires. Amine absorption has been the primary method of separating CO2 from gas

[22] U.S. DEPARTMENT OF ENERGY Guidelines to Determine Well-to-Gate Greenhouse Gas (GHG) Emissions of Hydrogen Production Pathways using 45VH2-GREET 2023 page 11 and footnote 26, "Allocation of emissions to valorized co-products is standard practice in well-to-gate life cycle analysis, including in previously published GREET models and related publications."

[23] "The appropriateness of steam valorization in other real-world CCS systems in the future may depend on the type of technology utilized and the system's design. While pathways that incorporate both CCS and steam valorization cannot currently be evaluated using 45VH2-GREET, this assumption may be re-evaluated in future versions of the model as new CCS technologies are evaluated." U.S. DEPARTMENT OF ENERGY Guidelines to Determine Well-to-Gate Greenhouse Gas (GHG) Emissions of Hydrogen Production Pathways using 45VH2-GREET 2023 page 12.

[24] Hoeger, Christopher, Burt, Stephanie, and Baxter, Larry. Cryogenic Carbon Capture™ Technoeconomic Analysis. United States: N. p., 2021. https://www.osti.gov/biblio/1781605

mixtures for more than 40 years, but technology developments with cryogenic processes have resulted in more efficient and effective CO2 capture. Unlike amine-based systems, cryogenic-based systems do not rely on absorption followed by multiple heat processes to release the CO2 and hydrogen by-products that have been absorbed into a liquid material. Published reports have shown that when a cryogenic process is employed, it significantly reduces overall energy demand (steam and electricity used)[25] resulting in co-product steam that can be used to reduce GHG emissions in other processes requiring heat. If utilized in this manner, producers should be able to capture the benefit of their more efficient processes and take into account the co-product steam.

The co-product steam produced from a natural gas pathway with cryogenic CCS technology is measured by a metering system, which is the exact same way co-product steam is measured for a natural gas pathway without CCS. Accordingly, there is no justification for allowing co-product steam to be measured as part of a well-to-gate LCA for natural gas production pathways without CCS, but not allow the co-product steam to be measured for natural gas production pathways with cryogenic CCS technology.

c. Co-product steam must be allowed to be taken into account in order to determine the CI of the hydrogen produced

Hydrogen producers using natural gas and CCS should be able to prove the efficiencies of their processes and take into account valorized co-product steam (subject to the DOE's restrictions on the amount) in the 45VH2-GREET model when determining the emissions rate for their particular process. In short, co-product steam should be treated as enabled foreground data in all production pathways, just as it is in natural gas pathways without CCS. Similar to carbon capture efficiency and hydrogen yield, which are foreground data in all relevant pathways, the amount of co-product steam created during the hydrogen production process, no matter what CCS technology is used, can easily be measured by metering and validated as required under the Proposed Regulations.

Recommended addition and changes to the relevant provisions of the Proposed Regulations are reflected in *red* below.

> § 1.45V-1(a)(8)(iii) *Emissions through the point of production (well-to-gate).* The term *emissions through the point of production (well-to-gate)* means the aggregate lifecycle GHG emissions related to hydrogen produced at a hydrogen production facility during the taxable year through the point of production. It includes emissions associated with feedstock growth, gathering, extraction, processing, and delivery to a hydrogen production facility. It also includes the emissions associated with the hydrogen production process, inclusive of the electricity used by the hydrogen production facility, any capture and

[25] ERIC LEWIS ET AL, U.S. DEP'T OF ENERGY NAT'L ENERGY TECH. LAB'Y, COMPARISON OF COMMERCIAL, STATE-OF-THE-ART, FOSSIL-BASED HYDROGEN PRODUCTION TECHNOLOGIES (2022), https://netl.doe.gov/projects/files/ComparisonofCommercialStateofArtFossilBasedHydrogenProductionTechnologies_041222.pdf

sequestration of carbon dioxide generated by the hydrogen production facility, *and accounts for valorized co-product steam*.

In keeping with the foregoing, we urge Treasury, the IRS and the Department of Energy to provide a level playing field, while maintaining the proposed guardrails to prevent abuse, by including a direct reference to co-product steam in the final regulations and making it foreground data for all production pathways. Such a consistent approach would avoid disadvantaging clean hydrogen produced (more efficiently) via natural gas with cryogenic carbon capture.

III. Conclusion:

We appreciate Treasury's efforts to finalize the 45V regulation in a timely manner. We are concerned, however, that the failure of the final regulations to address the issues discussed above will significantly, and perhaps fatally, undermine the incentive that section 45V was intended to provide for clean hydrogen produced, no matter the feedstock, and will preclude producers from moving forward with planned projects critical to meeting the nation's clean energy and climate goals.

As noted, we are in the advanced stages of development of the world's largest low carbon hydrogen facility in Baytown, Texas and have made significant investments to further reduce the carbon intensity of the hydrogen we plan to produce. However, if the 45V credit does not sufficiently reflect the proposed modifications in this letter, the cost of the hydrogen produced will be such that the market for low carbon hydrogen will not be catalyzed and our project, and possibly others, will not proceed.

Sincerely,

DocuSigned by:
J. R. Chapman
EF4FC935BC434CE...

James R. Chapman
Vice President, Tax and Treasurer