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Internal Revenue Service
Office of Chief Counsel
Attn: CC:PA:LPD:PR (REG-117631-23)
Room 5203
P O Box 7604
Ben Franklin Station
Washington, DC 20044

RE: Comments Regarding Proposed Regulations Regarding 45V Credit for Production of Clean Hydrogen

Office of Chief Counsel

CFO Services is a tax consulting firm that works with technology and manufacturing companies across the country. We have extensive experience and technology to provide a broad range of services to help companies identify and document federal, state, and local incentives. Our Federal Incentives team focuses on R&D and manufacturing incentives, whereas our Multi-State Credits & Incentives team concentrates on successful collaboration with state and local representatives to capture statutory and discretionary incentives.

We are excited to review these proposed regulations with the goal of looking out for the compliance requirements of our clients and providing feedback to build a good incentive program.

We focused our comments on applications that have been observed in different industries and documentation needed from other credits. We address the following sections of the proposed regulations.

- Facility needs more clarity since it is important to other aspects.
- Timing of completing the verification of Clean Hydrogen
- More GREET pathways needed, especially for by-product pathways
- EAC being optional is not clear in the regulations.

- Better definition of “use”
- Modification of existing facilities and used property not clearly defined.

Facility needs more clarity since it is important to other aspects.

A. Facility

> *Proposed § 1.45V–1(a)(7)(i) would provide that, for purposes of the definition of a qualified clean hydrogen production facility provided at section 45V(c)(3), the term “facility” means a single production line that is used to produce qualified clean hydrogen. A “single production line” would include all components of property that function interdependently to produce qualified clean hydrogen. Components of property are functionally interdependent if the placing in service of each component is dependent upon the placing in service of each of the other components to produce qualified clean hydrogen. Proposed § 1.45V–1(a)(7)(ii) would provide that a facility does not include equipment used to condition or transport hydrogen beyond the point of production. A facility would also not include electricity production equipment used to power the hydrogen production process, including any carbon capture equipment associated with the electricity production process. Proposed § 1.45V–1(a)(7)(iii) would provide that components that have a purpose in addition to the production of qualified hydrogen may be part of a facility if such components function interdependently with other components to produce qualified clean hydrogen. Proposed § 1.45V–1(a)(7)(iv) would provide an example to illustrate the definition of facility for purposes of section 45V.*[1]

> ***(i) In general.*** *For purposes of the definition of qualified clean hydrogen production facility provided at section 45V(c)(3) and paragraph (a)(10) of this section, unless otherwise specified, the term facility means a single production line that is used to produce qualified clean hydrogen. A single production line includes all components of property that function interdependently to produce qualified clean hydrogen. Components of property function interdependently to produce qualified clean hydrogen if the placing in service of each component is dependent upon the placing in service of each of the other components to produce qualified clean hydrogen*[2]*.*

COMMENT:

The facility definition provided in the regulations needs either more explanation or more examples, or both. The definition of the “facility” is so important to 45V that it needs be presented clearer. Facility is needed for determining GREET, applying for a PER determination, applying the Modification rules, defining EAC inputs, and applying the Prevailing Wage and Apprenticeship requirements.

To be more specific, the regulations need better definitions of the terms “single production line” and “interdependently”. Leaving these open to interpretation does not help taxpayers or the IRS in defining

[1] Explanation of Provisions, II. Definitions

[2] 1.45V-1(a)(7)

a clear demarcation of the facility. The regulations seem to assume a stand-alone hydrogen facility, but the DOE has pointed to numerous pathways in the 45V2-GREET model that are not within stand-alone facilities. Please consider how these regulations apply to facilities that produce hydrogen as by-products, as for example the byproduct hydrogen from chlor-alkali processes[3], and how the facility definition and terms impacts those types of processes. The DOE is planning on updating the model for by-product pathways, but the regulations do not seem to work in applying the facility definition.

Lastly, there is a sort of "circular loop" between the facility definition and determining an emissions value. If you do not have a stand-alone facility, you can't determine if you produce qualified clean hydrogen from the facility until you have an emissions value from 45VH2. The loop is that you can't determine an emissions value, until you have defined the facility.

Timing of completing the verification of Clean Hydrogen

> *Department and the IRS request comments on this proposed rule, specifically whether taxpayers anticipate they will be able to complete all the requirements for claiming the section 45V credit, including the proposed requirements for verification specified below, by the extended return filing deadline for the taxable year of hydrogen production. If taxpayers anticipate that they will not be able to complete all the requirements by such filing deadline, comments are also requested on what specific alternatives to the proposed rule, if any, should be considered and their rationale.*[4]

(k) Timely verification report.

> *A verification report must be signed and dated by the qualified verifier no later than—*
>
> *(1) The due date, including extensions, of the Federal income tax return or information return for the taxable year during which the hydrogen undergoing verification is produced; or*
>
> *(2) In the case of a credit first claimed on an amended return or administrative adjustment request, the date on which the amended return or administrative adjustment request is filed.*[5]

COMMENT:
In the first few years of 45V credits being claimed, it will be very difficult for taxpayers to receive a PER value, register for the "elective payment", perform a prevailing wage review, and have a third-party complete the verification report for the taxpayer. If the pathway for the taxpayer has not been established within 45VH2-GREET, then the earliest to request a PER is April of 2024. It is unknown as to the time it will take for the DOE to issue a PER, so at least for the 2023 tax year, it will be near impossible to claim 2023 credits on an original return. This will require taxpayers to miss out on significant benefits

[3] Section 5 of the GREET Manual for 45VH2-GREET
[4] Explanation of Provisions, II. Rules of General Applicability
[5] 1.45V-5(k)

and must file an amended return. Please consider at least allowing taxpayers to file the 2023 tax year without the verification report and requiring it starting with the 2024 tax year.

G. Definitions Related to Verifications

> *The Treasury Department and the IRS request comment on this definition of ''qualified verifier,'' including on whether additional accreditations that demonstrate sufficient expertise for verification of lifecycle analysis for the section 45V credit should be included*[6]*.*

(h) Qualified verifier.

> *The term qualified verifier means any individual or organization with active accreditation—*
>
> *(1) As a validation and verification body from the American National Standards Institute National Accreditation Board; or*
>
> *(2) As a verifier, lead verifier, or verification body under the California Air Resources Board Low Carbon Fuel Standard program.*[7]

COMMENT:
The regulations do not specify what type of accreditation is needed from the ANSI board, so it could allow many different "qualified verifier". The California board is more specific and seems to target certain "qualified verifier". If the IRS wants to have a specific accreditation, please update the regulations with the different types allowed. It does not seem necessary to require additional accreditations, and another level of compliance is not needed.

More GREET pathways needed, especially for by-product pathways.

A. GREET Model

> *The Treasury Department and the IRS seek comment on the readiness of verification mechanisms that could be utilized for certain background data in 45VH2– GREET if it were reverted to foreground data in future releases. For example, the upstream methane loss rate is background data in 45VH2–GREET, and the Treasury Department and the IRS seek comment on conditions, if any, under which the methane loss rate may in future releases become foreground data (such as certificates that verifiably demonstrate different methane loss rates for natural gas feedstocks, sometimes described as responsibly sourced natural gas).*
>
> *The Treasury Department and the IRS seek comments on this approach, including whether alternative co-product accounting methods, such as physical allocation (for example, energy allocation or mass allocation) or allocation based on other*

[6] Explanation of Provisions, VI. Procedures for Verification of Qualified Clean Hydrogen Production and Sale or Use
[7] 1.45V-5(h)

characteristics, would better ensure well-to-gate carbon intensity of hydrogen production is accurately represented[8].

COMMENT:
The current regulations only address 8 hydrogen pathways, and more pathways are needed before the background data becomes foreground data. In addition, until more by-product pathways are introduced into the 45VH2-GREET model taxpayers can't even identify the background data that impacts the emission rate based on specific location criteria. Some of the background data that is used for upstream feedstocks will be difficult to quantify, especially if the feedstock is not within the taxpayer's production system.

B. Provisional Emissions Rate
2. Provisional Emissions Rate Determination

The Treasury Department and the IRS seek comments on appropriate indicators of project readiness that should be in place before an applicant requests an emissions value to ensure that requests correspond to hydrogen production facilities with significant commercial interest, and standards against which these indicators could be measured[9].

(5) Department of Energy (DOE) emissions value request process.

An applicant that submits a request for an emissions value must follow the procedures specified by the DOE to request and obtain such emissions value. Emissions values will be evaluated using the same well-to-gate system boundary that is employed in 45VH2-GREET. Additionally, if applicable, background data parameters in 45VH2-GREET will also be treated as background data (with fixed values that an applicant cannot change) in the emissions value request process. Treatment of EACs and other proposals outlined in the regulations in this part under section 45V will be consistently applied in the emissions value request process. An applicant may request an emissions value from the DOE only after a front-end engineering and design (FEED) study or similar indication of project maturity, as determined by the DOE, such as project specification and cost estimation sufficient to inform a final investment decision has been completed for the hydrogen production facility. The DOE may decline to review applications that are not responsive, including those applications that use a hydrogen production technology and feedstock already in 45VH2-GREET or applications that are incomplete. Guidance and procedures for applicants to request and obtain an emissions value from the DOE will be published by the DOE, including a process for, under limited circumstances, a revision to the DOE's initial analytical assessment of an emissions value on the basis of revised technical information or facility design and operation[10].

[8] Explanation of Provisions, V. Procedures for Determining Lifecycle Greenhouse Gas Emissions Rates for Qualified Clean Hydrogen
[9] Explanation of Provisions, V. Procedures for Determining Lifecycle Greenhouse Gas Emissions Rates for Qualified Clean Hydrogen
[10] 1.45V-4(c)(5)

COMMENT:
The IRS and DOE should require a similar readiness for projects as was required for 48C concept paper determination. That method allowed for new projects to develop a plan and quantify potential operational characteristics. It could be similar to the 48C application data sheet and the informaiton requested in the project overview, commercial viability, and facility-level emissions tabs.

The regulations in 1.45V-4(c)(5) only refer to information that would be prepared for new facilities. There is no indication as to what informaiton will be needed for existing facilities. Also, as mentioned above, the time required for the DOE analysis to be completed will be critical in taxpayers taking advantage of the 45V credit.

Lastly, it seems logical that some taxpayers would want to improve the level of GHG emissions within a qualified facility. The regulations seem to only allow "limited circumstances" to request a revision to the DOEs assessment. If there are no pathways in the 45VH2-GREET, then the taxpayer needs the DOE to perform the analysis first to even determine if they qualify for the 45V and at what level. From that determination, the taxpayer should be given the opportunity to make qualified modifications to improve its GHG level, and then request another PER evaluation from the DOE.

EAC being optional is not clear in the regulations.

C. Use of Energy Attribute Certificates

Proposed § 1.45V–4(d)(1) would provide that for purposes of section 45V, if a taxpayer determines a lifecycle GHG emissions rate for hydrogen produced at a hydrogen production facility using the most recent GREET model (as defined in proposed § 1.45V–1(a)(8)(ii)) or a PER (as defined in proposed § 1.45V–4(c)(1)), then the taxpayer may reflect in GREET or include in a PER such hydrogen production facility's use of electricity as being from a specific electricity generating facility rather than the being from the regional electricity grid (as represented in 45VH2–GREET) only if the taxpayer acquires and retires a qualifying EAC (as defined in proposed § 1.45V–4(d)(2)(iv)) for each unit of electricity that the taxpayer claims from such source. For example, one megawatt-hour of electricity used to produce hydrogen would need to be matched with one megawatt-hour of qualifying EACs. The Treasury Department and the IRS seek comments on whether a different treatment would be more appropriate to account for transmission and distribution line losses[11].

(1) In general. For purposes of the section 45V credit, if a taxpayer determines a lifecycle GHG emissions rate for hydrogen produced at a hydrogen production facility using the most recent GREET model or the Secretary determines a provisional emissions rate for hydrogen produced at a hydrogen production facility subject to a PER petition, then the taxpayer may treat such hydrogen production facility's use of electricity as being from a specific electricity generating facility

[11] Explanation of Provisions, V. Procedures for Determining Lifecycle Greenhouse Gas Emissions Rates for Qualified Clean Hydrogen

rather than being from the regional electricity grid (as represented in 45VH2-GREET) only if the taxpayer acquires and retires qualifying EACs (as defined in paragraph (d)(2)(iv) of this section) for each unit of electricity that the taxpayer claims from such source. For example, one megawatt-hour of electricity use to produce hydrogen would need to be matched with one megawatt-hour of qualifying EACs. Further, to satisfy this requirement, a taxpayer's acquisition and retirement of qualifying EACs must also be recorded in a qualified EAC registry or accounting system (as defined in paragraph (d)(2)(v) of this section) so that the acquisition and retirement of such EACs may be verified by a qualified verifier (as defined in §1.45V-5(h)). The requirements of this paragraph (d)(1) apply regardless of whether the electricity generating facility is grid connected, directly connected, or co-located with the hydrogen production facility[12].

COMMENT:
The regulations of 1.45V-4(d) do not make it clear that using EACs from a specific electricity generating facility is an optional method. Please make it clearer in the language that taxpayers can choose to follow this method, and then need to follow the EAC requirements (Incrementality, Temporal Matching, and Deliverability). In the 45VH2-GREET taxpayers are given the option to use this method, and taxpayers are confused because the explanation of the regulations and the regulations themselves don't make it clear on it being optional. Please update the language that EACs are an optional method for taxpayers to account for electricity in its 45VH2-GREET.

Better definition of "use"

C. Requirements for Sale or Use Attestation

The Treasury Department and the IRS request comments on whether there are additional safeguards that the regulations could adopt to prevent this or similar types of abusive section 45V credit claims, including section 45V credit claims arising if such circular arrangements are coordinated among multiple parties[13].

(ii) For sale or use.

The term for sale or use means for the primary purpose of making ready and available for sale or use. Storage of hydrogen following production does not disqualify such hydrogen from being considered produced for sale or use[14].

(2) Verifiable use*[15]*.

For purposes of section 45V(c)(2)(B)(ii) of the Code and the section 45V regulations (as defined in §1.45V-1(a)(13)), a person's verifiable use of the hydrogen specified in paragraph (d)(1) of this section can occur within or outside the United States. A

[12] 1.45V-4(d)
[13] Explanation of Provisions, VI. Procedures for Verification of Qualified Clean Hydrogen Production and Sale or Use
[14] 1.45V-1(a)(9)
[15] 1.45V-5(d)

verifiable use can be made by the taxpayer or a person other than the taxpayer. For example, a verifiable use includes a tolling arrangement pursuant to which a service recipient provides raw materials or inputs, such as water or electricity, to a toller (that is, a third-party service provider that owns a hydrogen production facility), and the toller produces hydrogen for the service recipient using the service recipient's raw materials or inputs in exchange for a fee, use of the hydrogen by the service recipient would be a verifiable use. However, a verifiable use does not include—

(i) Use of hydrogen to generate electricity that is then directly or indirectly used in the production of more hydrogen; or

(ii) Venting or flaring of hydrogen.

COMMENT:
The regulations on defining a qualified "use" seem to leave a very wide interpretation for both taxpayers and the IRS. This could lead to unintended interpretations between the IRS and taxpayers in the future. There should be more prevalent examples, like replacing natural gas usage. The tolling example is a unique and specific application of use, and only demonstrates that the use can be a person other than the taxpayer. Please update the regulations, to provide an example of usage within production facilities that replace natural gas usage or other industrial uses.

Modification of existing facilities and used property not clearly defined.

(2) Modification requirements.

For purposes of section 45V(d)(4) and paragraph (a)(1) of this section, an existing facility will not be deemed to have been originally placed in service as of the date the property required to complete the modification is placed in service unless the modification is made for the purpose of enabling the facility to produce qualified clean hydrogen and the taxpayer pays or incurs an amount that is properly chargeable to the taxpayer's capital account with respect to the facility. A modification is made for the purpose of enabling the facility to produce qualified clean hydrogen if the facility could not produce hydrogen with a lifecycle greenhouse gas (GHG) emissions rate that is less than or equal to 4 kilograms of CO2e per kilogram of hydrogen but for the modification. For example, if a taxpayer solely pays or incurs capital expenses to modify existing components of a hydrogen production facility that are not necessary for the production of hydrogen with a lifecycle GHG emissions rate that is less than or equal to 4 kilograms of CO2e per kilogram of hydrogen, such modification does not entitle the facility to a new placed in service date[16].

(b) Retrofit of an Existing Facility (80/20 Rule).

For purposes of section 45V(a)(1), a facility may establish a new date on which it is considered originally placed in service, even though the facility contains some used property, provided the fair market value of the used property is not more than 20

[16] 1.45V-6(a)

percent of the facility's total value, calculated by adding the cost of the new property to the value of the used property (80/20 Rule). For purposes of the 80/20 Rule, the cost of new property includes all properly capitalized costs of the new property included within the facility. The 80/20 Rule applies to any existing facility, regardless of whether the facility previously produced qualified clean hydrogen and regardless of when the facility was originally placed in service (before application of this paragraph (b)). If a facility satisfies the requirements of the 80/20 Rule, then the date on which such facility is considered originally placed in service for purposes of section 45V(a)(1) is the date on which the new property added to the facility is placed in service[17].

COMMENT:
Again, as stated above the definition of the "facility" becomes important in applying the modification rules and the proposed 80/20 rule. Taxpayers with hydrogen being produced at the end of the interdependent equipment will have a different threshold versus a taxpayer that produces it earlier within its process.

The term "used" property needs to be defined clearer for taxpayers to understand "used". Based on the title of "existing facility" this could mean a purchased facility or an already existing facility of the taxpayer. When does the equipment become "used" needs to be addressed, because it seems to have similarities of the "original use" used by other investment tax credits.

The "used" property definition also could be construed if a taxpayer must make modifications to qualify. For example, if a facility is placed in service after 1/1/23 and from the PER process determines they do not fall under the minimum 4kg CO2 per kg of H2. Then if the taxpayer makes a modification to the "existing facility" that did not meet the qualified clean hydrogen facility definition, they will have to follow the 80/20. They would most likely fail the test because the original facility has a very high fair value. This test does not allow you to fail the 45VH2-GREET model and then make any modifications.

With the 45VH2-GREET model being limited in its pathways and the only model allowed to determine the emissions value, a taxpayer has no opportunity to evaluate any existing facility before modifications are made to see if those modifications reduce the GHG to qualified levels. The "used" property will create unnecessary controversy between taxpayers and the IRS.

In the same concept, if a taxpayer currently qualifies for 45V but wants to improve its level of GHG for the 45V credit, these modification rules, especially the 80/20 rule, unintentionally disqualify taxpayers and does not incent them to reduce GHG in hydrogen production. Our recommendation is to consider something similar to the "original use" rules, so taxpayers don't get penalized for wanting to improve GHG levels and are caught within the 80/20 rule.

The 80/20 rule is not written in the actual statute. The statute only allows modifications to existing facilities that were placed in service before 2023. The 80/20 rule does allow taxpayers to obtain a new placed in-service date for existing facilities after 2023, which seems beneficial to taxpayers. There does seem to be unintended applications of the 80/20 rule that could disqualify taxpayers with existing facilities.

[17] 1.45V-6

The examples for 1.45V-6 leave the taxpayer to assume that there are two modification rules. 1.45V-6(a) applies to existing facilities before January 1, 2023, and 1.45V-6(b) applies to existing facilities after that date, but 1.45V-6(b) states it applies to "any existing facility". If that is the case, it seems highly unlikely that an existing facility could even qualify because of the large 80/20 threshold. Please clarify this regulation to allow for the applications of the modification rule.

Lastly, the term "modification" has no relationship to the Prevailing Wage and Apprenticeship regulations under 1.45V-3 with the terms "construction, alteration, or repair". Please use consistent terms between the two, so the application of a modification has its appropriate connection with the Prevailing Wage and Apprenticeship regulations.

We appreciate the opportunity to provide our comments to you and would be pleased to discuss them further. If you have any questions, please contact Nick Panko, to set up a further discussion.

Sincerely,

Nick Panko
Vice President
CFO Services