INTERNATIONAL ENERGY CREDIT ASSOCIATION

February 27, 2024

Filed Electronically at: Federal eRulemaking Portal: https://www.regulations.gov

CC:PA:LPD:PR (REG-117631-23), Room 5203
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Re: Comments of the IECA on: **Section 45V Credit for Production of Clean Hydrogen; Section 48(a)(15) Election to Treat Clean Hydrogen Production Facilities as Energy Property**, 88 Fed. Reg. 89220 (published December 26, 2023) (REG-117631-23) RIN 1545-BQ97

Dear Office of Chief Counsel and Ms. Hayes:

The International Energy Credit Association ("IECA") appreciates the opportunity to submit these comments to the Internal Revenue Service ("IRS") and the Department of the Treasury ("Treasury"). The IECA is an all-volunteer organization relying on its members for drafting support. We respectfully request that the IRS accept these IECA Comments submitted one day late as the IRS considers the important work it is pursuing with the establishment of regulations implementing the Section 45V tax credit for Clean Hydrogen Production. Thank you for your review and consideration of these IECA Comments.

Background about the IECA

The IECA is an association of over 1,400 credit, risk management, legal and finance professionals that is dedicated to promoting the education and understanding of credit and other risk management-related issues in the energy industry. For the last 100 years, IECA members have actively promoted the development of best practices that reflect the unique needs and concerns of the energy industry.

The IECA seeks to protect the rights and advance the interests of a broad range of domestic and foreign energy market participants, representatives of which make up the IECA's membership. These entities finance, produce, sell, and/or purchase for resale substantial quantities of various physical energy commodities, including electricity, natural gas, oil, refined products, hydrogen, ammonia, renewable energy certificates, voluntary carbon credits, and numerous other energy-related physical commodities (both tangible and intangible) necessary for the healthy functioning of the energy markets and the "real economy."

I. Summary Description of 45V Clean Hydrogen Tax Credit.

As the IRS explained (see 88 Fed. Reg. 89220, at 89220):

"The proposed regulations would provide rules for: determining lifecycle greenhouse gas emissions rates resulting from hydrogen production processes; petitioning for provisional emissions rates; verifying production and sale or use of clean hydrogen; modifying or retrofitting existing qualified clean hydrogen production facilities; using electricity from certain renewable or zero emissions sources to produce qualified clean hydrogen; and electing to treat part of a specified clean hydrogen production facility instead as property eligible for the energy credit. The proposed regulations would affect all taxpayers who produce qualified clean hydrogen and claim the clean hydrogen production credit, elect to treat part of a specified clean hydrogen production facility as property eligible for the energy credit, or produce electricity from certain renewable or zero emissions sources used by taxpayers or related persons to produce qualified clean hydrogen." (Emphasis added.)

The IRS describes the Section 45V credit for the production of clean hydrogen as follows (See 88 Fed. Reg. 89220, at 89220 - 89221):

"Section 45V provides a tax credit for the production of qualified clean hydrogen. For purposes of section 38 of the Code, section 45V(a) provides that the clean hydrogen production credit for any taxable year is an amount equal to the product of (i) the kilograms of qualified clean hydrogen produced by the taxpayer during such taxable year at a qualified clean hydrogen production facility during the 10-year period beginning on the date such facility was originally placed in service, and (ii) the applicable amount as determined under section 45V(b) with respect to such hydrogen.

Section 45V(b)(1) provides that, for purposes of section 45V(a)(2), the applicable amount is an amount equal to the applicable percentage of $0.60. …

Section 45V(b)(2) provides that, for purposes of section 45V(b)(1), the applicable percentage is determined based on the lifecycle greenhouse gas emissions (lifecycle GHG emissions) rate of the process to produce any qualified clean hydrogen as follows: (i) if the lifecycle GHG emissions rate is not greater than 4 kilograms of carbon dioxide equivalent (CO_2e) per kilogram of hydrogen, and not less than 2.5 kilograms of CO_2e per kilogram of hydrogen, then the applicable percentage is 20 percent; (ii) if the lifecycle GHG emissions rate is less than 2.5 kilograms of CO_2e per kilogram of hydrogen, and not less than 1.5 kilograms of CO_2e per kilogram of hydrogen, then the applicable percentage is 25 percent; (iii) if the lifecycle GHG emissions rate is less than 1.5 kilograms of CO_2e per kilogram of hydrogen, and not less than 0.45 kilograms of CO_2e per kilogram of hydrogen, then the applicable percentage is 33.4 percent; and (iv) if the lifecycle GHG emissions rate is less than 0.45 kilograms of CO_2e per kilogram of hydrogen, then the applicable percentage is 100 percent.

…

Section 45V(e)(1) provides that, in the case of any qualified clean hydrogen production facility that satisfies the requirements of section 45V(e)(2) [i.e., satisfies prevailing wage and apprenticeship requirements], the amount of the section 45V credit with respect to qualified clean hydrogen described

in section 45V(b)(2) is equal to the amount determined under section 45V(a) (determined without regard to section 45V(e)(1)) multiplied by five.

…

2. Definitions
a. Lifecycle Greenhouse Gas Emissions
Section 45V(c)(1)(A) provides that, subject to section 45V(c)(1)(B), the term "lifecycle greenhouse gas emissions" has the same meaning given such term under section 211(o)(1)(H) of the Clean Air Act (42 U.S.C. 7545(o)(1)(H)), as in effect on August 16, 2022. Under section 45V(c)(1)(B), the term "lifecycle greenhouse gas emissions" includes emissions only through the point of production (well-to-gate), as determined under the most recent Greenhouse gases, Regulated Emissions, and Energy used in Transportation model, referred to as the "GREET model" commonly and in the document, developed by Argonne National Laboratory, or a successor model as determined by the Secretary of the Treasury or her delegate (Secretary).

b. Qualified Clean Hydrogen
Section 45V(c)(2)(A) provides that the term "qualified clean hydrogen" means hydrogen that is produced through a process that results in a lifecycle GHG emissions rate of not greater than 4 kilograms of CO2e per kilogram of hydrogen. Section 45V(c)(2)(B) further provides that the term "qualified clean hydrogen" does not include any hydrogen unless (i) such hydrogen is produced (A) in the United States (as defined in section 638(1) of the Code) or a United States territory (having the meaning of the term "possession" as defined in section 638(2)), (B) in the ordinary course of a trade or business of the taxpayer, and (C) for sale or use; and (ii) the production and sale or use of such hydrogen is verified by an unrelated party.

c. Provisional Emissions Rate
Section 45V(c)(2)(C) provides that in the case of any hydrogen for which a lifecycle GHG emissions rate has not been determined for purposes of section 45V, a taxpayer producing such hydrogen may file a petition with the Secretary for a determination of the lifecycle GHG emissions rate with respect to such hydrogen, which is referred to as a "provisional emissions rate" or PER in the proposed regulations.

d. Qualified Clean Hydrogen Production Facility
Section 45V(c)(3) provides that the term "qualified clean hydrogen production facility" means a facility (i) owned by the taxpayer, (ii) that produces qualified clean hydrogen, and (iii) the construction of which begins before January 1, 2033."

II. Comments of IECA

The IECA generally endorses the foregoing summary description of the Clean Hydrogen Tax Credit under Section 45V, as excerpted from the IRS's proposed rulemaking. In fact, the IECA particularly supports the procedure proposed by the IRS allowing a taxpayer to file a petition with the Secretary for a "provisional emissions rate" or PER in order to demonstrate that its proposed "qualified clean hydrogen production facility" is eligible for a larger Section 45V tax credit, because the actual "lifecycle GHG emissions rate" of its facility is better than the "lifecycle GHG emissions rate" attributed to such facility using the GREET Model.

The IECA supports the description of "emissions through the point of production (well-to-gate)" found on page 89224 (88 Fed. Reg. 89224):

> "D. Emissions Through the Point of Production (Well-to-Gate)
> Proposed § 1.45V–1(a)(8)(iii) would provide that, for purposes of section 45V(c)(1)(B) and proposed § 1.45V– 1(a)(8)(i), 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 and any capture and sequestration of carbon dioxide generated by the hydrogen production facility." (Emphasis added.)

A. IECA Objects to the IRS' proposed creation of "fixed assumptions" in the GREET Model, labelling such "fixed assumptions" as "background data," and then declaring that "Users of 45VH2-GREET may not change background data."

As the IRS explains on page 89225 (88 Fed. Reg. at 89225), data such as "upstream methane loss rates" and "emissions associated with power from specific generator types, and emissions associated with regional electricity grids" are treated as "background data" and "users of 45VH2-GREET may not change background data." The IRS explains its position by saying: "Background data 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." The IECA objects to this approach by the IRS.

The largest natural gas producer in the U.S., a company called EQT, announced earlier this year that it had replaced nearly 9,000 pneumatic actuators.[1] If true, this one producer could have reduced its "upstream methane loss rates" by 60% or 70% when compared to its methane losses just two years earlier. For the IRS to now deny a user of the GREET model to demonstrate that its "upstream methane loss rate" is significantly lower than the methane loss rate "assumed" in the GREET model by Argonne National Laboratory is taking away a significant incentive for clean hydrogen producers and "responsible" natural gas producers to invest in the very types of innovations that the U.S. needs to have hydrogen producers and natural gas producers invest in as a fundamental tool to manage and mitigate the U.S. impacts on global climate change.

Moreover, the technology is available today from independent non-profit verifiers like Trustwell Certificates (with its Project Canary testing and monitoring technology), Methane IQ, Equitable Origin, and others, which can and do "verifiably demonstrate different methane loss rates for natural gas feedstocks."

B. IECA Objects to the IRS' proposed statement on page 89225 that "a taxpayer may not file a petition with the Secretary for a PER unless a lifecycle GHG emissions rate has not been determined under the most recent GREET model."

The IRS explains on pages 89225 – 89226, that "Proposed §1.45V-4(c)(2)(i) would further provide that a lifecycle GHG emissions rate has not been determined under the most recent GREET model with respect to

[1] https://www.naturalgasintel.com/eqt-eliminates-natural-gas-powered-pneumatic-devices-sharply-cuts-methane-emissions/ and https://www.reuters.com/article/eqt-corp-carbon/eqt-removes-all-natural-gas-powered-pneumatic-devices-from-operations-idUSL4N33P2KT/

hydrogen produced by the taxpayer at a hydrogen production facility if it uses a hydrogen production pathway that is not included in the most recent GREET model." (Emphasis added.)

As also explained on page 89225, "as of the publication date of these proposed regulations, 45VH2-GREET includes the following hydrogen production pathways – (1) Steam methane reforming (SMR) of natural gas, with potential carbon capture and sequestration (CCS); (2) Autothermal reforming (ATR) of natural gas, with potential CCS;"

As a result of this position being taken by the IRS, the taxpayer using natural gas produced by EQT and verified to have reduced its "upstream methane losses" by 60% to 70%, in an SMR or ATR with CCS, will be denied the opportunity to request a PER from the Secretary, because its "hydrogen production pathway" is already addressed in the GREET model.

The IECA submits that this is the exact opposite of the types of policies the IRS should be pursuing. Why would the IRS deliberately seek to take away an incredible incentive to cause clean hydrogen producers to require any provider of natural gas feedstock to an SMR or ATR production method with CCS to eliminate their "upstream methane loss rates" by eliminating all natural gas-powered pneumatic actuator devices as was done by EQT, the largest natural gas producer in the U.S.?

C. IECA Endorses the IRS Decision to accept Energy Attribute Certificates (EACs) in "documenting purchased electricity inputs and assessing emissions impacts of electricity used in the production of hydrogen" under 1.45V-4(d)(1).

As the IRS explained at page 89227 (88 Fed. Reg. at 89227):

> "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 -SIC] 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 IECA endorses the foregoing decision by the IRS, including the requirement that "a taxpayer's acquisition and retirement of qualifying EACs must also be recorded in a qualified EAC registry or accounting system (as defined in proposed § 1.45V-4(d)(2)(v)) so that the acquisition and retirement of such EACs may be verified by a qualified verifier (as defined in proposed § 1.45V-5(h))."

D. The IECA Objects to the IRS' proposed "eligible energy attribute certificate requirements" under proposed § 1.45V-4(d)(3) for using such EACs as totally unnecessary.

As explained on pages 89228 and 89229 (88 Fed. Reg. at 89228-89229), the IRS has imposed three additional requirements called "incrementality, temporal matching, and deliverability." None of the three of

these additional requirements is necessary and should not be required of taxpayers using EACs to demonstrate satisfaction of a lower "lifecycle GHG emissions rate."

The IRS offered the following as justification for its additional requirements for "eligible" EACs in proposed § 1.45V-4(d)(3) (see 88 Fed. Reg. at 89228):

> "2. Eligible Energy Attribute Certificate Requirements
> Proposed § 1.45V–4(d)(3) would provide that an EAC meets the requirements to be a qualifying EAC if it meets the requirements for incrementality, temporal matching, and deliverability. The incrementality requirement in proposed § 1.45V– 4(d)(3)(i) would require qualifying EACs to represent incremental source electricity, such as electricity from an electricity generating facility that has a recent COD [i.e., the generator's COD must occur within 36 months of the start of hydrogen production]. As discussed in more detail later in this section, the Treasury Department and the IRS are requesting comments on whether and under what circumstances electricity generated by an existing electricity generating facility (that is, with a less recent COD) that is dedicated to hydrogen production may be treated as satisfying the incrementality requirement. The temporal matching requirement in proposed § 1.45V–4(d)(3)(ii) would require that qualifying EACs are retired that represent electricity produced in the same time period in which the hydrogen production facility consumes electricity in the production of hydrogen. The deliverability requirement in proposed § 1.45V– 4(d)(3)(iii) would require qualifying EACs to represent electricity that was produced by an electricity generating facility that is in the same region as the relevant hydrogen production facility.
>
> The Treasury Department and the IRS, in consultation with the EPA and the DOE, have preliminarily determined that these qualifying EAC requirements are consistent with the requirements of section 45V(c)(1)(A) and (B) of the Code.12 The EPA has advised that, based on its prior implementation of section 211(o)(1)(H) of the Clean Air Act in other contexts, it would be reasonable and consistent with the EPA's precedent for the Treasury Department and the IRS to determine that induced grid emissions are an anticipated real-world result of electrolytic hydrogen production that must be considered in lifecycle GHG analyses for purposes of the section 45V credit. Such interpretation would be consistent with the EPA's long-standing interpretation and application of section 211(o)(1)(H) of the Clean Air Act in the context of the Renewable Fuel Standard (RFS) program. The EPA has also noted that EACs are an established means for documentation and verification of the electricity generation and purchase of zero-GHG electricity. Moreover, the EPA has advised that it believes it would be reasonable for the Treasury Department and the IRS to use EACs that possess specific attributes that meet certain criteria as a means of reducing the risk of induced grid emissions resulting from new load from electrolytic hydrogen production being added to an existing grid. Such requirements would mitigate the risk of inappropriately crediting hydrogen production that does not meet the lifecycle GHG levels required by section 45V."

The IECA submits that:

(i) "Incrementality" is unnecessary. If a currently idle solar, wind, geothermal, nuclear or fossil-fuel plant with CCS, that has not sold its EACs to anyone, resumes operation and sells its EACs to the taxpayer owning a qualified clean hydrogen production facility, then for each EAC acquired by the taxpayer, a MWh of electric energy will have been produced, which has no or low GHG emissions associated with it and that MWh of low or no GHG emissions electric energy will have taken the place of a MWh of higher GHG emissions electric energy, which will have improved the global climate change impact for the better.

(ii) "Temporal Matching" is unnecessary. If a taxpayer owning a qualified clean hydrogen production facility purchases and retires one EAC (presuming one EAC represents the generation of one Megawatt-hour of electric energy by a no-or-low GHG emissions electric generator) produced in the same year (i.e., vintage) for every one Megawatt-hour of electric energy consumed by such taxpayer's hydrogen production facility in that same year, then all the electric energy produced by the EAC generator need not be generated in the same hour(s) in which the hydrogen production facility consumed electric energy, to achieve the reduction in GHG emissions that are intended to occur under the Clean Hydrogen Tax Credit.

(iii) "Deliverability" is unnecessary. Climate change is affected by increases or reductions in "global" emissions of CO2e quantities of GHG emissions. The "risk of induced grid emissions" mattered when the Clean Air Act programs were seeking to reduce emissions of SOX and NOX, which did have adverse local impacts from the production of acid-rain, smog and other local air-inversion impacts that affected asthma patients. However, when the only pollutant is climate-change inducing CO2 or methane, the impacts are global, not local, and there is no need to require that the solar, wind, geothermal, nuclear, or fossil-fuel with CCS source of electric energy be located in the same region (i.e., balancing authority area) as the hydrogen-producing facility.

As long as no-or-low GHG emissions electric energy is produced during the same general time period in which a qualified clean hydrogen producing facility is consuming electric energy, and the taxpayer owning the hydrogen-producing facility purchases and retires a quantity of EACs equivalent to the quantity of electric energy consumed by such hydrogen production facility, then objectives of the Section 45V clean hydrogen tax credit will have been met. That will be true if the verified EACs are generated by a solar, wind, geothermal, nuclear or fossil-fuel with CCS source of electricity located in one part of the world and the hydrogen production facility is located in another part of the world. The beneficial impact on global climate change will be the same.

III. Correspondence Regarding These Comments

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IV. CONCLUSION.

The IECA appreciates the opportunity to submit these Comments in response to the IRS's Proposed Rulemaking. The IECA respectfully requests that the IRS consider these Comments as the IRS moves forward to establish and implement its regulations regarding the Section 45V tax credit for the production of Clean Hydrogen and the fundamental benefits to our economy due to increased investment in clean energy manufacturing in the US, creating new jobs in the US, and managing/mitigating the US economy's contribution to the global impacts of climate change.

We would welcome the opportunity to discuss these Comments further should you require any additional information on any of the topics discussed herein.

Yours truly,
INTERNATIONAL ENERGY CREDIT ASSOCIATION

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