

January 5, 2024

# Proposed Rules on U.S. Clean Hydrogen Production Tax Credit

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## BACKGROUND

The U.S. Inflation Reduction Act of 2022 (the “IRA”) established a new tax credit under the Internal Revenue Code (the “IRC”) §45V for U.S.-based production of clean hydrogen. More specifically, the §45V credit provides for a credit for qualified clean hydrogen produced through a process that results in lifecycle greenhouse gas (“GHG”) emissions through the point of production of no more than 4 kilograms of CO<sub>2</sub>e per kilogram of hydrogen. The §45V credit is available when qualified clean hydrogen is (i) produced in the United States or a United States territory, (ii) produced in the ordinary course of a trade or business of the taxpayer, (iii) produced for sale or use, and (iv) the production and sale or use of such hydrogen is verified by an unrelated party.

On December 22, 2023, the U.S. Department of the Treasury (the “Treasury”) and the U.S. Internal Revenue Service (the “IRS”) published long-awaited proposed regulations for claiming the credit. In parallel, the U.S. Department of Energy (the “DOE”) released a supporting whitepaper<sup>1</sup> and new model<sup>2</sup> that describe how to assess lifecycle GHG emissions for the purposes of the credit.

The proposed regulations embrace some of the more stringent proposed requirements for the use of renewable power in the production of qualified clean hydrogen, including incrementality, temporal matching and deliverability (as described in greater detail below), which are also found in the EU’s clean hydrogen rules (but with some notable variations).<sup>3</sup> The proposed regulations also contain some uncertainties on which the Treasury and the IRS are seeking comments, such as successor GREET models and alternatives to the incrementality requirement. The Treasury and the IRS have requested comments by February 26, 2024.

## I. ELIGIBILITY FOR AND AMOUNT OF TAX CREDIT

The §45V credit is calculated as a dollar amount per kilogram of qualified clean hydrogen produced by a taxpayer during a 10-year period beginning on the date a production facility is placed in service. The manner in which clean hydrogen is produced is not specified in the IRC. Instead, as described above, the credit amount depends on the lifecycle GHG emissions of the production process.

The base §45V credit is \$0.60 per kilogram of clean hydrogen, adjusted annually due to inflation, and decreases as the hydrogen's lifecycle carbon intensity increases. The base credit is multiplied by five for facilities that satisfy the [prevailing wage and apprenticeship](#) requirements (as shown in the table below).<sup>4</sup>

<b>CO<sub>2</sub>E PRODUCED PER KG OF HYDROGEN</b>	<b>MAXIMUM CREDIT AMOUNT (ASSUMING PREVAILING WAGE AND APPRENTICESHIP REQUIREMENTS ARE MET AND INFLATION ADJUSTED)</b>
0 – .45KG	\$3.00 / kg
0.45 – 1.5KG	\$1.00 / kg
1.5 – 2.5KG	\$0.75 / kg
2.5 – 4KG	\$0.60 / kg

Taxpayers cannot claim a §45V credit for hydrogen produced at a facility that includes carbon capture equipment for which the §45Q carbon sequestration credit is claimed during any taxable year or any prior taxable year.

## II. DETERMINING LIFECYCLE GHG EMISSIONS RATES

As noted above, the amount of the §45V credit is determined based upon the lifecycle GHG emissions rate<sup>5</sup> for that taxable year's total hydrogen production at a qualified clean hydrogen production facility.<sup>6</sup> Lifecycle GHG emissions include emissions only through the point of production ("well-to-gate"), as determined (i) under the most recent Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation 45VH2 model (the "GREET model")<sup>7</sup> developed by the DOE's Argonne National Laboratory or (ii) in the case of any hydrogen for which a lifecycle GHG emissions rate has not been determined for purposes of §45V, by petition for determination by the Treasury Secretary of the lifecycle GHG emissions rate with respect to such hydrogen, called a provisional emissions rate ("PER").<sup>8</sup>

### A. GREET Model

Each taxable year, a taxpayer claiming the §45V credit must determine the lifecycle GHG emissions rate of hydrogen produced at a hydrogen production facility using the most recent GREET model (referred to as 45VH2-GREET) or a successor model (or petition for a PER, as discussed below).<sup>9</sup> The GREET model includes emissions associated with feedstock growth, extraction, processing and delivery to the hydrogen production facility, as well as emissions associated with the power used by the hydrogen production facility, including electricity used by the hydrogen production facility and any capture and sequestration of carbon

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dioxide generated by the hydrogen production facility. If a newer GREET model 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 version as the most recent GREET model.<sup>10</sup> The Treasury and the IRS request comments on alternative definitions for “most recent GREET model” whereby the Treasury Secretary would determine if the latest version of the GREET model is an appropriate “successor model” for purpose of the §45V tax credit. As it stands, the inability to use a specific GREET model that is fixed at the time of a project’s final investment decision (“FID”) and not subject to further updates post-FID introduces the risk that a project could lose or reduce its credit eligibility as a result of a subsequent GREET model update.

The lifecycle GHG emissions are determined separately for each hydrogen production facility that the taxpayer owns and as of the close of each respective taxable year in which such production occurs. 45VH2-GREET includes the following hydrogen production pathways:

- Steam methane reforming (“SMR”) of natural gas, with potential carbon capture and sequestration (“CCS”);
- Autothermal reforming (“ATR”) of natural gas, with potential CCS;
- SMR of landfill gas with potential CCS;
- ATR of landfill gas with potential CCS;
- Coal gasification with potential CCS;
- Biomass gasification with corn stover and logging residue with no significant market value with potential CCS;
- Low-temperature water electrolysis using electricity; and
- High-temperature water electrolysis using electricity and potential heat from nuclear power plants.

Certain parameters in 45VH2-GREET are fixed assumptions, referred to as “background data”, and cannot be changed by users of 45VH2-GREET (e.g., upstream methane loss rates, emissions associated with power generation from specific generator types, and emissions associated with regional electricity grids).<sup>11</sup> However, 45VH2-GREET restricts the amount of steam co-product that reformers can claim based on the quantity of steam that an optimally designed reformer is expected to be capable of producing based on modeling from the National Energy Technology Laboratory.<sup>12</sup> This restriction is included within the model to avoid incentivizing generation or over-production of hydrogen co-products like steam to enable access to a higher tax credit value by artificially reducing the calculated carbon intensity of the hydrogen.

### **B. Provisional Emissions Rate**

If a hydrogen producer intends to use a hydrogen production pathway that is not yet included in the most recent GREET model, a taxpayer may file a petition with the Treasury Secretary for a PER.<sup>13</sup> To use the PER approach, the taxpayer will need to (i) make an application to the DOE requesting an emissions value, and include a front-end engineering and design (“FEED”) study or similar indication of project maturity, such as project specification and cost estimation sufficient to inform a final investment decision, and (ii) attach a

PER petition containing the emissions value provided by the DOE to the first federal income tax return in which it is claiming the §45 credit.<sup>14</sup> A taxpayer will be able to rely upon an emissions value provided by the DOE so long as any information, representations, or other data provided to the DOE in support of the request for an emissions value are accurate. The DOE will specify procedures for requesting an emissions value by April 1, 2024.<sup>15</sup>

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### III. ENERGY ATTRIBUTE CERTIFICATES, INCREMENTALITY AND TEMPORAL MATCHING

In consultation with the U.S. Environmental Protection Agency (the “EPA”) and the DOE, the Treasury and the IRS determined that energy attribute certificates (“EACs”) can be used to document and assess GHG emissions from the production of hydrogen.

The proposed regulations provide that for purposes of determining a lifecycle GHG emissions rate, a taxpayer may treat electricity used by a hydrogen production facility as being from a specific electricity generating facility rather than the regional electricity grid only if the taxpayer acquires and [retires](#) a qualifying EAC,<sup>16</sup> such as a renewable energy certificate, for each unit of electricity that the taxpayer claims from such source.

A “qualifying EAC” is an EAC that provides the following information, which must be verified by a qualified verifier:<sup>17</sup> (i) a description of the electricity generating facility; (ii) the amount and units of electricity; (iii) the date on which the electricity generating facility first began operations (defined as “commercial operations date” or “COD”); (iv) for electricity generated before January 2028, the year in which such electricity was generated; (v) for electricity that is generated after December 31, 2027, the date and hour in which such electricity was generated; and (vi) a unique project identifier for each EAC that can be used to cross reference any additional information, such as the facility’s location.

A taxpayer’s acquisition and retirement of qualifying EACs must also be recorded in a qualified EAC registry or accounting system, which verifies that the environmental attributes of each EAC is claimed and retired only once and prevents duplicative registration of generators.<sup>18</sup> To prevent two different parties from claiming the same environmental benefits from the same generated energy (called “double claiming”), these requirements apply regardless of whether the electricity generating facility is grid connected, directly connected, or co-located with the hydrogen production facility. In other words, qualifying EACs will be required even if the underlying source of electricity is directly connected to the hydrogen production facility and not connected to the grid.

Moreover, the proposed regulations impose and define three criteria for an EAC to be a qualifying EAC: (A) incrementality, (B) temporal matching, and (C) deliverability.

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## A. Incrementality

Incrementality (in the EU called “additionality”) refers to the concept that purchased carbon offsets and EACs should introduce new renewable energy onto the electricity grid and avoid carbon emissions beyond what would have happened in a “business as usual” case.

In the proposed rules, an EAC meets the incrementality requirement if the electricity generating facility that produced the unit of electricity to which the EAC relates has a commercial operations date (“COD”) that is **no more than 36 months before** the hydrogen production facility was placed in service. The COD registered with the EAC tracking system represents the COD for purposes of the §45V credit.

This 36-month requirement is consistent with the EU additionality requirement under Article 5 of the EU [First Delegated Act](#) for the production of renewable fuels of non-biological origin (“RFNBOs,” which include hydrogen). However, different from the proposed U.S. regulations, the EU rules do not permit virtual transactions with EACs to comply with the additionality condition, but require renewables power purchase agreements (“PPAs”) ensuring that the physical power is delivered.

The Treasury and the IRS request comments on whether electricity generated by an **existing** fossil fuel electricity generating facility should be considered incremental under circumstances such as if CCS facilities were installed with a COD that is no more than 36 months before the relevant hydrogen production facility was placed in service.

The proposed regulations also provide for an alternative test to establish incrementality for facilities that underwent an uprate<sup>19</sup> no more than 36 months before the hydrogen production facility was placed in service and the generated electricity is part of the facility’s uprated production.

By contrast, the EU First Delegated Act states that where additional production capacity is added to an existing installation producing RFNBOs, the added capacity shall be considered to have come into operation *at the same time as the initial installation*, provided that the capacity is added at the same site and the addition takes place no later than 36 months after the initial installation came into operation.<sup>20</sup>

**Avoided retirements approach.** The Treasury and the IRS seek comments on whether to recognize an “avoided retirements approach” that would treat EACs from an existing electricity generating facility as satisfying the incrementality requirement if the facility is likely to avoid retirement because of its relationship with a hydrogen production facility. Among other points, the Treasury and the IRS seek comments about the appropriate criteria to ensure that only electric generation supplying the minimum hydrogen production necessary to avoid retirement is counted as incremental, and about whether financial loss or out-of-market financial support driven by federal or state policy are appropriate criteria to assess retirement risk.

**Modelling approach.** The Treasury and the IRS also seek comments on whether to provide an opportunity to demonstrate zero or minimal induced grid emissions through modeling. A demonstrated or modeled

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minimal emission approach could treat electricity produced by existing electricity generating facilities as satisfying the incrementality requirement if it is demonstrated that such sources would not give rise to significant induced grid emissions.

**Formulaic approaches.** The Treasury and the IRS are also considering other alternative approaches to meet the incrementality requirement. One approach would deem 5% of the hourly generation from existing clean generators (such as wind, solar, nuclear, and hydropower facilities) placed in service before January 1, 2023 as satisfying the incrementality requirement. The Treasury and the IRS seek comments on whether a higher amount, such as 10%, would be appropriate, and invite comments on alternative formulaic approaches.

### B. Temporal Matching

Temporal matching or correlation means that the renewable electricity generated (or represented by an EAC) and the hydrogen production need to match in a certain timeframe. Temporal matching and deliverability (discussed below) are aimed at ensuring that there is a physical flow of renewable electricity to the hydrogen production facility to avoid the activation of fossil power plants.

The proposed general rule is that an EAC satisfies the temporal matching requirement if the electricity represented by the EAC is generated **in the same hour** that the taxpayer's hydrogen production facility uses electricity to produce hydrogen. Because hourly tracking by tracking systems and necessary software will take time to develop, a transition rule will be applicable before January 1, 2028 that permits **annual** matching of electricity generation with hydrogen production.

In comparison, the EU's First Delegated Act requires *monthly* matching of renewable electricity generation with hydrogen production until December 31, 2029. After that date, hourly matching is required.

### C. Deliverability

Deliverability or geographical correlation means that the power generation unit from which the generator has purchased an EAC (or with which it has concluded a PPA) should be in proximity of the hydrogen production facility to ensure that the loss of power during transmission is kept at a minimum and avoid activation of fossil power.

Deliverability requires 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. Region means a U.S. region as defined in the DOE National Transmission Needs Study, released in October 2023. In the study, the DOE has divided the U.S. into 15 geographic regions.<sup>21</sup> The Treasury and the IRS request comments on whether there are additional ways to establish deliverability even if the electricity generating and the hydrogen production facility are not located in the same region or if the clean electricity generator is located outside the United States.

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The deliverability requirement is analogous to the “geographical correlation” requirement under the EU First Delegated Act, which specifies that the renewable electricity used must be generated in the same, or an interconnected, “bidding zone.”<sup>22</sup> In the case of non-EU countries where the EU “bidding zone” concept does not apply, the provision should be implemented based on the most similar equivalent concept, such as similar market regulations, the physical characteristics of the electricity grid, notably the level of interconnection or, as a last resort, the country.<sup>23</sup> It is unclear whether the 15 regions as defined by the DOE would align with the EU requirements.

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#### IV. PROCEDURES TO VERIFY QUALIFIED CLEAN HYDROGEN PRODUCTION AND SALE OR USE

The proposed regulations specify procedures to verify qualified clean hydrogen production and sale or use. “Qualified clean hydrogen” requires that the hydrogen is produced (i) in the United States or a U.S. territory; (ii) in the ordinary course of a trade or business of the taxpayer; and (iii) for sale or use. While the proposed regulations do not further describe what “ordinary course of a trade or business” means, they clarify that “for sale or use” would mean that hydrogen is produced primarily for the purpose of making it ready and available for sale or use.

In order to qualify as “qualified clean hydrogen” for the §45V credit, the production and sale or use of such hydrogen must be verified by an unrelated party.<sup>24</sup> The verification can be accomplished by attaching a verification report<sup>25</sup> provided by the qualified verifier<sup>26</sup> to the taxpayer’s tax return which would also include the following attestations:

- A “production attestation” that states that the qualified verifier performed a verification sufficient to determine that the operation of the facility and any EACs are accurately reflected;<sup>27</sup>
- A “sale or use attestation” that the qualified verifier performed a verification sufficient to determine that the amount of qualified clean hydrogen that is specified in the production attestation and that is claimed has been sold or used;<sup>28</sup>
- A “conflict attestation” that the qualified verifier, among other requirements, has not received nor will receive a fee based on the value of any §45V credit, was not a party to any transaction in which the taxpayer sold qualified clean hydrogen it had produced, and is not related to or an employee of the taxpayer;<sup>29</sup> and
- A qualified verifier statement containing information on the qualified verifier.<sup>30</sup>

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#### V. CLEAN HYDROGEN PRODUCTION FACILITY AS ENERGY PROPERTY FOR §48 INVESTMENT TAX CREDIT

A taxpayer can make an irrevocable election for a clean hydrogen production facility to claim the §48 investment tax credit instead of the §45V credit for any “qualified property” (generally meaning tangible property with respect to which depreciation is allowable, is constructed or acquired by the taxpayer, and the original use of which commences with the taxpayer) that is part of the facility and is placed in service after December 31, 2022.<sup>31</sup>

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The proposed regulations provide the mechanism for making the election (by claiming the §48 credit on a Form 3468, *Investment Credit*, with the taxpayer's tax return for the taxable year and providing any other necessary information). A separate election must be made for each clean hydrogen production facility.<sup>32</sup> The taxpayer must obtain an annual verification report<sup>33</sup> for the taxable year in which the election is made and for each taxable year thereafter of the recapture period (described more below), which must be attached to the Form 3468, *Investment Credit*.<sup>34</sup>

For any facility with multiple owners, an election made by one owner would bind all owners that directly or indirectly own an interest in the facility, although the Treasury and the IRS request comments on how to treat facilities owned through a tenancy-in-common. Moreover, for facilities owned by a partnership or an S corporation, the election must be made by the partnership or S corporation and would be binding on all ultimate credit claimants.<sup>35</sup>

In the event that in any taxable year of the recapture period, (i) the taxpayer fails to obtain an annual verification report by the deadline for filing its income tax return, (ii) the facility produces qualified clean hydrogen through a process that results in a lifecycle GHG emissions rate greater than the lifecycle GHG emissions rate such facility was designed for and expected to produce, or (iii) the facility actually produced hydrogen through a process that results in a lifecycle GHG emissions rate of greater than 4 kilogram of CO<sub>2</sub>e per kilogram of hydrogen, an "emissions tier recapture" event will occur. The recapture period begins on the first day of the first taxable year after the taxable year in which the facility was placed in service and ends on the last day of the fifth taxable year after the close of the taxable year in which the facility was placed in service. For example, if a calendar-year taxpayer places in service a facility on June 1, 2023, the recapture period is January 1, 2024 through December 31, 2028. The recapture amount is 20% of the excess credit (in the case of (ii) above) and 20% of the §48 credit amount claimed (in the case of (i) and (iii) above).<sup>36</sup>

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## VI. RENEWABLE NATURAL GAS AND FUGITIVE SOURCES OF METHANE

The Treasury and the IRS invite comments on rules addressing hydrogen production pathways that use renewable natural gas ("RNG"), referring to biogas that has been upgraded to be equivalent in nature to fossil natural gas, or other fugitive sources of methane (e.g., from coal mine operations) for purposes of the §45V credit, including conditions that must be met before certificates of RNG or fugitive methane and the GHG emissions benefits they are meant to represent may be taken into account in determining lifecycle GHG emissions rates.<sup>37</sup>

For biogas<sup>38</sup> or biogas-based RNG to receive an emissions value consistent with that gas (and not standard natural gas), the Treasury and the IRS anticipate requiring that the RNG used during the hydrogen production process originate from the "first productive use" of the relevant methane. The Treasury and the IRS further propose to define "first productive use" of the relevant methane as the time when a producer of



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that gas first begins using or selling it for productive use in the same taxable year as (or after) the relevant hydrogen production facility was placed in service. In other words, biogas from any source that had been productively used in a taxable year prior to the taxable year in which the hydrogen production facility was placed in service would not receive an emission value consistent with biogas-based RNG but would instead receive a value consistent with natural gas in the determination of the emissions value for that specific hydrogen production pathway, thereby limiting emissions associated with the diversion of biogas or RNG from other pre-existing productive uses.

The Treasury and the IRS request comments on the rules they plan to promulgate related to RNG and fugitive methane, including on the appropriate lifecycle analysis considerations associated with specific fugitive methane sources, such as counterfactual scenarios, to account for direct and significant indirect emissions, and also the manner in which to assess methane from these sources if the current practice is flaring.

The Treasury and the IRS are also considering providing rules for using RNG certificates and documentation required in the event additional conditions for use of RNG are later imposed.

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ENDNOTES

- 1 [DOE - Assessing Lifecycle Greenhouse Gas Emissions Associated with Electricity Use for the Section 45V Clean Hydrogen Production Tax Credit.](#)
- 2 DOE Office of Energy Efficiency & Renewable Energy, Greenhouse Gases, Regulated Emissions, and Energy Use in Technologies, see [GREET | Department of Energy](#).
- 3 See our [publication](#) on Recent Developments in EU Hydrogen Initiatives, dated November 17, 2022.
- 4 §45V(e)(2). The prevailing wage requirements generally require that laborers and mechanics employed by taxpayers, contractors, and subcontractors to be paid wages not less than prevailing rates as most recently determined by the Secretary of Labor.
- 5 Prop. Reg. §1.45V-1(a)(8)(i).
- 6 Prop. Reg. §1.45V-1(a)(10)(b).
- 7 Prop. Reg. §1.45V-1(a)(8)(ii); Prop. Reg. §1.45V-4(a).
- 8 Prop. Reg. §1.45V-4(a).
- 9 In calculating the lifecycle GHG emissions rate for purposes of determining the amount of the §45V credit, the taxpayer must accurately enter all information about its qualified clean hydrogen production facility requested within the interface of 45VH2-GREET in compliance with the most recent version of the *Guidelines to Determine Well-to-Gate Greenhouse Gas (GHG) Emissions of Hydrogen Production Pathways using 45VH2-GREET* (GREET User Manual), which currently can be found at [www.energy.gov/45vresources](http://www.energy.gov/45vresources). Current 45VH2-GREET, previous versions of 45VH2-GREET, and subsequent updates to 45VH2-GREET can be found at [www.energy.gov/45vresources](http://www.energy.gov/45vresources). Information for the location of 45VH2-GREET and accompanying documentation will be included in the instructions to the Form 7210, *Clean Hydrogen Production Credit*. Prop. Reg. § 1.45V-4(b).
- 10 Prop. Reg. §1.45V-1(a)(8)(ii).
- 11 Guidelines to Determine Well-to-Gate Greenhouse Gas (GHG) Emissions of Hydrogen Production Pathways using 45VH2-GREET (the “GREET User Manual”).
- 12 National Energy Technology Laboratory, DOE, “Comparison of Commercial, State-of-the-Art, Fossil-Based Hydrogen Production Technologies,” April 12, 2022, *available at* [Comparison of Commercial, State-of-the-Art, Fossil-Based Hydrogen Production Technologies \(Technical Report\) | OSTI.GOV](#).
- 13 Prop. Reg. §1.45V-4(c)(2)(i).
- 14 A PER petition must contain (i) an emissions value obtained from the DOE setting forth the DOE’s analytical assessment of the lifecycle GHG emissions rate associated with the facility’s hydrogen production pathway, and (ii) a copy of the taxpayer’s request to the DOE for an emissions value. Prop. Reg. § 1.45V-4(c)(3).
- 15 Prop. Reg. §1.45V-4(c)(5).
- 16 EACs can be used to reduce an organization’s market-based scope 2 emissions from purchased electricity and to claim the use of renewable electricity from a low or zero emission source. [Offsets and RECs: What’s the Difference? \(epa.gov\)](#)
- 17 See endnote 26 for the definition of “qualified verifier.”
- 18 A “qualified EAC registry or accounting system” is defined as a tracking system that (i) assigns a unique identification number to each EAC, (ii) enables verification that only one EAC is associated with each unit of electricity, (iii) verifies that the underlying environmental attributes of each EAC is claimed and retired only once, (iv) identifies the owner of each EAC, and (v) provides a publicly accessible view of all registered electricity generators in the tracking system to prevent duplicative

ENDNOTES (CONTINUED)

- registration of generators. Qualified regional tracking systems in the U.S. include the North American Registry (“NAR”), the New York Generation Attribute Tracking System (“NYGATS”) and the Western Electric Coordination Council (“WREGIS”). Currently, 10 regional tracking systems exist in the U.S., see [Resource Solutions - The Legal Basis for RECs](#), a source that the EPA refers to, see [Renewable Energy Certificates \(RECs\) | US EPA](#).
- 19 “Uprate” means an increase in an electricity generation facility’s rated nameplate capacity in nameplate megawatts, see proposed §1.45V-4(d)(3)(i)(B).
- 20 Art. 5(a) of the EU First Delegated Act.
- 21 [DOE National Transmission Needs Study \(Oct. 2023\)](#).
- 22 Article 2(65) of [Regulation \(EU\) 2019/ 943](#) defines this as the largest geographical area within which market participants are able to exchange energy without capacity allocation.
- 23 See our [publication](#) on Exporting Green Hydrogen to the EU, dated March 6, 2023.
- 24 IRC §45V(c)(2)(B)(ii).
- 25 The verification must include (i) the location of the hydrogen production facility; (ii) a description of the hydrogen production facility, including its method of producing hydrogen; (iii) the type(s) of feedstock(s) used by the hydrogen production facility during the taxable year of production; (iv) the amount(s) of feedstock(s) used by the hydrogen production facility during the taxable year of production; and (v) a list of the metering devices used to record any data used by the qualified verifier. Prop. Reg. §1.45V-5(g).
- 26 A “qualified verifier” is any individual or organization with active accreditation (i) as a validation and verification body from the American National Standards Institute National Accreditation Board; or (ii) as a verifier, lead verifier, or verification body under the California Air Resources Board Low Carbon Fuel Standard program. Prop. Reg. §1.45V-5(h).
- 27 Prop. Reg. §1.45V-5(c)(1).
- 28 Prop. Reg. §1.45V-5(d).
- 29 Prop. Reg. §1.45V-5(e)(1).
- 30 Prop. Reg. §1.45V-5(f).
- 31 IRC §48(a)(15). A “specified clean hydrogen production facility” for which the §48 credit can be claimed, as provided under the statute and further clarified by the proposed regulations, means any qualified clean hydrogen production facility (i) that is placed in service after December 31, 2022, (ii) with respect to which no §45V credit or §45Q credit has been allowed, and for which the taxpayer makes an irrevocable election to have §48 apply, and (iii) for which an unrelated party has verified that such facility produces hydrogen through a process that results in lifecycle greenhouse gas emissions that are consistent with the hydrogen that such facility was designed and expected to produce.
- 32 Prop. Reg. §1.48-15(d)(1).
- 33 This report would include (i) certain information from the qualified verifier regarding the taxpayer’s production of qualified clean hydrogen for sale or use, the amount of such qualified clean hydrogen sold or used, conflicts of interest, qualified verifier’s qualifications, taxpayer’s hydrogen production facility, and any other substantiation documentation, (ii) a statement attesting to the lifecycle GHG emissions rate of the hydrogen produced at the facility that the operation and any energy attribute certificates for the purpose of accounting for such facility’s emissions are accurately reflected in the data that the taxpayer entered into the most recent GREET model, and (iii) an attestation that the facility produced hydrogen through a process that results in a lifecycle GHG emissions rate that is consistent with, or lower than, the lifecycle GHG emissions rate of the hydrogen that such facility was designed and expected to produce. Prop. Reg. §1.48-15(e)(2)(i).

ENDNOTES (CONTINUED)

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- <sup>34</sup> Prop. Reg. §1.48-15(e)(1). If the taxpayer has elected to transfer the credit, then the conflicts of interest attestation must be made with respect to the verifier's independence from both the transferor and the transferee. Prop. Reg. §1.48-15(e)(2)(ii).
- <sup>35</sup> Prop. Reg. §1.48-15(d).
- <sup>36</sup> Prop. Reg. §1.48-15(f).
- <sup>37</sup> The preamble to the proposed regulations note that such conditions would be logically consistent with but not identical to the incrementality, temporal matching and deliverability requirements for electricity derived EACs, in that they would be designed to reflect the ways in which additional RNG or demand for fugitive methane can impact lifecycle GHG emissions and also to address the differences between electricity and methane.
- <sup>38</sup> The preamble to the proposed regulations defines biogas as “gas resulting from the decomposition of organic matter under anaerobic conditions, and the principal constituent is methane (50-75 percent).”

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