

## Proposed Hydrogen Production Credit Guidance is a Step Forward to Bankable Hydrogen Deals

30 January 2024

On December 22, 2023, the IRS and the Department of the Treasury published proposed regulations (“Proposed Regulations”) addressing the federal income tax credit for hydrogen production under section 45V (“Clean Hydrogen Production Credit” or “45V”) of the U.S. Internal Revenue Code (the “Code”).

### Key Commercial Takeaways

- **Financing projects based on the Proposed Regulations favor blue hydrogen in the near term.**<sup>1</sup> Blue hydrogen projects (generally using carbon capture to reduce emissions) are eligible for the Code section 45Q production tax credit available for carbon capture (“45Q”) as an alternative to 45V. In contrast, green hydrogen (generally understood as electrolyzers powered with renewables) rely on clean electricity usage,<sup>2</sup> which requires either market-based solutions to substantiate clean electricity procurement (see below), or a dedicated adjacent clean electricity power plant.
  - Blue hydrogen projects are better positioned to raise debt against the relatively predictable 45Q versus the uncertainty of whether the project can comply with the more stringent 45V green hydrogen production requirements, which are subject to annual changes.
- **Market-based solutions for substantiating green hydrogen are restrictive, limiting the practicality of qualifying for the top 45V tax credit for the full 10-year credit period.** Hydrogen developers that plan to utilize energy attribute certificates (“EACs”), statements issued by power producers listing their renewable

energy production, for substantiating clean power usage on an annual basis may only do so through 2027, after which they must use hourly matching EACs. The Proposed Regulations recognize the market currently cannot support hourly matching, suggesting the requirements are sensible only if independent system operators (“ISOs”) can timely develop hourly matching tools. If Sponsors and ISOs cannot timely develop EAC compliance solutions, the tax credit value will be significantly impacted starting in 2028.

- Lenders may not want to take the risk that hourly matching tools will become available and prevalent in a timely manner, resulting in significantly reduced debt sizing. Specifically, lenders that finance against tax credit forward sale contracts are likely to heavily discount the debt size in 45V value (due to modeling uncertainty resulting from the credit value’s inverse relationship to emissions, and the latter’s dependency on the future of the EAC market) in comparison to fixed production tax credits pursuant to Code section 45 (determined on a per kilowatt basis) or 45Q (determined on a per ton of carbon basis).
- **EACs must be from an energy facility in the same region as the hydrogen plant and must have started commercial operations within 36 months prior to the hydrogen plant being placed in service.** The Proposed Regulations only allow taxpayers to utilize EACs from facilities that start generating renewable power within three years of the hydrogen production using that facility’s power. Sponsors that develop integrated power and hydrogen projects are better positioned to utilize EACs and transition to hourly matching if they can utilize their power generation for hydrogen production. Nuclear power, although emissions-free, will often be disadvantaged because existing plants have been in operations too long.
- **Blue hydrogen projects using carbon capture as part of their production may switch from 45V to 45Q, but not the other way around.** Blue hydrogen has the option of claiming 45V (e.g., by using EACs), and then switching to 45Q if the EAC requirements are difficult to satisfy. However, once a taxpayer claims 45Q in a taxable year, it cannot revert to 45V. Additionally, a blue hydrogen project can generate 45V for 10 years, and then 45Q credit for two years after the end of the 45V credit period (i.e., the two years that remain from the 12-year 45Q credit period).
- **A taxpayer that owns clean generation facilities that result in production tax credits can sell power to its own hydrogen production facility and claim both the 45V and 45 clean electricity production tax credits.**
- **A taxpayer must use the updated annual Greenhouse Gases, Regulated Emissions, and Energy use in Transportation model (“GREET Model”), adding uncertainty as to the 10-year emissions inputs for 45V computations.** The Proposed Regulations state that taxpayers must use the most recently published GREET Model for the taxable year. This will present financing challenges as taxpayers

and lenders will not be able to predict how changes to the GREET Model will affect the computation of carbon emissions rates, the most significant variable input of 45V value.

## Detailed Discussion of the Proposed Regulations

### 1. Clean Hydrogen Production Credit

The Clean Hydrogen Production Credit provides up to \$3 per kilogram of production, assuming the taxpayer has satisfied the prevailing wage and apprenticeship requirements. The highest credit amount is available to taxpayers that substantiate a low emissions rate, with reduced credit rates available for higher emissions production. This emissions rate is determined based on the lifecycle greenhouse gas emissions rate (“Lifecycle GHG Rate”) of the process used to produce qualified clean hydrogen at the applicable facility as shown in the following table:

<i>Lifecycle GHG Rate (per 1kg of hydrogen produced)</i>	<i>Percentage of \$3 per 1kg</i>
≤ 4 kg of CO <sub>2</sub> e	20%
≥ 2.5 kg of CO <sub>2</sub> e	
< 2.5 kg of CO <sub>2</sub> e	25%
≥ 1.5 kg of CO <sub>2</sub> e	
< 1.5 kg of CO <sub>2</sub> e	33.4%
≥ 0.45 kg of CO <sub>2</sub> e	
< 0.45 kg of CO <sub>2</sub> e	100%

The term “lifecycle greenhouse gas emissions” includes only emissions through the point of production (well-to-gate), as determined under the most recent GREET Model. A taxpayer producing hydrogen for which a Lifecycle GHG Rate has not been determined may file a petition with the Secretary for a determination of the lifecycle GHG emissions rate with respect to such hydrogen.

Only a facility (i) owned by the taxpayer, (ii) that produces qualified clean hydrogen, and (iii) the construction of which begins before January 1, 2033, (such facility, a “Qualified Clean Hydrogen Production Facility”) is eligible for the Clean Hydrogen Production Credit. Further, no Clean Hydrogen Production Credit is available for hydrogen produced at a facility that includes carbon capture equipment for which a taxpayer has claimed 45Q for the taxable year or any prior taxable year.

Taxpayers are permitted to rely on the Proposed Regulations for taxable years beginning after December 31, 2022, until the date on which final regulations are published in the Federal Register.

#### (a) Qualified Clean Hydrogen Facility

The Proposed Regulations provide that a “facility,” for purposes of determining a Qualified Clean Hydrogen Facility, means a single production line that is used to produce qualified hydrogen and excludes property that conditions or transports hydrogen from the point of production. A single production line includes all components of property that function interdependently to produce qualified clean hydrogen. Components 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 clean hydrogen.

The Proposed Regulations provide that taxpayers may retrofit an existing facility and qualify that facility as newly placed in service pursuant to the 80/20 rule. This rule treats a facility that consists of new and used property to be a “new” facility if the cost of used property in the facility is no more than 20% of the facility’s total value (which is the sum of the cost of new property, plus the value of used property). The placed-in-service date for the new or retrofitted facility will be the date that the new property is placed in service for purposes of section 45V.

#### (b) Qualified Clean Hydrogen

Only domestic qualified clean hydrogen produced for “sale or use” and verified by an independent party as such is eligible for the Clean Hydrogen Production Credit. Taxpayers may sell the verified hydrogen anywhere in the world. However, the sale may not be for wasteful purposes (e.g., such as using hydrogen to generate electricity to produce hydrogen, or to vent/flare hydrogen). Storage of qualified clean hydrogen before sale or use is permissible.

#### (c) Use of Energy Attribute Certificates

For purposes of calculating the Qualified Clean Hydrogen Production Facility's Lifecycle GHG Rate, discussed below, per the Proposed Regulations, taxpayers may treat electricity used in a Qualified Clean Hydrogen Production Facility as being from a specific electricity generating facility if the taxpayer both acquires and retires qualifying EACs for each unit of electricity that the taxpayer claims from such facility. An EAC is a contractual instrument issued by a qualified EAC registry that represents the specific unit of energy produced. A qualified EAC registry or accounting system means a tracking system that assigns a unique ID number to each EAC tracked by such system, enables verification that only one EAC is associated with each unit of electricity, verifies that each EAC is claimed and retired only once, identifies the owner of each EAC and provides a publicly accessible view of all currently registered generators in the tracking system to prevent duplicative registration of generators.<sup>3</sup>

With respect to the electricity to which they relate, only EACs that contain the following information would be eligible to qualify for use in determining a facility's Lifecycle GHG Rate: (i) a description of the electricity generating facility, including the technology and feedstock used to generate the electricity; (ii) the amount and units of electricity; (iii) the date on which the facility that generated the electricity first began commercial operations; (iv) for electricity that is generated before January 1, 2028, the calendar 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 identification number or assigned identifier for each EAC that can be used to cross reference any additional electricity generating facility information that may be needed, such as location.

In order for an EAC to qualify for use in determining a facility's Lifecycle GHG Rate, it must meet three requirements: (1) incrementality, (2) temporal matching and (3) deliverability.

An EAC meets the incrementality requirement if either (A) the electricity generation facility that produced the unit of electricity to which such EAC relates commenced commercial operations no more than 36 months prior to the placed-in-service date for the applicable Clean Hydrogen Production Facility or (B) the electricity represented by the EAC is produced by an electricity generating facility that no more than 36 months before the placed-in-service date for the applicable Clean Hydrogen Production Facility to which such EAC relates has had an increase in nameplate capacity and the electricity associated with such Clean Hydrogen Production Facility is part of such increase in electricity. The IRS is also considering providing in the final regulations alternative circumstances in which the incrementality requirement may be satisfied, such as if an energy production facility avoids retirement because of its relationship to

a hydrogen production facility or if it is demonstrated that via minimal emissions modeling that existing sources and circumstances would not give rise to significant induced grid emissions.

An EAC satisfies the temporal matching requirement if the electricity represented by such EAC is generated in the same hour that the taxpayer's hydrogen production facility uses electricity to produce hydrogen. However, for EACs that represent electricity generated before January 1, 2028, the EAC will be deemed generated in the same hour if such electricity is generated in the same calendar year that the taxpayer's hydrogen production facility uses electricity to produce hydrogen.

An EAC satisfies the deliverability requirements if the electricity represented by the EAC is generated by a facility that is in the same region as the applicable hydrogen production facility. For purposes of this requirement, a "region" means a region derived from the National Transmission Needs Study released by the DOE on October 30, 2023, or Alaska, Hawaii and each U.S. territory.

#### (d) Life Cycle Greenhouse Gas Emissions Rate

The Proposed Regulations confirm that only emissions "through the point of production (well-to-gate)" are counted towards a Qualified Clean Hydrogen Production Facility, as calculated using the most recent version of the GREET Model. The Proposed Regulations include in the Lifecycle GHG Rate emissions associated with feedstock growth, gathering, extraction, processing, and delivery to a hydrogen production facility as well as emissions associated with the hydrogen production process, including the electricity used by the hydrogen production facility and any capture and sequestration of carbon dioxide generated by the hydrogen production facility. The Proposed Regulations note that the inclusion of indirect or induced emissions (i.e., emissions associated with increased demand on the electricity grid) in a facility's Lifecycle GHG Rate is consistent with the U.S. Environmental Protection Agency's interpretation of the Lifecycle GHG Rate in the context of the Renewable Fuel Standard.

Further, the Proposed Regulations clarify that the most recent GREET Model shall be the version available on the first day of the taxable year during which the hydrogen is produced. If the most recent GREET Model becomes available after the first day of the taxable year, but within the same taxable year, the taxpayer may decide which model to use. Accordingly, the applicable GREET Model for determining the amount of the Clean Hydrogen Production Credit may change within the 10-year period during which the Clean Hydrogen Production Credit is allowed.

#### (e) Timing Rule for Determination of Clean Hydrogen Production Credit

The Proposed Regulations provide that a taxpayer is not eligible to claim the Clean Hydrogen Production Credit until all relevant verification requirements have been completed for both the production and sale or use of the hydrogen. The preamble to the Proposed Regulations recognizes that this may require a taxpayer to file an amended return if the verification requirements for a taxable year are satisfied after the due date for the taxpayer to file their tax return for such year.

Moreover, the Proposed Regulations note that the period of limitations under section 6511 of the Code for filing a claim for refund or credit applies to the taxable year of production, even if the sale or use of the hydrogen and the verification thereof may have occurred in a subsequent taxable year. Accordingly, a taxpayer may lose the opportunity to claim a Clean Hydrogen Production Credit for a particular taxable year if completion of verification procedures for such year takes longer than the period of limitations prescribed by section 6511 (currently, the later of three years from the date the return for the applicable tax year was filed or two years from the date the tax for the applicable tax year was paid).

#### (f) Provisional Emissions Rates

A taxpayer using a pathway that lacks a Lifecycle GHG Rate may file a petition for a determination of a provisional emissions rate (“PER”) with respect to the hydrogen. The Proposed Regulations provide that a Lifecycle GHG Rate is not determined with respect to hydrogen produced at a facility if (i) the feedstock used by such facility is not included in the most recent GREET Model or (ii) such facility’s hydrogen production technology is not included in the most recent GREET Model. A taxpayer may not use the PER process simply because it disagrees with the underlying assumptions or calculation approach used by the GREET Model. Further, the Proposed Regulations clarify that if a taxpayer’s request for a PER is pending at the time a GREET Model is released that includes the applicable facility’s hydrogen production pathway, then such updated model will be considered the most recent GREET Model.

#### (g) Coordination with Section 45Q

Generally, 45V is disallowed with respect to a qualified clean hydrogen production facility if such facility includes a carbon capture and sequestration (“CCS”) equipment with respect to which any taxpayer had previously been allowed 45Q. However, the Proposed Regulations allow taxpayers to claim 45Q with respect to carbon capture if the taxpayer claimed 45V in prior year(s). In sum, a decision to claim 45Q permanently

disables the facility from later claiming 45V.

Two clarifications are important in this context. First, CCS equipment utilized in the facility providing power to the hydrogen production plant can claim 45Q without impacting 45V for the hydrogen production facility. Second, if a taxpayer claimed 45Q with respect to CCS equipment and retrofits such equipment for use in a qualified clean hydrogen production facility, the taxpayer may claim the 45V credit subject to the toggling rules above.

#### (h) Verification Report Requirements

A requisite to claiming 45V credits is the receipt of an independent “verification report” prepared by a “qualified verifier,” signed under penalty of perjury, and provided to IRS. Details regarding the preparation of such a report can be found in the “Compliance Appendix” at the end of this alert.

## 2. Election To Treat Clean Hydrogen Production Facilities as Energy Property

Under section 48(a)(15)(A)(i) of the Code, any qualified property (as defined in section 48(a)(5)(D) of the Code) that is part of a specified clean hydrogen production facility may, by election by the applicable taxpayer, be treated as energy property (such election, the “ITC Election”). The energy percentage of the basis of any qualified property that is treated as energy property for a facility that is designed and reasonably expected to produce qualified clean hydrogen is determined based on the lifecycle greenhouse gas emissions rate of the process to produce any qualified clean hydrogen at the applicable facility as shown in Table 2.

<b><i>Lifecycle Greenhouse Gas Emissions Rate (per 1kg of hydrogen)</i></b>	<b><i>Energy Percentage</i></b>
≤ 4kg of CO <sub>2</sub> e, and ≥ 2.5 kg of CO <sub>2</sub> e	1.2%
< 2.5kg of CO <sub>2</sub> e, and ≥ 1.5kg of CO <sub>2</sub> e	1.5%

< 1.5kg of CO <sub>2</sub> e, and	2%
≥ 0.45kg of CO <sub>2</sub> e	
< 0.45kg of CO <sub>2</sub> e	6%

Table 2

The domestic content and energy community bonuses under sections 48(a)(12) and (a) (14) (respectively, increases to the ITC for using domestically sourced components, and siting a project in certain identified census tracts) do not apply to ITCs claimed in respect of a Qualified Clean Hydrogen Production Facility. The ITC election may only be made with respect to Qualified Clean Hydrogen Production Facilities (i) that are placed in service after December 31, 2022, (ii) with respect to which (A) no Clean Hydrogen Credit or 45Q Credit has been allowed, and (B) the taxpayer makes an irrevocable election to have section 48(a)(15) of the Code apply, and (iii) for which an unrelated third party has verified that such facility produces hydrogen through a process that results in lifecycle GHG emissions that are consistent with the hydrogen that such facility was designed and expected to produce. No Clean Hydrogen Production Credit or 45Q Credit is allowed for any taxable year with respect to any Clean Hydrogen Production Facility or any carbon capture equipment included at a facility for which an ITC Election has been made.

Taxpayers may only make an ITC Election with respect to property placed in service after December 31, 2022, and for any property the construction of which began before January 1, 2023, only to the extent of the basis thereof attributable to construction, reconstruction, or erection after December 31, 2022.

The Proposed Regulations expand on these rules describing the ITC Election.

(a) ITC Election and Verification Procedures

The Proposed Regulations contain detailed procedural requirements for making and verifying the ITC Election. These requirements are discussed in the “Compliance Appendix” at the end of this alert.

(b) Recapture

In addition to the general rules for recaptures of ITCs provided in section 50(a) of the Code, ITCs resulting from an ITC Election are also subject to recapture if any of the following events occur during the five-year period after the project is placed in service (“Recapture Period”): (1) the taxpayer fails to obtain an annual verification report by the deadline for filing its Federal Income tax return (including any extensions) for any taxable year in which such report is required, (2) the applicable facility actually produced hydrogen through a process that results in a Lifecycle GHG Rate that can only support a lower energy percentage than the energy percentage used to calculate the amount of the ITC for the facility or (3) the applicable facility actually produced hydrogen through a process that results in a Lifecycle GHG Rate of greater than 4kg of CO<sub>2</sub>e per Kg of hydrogen.

In the cases of events (1) or (3) occurring, the amount of recapture (i.e., amount included in the taxable income for such taxpayer in the taxable year of such recapture event) equals 20 percent of the amount of the ITC claimed with respect to the applicable facility. In the case of event (2) occurring, the recapture amount is equal to 20 percent of the excess of (A) the ITC allowed to the taxpayer with respect to such facility over (B) the amount of the ITC that would be allowed to such taxpayer for the hydrogen actually produced by such facility. Notably, there is no corresponding bonus provided to taxpayers if the converse of event (2) occurs (i.e., the applicable facility actually produced hydrogen through a process that results in a Lifecycle GHG Rate that can support a higher energy percentage than the energy percentage used to calculate the amount of the ITC for the facility). Accordingly, if a taxpayer predicts that the Lifecycle GHG Rate of a hydrogen production facility will decrease over time, the Clean Hydrogen Production Credit may be preferable.

Finally, the Proposed Regulations provide an ordering rule for applying the various recapture rules applicable to ITCs as follows: (1) section 50(a) (recapture in case of dispositions, etc.), (2) section 48(a)(10)(C) (recapture relating to the prevailing wage requirements) and (3) section 48(a)(15)(E) (ITC Election recapture). It is worth noting that the Recapture Period for the ITC Election is slightly longer than the recapture period under section 50(a): while the section 50(a) recapture period is five years from the applicable property’s placed-in-service date, the ITC Election Recapture Period is five years beginning on the first tax year immediately following the applicable facility’s placed in service date.

## Compliance Appendix

## (a) 45V Credit Verification Report Requirements

A requisite to claiming 45V credits is the receipt of independent “verification report” by a “qualified verifier,” signed under penalty of perjury, and provided to IRS. A “qualified verifier” is defined as an individual having accreditation from the American National Standards Institute National Accreditation Board or as a verifier, lead verifier, or verification body under the California Air Resources Board Low Carbon Fuel Standard program. A taxpayer accumulates credits only when the verification process is completed by the filing deadline (including extensions) for the taxable year of hydrogen production, and amended returns are allowed.

The Proposed Regulations set forth the following information that must be included in the verification report:

**1. Production Attestation** from the qualified verifier regarding the taxpayer’s production of qualified clean hydrogen for sale or use during the taxable year, which must state under penalty of perjury that it performed a verification sufficient to determine the following:

- i. the amount of qualified clean hydrogen produced,
- ii. the lifecycle GHG emissions rate used (either by reference to the most recent GREET Model, or via a PER), including the impacts on the lifecycle GHG emissions rate by virtue of qualifying EACs, the employment of CCS capture equipment, or sources of biomass).

**2. Sale or Use Attestation** from the qualified verifier regarding the amount of qualified clean hydrogen sold or used, stating under penalty of perjury that it performed a verification sufficient to determine the following the amount of qualified clean hydrogen referenced in the Production Attestation has been sold or used.

**3. Conflict of Interest Attestation** by the qualified verifier, which must include an attestation under penalty of perjury that the verifier:

- i. Does not receive a fee associated with the report based on the amount of credits verified.
- ii. Is not economically a party to any transaction that is the subject of such clean hydrogen.

iii. Is not an employee of, or related (within the meaning of section 267(b) or 707(b)(1)) to, the taxpayer.

iv. Certain other arrangements by marriage or by virtue of partner status in a partnership.

Importantly, the Conflict of Interest Attestation by the verifier must be made with respect to both the transferor and transferee taxpayer where an election to transfer credits pursuant to section 6418 is made.

**4. Qualified Verifier Statement** containing certain information regarding the qualified verifier itself, including:

i. Documentation of qualifications;

ii. Name, address and TIN;

iii. Education, experience, and copy of certificate from accrediting body;

iv. If verifier is a partner in a partnership, the same information for the partnership;

v. Signature and date;

vi. Statement that the verification was conducted for federal income tax purposes.

**5. Production Facility's General Information**, which 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) and amounts of feedstock(s) used by the hydrogen production facility during the taxable year of production;

iv. a list of the metering devices used to record any data used by the qualified verifier to support the production attestation along with a statement that the qualified verifier is reasonably assured that the device(s) underwent industry-

appropriate quality assurance and quality control, and that the accuracy and calibration of the device has been tested in the last year.

**6. Substantiating Documents** stating that for purposes of the aforementioned verification process the standards and best practices prescribed by the qualified verifier's accrediting body were followed, taking into account the circumstances of the taxpayer and the taxpayer's hydrogen production facility.

(b) ITC Election and Verification Procedures

The Proposed Regulations provide that the ITC Election must be made with respect to a specified Clean Hydrogen Production Facility on Form 3468, *Investment Credit*, which must be filed with the taxpayer's Federal income tax return for the taxable year in which such facility is placed in service. The taxpayer must also attach a Form 3468, *Investment Credit*, to such tax return. A separate ITC election must be made for each Clean Hydrogen Production Facility for which that taxpayer elects to treat the qualified property that is part of the facility as energy property. The ITC election is irrevocable.

Furthermore, if any taxpayer owning an interest in a Clean Hydrogen Production Facility makes an ITC Election with respect to such facility, then all taxpayers that directly or indirectly own an interest in such facility will be bound by such election (and, accordingly, cannot claim a Clean Hydrogen Production Credit with respect to such facility). Accordingly, taxpayers that own partial interests in hydrogen production facilities that expect to claim the Clean Hydrogen Production Credit may wish to secure appropriate contractual protection from the remaining owners to ensure such owners will not make an ITC Election with respect to such facility.

With respect to Clean Hydrogen Production Facilities owned by partnerships or S corporations, the ITC Election must be made by the partnership or S corporation and is binding on all partners or shareholders that would be allocated the credit. The applicable partnership or S corporation must file a Form 3468, *Investment Credit*, with its entity tax return for the taxable year in which the facility is placed in service.

In the case of any property placed in service after December 31, 2022, for which construction began before January 1, 2023, the ITC election only applies to the extent of the basis of such property that is attributable to the construction, reconstruction or erection occurring after December 31, 2022. Therefore, unlike the Clean Hydrogen Production Credit, the ITC Election is limited for facilities that began construction prior to January 1, 2023. Accordingly, for taxpayers that began construction of hydrogen

production facilities prior to January 1, 2023, the Clean Hydrogen Production Credit may be a more attractive option than the ITC Election.

Hydrogen production facilities that have made the ITC Election must complete verification requirements similar to those for the Clean Hydrogen Production Credit described above. Taxpayers that have made the ITC Election with respect to a hydrogen production facility must obtain a verification report for the taxable year in which the ITC Election was made and for each taxable year thereafter during the Recapture Period. The first annual verification reports must be attached to the Form 3468, *Investment Credit*, for the taxable year in which the ITC Election is made. The contents of such annual reports are discussed in detail in the Proposed Regulations.

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1. Hydrogen production uses color coding to signal the process used to reduce its carbon intensity and the approximate reduction in that intensity. Specifically:

Green hydrogen, commonly understood as the lowest carbon intensive way to produce hydrogen, generally refers to hydrogen produced using zero or low carbon electricity (e.g., wind, solar) to power electrolyzers. In addition, any other inputs (e.g., sourcing water) is analyzed to evaluate the emissions associated therewith.

Pink hydrogen is similar to green hydrogen except the clean energy source is electricity from nuclear plants.

Blue hydrogen generally refers to reducing carbon emissions associated with hydrogen production through carbon capture connected to the emissions source. Examples include steam methane reform or natural gas sourced electricity generation which, absent carbon capture, has high emissions.

Gray hydrogen refers to fossil fuel sourced electricity to produce hydrogen with minimal carbon emission reductions, which is effectively blue hydrogen without the carbon capture.↩

2. As further discussed herein, a taxpayer can substantiate the use of renewable sourced electricity by demonstrating a direct connection between the generation and the hydrogen production facility, or by purchasing certificates from a clean electricity producer that matches the amount of power purchased with the amount of power used in connection with producing hydrogen ↩

3. Certain specific registries are identified by the Proposed Regulations as qualified EAC registries: Electric Reliability Council of Texas; Michigan Renewable Energy Certification System; Midwest Renewable Energy Tracking System, Inc.; North American Registry; New England Power Pool Generation Information System; New York Generation Attribute Tracking System; North Carolina Renewable Energy Tracking System; PJM Generation Attribute Tracking System; and Western Electric Coordinating Council. ↩

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## Suggested Reading

- 26 January 2024 Press Release Kirkland Advises Monomoy on Acquisition of EnviroTech Services
- 26 January 2024 Press Release Kirkland Advises on Close of \$3.8 Billion Arlington Capital Partners VI Fund

- 25 January 2024 Press Release Kirkland Advises Energy Spectrum Partners and ESGEN Acquisition Corp. on Updated Transaction Terms for its Pending Combination with Sunergy

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