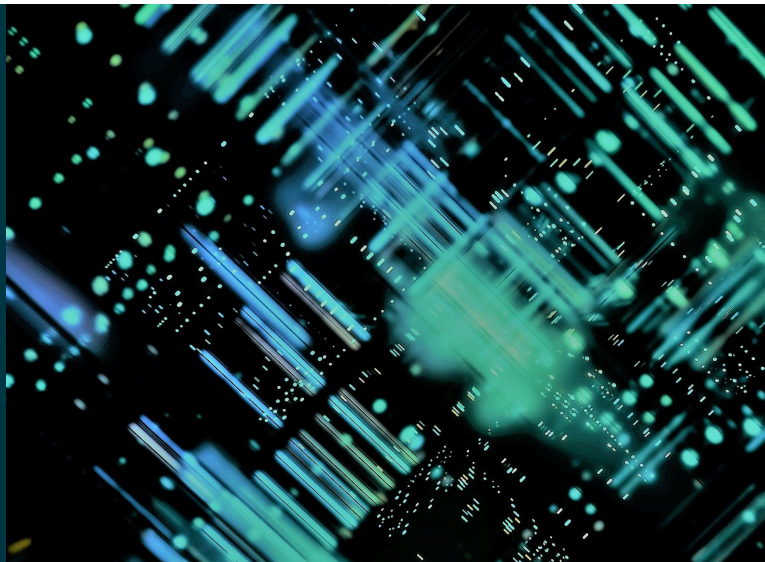


Treasury and IRS Release Final Hydrogen Production Tax Credit Regulations



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ALERTS

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Summary

On January 3, 2025, the U.S. Department of the Treasury (Treasury) and the Internal Revenue Service (IRS) issued final regulations^[1] (Regulations) to implement the tax credit for the production of “qualified clean hydrogen” (Clean Hydrogen Credit) under Section 45V of the Internal Revenue Code of 1986, as amended (Code), implementing the Inflation Reduction Act of 2022 (IRA). These Regulations finalize previously proposed regulations issued on December 26, 2023, [discussed by Wilson Sonsini](#), as well as the supplemental proposed regulations issued on April 10, 2024, also [discussed by Wilson Sonsini](#).

There is no doubt or debate that tax credit programs can be used effectively to drive new markets, providing price support for output, here, an alternative fuel, before mature commodity markets exist. The customary question, based on comparable prior efforts, is whether the structure of these Regulations is reasonably likely to advance market lift-off in green and blue hydrogen production, including by supporting project sponsors and private capital mobilization at a lower cost. While the answer will depend on several market (and political) factors, the Regulations do appear to be a positive step forward for the industry. Markedly, electricity producers with access to carbon capture and storage systems have a new and important role to play. Finally, blending and ammonia prohibitions remain.

While the amount of the credit depends on lifecycle emissions of the hydrogen, the upper credit values (of \$3.00 per kilogram of hydrogen) are substantial relative to the expected average production price for blue hydrogen. The credit is available for a 10-year period, with transferability and direct pay available for five years. Thus, despite some understandable concerns about complexity, we believe that the Regulations can have a significant stabilizing effect for project sponsors facing the “chicken-egg” dynamic of demand/production, including by reducing the cost of capital. The Regulations’ stabilization effect is particularly important to the sector, given the California Air Resource Board’s (CARB’s) recent decision to drop its Advanced Clean Fleets (ACF) waiver request (the counterpart waiver to its Advanced Clean Trucks rule issued in March 2023).

Here, we summarize the trajectory of the Regulation, its fundamental value proposition, and how sponsors and investors can advance that value, also addressing continued Regulation-based uncertainties, in a commercially reasonable manner.

Regulations Overview

Qualified clean hydrogen must be produced through a process in which the lifecycle greenhouse gas (GHG) emissions, are less than or equal to 4 kilograms of carbon dioxide equivalent (CO₂e) per kilogram of hydrogen, a statutory limitation. The lifecycle GHG emissions can be measured, i.e.,

quantified, in two ways. The first is using the latest publicly available version of the 45VH2-GREET Model developed by the Argonne National Laboratory and published by the U.S. Department of Energy (DOE) (GREET Model). Alternatively, for sponsors using different feedstocks or processes not within the GREET Model, a taxpayer may file a request with the DOE for a Provisional Emissions Rate (PER). In either case, third-party verification is required. At its core, the GREET Model employs a regional grid profile for emissions, unless Energy Attribute Certificates (EACs) are used, putting a priority on EAC considerations (discussed below). Moreover, the Regulations create a safe harbor for calculating lifecycle GHG emissions, allowing for a 10-year lock-in associated with the GREET Model, which has been welcomed, given concerns about GREET Model evolutions, e.g., removal of feedstocks. Notably, life cycle GHG emissions are evaluated from generation through the point of production (“well-to-gate”).

To be eligible for the Clean Hydrogen Credit, EACs or Renewable Energy Certificates (RECs, and together with EACs, EACs) must demonstrate that their grid connected electricity is: i) additional or incremental, ii) sourced from the same region as the taxpayer (i.e., deliverable), with a limited exception for cross-region deliverability if such deliverability can be adequately tracked and verified, and iii) generated in the same year as the clean hydrogen produced prior to December 31, 2029, with a phase-in to hourly or time-matching generation as evidenced by EACs thereafter (i.e., temporal matching).

In terms of its economics, the Clean Hydrogen Credit provides a 10-year production tax credit or an investment tax credit for taxpayers who produce qualifying clean hydrogen at a facility placed into service after December 31, 2022, which begins construction before January 1, 2033, with four technology-neutral credit tiers or amounts. These four tiers are determined based upon the lifecycle GHG emissions rate as determined by the GREET Model resulting from production as follows:

Table 1: Clean Hydrogen Credit—Credit Amount Calculation (Summary Table)

Kg of CO ₂ e/kg of qualifying clean hydrogen produced	Production Tax Credit Rate – \$0.60/kg of hydrogen multiplied by:	Investment Tax Credit Rate – % of the cost of the facility or modification:
2.5 to 4	20%	1.2%
1.5 to < 2.5	25%	1.5%
0.45 to < 1.5	33.4%	2%
< 0.45	100%	6%

The base credits above are multiplied by five if either the construction of the facility begins prior to January 29, 2023, and the prevailing wage and apprenticeship requirements are met for any alteration and repair that occurs after January 29, 2023, or if the facility satisfies the prevailing wage and apprenticeship requirements set forth at Section 45V(e)(3)(A) and (4) of the Code, resulting in a range of \$0.60 to \$3.00 per kg of hydrogen and an investment tax rate of six percent to 30 percent. The production tax credit base rate is also adjusted to account for inflation.

The Clean Hydrogen Credit is eligible for both transferability and direct pay for a period of five years. For more information on transferability and direct pay, please see the [Wilson Sonsini white paper](#).

Key Takeaways

- The Regulations confirm that a single hydrogen production “facility” cannot claim both the Clean Hydrogen Credit and the Section 45Q carbon oxide sequestration credit and clarify that electricity production equipment that powers the hydrogen production process, and which contains carbon capture equipment for which a Section 45Q credit is allowed will not disqualify the hydrogen production facility from claiming the Clean Hydrogen Credit.
- The Regulations retained the fundamental “three pillars” formulation for EACs, but made the requirements more flexible, specifically by:
 - retaining “deliverability” (geographical matching) to ensure electricity is sourced from a power producer that is physically located in the same region as the hydrogen facility, while allowing cross-region deliverability if such deliverability can be adequately tracked and verified;
 - changing the “temporal matching” requirements by postponing hourly matching between electricity generation and hydrogen production to 2030; and

- providing additional pathways to qualify for “incrementality,” specifically for:
 - nuclear plants, of up to 200MW per qualifying reactor, that meet certain criteria for retirement risk and co-dependence on hydrogen investment;
 - states where the electricity generated is subject to the state’s robust GHG emissions caps and clean electricity standards or renewable portfolio standards, subject to certain criteria. Currently, only California and Washington qualify; and
 - generators that have added CCS within a 36-month window before the hydrogen facility is placed in service.
- The Regulations provide a new beginning of construction safe harbor to mitigate concerns that subsequent updates to the GREET Model would alter annual emissions assessments and create uncertainty about future credit amounts.
- Hydrogen produced from cracking man-made chemicals (such as ammonia) is not eligible for the Clean Hydrogen Credit. Hydrogen produced from methane and other natural gas alternatives face expanded lifecycle assessment (LCA) obligations.
- Small and large producers face the same filing obligations.

Treasury and IRS Hydrogen Production Tax Credit Regulations—Detailed Review

This deep dive provides a detailed synopsis of the Regulations as they apply to a variety of production scenarios. We review key definitions, emissions accounting standards, notable carve outs, and specific rules for consideration when evaluating the tax implications of engaging in the hydrogen energy industry.

Definition of Clean Hydrogen Production Facility

The Regulations define a “facility” as a “single production line that is used to produce qualified clean hydrogen,” including all components that “function interdependently” to produce such hydrogen. In response to comments requesting clarification on the meaning of functional interdependence, the Regulations cite to legal precedent explaining the functional interdependence test and clarify that only those components that function interdependently to produce clean hydrogen “through a process that results in the lifecycle GHG emissions rate used to determine the credit” can be included in defining the qualified clean hydrogen facility. The Regulations further clarify that carbon capture equipment is considered part of a facility if such equipment contributes to the GHG emissions rate determination, and multipurpose components (e.g., components that have a purpose in addition to the production of qualified clean hydrogen) are included if such components function interdependently with other components. Notably, “feedstock-related equipment,” which includes “production, purification, recovery, transportation, or transmission equipment” is excluded from the definition of facility, but emissions from feedstock growth, gathering, extraction, processing, and delivery are included in the calculation of GHG emissions.

Calculation of GHG Emissions

Emissions from well-to-gate, as determined by the most recent GREET model, are used to determine the GHG emissions. The Regulations clarify that the calculation of well-to-gate emissions includes certain emissions that occur upstream of the facility’s clean hydrogen production. Such emissions include feedstock emissions, emissions associated with the production of non-hydrogen gases that are part of the hydrogen gas stream, and certain emissions that occur downstream of the facility’s clean hydrogen production process, such as emissions associated with purifying the hydrogen gas stream (i.e., removing non-hydrogen gases that are part of the hydrogen gas stream), if the taxpayer knows or has reason to know that purification is needed in order to allow the hydrogen to be productively used (i.e., consumed for economic value). Similarly, lifecycle emissions associated with efforts to purify the hydrogen gas stream are included in the well-to-gate calculation if the taxpayer knows or has reason to know that purification is needed because the hydrogen gas stream contains less than 99 percent hydrogen and will be combusted without purification. Notably, for emissions from the natural gas and alternatives supply chain, leakage of upstream methane is set at the national average (of 0.9 percent) until 2026, after which time the leakage rate will be determined according to the most recent version of the Environmental Protection Agency’s [Subpart W](#) source-specific reporting standards. In contrast, emissions from liquefaction, storage, or transport of hydrogen are not included in the well-to-gate calculation (these emissions occur after the hydrogen production process is complete) nor are emissions from the manufacturing of equipment used within the hydrogen production pathway (e.g., power generators).

Hydrogen Produced from Ammonia

Treasury clarified that hydrogen released from cracking a man-made chemical that stores hydrogen (such as ammonia) is not eligible for the Clean Hydrogen Credit. The preamble to the Regulations states that this exclusion is based on the grounds that the hydrogen released from such cracking had already previously been produced, and the man-made chemical merely stored the hydrogen. As a result, Treasury determined that the cracking of such chemicals is not a distinct hydrogen production process.

Definition of Process and Feedstock

Section 45V(b)(2) of the Code requires taxpayers to measure the GHG emissions of hydrogen produced through a “process” to determine the “applicable percentage” (i.e., the base credit rate). After considering comments to the proposed regulations, the Regulations define “process” to mean the “operations conducted by a facility to produce hydrogen” (e.g., electrolysis, steam methane reforming) “during a taxable year using a primary feedstock.” The Regulations further define primary feedstock to mean “a hydrogen-containing chemical that is transformed to produce hydrogen at a hydrogen production facility and has uniform or similar attributes distinguished by the source from which it is derived, if such source materially affects the lifecycle GHG emissions associated with use of the chemical to produce hydrogen.” Notably, if a facility uses multiple primary feedstocks to produce hydrogen, for example, one feedstock using water and the other using fossil natural gas, then the facility has multiple hydrogen production processes for purposes of calculating the production tax credit, and each process must be assessed separately to determine its GHG emissions rate but would have a separate right to a valuable credit, if conforming.

Anti-Abuse Rule

The Regulations prohibit taxpayers from claiming the Clean Hydrogen Credit if the taxpayer’s primary purpose is selling or using the clean hydrogen in a wasteful manner. Specifically, the taxpayer may not claim the credit if they know, or have reason to know, that the clean hydrogen will be vented, flared, or used to produce heat or power that is then used to produce hydrogen, in each case in excess of standard commercial practice.

Determining Lifecycle GHG Emissions Rates

a) Election to Calculate LCA on an Hourly Basis

As previously discussed, the Clean Hydrogen Credit amount is based on the lifecycle GHG emissions rate of each hydrogen production pathway at the hydrogen production facility on an annualized basis, as calculated using the GREET Model, or, if the GREET Model has not produced an LCA for the hydrogen production pathway, through the PER filing process. In the Regulations, Treasury noted that taxpayers with facilities that produce hydrogen using electricity as a feedstock may conclude that it is infeasible to secure sufficient EACs from renewable sources to qualify for the lowest LCA tier, which creates a risk that “limited availability of EACs could adversely affect eligibility for the Section 45V production tax credit for all hydrogen from a single process.” To mitigate this risk, the Regulations allow such taxpayers to, beginning on January 1, 2030, determine the emissions associated with such facility on an hourly basis, but only if the hydrogen production process achieves an annual LCA rate of not greater than 4 kg of CO₂e per kg of qualifying clean hydrogen produced.

b) GREET Model Safe Harbor Election

In response to concerns raised by commenters that subsequent updates to the GREET Model would unexpectedly alter annual emissions assessments and create uncertainty about future credit amounts, Treasury created a new beginning of construction safe harbor. Under the safe harbor, taxpayers may make an irrevocable election, at the date the facility begins construction, to use the version of the GREET Model then currently in effect for the duration of the 10-year credit period.

c) PER Petition

As discussed, a taxpayer may file a request with the DOE to determine a PER for its hydrogen production process, if its production process falls outside the GREET Model (e.g., either the feedstock used (such as renewable natural gas feedstocks in the form of food waste, animal waste, or biogas), or the facility’s hydrogen production technology, is not included in the GREET Model). If the DOE provides a PER, but the taxpayer’s hydrogen production process is included in a subsequent version of the GREET Model, the taxpayer must stop using the PER and instead start using the values contained in the GREET Model to determine its LCA, subject to a limited exception available to taxpayers that receive a PER from the DOE prior to the date of beginning of construction of their facility. The Regulations allow such taxpayers to “lock-in” and use the PER provided for the duration

of the 10-year credit period, on the basis that such taxpayers relied on their PERs “in order to secure financing and begin construction.”

Additionally, the Regulations provide that a taxpayer may only use the PER to calculate the credit amount if there have been no material changes (i.e., a change that would cause a qualified verifier to be unable to complete a production attestation) to the information provided to the DOE to obtain a PER. Finally, the Regulations allow a taxpayer to make an irrevocable election on IRS Form 7210, by the due date for filing its tax return, to treat the first version of the GREET Model that includes the taxpayer’s hydrogen production pathway as the default GREET Model for such pathway for the duration of the 10-year credit period.

d) Use of EACs and Three Pillars Approach for Electricity

The Regulations allow taxpayers to treat their hydrogen production facility’s use of electricity as being sourced from a specific electricity generating facility, rather than from electricity sourced from the regional electricity grid, only if the taxpayers acquire and retire qualifying EACs for each unit of electricity claimed from such source. The EACs must also be recorded in a qualified EAC registry or accounting system, so they may be verified by a qualified verifier, and must meet the “three pillars” set forth by Treasury. The “three pillars” are “guardrails” that “ensure that hydrogen producers’ electricity use can be reasonably deemed to reflect the emissions associated with specific generators from which the EACs were purchased and retired,” as described in detail below.

i) Additionality or Incrementality

EACs must be produced by: a) a clean power generation facility that began commercial operations within three years of the taxpayer’s hydrogen facility being placed into service, or an electricity generating facility that uses carbon capture and sequestration technology with a placed in service date within three years of the hydrogen facility’s placed in service date, b) newly added capacity to facilities older than three years, if the electricity sourced is part of the facility’s newly added production (electricity from restated facilities, which had been decommissioned or were in the process of being decommissioned, is eligible as well, provided certain conditions are met), c) an electricity generating facility in a “qualifying state,” (at the time of this alert, only California and Washington) as defined in the Regulations (generally, a state that Treasury has determined has a qualifying electricity decarbonization standard and a qualifying GHG emissions cap program), if the hydrogen production facility is also located in a qualifying state, or d) a “qualifying nuclear reactor,” as defined in the Regulations, subject (with exceptions) to a cap of 200 MWh of electricity per operating hour per qualifying nuclear reactor. The Regulations do not establish a broad curtailment exception.

ii) Deliverability

The Regulations require clean power to be sourced from the same region as the taxpayer, which requires that the clean power source and the hydrogen production facility must be electrically interconnected to balancing authorities in the same region, with a limited exception for “certain instances of actual cross-region deliverability, where the deliverability of such generation can be tracked and verified.”

The applicable balancing authorities and associated regions are reproduced below in **Table 2:[2]**

Balancing Authority	Region
Balancing Authority of Northern California	California
California Independent System Operator (Balancing Authority)	California
Imperial Irrigation District	California
Los Angeles Dept of Water & Power	California
Turlock Irrigation District	California
Midcontinent ISO (Balancing Authority): South	Delta
Duke Energy Florida Inc	Florida
Florida Municipal Power Pool	Florida
Florida Power & Light	Florida

Gainesville Regional Utilities	Florida
Homestead (City of)	Florida
JEA	Florida
New Smyrna Beach Utilities Commission	Florida
Reedy Creek Improvement District	Florida
Seminole Electric Coop Inc	Florida
Tallahassee FL (City of)	Florida
Tampa Electric Co	Florida
East Kentucky Power Coop Inc	Mid-Atlantic
LG&E & KU Services Co	Mid-Atlantic
Ohio Valley Electric Corp	Mid-Atlantic
PJM Interconnection	Mid-Atlantic
Associated Electric Coop Inc	Midwest
Electric Energy Inc	Midwest
Gridliance Heartland	Midwest
Midcontinent ISO (Balancing Authority): North and Central	Midwest
NaturEner Power Watch LLC (GWA)	Mountain
NaturEner Wind Watch LLC	Mountain
Nevada Power Co	Mountain
Northwestern Energy	Mountain
PacifiCorp East	Mountain
Public Service Co of Colorado	Mountain
WAPA Rocky Mountain Region	Mountain
WAPA Upper Great Plains West	Mountain
New England ISO (Balancing Authority)	New England
Northern Maine	New England
New York ISO (Balancing Authority)	New York
Avangrid Renewables LCC	Northwest
Avista Corp	Northwest
Bonneville Power Administration	Northwest
Gridforce Energy Management LLC	Northwest
Idaho Power Co	Northwest
PacifiCorp West	Northwest
Portland General Electric	Northwest
PUD No 1 of Chelan County	Northwest
PUD No 1 of Douglas County	Northwest

PUD No 2 of Grant County	Northwest
Puget Sound Energy Inc	Northwest
Seattle City Light	Northwest
Tacoma Power	Northwest
Southwest Power Pool (Balancing Authority)	Plains
Southwestern Power Administration	Plains
Alcoa Power Generating Inc Yadkin Division	Southeast
Duke Energy Carolinas LLC	Southeast
Duke Energy Progress East	Southeast
Duke Energy Progress West	Southeast
PowerSouth Energy Coop	Southeast
South Carolina Electric & Gas Co	Southeast
South Carolina Public Service Authority	Southeast
Southeastern Power Administration (Southern)	Southeast
Southern Co Services Inc	Southeast
Tennessee Valley Authority	Southeast
Arizona Public Service Co	Southwest
Arlington Valley LLC	Southwest
El Paso Electric	Southwest
Gila River Power LLC	Southwest
Griffith Energy LLC	Southwest
New Harquahala Generating Co LLC	Southwest
Public Service Co of New Mexico	Southwest
Salt River Project	Southwest
Tucson Electric Power Co	Southwest
WAPA Desert Southwest Region	Southwest
ERCOT ISO (Balancing Authority)	Texas

Note that while Alaska and Hawaii are not depicted, they are treated as two additional regions, one covering the entirety of Hawaii and the other the entirety of Alaska. Similarly, each U.S. territory is considered a separate region. Further, the rule also allows for electricity from Canada or Mexico to qualify—as an interregional delivery—if the generator provides an attestation that the “use or attributes of the electricity represented by each EAC are not being claimed for any other purpose.”

iii) Time-Matching

For projects producing hydrogen before January 1, 2030, the Regulations require annual matching of EACs on a calendar-year basis (i.e., the electricity must be generated in the same calendar year in which the hydrogen is produced), shifting to hourly matching on January 1, 2030. In the proposed regulations, Treasury had proposed that the transition to hourly matching occur on January 1, 2028. In response to numerous comments, Treasury extended the transition date to January 1, 2030, on the basis that the additional two years would allow tracking systems to “achieve the necessary functionality for an hourly matching requirement, and to allow the market to develop for hourly-

matched EACs.” Notably, the phase-in timeline requiring hourly matching by 2030 aligns with the European Union’s required timeline, as mandated under Article 6 of the EU Delegated Act on Renewable Fuels of Non-Biological Origin.

The Regulations also clarify how hydrogen facilities that source electricity from energy storage technologies may comply with the time-matching requirement. Specifically, the EAC purchased must be discharged from the storage system in the same hour the hydrogen production facility uses electricity to produce hydrogen. The storage facility must also be located in the same region as both the hydrogen production facility and the electricity generating facility.

Use of Natural Gas Alternatives

For taxpayers seeking to claim the Clean Hydrogen Credit for hydrogen derived from natural gas alternatives, e.g., methane derived from biogas, renewable natural gas (RNG), or fugitive methane, the Regulations state that the LCA must account for both direct and significant indirect emissions from the process. The LCA must consider “the alternative fates of that methane, including avoided emissions and alternative productive uses of that methane,” as well as the risk that the Clean Hydrogen Credit would cause more methane to be produced, leading to increased emissions.

Additionally, taxpayers may treat their hydrogen production facility’s use of RNG or coal mine methane as being sourced from a natural gas alternative, rather than from gas sourced from fossil natural gas, only if the taxpayers acquire and retire qualifying gas EACs for each unit of gas claimed from such source. A qualifying gas EAC must have been injected into a pipeline located in the contiguous United States in the same calendar month in which the hydrogen production facility used the RNG or methane, and the hydrogen production facility must also be located in and connected to a natural gas pipeline in the contiguous United States. Alaska, Hawaii, and each U.S. territory are treated as separate regions, with corresponding time-matching and deliverability requirements. The gas EACs must also be recorded in a “qualified EAC registry or accounting system” and verified by a qualified verifier.

Notably, the Regulations depart from a requirement described in the preamble to the proposed regulations that would have allowed the taxpayer to receive an emissions value for its hydrogen consistent with the emissions from a natural gas alternative only if the hydrogen was the first productive use of the natural gas alternative. Under this proposed requirement, if the natural gas alternative had previously been used for heating or electricity, for example, the hydrogen process’ emission value would have been consistent with the value assigned to hydrogen produced from fossil natural gas. The Regulations do not to adopt this requirement, with Treasury reasoning that the requirement would have been difficult to “substantiate and to verify independently.”

Filing Process

The Regulations declined to create a streamlined process for small hydrogen producers to claim the Clean Hydrogen Credit. Instead, all taxpayers must submit, with their annual U.S. federal income tax return, IRS Form 7210 (“Clean Hydrogen Production Credit”) if they intend to claim the production tax credit, or IRS Form 3468 (“Investment Credit”) if they intend to claim the investment tax credit.

Verifying Production and Use

Taxpayers must submit a verification report with their IRS Form 7210 submission for each qualified clean hydrogen production facility. The verification report must include the following information from a qualified verifier: i) attestations that the inputs used to determine the lifecycle GHG emissions rate are accurate, ii) attestations as to the amount of qualified clean hydrogen sold or used, iii) attestations regarding any conflicts of interest, iv) information regarding the qualified verifier’s qualifications, v) other general information about the hydrogen production facility, vi) other documentation necessary to substantiate the verification process, in accordance with the standards and best practices prescribed by the verifier’s accrediting body, and vii) other information required by the IRS. For purposes of clause (ii) above, the attestation must confirm that the hydrogen has been sold to a person that makes a “verifiable use” of the hydrogen. The verifiable use can be made by the taxpayer or another person but does not include using hydrogen to generate heat or power that is then used to produce more hydrogen (unless the heat or power is derived from a byproduct of hydrogen use) or venting or flaring the hydrogen. For purposes of clause (iv) above, the qualified verifier must maintain an active accreditation, either from the American National Standards Institute National Accreditation Board or from the CARB Low Carbon Fuel Standard program.

The Regulations impose additional verification requirements on taxpayers that seek to claim both the Clean Hydrogen Credit and either the Section 45 legacy production tax credit, or the Section 45U zero-

emissions nuclear power production credit, including that the electricity used to produce the hydrogen was produced at the facility claiming the applicable credit.

Modification of and Retrofitting Existing Facilities

The Regulations allow taxpayers to claim the Clean Hydrogen Credit for existing facilities (i.e., facilities placed in service prior to January 1, 2023, which did not initially produce hydrogen), if i) the taxpayer modifies such facilities to produce qualified clean hydrogen and ii) the amounts paid or incurred by the taxpayer to modify such facilities are properly chargeable to the taxpayer's capital account for the facility. Additionally, the modification must be made to enable the facility to produce clean hydrogen (i.e., it must allow the facility to produce hydrogen at a rate of less than or equal to 4 kg of CO₂e per kg of qualifying clean hydrogen produced), and the taxpayer cannot merely change fuel inputs to the hydrogen production facility (e.g., changing from conventional natural gas to RNG does not amount to a modification).

Alternatively, taxpayers may claim the Clean Hydrogen Credit for retrofitting a pre-existing hydrogen production facility, even though the retrofitted facility integrates used components from the pre-existing facility, if the fair market value of the used property does not exceed 20 percent of the retrofitted facility's total value (the "80/20 Rule"). If the facility satisfies the 80/20 Rule, the facility is considered placed in service on the date in which the new property added to the facility was placed in service. The Regulations clarify that the 80/20 Rule does not apply to facilities that satisfy the modification requirements set forth in Section 45V(d)(4) of the Code (described in the preceding paragraph). The Regulations declined to "clarify whether roads, fences, buildings, land, or other ancillary property" are part of the retrofitted facility for purposes of the 80/20 Rule because "existing Federal income tax concepts are sufficient to address this question."

Election to Use the Energy Credit

a) Credit Election Generally

Taxpayers can make an irrevocable election to receive, in lieu of a production tax credit under Section 45V, the investment tax credit under Section 48 of the Code. The credit amount is determined by multiplying the percentages set forth in Table 1 above by the basis of the property placed in service during the taxable year. To make this election, the taxpayer cannot have previously claimed a credit for the hydrogen production facility under Section 45V or Section 45Q of the Code. Additionally, the facility must be placed in service after December 31, 2022, and an unrelated party must have verified that the emissions from the facility's hydrogen production processes are consistent with the amount of the credit claimed, per Table 1.

Additionally, if multiple taxpayers have an interest in a hydrogen production facility, and any taxpayer makes an election to claim the investment tax credit, the election is binding on all taxpayers with an interest in the hydrogen production facility.

b) LCA Calculation

In contrast to taxpayers claiming the Section 45V production tax credit, taxpayers claiming the Section 48 investment tax credit are not required to calculate the lifecycle GHG emissions rate for each process in a facility with multiple processes. Instead, the lifecycle GHG emissions rate is determined using the "weighted average of the lifecycle GHG emissions rates of all hydrogen production processes." Treasury reasoned that adopting the process-by-process approach for the investment tax credit would be "inconsistent with the statutory scheme applicable to" the investment tax credit and "would be difficult to administer."

c) Provisional Emissions Rate

If the GREET Model has not determined a GHG emissions rate for the hydrogen production facility for which a taxpayer seeks to claim the investment tax credit, the taxpayer may file a request with the DOE to determine a PER for its hydrogen production process, using the same procedures that apply to production tax credit. Finally, the Regulations allow a taxpayer to make an irrevocable election on IRS Form 3468 by the due date for filing its tax return for the taxable period in which the facility is placed in service, to treat the first version of the GREET Model that includes the taxpayer's hydrogen production pathway as the default GREET Model for such pathway for the duration of the recapture period for the investment tax credit (i.e., the period that begins on the first day of the taxable year after the taxable year in which the facility was placed in service and ends on the close of the fifth taxable year following the close of the taxable year in which the facility was placed in service).

If the DOE provides a PER, but the taxpayer's hydrogen production process is included in an updated GREET Model before construction begins, the taxpayer may elect to use the PER for the remainder of the recapture period.

d) Verification

Taxpayers that claim the investment tax credit must also submit an annual verification report, beginning with the taxable year in which they make the election to claim the investment tax credit and continuing for each taxable year during the recapture period. The report must be signed by a qualified verifier, and contain the attestations and information described in (i)-(vii) in the "Verifying Production and Use" section of this client alert, as well as a statement attesting to i) the lifecycle GHG emissions of the hydrogen produced by the facility, for the taxable year to which the annual report relates, ii) the accuracy of any qualifying EACs applied to account for such emissions, and iii) a statement that the hydrogen produced resulted in lifecycle GHG emissions that are consistent with or lower than the lifecycle GHG emissions rate that the facility was designed and expected to produce.

e) Recapture

Table 3 below summarizes three types of recapture events and the corresponding recapture amount for each event.

Table 3 Recapture Events and Amounts

Recapture Event	Recapture Amount
The taxpayer fails to timely obtain the annual verification report by the deadline for filing its Federal income tax return or information return (including extensions).	20% of the investment tax credit allowed to the taxpayer for the specified clean hydrogen production facility.
The lifecycle GHG emissions rate from the facility requires the use of a lower energy percentage than the percentage the taxpayer used to calculate the investment tax credit amount.	20% of the excess of the investment tax credit allowed to the taxpayer in the taxable year over the investment tax credit that would have been allowable had the taxpayer used the correct energy percentage.
The lifecycle GHG emissions rate for the hydrogen produced is in excess of 4 kilograms of CO ₂ e per kilogram of hydrogen.	20% of the investment tax credit allowed to the taxpayer for the specified clean hydrogen production facility.

f) Recordkeeping

The taxpayer claiming the investment tax credit must maintain and preserve sufficient records to establish the amount claimed, consistent with Section 6001 of the Code.

g) Applicability

The Regulations are effective on January 10, 2025, and apply to taxable years beginning after December 26, 2023, the date the proposed regulations were published in the Federal Register. For taxable years beginning after December 31, 2022, and on or before December 26, 2023, taxpayers may choose to apply the rules of Regulations §§ 1.45V-1, -2, and -4 through -6, provided that taxpayers apply the rules in their entirety and in a consistent manner. For facilities that were placed in service before January 10, 2025, taxpayers may choose to rely upon the proposed regulations for taxable years beginning after December 31, 2022, and before January 10, 2025, provided that taxpayers follow the proposed regulations in their entirety and in a consistent manner.

Potential Challenges

The Congressional Review Act requires that federal agencies submit a report on each new rule to both houses of Congress and to Government Accountability Office's Comptroller General for review before the rule can take effect. As of January 20, 2025, no challenge of the Regulations has been introduced in Congress or filed in a federal court.

Our team would be pleased to assist you in your strategic planning. For more information on issues pertaining to tax and energy and climate solutions, please contact Wilson Sonsini attorneys [Elise Zoli](#), [Nicole Gambino](#), [Andrew Bryant](#), [Brandon King](#), or [Jaron Goddard](#).

[1] *See* 1.45V-4(d)(2)(ix) <https://www.federalregister.gov/documents/2025/01/10/2024-31513/credit-for-production-of-clean-hydrogen-and-energy-credit>.

[2] <https://www.ecfr.gov/current/title-26/chapter-I/subchapter-A/part-1/subject-group-ECFRe427f958a26c8f4/section-1.45V-4>.