

Submitted Electronically via the Federal eRulemaking Portal

December 03, 2022

The Honorable Lily Batchelder
Assistant Secretary (Tax Policy)
Department of the Treasury
1500 Pennsylvania Avenue, NW
Washington, DC 20220

William M. Paul
Principal Deputy Chief Counsel
Internal Revenue Service Internal Revenue Service
1111 Constitution Avenue, NW
Washington, DC 20224

Re: Request for Comments on Credits for Clean Hydrogen Under Section 45V (Notice 2022-58)

Dear Ms. Batchelder and Mr. Paul,

In furtherance of Ørsted's goal, creating a world that runs entirely on green energy, Ørsted develops, constructs, and operates offshore and land-based wind resources, solar farms, storage, and offshore transmission facilities. Ørsted is among the world's largest renewable energy companies and the global-leader in establishing utility-scale energy projects at sea, including developing more than 28 offshore wind farms and 17 offshore transmission systems. This portfolio includes the world's first offshore wind farm (Vindeby, 1991); America's first offshore wind farm (Block Island); and the world's largest (Hornsea 2). Ørsted's current installed offshore wind capacity is 7.6GW with another 2.3GW under construction. Ørsted has been awarded offtake agreements for about 5GW of offshore wind capacity on the east coast of the United States. With this extensive portfolio of offshore generation, Ørsted has designed and built the associated transmission assets including on- and offshore substations and converter stations and designed, permitted and constructed over one thousand miles of subsea export cables; and more than 1,700 miles of subsea array cables. Ørsted Onshore currently owns and operates 11 land-based wind farms, 4 solar farms, and 1 battery energy storage facility co-located with solar, with many more projects in various stages of development in the United States. In total, approximately 4GW of renewable land-based generation is either operational or in an advanced

construction stage.

Ørsted appreciates the opportunity to submit the following comments in response to the Request for Comments on Credits for Clean Hydrogen Under Section 45V (Notice 2022-58).

I. QUESTIONS FROM INTERNAL REVENUE SERVICE

.01 Credit for Production of Clean Hydrogen.

(1) Clean Hydrogen. Section 45V provides a definition of the term “qualified clean hydrogen.” What, if any, guidance is needed to clarify the definition of qualified clean hydrogen?

(a) Section 45V defines "lifecycle greenhouse gas emissions" to "only include emissions through the point of production (well-to-gate)."¹ Which specific steps and emissions should be included within the well-to-gate system boundary for clean hydrogen production from various resources?

Ørsted recommends that the IRS and Treasury adopt the same definition as proposed in the U.S. Department of Energy’s (“DOE”) Clean Hydrogen Production Standard Draft Guidance², as illustrated in Figure 1 therein (copied below).

¹ *The well-to-gate system boundary for hydrogen production includes emissions associated with feedstock growth, gathering, and/or extraction; feedstock delivery to a hydrogen production facility; conversion of feedstock to hydrogen at a production facility; generation of electricity consumed by a hydrogen production facility (including feedstock extraction for electricity generation, feedstock delivery, and the electricity generation process itself); and sequestration of carbon dioxide generated by a hydrogen production facility.*

² *U.S. Department of Energy, U.S. Department of Energy Clean Hydrogen Production Standard (CHPS) Draft Guidance (Sept. 22, 2022), <https://www.hydrogen.energy.gov/pdfs/clean-hydrogen-production-standard.pdf>.*

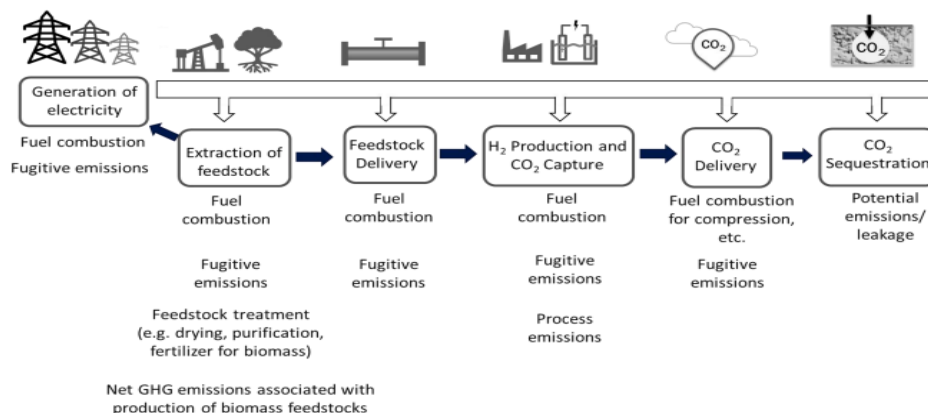


Figure 1: A lifecycle system boundary enables consistent and comprehensive evaluation of diverse hydrogen production systems. Examples of key emission sources within each step typically considered in the boundary are shown above.¹¹

This captures all feedstock production, transportation, and storage emissions, production emissions, and downstream greenhouse gas (“GHG”) emissions. We recommend that the definition does not include emissions associated with use of the hydrogen downstream from production (for example, in the production of derivative fuels or materials for which hydrogen is a feedstock), given the complexity of tracking the hydrogen after point of sale and given that how the hydrogen or derivative product is used is often out of the hydrogen producer’s control. The same approach should also apply where the hydrogen is produced by the same person or entity who then uses the hydrogen for the downstream process. This means that combined facilities (for example, producing hydrogen and then using hydrogen to produce an e-fuel), which will often be efficient to establish, will not be penalized as compared to pure hydrogen production facilities. Accordingly, where clean hydrogen and derivative products are produced at the same site, the boundary (i.e., the “gate” end of the system) should be defined as the pipe or other media connection between the hydrogen production equipment and the downstream equipment for further use of the hydrogen.

For the avoidance of doubt, Ørsted also recommends that construction emissions and emissions associated with the manufacturing of related equipment are excluded from the lifecycle analysis.

- (d) If a facility is producing qualified clean hydrogen during part of the taxable year, and also produces hydrogen that is not qualified clean hydrogen during other parts of the taxable year (for example, due to an emissions rate of greater than 4 kilograms of CO₂-e per kilogram of hydrogen), should the facility be eligible to claim the § 45V credit only for the qualified clean hydrogen it produces, or should it be restricted from claiming the § 45V credit entirely for that taxable year?

Ørsted recommends that the guidance clarifies that a facility will be able to claim the § 45V credit for any clean hydrogen volumes it produces, irrespective of whether it also produces hydrogen which does not meet the qualified clean hydrogen standard. If at times during a taxable year a facility produces hydrogen that does not meet the standard for qualified clean hydrogen, then those specific volumes should not be eligible for the credit; however, any hydrogen volumes produced that do meet qualified clean hydrogen should be eligible regardless. Producing some hydrogen volumes that do not meet the clean hydrogen standard should not disqualify the entire facility from receiving the § 45V credit for any qualified clean hydrogen produced in that taxable year, because:

- (i) hydrogen may be produced which is above the emissions intensity for qualified clean hydrogen but which still represents an effective decarbonizing tool in many contexts, where the alternative is likely to be natural gas or another fossil fuel. If hydrogen producers were to lose the § 45V credit entirely, then they would be strongly disincentivized from producing any hydrogen, removing another legitimate pathway to decarbonization and GHG emission reduction;
- (ii) there are likely to be many users of hydrogen (such as, for example, refineries) who require a constant supply in order to carry out industrial processes in a stable manner. By permitting hydrogen producers to make non-qualified clean hydrogen and still obtain the § 45V credit for volumes meeting the clean hydrogen standard, users and producers would be able to agree to receive and supply hydrogen in circumstances in which it is sufficiently important for non-qualified hydrogen to be supplied

(i.e., where it would be harmful or uneconomic for the user's facility to halt or change the downstream process) without jeopardizing the financial viability of the hydrogen production facility.

If the final guidance does take the position that production of non-qualified clean hydrogen will cause a producer to become entirely ineligible for the § 45V credit, there should be provisions to ensure that production which is inadvertently non-compliant will be excusable in certain circumstances; for example, where such non-compliance is the result of a third party's default or a failure of renewable power supply.

- (2) Alignment with the Clean Hydrogen Production Standard.** On September 22, 2022, the Department of Energy (DOE) released draft guidance for a Clean Hydrogen Production Standard (CHPS) developed to meet the requirements of § 40315 of the Infrastructure Investment and Jobs Act (IIJA), Public Law 117-58, 135 Stat. 429 (November 15, 2021).³ The CHPS draft guidance establishes a target lifecycle greenhouse gas emissions rate for clean hydrogen of no greater than 4.0 kilograms CO₂-e per kilogram of hydrogen, which is the same lifecycle greenhouse gas emissions limit required by the § 45V credit. For purposes of the § 45V credit, what should be the definition or specific boundaries of the well-to-gate analysis?

As a general principle, Ørsted recommends that the Treasury and DOE work to align the § 45V qualification rules and the CHPS rules and guidance as much as is practical, including but not limited to defining the specific "well-to-gate" boundaries. Creating different standards within the US will create confusion and slow investment and growth in the sector.

- (4) Recordkeeping and Reporting.**

- (c)** What technologies or accounting systems should be required for taxpayers to demonstrate sources of electricity supply?

³ <https://www.hydrogen.energy.gov/pdfs/clean-hydrogen-production-standard.pdf>

Direct physical connections between a source of power and a hydrogen producer will be the simplest way for a hydrogen producer to demonstrate that it has access to renewable power. In addition, Ørsted recommends that the IRS and Treasury issue guidance confirming that power which is purchased under a virtual power purchase agreement (“VPPA”) (entered into with a power producer located within the same balancing area as the hydrogen producer) will be an acceptable means of demonstrating the quantity of renewable power supplied to a clean hydrogen production facility. Supplying power via a dedicated line, such as a behind-the-meter configuration, is no different to using the public grid to move electrons. Using the grid is often a more efficient use of resources than building a new direct line, and will therefore allow for more renewable power and clean hydrogen deployment at a lower cost. It is critical, however, that the hydrogen producer is required to purchase the renewable attributes (the RECs) from the renewable power generation source and retire them upon consumption, such that they are not double counted.

Allowing producers of hydrogen to demonstrate renewable energy supply through VPPAs (plus RECs) will make it practically much more straightforward to develop new clean hydrogen facilities because those facilities will then not need to be co-located with renewable power sources. Building new renewable generation co-located with a hydrogen production facility is challenging from a practical standpoint. Clean hydrogen and derivative e-fuels will primarily be utilized in areas of existing industrial infrastructure. However, industrial areas where end-users are located that are ill-suited for the construction of utility-scale renewable generation because of limited land availability, permitting constraints and often less optimal renewable resources (wind, solar, etc.). Requiring co-location or a direct line to demonstrate renewable power sources would effectively prohibit this separation. In our view, the practical difficulties this would cause will significantly hamper the effectiveness of the § 45V credit, limiting the deployment of capital in the sector and the decarbonization benefits that clean hydrogen can provide.

- (f)** Should indirect book accounting factors that reduce a taxpayer's effective greenhouse gas emissions (also known as a book and claim system), including, but not limited to, renewable energy credits, power purchase agreements, renewable thermal credits, or biogas credits be considered when calculating the § 45V credit?

As stated above under 4(c), Ørsted recommends that renewable power supply (including RECs) via a VPPA within the same balancing area be considered as sufficiently demonstrating that a hydrogen producer has used a renewable energy source when evaluating the carbon intensity of electrolytic hydrogen production. This is the same approach taken in the EU, under the Renewable Energy Directive regime. Verification of this pathway should require documentation of the VPPA for sufficient energy and RECs as well as of the retirement of the REC certificates from the VPPA in the hydrogen production facility.

(6) Coordinating Rules.

(a) Application of certain § 45 rules.

- (ii)** Section 45V(d)(1) states that the rules for facilities owned by more than one taxpayer are similar to the rules of § 45(e)(3). How should production from a qualified facility with more than one person holding an ownership interest be allocated?

Ørsted recommends the IRS and Treasury clarify that it is permissible for the tax credit to be claimed when more than one taxpayer owns the qualified facility.

In addition, Ørsted recommends that the IRS and Treasury issue guidance clarifying the process for treatment of a qualified facility owned by more than one taxpayer, which the statute specifically states should be similar to the rules of § 45(e)(3).

- (7)** Please provide comments on any other topics related to § 45V credit that may require guidance.

Ørsted recommends the IRS and Treasury clarify that the domestic content and energy community bonus credits of the Act apply to the § 45V production clean hydrogen tax credit, if a project meets the applicable requirements.

II. CONCLUSION

Ørsted appreciates the opportunity to respond to this request for Notice 2022-58, and we would be pleased to discuss these comments with you if necessary.

Sincerely,

Melissa Peterson

[Melissa Peterson \(Dec 2, 2022 02:28 EST\)](#)

Melissa Peterson

Head of P2X Americas, Ørsted