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Office of the Associate Chief Counsel (Passthroughs and Special Industries)
U.S. Internal Revenue Service
CC:PA:LPD:PR {Notice 2022-58)
Room 5203, P.O. Box 7604, Ben Franklin Station
Washington, DC 20044

Via Federal eRulemaking Portal at: www.regulations.gov (IRS-2022-0058)

Dear Sir/Madam:

Attached herewith are additional comments from Shell USA, Inc., pertaining to Notice 2022-58, "Supplemental Comments on the Credit for Clean Hydrogen Production."

Sincerely,

[redacted]

John Misso
Vice President and General Tax Counsel

This letter supplements the response of Shell USA, Inc. to IRS Notice 2022-58 {the "Notice"), which requested comments on the clean hydrogen production credit as added by the Inflation Reduction Act of 2022 (P.L. 117-169, 136 Stat. 1818 (Aug. 16, 2022)) (the "IRA").

Shell[1] is committed to the advancement of a net-zero emissions economy that is supported by infrastructure across the supply chain necessary to fully scale the production and use of clean hydrogen, as defined by the US Department of Energy's Clean Hydrogen Production Standard (CHPS). Shell supports policy designs that stimulate the production and use of low-cost, clean hydrogen with a fully transparent lifecycle greenhouse gas accounting system applied consistently across the value chain. To that end, Shell is providing this second set of comments on the implementation of the 45V clean hydrogen production tax credit and the CHPS to help ensure that these policies deliver on the intent of stimulating the clean hydrogen economy in the U.S.

Qualified Facility Definition

Modern industrial facilities contain a vast array of equipment aimed at maximizing efficiency and reliability while balancing costs. To competitively achieve this goal, such facilities rely on shared, interdependent equipment and processes such as steam generation, utilities, compression, and many others. As industry transitions to lower carbon pathways, maintaining flexibility to achieve these synergies will be more important than ever as producing lower carbon intensity (CI) molecules will require additional decarbonization equipment, processes, and costs. This flexibility can result in maximized efficiencies which can, in turn, improve project fundamentals, helping to accelerate the adoption of clean hydrogen.

A key aspect enabling such flexibility is setting facility boundaries for hydrogen production or carbon capture that are limited to the process equipment focused exclusively on such production. For SMR, ATR, or POx production technologies, this includes the reforming and shift reactors as shown in Figure 1. By excluding non-core equipment from the facility boundary, ancillary equipment costs could be shared across unrelated processes elsewhere on site or between sites. This will support better scale for this equipment, and/or provide backup units for improved reliability.

A focused boundary will also facilitate an industrial site's potential to deploy multiple decarbonization technologies such as hydrogen firing alongside carbon capture, thus enabling different process trains to adopt the best solution for their respective application. Figure 1 demonstrates this by showing unprocessed CO2 and flue gas from a hydrogen reforming reactor being combined for capture with flue gas from unrelated miscellaneous equipment. Upsizing one large unit would be more cost competitive than building multiple capture units and could lower hurdle rates of additional CO2 volumes unrelated to hydrogen production. In this example, if the hydrogen production unit pursues 45V tax credits, then it will be important to properly track and account for CO2 volumes attributable to hydrogen (i.e., 45V volumes) but still allow non-hydrogen volumes to remain eligible for 4SQ credits. To be clear, Shell does not assume stackability of 45v and 45q credits for the same molecules.

[1] Shell companies have their own separate identities but in document we may sometimes use "Shell", "Group, "we" or "us" when we refer to Shell companies in general or where no useful purpose is served by identifying any particular Shell company.

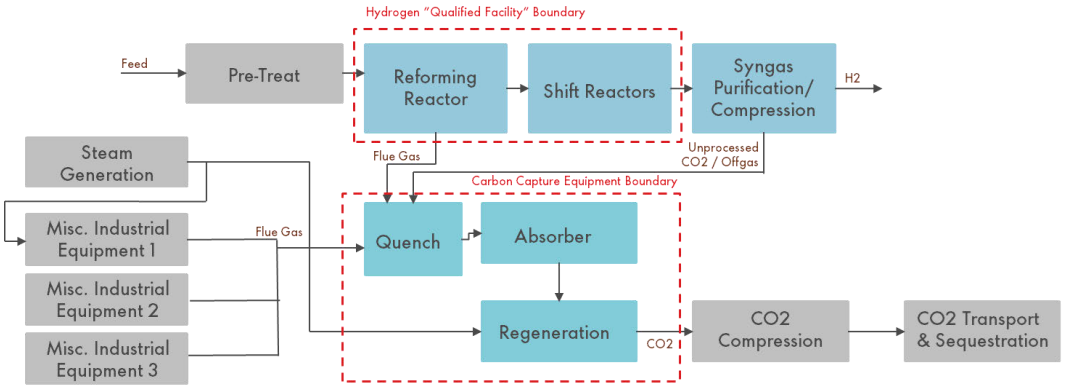

Figure 1: Illustrative process flow of integrated hydrogen+ carbon capture facility

Further benefits can also be achieved by a focused boundary definition. These include the potential for phased scaling of multiple units at a single location. Clean hydrogen is a frontier market which presents early adoption risks. Phasing development as the market matures will be an important risk management technique. If a facility boundary is drawn too wide, this eliminates the potential to construct additional production units if tax benefits would not be available for the full 10 -12 year tenure on those units. Further, different hydrogen production methods (electrolytic, SMR, POx, ATR) may be targeted for a single site and it may be optimal for different units to pursue different 45V CI thresholds, or for some to instead opt for 45Q. Further, building multiple units at the same site can accelerate adoption due to network effects and infrastructure synergies. This aligns with DOE H2 hubs concept. Disincentivizing early-stage hydrogen project developers from follow-on growth would undermine the trajectory and objectives of H2 hubs and industry as a whole.

Facility definitions and treatment of products should also be agnostic of equipment ownership or use case. For instance, if a project developer chooses to purchase low carbon steam or renewable power from a 3rd party, these attributes should be treated similarly as if these products were produced by the developer and vice versa. The same is true for hydrogen end use; a project developer should have the flexibility to deploy low carbon hydrogen irrespective of ownership or use case including for purposes of further decarbonization of hydrogen production itself.

Responsibly Sourced Gas:

Shell acknowledges that the journey towards a more sustainable energy landscape is not an overnight transformation, but rather a complex and gradual process. The global energy demand remains high, necessitating careful consideration of effective transitional solutions. Shell believes that responsibly sourced gas (RSG) constitutes a pivotal measure in the ongoing efforts to meet energy demand while curtailing environmental impact and advancing emissions reduction objectives. While the ultimate goal centers on renewable energy as the cornerstone of sustainability, RSG emerges as a pragmatic transitional energy solution, effectively bridging the gap during the transition away from carbon-intensive fuels. Beyond its environmental benefits, RSG is also domestically available, fostering local

economic growth through tax contributions, job creation, and lease payments to landowners, among other factors. This approach aligns coherently with Shell's commitment to responsible energy practices and echoes the broader industry-wide drive for meaningful and verifiable emissions reductions while ensuring adequate energy supply.

The following position on the use of book and claim of environmental attributes for the use of RSG to offset the carbon intensity of hydrogen production under both the Section 45V tax credit and the DOE's proposed CHPS represents Shell's interest in decarbonizing the economy, remaining technology neutral, and focusing on reducing carbon intensity across the supply chain.

Use of Book and Claim Accounting

A taxpayer should be able to utilize indirect book accounting factors, i.e. the purchase and retirement of environmental attributes and use of contracts, to demonstrate that the clean hydrogen production method is using the feedstocks and energy inputs that were included in the GREET model lifecycle analysis (LCA) of the production process. An entity that holds environmental attributes tied to the RSG used to produce clean hydrogen should be required to retire the attributes. Allowing customers and corporations to benefit from book and claim RSG can help expand the demand pool and provide additional finance to ramp up the supply of low carbon energies needed to progress the energy transition, particularly for hard to abate sectors.

Rationale

Allowance of market-based mechanisms using the GREET model to determine the LCA of the feedstock is consistent with legislative intent for section 45V, as articulated in a colloquy between Senator Wyden and Senator Carper:

> *Mr. CARPER. "In section {45V}, the term 'lifecycle greenhouse gas emissions' for a qualified hydrogen facility is determined by the aggregate quantity of greenhouse gas emissions through the point of production, as determined under the most recent Greenhouse gases, Regulated Emissions, and Energy use in Technologies-GREET-model. It is also my understanding of the intent of section [45V], is that in determining 'lifecycle greenhouse gas emissions' for this section, the Secretary shall recognize and incorporate indirect book accounting factors, also known as a book and claim system, that reduce effective greenhouse gas emissions, which includes, but is not limited to, renewable energy credits, renewable thermal credits, renewable identification numbers, or biogas credits. Is that the chairman's understanding as well?*
>
> *Mr. WYDEN. Yes."*[2]

Allowance of book and claim mechanisms is also consistent with many state regimes, such as California's Low Carbon Fuel Standard (LCFS) system and is employed with strict record keeping requirements across the U.S. and internationally.[3] It is used in nearly all North American renewable gas procurement programs and is included in the Environmental Protection Agency's (EPA's) Renewable Fuel Standard (RFS).

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[2] Congressional Record, Aug. 6, 2022, p.4165

[3] See, e.g., CA LCFS: RESO 18-34 LCFS Attachment A, Final Reg Order (ca.gov).

Practical Restrictions of Book and Claim Accounting for RSG

Treasury should provide for a practical book-and-claim accounting system under Section 45V, consistent with Congressional intent for implementation of the tax credit.

Deliverability/Physical Tracing

Shell recommends that direct receipt of RSG to a clean hydrogen producer not be required to qualify for the credit, nor should book-and-claim accounting be combined with pipeline flow restrictions regarding physical traceability (so long as the RSG is injected into a gas pipeline system).

Rationale:

RSG producers can be located throughout the country and may not be close to the site where the clean hydrogen will be produced. RSG can be distributed to the hydrogen production site through a gas pipeline system. Federal regulations allow entities to inject and withdraw RSG or natural gas anywhere on the system. Since the RSG can be both injected and stored in the gas pipeline network, book-and-claim accounting allows end users to contract for and receive credit for the RSG and its associated environmental attributes even if the end user does not physically receive the RSG to its facility. Although the reduction of emissions associated with the carbon dioxide intensity (CI) of the RSG may not be avoided directly at the hydrogen production facility, equal emissions are avoided throughout the gas pipeline system in the other end uses consuming the RSG. Book-and-claim accounting should be allowed so long as the environmental attributes of the RSG are not being claimed elsewhere on the gas distribution system.

For example, a clean hydrogen producer located in Louisiana should be able to contract with an RSG producer in Texas to purchase the RSG and its associated environmental attributes for use in its clean hydrogen production process if the RSG is injected into the gas pipeline system. Even if it cannot be demonstrated that the RSG is delivered directly to the clean hydrogen producer in Louisiana, the purchase of the environmental attributes will demonstrate that the clean hydrogen is produced with the CI of the RSG. Again, the end result is that the introduction of the low CI RSG into the gas pipeline system results in the use of lower carbon intensity gas on the system.

To ensure the credibility of environmental attributes of RSG, it is crucial to recognize established, reputable protocols and guidelines that define the carbon intensity. These protocols and guidelines should be designed to simplify the process, while maintaining environmental robustness, credibility, and flexibility when applying these protocols to multiple applications.

RSG certification should complement direct regulation of methane rather than supplant it. Certification should be based on robust data reporting and performance. Direct receipt of RSG should not be required to claim the environmental attributes.

As monitoring of methane emissions across the value chain becomes more established, assessing carbon intensity for purposes of 45v should evolve to recognize this scientific progress. Utilizing expanded monitoring across the value chain allows more parties to play a role in emission reduction.