December 3, 2022

Office of the Associate Chief Counsel
Passthroughs and Industries

Internal Revenue Service
CC:PA:LPD:PR (Notice 2022-58)
Room 5203, PO Box 7604
Ben Franklin Station
Washington, DC 20044

Via Electronic Submission to Regulations.gov

RE: Notice 2022-58, Request for Comments on Credits for Clean Hydrogen and Clean Fuel Production

Dear Sirs and Madams:

We appreciate the opportunity to comment on Notice 2022-58 (the "Notice") regarding the Section 45V Credit for Production of Clean Hydrogen ("45V") and 45Z Clean Fuel Production Credit ("45Z") recently enacted under the Inflation Reduction Act ("IRA"). The 45V, 45Z and 45Q credits are vital to growth of renewable energy.

Red Rock Biofuels Holdings, Inc. ("RRBH") is building out a portfolio of biorefineries to convert millions of tons of waste woody biomass into hundreds of millions of gallons of Sustainable Aviation Fuel ("SAF") each year for the aviation industry, which has limited options to reduce greenhouse gas emissions given the energy density required for flight. RRBH was founded in 2011 to decarbonize the heavy transportation industry and mitigate catastrophic wildfire risk. RRBH's first commercial project is currently under construction in Lakeview, Oregon. RRBH has commenced development of its next plant in the portfolio, Shasta Biofuels LLC, in northern California.

We respond here to both general and specific information requests in the Notice.

General Comments

First, timely guidance for both 45V and 45Z is imperative to provide certainty and maximize investment potential. Expedited implementation is especially important for the sustainable aviation fuel ("SAF") industry. With project timelines that span five or more years and the 45Z credit currently set to expire at the end of 2027, it is critical for Treasury to provide guidance as soon as possible.

Second, the Greenhouse Gases, Regulated Emissions, and Energy Use in Technologies ("GREET") model, a state-of-the-art model developed and regularly updated by the U.S. Department of Energy's ("DOE's") Argonne National Laboratory and already explicitly incorporated for other fuel types under 45V and 45Z, should be confirmed as a suitable lifecycle methodology under both 45V and 45Z.

Specific Comments – 45V

> *Section 3.01(1): 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?*

The definition of qualified clean hydrogen should clarify that molecular hydrogen ("H_2") contained in a syngas mixture consisting primarily, but not exclusively, of carbon monoxide and H_2 qualifies as clean hydrogen production under the 45V. Biomass gasification generally produces such syngas. Biomass is a critical feedstock for meeting President Biden's Sustainable Aviation Fuel Grand Challenge of producing at least 3 billion gallons per year by 2030, and gasification technology is key to unlocking biomass as a feedstock to produce SAF. Given the vast sums of capital expenditure necessary and long development and construction durations to construct SAF production facilities, this guidance is extremely important and should be promulgated in the near-term.

> *Section 3.01(1)(b)(i): How should lifecycle greenhouse gas emissions be allocated to co-products from the clean hydrogen production process? For example, a clean hydrogen producer may valorize steam, electricity, elemental carbon, or oxygen produced alongside clean hydrogen.*

Lifecycle greenhouse gas emissions should be allocated on an energy basis to co-products from the clean hydrogen production process. This is consistent with how the DOE's GREET model allocates emissions.

> *Section 3.01(1)(b)(iii): What considerations support the recommended approaches to these issues?*

Allocating emissions to coproducts on an energy basis is consistent with how the DOE's GREET model allocates emissions.

> *Section 3.01(1)(e) How should qualified clean hydrogen production processes be required to verify the delivery of energy inputs that would be required to meet the estimated lifecycle greenhouse gas emissions rate as determined using the GREET model or other tools if used to supplement GREET?*

Third party verification of (1) utility consumption (or other energy source consumption if heat or power is generated onsite) over a specified period (thirty days) and (2) physical connections to utility sources (or quantities of energy sources consumed if heat or power is generated onsite) should be required to verify the delivery of energy inputs required to meet the estimated lifecycle greenhouse gas emissions rate as determined using the GREET model.

The Secretary should make a determination based on meeting the criteria described below in Section 3.01(3)(a) and the GREET lifecycle-analysis performed by a third party and submitted by the applicant. Additionally, to ease administrative burdens, Treasury should broadly recognize producer-specific values determined by third parties, including third-party certified values determined under the Carbon Offsetting and Reduction Scheme for International Aviation ("CORSIA") or GREET, as well as any value already approved under EPA's RFS program, California's Low Carbon Fuel Standard ("LCFS") program, or any other methodology that Treasury determines is similar to that agreed under CORSIA and meets the Clean Air Act criteria.

> *Section 3.01(1)(e)(ii) What granularity of time matching (that is, annual, hourly, or other) of energy inputs used in the qualified clean hydrogen production process should be required?*

Energy inputs used in qualified clean hydrogen production process should be measured (and averaged) over a thirty-day (or monthly) period to accommodate day-to-day variability and coincide with utility billing.

Section 3.01(3)(a) At what stage in the production process should a taxpayer be able to file such a petition for a provisional emissions rate?

To avoid receiving an overwhelming number of applications, Treasury should establish a set of criteria that would discourage wasteful petitions while also encouraging serious applicants that have completed some initial development work. A taxpayer should be able to file such a petition for a provisional emissions rate once the taxpayer has completed all of the following:

- a third-party lifecycle analysis using GREET,
- established control on the proposed project site (ownership or executed 10+ year lease),
- established that the project site has current zoning to support clean hydrogen production, and
- applicant entity is registered to do business in the project site's state.

Section 3.01(3)(b) What criteria should be considered by the Secretary in making a determination regarding the provisional emissions rate?

The Secretary should make a determination based on meeting the criteria described above in Section 3.01(3)(a) and the GREET lifecycle-analysis performed by a third party and submitted by the applicant. Additionally, to ease administrative burdens, Treasury should broadly recognize producer-specific values determined by third parties, including third-party certified values determined under CORSIA or GREET, as well as any value already approved under EPA's RFS program, California's LCFS program, or any other methodology that Treasury determines is similar to that agreed under CORSIA and meets the Clean Air Act criteria.

Section 3.01(4)(a) What documentation or substantiation do taxpayers maintain or could they create to demonstrate the lifecycle greenhouse gas emissions rate resulting from a clean hydrogen production process?

Taxpayers should maintain records regarding hydrogen and coproduct production, utility consumption (or other energy source consumption if heat or power is generated onsite) and consumption of feedstock(s) used to produce clean hydrogen.

Section 3.01(4)(b) What technologies or methodologies should be required for monitoring the lifecycle greenhouse gas emissions rate resulting from the clean hydrogen production process?

Taxpayers should undergo an annual audit or certification of greenhouse gas emissions by a third party.

Section 3.01(4)(c) What technologies or accounting systems should be required for taxpayers to demonstrate sources of electricity supply?

A third party should verify the physical connection to electricity supply. If electricity is supplied via connection to a grid, the carbon intensity of the specific grid to which the clean hydrogen production facility is connected should be quantified as determined by the California Air Resources Board ("CARB"), Oregon Department of Environmental Quality, or similar bodies in other states.

Section 3.01(4)(d) What procedures or standards should be required to verify the production (including lifecycle greenhouse gas emissions), sale and/or use of clean hydrogen for the § 45V credit, § 45 credit, and § 48 credit?

Taxpayers should maintain records regarding hydrogen and coproduct production, utility consumption (or other energy source consumption if heat or power is generated onsite), and consumption of feedstock(s) used to produce clean hydrogen. A third party should annually audit or certify these figures.

Section 3.01(4)(e) If a taxpayer serves as both the clean hydrogen producer and the clean hydrogen user, rather than selling to an intermediary third party, what verification process should be put in place (for example, amount of clean hydrogen utilized and guarantee of emissions or use of clean electricity) to demonstrate that the production of clean hydrogen meets the requirements for the § 45V credit?

Taxpayers should maintain records regarding hydrogen and coproduct production, utility consumption (or other energy source consumption if heat or power is generated onsite) and consumption of feedstock(s) used to produce clean hydrogen. A third party should annually audit or certify these figures.

Section 3.01(4)(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?

Indirect book accounting should **not** be considered when calculating the 45V credit. Allowing such indirect book accounting of renewable electricity or other indirect supply of renewable energy would be incredibly damaging to the 45V credit system. The single best place to see the importance of disallowing indirect book accounting is in California's LCFS program, which requires direct physical connection to a source of renewable electricity. In the absence of such connection, the fuel production facility consumes electricity at the carbon intensity of its respective local grid/utility. Had CARB opened the door to indirect book accounting of renewable electricity, many fuel producers would have simply purchased inexpensive (and potentially very difficult to verify) renewable energy credits to dramatically decrease the carbon intensity of their fuels. This would have served to bid up the price of such renewable energy credits while also dramatically expanding the supply of LCFS credits, thereby significantly devaluing them. In essence, CARB wanted to make it challenging to produce low carbon fuels. Through the IRA, in an effort to promote U.S. energy development and combat climate change, Congress also sought to make it a challenge to produce the lowest carbon intensity hydrogen. Permitting indirect book accounting of renewable electricity would serve to undermine this Congressional intent by permitting hydrogen producers to produce "low-carbon" hydrogen through a difficult-to-verify indirect book accounting of renewable electricity. Furthermore, if indirect book accounting were allowed, where would boundaries be placed? Could a producer purchase offsets from their local utility, a foreign utility, or perhaps a foreign tree planting project? Indirect book accounting opens a Pandora's box of potential abuse.

Section 3.01(4)(g) If indirect book accounting factors that reduce a taxpayer's effective greenhouse gas emissions, such as zero-emission credits or power purchase agreements for clean energy, are considered in calculating the § 45V credit, what considerations (such as time,

location, and vintage) should be included in determining the greenhouse gas emissions rate of these book accounting factors?

For all the reasons mentioned above in 3.01(4)(f), indirect book accounting should **not** be allowed to reduce a taxpayer's effective greenhouse gas emissions. It would open the 45V to significant potential abuse, and do a serious discredit to those taxpayers that actually produce low-carbon hydrogen through direct low-carbon energy use.

Specific Comments – 45Z

Section 3.02(2) Section 45Z(b)(1)(B)(iii) provides that the lifecycle greenhouse gas emissions of sustainable aviation fuel shall be determined in accordance with the Carbon Offsetting and Reduction Scheme for International Aviation or "any similar methodology which satisfies the criteria under § 211(o)(1)(H) of the Clean Air Act (42 U.S.C. 7545(o)(1)(H)), as in effect on the date of enactment of this section." What methodologies should the Treasury Department and IRS consider for the lifecycle greenhouse gas emissions of sustainable aviation fuel for the purposes of § 45Z(b)(1)(B)(iii)(II)?

The DOE's GREET model should be confirmed as a suitable lifecycle methodology under 45Z.

Section 3.02(3)(a) At what stage in the production process should a taxpayer be able to file a petition for a provisional emissions rate?

To avoid receiving an overwhelming number of applications, Treasury should establish a set of criteria that would discourage wasteful petitions while also encouraging serious applicants that have completed some initial development work. A taxpayer should be able to file such a petition for a provisional emissions rate once the taxpayer has completed all of the following:

- a third-party lifecycle analysis using GREET,
- established control on the proposed project site (ownership or executed 10+ year lease),
- established that the project site has current zoning to support clean hydrogen production, and
- applicant entity is registered to do business in the project site's state.

Section 3.02(3)(b) What criteria should be considered by the Secretary to determine the provisional emissions rate?

The Secretary should make a determination based on meeting the criteria described above in Section 3.02(3)(a) and the GREET lifecycle-analysis performed by a third party and submitted by the applicant. Additionally, to ease administrative burdens, Treasury should broadly recognize producer-specific values determined by third parties, including third-party certified values determined under CORSIA or GREET, as well as any value already approved under EPA's RFS program, California's LCFS program, or any other methodology that Treasury determines is similar to that agreed under CORSIA and meets the Clean Air Act criteria.

Section 3.02(4) Section 45Z(f)(1) provides several requirements for a taxpayer to claim the § 45Z credit, including for sustainable aviation fuel a certification from an unrelated party demonstrating compliance with the general requirements of the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) or in the case of any similar methodology, as defined in § 45Z(b)(1)(B)(iii)(II), requirements that are similar to CORSIA's requirements. With

respect to this certification requirement for sustainable aviation fuel, what certification options and parties should be considered to support supply chain traceability and information transmission requirements?

The Treasury should accept certification under the Roundtable on Sustainable Biomaterials' CORSIA Certification program.

RRBH appreciates the opportunity to submit these responses to the Treasury Department's and IRS' request for comments. Thank you for your consideration. If you have any questions on these comments, please do not hesitate to contact us.

Respectfully submitted,

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