December 3, 2022

Internal Revenue Service
CC:PA:LPD:PR (Notice 2022-49)
Room 5203
P.O. Box 7604
Ben Franklin Station
Washington, DC. 20044

Re: Biomass Power Association comments in response to Notice 2022-58 (filed electronically via the Federal eRulemaking Portal)

Biomass Power Association (BPA) appreciates having the opportunity to comment on the Department of Treasury (Treasury) and Internal Revenue Service (IRS) plan to implement the §§ 45V clean hydrogen and 45Z clean fuels credits provided for under the *Inflation Reduction Act* (IRA)(P.L. 117-169). What follows are BPA's comments in response to Notice 2022-58 regarding implementation of the new §45V credit for the production of clean hydrogen (§45V credit).

About Biomass Power Association

The members of the Biomass Power Association are domestic power producers who use organic waste, residues and byproducts as fuel to generate heat and electricity. The vast majority of the materials used as fuel by biomass power facilities are otherwise unusable; they have the least value in the supply chain and, if not used for biomass power production, would often otherwise be open burned or left in the forest to decompose or potentially contribute to wildfire. Biomass power facilities are predominantly located in rural areas. Biomass is recognized as a low-carbon source of power, meaning that the carbon released from a facility is already part of the carbon cycle rather than being newly introduced into the atmosphere from within the Earth as happens when fossil fuels are burned. The influx of cheap natural gas and other sources of low-cost power over the past decade have made it increasingly difficult for biomass power facilities to remain on the grid.

§**45V Credit for the Production of Clean Hydrogen:**

In general, the §45V credit is calculated by multiplying the kilograms (kg) of clean hydrogen produced at a qualifying facility by the applicable credit amount. The credit amount is determined in part by whether the production facility meets prevailing wage and apprenticeship standards. The percentage of the allowable credit that can be claimed is based on the lifecycle well-to-gate emissions associated with the production of the clean hydrogen. Hydrogen produced in a manner resulting in a lifecycle GHG emissions rate exceeding 4 kg of CO_2-e per kg of hydrogen cannot utilize the §45V credit.

Perspective on Calculating Lifecycle GHG Emissions for Purposes of the §45V Credit:

- *Notice 2022-58 seeks comment on which steps and emissions should be included within the well-to-gate system boundary for clean hydrogen production from various resources.*

Consistent with the U.S. Department of Energy (DOE) Clean Hydrogen Production Standard (CHPS) Draft Guidance, lifecycle GHG emissions for feedstocks or energy products derived in whole or in part from waste materials should consider the alternative fate of waste materials had they not been used in hydrogen production.

There is significant precedent for such an approach, including in the DOE's Greenhouse Gases, Regulated Emissions, and Energy Use in Technologies (GREET) model. The GREET model already incorporates the avoided emission benefits associated with diverting wastes from their baseline management practices to hydrogen production. Including these credits for avoided emissions will incentivize low carbon hydrogen production processes and recognize the real-world emission benefits of converting waste to hydrogen either directly, or through an intermediary energy pathway.

The latest scientific analysis regarding the climate impacts of methane and forest fires should be incorporated in the lifecycle analysis used to determine credit eligibility and amounts for purposes of the §45V credit. According to the UNEP, "cutting methane is the strongest lever we have to slow climate change over the next 25 years."[i] In the near-term, reducing emissions of SLCPs like methane is more effective than reducing CO_2.[ii]

- *Notice 2022-58 seeks comment on how lifecycle GHG emissions should be allocated to co-products from the clean hydrogen production process.*

BPA supports accounting for co-products and services when assessing lifecycle GHG emissions for purposes of the §45V credit. Multipurpose facilities that generate other products or provide other services while delivering electricity to the grid can provide vital pathways to reduce GHG emissions. However, it is critically important that an appropriate credit is given in calculating lifecycle GHG emissions for the non-electricity products or services provided by the facility. Biomass facilities are recognized as sources of GHG mitigation due to the avoided emissions that would have occurred through decomposition, open burning or wildfire if the fuel was not used at a biomass facility.

In developing guidance, we ask that Treasury and IRS review the EPA's implementation of co-product credits under the lifecycle analysis the agency uses to administer the Renewable Fuel Standard (RFS). EPA conducts this analysis and administers the RFS consistent with the requirements of §211(o)(1)(H) of the Clean Air Act, which is the same definition of lifecycle GHG referenced in §45V(c)(1)(A).

In developing guidance, we recommend that Treasury review the U.S. Environmental Protection Agency's (EPA) implementation of co-product credits under the lifecycle analysis the agency uses to administer the Renewable Fuel Standard (RFS). EPA conducts this analysis and administers the RFS consistent with the requirements of §211(o)(1)(H) of the Clean Air Act, which is the same definition of lifecycle GHG referenced in §45Y(b)(2)(B).

Under the RFS, a GHG emissions credit is applied to renewable fuel processes that generate a coproduct equal to the emissions that would have occurred if the co-product were delivered by a separate process. GREET is the predominate model used for the RFS and the lifecycle GHG emissions definition contained in the Clean Air Act. Because the GREET analysis is already required for other programs and compliance purposes, relying on it would reduce administrative burden while still giving the IRS quality information to support tax benefit claims.

- *Notice 2022-58 seeks comment on how emissions should be allocated to the co-products (for example, system expansion, energy-based approach, mass-based approach).*

The energy allocation method should be used for all hydrogen pathways that produce only energy products. Pathways that produce non-energy co-products (e.g., elemental carbon) should use economic (price-based) allocation based on a 3-year average of price data. This hierarchical approach is designed to allocate emissions based on what society values most. The primary interest is to produce energy and pathways that produce only energy should allocate emissions based on the relative share of energy flows in the products. For processes producing non-energy products, emissions should be allocated based on economic value because this reflects the relative value of each product in the global marketplace.

To the extent that the use of waste sources of material or energy are considered as a co-service, as opposed to an alternative fate credit, we recommend that the waste management service or forest fire risk reduction service provided be considered as a credit under a system expansion approach.

- *Notice 2022-58 seeks comment on the question 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 CO_2-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?*

BPA supports allowing a facility to claim the §45V credit only for the production of qualifying clean hydrogen. A facility should not be excluded for the entirety of the taxable year for producing hydrogen that does not qualify for the §45V credit.

- *Notice 2022-58 seeks comment on how qualified clean hydrogen production processes should 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. The notice also asks for input on requirements about the granularity of time matching of energy inputs used in the production of qualifying clean hydrogen.

Many hydrogen producers do not have direct access to renewable electricity or RNG and the economics of developing their own renewable electricity or RNG sources are prohibitive. Use of renewable electricity and RNG via "book and claim" accounting can be readily verified by third parties based on contracts, attestation letters and data management systems. Book and claim accounting has been successfully used to promote low-CI hydrogen production under many fuel programs, including the California Low Carbon Fuel Standard (LCFS) and other state LCFS programs, the International Sustainability and Carbon (ISCC) certification scheme and many others. Book and claim accounting is also utilized by EPA to verify compliance under the RFS.

The timing of energy inputs should be done on an annual basis, consistent with the trading of yearly vintages for RECs and other environmental attribute products (e.g. carbon credits).

- *Notice 2022-58 seeks comments on aligning the boundaries of the well-to-gate lifecycle analysis provided in the Clean Hydrogen Production Standard (CHPS) with those required by the §45V credit.*

On September 22, 2022, DOE released draft guidance for a CHPS developed to meet the requirements of § 40315 of the Infrastructure Investment and Jobs Act (IIJA)(P.L. 117-58). The CHPS draft guidance establishes a target lifecycle greenhouse gas emissions rate for clean hydrogen of no greater than 4.0 kilograms CO_2-e per kilogram of hydrogen, which is the same lifecycle greenhouse gas emissions limit required by the §45V credit.

For purposes of both the CHPS and the §45V credit, the boundaries for purposes of the well-to-gate lifecycle analysis should be the same. The analysis should, at a minimum, include upstream emissions from energy and materials and incorporate an alternative fate analysis. This is particularly relevant for fuel derived from forest fire risk reduction and restoration activities, which would require management in the absence of the hydrogen production pathway, and co-product and co-service attribution and crediting through system expansion as appropriate.

- *Notice 2022-58 seeks comment on what stage in the production process a taxpayer should be able to file a petition for a provisional emissions rate for purposes of the §45V credit and the criteria that that should be considered when making a determination regarding a provisional emissions rate.*

To provide certainty and facilitate project development, permitting, and financing, taxpayers should be able to apply for a provisional rate during the planning and design phases of a clean hydrogen project. In evaluating a petition, the submission's technical accuracy and adherence to an accepted lifecycle standard (e.g. ISO 14040) should be considered.

Biomass Power Association also encourages the IRS and Department of Treasury to consider providing guidance on the following:

A. ***The Definition of "Any Transportation Fuel"***

Section 45Z(d)(5) defines "transportation fuel" as a "fuel" which meets a three-part test, as follows:

(i) is suitable for use as a fuel in a highway vehicle or aircraft;
(ii) has an emissions rate which is not greater than 50 kilograms of CO2e per mmBTU, and
(iii) is not derived from coprocessing an applicable material (or materials derived from an applicable material) with a feedstock other than biomass.

BPA requests guidance on the types of fuels deemed to be "suitable for use as a fuel in a highway vehicle." For the reasons below, the definition of "transportation fuel" should include *any* type of fuel – liquid, gaseous, or in the form of electricity – that is "suitable for use" as a "fuel."

First, the scope of the credit is broad, and applies to "***any transportation fuel"*** that is both produced and sold in the manner set forth in Section 45Z(a)(1)(A). The statute makes no mention of limiting "fuel in a highway vehicle" to certain types of fuel or physical characteristics.[1] The fuel must be "suitable" for use in transportation, and nothing more. Merriam-Webster Dictionary defines "suitable" as "adopted to a use or purpose." If "***any transportation fuel*"** is "suitable for use" for transportation, it is a "transportation fuel" under 45Z(d)(5). A wide variety of transportation fuels are "suitable for use" in transportation, ranging from natural gas in CNG or LNG truck fleets to electricity in electric vehicles.[2] There is no basis to conclude that non-liquid transportation fuels are excluded from 45Z or that Congress intended such a result.

Second, it is significant that 45Z(a)(3)(B) does, in fact, limit the type of fuels to "liquid fuels." In that section, the special rate for "sustainable aviation" applies when the aviation fuel is a "liquid fuel." There is no such limitation for other aviation fuels and none found in the definition of transportation fuels used for motor vehicles. In fact, as the Internal Revenue Service has concluded in determining the scope of other tax credits for fuel, "Congress knows how to limit a credit to fuels in a motor vehicle" if they had so intended.[iii]

[1] This is in contrast to other tax credits for transportation fuels under existing laws that will be repealed by the IRA effective January 1, 2025. For example, the second-generation biofuel tax credit is limited to "any **liquid fuel**" derived from biomass, see 26 USC Section 40(b)(6). See also 26 USC Section 6426, which is limited to certain specific liquid and non-liquid fuels. 45Z contains no such limitations as to type of fuels of physical characteristics.
[2] In fact, the IRS recognizes CNG and LNG as an "alternative fuel" that qualifies for a refundable tax credit for the sale of such fuel in a motor vehicle. IRS Notice 2013-26

Third, effective January 1, 2025, 45Z is intended to repeal the existing second-generation biofuel credit. That credit, which expires on December 31, 2024, applies only to liquids ("second generation biofuel means ***any liquid fuel***").[iv] Section 45Z clearly and unequivocally repealed the "liquid" requirement of the second-generation biofuels by removing any reference to "liquid" in the definition of "transportation fuel " produced on or after January 1, 2025. The repeal of the "liquid" requirement underscores that the definition of "transportation fuel" be broad and include non-liquid fuels.

Finally, the statutory language of "transportation fuel" is not only broad and unequivocal, but limiting the term to "liquids" would be at odds with the intent of 45Z to be a technology neutral program that subsumes all previous tax credits beginning January 1, 2025. For example, 26 USC Section 6426 provides a credit for the transportation use of natural gas, a non-liquid fuel, in the amount of $0.50 per gallon equivalent. That provision expires on December 31, 2024 and is replaced with 45Z, thus allowing all the fuels described in 26 USC Section 6426 to qualify. There is no basis for Treasury or the IRS to now conclude that fuels previously considered "transportation fuels" under Section 6426 no longer are "transportation fuels" under 45Z simply because they are non-liquid, just like it there is no basis to exclude electricity as a form of fuel when it otherwise meets the emission rates and other requirements of the statute.

Finally, to underscore Congress' intent to include non-liquid fuels, it is noteworthy that 45Z refers to "the applicable amount per gallon (or ***gallon equivalent***) with respect to any transportation fuel…." If 45Z were limited to "liquid" gallons, there would be no purpose in adding the words "or gallon equivalent." Clearly, Congress added the words "equivalence value" so that non-liquid fuels would be included in 45Z.

B. **Guidance on "Equivalence"**

The applicable monetary amount of the credit is based on each gallon produced and sold, or its "gallon equivalent." Since electricity and gaseous fuels are not in a liquid form, they cannot be measured "per gallon." As a result, Treasury and the IRS need to determine the equivalence value of non-liquid fuels, just like the Environmental Protection Agency has made equivalency determinations for non-liquid fuels under the RFS.

Following enactment of EISA, EPA undertook rule-making to determine the gasoline gallon equivalence values of non-liquid fuels. Those values are set forth at 40 CFR 80.1415.[v] Notably, for electricity, the Agency is proposing to change the original equivalency value of 22.6 kWh/GGE to 6.5 kWh/GGE, to more accurately reflect the efficiency of the electric drivetrain over the combustion engine. BPA urges Treasury and the IRS to adopt a similar equivalency value for electricity for 45Z, for all the reasons set forth in (cite new rulemaking).

C. **"Use" Requirement**

To qualify for the credit, a fuel that meets the definition of 45Z(d)(5) must be "produced by the taxpayer at a qualified facility and sold by the taxpayer in a manner described in paragraph (4)

during the taxable year." To meet the sale requirements, the fuel must either be "(A) for use by such person in the production of a fuel mixture, (B) for use by such person in a trade or business, (C) who sells such fuel at retail to another person and places such fuel in the fuel tank of such other person." There is no requirement of actual use for transportation. Provided that the fuel is "suitable" for transportation and is sold in a manner set forth in 45Z(a)(4), a credit is allowed.

Treasury and the IRS need to adopt guidance on the following issues: (1) the definition of transportation fuels; (2) the adoption of equivalency values for non-liquid fuels including electricity; and (3) a clear statement that actual use in transportation is not required, provided the fuel is "suitable" for such use.

Conclusion:

Biomass Power Association appreciates having the opportunity to comment on Notice 2022-58 regarding the Treasury and IRS plan to implement IRA's new §45V clean hydrogen credits and §45Z clean fuel credits. We look forward to working with both Treasury and IRS to implement these important provisions that will allow for the use of biomass to utilize organic wastes and residues and meet the nation's climate goals.

We welcome the opportunity to speak with you about our comments. Please feel free to contact us at 202-494-2493 or carrie@usabiomass.org.

Sincerely,

Carrie Annand

Carrie Annand
Executive Director

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[i] https://www.unep.org/news-and-stories/press-release/global-assessment-urgent-steps-must-be-taken-reduce-methane
United Nations Environmental Program (UNEP) (2021) *Global Methane Assessment: Benefits and Costs of Mitigating Methane Emissions*, https://www.unep.org/resources/report/global-methane-assessment-benefits-and-costs-mitigating-methane-emissions

[ii] Hu *et al.* (2013) Mitigation of short-lived climate pollutants slows sea-level rise, *Nature Climate Change,* 3, 730-734. https://www.nature.com/articles/nclimate1869

[iii] Memorandum of the Chief Counsel, June 28, 2010.

[iv] See Note 1. Also, 45Z(c) applies to "transportation fuel" that is "produced after December 31, 2024.

[v] [75 FR 14863, Mar. 26, 2010, as amended at 75 FR 26037, May 10, 2010; 77 FR 1355, Jan. 9, 2012; 79 FR 42159, July 18, 2014; 85 FR 7075, Feb. 6, 2020; 87 FR 39661, July 1, 2022]