BayoTech™

December 3, 2022

Internal Revenue Service
Room 5203
P.O. Box 7604
Ben Franklin Station
Washington, DC 20044

RE: Notice 2022-58 Comments

To whom it may concern:

BayoTech, Inc. ("BayoTech") appreciates this opportunity to provide comments in response to the Department of Treasury's Request for Information on Notice 2022-58 – Request for Comments on Credits for Clean Hydrogen and Clean Fuel Production.

BayoTech is a full-service hydrogen production, delivery, and storage technology company headquartered in Albuquerque, New Mexico. We are focused on building a new, highly efficient model of local hydrogen production hubs. Producing on a small scale with our unique technology, BayoTech is making reliable, cost-effective, low-carbon hydrogen accessible today. We appreciate the Biden Administration's recognition of the importance of hydrogen to achieving decarbonization goals. BayoTech's technology provides flexible, market-ready solutions to immediately reduce carbon and particulate matter emissions through hydrogen deployment and help grow the clean energy economy.

Please see the below comments and we look forward to working with the Department on implementation of the Inflation Reduction Act's hydrogen incentives.

(1) 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)."3 Which specific steps and emissions should be included within the well-to-gate system boundary for clean hydrogen production from various resources?

The Greenhouse gases, Regulated Emissions, and Energy use in Technologies (GREET) Model developed by Argonne National Lab is the gold standard for measuring carbon intensity and Congress mandated its use to ensure an accurate and effective accounting of GHG emissions reductions. The Argonne GREET model provides a high level of specificity in terms of measures projects can take to reduce their lifecycle carbon intensity. We urge Treasury to incorporate

this granularity into 45V guidance to create as much incentive as possible for projects to take measures to reduce emissions.

For example, the use of renewable natural gas (RNG) as a feedstock in hydrogen production has the potential to drive CI scores below zero. Treasury should incorporate the specificity with which the Argonne GREET recognizes different forms and sources of RNG and their attendant CI scores. If these RNG sources are fully recognized, taxpayers will have the incentive to pursue the lowest carbon feedstock possible.

(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?

We recommend that in order to foster an innovative and competitive commercialization pathway for hydrogen producers, an individual hydrogen producing facility should be able to flexibly provide hydrogen to downstream customers with a variety of carbon intensities, depending on feasibility and economic value (*i.e.*, demand and cost). Eligibility for the PTC should be clear for any portion of produced hydrogen that meets the eligibility threshold. The PTC incentive provides a strong signal to support the economic value of low CI hydrogen, but facility operators should be afforded the ability to adjust their approach as needed.

The ability to adjust carbon intensity across defined time durations, or "batch production," is dependent on a robust, well designed accounting methodology and tracking infrastructure. The ability to "Book and Claim" – or to register, track, and account for the chain of custody on renewable energy credits, and/or environmental assets related to renewable electricity, biogas, or other energy sources / feedstocks should be well defined as a critical element for implementation. Third party verification of the pathway, both during establishment, and on an annual / semi-annual basis would ensure consistency and accuracy**.**

(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?

The use of Book and Claim accounting for energy sources and feedstocks requires a transparent and well defined reporting and recordkeeping methodology by all involved parties. Existing programs such as the California Low Carbon Fuel Standard provide well established protocols for registration, verification, and accountability for carbon emission reduction pathways. The use of accredited third party verification ensures a clear system of accountability, liability, and reputational credibility, and avoids conflicts of interest that would be present in self-verification schemes.

(i) How might clean hydrogen production facilities verify the production of qualified clean hydrogen using other specific energy sources?

Similar to the California LCFS approach, predefined "Tier 1" pathways for well known production technologies can provide a standardized lookup table with carbon intensity values for common technologies and energy sources. This should include technologies such as electrolysis, steam methane reformation, etc, using various combinations of energy sources, including grid tied electricity (per EGRID criteria), renewable electricity, fossil natural gas, renewable natural gas from various sources, etc. Tier 1 pathways must allow for variable carbon intensity on the feedstock RNG. Tier 2 pathways should be available on an as-needed basis to establish customized project level carbon intensities for novel technologies, energy sources, or blends thereof.

(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?

We recommend that the granularity of time matching of energy inputs should be tied to the same time duration of the hydrogen production, in other words, the two should correlate, or be prorated based on the actual time duration of the energy supply contract. If a specific time duration is required, we suggest it should be at the scale of a single day (calendar date) to avoid unnecessary complexity and confusion. In order to gain full credit potential, the specific production days, and total number of days should match the total number of days of supplied energy. If applied consistently, overcounting at the front end of a time duration would average out where it was undercounted at the end of that duration.

(2) Alignment with the Clean Hydrogen Production Standard. For purposes of the § 45V credit, what should be the definition or specific boundaries of the well-to-gate analysis?

The harmonization of well-to-gate carbon intensity analysis between the DOE Hydrogen Hub program and the IRA PTC requires the use of a clear and consistent methodology. As noted above, a Tier 1, Tier 2 system can help provide baseline standard assumptions that will facilitate DOE program development.

(3) Provisional Emissions Rate.

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

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

Similar to the California LCFS program, a provisional emissions rate and eligibility should be possible after commissioning a production pathway, within the first 3 months, based on preliminary system modeling performed by a third party verifier as part of the pathway application, and subject to verification at the end of the annual performance period.

(4) Recordkeeping and Reporting.

(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?

Book and claim mechanisms (RECs, PPAs, etc) have proven successful in encouraging the significant expansion of investment and construction of a wide array of renewable energy and carbon reduction measures in the electricity sector. Similarly, the California LCFS program allows the use of book and claim feedstocks in the production of renewable transportation fuels, including hydrogen, and accordingly has continued to exceed its carbon reduction goals over the course of the program. We strongly recommend a similar approach should be applied to allow the PTC to support low carbon and zero carbon hydrogen produced with book and claim RNG.

Again, we appreciate the opportunity to provide comments and feedback regarding these provisions of the IRA and look forward to receiving the IRS's responses.