National Farmers Union
UNITED TO GROW FAMILY AGRICULTURE

December 2, 2022

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

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

National Farmers Union (NFU) is a grassroots general farm organization representing family farm, ranch, and rural members nationwide. Since 1902, NFU has worked to ensure that farm families and their communities are respected, valued, and enjoy economic prosperity and social justice. Vibrant rural communities, in turn, are vital to the health, security and economic well-being of our entire national economy. Notice 2022-58 requests comments related to the clean hydrogen production credit under § 45V of the Internal Revenue Code and the clean fuel production credit under § 45Z of the Internal Revenue Code, both as amended or added by the Inflation Reduction Act of 2022 (IRA). The IRA presents a significant opportunity to reduce greenhouse gas (GHG) emissions and move this country toward decarbonization through, among other things, increased use of biofuels. NFU has been a strong supporter of biofuels because they create a price-stabilizing mechanism, encourage much-needed reinvestment in our rural communities, and contribute significantly to net farm income. We appreciate the opportunity to provide these comments in response to Notice 2022-58.

NFU's response to Notice 2022-58 focuses on the clean fuel production credit under § 45Z. The § 45Z credit applies to transportation fuel that is produced at a qualified facility and sold in a manner described in § 45Z(a)(4) after December 31, 2024 and before January 1, 2028. The amount of the credit is based on the emissions factor for such fuel (as determined under § 45Z(b)) and is increased for sustainable aviation fuels.[1] The emissions factor is determined by the emissions rate set by the Secretary for similar types and categories of transportation fuels based on the fuel's lifecycle GHG emissions. While

[1] Sustainable aviation fuels may be eligible for a production tax credit from January 1, 2023 through December 31, 2024 under § 40B of the Internal Revenue Code. Under the IRA, this credit would apply to fuels that have a "lifecycle greenhouse gas emissions reduction percentage of at least 50 percent" as compared to petroleum-based jet fuel. 26 U.S.C. § 40B(d)(1)(D). The value of this credit can be increased by $.01/gallon for each additional percentage of GHG reduction beyond 50 percent. *Id.* § 40B(b).

lifecycle analyses continue to evolve, the methodology used for calculating the lifecycle GHG emissions of the fuel must be transparent and have flexibility to account for different processes at any individual facility to support continued improvements in GHG emissions reductions and to support and promote sustainable agricultural practices. Along those lines, NFU supports allowing the use of Argonne National Laboratory's Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation (GREET) model for making lifecycle GHG calculations for all transportation fuels, including sustainable aviation fuel.

BIOFUELS ARE A KEY COMPONENT OF THIS NATION'S POLICY TO ADDRESS THE CHALLENGES ASSOCIATED WITH CLIMATE CHANGE, AND FARMERS STAND READY TO HELP TACKLE THOSE CHALLENGES.

Climate change impacts, brought on by GHG emissions to the earth's atmosphere resulting from human activity, are detrimental to both human health and the economy. As a family farm organization, NFU is particularly concerned with the challenges climate change poses to family farmers' ability to pursue improvements in global food security. "Rural communities, where economies are more tightly interconnected with agriculture than with other sectors, are particularly vulnerable to the agricultural volatility related to climate."[2] These challenges will make it more difficult for American farmers to produce the food, fiber, and fuel upon which the United States and world rely.

As formidable as these challenges may be, farmers, ranchers and rural communities can contribute to climate resilience and help circumvent serious harm to the economy and human health. "[R]ural residents and the lands they manage have the potential to make important economic and conservation contributions to climate change mitigation and adaptation," but their capacity to adapt is impacted by a host of demographic and economic concerns.[3] Promoting biofuel production and use will support these efforts.

Farmers have been the backbone of the growing biofuels industry in the United States, supporting the corn ethanol industry and diversifying feedstocks for "advanced biofuels" under the Renewable Fuel Standard (RFS) program.[4] Facing significant hurdles with expanding urban areas and loss of agricultural lands, farmers nonetheless have increased yields, protected the environment, and helped move this country toward energy independence. And, unlike fossil fuel production, farmers have done this in a sustainable way. Recognizing these investments and actions will promote further innovation and find new ways to bring added value to their farmland and production.

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[2] U.S. Global Change Research Program, *Fourth National Climate Assessment, Volume II Impacts, Risks, and Adaptation in the United States*, Chapter 10: Agriculture and Rural Communities (2018), https://nca2018.globalchange.gov/chapter/10/.

[3] *Id.*

[4] Advanced biofuels under the RFS program must be found to have at least a 50% reduction in lifecycle GHG emissions compared to the 2005 baseline petroleum fuel. 42 U.S.C. § 7545(o)(1)(B). Much of EPA's analysis is based on modeling conducted in 2010. Modeling of lifecycle analysis has evolved since then.

Land use in the United States has long served as a sink for GHG emissions, which can be lost as farmland becomes developed. Improving economics allows farmers to retain their lands. It also gives them the ability to take additional actions to improve their land management. Land ownership in the United States is highly dispersed. Reaching landowners to encourage climate-smart land management practices, in the numbers needed to meet important emissions reduction goals, will be a challenge. Offering farmers a way to achieve value for participating in climate change supports these goals. Strong biofuels policies support improved feedstock production practices and advancements in biofuel technology, providing greater GHG reductions that will help mitigate the climate change-driven hazards to agricultural production. Farmers stand ready to significantly contribute to these efforts.

CLEAN FUEL PRODUCTION CREDIT (§ 45Z)

For any transportation fuel which is not a sustainable aviation fuel, the IRA requires that the lifecycle GHG emissions be based on the most recent determinations under GREET or a successor model (as determined by the Secretary). For sustainable aviation fuels, however, the lifecycle GHG emissions is to be determined in accordance with—(i) the most recent Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) adopted by the International Civil Aviation Organization (ICAO) or (II) any similar methodology which satisfies the criteria under section 211(o)(1)(H) of the Clean Air Act (42 U.S.C. § 7545(o)(1)(H)). GREET is recognized and used by CORSIA as an available lifecycle analysis tool.[5] It has also been the basis for various lifecycle assessment by several regulatory agencies, including by the U.S. Environmental Protection Agency (EPA) in implementing the RFS program.[6] The lifecycle GHG emissions definition referenced in the IRA (42 U.S.C. § 7545(o)(1)(H)) is from the RFS program. Because of the data driven and scientific process used, we believe GREET does a good job at assessing direct emissions and "significant" indirect emissions that should be considered in a lifecycle assessment. NFU believes GREET currently is the most reliable model used in the United States for purposes of regulatory action, including for sustainable aviation fuels.

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[5] *See* ICAO, *CORSIA Methodology for Calculating Actual Life Cycle Emissions Values* (June 2022), *available at* https://www.icao.int/environmental-protection/CORSIA/Documents/CORSIA_Eligible_Fuels/ICAO%20document%2007%20-%20Methodology%20for%20Actual%20Life%20Cycle%20Emissions%20-%20June%202022.pdf; *see also* ICAO, *CORSIA Supporting Document: CORSIA Eligible Fuels – Life Cycle Assessment Methodology* (June 2022), *available at* https://www.icao.int/environmental-protection/CORSIA/Documents/CORSIA_Eligible_Fuels/CORSIA_Supporting_Document_CORSIA%20Eligible%20Fuels_LCA_Methodology_V5.pdf.

[6] In 2010, EPA utilized additional models to assess indirect emissions largely related to land use. EPA has recognized that several, more recent studies show dramatically higher GHG emissions reductions compared to EPA's 2010 analysis. *See* Presentation of Karl Simon, EPA, Slide 3, EPA-HQ-OAR-2021-0921-0004, *available at* https://www.regulations.gov/document/EPA-HQ-OAR-2021-0921-0004. Since 2010, GREET has incorporated a land use component into its modeling. GREET is continually revised based on updated data and scientific review.

NFU encourages the IRS to work with the U.S. Department of Energy on use of the GREET model for IRA implementation. Further, to ensure consistency and uniformity across various IRA energy tax provisions, NFU also urges the IRS to use the Argonne GREET model for lifecycle analysis related to the § 40B sustainable aviation fuel tax credit. The legislation requires that the lifecycle method used be "similar" to the CORSIA methodology and must also comport with the methods spelled out in section 211(o) of the Clean Air Act—GREET meets both of those requirements.

GREET calculates a fuel's well-to-wheel GHG emissions through an attributional lifecycle analysis that includes emissions from feedstock production, biofuels production, and use. The current version of GREET also includes a consequential lifecycle analysis for indirect or induced emissions (i.e., land use change), utilizing the Carbon Calculator for Land Use Change from Biofuels Production (CCLUB). As noted above, the CORSIA Eligible Fuels – Life Cycle Assessment Methodology utilizes GREET, including adopting several GREET values. This also includes the elements outlined in the definition of lifecycle GHG emissions under the RFS program at 45 U.S.C. § 7545(o)(1)(H), which is incorporated by reference in the IRA. GREET is required to be used for non-aviation transportation fuels, such as hydrogen.[7] States also use a modified version of the GREET model in determining carbon intensity scores of fuels under their Low Carbon Fuel Standard programs. These approaches should be consistent for fuel producers in the United States.

A large source of uncertainty in the lifecycle analysis of crop-based biofuels is the land use component of the assessment. This also represents the largest difference between lifecycle analysis using GREET and the CORSIA default values. However, U.S. farmers have responded to demand by moving toward sustainable practices and intensification, not land expansion, and even the land use aspect of EPA's analysis has not been experienced in the real world.[8] While models can be used for comparison purposes, they are also difficult to use to identify specific emissions values. At a recent workshop held by EPA on conducting lifecycle analysis for biofuels, it was shown how incorrect assumptions and misapplication of data can result in a significant overestimation of GHG emissions associated with land use changes, soil organic carbon losses, and nitrous oxide. Several recent papers purporting to assess the lifecycle GHG emissions of corn ethanol, for example, have been based on flawed assumptions or assumptions biased against crop-based biofuels.[9]

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[7] *See, e.g.,* 26 U.S.C. § 45V(c)(1)(B).
[8] *See, e.g.,* Presentation of William Hohenstein, U.S. Department of Agriculture (USDA), Slide 2 and 16, EPA-HQ-OAR-2021-0921-0015, *available at* https://www.regulations.gov/document/EPA-HQ-OAR-2021-0921-0015.
[9] *See, e.g.,* Farzad Taheripour, et al., *Comments on "Environmental Outcomes of the US Renewable Fuel Standard"*, at 2 (2022), *available at* https://greet.es.anl.gov/publication-comment_environ_outcomes_us_rfs; *see also* Farzad Taheripour, et al., *Response to Comments from Lark et al. regarding Taheripour et al. March 2022 Comments on Lark et al. Original PNAS Paper*, at 3 (2022), *available at* https://greet.es.anl.gov/publication-comment_environ_outcomes_us_rfs ("In conclusion, we find that the Lark et al. (a) paper is more problematic than what we initially evaluated to be the case.").

In particular, we believe the land use inputs outlined in the current default values used by CORSIA are substantially overestimated. The IRS, therefore, should not simply rely on the default values determined by CORSIA, given the evolving nature of lifecycle analysis and the concerns raised by the U.S. biofuels industry with determining land use emissions, particularly in tying those emissions to biofuels production. Rather, GREET can be used to determine provisional rates based on default values and other standard information. If appropriate, the facilities could utilize these rates moving forward as well.

While default values and standard information could be utilized, the IRS should also provide guidance that allows flexibility for individual producers to submit lifecycle GHG emissions for their individual facilities for all transportation fuels.[10] GREET is transparent and available to the public. Many fuel producers will already have experience with such a process through EPA's efficient producer petition process under the RFS program and through the California Air Resources Board's process for renewable fuel producers to obtain carbon intensity scores for their fuel under California's Low Carbon Fuel Standard program. Both were developed with the intention to facilitate and streamline the petition process. The IRS can look to these programs to develop a similar process for seeking individual emissions rates.

This would also allow transportation fuel producers to lower the emissions rates for their fuels based on the GHG-reduction strategies that they deploy. Examples of those strategies include, but are not limited to, renewable electricity use, combustion of biomass for fuel, wet versus dry distillers grain production, and carbon capture and sequestration. Ethanol producers, for example, have been investing in technology and process improvements to reduce GHG emissions.[11] The biofuels industry continues to innovate to help move this country toward decarbonization, such as developing processes to convert ethanol into sustainable jet fuel. The IRS should offer flexibility so producers can benefit from these investments and incentivize further GHG emissions reductions, which is at the core of the IRA tax credits.

Other important considerations in any lifecycle GHG analysis for crop-based fuels are the actions being taken by farmers themselves toward more sustainable practices and toward mitigating against climate change impacts. As explained by USDA at EPA's workshop on lifecycle modeling, farmers have taken action to address GHG emissions,

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[10] This is consistent with CORSIA. *See, e.g.,* ICAO, *CORSIA Methodology for Calculating Actual Life Cycle Emissions Values* (June 2022), *available at* https://www.icao.int/environmental-protection/CORSIA/Documents/CORSIA_Eligible_Fuels/ICAO%20document%2007%20-%20Methodology%20for%20Actual%20Life%20Cycle%20Emissions%20-%20June%202022.pdf. The methodology for calculating actual life cycle emissions values under CORSIA, like GREET, determines emissions on a facility-specific basis.

[11] The ethanol industry has pledged to reach net zero emissions by 2050. *See* Renewable Fuels Association July 27, 2021 Press Release, *RFA Pledge to President: Ethanol to Achieve Net Zero Emissions by 2050 or Sooner*, https://ethanolrfa.org/media-and-news/category/news-releases/article/2021/07/rfa-pledge-to-president-ethanol-to-achieve-net-zero-emissions-by-2050-or-sooner.

including, but not limited to, increasing no till and reduced till practices, increasing the use of cover crops that can provide GHG benefits, and reducing nitrogen use per bushel of corn.[12] For example, use of cover crops can improve soil carbon, erosion resiliency, and soil productivity, increasing yields, reducing inputs needed, and supporting increased production without land use change impacts. These considerations should improve the GHG profile of crop-based biofuels, which can lead to improved policies to support continued actions by farmers and biofuel production and use. This will help mitigate GHG emissions and the impacts of climate change.

The IRS should also look to the RFS and Low Carbon Fuel Standard programs when considering what, if any, requirements are needed to show compliance. Federal and state government agencies may require reporting of GHG emissions, which may include verification measures. IRS should allow facilities to rely on these reporting requirements to report their direct emissions. For example, a RIN and credit generation under the RFS or Low Carbon Fuel Standard programs have substantial documentation and attest engagement requirements that facilities should be able to utilize to support any supply chain traceability requirements.

As biofuels producers continue to innovate and seek to reduce GHG emissions, their operations may implicate additional tax credits, such as those provided under § 45V, § 48, and § 45Q. The IRS should provide guidance as to how the § 45Z tax credit interacts with these other tax credits. Such guidance should provide sufficient flexibility to allow producers to utilize the appropriate tax credits to incentivize GHG emissions reductions.

CONCLUSION

NFU supports the IRA's efforts to address climate change and incentivize actions that seek to move the transportation fuel sector toward decarbonization. Incentivizing biofuel production helps strengthen the climate resilience of agriculture and the food system. We stand ready to offer any support and assistance the IRS may find helpful regarding these matters.

Thank you for your consideration of these comments.

Sincerely,

Rob Larew
President

[12] *See, e.g.,* Presentation of William Hohenstein, USDA, Slide 8-10, EPA-HQ-OAR-2021-0921-0015, *available at* https://www.regulations.gov/document/EPA-HQ-OAR-2021-0921-0015.