RENEWABLE FUELS ASSOCIATION

Attention: Docket EERE_FRDOC_0001

Department of Energy
Energy Efficiency and Renewable Energy Office
Attention: John Cabaniss
1000 Independence Ave. SW
Washington, DC 20585

Submitted Electronically via regulations.gov

Re: Notice of Intent To Publish the 45Z Emissions Value Request Process; Request for Public Comments

The Renewable Fuels Association (RFA) appreciates the opportunity to provide comments to the Department of Energy (DOE) regarding its notice of intent to publish an Emissions Value Request process in support of the Treasury Department and Internal Revenue Service's administration of the Section 45Z Clean Fuel Production Credit.

RFA is the leading trade association for America's ethanol industry. Its mission is to advance the development, production, and use of fuel ethanol and co-products by strengthening America's renewable fuels industry and raising awareness about the benefits of renewable energy. Founded in 1981, RFA serves as the premier meeting ground for industry leaders and supporters. RFA's 300-plus members are working to help America become cleaner, safer, more energy secure, and economically vibrant.

If properly designed, the DOE's Emissions Value Request process can complement the technology-neutral intent of Section 45Z by encouraging innovation, accelerating adoption of new technologies, and ensuring accurate recognition of the emissions benefits achieved by today's ethanol producers. To accomplish this, DOE must craft a framework that reflects the realities of existing facilities, leverages decades of lifecycle analysis experience, and ensures advanced pathways like corn kernel fiber and sorghum kernel fiber ethanol are properly recognized.

1. **FEED Studies Are Not Appropriate for Existing Facilities.**

DOE's contemplated requirement of a front-end engineering and design (FEED) study—particularly an AACE Class 3 estimate—as a prerequisite to requesting an emissions value may be suitable for new projects. However, this requirement is unnecessary and impractical for existing ethanol facilities that already operate commercially. As of September 2025, the U.S. ethanol industry has existing production capacity of 18.28 billion gallons per year, whereas only 154 million gallons is under construction.[1]

Many plants in operation for over a decade maintain detailed engineering and operational documentation, validated mass and energy balances, process flow diagrams, and extensive environmental permitting records. These facilities also collect metered and monitored operational data that can directly inform lifecycle greenhouse gas (GHG) assessments.

Mandating a FEED study for such facilities would impose costs in the millions of dollars without enhancing DOE's ability to perform a robust lifecycle analysis. DOE should instead allow existing producers to submit equivalent documentation—such as validated operational data, process flow diagrams, or environmental permit applications—as is already accepted under EPA's Renewable Fuel Standard (RFS) pathway petition process for existing plants,[2] as well as under IRS's section 45Q tax credit framework for carbon capture projects.[3] RFA would be pleased to engage with DOE on developing a process that would leverage this existing data and documentation, in lieu of a FEED study for existing facilities.

2. **Existing Lifecycle Analysis (LCA) Methodologies Should Be Leveraged.**

DOE should build upon, not duplicate, the extensive lifecycle modeling infrastructure already in place. The Argonne National Laboratory GREET model is transparent, peer-reviewed, and updated annually. It has been extensively adopted by DOE, EPA, and the California Air Resources Board (CARB) to evaluate the emissions of ethanol and other transportation fuels. GREET already incorporates multiple ethanol pathways, accounts for coproduct credits, agricultural inputs, and process energy use, and is designed to reflect real-world facility data. Moreover, a version of the model, 45ZCF-

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[1] Renewable Fuels Association, "U.S. Ethanol and Alcohol-to-Jet Biorefineries," (Accessed Sep. 17, 2025), https://ethanolrfa.org/resources/us-ethanol-and-alcohol-to-jet-biorefineries

[2] *See*, e.g., U.S. Environmental Protection Agency, "Regulation of Fuels and Fuel Additives: 2010 Renewable Fuel Standards," 75 Fed. Reg. 14670 (Mar. 26, 2010).

[3] Internal Revenue Service, "Credit for Carbon Oxide Sequestration under Section 45Q," 85 Fed. Reg. 34050 (June 2, 2020).

GREET, is already used for fuels that have an existing pathway in the Section 45Z Emissions Rate Table published by the Treasury Department and Internal Revenue Service in January.[4]

Attempting to create a parallel DOE-specific methodology would risk regulatory inconsistency and confusion for producers. Instead, DOE should ensure its emissions value process is harmonized with GREET, consistent with the use of GREET under the RFS,[5] the California LCFS,[6] and DOE's section 45V hydrogen tax credit guidance.[7] Such harmonization would provide stability for producers and investors while reinforcing confidence in the credibility of emissions values assigned to ethanol pathways.

3. **Recognition of In Situ Production of Corn Kernel and Sorghum Kernel Fiber Ethanol.**

No pathways for ethanol from corn kernel fiber and sorghum kernel fiber were included in the Section 45Z Emissions Rate Table published in January, nor are they included in the menu of pathways in the 45ZCF-GREET model. In the future, both should be added to the table and should be reflected clearly in 45ZCF-GREET, separate from grain starch-based ethanol. However, until that is done, DOE should ensure that ethanol derived from in situ conversion of corn kernel fiber and sorghum kernel fiber to be specifically recognized through the Provisional Emissions Rate (PER) petition process and segregated for purposes of generating Section 45Z credits.

Kernel fiber ethanol is biochemically indistinct from starch ethanol and is already recognized by EPA as cellulosic biofuel under the RFS, making it eligible for D3 Renewable Identification Numbers (RINs).[8] This pathway delivers significantly lower carbon intensity compared to starch ethanol due to more efficient feedstock utilization and improved energy allocation.

Without clear lifecycle accounting mechanisms that allow for separating fiber-based gallons from starch-based gallons, producers risk losing credit for these advanced gallons under 45Z. DOE's current approach lumps fiber-based gallons together with starch-based

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[4] Internal Revenue Service, "Section 45Z Clean Fuel Production Credit; Emissions Rates; Request for Comments," (Jan. 10, 2025). https://www.irs.gov/pub/irs-drop/n-25-11.pdf.
[5] U.S. Environmental Protection Agency, "Renewable Fuel Standard Program: RFS2 Regulatory Impact Analysis," EPA-420-R-10-006 (Feb. 2010).
[6] California Air Resources Board, "Low Carbon Fuel Standard Life Cycle Analysis," https://ww2.arb.ca.gov/resources/documents/lcfs-life-cycle-analysis-models-and-documentation.
[7] U.S. Department of Energy, "Section 45V Clean Hydrogen Production Tax Credit Guidance," 88 Fed. Reg. 83364 (Dec. 28, 2023).
[8] U.S. Environmental Protection Agency, "Regulation of Fuels and Fuel Additives: RFS Pathways II and Technical Amendments to the RFS Standards and E15 Misfueling Mitigation Requirements," 79 Fed. Reg. 42128 (July 18, 2014).

gallons to create a volume weighted-average carbon intensity value. This approach results in fiber-based gallons being treated essentially the same as starch-based gallons from the standpoint of tax credit value generation. Because fiber-based gallons typically represent just 1-2 percent of an ethanol facility's production volume, lumping those gallons together with starch-based gallons waters down the distinct carbon intensity benefit of fiber-based gallons and erodes tax credit value generation opportunities. DOE should adopt the same approach already used in EPA's Moderated Transaction System (EMTS), which ensures accurate recordkeeping and gallon-by-gallon differentiation of kernel fiber ethanol from conventional starch ethanol.[9] Aligning DOE's lifecycle modeling methods and PER process with these existing precedents will ensure accurate emissions accounting, prevent double counting, and promote continued investment in fiber conversion technologies that deliver meaningful GHG reductions.

4. PER Processes Must Account for Feedstock Attributes.

DOE's contemplated PER petition process should explicitly allow producers to reflect the emissions benefits associated with feedstock-specific attributes. Under current GREET modeling, many important agricultural and supply-chain factors are treated as "background data" and cannot be tailored to reflect actual practices. Yet, these factors—such as field-level yield, fertilizer application rates, use of enhanced-efficiency fertilizers, conservation tillage, and cover crops—can materially lower lifecycle emissions.

Allowing PER petitions to incorporate verifiable feedstock attributes would align DOE's process with the statutory intent of Section 45Z and reward producers who invest in cleaner supply chains. It would also harmonize with the direction Treasury has already taken under the 45ZCF-GREET framework, where integration of USDA's FD-CIC module and CSA technical guidelines is under consideration.[10] In addition, DOE should provide flexibility for producers to account for co-product yields, and other facility-specific factors that are not adequately captured by static assumptions.

Just as RFA has emphasized in prior comments to Treasury, a PER process that ignores feedstock attributes would unfairly disadvantage producers who source from growers adopting sustainable practices and would provide the potential to incentivize growers for such practices.[11] DOE should therefore ensure that PER petitions are structured to capture these benefits in a transparent, verifiable, and administratively workable manner.

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[9] 40 CFR § 80.1452 (EPA Moderated Transaction System reporting requirements).

[10] U.S. Department of Agriculture, "Federal GHG Accounting for Climate-Smart Agriculture Feedstocks (FD-CIC)," technical guidelines, 2023.

[11] Renewable Fuels Association, "Comments on IRS Notice 2025-10," April 10, 2025, at 8–9

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RFA appreciates DOE's efforts to engage stakeholders in shaping the Emissions Value Request process and strongly supports the Department's role in ensuring the Section 45Z credit rewards accurate, science-based emissions reductions. To maximize the effectiveness of the program, DOE should adopt an approach that: (1) avoids unnecessary FEED study requirements for existing facilities; (2) relies on established lifecycle methodologies like GREET; (3) properly credits kernel fiber ethanol and other advanced pathways through proven gallon-differentiation mechanisms; and (4) ensures PER petitions can fully account for feedstock-specific attributes and management practices.

We look forward to continued dialogue with DOE, Treasury, and IRS as this process advances, and we stand ready to provide additional technical input, facility data, or analysis to help refine and implement a practical, credible, and innovation-driving framework for Section 45Z.

Sincerely,

Geoff Cooper
President and CEO