National Alliance of Forest Owners

April 6, 2026

Submitted Electronically via Regulations.gov
Docket No. REG-121244-23

Department of the Treasury
Internal Revenue Service
CC:PA:01:PR (REG-121244-23)
P.O. Box 7604
Ben Franklin Station
Washington, DC 20044

Re: Section 45Z Clean Fuel Production Credit – Proposed Rule (REG-121244-23)

Dear Sir or Madam:

The National Alliance of Forest Owners (NAFO), together with the undersigned state and national forestry and forest products organizations, appreciates the opportunity to submit these comments in response to the Department of the Treasury and the Internal Revenue Service's ("Treasury") proposed regulations implementing the Clean Fuel Production Credit under Section 45Z of the Internal Revenue Code.[1]

We represent America's working forests and the broader forest products supply chain—industries that support good-paying rural jobs, steward our natural resources through sustainable forest management, and play an important role in advancing our country's energy and economic goals. We believe Section 45Z should be implemented in a manner grounded in common sense, sound science, and a practical understanding of how working forests operate on the ground.

This rulemaking presents an important opportunity to cut red tape, unlock innovation, and deliver real benefits to American communities. Properly implemented, §45Z can help create new markets for low-value woody material, support domestic energy production, strengthen rural economies, and encourage active forest management. The proposed rule makes clear that §45Z turns on credit eligibility, emissions rates, and certification requirements; those implementation choices will determine whether woody biomass is meaningfully included or functionally left out.

Treasury should therefore ensure that its final regulations reflect the on-the-ground realities of working forests and provide a practical path for fuels derived from woody biomass to be fairly evaluated under the credit. Doing so will help remove unnecessary barriers to participation, recognize the full value of forest biomass, and open the door to long-term investment and growth.

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[1] *Section 45Z Clean Fuel Production Credit*, 91 Fed. Reg. 5160 (Feb. 4, 2026).

INTRODUCTION

NAFO is a national advocacy organization advancing federal policies that ensure private working forests harness the power of markets to build rural prosperity and support good-paying jobs while also providing clean air, clean water, wildlife habitat, and other public benefits through sustainable practices. NAFO members own and manage over 43 million acres of private working forests. NAFO member forests are owned by individuals, Tribes, businesses, and an increasing number of Americans who invest in working forests for retirement. NAFO's membership also includes state associations representing tens of millions of additional acres of private working forests. Private working forests provide a steady supply of wood and fiber to U.S. and global markets while supporting 3.9 million American jobs, mostly in and around rural communities.

Approximately 765 million acres of the United States, or a little more than one-third of the country, is forested. This percentage has remained stable since the early 1900s. Privately owned working forests managed to produce wood and fiber comprise 359 million acres, or approximately 47 percent of our nation's forests.[2] These forests provide 90 percent of the timber harvest that produces the wood and fiber needed for domestic forest products manufacturing. By comparison, public forestlands provide 10 percent of our nation's timber harvest, with most of this federal timber originating from National Forest System lands managed by the U.S. Forest Service (Forest Service) and O&C lands managed by the Bureau of Land Management.

Private working forests in the United States are among the most productive and sustainably managed forests in the world.[3] The United States can and should continue to be the leading forestry and forest products producing nation in the world. The current supply and annual consumption of U.S. timber demonstrate an abundant supply of domestically grown wood for both domestic use and international trade. These forests also provide benefits that extend well beyond timber supply, including clean water, wildlife habitat, carbon storage, recreation, and other important conservation outcomes achieved through active stewardship and responsible management.

This commitment to good stewardship extends well beyond sustainable harvesting. America's private forest owners are also leading the way in conservation—moving the paradigm away from top-down, reactive federal mandates toward bottom-up proactive solutions. Through voluntary partnerships like the Wildlife Conservation Initiative ("WCI"), forest owners are proving that private enterprise and local decision-making can

[2] Forest Carbon Data Visualization. "Forest Categories." https://forestcarbondataviz.org/forest-categories/.
[3] The most current, available data show that the total forest inventory on U.S. private working forests is 561 billion cubic feet (BCF) of wood, including 251 BCF of softwood and 310 BCF of hardwood. According to Forest Service data, Americans use 10 to 15 BCF of wood per year. Annual growth on private working forests is almost 19 BCF (11.8 BCF of softwood and 6.7 BCF of hardwood), far exceeding annual use. Today, private working forest owners in the U.S. grow 53% more wood than they harvest each year.

deliver real results for wildlife and habitat conservation.[4] Strong markets and responsible management go hand in hand. Maintaining healthy, functioning markets for forest products helps ensure that America's working forests remain working and intact, continuing to provide clean air and water, wildlife habitat, and good-paying jobs in rural communities.

At the same time, those market conditions are changing. America's forest owners and mills are steadily losing a once-reliable outlet for lower-value wood and residuals as paper and pulp markets contract, production capacity moves overseas, and legacy demand weakens. That matters because these lower-value materials have historically helped keep working forests working. If we want affordable American lumber, strong rural communities, and the many environmental benefits that come from private working forests remaining forests, we need new markets for the materials that are too often left behind.

That is where Section 45Z can play an important role. Treasury's implementation of §45Z presents a significant opportunity to align federal tax policy with longstanding national objectives: strengthening domestic energy production, supporting rural economies, encouraging active forest management, and promoting the productive use of abundant American resources. Properly implemented, §45Z can help unlock a new generation of investment in low-carbon fuels derived from forest biomass, particularly sustainable aviation fuel ("SAF") and other transportation fuels.

NAFO also recently joined the SAF Coalition, a nonprofit, nonpartisan coalition representing more than 50 participants across the SAF value chain, including airlines, low-carbon fuel companies, manufacturers, technology developers, and airports. The case for workable §45Z rules is not limited to the forestry sector. It is shared across the broader SAF economy by feedstock providers, fuel producers, infrastructure participants, and end users who all recognize the need for durable federal policy that supports domestic production and deployment of SAF.

To realize that opportunity, Treasury should ensure that its final regulations fully and fairly accommodate fuels derived from woody biomass. As currently structured, the proposal risks unintentionally excluding these fuels not because the statute forecloses them, but because the methodology and implementation framework may not allow them to be properly evaluated. That would be a missed opportunity for American energy production, rural investment, and sound forest management.

[4] The WCI is a formalized collaborative partnership between the U.S. Fish and Wildlife Service, the National Council for Air and Stream Improvement, Inc. (NCASI), and NAFO to conserve common, at-risk, and listed species on private working forests. The WCI makes 43 million forestland acres available for research and conservation related activities. Through the WCI, private forest owners provide access, data, and information to support research efforts, inform management and decision-making, and improve outcomes for species at scale. Through this partnership and related efforts at the federal, state, and local level, NAFO members alone report over 10 million acres committed to formal conservation projects.

COMMENTS

Private working forests do not exist in a vacuum. They are sustained by markets, managed over long time horizons, and woven into the economic life of rural America. Treasury's final §45Z regulations should reflect those realities.

In particular, Treasury should ensure that woody biomass is treated as a viable domestic feedstock for low-carbon fuels; that lifecycle modeling accurately reflects the realities of working forests; that forest residues and related materials are appropriately recognized as beneficial feedstocks; that practical and administrable pathways exist for determining emissions rates; and that §45Z is implemented in a manner consistent with broader federal policy supporting bioenergy, active forest management, and rural prosperity.

I. *Woody Biomass is a Scalable, Domestic Feedstock for Low-Carbon Fuels*

America's private working forests represent one of the most abundant and underutilized sources of renewable energy feedstock in the world. These forests are already managed to produce a continuous supply of wood and fiber, and they generate significant volumes of lower-value material, including pulpwood, early thinnings, small-diameter trees, sawmill residuals, and other materials such as tops, limbs, and cull material, that are well-suited for conversion into transportation fuels. Such materials arise across a range of harvest types, including both thinning operations and final harvests.

The need for new markets for these materials is becoming more urgent. For many forest owners and mills, lower-value wood and residuals have long provided an important supplemental revenue stream that helps keep operations viable. But that revenue stream is under pressure. As paper demand declines, mills close or scale back, recycling becomes more efficient, and portions of the global marketplace move elsewhere, demand for pulpwood and related materials has weakened. The result is that a meaningful part of the forest value chain is eroding, even while the need for active management remains.

Forest landowners and mills are doing what they can to adapt. Pellet production offers a partial solution, supplying fuel for electricity, heating, and cooking markets. Oriented strand board, used in housing construction, provides another outlet. But these markets are not sufficient, by themselves, to replace the declining demand for lower-value wood. Put simply, there remains no durable and adequately scaled market for a significant share of this material.

Section 45Z presents a timely opportunity to address that challenge. Converting woody biomass into transportation fuels, including SAF, is not speculative. The feedstock is abundant. The technology is developing. The policy case is strong. What is missing is regulatory certainty. Treasury can help provide that certainty by finalizing workable rules

that make plain that fuels derived from qualifying woody biomass can be evaluated fairly and, where appropriate, credited under §45Z.

Done right, §45Z can help turn waste into wealth. It can create new outlets for low-value material, support investment in rural communities, strengthen the economics of working forests, and reinforce the broader forest products supply chain that helps deliver affordable American building materials and other essential products. Absent such clarity, however, capital will remain on the sidelines; and a significant domestic energy resource will remain underutilized.

II. ***Lifecycle Modeling Must Accurately Reflect Working Forest Systems***

A central issue in Treasury's proposed rule is how lifecycle greenhouse gas emissions are calculated. If these methodologies do not accurately reflect real-world forest systems, they risk producing distorted results that effectively exclude forest-based fuels.

A. Modeling Frameworks Must Enable Forest Biomass Pathways

Treasury proposes to rely on the 45ZCF-GREET model to determine emissions rates.[5] However, as currently configured, that model does not include pathways for fuels derived from forest biomass. This creates a fundamental problem: a fuel cannot qualify for the credit if there is no viable method to calculate its emissions rate. In effect, the absence of a pathway becomes a barrier to eligibility.

Treasury should address this problem directly. At a minimum, it should update or supplement the relevant modeling framework so that fuels derived from forest biomass can be evaluated in a practical and consistent manner. If that cannot be accomplished solely through the current version of 45ZCF-GREET[6], Treasury should permit an appropriate GREET-based alternative or provide clear guidance for how producers may establish emissions rates for fuels derived from woody biomass. The point is not to create a special carveout. It is simply to ensure that qualifying fuels have a real path to evaluation. The goal should be straightforward: ensure that the methodology enables all qualifying fuels to be evaluated on their merits.

B. Lifecycle Analysis Must Reflect the Forest Carbon Cycle

Lifecycle analysis under §45Z should also reflect the forest carbon cycle. Working forests operate on a continuous cycle of growth, harvest, and regrowth. Carbon absorbed during tree growth is stored in biomass and released when that biomass is used, after which new growth begins the cycle again.

Federal policy has long recognized this dynamic. Congress has repeatedly affirmed that forest bioenergy can be treated as carbon neutral when sourced from sustainably

[5] See Prop. Treas. Reg. § 1.45Z-2(e)(3)(iv), 91 Fed. Reg. at 5172 (non-aviation fuels); Prop. Treas. Reg. § 1.45Z-2(e)(3)(v), 91 Fed. Reg. at 5171 (aviation fuels).
[6] See 91 Fed. Reg. at 5171 (identifying DOE GREET site and referenced models).

managed forests.[7] Lifecycle analysis under §45Z should reflect that reality. Failing to do so risks treating renewable, biogenic carbon the same as fossil carbon, which does not regenerate on human timescales.

C. Modeling Should Reflect Appropriate Time Horizons and System Boundaries

The methodology should also reflect appropriate time horizons and system boundaries. Forest systems operate over long time horizons and across large landscapes.

Evaluating emissions over artificially narrow timeframes or geographic boundaries can produce misleading results. Treasury should therefore ensure that lifecycle methodologies under §45Z consider the forest system as a whole, rather than through an artificially narrow project-by-project lens, and should use time horizons that reflect the long-term dynamics of forest growth and carbon cycling. That approach is more faithful to the statutory command to consider the full fuel lifecycle and more likely to produce sound policy outcomes.[8]

D. Lifecycle Analysis Should Account for Avoided Emissions

Finally, lifecycle analysis should account for practical alternative fates of forest residues. In many cases, the relevant comparison is not between fuel use and no emissions, but between fuel use and a higher-emitting alternative fate. Lower-value forest materials are often pile-burned, left to decompose, or allowed to accumulate as hazardous fuels that increase wildfire risk. Treasury's approach should account for those real-world alternatives when evaluating lifecycle emissions. When forest biomass is used to produce fuel, it can reduce net emissions by displacing these higher-emitting scenarios.

III. Forest Residues and Related Materials Should Be Clearly Recognized as Eligible Feedstocks

Lower-value forest materials, including thinnings, pulpwood, mill byproducts, and harvest residuals, are an essential part of the forest products supply chain and among the most promising feedstocks for low-carbon fuel production. They can supply useful energy value, improve forest health by reducing excess biomass, and provide an economic return on material that might otherwise be discarded or underused.

These materials are not waste; they are commercially produced outputs that currently face declining or insufficient market demand.

Treasury should make clear in the final rule that such materials can qualify as eligible feedstocks under §45Z and should ensure that the associated lifecycle analysis captures their practical and environmental benefits. Providing clarity here will reduce

[7] See, *e.g.,* Consolidated Appropriations Act, 2024, Pub. L. No. 118-42, § 431 (directing consistency in federal policy recognizing forest bioenergy); see also U.S. Energy Info. Admin., *Monthly Energy Review*, Note 2: Accounting for Carbon Dioxide Emissions from Biomass Energy Combustion.
[8] 42 U.S.C. § 7545(o)(1)(H); see also 26 U.S.C. § 45Z(b)(1)(B)(i).

uncertainty, support investment, and better align the rule with real-world forestry practices. This point matters not only for fuel producers, but also for the broader forest economy. In many regions low-value wood, including pulpwood and residuals, is no longer backed by strong traditional markets. Recognizing these materials under §45Z would help create a productive use for material that too often lacks one, while also supporting the active management necessary to keep forests healthy, productive, and intact.

IV. Treasury Should Provide Clear and Workable Pathways for Credit Eligibility

Even where the statute permits eligibility, uncertainty in implementation can still stop projects before they begin. Treasury should therefore provide a clear and workable process for determining emissions rates for fuels derived from woody biomass, including through administrable provisional emissions rate pathways where needed.[9] Project developers, investors, and supply-chain participants need enough clarity to make decisions in the real world, not merely enough ambiguity to continue waiting for future guidance.

There is also a timing dimension Treasury should keep in mind. Section 45Z is a time-limited credit.[10] As proposed, it applies to qualifying fuel produced after December 31, 2024 and sold by December 31, 2029.[11] That finite statutory horizon makes regulatory clarity more important, not less. Investors and project developers considering facilities, feedstock arrangements, and offtake relationships need workable rules now if the credit is to shape real-world behavior during the years Congress has made it available. Treasury cannot extend the statute, but it can provide the degree of certainty necessary for market participants to act while the window remains open.

In short, a credit is not available in practice if there is no administrable path for producers to demonstrate eligibility. Treasury should ensure that the final rule is not merely theoretically accommodating, but operationally usable.

V. Section 45Z Should Align with Existing Federal Bioenergy Policy

Federal policy has repeatedly recognized the role of forest biomass in advancing domestic energy production, rural economic development, and sound land management. The Renewable Fuel Standard provides a longstanding lifecycle framework for transportation fuels under the Clean Air Act. Congress has directed consistency in federal policy regarding forest bioenergy.[12] And this Administration has emphasized the importance of removing barriers to domestic energy production, including biofuels.[13]

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[9] See 91 Fed. Reg. at 5198 (describing provisional emissions rate process).
[10] 26 U.S.C. § 45Z; see also *Section 45Z Clean Fuel Production Credit*, 91 Fed. Reg. at 5160.
[11] See 26 U.S.C. § 45Z(g); Section 45Z Clean Fuel Production Credit, 91 Fed. Reg. at 5160.
[12] Consolidated Appropriations Act, 2024, Pub. L. No. 118-42, § 431.
[13] Exec. Order No. 14154, 90 Fed. Reg. 8353 (Jan. 29, 2025); Exec. Order No. 14213, 90 Fed. Reg. 9945 (Feb. 14, 2025).

Treasury should implement §45Z in a manner consistent with those broader policy commitments rather than in a way that creates fresh uncertainty or needless divergence. Diverging from established federal approaches would create unnecessary confusion and undermine investment signals. This is especially true given that EPA is currently revisiting forest-based biomass issues in the RFS context, where NAFO and others have urged the federal government to adopt rules grounded in common sense, sound science, and a practical understanding of how working forests actually operate.[14] A radically different approach under §45Z would send conflicting signals to the same set of industries, investors, and land managers.

That approach would also fit squarely within the Administration's stated priorities. President Trump's Executive Order 14154, *Unleashing American Energy*, directs agencies to identify and remove undue burdens on domestic energy resources, expressly including biofuels. Treasury should take that direction seriously here. America has the forests, the feedstock, the know-how, and the need. Final §45Z regulations should help unleash those advantages, not bury them under technical barriers that prevent domestic biomass from competing on a level playing field.

More broadly, the productive use of low-value forest biomass is not merely an energy issue. It is also a forest health, public safety, and competitiveness issue. Across much of the country, excessive fuel loads are contributing to larger and more destructive wildfires. Markets for lower-value material help make thinning, restoration, and other management treatments more economically viable. By supporting the use of woody biomass as a fuel feedstock, §45Z can complement broader efforts to reduce hazardous fuels, support restoration, and protect communities.

The global market for low-carbon fuels is also moving quickly. If the United States fails to provide workable rules for domestic biomass-based fuels, American producers and rural communities risk being left behind while others build out supply chains and production capacity. A sound final rule, by contrast, can help drive investment in rural America, strengthen domestic supply chains, and advance domestic energy goals by making better use of abundant American resources.

CONCLUSION

Section 45Z presents a significant opportunity to advance U.S. energy, economic, and environmental objectives using abundant domestic resources. With thoughtful implementation, Treasury can ensure that this credit supports a broader range of low-carbon fuels, including those derived from America's sustainably managed working forests.

[14] Renewable Fuel Standard (RFS) Program: Standards for 2026 and 2027, *Partial Waiver of 2025 Cellulosic Biofuel Volume Requirement, and Other Changes*, 90 Fed. Reg. 25784 (June 17, 2025); see also NAFO et al., Comments to EPA on Proposed RFS Standards for 2026 and 2027 (Aug. 8, 2025).

NAFO therefore respectfully urges Treasury to finalize regulations that make clear that woody biomass can serve as a viable feedstock under §45Z, adopt lifecycle approaches that accurately reflect working forest systems, appropriately recognize the value of forest residues and other low-value materials, and provide practical pathways for producers to establish emissions rates and claim the credit where warranted.

Done right, §45Z can help strengthen domestic energy production, support rural prosperity, improve forest management, and create new markets for materials that too often go to waste. It can help convert a growing market challenge into a productive economic opportunity. In that sense, this rulemaking is about more than tax implementation alone. It is an opportunity to put common sense, sound science, and pro-growth policy to work together in service of American energy and American forests.

Respectfully,

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The following organizations respectfully join in submitting this comment:

Alabama Forestry Association
Arkansas Forestry Association
Association of Consulting Foresters
California Forestry Association
Empire State Forest Products Association
Georgia Forestry Association
Idaho Forest Owners Association
Louisiana Forestry Association
Louisiana Logging Council
Maine Forest Products Council
Massachusetts Forest Alliance
Mississippi Forestry Association
Ohio Forestry Association
Oregon Forest Industries Council
Pennsylvania Forest Products Association
Society of American Foresters
Tennessee Forestry Association
Texas Forestry Association
Texas Logging Council
West Virginia Forestry Association