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IRS Notice 2026-53 and DOE Release Reshape §45Z Clean Fuel Credit

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The §45Z clean fuel production credit has emerged as a technically complex and financially significant incentive in the clean energy tax landscape, and recent guidance governing it continues to evolve at a pace that demands close attention from practitioners.

The US Treasury Department and IRS released Notice 2026-53 on Sept. 8, and the US Department of Energy concurrently released the September 2026 version of the 45ZCF-GREET model, delivering a set of updates that will affect how taxpayers calculate lifecycle greenhouse gas emissions rates, structure their credit claims, and maintain documentation necessary to defend those claims.

Notice 2026-53 provides the 2026 emissions rate table, announces the ability to use a §45Z-specific USDA Feedstock Carbon Intensity Calculator, or 45Z FD-CIC, within the 45ZCF-GREET model for both 2025 and 2026 produced fuels, provides additional information relating to specific animal manure feedstock pathways, and provides transitional guidance relating to certain changes required by Pub. L. No. 119-21, commonly referred to as the One Big Beautiful Bill Act, for transportation fuel produced after Dec. 31, 2025.

The DOE's September 2026 model builds on the version released in June 2026 and incorporates additional changes related to regenerative agricultural practices, renewable natural gas, or RNG, animal manure, certain oil feedstocks, combined heat and power systems, and energy attribute certificates, or EACs. The updated model also incorporates certain changes required by OBBBA.

Background

Section 45Z was enacted by the Inflation Reduction Act of 2022 and designed to consolidate and replace certain pre-enactment credits for biodiesel, renewable diesel, and alternative fuels, and to incentivize domestic production of both sustainable aviation fuel, or SAF, and non-SAF fuels. The amount of the credit is for certain transportation fuels based, in part, on the lifecycle greenhouse gas emissions rate of the fuel. Under prior guidance, Treasury determined that for certain fuels, the 45ZCF-GREET model issued by the DOE is the proper model for determining emissions rates. *See* KPMG's TaxNewsFlash, *Proposed regulations: Clean fuel production credit under section 45Z* (Feb. 3, 2026) (discussing Feb, 2026 proposed regulations under §45Z).

The OBBBA amended §45Z and extended the credit by two years. As a result, the §45Z credit is available for fuels produced after Dec. 31, 2024, and sold before Dec. 31, 2029. The OBBBA also modified several §45Z rules applicable to fuel produced after Dec. 31, 2025.

The focus of this article is Notice 2026-53, which addresses some of these changes, including rules relating to animal manure and regenerative agricultural practices, and DOE's concurrently released September 2026 model and an updated user manual. *See* KPMG's TaxNewsFlash, *Notice 2026-53: 2026 emissions rates tables for section 45Z clean fuel production credit; guidance on use of manure-derived fuels and regenerative agricultural practices* (Sept. 8, 2026); DOE, *45ZCF-GREET 2026 Frequently Asked Questions* (Sept. 2026).

45ZCF-GREET Model Updates

The September 2026 model includes several changes to the model relative to the June 2026 version.

Regenerative agricultural practices and safe harbor: The September 2026 update incorporates the 45ZCF FD-CIC, which allows emissions adjustments associated with certain regenerative agricultural practices to be reflected in the lifecycle emissions rate of transportation fuel produced from qualifying agricultural feedstocks.

The agricultural practices currently incorporated into the 45ZCF FD-CIC include cover crops, tillage practices, and application of nitrification inhibitors and manure. A taxpayer may run the 45ZCF FD-CIC through an interface that automatically transfers the calculated feedstock emissions intensity into the 45ZCF-GREET model or may separately calculate the feedstock emissions intensity and manually enter the result into the 45ZCF-GREET model.

Notice 2026-53 provides that the 45ZCF FD-CIC may be used, so long as the taxpayer complies with all the USDA technical guidelines found in 7 CFR Part 2100, specifically including chain of custody, audit, and verification standards. In addition, because the primary feedstock for fuel produced in 2025 and 2026 was likely planted before the publication of the relevant USDA guidelines, specified rules regarding the pre-application development of a nutrient budget are deemed satisfied, providing a safe harbor.

However, taxpayers must be able to substantiate certain inputs into 45ZCF FD-CIC. As a result, certain agricultural practices occurring at the farm level, provided that they are documented appropriately, may be reflected in the emissions rate calculated for the resulting transportation fuel.

New RNG pathways. The September 2026 model expands the RNG pathways available in the 45ZCF-GREET model. It expands categories of fuel for RNG produced through the anaerobic digestion and upgrading pathway by adding new primary feedstocks:

- Food scraps
- Corn stover
- Grain stillage
- Mixed high moisture organic wastes

The mixed high moisture organic waste category may include several types of waste materials identified in the user manual, including certain food and beverage processing wastes and other industrial organic wastes.

These additions expand the RNG production pathway for which an emissions rate may be determined through the 45ZCF-GREET model.

US dairy and swine manure RNG. For transportation fuel produced after Dec. 31, 2025, the September 2026 model adds separate categories of fuel for RNG produced from US dairy and swine manure.

The prior animal manure category continues to apply to fuel produced before Jan. 1, 2026. For post-2025 production, the US dairy and swine manure categories allow users to account for farm-specific prior manure management practices to determine the alternative fate of methane when calculating the avoided emissions associated with the manure used to produce RNG.

Users generally enter information concerning the annual number of animals by type and the share of manure managed using each specified prior manure management practice. Notice 2026-53 defines the relevant prior manure management practices by reference to the practices in place immediately before the earlier of commencement of the anaerobic digester operation or Sept. 8, 2026, subject to additional rules for manure supplied to offsite digesters.

The current model provides separate US dairy and swine manure pathways for digesters processing one type of livestock manure exclusively. It doesn't currently provide a pathway for digesters processing mixtures of animal manure, such as combinations of dairy and swine manure. Additionally, Notice 2026-53 indicates that poultry manure and beef manure pathways are expected to be released in 2026, but these pathways weren't part of the September model.

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Additional feedstock changes. The September 2026 model also makes several changes affecting used cooking oil, or UCO, and other feedstock inputs.

For 2025 production, the model updates the categories applicable to imported UCO to reflect recent clarifications concerning §45Z eligibility. Specifically, Notice 2026-53 provides long-awaited guidance for computing the emissions rate of imported UCO that isn't sourced from the US, Canada, or Mexico. The notice instructs taxpayers to use the Sept. 2026 model to compute the emissions rate for imported non-Canadian/Mexican UCO for fuel produced in 2025. Such imported non-Canadian/Mexican UCO isn't an eligible feedstock for fuel produced in 2026, due to an OBBBA amendment to §45Z.

The model adds a user input for other imported or otherwise unmodeled oils used in the transesterification of mixed oils and hydro-processed esters and fatty acids pathways. The model also renames "Distillers Corn Oil" as "Distillers Corn Oil/Distillers Sorghum Oil" to clarify that the feedstock may consist of either distilled corn oil, distilled sorghum oil, or a blend of both.

Combined heat and power and EAC inputs. The September 2026 update modifies certain inputs for facilities using integrated natural gas combined heat and power systems for onsite electricity production.

For certain pathways, the model adds inputs addressing integrated natural gas combined heat and power and provides additional guidance concerning the use of EACs. Specifically, a new feature of the model allows taxpayers to account for electricity usage attributable to on-site integrated behind-the-meter, or BTM, power.

Takeaways

Each change discussed herein may provide opportunities for taxpayers to increase §45Z credits but also may create administrative or recordkeeping challenges. Some key observations relating to Notice 2026-53 and the September 2026 model include:

1. Notice 2026-53 states that the 2026 45Z FD-CIC can be used for fuel produced in 2025; however, the proposed regulations generally require taxpayers to use a 45ZCF-GREET model released during the tax year. No additional guidance was provided with respect to how the 45Z FD-CIC can be incorporated into a 2025 version of the model, or whether the Sept. 2026 model may be used for this purpose.

2. The 2025 models used a national average "avoided fate" metric as part of the generic animal manure RNG pathway. In the September 2026 model, each facility will have its own unique avoided fate based on the prior manure management practices. However, any taxpayer that can't substantiate its farm-specific prior manure management practices will receive an emissions rate that doesn't include any avoided fate metric for such farm's portion of the taxpayer's manure inputs, which may be quite detrimental to the emissions rate.

3. Notice 2026-53 provides that taxpayers are permitted to use the September 2026 model to compute the emissions rate for imported non-Canadian/Mexican UCO for fuel produced in 2025. Although this is welcome guidance, it may come too late for taxpayers who prefer to transfer their §45Z credit and whose extended filing deadlines for tax year 2025 have already passed.

4. The ability to use EACs to account for electricity related to certain integrated BTM power systems may provide a significant opportunity to improve the emissions rate at certain facilities.

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