

IRS Notice 2026-53, Guidance on Establishment of Emissions Rates and Regenerative Ag for the 45Z tax credit

Summary

WHAT:	Summary: IRS Guidance on Emissions Rates and Regenerative Ag into 45Z
WHEN:	Released Tuesday, September 8, 2026
REGARDING:	IRS Guidance, Notice 2026-53
EFFECTIVE DATE:	September 8, 2026
PURPOSE:	This notice addresses the establishment of emissions rates for transportation fuel derived from animal manure. This notice also describes how certain regenerative agricultural feedstock practices may be taken into account for purposes of § 45Z. The Appendix to this notice provides the annual emissions rate table for calendar year 2026 for purposes of § 45Z.

Background

A taxpayer calculates the amount of the § 45Z credit by multiplying the applicable amount per gallon or gallon equivalent with respect to a transportation fuel produced and sold in a qualified sale by the emissions factor for such fuel. The credit amount is rounded to the nearest cent. A taxpayer's total § 45Z credit for a taxable year is the sum of the § 45Z credit for each transportation fuel sold during the taxable year.

A transportation fuel's emissions factor measures the reduction in the fuel's emissions rate relative to the statutory baseline emissions rate of 50kg of CO₂e per mmBTU, expressed as a fraction of the statutory baseline. Emissions factors must be rounded to the nearest multiple of 0.1.

If a taxpayer produces a transportation fuel for which an emissions rate has not been established in the annual emissions rate table, they may file a petition with the Secretary for a Provisional Emissions Rate (PER).

When an emissions rate is first established for a type and category of fuel, whether in an applicable emissions rate table or by a PER determination, that emissions rate will relate back to January 1, 2025.

Updated Emissions Rate Table

- For biodiesel producers, added sorghum oil as a new primary feedstock.
- For renewable natural gas producers, added as new primary feedstocks dairy manure, swine manure, food scraps, corn stover, grain stillage, U.S. fats, oils, and greases and septage, DCO, DSO, and mixed high-moisture organic waste.
- For propane, naphtha, and SAF producers, added DSO as a new primary feedstock.
- Coal Mine Methane Capture and Upgrading has been added to the annual emissions rate table, (*was included in the previous 45ZCF GREET Model User Manual).

Safe Harbor: Regenerative Ag Practices

For fuel produced in 2025, a taxpayer may use the 2026 version of 45ZCF FDCIC to determine the emissions associated with feedstocks produced using low-carbon agricultural practices, provided the taxpayer satisfies all requirements for such practices under the USDA technical guidelines in [7 CFR part 2100](#), including the chain of custody standards and the audit and verification standards.

The Treasury Department and the IRS are aware that for fuel produced in 2025 and 2026, the primary feedstock produced using low-carbon agricultural practices was likely planted before the publication of the final USDA technical guidelines. As such, for fuel produced in 2025 and 2026, the requirements regarding the pre-application development of a nutrient budget ([7 CFR 2100.060](#)), are deemed satisfied for purposes of § 45Z.

However, a taxpayer must be able to substantiate the application of any nutrients (such as nitrogen, phosphorus, and potassium) and measurable nutrient sources and removals that the taxpayer inputs into 45ZCF FD-CIC. A taxpayer must also keep records sufficient to substantiate its claim for the § 45Z credit.

Animal Manure Feedstocks

Dairy manure and swine manure are included as primary feedstocks in the 2026 emissions rate table.

*The IRS anticipates that poultry manure and beef manure will be added in a future update and to await subsequent 45ZCF-GREET model updates, rather than submitting a PER.

Alternative Fate: For Farm-Specific prior Manure Management Practices

In certain instances a distinct emissions rate for a transportation fuel derived from animal manure may be determined within the 45ZCFGREET model on the basis of the farm-specific prior manure management practices applied to each specific animal manure feedstock.

A taxpayer producing a transportation fuel derived from animal manure may use an **alternative fate** reflecting **farm-specific prior manure management practices for the animal manure** from which the taxpayer derived its transportation fuel.

For determining alternative fate, a “farm” is any animal feeding operation, with or without a nutrient management plan, or other animal operation with a nutrient management plan. Farm-specific prior manure management practices depend on the animal manure, and may include manure storage in uncovered lagoons, deep pits, liquid/slurry, pasture/range/paddock, dry lot, and solid storage.

A taxpayer producing a fuel derived from an animal manure determines a distinct emissions rate by inputting into the 45ZCF-GREET model the number of animals by type and share of manure managed using each prior practice in place immediately preceding the earlier of:

- (i) the commencement date of any anaerobic digester operation, or
- (ii) September 8, 2026.

If a farm diverted manure to an off-farm anaerobic digester, the commencement date is the date the farm first began diverting manure to any off-site anaerobic digester.

A taxpayer will provide the number of animals by type and the share of manure managed using each practice, including the quantity routed to an anaerobic digester, in the taxable year of production. This information is collectively used to calculate the avoided emissions in the 45ZCF-GREET model for prior manure management practices based on the specific animal manure feedstock.

A taxpayer must be able to substantiate such farm-specific prior manure management practices for all collected manure if such data are used to establish an alternative fate. A taxpayer that cannot substantiate the farm-specific prior manure management practices of a given farm will not have avoided emissions included in the 45ZCF-GREET model for such farm’s portion of the taxpayer’s manure inputs.

The 45ZCF-GREET model will not provide a farm-specific alternative fate with respect to animal manure sourced from a new farm (a farm that begins operations after September 8, 2026) until the Treasury Department and the IRS issue further guidance on this issue.

As previously explained, the farm-specific alternative fate for a specific animal manure feedstock reflects the avoided emissions from utilizing an anaerobic digester as compared to the prior manure management practices for a given animal manure on the farm.

Given how the farm-specific alternative fate is calculated, a new farm, which necessarily has no existing manure management practices, could be incentivized to select the highest emitting

practices on startup. Such intentional inflation of avoided emissions, and in turn the § 45Z credit amount, is contrary to the language of § 45Z and its incentivization of cleaner fuel production.

A taxpayer must use a version of the 45ZCF-GREET model reflecting an alternative fate derived from the national average of all animal waste management practices to determine the emissions rate of a transportation fuel derived from animal manure produced on or before December 31, 2025.

*The Treasury Department and the IRS are studying how a distinct emissions rate for transportation fuel derived from animal manures sourced from a new farm may be determined in a manner that mitigates these concerns.

ILUC Exclusion

A taxpayer producing a transportation fuel after December 31, 2025, must determine an emissions rate that does not include ILUC emissions. For taxpayers using a version of the 45ZCF-GREET model that includes ILUC emissions to determine the emissions rate for a transportation fuel produced after December 31, 2025, the ILUC value published in the 45ZCF-GREET model must be subtracted from the Total Life Cycle Analysis Results (Total LCA Results).

To make this adjustment, a taxpayer must subtract the ILUC value in the calculated results table from the Total LCA Results, expressed in grams of CO₂e per megajoule. The adjusted Total LCA results must then be multiplied by a factor of 1.055 to convert the Total LCA Results into kg of CO₂e per mMBTU.

Taxpayers using CORSIA Default to determine the emissions rate for a SAF transportation fuel produced after December 31, 2025, must exclude the relevant Default ILUC value listed in CORSIA Default.

Taxpayers using CORSIA Actual to determine the emissions rate for a SAF transportation fuel produced after December 31, 2025, must exclude any ILUC value included as part of the CORSIA Actual verification process.

Foreign Feedstock Limitations

A taxpayer producing a transportation fuel from Mexican or Canadian UCO must use a version of the 45ZCF-GREET model that includes such primary feedstocks to determine the emissions rate of such fuel. The first emissions rate for such fuel, established in the June 2026 version of the 45ZCF-GREET model, relates back for such fuel produced since January 1, 2025.

Transportation fuel produced after December 31, 2025, from imported non-Canadian/Mexican UCO, is not eligible for the § 45Z credit.

However, for fuel produced in 2025 only, a taxpayer producing a transportation fuel from imported nonCanadian/Mexican UCO must use the applicable pathway in the updated September 2026 45ZCF-GREET model for imported non-Canadian/Mexican UCO.

Negative Emissions Rates

Negative emissions rates are prohibited for transportation fuel produced after December 31, 2025, unless derived from animal manure. A taxpayer using a pre-June 2026 version of the 45ZCF-GREET model to determine the emissions rate of any other transportation fuel produced in 2026 must adjust any negative result up to zero.