

Treasury Releases Notice on the Section 45Z Clean Fuel Production Credit

Insight

V&E Renewable Energy Update

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By [Sean Moran](#), [Lauren Collins](#), [Peter Rogers](#), [Sarah McIntosh](#), and [Hoo Ray](#)

On May 31, 2024, the Department of the Treasury (“Treasury”) and the Internal Revenue Service continued to churn out Inflation Reduction Act of 2022 (“IRA”)¹ guidance by releasing [Notice 2024-49](#) (the “Notice”) regarding the clean fuel production tax credit (the “45Z Credit”)² available under new section 45Z of the Internal Revenue Code of 1986, as amended.

The main thrust of the Notice is to strongly encourage any taxpayer that intends to claim the 45Z Credit to register as a clean fuel producer under section 4101 as soon as possible because taxpayers must be registered as clean fuel producers under section 4101 to be entitled to any 45Z Credits. The Notice encourages taxpayers to submit their registration applications as soon as possible. While the IRS intends to timely process completed registration applications it receives by July 15, 2024, so that applicants can receive their letters of registration by January 1, 2025, the IRS cautions that applications received after July 15, 2024 may not receive a letter of registration until after January 1, 2025. As such, registrants who submit registration applications after July 15, 2024 may lose out on a portion of the 45Z Credit that they would otherwise generate during 2025.

Pursuant to section 45Z, Treasury is required to provide a table setting forth the emissions rates for similar types and categories of transportation fuels that might be eligible for the 45Z Credit. The Notice does **not** provide this table, but it does provide the first insight into the types and categories of fuels that Treasury expects to be eligible for the 45Z Credit by virtue of having an emissions rate below 50 kgCO₂e per mmBTU. The preliminary list includes:

- Non-aviation fuels such as:
 - Biodiesel;
 - Butanol;
 - Diesel;
 - Dimethyl ether;
 - Ethanol;
 - Gasoline;
 - Hydrogen;
 - Liquefied petroleum gas;
 - Methanol; and
 - Natural gas
- Sustainable aviation fuels such as:
 - Liquid fuels that meet the specifications of one of the annexes of ASTM D7566, including various synthesized paraffinic kerosenes, alcohol-to-jet fuels and catalytic hydrothermolysis jet fuels; and

- Biomass-based Fischer-Tropsch liquid fuels, described more fully in section A1.2.2.2 of ASTM D1655 Annex A1

The Notice also provides a list of almost 100 feedstocks (reproduced below) for clean fuel production, giving taxpayers some insight into the feedstocks that Treasury is focused on and the detailed lifecycle analysis approach that Treasury appears to be taking.

Stay tuned for further updates as we anxiously await further guidance in this space.

Appendix A – Table of Feedstocks* Used to Make Fuels that May Be Eligible for the § 45Z Credit

* Appendix A identifies primary feedstocks used to make transportation fuels that may be eligible for the § 45Z credit for purposes of applications for registration. Producers should list the feedstock(s) that are sourced from one or more separate entities or facilities as the main input(s) to their fuel production process. For example, an alcohol-to-jet (ATJ) producer that imports ethanol from one or more separate ethanol production facilities may list ethanol as the feedstock, whereas an integrated ATJ facility with on-site ethanol production should list the feedstock used to produce the ethanol. Renewable natural gas (RNG) producers with on-site anaerobic digestion should list the inputs to the digester (for example, manure or food waste) as feedstocks, whereas RNG producers that import biogas from a separate site should list biogas as the feedstock.

** For purposes of Appendix A, “dedicated” means woody biomass grown for the purpose of being harvested for biofuel production.

Feedstock Type	Feedstock	Additional Information
Agricultural Residue	Barley straw	
Agricultural Residue	Corn stover	
Agricultural Residue	Cotton field residues	
Agricultural Residue	Oats straw	
Agricultural Residue	Orchard or vineyard residues	
Agricultural Residue	Rice straw	
Agricultural Residue	Sorghum stubble	

Feedstock Type	Feedstock	Additional Information
Agricultural Residue	Sugarcane bagasse	
Agricultural Residue	Wheat straw	
Agricultural Residue	Other agricultural residues	
Algae	Algal oil	
Biogas	Dairy/swine digester gas	
Biogas	High solid anaerobic digester gas	
Biogas	Landfill gas	
Biogas	Waste gases	
Biogas	Other biomethane	
Biomass Energy Crop	Biomass sorghum	
Biomass Energy Crop	Energy cane	
Biomass Energy Crop	Miscanthus	
Biomass Energy Crop	Switchgrass	
Biomass Energy Crop	Other biomass energy crop	
CO ₂	CO ₂ co-produced with hydrogen	Includes CO ₂ co-produced with hydrogen produced for use in the Haber-Bosch process
CO ₂	CO ₂ from biogas upgrading	Includes CO ₂ from landfill gas upgrading

Feedstock Type	Feedstock	Additional Information
CO ₂	CO ₂ from calcination of inorganic materials in cement production	
CO ₂	CO ₂ from direct air capture	
CO ₂	CO ₂ from ethanol fermentation	
CO ₂	CO ₂ from ore oxidation in iron and steel production	
CO ₂	Post-combustion captured biogenic CO ₂	Includes only CO ₂ captured from combustion of bio-based materials (for example, biomass, biogas)
CO ₂	Post-combustion captured fossil CO ₂	Includes only CO ₂ captured from combustion of fossil fuels
CO ₂	Other CO ₂ source	
Ethanol	Corn grain	Applicable for SAF only
Ethanol	Sugarcane	Applicable for SAF only
Ethanol	Other sugar crop	Applicable for SAF only
Ethanol	Other grain crop	Applicable for SAF only
Ethanol	Other feedstocks	Applicable for SAF only
Fats, Oils, and Greases	Tallow	

Feedstock Type	Feedstock	Additional Information
Fats, Oils, and Greases	Tall oil	
Fats, Oils, and Greases	Used cooking oil	
Fats, Oils, and Greases	Tallow [sic]	
Industrial Byproduct	Black liquor	
Industrial Byproduct	Corn kernel fiber	
Industrial Byproduct	Distillers corn oil	
Industrial Byproduct	Distillers sorghum oil	
Industrial Byproduct	Milling residues	
Industrial Byproduct	Nut hulls or shells	
Industrial Byproduct	Other byproduct	
Industrial Byproduct	Other food or beverage manufacturing wastes	This includes brewery, winery, and distillery waste, including spent grain
Isobutanol	Corn grain	Applicable for SAF only
Isobutanol	Sugarcane	Applicable for SAF only
Isobutanol	Other feedstocks	Applicable for SAF only
Isobutanol	Other grain crop	Applicable for SAF only
Isobutanol	Other sugar crop	Applicable for SAF only
Manure	Manure, beef	
Manure	Manure, dairy	
Manure	Manure, swine	

Feedstock Type	Feedstock	Additional Information
Mixed Organic Waste	Construction, demolition, or other urban wood waste	
Mixed Organic Waste	Mixed non-residential food waste	
Mixed Organic Waste	Mixed residential food waste	
Mixed Organic Waste	Municipal solid waste	
Mixed Organic Waste	Paper and paperboard	
Mixed Organic Waste	Wastewater treatment Sludge	
Mixed Organic Waste	Yard waste	
Mixed Organic Waste	Other mixed organic waste	
Natural Gas	Natural gas	
Natural Gas	Renewable natural gas	
Oilseed	Jatropha oil	
Oilseed	Palm oil	Potentially eligible feedstock for non-SAF transportation fuel. SAF derived from palm fatty acid distillates is explicitly prohibited
Oilseed	Rapeseed/canola oil	
Oilseed	Soybean oil	
Oilseed	Other oilseed	

Feedstock Type	Feedstock	Additional Information
Other Alcohols	Corn grain	Applicable for SAF only
Other Alcohols	Sugarcane	Applicable for SAF only
Other Alcohols	Other feedstocks	Applicable for SAF only
Other Alcohols	Other grain crop	Applicable for SAF only
Other Alcohols	Other sugar crop	Applicable for SAF only
Second or Intermediate Crop	Camelina	
Second or Intermediate Crop	Carinata	
Second or Intermediate Crop	Corn safrina	
Second or Intermediate Crop	Other second or intermediate crop	
Second or Intermediate Crop	Pennycress	
Starch Crop	Barley	
Starch Crop	Corn grain	
Starch Crop	Grain sorghum	
Starch Crop	Wheat	
Starch Crop	Other starch crop	
Sugar Crop	Sugarbeet	
Sugar Crop	Sugarcane	
Sugar Crop	Sweet sorghum	

Feedstock Type	Feedstock	Additional Information
Sugar Crop	Other sugar crop	
Woody Biomass	Forest slash	
Woody Biomass	Pre-commercial thinnings	
Woody Biomass	Dedicated short-rotation poplar**	
Woody Biomass	Dedicated short-rotation willow**	
Woody Biomass	Dedicated pine**	
Woody Biomass	Dedicated short-rotation eucalyptus**	
Woody Biomass	Other dedicated woody Biomass**	
Woody Biomass	Other woody biomass residues	
Other	A feedstock used to produce a fuel eligible for the § 45Z credit which is not listed in this table	On your Form 637, state “Other” and provide a description of the feedstock

¹ Our full coverage of IRA matters can be found [here](#).

² The 45Z Credit succeeds several fuel production credits that expire in 2024 (e.g., the credits provided in sections 40, 40A, 40B and 6426) and will be available for certain clean fuels produced and sold between January 1, 2025 and December 31, 2027. Unlike its predecessor credits, the 45Z Credit is “tech-neutral,” providing a tax credit for any fuel with an emission rate below 50 kgCO₂e per mmBTU and a higher credit for clean fuels with lower emission rates. Emission rates for various types and categories of fuels will be set forth in an “emissions table” that, pursuant to section 45Z, Treasury must publish no later than January 1, 2025.

Key Contacts

Partner

Sean M. Moran

[+1.512.542.8421](tel:+15125428421)

smoran@velaw.com

Partner

Lauren A. Collins

[+1.213.527.6406](tel:+12135276406)

laurencollins@velaw.com

Counsel

Peter W. Rogers

[+1.214.220.7980](tel:+12142207980)

progers@velaw.com

Associate

Sarah McIntosh

[+1.202.639.6595](tel:+12026396595)

smcintosh@velaw.com

Associate

Hoo Ray

[+1.713.758.2540](tel:+17137582540)

hray@velaw.com

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