

Part III - Administrative, Procedural, and Miscellaneous

Section 45Z Clean Fuel Production Credit; Request for Public Comments

Notice 2025-10

SECTION 1. PURPOSE

This notice announces that the Department of the Treasury (Treasury Department) and the Internal Revenue Service (IRS) intend to propose regulations (forthcoming proposed regulations) addressing the clean fuel production credit determined under § 45Z of the Internal Revenue Code (§ 45Z credit),¹ which applies to eligible transportation fuel produced domestically after December 31, 2024, that is sold by December 31, 2027. In addition to providing background on the § 45Z credit, this notice explains the rules that the Treasury Department and the IRS intend to propose in the forthcoming proposed regulations and requests public comments on the draft text of the forthcoming proposed regulations contained in the appendix to this notice. Notice 2025-11, this Bulletin, provides additional guidance on fuel emissions rates for purposes of the § 45Z credit and contains the initial emissions rate table described in § 45Z(b)(1)(B)(i).

The Treasury Department and the IRS developed this notice and Notice 2025-11 in consultation with the Department of Energy (DOE), the Environmental Protection

¹ Unless otherwise specified, all “section” or “§” references are to sections of the Internal Revenue Code (Code), or the regulations issued thereunder.

Agency (EPA), the United States Department of Agriculture, and other Federal agencies.

SECTION 2. BACKGROUND

.01 Overview of § 45Z. Section 45Z, added to the Code by § 13704 of Public Law 117-169, 136 Stat. 1818, 1997 (August 16, 2022), commonly known as the Inflation Reduction Act of 2022 (IRA), provides an income tax credit for clean transportation fuel produced domestically after December 31, 2024, and sold by December 31, 2027. The § 45Z credit is a general business credit under § 38.

To qualify for the § 45Z credit, a taxpayer must: (1) produce a transportation fuel that has a lifecycle greenhouse gas emissions rate (emissions rate) of not greater than 50 kilograms (kg) of CO₂e per mmBTU² and that satisfies certain suitability and coprocessing requirements; (2) produce the fuel in the United States at a qualified facility; (3) be registered as a producer of clean fuel under § 4101 at the time of production; and (4) sell the fuel to an unrelated person in a qualifying manner during the taxable year. See § 45Z(a)(1) & (4), (d)(4)-(5)(A), and (f)(1). A taxpayer producing a transportation fuel that is sustainable aviation fuel (SAF transportation fuel) must also provide unrelated party certification demonstrating compliance with certain requirements. See § 45Z(f)(1)(A)(i)(II). A taxpayer is eligible to claim a § 45Z credit for the taxable year in which the taxpayer sells a transportation fuel. See § 45Z(a)(1)(A).

Under § 45Z(a)(1), a taxpayer calculates the § 45Z credit by multiplying the applicable amount per gallon or gallon equivalent with respect to a transportation fuel by

² The term “mmBTU” means 1,000,000 British thermal units, and the term “Btu” means British thermal units. The term “CO₂e” means, with respect to any greenhouse gas, the equivalent carbon dioxide (as determined based on relative global warming potential). See § 45Z(d)(1)-(2).

the emissions factor for such fuel. The applicable amount varies depending on whether the transportation fuel is a SAF transportation fuel or a transportation fuel that is not a sustainable aviation fuel (non-SAF transportation fuel) and is higher for SAF transportation fuel than for non-SAF transportation fuel. Under § 45Z(a)(2) and (3), the applicable amount increases if the taxpayer produces transportation fuel at a qualified facility that satisfies the prevailing wage and apprenticeship (PWA) requirements. See § 1.45Z-3 of the Income Tax Regulations for applicable PWA requirements.

A transportation fuel's emissions factor is a calculation of the fuel's emission rate against the baseline emissions rate of 50 kg of CO₂e per mmBTU. See § 45Z(b)(1)(A). A taxpayer determines a fuel's emissions rate by using either the annual emissions rate table published by the Secretary of the Treasury or her delegate (Secretary) or a provisional emissions rate (PER) determined by the Secretary. See § 45Z(b)(1)(B) and (D).

.02 Section 45Z published guidance and FAQs.

(1) Notice 2022-58 (Request for Comments). Notice 2022-58, 2022-47 I.R.B. 483 (released November 3, 2022), requested comments on § 45Z.³ The comments received in response to Notice 2022-58 were considered in the drafting of this notice.

(2) Notice 2024-49 (Registration Requirements). Notice 2024-49, 2024-26 I.R.B. 1781 (released May 31, 2024), provides guidance on the § 45Z registration requirements, including the time, form, and manner of registration. Notice 2024-49 also provides initial definitions of SAF and non-SAF transportation fuels and an initial, non-exclusive list of primary feedstocks, to help taxpayers applying for registration identify

³ Notice 2022-58 also requested comments on § 45V.

fuels and primary feedstocks that may qualify for the § 45Z credit. Section 7 of this notice addresses the effect of this notice on Notice 2024-49.

(3) Treasury Decision 9998 (PWA Requirements). Treasury Decision 9998, published in the *Federal Register* at 89 FR 53184 (June 25, 2024), adopted final regulations on the PWA requirements under several sections of the Code (PWA Regulations). The PWA Regulations include § 1.45Z-3, which provides rules on the application of the PWA requirements to § 45Z.

(4) Fact Sheet FAQs. A § 45Z Fact Sheet, FS-2024-25 (released July 10, 2024), provides answers to certain frequently asked questions (FAQs) on the § 45Z registration requirements. This Fact Sheet is available at <https://www.irs.gov/newsroom/frequently-asked-questions-about-applying-for-registration-for-the-clean-fuel-production-credit-under-ss-45z>.

(5) Notice 2025-11. Notice 2025-11 provides guidance regarding methodologies for determining emissions rates under § 45Z and provides the initial emissions rate table required by § 45Z(b)(1)(B)(i). Notice 2025-11 is being released concurrently with this notice.

SECTION 3. EXPLANATION OF FORTHCOMING PROPOSED REGULATIONS

.01 Forthcoming proposed regulations. The draft text of the forthcoming § 45Z proposed regulations is contained in the appendix of this notice. This section 3 explains the draft regulatory text.

.02 Authority. The forthcoming proposed regulations would be issued under the authority granted by §§ 45Z, 4101(a)(1), 6001, and 7805(a).

Section 45Z contains several delegations of authority to the Secretary. Section 45Z(e) directs the Secretary to issue guidance no later than January 1, 2025, regarding implementation of § 45Z, including calculation of emissions factors for transportation fuel, the emissions rate table described in § 45Z(b)(1)(B)(i), and the determination of clean fuel production credits under § 45Z. Section 45Z(f)(2) further authorizes the Secretary to issue regulations regarding the fuel production attributable to the taxpayer, and § 45Z(f)(1)(A)(i)(II) authorizes the Secretary to issue guidance on certification and other information with respect to certain transportation fuels. Section 45Z(b)(1)(B)(ii) authorizes the Secretary to determine whether a model is a successor model in the case of non-SAF transportation fuel. Additionally, § 45Z(b)(1)(B)(i) directs the Secretary, subject to § 45Z(b)(1)(B)(ii) and (iii), to annually publish a table setting forth the emissions rate for similar types and categories of transportation fuels based on the amount of lifecycle greenhouse gas emissions as described in section 211(o)(1)(H) of the Clean Air Act (42 U.S.C. 7545(o)(1)(H)), as in effect on August 16, 2022 (CAA) for such fuels, expressed as kilograms of CO₂e per mmBTU, which a taxpayer must use for purposes of § 45Z. See Notice 2025-11 (providing initial emissions rate table).

Section 4101(a)(1) authorizes the Secretary to prescribe regulations related to any registration required under § 4101, including the time, form, manner, and terms and conditions of such registration.

Section 6001 authorizes the Secretary to prescribe regulations related to recordkeeping, statements, and special returns. The Secretary implemented such regulations under § 1.6001-1.

Section 7805(a) authorizes the Secretary to prescribe all needful rules and regulations for the enforcement of the Code, including all rules and regulations as may be necessary by reason of any alteration of law in relation to internal revenue.

.03 Definitions. Section 1.45Z-1 of the forthcoming proposed regulations would provide definitions that would apply for purposes of § 45Z. The forthcoming proposed regulations would incorporate statutory definitions and provide additional or clarifying definitions with respect to § 45Z. Sections 3.03(1) through (10) of this notice address some of the key terms that would be defined in the forthcoming proposed regulations.

(1) 45ZCF-GREET model. The forthcoming proposed regulations would provide that the 45ZCF-GREET model means the model by that name developed by the Argonne National Laboratory (ANL) and published by the DOE for use in determining the amount of lifecycle greenhouse gas emissions for purposes of § 45Z. For additional information about the 45ZCF-GREET model, see section 3.04(3)(a) of this notice.

(2) Fuel. The forthcoming proposed regulations would define a “fuel” as any liquid or gaseous substance that can be consumed to supply heat or power. Therefore, for purposes of § 45Z, the term “fuel” would not include electricity. For an additional explanation, see section 3.03(8)(b) of this notice.

(3) Gallon equivalent.

(a) In general. The forthcoming proposed regulations would define “gallon equivalent” for purposes of § 45Z(a)(1)(A) to mean, with respect to any non-liquid fuel, the amount of such fuel that has the energy equivalent of a gallon of gasoline, which refers to the amount of such fuel having a Btu content of 116,090 (lower heating value).

(b) Non-liquid fuel. The forthcoming proposed regulations would clarify that a fuel is considered non-liquid if it is in a gaseous state at ambient pressure and temperature of 1 atmosphere and 60 degrees Fahrenheit, respectively. The forthcoming proposed regulations would also clarify that the gallon equivalent for a given non-liquid fuel is calculated by dividing the lower heating value of that fuel (measured in Btu) by the lower heating value of a gallon of gasoline (that is, 116,090 Btu), rounded to 5 decimal places.

(4) Producer and taxpayer.

(a) In general. The forthcoming proposed regulations would define “producer” for purposes of § 45Z as the person that engages in the production of a transportation fuel. The forthcoming proposed regulations would define the “taxpayer” for purposes of § 45Z as the person that is registered as a producer of clean fuel under § 4101 (or treated as the registrant for purposes of filing a claim for the § 45Z credit).

Section 45Z refers to the “taxpayer” producing and selling a transportation fuel as the person eligible to claim the credit but does not specify who that person is if the production process involves multiple persons and multiple steps. The forthcoming proposed regulations would provide clarity on this point.

(b) Producer of alternative natural gas. The forthcoming proposed regulations would provide that the “producer” of alternative natural gas, including renewable natural gas (RNG), for purposes of § 45Z is the person that processes the alternative natural gas (processor) to remove water, carbon dioxide, and other impurities such that it is interchangeable with fossil natural gas. This definition would be consistent with the purpose of § 45Z because the processor is the most active participant in the production

process, and § 45Z incentivizes production. The definition of “producer” would, therefore, exclude any person that removes conventional or alternative natural gas (CANG) from a pipeline, compresses it further after removal, and then sells such further-compressed CANG (compressor). Under the proposed definition, CANG compression also would not meet the definition of “production” because compression is not a chemical transformation, and the compression process is minimal processing.

Several commenters and industry stakeholders specifically raised questions about who should be considered the producer of RNG for purposes of § 45Z. The Treasury Department and the IRS understand that the processor and the compressor are typically different persons, and that the processor typically performs most of the active production and owns (or uses) a facility. The Treasury Department and the IRS further understand that the compressor typically performs the final compression step before a fuel is used in a vehicle and typically owns (or uses) only compression equipment rather than an actual facility. As a result, the compressor would be unable to meet the requirement that transportation fuel be produced in a qualified facility as provided in § 45Z(d)(4) and § 1.45Z-1(b)(24) of the forthcoming proposed regulations and is not engaging in production of a transportation fuel under § 45Z(a)(1) and § 1.45Z-1(b)(23) of the forthcoming proposed regulations.

(5) Production. The forthcoming proposed regulations would define “production” as all steps and processes used to make a transportation fuel. Under the forthcoming proposed regulations, production would begin with the processing of primary feedstock(s) and end with a transportation fuel ready to be sold in a qualifying sale.

Production would not include instances where a person uses a primary feedstock to produce a fuel that meets the same ASTM standard as the primary feedstock.

The definition of “production” would also clarify that minimal processing would not qualify as production for purposes of the § 45Z credit. Minimal processing would include blending a fuel mixture or otherwise engaging in activities that do not result in a chemical transformation. Therefore, under the forthcoming proposed regulations, a person that merely blends a fuel mixture, regardless of whether the fuel mixture itself satisfies the requirements of § 45Z(d)(5)(A), is not a producer of a transportation fuel because the blending process would constitute minimal processing. For example, a person that blends different types of fuel, such as ethanol and gasoline, directly at a fuel pump (sometimes known as splash blending) would not be the producer of a transportation fuel. Further, the importation of fuel that is largely finished fuel and undergoes only minimal processing in the United States would not constitute production.

Section 45Z is a production credit that is meant to replace fuel credits and payments that specifically incentivize blending (including credits under §§ 40B and 6426(k), which incentivize SAF blending). Thus, to equate blending with production would be contrary to Congress’s purpose in enacting § 45Z.

The forthcoming proposed regulations would also incorporate the rules in § 45Z(f)(1)(A)(ii) and (f)(1)(B) requiring production to occur in the United States.

(6) Qualified facility.

(a) Facility. The forthcoming proposed regulations would clarify that a “facility,” as used in § 45Z(d)(4), means a single production line that is used to produce a

transportation fuel and would include all components that function interdependently to produce a transportation fuel. The definition would also clarify the treatment of indirect, post-production, and multipurpose equipment. The definition of “facility” would also exclude CANG compression equipment as post-production equipment.

(b) Qualified facility. The forthcoming proposed regulations would clarify that a “qualified facility,” as defined in § 45Z(d)(4), means a facility that satisfies the anti-stacking rules in § 45Z(d)(4)(B) and § 1.45Z-4 of the forthcoming proposed regulations.

(7) Qualifying sale. The forthcoming proposed regulations would define a “qualifying sale” in accordance with § 45Z(a)(4). The forthcoming proposed regulations would also (1) clarify that a sale “for use . . . in a trade or business” refers to use as a fuel in a trade or business within the meaning of § 162; and (2) incorporate the sale attribution rules in § 45Z(f)(3) when fuel is sold by another member (as defined in § 1.1502-1(b)) of the taxpayer’s consolidated group (as defined in § 1.1502-1(h)).

(8) Transportation fuel.

(a) In general. The forthcoming proposed regulations would define terms associated with the § 45Z(d)(5)(A) definition of “transportation fuel.”

The term “suitable for use as a fuel in a highway vehicle or aircraft” (suitable for use) would be defined to mean that the fuel either has practical and commercial fitness for use as a fuel in a highway vehicle or aircraft, or may be blended into a fuel mixture that has practical and commercial fitness for use as a fuel in a highway vehicle or aircraft. The forthcoming proposed regulations would also clarify that actual use as a fuel in a highway vehicle or aircraft is not required. For example, a fuel that is otherwise suitable for use, but is used as marine diesel fuel or marine methanol, may satisfy the

definition of transportation fuel. The forthcoming proposed regulations would further provide that CANG is suitable for use once it is produced such that if further compressed it would meet the specifications of ASTM International D8080, and that a fuel that does not require further processing and may be blended with or used as a component of taxable fuel (within the meaning of § 4083) is suitable for use.

(b) Electricity. The forthcoming proposed regulations would not include electricity in the definition of “transportation fuel,” and electricity production would therefore be ineligible for the § 45Z credit, for several reasons.

First, at the time § 45Z was enacted, the Code contained an assortment of income tax credit, excise tax credit, and excise tax payment provisions for various biofuels and other alternative fuels sold or used as a fuel. These include incentives for biodiesel, renewable diesel, and several different alternative fuels (including compressed natural gas and second generation biofuel). Joint Committee on Taxation, *General Explanation of Tax Legislation Enacted in the 117th Congress*, JCS 1-23, at 278 (Dec. 31, 2023). Congress designed the § 45Z credit to replace these incentives, which were only available for liquid or gaseous fuels. See §§ 40(b)(6); 40A(b)(1) and (b)(2); 40B; 6426(c)-(e) and (k); 6427(e). Therefore, for purposes of § 45Z, a “fuel” refers to a liquid or gaseous substance that can be consumed to supply heat or power and does not include electricity.

Second, the anti-stacking rules within the definition of “qualified facility” in § 45Z(d)(4)(B) prevent the allowance of both a § 45Z credit and a credit for clean hydrogen production (§ 45V or 48(a)(15)) or carbon oxide sequestration (§ 45Q) with respect to a facility in a taxable year. The inclusion of the anti-stacking rules indicates

that Congress was concerned about the potential for activity at a particular facility to generate multiple credits in a taxable year and wished to foreclose that possibility. This, combined with the omission of the § 45Y credit from the anti-stacking rules, suggests that the production of electricity is not eligible for the § 45Z credit. See § 45Z(d)(4)(B). Had Congress intended to include electricity as a transportation fuel for purposes of § 45Z, Congress would have included the § 45Y credit in the anti-stacking rules.

Third, the Code already provides a separate credit for clean electricity production under § 45Y. When Congress created the § 45Z clean fuel production credit, it also created the clean electricity production credit under § 45Y. Generally, the credit allowed under § 45Y is not limited based on how the electricity is ultimately used. If the definition of “transportation fuel” in § 45Z were read to include electricity, there would be significant overlap between the electricity eligible for a credit under § 45Z and the electricity eligible for a credit under § 45Y. A reading of § 45Z to include electricity would not be consistent with Congress’ intent in designing § 45Y specifically to incentivize clean electricity production and § 45Z to incentivize production of clean transportation fuel.

(9) Non-SAF transportation fuel. The forthcoming proposed regulations would define “non-SAF transportation fuel” for purposes of § 45Z. The forthcoming proposed regulations would also provide a list of non-SAF fuels that may qualify as a transportation fuel, as well as descriptions of such fuels. A listed non-SAF fuel that meets the applicable description must also meet all the other applicable requirements under § 45Z to qualify as a transportation fuel. The list of non-SAF fuels would

generally track those in Notice 2024-49, with a few modifications to the definitions within Notice 2024-49 to address concerns raised by commenters and industry stakeholders.

(10) SAF transportation fuel. The forthcoming proposed regulations would define “SAF transportation fuel” in accordance with the § 45Z(a)(3)(B) definition of sustainable aviation fuel and would clarify that a taxpayer may meet the requirement that the fuel be “sold for use in an aircraft” if such taxpayer sells a synthetic blending component to a person that blends the fuel into a fuel mixture described in ASTM D7566.

.04 General rules.

(1) Overview. Section 1.45Z-2 of the forthcoming proposed regulations would provide general rules regarding the amount and timing of the § 45Z credit. The rules would describe and clarify the credit calculation rules in § 45Z(a) to (c), including the applicable amount, the emissions factor, the emissions rate, the applicable emissions rate table, rounding, and inflation adjustment. The rules would also clarify that a taxpayer is eligible to claim the § 45Z credit only for the taxable year in which a qualifying sale of a transportation fuel occurs. See § 45Z(a)(1)(A)(ii). The rules would provide that a taxpayer may produce a transportation fuel in an earlier taxable year than the taxable year in which the qualifying sale of such fuel occurs, and that a qualifying sale may take place no earlier than the date the fuel is produced. The forthcoming proposed regulations would also describe when a taxpayer may file a petition with the Secretary for determination of a PER and generally describe the PER process. The Treasury Department and the IRS will publish guidance establishing procedures for taxpayers to request a PER and providing the § 45Z inflation adjustment factor at a later time.

(2) Fuel measurement. The forthcoming proposed regulations would require the § 45Z credit to be calculated using the applicable amount per gallon for liquid transportation fuels and the applicable amount per gasoline gallon equivalent for non-liquid transportation fuels. The volume of a liquid fuel would be measured on the basis of gallons adjusted to ambient pressure and temperature of 1 atmosphere and 60 degrees Fahrenheit. Section 45Z directs taxpayers to use a gallon equivalent for non-liquid fuels but does not provide a baseline standard. Gasoline is the most appropriate baseline fuel for a gallon equivalency for non-liquid fuels because gasoline is the most common transportation fuel, and § 45Z is designed to incentivize cleaner transportation fuels as alternatives to existing fossil fuels. The use of a gasoline gallon equivalency is also consistent with the gasoline gallon equivalent requirement in § 6426(d)(3), which applies to many of the types of fuel that would be considered transportation fuel under § 45Z in the context of a credit that § 45Z is intended to replace. To facilitate implementation of a gallon equivalency standard for non-liquid fuels, it is necessary to specify whether the equivalency is based on a lower heating value or a higher heating value of the baseline fuel, as the two types of heating values have different energy contents. The forthcoming proposed regulations would use a lower heating value of gasoline, rather than a higher heating value, because it is a better representation of the useful energy provided by a transportation fuel.

(3) Emissions rates.

(a) 45ZCF-GREET model. (i) In general. Section 45Z(b)(1)(B)(ii) provides that in the case of non-SAF transportation fuel, the lifecycle greenhouse gas emissions of such fuel must be based on the most recent determinations under the Greenhouse gases,

Regulated Emissions, and Energy use in Transportation model developed by the ANL or a successor model (as determined by the Secretary). The name of the “Greenhouse gases, Regulated Emissions, and Energy use in Transportation” model was changed to “Greenhouse gases, Regulated Emissions, and Energy use in Technologies” and it is now generally referred to as the “GREET” model.

The GREET model refers to a suite of models, the first version of which was released in 1995 and is now called the R&D GREET model. Since 1995, DOE maintained the GREET model to enable research regarding lifecycle analyses of hundreds of different methods of producing, delivering, and using energy. The R&D GREET model, was not designed to be used for determining emissions rates for tax credits, including the § 45Z credit, but the current suite of GREET models includes different versions, some of which are designed to facilitate particular regulatory regimes.

As of January 10, 2025, the DOE’s GREET website lists the following different versions of the GREET model: R&D GREET, 40BSAF-GREET, 45VH2-GREET, 45ZCF-GREET, CA-GREET4.0, and ICAO-GREET. See <http://energy.gov/eere/greet>. For the reasons discussed below, for purposes of the § 45Z credit, the phrase “most recent determinations under the Greenhouse gases, Regulated Emissions, and Energy use in Transportation model” in § 45Z(b)(1)(B)(ii) is best understood as referring to determinations under the 45ZCF-GREET model. In addition, the forthcoming proposed regulations would designate the 45ZCF-GREET model as a successor model to the GREET model.

Some commenters have suggested that the R&D GREET model should be used for the § 45Z credit. However, the 45ZCF-GREET model is the only appropriate GREET model to use for purposes of the 45Z credit, because the R&D GREET model is not limited to transportation fuels and includes information that is based on preliminary analyses (that is, analyses that are not yet complete, have significant technical uncertainties, or are still being reviewed by laboratory staff, the DOE staff, or independent experts). See *generally* GREET, Office of Energy Efficiency & Renewable Energy, U.S. Department of Energy available at <https://www.energy.gov/eere/greet>.

While the R&D GREET model is a valuable tool for characterizing the benefits and impacts of energy technologies in a directional manner and testing new and updated data and parameters, it is not appropriate for use in analyses where a high degree of precision and certainty is required. Because the R&D GREET model offers users many choices regarding analysis methodology (for example, co-product accounting method and global warming potential values), different users can calculate different emissions rates with respect to the same fuel. Many of these choices would not be appropriate for the specific context of the § 45Z credit given the potentially preliminary nature of much of the information represented in R&D GREET and given that specific representations of activities, and their emissions, are needed in a specific fashion (for example, to comply with the requirements of § 45Z). Given the limitations of some of the data underlying aspects of the R&D GREET model and the fact that the model does not predetermine for the user which methodologies and accounting parameters are appropriate for compliance with the requirements of § 45Z, R&D

GREET does not provide the analytical and methodological specificity necessary to meet the specific objectives or statutory requirements of the § 45Z credit.

ANL developed, and the DOE published, the 45ZCF-GREET model as a specific version of the GREET model to determine emissions rates that also meets three key parameters: (1) user-friendliness and consistency, (2) technical robustness of the pathways represented, and (3) consistency with the requirements of § 45Z. The first version of the 45ZCF-GREET model, anticipated to be released on January 10, 2025, will be available at <https://www.energy.gov/eere/greet>. This first version of the 45ZCF-GREET model includes the most commonly used types and categories of fuel that are anticipated to meet the eligibility requirements to claim the § 45Z credit. Additional types and categories of fuel may be added in future versions of the 45ZCF-GREET model.

Implementation of the § 45Z credit requires that data used to calculate emissions rates reflect a given taxpayer's specific operations and that such data be independently verifiable to the extent possible. Use of facility-specific, verifiable data ensures that the § 45Z credit is available only to those fuels that meet statutory requirements. For certain parameters, bespoke inputs are unlikely to be easily measured by taxpayers and/or independently verifiable with high fidelity, given the current status of verification mechanisms. Thus, certain parameters in the 45ZCF-GREET model are fixed assumptions, referred to as "background data," that are based on the best available data and may not be changed by users. Alternatively, the "foreground data" in the

45ZCF-GREET model are parameters that must be input by the user. See the 45ZCF-GREET User Manual⁴ for details on background and foreground data.

(ii) 45ZCF-GREET as a “successor model”

The Treasury Department and the IRS recognize that the continued existence of the R&D GREET model and periodic updates to both the 45ZCF-GREET model and the R&D GREET model may create potential uncertainty about the meaning of “most recent determinations” with regard to the GREET model, which would be detrimental to the administration and implementation of the § 45Z credit. To avoid any potential uncertainty, the forthcoming proposed regulations would invoke the Secretary’s express delegation of authority in § 45Z(b)(1)(B)(ii) to require use of the 45ZCF-GREET model as a successor model.

This rule would be consistent with the Secretary’s determination that, for purposes of the § 45V credit, the 45VH2-GREET model is a “successor” model to GREET and that taxpayers are required to use the most recent version of the 45VH2-GREET model.⁵ See T.D. 10023 (January 10, 2025) for the Secretary’s determination with regard to the 45VH2-GREET model and a more detailed discussion of the GREET model.

In drafting the forthcoming proposed regulations, the Treasury Department and the IRS considered the statutory definition of “lifecycle greenhouse gas emissions” in § 211(o)(1)(H) of the Clean Air Act (as in effect on August 16, 2022) and the specific

⁴ The 45ZCF-GREET User Manual, along with the 45ZCF-GREET model, is available at: <https://www.energy.gov/eere/greet>.

⁵ Similar to § 45Z(b)(1)(B)(ii), § 45V(c)(1)(B) requires the Secretary to determine lifecycle greenhouse gas emissions using “the most recent Greenhouse gases, Regulated Emissions, and Energy use in Transportation model (commonly referred to as the ‘GREET model’) developed by Argonne National Laboratory, or a successor model (as determined by the Secretary)” for purposes of the clean hydrogen production credit under § 45V.

objectives of § 45Z and consulted with the DOE. The 45ZCF-GREET model is a model specifically developed by ANL as a derivative of and successor to the R&D GREET model to meet the requirements and objectives of § 45Z.

(iii) Most recent determinations under GREET. Regardless of any determination by the Secretary of a successor model, the phrase “most recent determinations under the Greenhouse gases, Regulated Emissions, and Energy use in Transportation model” in § 45Z(b)(1)(B)(ii) is best understood as referring to determinations under the latest version of the 45ZCF-GREET model.

After consultation with the DOE, the Treasury Department and the IRS have concluded that use of the latest version of the 45ZCF-GREET model would be appropriate because it is tailored to the administration of the § 45Z tax credit and includes features that make it easy for taxpayers to use. Use of the latest version of the 45ZCF-GREET model would also ensure that the pathways and approaches provided for determining “well-to-wheel” emissions for various fuel production processes are of sufficient methodological certainty to be appropriate for determining eligibility for a tax credit. The most recent determinations under the latest version of the 45ZCF-GREET model are the only determinations under a variant of a GREET model that are suitable for use and may be used for purposes of the § 45Z credit.

(iv) SAF portion of 45ZCF-GREET model. The forthcoming proposed regulations would provide that the 45ZCF-GREET model can be used to determine emissions rates for SAF transportation fuel (SAF portion of 45ZCF-GREET model). The SAF portion of the 45ZCF-GREET model is a “similar methodology” to CORSIA under § 45Z(b)(1)(B)(iii)(II) because, like the CORSIA program, it evaluates the full fuel

lifecycle, including all stages of fuel and feedstock production through to the end use of the finished fuel. The DOE worked with the Treasury Department and other federal agencies to develop the 45ZCF-GREET model, including specifications for and limitations on background and foreground data, to satisfy the statutory requirements of § 45Z. Additionally, in the context of whether the R&D GREET model could be used to determine lifecycle greenhouse gas emissions for purposes of § 40B(e)(2),⁶ the EPA identified certain necessary components of a lifecycle greenhouse gas analysis consistent with § 211(o)(1)(H) of the CAA that the R&D GREET model lacked and determined that the newly created 40BSAF-GREET 2024 model included the absent categories of emissions.⁷ Similarly, the EPA has concluded that the newly-created 45ZCF-GREET model includes the categories of emissions it previously identified as missing from the R&D GREET model, the lack of which made R&D GREET insufficient for calculating lifecycle greenhouse gas emissions for purposes of § 211(o)(1)(H) of the CAA.⁸

Additionally, the 45ZCF-GREET model contains certain necessary components of a lifecycle greenhouse gas analysis consistent with § 211(o)(1)(H) of the CAA.⁹ Therefore, emissions rates for SAF transportation fuels calculated using the 45ZCF-

⁶ Section 40B(e)(2) has a requirement that a methodology similar to CORSIA must also satisfy the criteria under § 211(o)(1)(H) of the CAA, just as in § 45Z(b)(1)(B)(iii)(II). See also Notice 2024-37, 2024-21 I.R.B. 1191.

⁷ See Letter from Joseph Goffman, Principal Deputy Assistant Administrator for the Office of Air and Radiation, U.S. Environmental Protection Agency, to Lily Batchelder, Assistant Secretary for Tax Policy, U.S. Department of Treasury (December 13, 2023), (EPA December 2023 Letter) *available at* <https://home.treasury.gov/system/files/136/Final-EPA-letter-to-UST-on-SAF-signed.pdf>.

⁸ See Letter from Joseph Goffman, Assistant Administrator for the Office of Air and Radiation, U.S. Environmental Protection Agency, to Aviva Aron-Dine, Deputy Assistant Secretary for Tax Policy, U.S. Department of Treasury (January 8, 2025), (EPA January 2025 Letter) *available at* <https://home.treasury.gov/system/files/136/January-2025-EPA-letter-to-UST-on-45zcf-GREET-signed.pdf>.

⁹ EPA January 2025 Letter.

REET model would be based on the amount of lifecycle greenhouse gas emissions as described in § 211(o)(1)(H) of the CAA. See § 45Z(b)(1)(B)(i).

(b) Methodologies. The forthcoming proposed regulations would designate the allowed methodologies for determining emissions rates for purposes of the emissions rate table described in § 45Z(b)(1)(B)(i). If a type and category of non-SAF transportation fuel is established in the applicable emissions rate table, a taxpayer producing such type and category of fuel would determine the fuel's emissions rate using the 45ZCF-REET model, as directed by the applicable emissions rate table. If a type and category of SAF transportation fuel is established in the applicable emissions rate table, a taxpayer producing such type and category of fuel would determine the fuel's emissions rate using the most recent version of the CORSIA Default Life Cycle Emissions Values for CORSIA Eligible Fuels lifecycle approach (CORSIA Default) or the CORSIA Methodology for Calculating Actual Life Cycle Emissions Values lifecycle approach (CORSIA Actual), or the 45ZCF-REET model, as directed by the applicable emissions rate table. Under the forthcoming proposed regulations, for each type and category of SAF transportation fuel, a taxpayer would be required to use the same methodology to calculate lifecycle greenhouse gas emissions associated with all stages of fuel feedstock production and distribution.

Section 45Z(b)(1)(B)(i) requires the emissions rate table to be based on the amount of lifecycle greenhouse gas emissions (as described in § 211(o)(1)(H) of the CAA) for such fuels. This CAA provision defines lifecycle greenhouse gas emissions as the aggregate emissions from all stages of the fuel's production and use, including feedstock production and transportation, fuel production and distribution, and use of the

finished fuel. This type of lifecycle analysis is sometimes referred to as “well-to-wheel” emissions analysis. As a result, for each type and category of transportation fuel, the 45ZCF-GREET model also uses “well-to-wheel” emissions to calculate lifecycle greenhouse gas emissions for all stages of fuel production, as well as emissions resulting from use of the fuel in transportation.

Consistent with § 45Z(b)(1)(B)(ii), the forthcoming proposed regulations would require taxpayers to use the most recent version of an allowed methodology that is publicly available on the first day of the taxable year during which the taxpayer produced the transportation fuel for which the § 45Z credit is claimed. If a version of an allowed methodology adds a type or category of fuel after the first day of a taxable year, taxpayers must use such version for such new type or category of fuel for the entire taxable year. If an updated version of an allowed methodology becomes publicly available after the first day of the taxable year of production (but still within such taxable year), then the taxpayer could choose to treat such updated version as the most recent version of such methodology.

In the 45ZCF-GREET model, for purposes of accounting for emissions associated with hydrogen (as a production input), natural gas alternatives (as a production input or as the transportation fuel produced), electricity, and carbon capture and sequestration, rules similar to the rules under section 45V would apply.

The portions of the forthcoming proposed regulations regarding the emissions rate table and allowed methodologies (including the designation of the 45ZCF-GREET model as a successor model) would apply to taxable periods ending on or after January 10, 2025.

The Treasury Department and the IRS intend to propose rules at a future date providing that taxpayers will be able to access additional reductions in calculating the lifecycle greenhouse gas emissions rates of SAF and non-SAF transportation fuels (as described in 42 U.S.C. 7545(o)(1)(H)) by utilizing certain climate smart agriculture (CSA) practices for cultivating domestic corn (CSA corn), domestic soybeans (CSA soybeans), and domestic sorghum (CSA sorghum) (collectively, CSA crops) for use as SAF and non-SAF transportation fuel primary feedstocks. These additional reductions would be available to taxpayers once the Treasury Department and the IRS propose regulations, including rules for CSA, for the § 45Z credit, and an accounting of one or more CSA practices is developed for the lifecycle greenhouse gas emissions rates of CSA crops calculated under the 45ZCF-GREET model.

.05 Special rules. Section 1.45Z-4 of the forthcoming proposed regulations would provide certain special rules with respect to the § 45Z credit. The rules would (1) incorporate the requirements in § 45Z(f)(1)(A)(i)(I) and (ii) that taxpayers must be registered as a producer of clean fuel under § 4101 at the time of production and produce their fuel in the United States; (2) describe the anti-stacking rules under § 45Z(d)(4)(B) for purposes of determining if a facility is a qualified facility, including examples; (3) incorporate the production attribution rules in § 45Z(f)(2) for facilities with multiple owners; (4) clarify that § 45Z does not require the taxpayer to own a facility and provide related production attribution rules; and (5) describe the recordkeeping and substantiation requirements for taxpayers claiming the § 45Z credit.

The forthcoming proposed regulations would provide an emission rate substantiation safe harbor providing that a taxpayer may substantiate the emissions rate

for a non-SAF transportation fuel that was determined using the 45ZCF-GREET model by obtaining certification with respect to such fuel substantially in the form and manner described in § 1.45Z-5 of the forthcoming proposed regulations for certifying a SAF transportation fuel emissions rate determined using the 45ZCF-GREET model.

The Treasury Department and the IRS are concerned about the potential abuse of the section 45Z credit where transportation fuel is produced and sold in a manner that is inconsistent with the statutory purposes. The Treasury Department and the IRS are considering the need for an anti-abuse rule in the forthcoming proposed regulations.

With respect to used cooking oil (UCO) feedstocks, the Treasury Department and the IRS are concerned about (1) the improper identification of a substance that is not UCO as UCO (for example, virgin palm oil mislabeled as UCO), which could have substantially greater emissions impacts than genuine UCO, and (2) the uncertainty of market impacts caused by incentivizing UCO (for example, the degree to which increased UCO demand would be backfilled by virgin oils such as palm oil). Both of these concerns are particularly acute for imported UCO given the lack of transparency regarding the local sources. Due to these significant concerns about the ability to reliably distinguish between imported UCO and palm oil, and the resulting risk of crediting ineligible fuels, the Treasury Department and the IRS are considering appropriate substantiation and recordkeeping requirements for imported UCO. As a result, pathways that use imported UCO will not be available in the 45ZCF-GREET model until the Treasury Department and the IRS publish further guidance. UCO is considered to be imported if it originates from a source (for example, restaurant or food

processor) outside the United States and/or is purchased from an aggregator located outside the United States.

.06 Certification of emissions rates. Section 1.45Z-5 of the forthcoming proposed regulations would provide rules for unrelated party certification of emissions rates for SAF transportation fuel (certification). The rules would describe the content, form, and manner for a taxpayer to provide certification under § 45Z(f)(1)(A)(i)(II). The Treasury Department and the IRS are developing a model certificate that will be provided at a later date. Until the model certificate is available, taxpayers may use the model certificates included in Notice 2024-6, 2024-2 I.R.B. 348, and Notice 2024-37, 2024-21 I.R.B. 1191, as examples of how to format their certification. Taxpayers should reference § 1.45Z-5 of the forthcoming proposed regulations for the substance and content of the certification.

The forthcoming proposed regulations would treat the following as qualified certifiers for the associated methodologies: (1) for taxpayers using CORSIA Default or CORSIA Actual, any individual or organization with active accreditation from International Sustainability and Carbon Certification, Roundtable on Sustainable Biomaterials, or other sustainability certification scheme approved by the International Civil Aviation Organization; and (2) for taxpayers using the 45ZCF-GREET model, any individual or organization with active accreditation (i) as a validation and certification body from the American National Standards Institute National Accreditation Board or (ii) as a verifier, lead verifier, or verification body under the California Air Resources Board Low Carbon Fuel Standard program (CARB LCFS). Qualified certifiers would be

required to have the relevant active accreditation as of the date they provide the certification for a taxpayer's fuel.

The forthcoming proposed regulations would include CARB LCFS verifiers as qualified certifiers for taxpayers using the 45ZCF-GREET model as a methodology for SAF transportation fuel because CARB LCFS verifiers are experienced with evaluating information similar to the information included in the 45ZCF-GREET model.

The Treasury Department and the IRS anticipate requiring unrelated party certification of CSA crops, including information related to chain of custody of CSA crops throughout the biofuel supply chain.

.07 Claim filing. Section 1.45Z-6 of the forthcoming proposed regulations would (1) describe the time and manner of filing a claim for the § 45Z credit and (2) provide special rules for cases in which the producer of a clean fuel is not the credit claimant. If an entity that is disregarded as an entity separate from its owner within the meaning of § 301.7701-2(c)(2)(i) of the Procedure and Administration Regulations (disregarded entity) or a qualified subchapter S subsidiary within the meaning of § 1361(b)(3)(B) (QSub) produces transportation fuel that is eligible for the § 45Z credit, the forthcoming proposed regulations would treat the owner of such disregarded entity or QSub as registered as a producer of clean fuel under § 4101 for purposes of claiming the § 45Z credit. In addition, the forthcoming proposed regulations would clarify that the agent of a consolidated group, when filing a Form 7218, *Clean Fuel Production Credit*, to claim the § 45Z credit, must use the producer's registration number (within the meaning of § 45Z(f)(1)(A)(i)(I) and § 1.4101-1) of the member that produced the transportation fuel.

The forthcoming proposed regulations would be consistent with the § 45Z Fact Sheet FAQs and provide additional specificity and clarity.

.08 Registration.

(1) Registration rules generally. Section 1.4101-1 of the forthcoming proposed regulations would provide rules regarding the approval, denial, revocation, or suspension of registration that are similar to the rules of § 4222(c) and § 48.4222(c)-1 of the Manufacturers and Retailers Excise Tax Regulations. Additionally, many of the requirements of § 1.4101-1 of the forthcoming proposed regulations would be similar or identical to the requirements of § 48.4101-1. The Treasury Department and the IRS are aware that many applicants for registration as clean fuel producers (which is required in order to claim the § 45Z credit) must also be registered under § 4101 for excise tax purposes; such applicants are therefore familiar with the registration process and must maintain other § 4101 registrations.

(2) Separate entity treatment. The forthcoming proposed regulations would generally provide that each business unit that has, or is required to have, a separate employer identification number (EIN) is treated as a separate person. The rules would provide that each disregarded entity that has an EIN and is a producer of transportation fuel for purposes of § 45Z must register as a producer of clean fuel in order to be eligible to claim the § 45Z credit. The rules would also provide that each QSub that has an EIN and is a producer of transportation fuel for purposes of § 45Z must register as a producer of clean fuel in order to be eligible to claim the § 45Z credit.

The Treasury Department and the IRS understand that, for many producers, each facility is owned by a disregarded entity. The forthcoming proposed regulations

would provide registration rules that would reflect this practice while also satisfying the statutory requirements. The separate entity treatment rules also would provide for registration in a manner that would be similar to registering on a facility basis and would thus align more closely with other related tax provisions, including §§ 45V and 45Q (for which anti-stacking provisions apply) and the elective payment election and transfer election provisions of §§ 6417 and 6418, which are generally determined on a per-facility basis. The rules would also be consistent with (1) § 48.4101-1(a)(4), which requires separate entity treatment by providing that every business that has or is required to have a separate EIN is treated as a separate person for purposes of excise tax registrations under § 4101, (2) § 301.7701-2(c)(2)(v)(A)(3), which provides that § 301.7701-2(c)(2)(i) (concerning certain wholly-owned entities) does not apply for purposes of registration under §§ 4101, 4222, and 4412, and (3) § 1.1361-4(a)(8)(i)(C), which provides that a QSub is treated as a separate corporation for purposes of registration under §§ 4101, 4222, and 4412.

(3) Reregistration safe harbor. The forthcoming proposed regulations would provide a safe harbor for a person that has been registered by the IRS and must reregister due to a change in ownership. A person that is approved for reregistration would be eligible to claim a § 45Z credit as of the date the IRS received the application for reregistration, even if, at the time of such person's fuel production, the IRS had not yet approved the reregistration.

(4) Section 4101(a)(1) registration requirement. Section 13704(b)(5) of the IRA provides that for transportation fuel produced after December 31, 2024, "[s]ection 4101(a)(1), as amended by the preceding provisions of this Act, is amended by inserting

the phrase ‘every person producing a fuel eligible for the clean fuel production credit (pursuant to section 45Z)’ after ‘section 6426(k)(3)).’” However, § 4101(a)(1) does not reference § 6426(k)(3). A prior version of such amendment contained text that read “(as defined in section 40B or section 6426(k)(3)),”¹⁰ but the reference to § 6426(k)(3) did not appear in the enacted version of § 13704(b)(5) of the IRA. The Office of Law Revision Counsel of the U.S. House of Representatives, whose functions include preparing and publishing periodically a new edition of the United States Code, executed the provision by making the insertion after “section 40B),” to reflect the probable intent of Congress.¹¹ Such intent is also reflected in § 45Z(f)(1)(A)(i)(I). For these reasons, the forthcoming proposed regulations would require every person intending to claim a § 45Z credit with respect to the production of a fuel eligible for the § 45Z credit to register with the IRS under § 4101.

SECTION 4. REQUEST FOR COMMENTS

.01 General request for comments. The Treasury Department and the IRS request comments on the forthcoming proposed regulations described in section 3 of this notice, the topics identified in section 4.02 of this notice, and the draft text in the appendix of this notice.

.02 Specific request for comments. The Treasury Department and the IRS specifically request comments on:

(1) How the fuel pathways approved under the EPA’s Renewable Fuel Standard (RFS) program could be adapted for purposes of the emissions rate table if the

¹⁰ See H.R. 5376, 121st Cong., 2d. Sess. § 136203(d)(2)(E) (Nov. 19, 2021).

¹¹ Available at <https://uscode.house.gov/view.xhtml?req=granuleid:USC-prelim-title26-section4101&num=0&edition=prelim>.

Treasury Department and the EPA were to determine that the RFS program is a methodology “similar” to CORSIA that also satisfies the criteria under § 211(o)(1)(H) of the CAA (as required by § 45Z(b)(1)(B)(iii)(II)).

(2) Any clean fuel production processes that are currently in commerce that might meet the eligibility requirements of § 45Z but are not included in the 45ZCF-GREET model that is released simultaneously with this notice.

SECTION 5. SUBMISSION OF COMMENTS

Written comments should be submitted by April 10, 2025. The subject line for the comments should include a reference to Notice 2025-10. Comments may be submitted in one of two ways:

(1) electronically via the Federal eRulemaking Portal at <http://www.regulations.gov> (type IRS-2025-0002 in the search field on the regulations.gov homepage to find this notice and submit comments); or

(2) by mail to: Internal Revenue Service, CC:PA:01:PR (Notice 2025-10), Room 5203, P.O. Box 7604, Ben Franklin Station, Washington, DC 20044.

All commenters are strongly encouraged to submit comments electronically. The Treasury Department and the IRS will publish for public availability any comment submitted electronically, or on paper, to its public docket on www.regulations.gov.

SECTION 6. EFFECTIVE DATE OF THIS NOTICE

This notice is effective January 10, 2025.

SECTION 7. EFFECT ON OTHER DOCUMENTS

Section 3 of Notice 2024-49 is modified and superseded. Until further notice, the definitions in section 3 of Notice 2024-49 are replaced with the definitions in the appendix of this notice.

SECTION 8. PAPERWORK REDUCTION ACT

The Paperwork Reduction Act of 1995 (44 U.S.C. 3501-3520) (PRA) generally requires that a federal agency obtain the approval of the Office of Management and Budget (OMB) before collecting information from the public, whether such collection of information is mandatory, voluntary, or required to obtain or retain a benefit. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a valid control number assigned by the OMB.

This notice sets forth intended collections of information to be provided to the IRS with Form 637, *Application for Registration (For Certain Excise Tax Activities)*, to determine whether an applicant meets the requirements to be registered under § 4101, a requirement to qualify for the § 45Z credit. Any collections of information associated with this notice will be reflected in the submission to the OMB for review in accordance with the PRA that is associated with Form 637 (OMB control number 1545-1835). This submission will be updated in the ordinary course.

Any collections of information associated with this notice may include reporting and third-party disclosure requirements that would be necessary to ensure that taxpayers qualify for the § 45Z credit. The collections would be used by the IRS for tax compliance purposes and by taxpayers to ensure that the fuel being produced qualifies for the § 45Z credit. The burden for these requirements would be included with the

Form and Instructions for Form 7218, *Clean Fuel Production Credit*. For PRA purposes, the Form and Instructions for Form 7218 are already approved by OMB under 1545-0123 for business filers, 1545-0092 for individuals, 1545-0047 for non-profit organizations, and 1545-0092 for trust and estate filers.

Any collections of information associated with this notice may include reporting and recordkeeping requirements. The collections would be used by the IRS for tax compliance purposes. A taxpayer would use these collections to establish its eligibility for the § 45Z credit and the amount of the credit claimed. The recordkeeping requirements would include that taxpayers keep records about emissions rates, production, and sale. These recordkeeping requirements are considered general tax records under § 1.6001-1(e). For PRA purposes, general tax records are already approved by OMB under 1545-0123 for business filers, 1545-0092 for individuals, 1545-0047 for non-profit organizations, and 1545-0092 for trust and estate filers.

SECTION 9. DRAFTING INFORMATION

The principal authors of this notice are Jennifer Golden, Danielle Mayfield, Camille Edwards Bennehoff, and Andrew Clark of the Office of Associate Chief Counsel (Passthroughs & Special Industries). For questions regarding this notice, contact Ms. Golden, Ms. Mayfield, Ms. Edwards Bennehoff, or Mr. Clark at (202) 317-6855 (not a toll-free number).

Appendix – Draft Text of Forthcoming Proposed Regulations

§1.45Z-1 Clean fuel production credit; definitions.

(a) *Overview.* For purposes of section 38 of the Code, the section 45Z clean fuel production credit is determined under section 45Z of the Code and the section 45Z regulations. This section provides an overview and definitions that apply for purposes of section 45Z and the section 45Z regulations. Section 1.45Z-2 provides general rules for determining the amount and timing of the section 45Z credit, including rules on the emissions factor and the emissions rate for transportation fuels. Section 1.45Z-3 provides rules relating to the increased credit amount for satisfying prevailing wage and apprenticeship requirements. Section 1.45Z-4 provides rules on required registration (under section 4101 of the Code and §1.4101-1 of this chapter), anti-stacking, production attribution, facility ownership, and recordkeeping and substantiation. Section 1.45Z-5 provides procedures for the certification of emissions rates. Section 1.45Z-6 provides procedures for filing a claim for the section 45Z credit. Section 1.4101-1 provides the rules for registration under section 4101.

(b) *Definitions.* The definitions in this section apply for purposes of section 45Z and the section 45Z regulations.

(1) *45ZCF-GREET model.* The term *45ZCF-GREET model* means the model by that name developed by the Argonne National Laboratory and published by the DOE for use in determining the amount of lifecycle greenhouse gas emissions for purposes of section 45Z.

(2) *Applicable amount*. The term *applicable amount* means the applicable amount as described in section 45Z(a)(2) and (a)(3)(A) and §1.45Z-2(a)(4).

(3) *Applicable material*. As provided in section 45Z(d)(5)(B)(i), the term *applicable material* means—

- (i) monoglycerides, diglycerides, and triglycerides,
- (ii) free fatty acids, and
- (iii) fatty acid esters.

(4) *ASTM*. The term *ASTM* means the standards published by ASTM International, formerly known as the American Society for Testing and Materials. Additional information about ASTM International is available at <https://www.astm.org/>.

(5) *Biomass*. As provided in section 45Z(d)(5)(B)(ii) (citing section 45K(c)(3) of the Code), the term *biomass* means any organic material other than (i) oil and natural gas (or any product thereof), and (ii) coal (including lignite) or any product thereof.

(6) *Claim; Form 7218*. The term *claim* means a completed Form 7218, *Clean Fuel Production Credit* (including any other required documentation that the relevant form instructions and the section 45Z regulations require), filed with the taxpayer's Federal income tax return or Federal information return for the taxable year in which the section 45Z credit is determined. The term *Form 7218* means Form 7218, *Clean Fuel Production Credit*, and any successor form(s). See §601.602 Statement of Procedural Rules of this chapter.

(7) *CO₂e*. As provided in section 45Z(d)(2), the term *CO₂e* means, with respect to any greenhouse gas, the equivalent carbon dioxide (as determined based on relative global warming potential).

(8) *Code*. The term *Code* means the Internal Revenue Code.

(9) *CORSIA program*--(i) *In general*. As provided in section 45Z(b)(1)(B)(iii)(I), the term *CORSIA program* means the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) program which has been adopted by the International Civil Aviation Organization with the agreement of the United States. Additional information about the CORSIA program is available at <https://www.icao.int/environmental-protection/CORSIA/Pages/default.aspx>.

(ii) *CORSIA Default or CORSIA Actual*. The term *CORSIA Default or CORSIA Actual* means determinations from fuel pathways approved under the CORSIA Default Life Cycle Emissions Values for CORSIA Eligible Fuels lifecycle approach (CORSIA Default) or the CORSIA Methodology for Calculating Actual Life Cycle Emissions Values lifecycle approach (CORSIA Actual). Additional information about CORSIA Default and CORSIA Actual is available at <https://www.icao.int/environmental-protection/CORSIA/Pages/CORSIA-Eligible-Fuels.aspx>.

(10) *DOE*. The term *DOE* means the United States Department of Energy.

(11) *Emissions factor*. The term *emissions factor* means the emissions factor as described in section 45Z(b)(1)(A) and §1.45Z-2(c)(1).

(12) *Emissions rate*. The term *emissions rate* means the emissions rate for a transportation fuel as described in §1.45Z-2(d).

(13) *EPA*. The term *EPA* means the United States Environmental Protection Agency.

(14) *Facility*--(i) *In general*. For purposes of the definition of *qualified facility* provided in section 45Z(d)(4) and paragraph (b)(24) of this section, the term *facility*

means a single production line that is used to produce a transportation fuel. For this purpose, a single production line includes all components that function interdependently to produce a transportation fuel through a process that results in the lifecycle greenhouse gas emissions rate used to determine the credit. Components function interdependently to produce a transportation fuel if the use of each component is dependent upon the use of each of the other components to produce a transportation fuel. A component that functions interdependently with other components to produce a transportation fuel need not be located within the same building as, or within a certain geographic proximity to, the other components. A facility includes carbon capture equipment if such carbon capture equipment contributes to the lifecycle greenhouse gas emissions rate of the process by which the transportation fuel for which the credit is determined is produced. A single production line includes all steps of the production process from the processing of feedstock through to the transportation fuel that is sold by the taxpayer in a qualifying sale.

(ii) *Certain indirect production and post-production equipment.* The term *facility* does not include—

(A) Equipment that is used to condition, such as equipment used to blend transportation fuel into a fuel mixture, pressurize a fuel for use in transportation, or transport a transportation fuel beyond the point of production; or

(B) Notwithstanding paragraph (b)(14)(iii) of this section, feedstock-related equipment (including production, purification, recovery, transportation, or transmission equipment) or electricity production equipment used to power the transportation fuel

production process, including any carbon capture equipment associated with the electricity production process.

(iii) *Multipurpose components.* Components that have a purpose in addition to the production of a transportation fuel may be part of a facility if such components function interdependently with other components to produce a transportation fuel.

(iv) *Examples.* The following examples illustrate the definition of facility.

(A) *Example 1. Effect of geographic proximity; carbon capture equipment.* Z produces a transportation fuel at a facility that is equipped with carbon capture equipment (as defined in §1.45Q-2(c)), as distinguished from the carbon capture equipment described in paragraph (b)(14)(ii)(B) of this section. One purpose of the equipment is to capture carbon oxides. Without the carbon capture equipment, the facility could not produce a fuel that has an emissions rate that is not greater than 50 kilograms of CO₂e per mmBTU. Because the carbon capture equipment functions interdependently with other components to produce the transportation fuel, the carbon capture equipment is part of the facility under paragraph (b)(14)(i) of this section. The analysis in this example is the same regardless of the geographic distance between the carbon capture equipment and the rest of the components comprising the facility. A component that functions interdependently with other components to produce a transportation fuel need not be located within the same building as, or within a certain geographic proximity to, the other components.

(B) *Example 2. Single production line with components functioning interdependently; SAF transportation fuel.* X produces SAF transportation fuel that is a synthetic blending component that meets the requirements of ASTM D7566, Annex A2,

at its facility. X sells the SAF transportation fuel to an unrelated person, Y, a blender, that blends it with kerosene to create a fuel mixture that qualifies as jet fuel under ASTM 7566. X uses equipment and components that function interdependently to produce the SAF transportation fuel that is sold to Y. X's equipment and components constitute a facility for section 45Z purposes. As described in paragraph (b)(14)(ii)(A) of this section, Y's equipment and components used to make a transportation fuel mixture are blending equipment and not a facility for section 45Z purposes.

(15) *Fuel*. The term *fuel* means any liquid or gaseous substance that can be consumed to supply heat or power. Therefore, for purposes of section 45Z, the term *fuel* does not include electricity.

(16) *Gallon equivalent*--(i) *In general*. The term *gallon equivalent* means, with respect to any non-liquid fuel, the amount of such fuel that has the energy equivalent of a gallon of gasoline, which refers to the amount of such fuel having a Btu content of 116,090 (lower heating value).

(ii) *Non-liquid fuel*. A fuel is considered non-liquid if it is in a gaseous state at ambient pressure and temperature of 1 atmosphere and 60 degrees Fahrenheit, respectively.

(iii) *Calculation*. For a given non-liquid fuel, the gallon equivalent of such fuel is equal to that fuel's lower heating value divided by the lower heating value of a gallon of gasoline. Expressed mathematically: $\text{Gallon equivalent} = \text{lower heating value of given fuel (measured in Btu)} \div \text{lower heating value of a gallon of gasoline (116,090 Btu)}$. Such gallon equivalent must be rounded to 5 decimal places. The lower heating value of some non-liquid fuels are provided below:

Fuel	Lower Heating Value
Low-GHG compressed CANG	20,267 Btu per pound
Low-GHG dimethyl ether	12,417 Btu per pound
Low-GHG hydrogen	51,585 Btu per pound
Low-GHG liquified CANG ¹	20,908 Btu per pound
Low-GHG LPG (other than propane from HEFA) ²	19,873 Btu per pound
Low-GHG LPG (propane from HEFA) ³	18,568 Btu per pound

(iv) *Example.* A produced 100,000 pounds of low-GHG compressed CANG at a qualified facility and sold it in a qualifying sale. To determine the number of gallon equivalents for which A is eligible to claim the section 45Z credit, A must divide the lower heating value of low-GHG compressed CANG, 20,267 Btu per pound, by the lower heating value of a gallon of gasoline, 116,090 Btu. Rounded to 5 decimal places, on an energy equivalence basis, each pound of low-GHG compressed CANG is equal to 0.17458 gallon equivalents. As such, A is eligible to claim the section 45Z credit for 17,458 gallon equivalents of low-GHG compressed CANG.

(17) *Greenhouse gas (GHG).* As provided in section 45Z(d)(3), the term *greenhouse gas*, or *GHG*, has the same meaning given that term under section 211(o)(1)(G) of the Clean Air Act (42 U.S.C. 7545(o)(1)(G)), as in effect on August 16, 2022.

¹ Low-GHG liquified CANG is a non-liquid fuel at ambient pressure and temperature of 1 atmosphere and 60 degrees Fahrenheit.

² Low-GHG LPG (other than propane from HEFA) is a non-liquid fuel at ambient pressure and temperature of 1 atmosphere and 60 degrees Fahrenheit.

³ Low-GHG LPG (propane from HEFA) is a non-liquid fuel at ambient pressure and temperature of 1 atmosphere and 60 degrees Fahrenheit.

(18) *Lifecycle greenhouse gas emissions*. The term *lifecycle greenhouse gas emissions* means the lifecycle greenhouse gas emissions as described in section 211(o)(1)(H) of the Clean Air Act (42 U.S.C. 7545(o)(1)(H)), as in effect on August 16, 2022.

(19) *mmBTU*. As provided in section 45Z(d)(1), the term *mmBTU* means 1,000,000 British thermal units.

(20) *Non-SAF transportation fuel*--(i) *In general*. The term *non-SAF transportation fuel* means any transportation fuel that is not a SAF transportation fuel.

(ii) *Low-GHG non-SAF fuels*. This paragraph provides a list of non-SAF fuels that may qualify as a transportation fuel, as well as descriptions for such fuels. A listed non-SAF fuel that meets the applicable description in this paragraph (b)(20)(ii) must also meet all the other applicable requirements under section 45Z and the section 45Z regulations to qualify as a transportation fuel.

(A) *Low-GHG biodiesel*. The term *low-GHG biodiesel* means the monoalkyl esters of long chain fatty acids that meet the specifications of ASTM D6751 and that have an emissions rate that is not greater than 50 kilograms of CO₂e per mmBTU.

(B) *Low-GHG butanol*. The term *low-GHG butanol* means any mixture of n-butyl, sec-butyl, and iso-butyl alcohols that meets the specifications of ASTM D7862 and that has an emissions rate that is not greater than 50 kilograms of CO₂e per mmBTU.

(C) *Low-GHG diesel fuel*. The term *low-GHG diesel fuel* means liquid fuel, including renewable diesel, that meets the specifications of ASTM D975 and that has an emissions rate that is not greater than 50 kilograms of CO₂e per mmBTU.

(D) *Low-GHG dimethyl ether*. The term *low-GHG dimethyl ether*, which includes renewable dimethyl ether, means a gaseous fuel that meets the specifications of ASTM D7901 and that has an emissions rate that is not greater than 50 kilograms of CO_{2e} per mmBTU.

(E) *Low-GHG ethanol*. The term *low-GHG ethanol* means ethyl alcohol that is a liquid fuel that meets the specifications of ASTM D4806 for denatured fuel ethanol for blending with gasoline and that has an emissions rate that is not greater than 50 kilograms of CO_{2e} per mmBTU.

(F) *Low-GHG gasoline*. The term *low-GHG gasoline*, which includes renewable gasoline, means liquid fuel that meets the specifications of ASTM D4814 and that has an emissions rate that is not greater than 50 kilograms of CO_{2e} per mmBTU.

(G) *Low-GHG hydrogen*. The term *low-GHG hydrogen* means any gaseous or liquid fuel that meets the requirements of the Society of Automotive Engineers (SAE) J2719 standard and that has an emissions rate that is not greater than 50 kilograms of CO_{2e} per mmBTU. Information about SAE standards is available at <https://www.sae.org/standards>.

(H) *Low-GHG liquefied petroleum gas (LPG)*. The term *low-GHG LPG*, which includes low-GHG propane, means liquefied gases that meet the specifications of ASTM D1835 and that have an emissions rate that is not greater than 50 kilograms of CO_{2e} per mmBTU.

(I) *Low-GHG methanol*. The term *low-GHG methanol* means a methyl alcohol that is a liquid fuel that meets the specifications of ASTM D1152 or ASTM D5797 and that has an emissions rate that is not greater than 50 kilograms of CO_{2e} per mmBTU.

(J) *Low-GHG conventional or alternative natural gas (CANG)*. The term *low-GHG conventional or alternative natural gas (CANG)*, which includes renewable natural gas (RNG), means a pipeline-quality compressed or liquefied gas that meets the specifications of ASTM D8080, except for the compression requirements, and that has an emissions rate that is not greater than 50 kilograms of CO₂e per mmBTU.

(21) *Prevailing wage and apprenticeship requirements*. The term *prevailing wage and apprenticeship requirements* or *PWA requirements* means the requirements described in section 45Z(f)(6) and (7) and §1.45Z-3.

(22) *Producer--(i) In general*. Except as provided in paragraph (b)(22)(ii), the term *producer* means the person that engages in the production of a transportation fuel.

(ii) *Alternative natural gas*. With respect to alternative natural gas, including RNG, the term *producer* means the person that processes the alternative natural gas (processor) to remove water, carbon dioxide, and other impurities such that it is interchangeable with fossil natural gas.

(iii) *Examples*. The following examples illustrate the definition of producer.

(A) *Example 1. SAF producer*. X uses vegetable oil to make 10,000 gallons of a synthetic blending component via a hydroprocessed esters and fatty acids (HEFA) production pathway described in ASTM D7566, Annex A2, that qualifies as a SAF transportation fuel. X sells the synthetic blending component to Y, a blender that makes a 20,000-gallon SAF blend consisting of 50 percent synthetic blending component and 50 percent petroleum-based kerosene that meets the requirements of ASTM D7566. X and Y are unrelated. X is the producer for the 10,000 gallons of synthetic blending

component that it sold to Y. Y is not the producer for any of the 20,000 gallons of fuel that it blended, because blending is not production.

(B) *Example 2. RNG producer.* R collects biogas from an anaerobic digester and processes it into RNG that qualifies as a transportation fuel. R sells 10,000-gallon equivalents of RNG to W, a RNG wholesaler and distributor. R injects the 10,000-gallon equivalents of RNG into a pipeline. W removes 10,000-gallon equivalents of CANG from the pipeline, further compresses it and sells it to a municipality that uses it to fuel compressed natural gas buses. R and W are unrelated. R is the producer of the 10,000-gallon equivalents of RNG. W is not the producer because W merely took a post-production transportation fuel and further compressed it. Further, W's compression equipment does not constitute a facility (as defined in paragraph (b)(14) of this section), as the equipment was used solely to condition, pressurize, or transport a transportation fuel beyond the point of production.

(23) *Production--(i) In general.* The term *production* means all steps and processes used to make a transportation fuel. Production begins with the processing of primary feedstock(s) and ends with a transportation fuel ready to be sold in a qualifying sale. Production must involve substantial processing by the producer to create a transportation fuel. Production does not include instances in which a person engages in minimal processing, such as blending a fuel mixture or otherwise engaging in activities that do not result in a chemical transformation. Production does not include instances where a person uses a primary feedstock to produce a fuel that meets the same ASTM standard as the primary feedstock. Production must occur in the United States.

(ii) *Examples.* The following examples illustrate the definition of production.

(A) *Example 1. Minimal processing when stabilizing biodiesel; production in the United States.* X, a domestic corporation, imports fatty acid methyl ester (FAME) that does not meet the ASTM D6751 specifications for biodiesel. After importation into the United States, X adds a stabilizing additive so that the FAME meets the specifications of ASTM D6751. The resulting fuel is ASTM-compliant biodiesel that qualifies as a transportation fuel. X then sells the ASTM-compliant biodiesel to an unrelated person for use as a fuel in that person's trade or business. X has not produced the ASTM-compliant biodiesel, as X merely engaged in minimal processing by adding an additive to the imported FAME. Further, the ASTM-compliant biodiesel sold by X was not produced in the United States, as X did not engage in substantial processing in the United States. Substantial processing, and thus production, occurred before X imported the FAME into the United States.

(B) *Example 2. Minimal processing when dehydrating hydrous ethanol; production in the United States.* Y, a domestic corporation, imports hydrous ethanol into the United States. The hydrous ethanol has excessive water content and does not meet the ASTM D4806 specifications for ethanol. After importation into the United States, Y reduces the water content of the hydrous ethanol. The resulting fuel is ASTM-compliant anhydrous ethanol that qualifies as a transportation fuel. Y then sells the ASTM-compliant anhydrous ethanol to an unrelated person for use in the production of a gasoline blend. Y has not produced the ASTM-compliant anhydrous ethanol, as Y merely engaged in minimal processing by dehydrating the imported hydrous ethanol. Further, the ASTM-compliant anhydrous ethanol sold by Y was not produced in the United States, as Y did not engage in substantial processing in the United States.

Substantial processing, and thus production, occurred before Y imported the hydrous ethanol into the United States.

(24) *Qualified facility*--(i) *In general*. As provided in section 45Z(d)(4), the term *qualified facility* means a facility (as defined in paragraph (b)(14) of this section) used for the production of transportation fuel and excludes any facility for which an anti-stacking credit is allowed under section 38 for the taxable year. See §1.45Z-4(b) for more information on the application of the anti-stacking rules.

(ii) *Anti-stacking credit*. The term *anti-stacking credit* means any one of the following credits:

(A) The credit for production of clean hydrogen under section 45V (section 45V credit).

(B) The credit determined under section 46 to the extent that such credit is attributable to the energy credit determined under section 48 with respect to any specified clean hydrogen production facility for which an election is made under section 48(a)(15) (section 48(a)(15) election).

(C) The credit for carbon oxide sequestration under section 45Q (section 45Q credit).

(25) *Qualifying sale*--(i) *In general*. As provided in section 45Z(a)(4), the term *qualifying sale* means a sale of transportation fuel by the taxpayer to an unrelated person if--

(A) The fuel is sold for use in the production of a fuel mixture by such person,

(B) The fuel is sold for use in a trade or business by such person, or

(C) Such person sells such fuel at retail to another person and places such fuel in the fuel tank of such other person.

(ii) *Sold for use in a trade or business.* The term *sold for use in a trade or business* means sold for use as a fuel in a trade or business within the meaning of section 162 of the Code. The term does not include a sale for blending or for further processing, including use as a primary feedstock to produce another fuel.

(iii) *Sale by another member of a consolidated group.* In the case of a corporation that is a member of an affiliated group of corporations filing a consolidated return (that is, a member of a consolidated group (as defined in §1.1502-1(b) and (h))), such corporation will be treated as selling fuel to an unrelated person if such fuel is sold to the unrelated person by another member of such consolidated group.

(iv) *Example. Qualifying sale related to ethanol to SAF production.* A produces 12,000 gallons of ethanol. A sells the ethanol to B. A and B are unrelated. B uses the 12,000 gallons of ethanol to produce 4,500 gallons of a synthetic blending component under ASTM 7566, Annex A5 (ATJ-SPK). B then blends the 4,500 gallons of synthetic blending component with petroleum-based kerosene. B's resulting 9,000-gallon SAF blend is 50 percent synthetic blending component and 50 percent kerosene and meets the requirements of ASTM D7566. B sells the SAF blend to an unrelated person for use in an aircraft in a trade or business under section 162.

A, the producer of the 12,000 gallons of ethanol, is not eligible to claim a section 45Z credit for the 12,000 gallons of ethanol that it sold to B. A sold the ethanol to B for use as a primary feedstock to produce another fuel, which paragraph (b)(25)(ii) of this section excludes from the definition of *sold for use in a trade or business*, and the sale

is not otherwise a qualifying sale. B is the producer of the 4,500 gallons of ATJ-SPK, the synthetic blending component, that it made and sold as part of the SAF blend. Assuming all other requirements of the section 45Z credit are met, B is eligible to claim a section 45Z credit for the 4,500 gallons of synthetic blending component because it sold such fuel for use in an aircraft in a trade or business within the meaning of section 162.

(26) *SAF transportation fuel*--(i) *In general.* The term *SAF transportation fuel* means sustainable aviation fuel (SAF) as defined in section 45Z(a)(3)(B). That term means the non-kerosene portion of any liquid fuel that is a transportation fuel, is sold for use in an aircraft, and:

(A) meets the requirements of—

(1) ASTM D7566, or

(2) the Fischer Tropsch provisions of ASTM D1655, Annex A1; and

(B) is not derived from palm fatty acid distillates or petroleum.

(ii) *Synthetic blending component.* The term *synthetic blending component* means the SAF portion of a fuel mixture described in ASTM D7566 that meets the specifications of one of the ASTM D7566 Annexes and is not derived from palm fatty acid distillates or petroleum.

(iii) *Sold for use in an aircraft.* A synthetic blending component sold to a person that blends the fuel into a fuel mixture described in ASTM D7566 is sold for use in an aircraft.

(iv) *FT hydrocarbons.* The term *FT hydrocarbons* means the Fischer Tropsch hydrocarbons that are derived from biomass, used to produce jet fuel described in

section A1.2.2.2 of ASTM D1655, Annex A1, and not derived from palm fatty acid distillates or petroleum.

(v) *ASTM D7566 Annexes*. The term *ASTM D7566 Annexes* means any of the annexes in ASTM D7566 that provide the specifications for a pathway to create a synthetic blending component that can be blended with ASTM D1655-compliant kerosene.

(vi) *ASTM D1655, Annex A1*. The term *ASTM D1655, Annex A1* means the Fischer Tropsch provisions of ASTM D1655 Annex A1 that are contained in section A1.2.2.2, which provides a pathway for coprocessing up to five percent of FT hydrocarbons with petroleum to make a liquid fuel that qualifies as jet fuel. For purposes of this definition, the term *petroleum* includes any conventionally sourced hydrocarbons permitted under ASTM D1655, Annex A1. Liquid fuel produced in accordance with section A1.2.2.1 of ASTM D1655, Annex A1 does not qualify for the section 45Z credit because section A1.2.2.1 defines a pathway for producing a liquid fuel from coprocessing an applicable material (or materials derived therefrom) with a non-biomass feedstock.

(27) *Secretary; IRS*--(i) *Secretary*. The term *Secretary* means the Secretary of the Treasury or her delegate.

(ii) *IRS*. The term *IRS* means the Internal Revenue Service.

(28) *Section 45Z credit*. The term *section 45Z credit* means the clean fuel production credit determined under section 45Z of the Code and the section 45Z regulations.

(29) *Section 45Z regulations*. The term *section 45Z regulations* means the regulations in this section, §§1.45Z-2 through 1.45Z-6, and §1.4101-1.

(30) *Taxpayer*. The term *taxpayer* means the person that is registered as the producer of a clean fuel under section 4101 (or that is treated as the registrant for purposes of filing a claim for the section 45Z credit). See §1.45Z-6, *Procedures for filing a claim for clean fuel production credit*.

(31) *Transportation fuel*--(i) *In general*. As provided in section 45Z(d)(5)(A), the term *transportation fuel* means a fuel that—

(A) Is suitable for use as a fuel in a highway vehicle or aircraft,

(B) Has an emissions rate that is not greater than 50 kilograms of CO_{2e} per mmBTU, and

(C) Is not derived from coprocessing an applicable material (or materials derived from an applicable material) with a feedstock that is not biomass.

(ii) *Suitable for use as a fuel in a highway vehicle or aircraft (suitable for use)*--

(A) A fuel is *suitable for use* if the fuel either has practical and commercial fitness for use as a fuel in a highway vehicle or aircraft, or may be blended into a fuel mixture that has practical and commercial fitness for use as a fuel in a highway vehicle or aircraft. A fuel may possess this practical and commercial fitness even though use in a highway vehicle or aircraft is not the fuel's predominant use. However, a fuel does not possess this practical and commercial fitness solely by reason of its possible or rare use as a fuel in a highway vehicle or aircraft. A fuel is suitable for use at the point at which no further production, refinement, or other step is necessary before the fuel is ready to be sold in a qualifying sale, except, as specified in paragraph (b)(31)(ii)(B) of this section,

for CANG. To be considered suitable for use, a fuel need not actually be used as a fuel in a highway vehicle or aircraft.

(B) CANG is suitable for use once it is produced such that if further compressed it would meet the specifications of ASTM D8080.

(C) A fuel that does not require further processing and that may be blended with or used as a component of taxable fuel (within the meaning of section 4083 of the Code) is suitable for use.

(32) *United States*. As provided in section 45Z(f)(1)(B), the term *United States* includes any territory of the United States.

(33) *Unrelated person*. As provided in section 45Z(f)(3), the term *unrelated person* means a person not related to the taxpayer. Persons will be treated as related to each other if such persons would be treated as a single employer under the regulations prescribed under section 52(b) of the Code.

(c) *Applicability date*. This section applies to qualifying sales occurring on or after the date proposed regulations are published in the ***Federal Register***.

§1.45Z-2 General rules.

(a) *Amount of credit*. For purposes of section 38 of the Code, the section 45Z credit is determined under section 45Z of the Code and the section 45Z regulations.

(1) *In general*. The amount of the section 45Z credit for any taxable year is an amount equal to the product of—

(i) The applicable amount per gallon or gallon equivalent (as defined in §1.45Z-1(b)(16)) with respect to any transportation fuel which is—

(A) Produced by the taxpayer at a qualified facility, and

(B) Sold by the taxpayer in a qualifying sale during the taxable year, and

(ii) The emissions factor for such fuel.

(2) *Fuel measurement.* The volume of a liquid fuel is measured on the basis of gallons adjusted to ambient pressure and temperature of 1 atmosphere and 60 degrees Fahrenheit. The gallon equivalent of a non-liquid fuel is calculated according to §1.45Z-1(b)(16).

(3) *Rounding.* As provided in section 45Z(a)(5), if the amount of any section 45Z credit is not a multiple of 1 cent, a taxpayer must round such amount to the nearest cent. A taxpayer must round up any amount ending in 0.5 cents or higher, and round down any amount ending in less than 0.5 cents.

(4) *Applicable amount--(i) In general.* The term *applicable amount* means the base amount described in paragraph (a)(4)(ii) of this section or the alternative amount described in paragraph (a)(4)(iii) of this section. The applicable amount is subject to inflation adjustment. See section 45Z(c).

(ii) *Base amount.* As provided in section 45Z(a)(2)(A) and (a)(3)(A)(i), in the case of any transportation fuel produced at a qualified facility that does not satisfy the prevailing wage and apprenticeship requirements, the term *base amount* means—

(A) For non-SAF transportation fuel, 20 cents subject to inflation adjustment for calendar years beginning after 2024; and

(B) For SAF transportation fuel, 35 cents subject to inflation adjustment for calendar years beginning after 2024.

(iii) *Alternative amount.* As provided in section 45Z(a)(2)(B) and (a)(3)(A)(ii), in the case of any transportation fuel produced at a qualified facility that satisfies the prevailing wage and apprenticeship requirements, the term *alternative amount* means—

(A) For non-SAF transportation fuel, \$1.00 subject to inflation adjustment for calendar years beginning after 2024; and

(B) For SAF transportation fuel, \$1.75 subject to inflation adjustment for calendar years beginning after 2024.

(5) *Inflation adjustment--(i) In general.* As provided in section 45Z(c)(1), for calendar years beginning after 2024, the base amount and the alternative amount for both non-SAF and SAF transportation fuel (that is, the \$0.20, \$0.35, \$1.00, and \$1.75 amounts described in paragraphs (a)(4)(ii) and (iii) of this section), will each be adjusted by multiplying such amount by the inflation adjustment factor for the calendar year in which the sale of the transportation fuel occurs. If an inflation adjusted amount is not a multiple of 1 cent, such amount will be rounded to the nearest multiple of 1 cent.

(ii) *Inflation adjustment factor.* As provided in section 45Z(c)(2), the term *inflation adjustment factor* means the inflation adjustment factor determined and published by the Secretary pursuant to section 45Y(c) of the Code, determined by substituting “calendar year 2022” for “calendar year 1992” in section 45Y(c)(3). Accordingly, the inflation adjustment factor for purposes of section 45Z means, with respect to a calendar year, a fraction the numerator of which is the GDP implicit price deflator for the preceding calendar year and the denominator of which is the GDP implicit price deflator for the calendar year 2022. In this context, the term *GDP implicit price deflator* means the most recent revision of the implicit price deflator for the gross domestic product as

computed and published by the Department of Commerce before March 15 of the calendar year. See section 45Y(c)(3).

(iii) *Publication of inflation adjustment factor.* The Secretary will publish guidance in the Internal Revenue Bulletin (see §601.601 of this chapter) no more frequently than annually that will provide the inflation adjustment factor.

(b) *Qualifying sale after production required.* For transportation fuel produced during or after 2025, a taxpayer is eligible to claim the section 45Z credit only for the taxable year in which the qualifying sale of that fuel occurs, provided the taxpayer meets all other requirements to claim the credit. However, such qualifying sale must occur before the termination date provided in section 45Z(g) (or as otherwise provided by Congress). A taxpayer may produce a transportation fuel in an earlier taxable year than the taxable year in which the qualifying sale of such fuel occurs. However, a qualifying sale may take place no earlier than the date the fuel is produced. Transportation fuel produced before 2025 is ineligible for the section 45Z credit.

(c) *Emissions factor--(1) In general.* As provided in section 45Z(b)(1)(A), the *emissions factor* of a transportation fuel is an amount equal to the quotient of—

- (i) An amount equal to—
 - (A) 50 kilograms of CO₂e per mmBTU, minus
 - (B) The emissions rate for such fuel, divided by
- (ii) 50 kilograms of CO₂e per mmBTU.

(2) *Rounding--(i) In general.* As provided in section 45Z(b)(2), if the emissions factor for a transportation fuel is not a multiple of 0.1, a taxpayer must round such amount to the nearest multiple of 0.1. A taxpayer must round up if the digit in the

hundredths place is a 5 or higher, and round down if the digit in the hundredths place is less than 5.

(ii) *Example.* Y produces a transportation fuel with an emissions rate of 21.25 kilograms of CO₂e per mmBTU. The emissions factor for Y's fuel is initially calculated as follows: $(50 - 21.25) \div 50 = 0.575$. Because 0.575 is not a multiple of 0.1, Y must round it to the nearest multiple of 0.1. Thus, the emissions factor for Y's fuel is 0.6. If Y's initial calculation had instead resulted in an emissions factor of 0.54, Y would have been required to round the emissions factor down to 0.5.

(d) *Emissions rate.* The emissions rate for a transportation fuel is such fuel's lifecycle greenhouse gas emissions rate expressed as kilograms of CO₂e per mmBTU, based on the amount of lifecycle greenhouse gas emissions of such fuel (determined pursuant to section 45Z(b)(1)(B) through (D) and paragraph (e) of this section), the applicable emissions rate table published by the Secretary, and, in the case of any transportation fuel for which an emissions rate has not been established in the applicable emissions rate table, any provisional emissions rate (PER) determined by the Secretary with respect to such fuel.

(e) *Emissions rate table--(1) In general.* As provided in section 45Z(b)(1)(B)(i), the Secretary will annually publish a table that sets forth the emissions rate for similar types and categories of transportation fuels (emissions rate table) based on the lifecycle greenhouse gas emissions for such fuels, expressed as kilograms of CO₂e per mmBTU, which a taxpayer must use for purposes of section 45Z. A taxpayer must use the applicable emissions rate table as specified in paragraph (e)(2) of this section (applicable emissions rate table).

(2) *Applicable emissions rate table--(i) In general.* A taxpayer that produces a type and category of transportation fuel that is established in the emissions rate table for the taxable year in which the taxpayer produces such fuel must use the emissions rate table to determine the emissions rate for such fuel for all of the taxpayer's production of such fuel during the taxable year. See paragraph (f)(1) of this section for additional discussion of types and categories of transportation fuel in the applicable emissions rate table.

(ii) *Emissions rate table updated during taxable year.* If, during the taxable year of production, the Secretary publishes an updated emissions rate table that adds a type and/or category of fuel produced by the taxpayer, the taxpayer must use such table to determine the emissions rate for such fuel(s).

(3) *Allowed methodologies for emissions rate table--(i) Methodologies for non-SAF transportation fuel generally.* If a type and category of non-SAF transportation fuel is established in the applicable emissions rate table, a taxpayer producing such type and category of fuel must determine the fuel's emissions rate using the 45ZCF-GREET model, as directed by the applicable emissions rate table.

(ii) *45ZCF-GREET model as a successor model.* For purposes of section 45Z(b)(1)(B)(ii), the 45ZCF-GREET model is a successor model (as determined by the Secretary).

(iii) *Methodologies for SAF transportation fuels.* If a type and category of SAF transportation fuel is established in the applicable emissions rate table, a taxpayer producing such type and category of fuel must determine the fuel's emissions rate using the most recent version of CORSIA Default or CORSIA Actual or the 45ZCF-GREET

model, as directed by the applicable emissions rate table. A taxpayer may choose, for each type and category of SAF transportation fuel that it produces, which of these methodologies to use. For each type and category of SAF transportation fuel, a taxpayer must use the same methodology to calculate lifecycle greenhouse gas emissions associated with all stages of fuel feedstock production and distribution. See §1.45Z-5, *Procedures for certification of lifecycle greenhouse gas emissions rates*, for information on how to certify these methodologies.

(iv) *Use of the most recent version of methodology.* A taxpayer must use the most recent version of a methodology allowed under paragraphs (e)(3)(i) and (iii) of this section (*allowed methodology*) that is publicly available on the first day of the taxable year during which the taxpayer produced the transportation fuel for which the section 45Z credit is claimed. If a version of an allowed methodology adds a type or category of fuel after the first day of a taxable year, taxpayers must use such version of the allowed methodology for such new type or category of fuel for the entire taxable year. If an updated version of an allowed methodology becomes publicly available after the first day of the taxable year of production (but still within such taxable year), then the taxpayer may, in its discretion, treat such updated version as the most recent version of such methodology.

(v) *Additional instructions on methodologies.* A taxpayer must use an allowed methodology in accordance with the applicable emissions rate table, accurately enter all information requested by such methodology, and follow all publicly available instructions for the use of such methodology.

(vi) *Accounting for certain emissions in 45ZCF-GREET model.* In the 45ZCF-GREET model, for purposes of accounting for emissions associated with hydrogen (as a production input), natural gas alternatives (as a production input or as the transportation fuel produced), electricity, and carbon capture and sequestration, rules similar to the rules under section 45V apply.

(f) *Provisional emissions rate (PER)--(1) In general.* If the applicable emissions rate table does not establish the type and category of transportation fuel produced by a taxpayer, such taxpayer may file a petition with the Secretary for determination of the emissions rate for such fuel. See section 45Z(b)(1)(D). A taxpayer requesting a PER is referred to as an “applicant.” An applicant may use the PER process if the transportation fuel that it is producing is (1) a novel type of fuel not established in the applicable emissions rate table, or (2) if the type of fuel is established in the emissions rate table, but such fuel is produced using a pathway or primary feedstock not established in the applicable emissions rate table. For non-SAF transportation fuels, an applicant may not request a PER for a type and category of transportation fuel if the pathway or primary feedstock is established in the applicable emissions rate table, even if the applicant disagrees with the underlying assumptions (that is, background data) or calculation approach used by the most recent 45ZCF-GREET model. For SAF transportation fuels, an applicant may not request a PER for a type and category of transportation fuel if the pathway or primary feedstock is established in the applicable emissions rate table, even if the applicant disagrees with the underlying assumptions or calculation approach used by the allowed methodology used to determine emissions

rates for the applicable emissions rate table (including the 45ZCF-GREET model and the CORSIA program).

(2) *Procedures for requesting a PER.* An applicant seeking a PER must follow the latest procedures for obtaining a PER as published by the Secretary in the section 45Z regulations and in the Internal Revenue Bulletin (see §601.601 of this chapter), including the process for obtaining an emissions value from the DOE that is used by the applicant to request a PER determination. For purposes of the section 45Z PER process, an *emissions value* is a value obtained from the DOE setting forth the DOE's analytical assessment of the lifecycle greenhouse gas emissions rate associated with the production of a type of transportation fuel using a particular primary feedstock and pathway.

(g) *New emissions rates (including PER) apply on January 1, 2025.* The emissions rate for any new type or category of fuel established on the applicable emissions rate table or determined through the PER process will apply on January 1, 2025, regardless of when the Treasury Department and the IRS publish guidance establishing an emissions rate or PER procedures.

(h) *Credit not allowed for production before January 1, 2025.* The section 45Z credit is not allowed for fuel produced before January 1, 2025.

(i) *Applicability date.* This section applies to qualifying sales occurring on or after the date proposed regulations are published in the ***Federal Register***, except that paragraph (e) of this section applies to taxable periods ending on or after **January 10, 2025**.

§1.45Z-4 Special Rules.

(a) *Registered production in the United States required--(1) In general.* As provided in section 45Z(f)(1)(A)(i)(I) and (ii), no section 45Z credit shall be determined with respect to any transportation fuel unless the taxpayer is registered as a producer of clean fuel under section 4101 of the Code at the time of production and such fuel is produced in the United States.

(2) *Registration rules and procedures.* The registration rules in §1.4101-1 apply for purposes of the section 45Z credit. A taxpayer will be considered registered as a producer of clean fuel under section 4101 at the time of production if, at such time, the taxpayer is registered in accordance with section 4101, §1.4101-1, and any applicable guidance published in the Internal Revenue Bulletin (see §601.601 of this chapter).

(b) *Anti-stacking rules--(1) In general.* This paragraph provides rules for determining if an anti-stacking credit has been allowed for a taxable year with respect to a facility. Such determination impacts whether the facility is a qualified facility as provided in section 45Z(d)(4)(B).

(2) *Application of anti-stacking rules on a taxable-year and per-facility basis--(i) In general.* The determination of whether a facility is a qualified facility is made separately for each taxable year and each facility. Whether a facility is a qualified facility for a given taxable year depends on whether the facility produced transportation fuel sold during that taxable year and whether an anti-stacking credit was allowed for that taxable year with respect to the facility. A facility may be a qualified a facility in one taxable year but not in another taxable year. If a taxpayer produces transportation fuel at multiple

facilities, the determination of whether such fuel was produced at a qualified facility is made separately for each facility.

(ii) *Section 48(a)(15) election.* A section 48(a)(15) election is irrevocable, and if made, will permanently disqualify a facility from being a qualified facility under section 45Z for the taxable year of the election and all subsequent taxable years.

(3) *Carbon capture equipment at a facility.* In the case of any transportation fuel produced at a facility that includes carbon capture equipment for which the section 45Q credit is allowed for the taxable year, such facility is not a qualified facility, and no section 45Z credit will be determined with respect to such facility for such taxable year.

(4) *Examples.* The following examples illustrate the application of the anti-stacking rules. For purposes of these examples, X, Y, and Z are all C corporations and unrelated calendar-year taxpayers, unless otherwise stated.

(i) *Example 1: Interaction of section 45Z and section 45V credits; transportation fuel and qualified clean hydrogen produced at the same facility by persons with the same taxable year.* During 2025 and 2026, X produces a transportation fuel at a facility and sells such fuel in a qualifying sale. X is otherwise eligible to claim the section 45Z credit with respect to the facility. During 2025 and 2026, Y produces qualified clean hydrogen, as defined in section 45V(c)(2), at the same facility. Y is allowed a section 45V credit with respect to the facility for 2025, but not for 2026. No other person is allowed a section 45V credit with respect to the facility for 2025 or 2026. Because Y is allowed a section 45V credit with respect to the facility for 2025, such facility is not a qualified facility for section 45Z purposes for 2025. Thus, X is not eligible to claim a section 45Z credit with respect to the facility for 2025. The result in this example would

be the same if a person other than Y is allowed the section 45V credit with respect to the facility for 2025. A separate analysis is conducted for 2026. Because no section 45V credit is allowed with respect to the facility for 2026, the facility is a qualified facility for section 45Z purposes for 2026. Therefore, X is eligible to claim a section 45Z credit with respect to the facility for 2026.

(ii) *Example 2: Interaction of section 45Z and section 45V credits; transportation fuel and qualified clean hydrogen produced at the same facility by persons with different taxable years.* During 2025, X produces a transportation fuel at a facility and sells such fuel in a qualifying sale. X is otherwise eligible to claim the section 45Z credit with respect to the facility. During 2025, Y produces qualified clean hydrogen, as defined in section 45V(c)(2), at the same facility. Y has a taxable year of October 1 to September 30. Y is allowed a section 45V credit with respect to the facility for its taxable year of October 1, 2024, to September 30, 2025, but not for its taxable year of October 1, 2025, to September 30, 2026. No other person is allowed a section 45V credit with respect to the facility for any portion of 2025. Such facility is not a qualified facility for section 45Z purposes for the period in 2025 for which Y is allowed a section 45V credit (that is, January 1 through September 30, 2025). However, such facility is a qualified facility for section 45Z purposes for the period in 2025 for which no section 45V credit is allowed with respect to the facility (that is, October 1 through December 31, 2025). Thus, X is eligible to claim a section 45Z credit with respect to the facility for 2025, but only for the period during which the facility is a qualified facility (that is, October 1 through December 31, 2025).

(iii) *Example 3: Interaction of section 45Z credit and section 48(a)(15) election.*

During 2025, X produces a transportation fuel at a facility and sells such fuel in a qualifying sale. During 2025, X also produces qualified clean hydrogen, as defined in section 45V(c)(2), at the same facility, which is a specified clean hydrogen production facility, as defined in section 48(a)(15)(C). X is otherwise eligible to claim the section 45Z credit and to make a section 48(a)(15) election with respect to the facility. For 2025, X makes an election under section 48(a)(15) to treat the facility as energy property for purposes of the energy credit under section 48, which credit then forms part of the investment credit under section 46 that is allowed to X. Because the transportation fuel and the qualified clean hydrogen are produced at the same facility, and X is allowed a section 46 credit attributable to a section 48(a)(15) election with respect to the facility for 2025, such facility is not a qualified facility for section 45Z purposes for 2025. Because a section 48(a)(15) election is irrevocable, the facility also will not be a qualified facility for section 45Z purposes for any subsequent taxable year. Thus, X is not eligible to claim the section 45Z credit with respect to the facility for 2025 or for any subsequent taxable year.

(iv) *Example 4: Interaction of section 45Z and section 45Q credits; transportation fuel produced at a facility that includes carbon capture equipment.* During 2025 and 2026, X produces a transportation fuel at a facility and sells such fuel in a qualifying sale. X is otherwise eligible to claim the section 45Z credit with respect to the facility. The facility includes carbon capture equipment. Y owns and uses the carbon capture equipment at the facility to capture carbon oxide. During 2025, Y utilizes or disposes of the carbon oxide in a manner that qualifies for the section 45Q credit. Y is allowed a

section 45Q credit with respect to the facility for 2025, but not for 2026. No other person is allowed a section 45Q credit with respect to the facility for 2025 or 2026. Because Y is allowed a section 45Q credit with respect to the facility for 2025, such facility is not a qualified facility for section 45Z purposes for 2025. Thus, X is not eligible to claim a section 45Z credit with respect to the facility for 2025. The result in this example would be the same if a person other than Y utilizes or disposes of the carbon oxide and is allowed a section 45Q credit with respect to the facility for 2025. A separate analysis is conducted for 2026. Because no section 45Q credit is allowed with respect to the facility for 2026, the facility is a qualified facility for section 45Z purposes for 2026. Therefore, X is eligible to claim a section 45Z credit with respect to the facility for 2026.

(c) *Production attributable to the taxpayer--(1) In general.* Except as provided in paragraph (d)(2) of this section, in the case of a facility in which more than one person has an ownership interest (and the arrangement is not classified as a partnership for Federal tax purposes), production from the facility is allocated among such persons in proportion to their respective ownership interests in the gross sales from such facility. See section 45Z(f)(2). In the case of such an allocation, the amount of each person's section 45Z credit is determined pursuant to section 45Z(a) and the section 45Z regulations based on each person's allocable share of production.

(2) *Example.* A, B, and C, all calendar year taxpayers, each own an interest in Facility, which is a qualified facility. A has a 45 percent ownership interest in Facility, B has a 35 percent ownership interest in Facility, and C has a 20 percent ownership interest in Facility. Gross sales from Facility are allocated among A, B, and C in

proportion to their ownership interests. During 2025, Facility produced 10 million gallons of transportation fuel. A, B, and C will each determine the amount of their section 45Z credit for 2025 based on their allocable share of the 10 million gallons of transportation fuel produced at Facility during 2025. Thus, A will determine the amount of its section 45Z credit based on 4.5 million gallons, B will determine the amount of its section 45Z credit based on 3.5 million gallons, and C will determine the amount of its section 45Z credit based on 2 million gallons.

(3) *Section 761(a) election.* If a facility is owned through an unincorporated organization that has made a valid election under section 761(a) of the Code, each member's undivided ownership interest in the facility will be treated as a separate facility owned by such member.

(d) *No requirement of facility ownership--(1) In general.* A taxpayer is not required to own the qualified facility at which the taxpayer produces transportation fuel in order for a section 45Z credit to be determined with respect to such fuel.

(2) *Application of production attribution rules if taxpayer does not own facility.* If a taxpayer produces transportation fuel at a facility owned by another person, production of such fuel will be attributed to the taxpayer unless otherwise specified in the Code or in the section 45Z regulations. In the case of a production arrangement under which multiple taxpayers produce transportation fuel at a facility that is not owned by all such taxpayers, the production of such transportation fuel will be allocated among the taxpayers in proportion to their respective interests in the gross sales from such fuel, as determined under the applicable contract or other legal arrangement with respect to such fuel.

(e) *Recordkeeping and substantiation--(1) In general.* A taxpayer claiming the section 45Z credit must keep records sufficient to establish the taxpayer's eligibility for the section 45Z credit and the amount of the credit claimed. At a minimum, those records must include records establishing that each fuel produced is a transportation fuel, records on the primary feedstock(s) used to produce each fuel, records establishing that each fuel meets any additional specifications for the type of fuel under §1.45Z-1(b)(20) and §1.45Z-1(b)(26), records substantiating how the emissions rate for each fuel was determined (including, if applicable, the specific type(s) and category(ies) under the applicable emissions rate table), records relating to any fuel testing obtained by the taxpayer, records establishing that each facility used to produce fuel is a qualified facility, records establishing the date each facility was placed in service, records establishing that each fuel was sold in a qualifying sale, and records establishing any unrelated party certification and substantiating the information therein. If a taxpayer is claiming an increased credit amount based on a qualified facility satisfying the prevailing wage and apprenticeship requirements, the taxpayer must also maintain records in accordance with §1.45-12. A taxpayer must also keep all information, including raw data, used for or related to any petition for a PER.

(2) *Safe harbor for substantiation of emissions rate.* A taxpayer may substantiate the emissions rate for a non-SAF transportation fuel that was determined using the 45ZCF-GREET model by obtaining certification with respect to such fuel substantially in the form and manner described in §1.45Z-5 for certifying a SAF transportation fuel emissions rate determined using the 45ZCF-GREET model and attaching such certification to its Form 7218 for the taxable year in which it claims a section 45Z credit

for such fuel. To qualify for this emissions rate substantiation safe harbor, a taxpayer must provide the qualified certifier with all information necessary to determine the emissions rate for a non-SAF transportation fuel using the 45ZCF-GREET model, including all information the taxpayer entered into 45ZCF-GREET, the specific type and category under the applicable emissions rate table for such fuel, and all other applicable information described in §1.45Z-5. The Secretary may provide other methods through which a taxpayer may substantiate the emissions rate for a non-SAF transportation fuel. The Secretary will describe any such methods in guidance published in the Internal Revenue Bulletin or in IRS forms, instructions, or publications. See §601.601 of this chapter.

(f) *Applicability date.* This section applies to qualifying sales occurring on or after the date proposed regulations are published in the ***Federal Register***.

§1.45Z-5 Procedures for certification of lifecycle greenhouse gas emissions rates.

(a) *In general.* This section provides rules on unrelated party certification for SAF transportation fuel pursuant to section 45Z(f)(1)(A)(i)(II) of the Code.

(b) *Certification requirements--(1) In general.* A taxpayer must attach a certification to the taxpayer's Form 7218 (as provided in the Form 7218 instructions), which is filed with the taxpayer's Federal income tax return or Federal information return, for each qualified facility at which the taxpayer produces SAF transportation fuel and for each taxable year in which the taxpayer claims the section 45Z credit.

(2) A certification specified in this paragraph (b) must be prepared by a qualified certifier under penalties of perjury and must contain—

(i) A statement from the qualified certifier regarding the production of SAF transportation fuel, including that the inputs used to determine the lifecycle greenhouse gas emissions rate of the production process are accurate (production statement);

(ii) A statement from the qualified certifier regarding the amount of SAF transportation fuel sold (sale statement);

(iii) A statement from the qualified certifier regarding conflicts of interest (conflict statement);

(iv) Information regarding the qualified certifier, including documentation of the qualified certifier's qualifications (qualified certifier statement);

(v) Certain general information about the qualified facility at which the SAF transportation fuel production undergoing certification occurred;

(vi) Any documentation necessary to substantiate the certification process given the standards and best practices prescribed by the qualified certifier's accrediting body and the circumstances of the taxpayer and the qualified facility; and

(vii) Any other information or documentation required by applicable IRS tax forms or instructions.

(3) *Qualified certifier.* (i) For taxpayers using CORSIA Default or CORSIA Actual to determine the emissions rate for SAF transportation fuel, the term qualified certifier means any individual or organization with active accreditation from International Sustainability and Carbon Certification, Roundtable on Sustainable Biomaterials, or other sustainability certification scheme approved by the International Civil Aviation Organization.

(ii) For taxpayers using the 45ZCF-GREET model to determine the emissions rate for SAF transportation fuel, the term qualified certifier means any individual or organization with active accreditation—

(A) From the American National Standards Institute National Accreditation Board to conduct validation and verification in accordance with the requirements of ISO 14065; or

(B) As a verifier, lead verifier, or verification body under the California Air Resources Board Low Carbon Fuel Standard program.

(iii) Qualified certifiers are qualified to provide certification only for the associated methodologies identified in this paragraph (b)(3). A qualified certifier must have active accreditation for the associated methodology as of the date it provides a certification to a taxpayer. A taxpayer must use the qualified certifier identified in this paragraph (b)(3) for the identified emissions rate methodology used by the taxpayer.

(c) *Requirements for the production statement.* The requirements set forth in this paragraph (c) apply to the production statement.

(1) The production statement must be a statement that the qualified certifier performed a certification sufficient to determine that any lifecycle greenhouse gas emissions data inputs and the operation, during the applicable taxable year, of the qualified facility that produced the SAF transportation fuel for which the section 45Z credit is claimed are accurately reflected in—

(i) The number of gallons of SAF transportation fuel produced by the taxpayer that is entered on the Form 7218 to which the certification is attached; and

(ii) Either—

(A) The data the taxpayer entered into the methodology under §1.45Z-2(e)(3)(iii) the taxpayer selected to determine the lifecycle greenhouse gas emissions rate that is entered on the Form 7218 to which the certification is attached; or

(B) The data the taxpayer submitted in a provisional emissions rate (PER) petition relating to the SAF transportation fuel for which the section 45Z credit is claimed, including data provided to the DOE in support of the taxpayer's request for the emissions value provided in the PER petition.

(2) If the production statement includes the information specified in paragraph (c)(1)(ii)(B) of this section, then the production statement must also specify the emissions value received from the DOE that was calculated using such data, expressed in kilograms of CO₂e per mmBTU.

(3) The production statement must specify the lifecycle greenhouse gas emissions rate (expressed in kilograms of CO₂e per mmBTU) and the amount of SAF transportation fuel produced by the taxpayer (expressed in gallons), that are entered on the Form 7218 to which the certification is attached.

(d) *Requirements for the sale statement.* The sale statement must state that the qualified certifier performed a certification sufficient to determine that the number of gallons of SAF transportation fuel that is specified in the production statement pursuant to paragraph (c)(1) of this section, and that is entered on the Form 7218 to which the certification is attached, has been sold in a qualifying sale.

(e) *Requirements for the conflict statement--(1) In general.* The conflict statement must state that—

(i) The qualified certifier has not received a fee based to any extent on the value of any section 45Z credit that has been or is expected to be claimed by the taxpayer and no arrangement has been made for such fee to be paid at any time in the future;

(ii) The qualified certifier has not been a party to any transaction involving the sale of SAF transportation fuel the taxpayer produced or in which the taxpayer purchased primary feedstocks for the production of such SAF transportation fuel;

(iii) The qualified certifier is not related, within the meaning of section 267(b) or 707(b)(1) of the Code, to the taxpayer, or an employee of, the taxpayer; and

(iv) The qualified certifier is not married to anyone who is related to, or an employee of, the taxpayer.

(2) *Additional attestations required in certain circumstances.* If the qualified certifier is acting in his or her capacity as a partner in a partnership, an employee of any person, whether an individual, corporation, or partnership, or an independent contractor engaged by a person other than the taxpayer, the attestations under paragraphs (e)(1)(i) through (iv) of this section must also be made with respect to the partnership or the person that employs or engages the qualified certifier.

(f) *Requirements for the qualified certifier statement.* The qualified certifier statement must include the items set forth in this paragraph (f).

(1) The qualified certifier's name, address, and certifier identification number (ex. CARB LCFS Verifier Executive Order Number);

(2) The qualified certifier's qualifications to conduct the certification, including a description of the certification the qualified certifier received from the accrediting body;

(3) If the qualified certifier is acting in his or her capacity as a partner in a partnership, an employee of any person, whether an individual, corporation, or partnership, or an independent contractor engaged by a person other than the taxpayer, the name, address, and certifier identification number of the partnership or the person that employs or engages the qualified certifier;

(4) The signature of the qualified certifier and the date of signature; and

(5) A statement that the certification was conducted for Federal tax purposes.

(g) *General information on qualified facility.* The certification must include the information set forth in this paragraph (g) for the qualified facility at which the SAF transportation fuel production undergoing certification occurred:

(1) The location of the qualified facility;

(2) A description of the qualified facility, including its method of producing SAF transportation fuel;

(3) The type(s) of primary feedstock(s) used by the qualified facility to produce SAF transportation fuel during the taxable year of production;

(4) The amount(s) of primary feedstock(s) used by the qualified facility during the taxable year of production;

(5) The locations from which primary feedstock(s) used by the qualified facility during the taxable year of production are sourced;

(6) A list of the metering devices used to record any data used by the qualified certifier to support the production statement under paragraph (c) of this section along with a statement that the qualified certifier is reasonably assured that the device(s) underwent industry-appropriate quality assurance and quality control, and the accuracy

and calibration of the device has been tested in the last year prior to the time of observation; and

(7) Confirmation that the emissions rate is accurate to the higher of +/-5% or 2 grams of CO₂e per mmBTU.

(h) *Timely certification*--(1) *In general.* A certification must be signed and dated by the qualified certifier no later than—

(i) The due date, including extensions, of the Federal income tax return or Federal information return for the taxable year during which the SAF transportation fuel undergoing certification is sold; or

(ii) In the case of a credit first claimed for the taxable year on an amended return or administrative adjustment request, the date on which the amended return or administrative adjustment request is filed.

(2) *Certification in a year other than the year of sale.* A taxpayer may obtain a certification with respect to a SAF transportation fuel in a different taxable year than the taxable year in which the qualifying sale of such fuel occurs.

(i) *Applicability date.* This section applies to qualifying sales occurring on or after the date proposed regulations are published in the ***Federal Register***.

§1.45Z-6 Procedures for filing a claim for the clean fuel production credit.

(a) *Time and manner of filing a claim.* To claim the section 45Z credit, a taxpayer must file a completed Form 7218 with the taxpayer's timely filed (including extensions) Federal income tax return or Federal information return for the taxable year in which the taxpayer claims the section 45Z credit. A taxpayer must file a separate Form 7218 for

each qualified facility at which transportation fuel for which the taxpayer is claiming the section 45Z credit is produced. A taxpayer must complete Form 7218 in accordance with the instructions to that form. A taxpayer must include with its Form 7218 any applicable certification required by §1.45Z-5.

(b) Special rules if producer is not credit claimant--(1) *Producer that is a disregarded entity or a qualified subchapter S subsidiary.* If an entity that is disregarded as an entity separate from its owner within the meaning of §301.7701-2(c)(2)(i) of this chapter (disregarded entity) or a qualified subchapter S subsidiary within the meaning of section 1361(b)(3)(B) (QSub) produces transportation fuel that is eligible for the section 45Z credit, the owner of such disregarded entity or QSub will be treated as registered as a producer of clean fuel under section 4101 for purposes of claiming the section 45Z credit. The producer's registration number (within the meaning of section 45Z(f)(1)(A)(i)(I) and §1.4101-1) of a disregarded entity or a QSub will be attributed to its owner. The owner of a disregarded entity or QSub that claims and is allowed a section 45Z credit with respect to transportation fuel produced by such disregarded entity or QSub must satisfy the recordkeeping requirements in §1.45Z-4(e).

(2) Producer that is a member of a consolidated group. If a member of a consolidated group (as defined in §1.1502-1(b) and (h), respectively) produces transportation fuel that is eligible for the section 45Z credit, such member is the person eligible to claim the section 45Z credit. The member must satisfy all requirements under section 45Z (for example, the recordkeeping requirements in §1.45Z-4(e)). For rules regarding the status of the common parent as generally the agent for members of its consolidated group, see §1.1502-77. The agent of a consolidated group, when filing a

Form 7218 to claim the section 45Z credit, must use the producer's registration number (within the meaning of section 45Z(f)(1)(A)(i)(I) and §1.4101-1) of the member that produced the transportation fuel.

(c) *Applicability date.* This section applies to qualifying sales occurring on or after the date proposed regulations are published in the ***Federal Register***.

§1.4101-1 Registration

(a) *In general.* This section provides rules relating to registration for purposes of the section 45Z credit.

(1) *Letter of Registration required.* A person is registered under section 4101 of the Code only if the IRS has issued a Letter of Registration to the person and the registration has not been revoked or suspended.

(2) *Separate entity treatment--(i) In general.* Each business unit that has, or is required to have, a separate employer identification number is treated as a separate person. Thus, two business units (for example, a parent corporation and a subsidiary corporation), each of which has a different employer identification number, are two persons.

(ii) *Disregarded entity.* Section 301.7701-2(c)(2)(i) of this chapter (relating to certain wholly owned entities) does not apply for purposes of registration under this section. An entity that is disregarded as an entity separate from its owner for any purpose under §301.7701-2 of this chapter and that has, or is required to have, an employer identification number is treated as a corporation (consistent with §301.7701-2(c)(2)(v)(B) of this chapter) for purposes of registration under this section. Therefore,

an entity that is treated as a corporation, that has an employer identification number, and that is a producer of transportation fuel for purposes of the section 45Z credit must register as a producer of clean fuel in order to be eligible to claim the section 45Z credit.

(iii) *Qualified subchapter S subsidiary.* Section 1.1361-4(a)(1)(i) (providing that a corporation that is a qualified subchapter S subsidiary as defined in section 1361(b)(3)(B) (QSub) is not treated as a separate corporation) does not apply for purposes of registration under this section. Therefore, a QSub that has an employer identification number and that is a producer of transportation fuel for purposes of the section 45Z credit must register as a producer of clean fuel to be eligible to claim the section 45Z credit.

(3) *Reregistration--(i) Reregistration in the event of change of ownership.* As provided in section 4101(a)(5), a person is required to reregister under this section if after a transaction (or series of related transactions) more than 50 percent of ownership interests in, or assets of, such person are held by persons other than persons (or persons related thereto) who held more than 50 percent of such interests or assets before the transaction (or series of related transactions). Reregistration does not apply to a company whose stock is regularly traded on an established securities market, but such companies are required to notify the IRS about the change in ownership.

(ii) *Reregistration in the event of change of employer identification number.* If a registrant changes its employer identification number, such registrant must reregister under this section using its new employer identification number.

(iii) *Safe harbor for purposes of section 45Z credit.* A person that is approved for reregistration is eligible to claim a section 45Z credit (provided that all requirements of

section 45Z are met) as of the date the IRS received the application for reregistration, even if, at the time of fuel production, the IRS has not yet approved the reregistration.

(b) *Definitions--(1) Applicant.* An *applicant* is a person that has applied for registration under paragraph (d) of this section.

(2) *Letter of registration.* A *Letter of Registration* is a letter issued by the IRS to confirm approval of a registration required under section 4101 and this section. A *Letter of Registration* includes the registrant's registration number and the effective date of the registration.

(3) *Penalized for a wrongful act.* A person has been *penalized for a wrongful act* if the person has—

(i) Been assessed any penalty under chapter 68 of the Code (or similar provision of the law of any State) for fraudulently failing to file any return or pay any tax, and the penalty has not been wholly abated, refunded, or credited;

(ii) Been assessed any penalty under chapter 68 of the Code, such penalty has not been wholly abated, refunded, or credited, and the IRS determines that the conduct resulting in the penalty is part of a consistent pattern of failing to deposit, pay, or pay over a substantial amount of tax;

(iii) Been convicted of a crime under chapter 75 of the Code (or similar provision of the law of any State), or of conspiracy to commit such a crime, and the conviction has not been wholly reversed by a court of competent jurisdiction;

(iv) Been convicted, under the laws of the United States or any State, of a felony for which an element of the offense is theft, fraud, or the making of false statements, and the conviction has not been wholly reversed by a court of competent jurisdiction;

(v) Been assessed any tax under section 4103 of the Code and the tax has not been wholly abated, refunded, or credited; or

(vi) Had its registration under section 4101, 4222, 4662, or 4682 of the Code revoked.

(4) *Related person.* A *related person* is a person that—

(i) Directly or indirectly exercises control over an activity of the applicant;

(ii) Owns, directly or indirectly, five percent or more of the applicant;

(iii) Is under a duty to assure the payment of a tax for which the applicant is responsible;

(iv) Is a member, with the applicant, of a group of organizations (as defined in §1.52-1(b)) that would be treated as a group of trades or businesses under common control for purposes of §1.52-1; or

(v) Distributed or transferred assets to the applicant in a transaction in which the applicant's basis in the assets is determined by reference to the basis of the assets in the hands of the distributor or transferor.

(5) *Registrant.* A *registrant* is a person that the IRS has, in accordance with paragraph (f)(3) of this section, registered under section 4101 and whose registration has not been revoked or suspended.

(c) *Requirement to register--(1) In general.* Every person intending to claim a section 45Z credit with respect to the production of a fuel eligible for the section 45Z credit is required to register with the IRS under this section.

(2) *Consequences of failing to register.* For the criminal penalty imposed for failure to register, see section 7232 of the Code. For the civil penalty imposed for failure

to register or reregister, see section 7272 of the Code. For the civil penalty imposed for failure to register or reregister under section 4101, see section 6719 of the Code.

(d) *Application instructions.* Application for registration under section 4101 must be made in accordance with the instructions for Form 637, *Application for Registration (For Certain Excise Tax Activities)*, or such other form as the Commissioner may designate. See §601.602 of this chapter.

(e) *Registration tests--(1) In general.* The IRS will register an applicant only if the IRS determines that the applicant meets the following three tests (collectively, the registration tests):

- (i) The activity test of paragraph (e)(2) of this section.
- (ii) The acceptable risk test of paragraph (e)(3) of this section.
- (iii) The satisfactory tax history test of paragraph (e)(4) of this section.

(2) *Activity test--(i) In general.* An applicant meets the activity test of this paragraph (e)(2) only if the IRS determines that the applicant—

(A) Is, in the course of its trade or business, regularly engaged in the activity for which they are requesting registration; or

(B) Is likely to be (because of such factors as the applicant's business experience, financial standing, or trade connections), in the course of its trade or business, regularly engaged in the activity for which they are requesting registration, within a reasonable time after becoming registered under section 4101.

(ii) *Example 1. Reasonable time standard; production to begin more than 6 months after registration.* An applicant submits a Form 637 requesting to become registered as a producer of fuel that may be eligible for the section 45Z credit, stating in

its application that it will not be able to produce such fuel for at least three years from the date of the application. Such applicant is not likely to be, in the course of its trade or business, regularly engaged as a producer of transportation fuel within a reasonable time (6 months) after becoming registered under section 4101.

(iii) *Example 2. Reasonable time standard; production to begin within 6 months of registration.* An applicant submits a Form 637 requesting to become registered as a producer of fuel that may be eligible for the section 45Z credit, stating in its application that it will be able to produce such fuel within six months after it becomes registered. Such applicant is likely to be, in the course of its trade or business, regularly engaged as a producer of transportation fuel within a reasonable time after becoming registered under section 4101.

(3) *Acceptable risk test--(i) In general.* An applicant meets the acceptable risk test of this paragraph (e)(3) if neither the applicant nor a related person has been penalized for a wrongful act. If an applicant or a related person has been penalized for a wrongful act, the IRS may nonetheless determine that an applicant meets the acceptable risk test based on consideration of the factors enumerated in paragraph (e)(3)(ii) of this section.

(ii) *Factors to consider.* In making the determination described in paragraph (e)(3)(i) of this section, the IRS may consider factors such as the following:

(A) The time elapsed since the applicant or related person was penalized for a wrongful act.

(B) The present relationship between the applicant and any related person that was penalized for any wrongful act.

(C) The degree of rehabilitation of the person penalized for any wrongful act.

(4) *Satisfactory tax history test--(i) In general.* An applicant meets the satisfactory tax history test of this paragraph (e)(4) only if the IRS determines that the applicant has a satisfactory tax history as described in paragraph (e)(4)(ii) of this section.

(ii) *Satisfactory tax history.* An applicant has a satisfactory tax history only if the Commissioner determines that the filing, deposit, and payment history for all Federal taxes of the applicant and any related person support the conclusion that the applicant will comply with its obligations under this section.

(f) *Action on the application by the IRS--(1) Review of application.* The IRS may investigate the accuracy and completeness of any representations made by an applicant and request any additional relevant information from the applicant.

(2) *Denial.* If the IRS determines that an applicant does not meet all of the registration tests described in paragraph (e) of this section, the IRS will notify the applicant, in writing, that its application for registration is denied and state the basis for the denial.

(3) *Approval.* If the IRS determines that an applicant meets all of the registration tests described in paragraph (e) of this section, the IRS will register the applicant under section 4101 and issue the applicant a Letter of Registration containing the effective date of the registration. The effective date of a registration under this section is the effective date provided in the Letter of Registration. A copy of an application for registration (Form 637) is not a Letter of Registration.

(g) *Terms and conditions of registration--(1) Affirmative duties.* Each applicant or registrant must—

(i) Make deposits, file returns, and pay taxes as required by the Code and the regulations;

(ii) Keep records sufficient to show eligibility for the section 45Z credit;

(iii) Notify the IRS of any change in the information the registrant submitted in connection with its application for registration, or previously submitted under this paragraph (g)(1)(iii), within 10 days after the change occurs. Changes requiring IRS notification include, but are not limited to, changes in ownership, address, and business activities.

(2) *Prohibited actions.* A registrant or applicant may not—

(i) Sell, lease, or otherwise allow another person to use its registration, or

(ii) Make any false statement to the IRS in connection with a submission under section 4101.

(h) *Effect of Letter of Registration.* A Letter of Registration is not a determination of liability for tax, eligibility for a tax credit or deduction, or any other tax treatment under the Code. For example, a Letter of Registration issued to a registrant producing a fuel that may be eligible for the section 45Z credit is not a determination that the fuel that the registrant produces is a transportation fuel under section 45Z(d)(5)(A) or that the facility at which the registrant produces such fuel is a qualified facility under section 45Z(d)(4). A Letter of Registration is also not a determination letter, as defined in §601.201(a)(3) of this chapter.

(i) *Adverse actions by the IRS against a registrant--(1) Mandatory revocation or suspension.* The IRS will revoke or suspend the registration of any registrant if the IRS determines that the registrant, at any time—

(i) Does not meet one or more of the registration tests under paragraph (e) of this section and has not corrected the deficiency within a reasonable period of time after notification by the IRS;

(ii) Has used its registration to evade, or attempt to evade, the payment of any tax, or to postpone or in any manner to interfere with the collection of any such tax, or to make a fraudulent claim for a credit or payment;

(iii) Has aided or abetted another person in evading, or attempting to evade, payment of any tax, or in making a fraudulent claim for a credit or payment; or

(iv) Has sold, leased, or otherwise allowed another person to use its registration.

(2) *Remedial action permitted in other cases.* If the IRS determines that a registrant has, at any time, failed to comply with the terms and conditions of registration under paragraph (g) of this section, made a false statement to the IRS in connection with its application for registration or retention of registration, or otherwise used its registration in a manner that creates a significant risk of nonpayment or late payment of tax, then the IRS may revoke or suspend the registrant's registration.

(3) *Action by the IRS to revoke or suspend a registration.* If the IRS revokes or suspends a registration, the IRS will notify the registrant in writing and state the basis for the revocation or suspension. The effective date of the revocation or suspension may not be earlier than the date on which the IRS notifies the registrant.

(j) *Applicability date.* This section applies to persons producing transportation fuel on or after the date proposed regulations are published in the ***Federal Register***.