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Briefing Paper Submitted on behalf OPAL Fuels, Inc.
in Response to Notice 2022-58
Inflation Reduction Act of 2022
Section 45Z Clean Fuel Production Credit
Request for Guidance

December 2, 2022

The Inflation Reduction Act of 2022, Pub. L. 117-169 (the "IRA") provides a new tax credit for the production of a transportation fuel that satisfies certain emissions requirements (the "Credit") under Section 45Z of the Internal Revenue Code (the "Code").[1] Taxpayers require guidance on various issues regarding the Credit, including: (i) confirmation that the Credit can be in excess of $1.00 per gallon (or gallon equivalent), (ii) the comprehensiveness of the emissions rate table to be provided annually by the Secretary under Section 45Z(b)(1)(B)(i), (iii) the process for petitioning the Secretary to determine a provisional emissions rate, (iv) clarification that the terms "gallon" and "gallon equivalent" apply to liquid and nonliquid fuels, respectively, (v) the qualification of landfill gas ("LFG") as "biomass," (vi) confirmation that the prevailing wage requirements under Section 45Z(f)(6) are only required to be satisfied for any alteration or repair of the qualified facility during the 2025, 2026 and 2027 taxable years in order to qualify for the $1.00 applicable amount per gallon, so long as the qualified facility is placed in service before January 1, 2025, (vii) clarification that the apprenticeship requirements under Section 45Z(f)(7) are only required to be satisfied for any alteration or repair of the qualified facility during the 2025, 2026 and 2027 taxable years in order to qualify for the $1.00 applicable amount per gallon, so long as the qualified facility is placed in service before January 1, 2025, (viii) the definition of "qualified facility" and confirmation that the renewable electricity facility to supply electricity to a "qualified facility" is a separate facility, (ix) confirmation that the Credit can be claimed for the production and sale of transportation fuel that is produced from feedstock produced in "qualified biogas property" for which an investment tax credit under Section 48 was claimed and (x) confirmation that carbon capture equipment installed on any "upstream" electricity, feedstock or fuel facilities, are not part of the qualified facility and do not prevent any Credit with respect to any transportation fuel produced at and sold from the downstream qualified facility (the "Guidance").

Background

Clean Transportation Fuel Production Credit—Generally

Under Section 45Z(d)(4), the term "transportation fuel" means a fuel which (a) is suitable for use as a fuel in a highway vehicle or aircraft, (b) has an emissions rate which is not greater than 50 kg of CO_2e per mmBTU and (c) is not derived from coprocessing an applicable material (or materials derived from an applicable material) with feedstock which is not biomass. I.R.C.

[1] All Section (§) references to the Code are as amended by the Inflation Reduction Act of 2022, Pub. L. 117-169.

§ 45Z(d)(4). By its terms, the Credit is only available for qualifying transportation fuel produced at a qualifying facility after December 31, 2024 and sold to an unrelated person for qualifying uses on or by December 31, 2027.

Discussion

A. Credit in excess of $1.00 per gallon (or gallon equivalent)

Assuming a taxpayer satisfies the prevailing wage and apprenticeship requirements, if and as applicable, with respect to the qualified facility, the "applicable amount per gallon" is $1.00. I.R.C. § 45Z(a)(2)(B). This amount is multiplied by an "emissions factor" that is calculated under Section 45Z(b)(1)(A). The emissions factor of a transportation fuel is expressed as "an amount equal to the quotient of—(I) an amount equal to—(aa) 50 kilograms of CO_2e per mmBTU, minus (bb) the emissions rate for such fuel, divided by (II) 50 kilograms of CO_2e per mmBTU." I.R.C. § 45Z(b)(1)(A). The "emissions rate" for a non-aviation fuel is determined under Section 45Z(b)(1)(B)(ii) based on the Greenhouse gases, Regulated Emissions, and Energy use in Transportation model (the "GREET Model") developed by Argonne National Laboratory ("ANL").

Under the GREET Model, certain pathways and inputs with respect to direct emissions, upstream energy sources (e.g., biomass), downstream carbon sequestration and fertilizer displacement methods, and avoided business-as-usual ("BAU") waste management emissions may yield a negative emissions rate. Congress clearly intended the GREET Model to capture negative emissions rates, as the rounding rules for emissions rates in Section 45Z(b)(1)(C)(ii) specifically allow the Secretary to round "an emissions rate that is between 2.5 kilograms of CO_2e per mmBTU and *-2.5 kilograms of CO_2e per mmBTU*" to zero (emphasis added).

In this scenario, the numerator of the quotient in Section 45Z(b)(1)(A) would be higher than 50 kilograms of CO_2e per mmBTU and the resulting emissions factor would be greater than 1. The negative emissions rate would therefore produce a Credit amount that is more than $1.00 per gallon.

The following example illustrates this application of Section 45Z(b)(1)(A):

> *Example 1: Emissions rate equal to -10 kilograms of CO_2e per mmBTU*
> In taxable year 2025, Company X produces 500 gallons of transportation fuel at a qualified facility as defined in Section 45Z(d)(4) and sells such transportation fuel in a manner described in Section 45Z(a)(4). In producing the transportation fuel, Company X utilizes upstream energy sources and downstream carbon oxide capture and sequestration methods to achieve a negative emissions rate of -10 kilograms of CO_2e per mmBTU under the GREET Model. The emissions factor for Company X is equal to the quotient of (a) an amount equal to (i) 50 kilograms of CO_2e per mmBTU, minus (ii) -10 kilograms of CO_2e

per mmBTU, divided by (b) 50 kilograms of CO_2e per mmBTU. Subtracting the -10 kilograms of CO_2e per mmBTU from 50 kilograms of CO_2e per mmBTU results in the numerator equaling 60 kilograms of CO_2e per mmBTU. Dividing this number by the denominator, 50 kilograms of CO_2e per mmBTU, results in an emissions factor of 1.2 (which is a multiple of 0.1, and therefore will not be rounded under Section 45Z(b)(2)). The emissions factor of 1.2 is multiplied by the applicable amount per gallon, $1.00 which results in a credit amount of $1.20 per gallon, and a total credit amount of $600 for Company X.

Congress clearly intended a higher applicable amount per gallon than $1.00 by the reference to a negative amount of kilograms of CO_2e per mmBTU in the statute. Congress knows how to limit or otherwise reduce a tax credit amount, but Congress did not include any cap on the amount of the Credit. The Guidance should confirm this straight-forward interpretation of the statutory language.

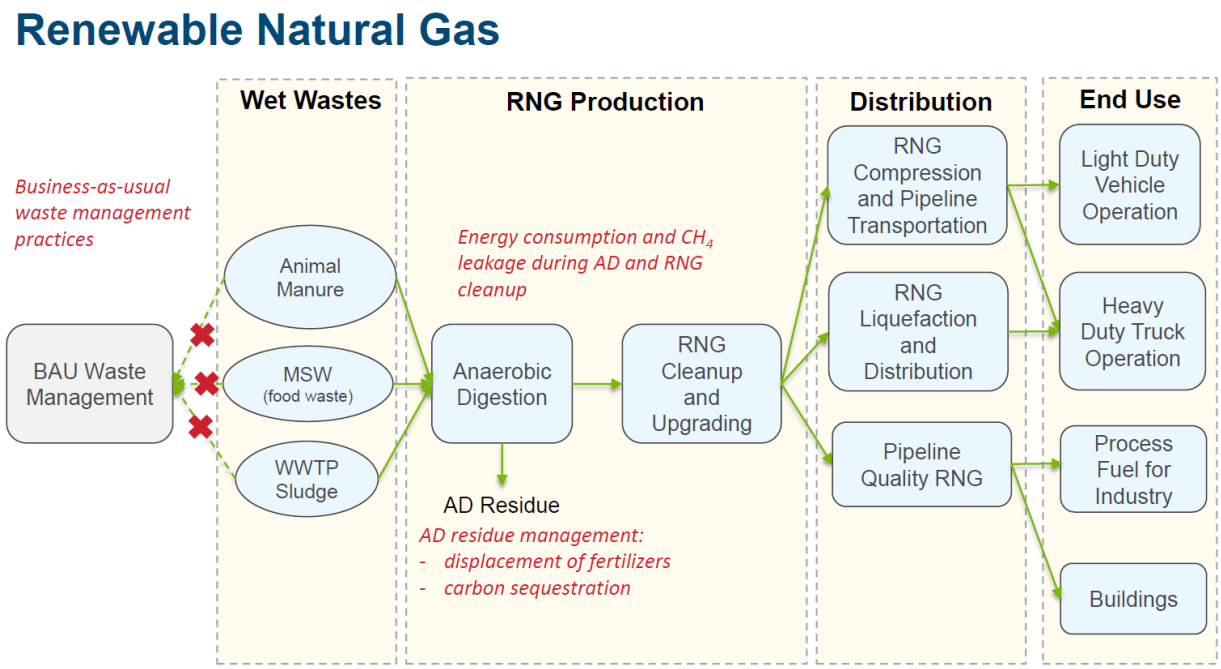
Requested Guidance. The Guidance should confirm that a Credit may be claimed in excess of $1.00 per gallon (or gallon equivalent) where application of the GREET Model yields a negative emissions rate.

B. Extensive emissions rates table

Section 45Z(b)(1)(B)(i) states that "the Secretary shall annually publish a table which sets forth the emissions rate for similar types and categories of transportation fuels based on the amount of lifecycle greenhouse gas emissions . . . for such fuels." The emissions rates are determined under the GREET Model developed by ANL under Section 45Z(b)(1)(B)(ii).

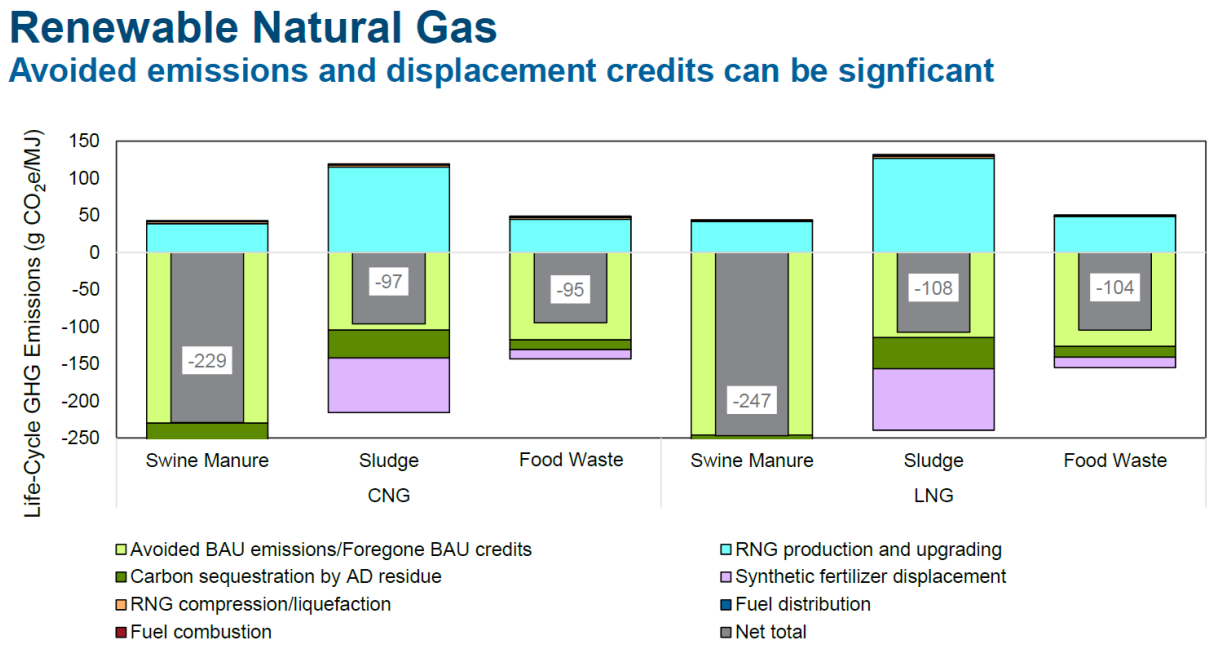
ANL describes the GREET Model as a "one-of-a-kind analytical tool that simulates the energy use and emissions output of various vehicle and fuel combinations." *GREET Model*, Argonne National Laboratory, https://greet.es.anl.gov/index.php (last visited Nov. 17, 2022). The GREET Model includes two separate models, a fuel-cycle GREET Model and a vehicle-cycle GREET Model, with the fuel-cycle GREET Model being applicable to Section 45Z. *Id.* The fuel-cycle GREET Model includes specific inputs and outputs for renewable natural gas ("RNG") production. *GREET Life Cycle Analysis of Bioenergy Technologies*, Presentation, Troy R. Hawkins & Hao Cai, https://greet.es.anl.gov/workshops (Nov. 7, 2022).

Under the RNG fuel-cycle GREET Model, the direct and upstream emissions of the RNG production process are measured, including energy consumption and CH_4 leakage during anaerobic digestion and RNG cleanup and upgrading. The RNG production process and corresponding direct and upstream emissions are shown on the diagram below:



GREET Life Cycle Analysis of Bioenergy Technologies, Presentation, Troy R. Hawkins & Hao Cai, https://greet.es.anl.gov/workshops (Nov. 7, 2022).

The RNG fuel-cycle GREET Model also accounts for the downstream and avoided emissions of the RNG production process. This includes emissions from anaerobic digestion residue management, such as displacement of fertilizers and carbon sequestration, and avoided BAU waste management emissions, as shown in the chart below:



GREET Life Cycle Analysis of Bioenergy Technologies, Presentation, Troy R. Hawkins & Hao Cai, https://greet.es.anl.gov/workshops (Nov. 7, 2022).

The RNG fuel-cycle model outputs the lifecycle greenhouse gas emissions for the RNG produced. This lifecycle greenhouse gas emissions output is relevant to the Credit, as this is the output used to determine the emissions rate under Section 45Z(b)(1)(B). The GREET Model formulates greenhouse gas emissions output as CO_2e intensity scores measured in grams of CO_2e per megajoule, which can then be converted to Section 45Z(b)(1)(A) emissions rates (measured in kilograms of CO_2e per MMBtu) via dimensional analysis. As shown in the chart above, accounting for the avoided BAU waste management emissions and anaerobic digester residue management processes may produce negative net lifecycle greenhouse gas emissions by significantly offsetting the direct and upstream emissions of the RNG production and upgrading.

Therefore, under the RNG fuel-cycle GREET Model, different pathways and inputs with respect to upstream energy sources (e.g., biomass), downstream carbon sequestration and fertilizer displacement methods, and avoided BAU waste management emissions will produce different emissions rates. For example, an LFG to RNG facility that uses solar power as an energy source should produce a lower emissions rate than an LFG to RNG facility that uses natural gas as an energy source under the RNG fuel-cycle GREET Model. To properly account for these differences, the table of emissions rates published by the Secretary pursuant to Section 45Z(b)(1)(B) should be extensive and allow taxpayers to distinguish emissions rates based on all inputs of the fuel-cycle GREET Model, which includes the energy sources and materials used to produce such transportation fuel and the downstream and avoided emissions from this production.

Requested Guidance. The emissions rate table published pursuant to Section 45Z(b)(1)(B) should be extensive and account for all inputs of the GREET Model, including energy sources and materials used in the production of transportation fuel, in addition to the offsetting downstream and avoided emissions from this production.

C. Petition process

Section 45Z(b)(1)(D) allows the taxpayer to file a petition with the Secretary for determination of the emissions rate for a transportation fuel which has not been established under Section 45Z(b)(1)(B). Notice 2022-58, section 3.02(3)(a), 2022-47 IRB 1, requests comments on the application of this provision and asks: "At what stage in the production process should a taxpayer be able to file a petition for a provisional emissions rate?" As the statute and Notice 2022-58 recognize, the GREET Model, while extensive, includes a limited number of pathways and does not specifically measure all potential inputs and applications for every project. It is imperative that the Guidance allow taxpayers to file a petition for a provisional emissions rate at the earliest possible point.

Importantly, taxpayers should have the opportunity to file a petition during the development phase of a project and obtain some level of assurance with respect to their projects and the future credit amounts before substantial investments are made. Taxpayers should be able to recommend an appropriate provisional rate based on the GREET Model if the provisional rate is certified by an independent third-party. It is clear that Congress intended to encourage

applications and pathways to greenhouse gas emissions reduction beyond those presently found in the GREET Model.

This petition process should be similar to the petition process for the carbon oxide sequestration credit under Section 45Q. Per Treasury Regulations Section 1.45Q-(c)(2), a taxpayer must use a lifecycle greenhouse gas emissions and lifecycle analysis ("LCA") to verify any Section 45Q credit amount. The LCA is subject to certain standards for preparation and documentation, and any submitted LCA report must meet certain independent third-party performance or verification requirements:

> The LCA report must be performed or verified by an independent third party. The LCA report must provide a statement documenting the qualifications of the independent third party, including proof of appropriate U.S. or foreign professional license, an affidavit from the third party stating that it is independent from the taxpayer (if a section 45Q(f)(3)(B) election has been made, the affidavit must state that the third party is independent from both the electing taxpayer and the credit claimant), and the statement must be made under penalties of perjury. If an independent third-party review is conducted, then it must include an assessment of the model and supporting data.

Treas. Reg. § 1.45Q-(c)(4). Taxpayers are required to submit the LCA report to the IRS and Department of Energy, and the taxpayer must also submit the model used if the LCA is not independently verified. Treas. Reg. § 1.45Q-(c)(5). The submitted LCA report is then subject to the Department of Energy's technical review and IRS approval before the taxpayer may claim the Section 45Q credit. Treas. Reg. § 1.45Q-(c)(6).

The Credit's provisional rate petition process should be similar to the Section 45Q petition process by allowing an independent third-party review or verification to create a provisional rate using the GREET Model for a specific taxpayer. Similar preparation and documentation standards to those in Treasury Regulations Section 1.45Q-(c)(3) could apply to this third-party review or verification, as well as the statement of qualifications, proof of licensure, affidavit of independence and penalty of perjury requirements under Treasury Regulations Section 1.45Q-(c)(4).

However, Section 45Z specifically calls for taxpayers to use the GREET Model, unlike Section 45Q, which did not specify one model to use. Therefore, the taxpayer should not need to include an assessment of the model used when petitioning for a provisional rate and the submitted report should not be subject to the Department of Energy's technical review, because all reviews and verifications will use the GREET Model.

Furthermore, the process to petition for a provisional rate should be clearly defined in the regulations and allow for a recommended provisional rate to be approved or rejected within a short time period. Allowing an independent third-party to calculate and certify the provisional rate using the GREET Model satisfies the intent of the statute. It is important that alternative

applications and pathways be decided quickly and given the same certainty as applications and pathways currently included in the GREET Model.

Requested Guidance. The Guidance should incorporate procedures to allow taxpayers to file for a provisional emissions rate after the Guidance is issued based on an independent third-party review or verification using the GREET Model for the taxpayer's specific inputs and outputs.

D. Gallon and gallon equivalent apply to liquid fuels and nonliquid fuels, respectively

The Credit is calculated, in part, on "the applicable amount *per gallon (or gallon equivalent)* with respect to any transportation fuel" produced at a qualified facility and sold by the taxpayer within a taxable year. I.R.C. § 45Z(a) (emphasis added). Section 45Z does not otherwise define the terms "gallon (or gallon equivalent)." In the case of the production and sale of a transportation fuel in a liquid form, the term "gallon" should be defined according to its plain and commonly understood meaning as "a unit of liquid capacity equal to 231 cubic inches or four quarts." *Gallon*, Merriam-Webster, https://www.merriam-webster.com/dictionary/gallon. The term "gallon equivalent" should be applied with respect to any nonliquid alternative fuels that are not measured in gallons, such as RNG, with the same meaning as "gasoline gallon equivalent," which is defined as the "amount of fuel it takes to equal the energy content of one liquid gallon of gasoline." *Fuel Properties Comparison*, Alternative Fuels Data Center, United States Department of Energy, https://afdc.energy.gov/fuels/properties (last visited Nov. 17, 2022). The energy content of one gasoline gallon equivalent equals 0.1143 mmBTUs.

Requested Guidance. The Guidance should confirm that the term "gallon" is applied to liquid fuels and the term "gallon equivalent" is applied to nonliquid alternative fuels in the same meaning as "gasoline gallon equivalent."

E. Biomass as defined in Section 45K(c)(3)

Section 45Z(d)(5)(B)(ii) defines biomass by reference to Section 45K(c)(3), as in effect on August 16, 2022. That section defines "biomass" as "any organic material other than (A) oil and natural gas (or any product thereof), and (B) coal (including lignite) or any product thereof." "Organic material" consists of carbon-based compounds. *See Air Pollution Training Institute: Basic Concepts in Environmental Sciences Glossary*, Office of Air and Radiation/Office of Air Quality and Planning Standards, United States Environmental Protection Agency ("organic" is a term that applies to compounds that contain carbon-hydrogen bonds); *Organic Matter*, Biology Online, https://www.biologyonline.com/dictionary/organic-matter (last visited Nov. 28, 2022) (defines organic matter as "[a]ny of the carbon-based compounds found in nature"); *Organic Matter*, Wikipedia, https://en.wikipedia.org/wiki/Organic_matter ("organic material" refers to "the large source of carbon-based compounds found within natural and engineered, terrestrial, and aquatic environments.").

LFG is composed of carbon-based compounds and is thus an "organic material". LFG contains roughly 50 percent methane (CH_4), 50 percent carbon dioxide (CO_2) and a small amount of non-methane organic compounds. *See Basic Information about Landfill Gas*, Landfill

Methane Outreach Program (LMOP), United States Environmental Protection Agency, https://www.epa.gov/lmop/basic-information-about-landfill-gas (last visited Nov. 28, 2022). In addition, LFG is not oil, natural gas or coal or a product thereof. *See* CCA 200952054 (Nov. 18, 2009) (production of LFG in connection with Section 45K tax credits is not an activity involving oil and gas). Accordingly, LFG is "biomass" as defined in Section 45K(c)(3).

In addition, LFG has long been considered by the Service to be produced from "biomass" for purposes of Section 45K(c)(3) (and its predecessors, former Section 29(c)(3), former Section 44D(c)(3) and former Section 48(l)(15)). *See, e.g.*, CCA 201017043 (Dec. 30, 2009) ("[G]as produced from a landfill may constitute a qualified fuel inasmuch as it is produced from biomass, within the meaning of § 45K(c)(3)."). Guidance issued under the Section 1603 program (which was intended to mimic the investment tax credit ("ITC") provides that liquids or gases produced from biomass are also "biomass." *See* "Payments for Specified Energy Property in Lieu of Tax Credits Under the American Recovery and Reinvestment Act of 2009, Frequently Asked Questions and Answers", #33 (open-loop biomass facilities include facilities that burn gases or liquids derived from open-loop biomass; use of pyrolysis oil derived from open-loop biomass permitted).

The legislative history confirms that Congress intended "biomass" to be defined broadly for purposes of the identical definition of "biomass" in the predecessor of Section 45K(c)(3):

> [B]iomass includes waste, sewage, sludge, grain, wood, oceanic and terrestrial crops and crop residues and includes waste products which have a market value. The conferees also intend that the definition of biomass does not exclude waste materials, such as municipal and industrial waste, which include such processed products of oil, natural gas or coal such as used plastic containers and asphalt shingles.

H.R. Conf. Rept. No. 96-817, at 132 (1980), 1980-3 C.B. 245, 299.

Moreover, the U.S. Energy Information Administration defines LFG as a biogas:

> Landfills for municipal solid waste are a source of biogas. Biogas is produced naturally by anaerobic bacteria in municipal solid waste landfills and is called landfill gas. Landfill gas with a high methane content can be dangerous to people and the environment because methane is flammable. Methane is also a strong greenhouse gas. Biogas contains small amounts of hydrogen sulfide, a noxious and potentially toxic compound when in high concentrations.

Biomass Explained, Landfill Gas and Biogas, U.S. Energy Information Administration, https://www.eia.gov/energyexplained/biomass/landfill-gas-and-biogas.php (last visited Oct. 27, 2022); *see also Renewable Natural Gas Production*, U.S. Department of Energy, Alternative Fuels Data Center, https://afdc.energy.gov/fuels/natural_gas_renewable.html (last visited Oct.

20, 2022) ("RNG is essentially biogas (the gaseous product of the decomposition of organic matter) that has been processed to purity standards.").

Requested Guidance. The Guidance should confirm that LFG is "biomass" as defined in Section 45K(c)(3) for purposes of "transportation fuel" under Section 45Z(d)(5).

F. Confirmation that prevailing wage requirements under Section 45Z(f)(6) are only required to be satisfied for any alteration or repair of the qualified facility during the 2025, 2026 and 2027 taxable years in order to qualify for the $1.00 applicable amount per gallon, so long as the qualified facility is placed in service before January 1, 2025

Section 45Z(a)(2) establishes that the Credit's applicable amount per gallon is $0.20, However, the applicable amount is increased to $1.00 per gallon if certain prevailing wage and apprenticeship requirements are met. Section 45Z(f)(6)(A) states that the prevailing wage requirements for qualified facilities will be similar to the rules of Section 45(b)(7). However, there is an exception in Section 45Z(f)(6)(B) for qualified facilities placed in service before January 1, 2025 that eliminates prevailing wage requirements for the construction of the facility, and for alterations or repairs performed before January 1, 2025.

Section 45Z(b)(6)(B) modifies the language in Section 45(b)(7)(A) for any qualified facility placed in service before January 1, 2025 to read:

> The requirements described in this subparagraph with respect to any qualified facility are that the taxpayer shall ensure that any laborers and mechanics employed by the taxpayer or any contractor or subcontractor in, *with respect to any taxable year beginning after December 31, 2024*, for which the credit is allowed under this section, the alteration or repair of such facility, shall be paid wages at rates not less than the prevailing rates . . . .

(Emphasis added). Under this provision, so long as the qualified facility is placed in service before January 1, 2025, the prevailing wage requirements are only required to be satisfied for any alteration or repair of the qualified facility during the 2025, 2026 and 2027 taxable years in order to qualify for the $1.00 applicable amount per gallon under Section 45Z(a)(2)(B).

Requested Guidance. The Guidance should confirm that the Section 45Z(f)(6) prevailing wage requirements for any qualified facility placed in service before January 1, 2025 only apply to the alteration or repair of such facility during the 2025, 2026 and 2027 taxable years in determining a taxpayer's applicable amount per gallon under Section 45Z(a)(2)(B).

G. Clarification that apprenticeship requirements under Section 45Z(f)(7) are only required to be satisfied for any alteration or repair of the qualified facility during the 2025, 2026 and 2027 taxable years in order to qualify for the $1.00 applicable amount per gallon, so long as the qualified facility is placed in service before January 1, 2025

Section 45Z(a)(2) establishes that the Credit's applicable amount is $0.20. However, the applicable amount is increased to $1.00 per gallon if certain prevailing wage and apprenticeship requirements are met. Section 45Z(f)(7) states that the apprenticeship requirements will be similar to the rules of Section 45(b)(8). However, unlike the special rule provided under Section 45Z(f)(6)(B) with respect to the application of the prevailing wage requirements, there is no exception to the apprenticeship requirements for qualified facilities placed in service before January 1, 2025. We believe this is a drafting error as the apprenticeship requirements should generally apply in a manner consistent with the prevailing wage requirements.

Section 45(b)(8)(A) imposes three apprenticeship requirements on the construction, alteration, or repair work of a qualified facility. The first requires a set percentage of the total labor hours to be performed by qualified apprentices, with respect to the construction, alteration, or repair work of any qualified facility. I.R.C. § 45(b)(8)(A)(i). The second requires a certain apprentice-to-journeyworker ratio. I.R.C. § 45(b)(8)(A)(ii). The third requires participation by qualified apprentices in construction, alteration, or repair work with respect to the construction of a qualified facility when the taxpayer, contractor or subcontractor employs four or more individuals for such work. I.R.C. § 45(b)(8)(A)(iii).

It is unclear why Section 45Z(f)(6)(B) provides a special rule regarding the prevailing wage requirements for qualified facilities placed in service prior to January 1, 2025, but Section 45Z(f)(7) does not provide a similar special rule for the apprenticeship requirements. These provisions should be consistent, and any inconsistency likely reflects faulty drafting rather than actual intent. For example, Section 45Z(f)(6)(B)(i) provides that the prevailing wage requirements in Section 45(b)(7)(A)(i) (with respect to the construction of the facility) do not apply to qualifying facilities placed in service prior to January 1, 2025. If a similar exception is not established for apprenticeship requirements, qualified facilities placed in service before January 1, 2025 will be subject to apprenticeship requirements for prior construction, alteration and repair work with respect to the construction of a qualified facility, but not the prevailing wage requirements. This is a counterintuitive result. The Guidance should confirm that the apprenticeship requirements are only required to be satisfied for any alteration or repair of the qualified facility during the 2025, 2026 and 2027 taxable years in order to qualify for the $1.00 applicable amount per gallon, so long as the qualified facility is placed in service before January 1, 2025, similar to the prevailing wage requirements special rule in Section 45Z(f)(6)(B).

Requested Guidance. The Guidance should conform the Section 45Z(f)(7) apprenticeship requirements to the Section 45Z(f)(6) prevailing wage requirements for any qualified facility placed in service before January 1, 2025 in determining a taxpayer's applicable amount under Section 45Z(a)(2)(B).

H. Definition of "Qualified Facility"

The statute does not define the scope of the "qualified facility," but rather addresses the ownership, production, and other requirements. Nonetheless, the Credit is a production tax credit ("PTC") and should be defined consistent with longstanding authorities that define the "facility" narrowly for purposes of the PTC—as contrasted with the ITC, which is broader in scope. As the authorities below demonstrate, the facility does not include feedstock and delivery

systems and should not include a renewable electricity facility that supplies electricity in order to produce transportation fuel in a qualified facility, even where the renewable electricity facility may be co-located with the qualified facility or owned by the same taxpayer that owns the qualified facility.

The term "qualified facility" has a settled meaning in the case of PTCs under Section 45, and in predecessor or related PTC provisions. The seminal ruling is Rev. Rul. 94-31, 1994-1 C.B. 16, which defined the term "facility" for purposes of a wind facility and defined the property within the boundaries of the "facility" to be quite narrow. Rev. Rul. 94-31 ruled that "each wind turbine together with its tower and supporting pad . . . is a separate facility" and "[e]ach of these facilities is a qualified facility . . . ." Rev. Rul. 94-31 explains:

> A wind turbine together with its tower and supporting pad comprise *the property on the windfarm necessary for the production of electricity from wind energy*. Moreover, each wind turbine on the windfarm can be separately operated and metered and can begin producing electricity when it is mounted atop a tower. Thus, the term "facility" under section 45(c)(3) means the wind turbine, together with the tower on which the wind turbine is mounted and the pad on which the tower is situated.

(Emphasis added). Although Rev. Rul. 94-31 specifically lists other property, it determined that only the specific property above was part of the "facility."

The IRS reached a similar conclusion with respect to a biomass facility under Section 45 in Notice 2006-88, 2006-22 I.R.B. 686. There, the IRS defined the "qualified facility" for production of electricity from open-loop biomass as follows:

> For purposes of 45(d)(3), an open-loop biomass facility is a power plant consisting of *all components necessary for the production of electricity from open-loop biomass (and, if applicable, other energy sources)*. Thus, a qualified open-loop biomass facility includes all burners and boilers (whether or not burning open-loop biomass), *any handling and delivery equipment that supplies fuel directly to and is integrated with such burners and boilers*, steam headers, turbines, generators, and all other depreciable property necessary to the production of electricity. *The facility does not include (i) property used for the collection, processing, or storage of open-loop biomass before its use in the production of electricity*, (ii) transformers or other property used in the transmission of electricity after its production, or (iii) ancillary site improvements, such as roadways and fencing, that are not necessary to the production of electricity. Each power plant that is operated as a separate integrated unit is treated as a separate facility for purposes of section 45(d)(3).

Notice 2006-88, section 3.01 (emphasis added).

Finally, in CCA 200347024 (Jan. 21, 2003), the IRS Office of Chief Counsel followed the same narrow definition of the term "facility" as provided in Rev. Rul. 94-31—in the context of the production of synthetic fuel under former Section 29. Chief Counsel explained:

> *The rationale of Rev. Rul. 94-31 excludes from a § 29 facility, preparation equipment, feedstock and product conveyors, and storage tanks*. This result is consistent with the separate definitions contained in § § 1.48-9(c)(5) and (c)(9) of synthetic fuel production equipment and the handling and preparation equipment for purposes of the energy investment credit. Some components that qualified for purposes of the energy credit, a part of the general investment tax credit, are excluded from description of a facility that qualifies for the § 29 and § 45 production credits. *The storage tanks and feedstock and end-product site improvements, equipment, and conveyors, while designed for and necessary to the operation of a particular plant, represent ancillary and auxiliary equipment and not synthetic fuel production equipment*.

(Emphasis added). Like the Credit, the credit under Section 29 in CCA 200347024 involves the production of an energy resource other than electricity.

The Credit is a PTC. Similar to other PTCs, the definition of the "qualified facility" under Section 45Z should be construed narrowly and should include only the property that is *necessary for the production of a transportation fuel*. Specifically, the qualified facility should be construed narrowly to exclude any "upstream" property used in the generation, collection, processing, storage, and/or delivery of electricity, feedstock, or fuel before its use in the production of the transportation fuel. Consistent with the authorities above, the qualified facility should include only handling and delivery equipment that supplies the electricity, feedstock, or fuel directly to and is integrated with the qualified facility. The qualified facility should not include any renewable electricity facility that is used to supply electricity for the production of a transportation fuel.

It should be emphasized that a qualified facility and any renewable electricity facility should be treated as separate facilities regardless of whether the renewable electricity facility and the qualified hydrogen production facility are co-located on the same site or constructed pursuant to the same development plan, or owned by the same taxpayer This analysis should be applied without regard to whether the lifecycle greenhouse gas emissions from the renewable electricity facility or other "upstream" process must be considered for purposes of determining qualification for the Credit and calculation of the Credit amount.

Requested Guidance: In determining the scope of the "qualified facility" for purposes of the Credit, the Guidance should confirm that the "qualified facility" is defined narrowly and includes only that property that is necessary for the production of a transportation fuel and does not include "upstream" electricity, feedstock or fuel facilities, even if such property is co-located

with the qualified facility, under the same development plan or owned by the same taxpayer. Similarly, the definition of qualified facility should not extend past the point that a transportation fuel is produced and is ready to be sold.

I. Clarification of the interplay between Section 48 tax credits for "qualified biogas property" and the Credit

Section 45Z(d)(4) provides that the term "qualified facility" for purposes of the Credit (a) means a facility used for the production of transportation fuels, and (b) does not include any facility for which one of the following credits is allowed under Section 38 for the taxable year: (i) the credit for production of clean hydrogen under Section 45V, (ii) the credit determined under Section 46 to the extent that such credit is attributable to the Section 48 credit with respect to any specified clean hydrogen production facility for which an election is made under Section 48(a)(15) or (iii) the credit for carbon oxide sequestration under Section 45Q. Accordingly, a taxpayer may not claim both the Credit and the credit under Section 45V, Section 48(a)(15) or Section 45Q in the same taxable year. Thus, the restriction on a qualified clean fuel production facility is clearly limited to the tax credits for producing clean hydrogen and carbon capture and sequestration.

Section 45(e)(12) provides that "[t]he term 'qualified facility' shall not include any facility which produces electricity from gas produced by qualified biogas property (as defined in section 48(c)(7)) if a credit is allowed under section 48 with respect to such property for the taxable year or any prior taxable year." Accordingly, a taxpayer may not claim the Section 45 production tax credit for any electricity produced from gas produced by property for which the Section 48 tax credit was claimed for "qualified biogas property."

These provisions clearly show that Congress knows how to draft a prohibition against the application of tax credits with respect to the same facility or with respect to the subsequent use of the product produced by a facility. There is no such prohibition on a taxpayer claiming the Credit if it utilizes gas produced by "qualified biogas property" (as defined in Section 48(c)(7)) if the Section 48 was allowed with respect to such property for the taxable year or any prior taxable year. Moreover, as discussed above, the "qualified facility" for purposes of the Credit should be defined narrowly and include only that property that is necessary for the production of a transportation fuel and should not include "upstream" electricity, feedstock or fuel facilities, even if such property is co-located with the qualified facility, under the same development plan or owned by the same taxpayer.

Requested Guidance. The Guidance should confirm that the Credit can be claimed for the production and sale of transportation fuel that is produced from feedstock produced in "qualified biogas property" for which an ITC under Section 48 was claimed for the taxable year or any prior taxable year.

J. Coordination with Section 45Q

As discussed above, in determining the scope of a "qualified facility" for purposes of the Credit, the Guidance should confirm that "qualified facility" is defined narrowly and includes

only that property that is necessary for the production of a transportation fuel and does not include "upstream" electricity, feedstock or fuel facilities. The restriction found in Section 45Z(d)(4)(B)(iii) should be limited to carbon oxides that are captured as emissions from the narrowly defined qualified facility. The restriction found in Section 45Z(d)(4)(B)(iii) should not apply to restrict use of the Section 45Q credit for carbon capture equipment installed upstream of the qualified facility in connection with an electricity generation asset supplying power to or producing feedstock for use in the qualified facility. For example, if qualified biogas property producing biogas for use as a feedstock in the production of a transportation fuel employs carbon capture and sequestration technology, such property could separately qualify for the Section 45Q tax credit without implicating Section 45Z(d)(4)(B)(iii).

Requested Guidance: The Guidance should confirm that carbon capture equipment installed on any "upstream" electricity, feedstock or fuel facilities, even if such property is co-located with the qualified facility, under the same development plan or owned by the same taxpayer, are not part of the qualified facility and do not prevent any Credit with respect to any transportation fuel produced at and sold from the downstream qualified facility.

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