345 Inverness Drive South
Building C, Suite 310
Englewood, CO 80112

T 303-858-8358
F 303-858-8431
gevo.com

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Office of the Associate Chief Counsel
Passthroughs and Industries
Internal Revenue Service
Room 5203, PO Box 7604
Ben Franklin Station
Washington, DC 20044

Via Electronic Submitted to Regulations.gov

Comments on Credits for Clean Hydrogen and Clean Fuel Production, **Notice 2022-58**

To Whom It May Concern,

Gevo, Inc. (Gevo) respectfully submits the following comments in response to the request from the Department of the Treasury and the Internal Revenue Service for comments on the Clean Fuel Production Credit under §45Z. We appreciate the opportunity to comment on this important incentive, and its relation to other incentives, §45V and §45Q. If guidance for §45Z incorporates our suggestions below, the domestic sustainable aviation fuel (SAF) industry will be well positioned to invest and grow, substantially reduce greenhouse gas emissions (GHG) and meet or exceed the SAF Grand Challenge goal of 3 billion gallons (BG) by 2030.

At Gevo, we intend to produce 1 BG of hydrocarbons by 2030, one-third of the SAF Grand Challenge's goal. We use biomass to create SAF with low or negative carbon emissions intensity (CI)[1] by starting with low-CI feedstock (*i.e.*, industrial, non-edible corn) and leveraging a mix of fossil and renewable energy sources for production. We also intend to incorporate carbon capture and sequestration (CCS) partnerships for our plants' biogenic CO2 production stream and use clean hydrogen for our alcohol-to-jet (ATJ) conversion process.

[1] Carbon Intensity in the context of Sustainable Aviation Fuel is defined as the total greenhouse gas emissions in grams of carbon dioxide equivalent of the SAF divided by the total megajoules of SAF (gCO2e/MJ)

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F 303-858-8431
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As a major contributor to the SAF Grand Challenge, Gevo believes that incentives, like those in the Inflation Reduction Act (IRA), encourage and support costly decarbonization efforts – especially for novel and capital-intensive SAF development projects like ours. We believe in using lifecycle greenhouse gas modeling within these incentives that accurately accounts for all carbon emissions, and we advocate for the same accounting mechanisms and inclusions for the lifecycle greenhouse gas emissions (or lifecycle analysis (LCA)) across all fuels and sectors including –aviation, non-aviation, and clean hydrogen. This is the only way to ensure every participant in the ecosystem, from farmer to flyer, is appropriately and consistently recognized for carbon reduction technologies and lower-carbon innovations. We believe the carbon counting mechanism must be consistent for long term investment certainty and program integrity.

The approach to completing a fuel's LCA is to ensure the use of a model that incorporates the best available scientific data, assumptions, and information. After reviewing numerous models and methodologies, Gevo has worked extensively with the experts at the U.S. Department of Energy's Argonne National Laboratory (ANL) in relation to our SAF, and Gevo believes ANL's Greenhouse gases, Regulated Emissions and Energy use in Transportation (GREET) model is the methodology that is most capable of accurately depicting a fuel's carbon intensity (CI) score. Given our use and understanding of the GREET model, we believe this to apply equally to clean hydrogen and non-aviation (transportation) fuels. We certainly believe, as do our aviation partners and SAF peers, that Congress intended to ensure that a state-of-the-art, world-leading methodology developed by U.S. government and academic researchers through an executive agency of the U.S. government - could and would be used to implement these new **U.S. specific** tax incentives (§45Z, §45V).

This Administration, via the IRA, has built a policy around decarbonization strategies; there is recognition and understanding that these strategies (biomass-based biofuels, CCS, clean hydrogen, low-CI electricity) benefit the climate by reducing greenhouse gas emissions. The model(s) used to account for CI reduction must account for opportunities to reduce emissions throughout the fuel production process, from feedstock production to fuel combustion. This must include practices such as carbon capture and sequestration (CCS), renewable energy use, biomass combustion for fuel, and others. Guidance provided by Treasury must ensure that facilities can choose to utilize the GREET model, inclusive of agricultural benefits, for program qualification.

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Englewood, CO 80112

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F 303-858-8431
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We also believe that carbon intensity calculations should include dynamic emissions factors for farm-level emissions from biofuel feedstock production—which make up a significant portion of overall biofuel emissions—and allow for unique and customizable CI calculations based on farm-level practices, including:

- Crop yield;
- Tillage and other land management practices;
- Fuel usage; and
- Fertilizer and chemicals management.

Including farm-level emissions provides the most accurate carbon intensity calculations to ensure the policy is achieving its intended climate goals throughout the entire biofuel supply chain. There are several policies in place to encourage these practices and consistent recognition across programs is necessary for widescale adoption.

It is important to remember that different policies and regulations (CORSIA, EPA'S Renewable Fuel Standard, CA Low Carbon Fuel Standard) use select parts of the GREET methodology. The result is that the exact same fuel with the same feedstock and inputs can output completely different results depending on the program. This creates winners and losers and hurts the integrity of the program. Picking and choosing which values count creates a framework where CI scores cannot be compared on a like-to-like, or apples-to-apples basis.

To visualize these concepts noted above, Gevo has compared, below, five widely known LCA frameworks for an ethanol-to-jet fuel pathway using the same feedstock (industrial-grade corn), process (plant) inputs and the following decarbonization strategies (technologies):

- Climate-smart agriculture;
- Carbon capture & sequestration (CCS);
- Low-CI electricity; and
- Low-CI hydrogen.

The total CI reductions for each model, compared to the baseline fossil jet fuel (CORSIA's fossil jet fuel baseline is utilized for this exercise), vary from -25% to -

345 Inverness Drive South
Building C, Suite 310
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T 303-858-8358
F 303-858-8431
gevo.com

127%[2]. Thus, this table and the displayed variances clearly demonstrate the inconsistencies across the methodologies in these programs compared to ANL's GREET model.

Carbon Intensity Evaluation[3]	**FOSSIL JET**	**ANL GREET**	**CA LCFS**	**RFS**	**CORSIA[4]**	**EU RED II[5]**
Combustion	77					
Jet Fuel Production	17					
Corn Feedstock		**20**	19	17	20	12
Better Land Management		**-20**				-23
CCS		**-31**	-30			-31
iLUC		**8**	21	30	26	
AtJ[6] Production Energy		**13**	13	12	13	11
Chemicals & T&D		**7**	7	7	7	7
Tailpipe		**1**	1		1	
Total, kgCO2e/MMBtu	**94**	**-2**	**31**	**66**	**67**	**-24**
Reduction from Fossil Jet	-	**-102%**	-65%	-26%	-25%	-127%

Table 1: Carbon Intensity Evaluation Across LCA Models/Methodologies, CI = kgCO2e/MMBtu

We will never achieve goals of decarbonization, innovation, nor improving agriculture without measuring carbon and allowing the marketplace to incentivize change.
A clean fuel tax credit that is truly performance based—and that accounts for lifecycle emissions throughout the production process— would provide the financial incentives needed for fuel producers and farmers to implement innovative processes to meaningfully reduce their greenhouse gas emissions. It would also ensure that all Americans see increased access to lower-carbon, and potentially lower-cost fuel alternatives.

In response to specific request for comment related to future guidance issued for the Clean Fuel Production Credit (§45Z), Gevo respectfully submits the comments below.

[2] If the table's cell above is blank, this means the methodology doesn't account for that input and it's not applicable in the fuel's LCA and final CI score
[3] Numbers won't sum perfectly due to rounding assumptions related to whole number presentation
[4] CORSIA values assume ANL GREET modeling is accepted for CORSIA's "core LCA" value but assumes CORSIA's default "iLUC LCA" value.
[5] European Union's Renewable Energy Directive (RED) II
[6] AtJ = Alcohol-to-Jet Fuel

345 Inverness Drive South
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F 303-858-8431
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Additionally, we support comments submitted by American Coalition for Ethanol, Growth Energy, and the Renewable Fuels Association where they do not conflict with our own. We appreciate your consideration and look forward to continuing to engage in this process. We request the opportunity to meet with Treasury personnel to discuss these comments and look forward to working with Treasury to implement these foundational SAF policies.

Thank you,

Lindsay Fitzgerald
Vice President, Government Relations
Gevo, Inc.
lfitzgerald@gevo.com

Sale Definition.

(a) What factors should the Treasury Department and the IRS consider in determining whether an unrelated person purchases transportation fuel for use in a trade or business for purposes of § 45Z(a)(4)(B)?

(b) What factors should the Treasury Department and the IRS consider in determining whether fuel is sold at retail for purposes of § 45Z(a)(4)(C)?

The liquid transportation fuel industry currently functions under the longstanding Product Transfer Document (PTD) requirements under the Renewable Fuel Standard (RFS)[7], CA LCFS[8], and/or OR CFP[9]. These requirements, including length of records maintenance should be incorporated by reference and maintain consistency within the industry and prevent duplication of efforts.

[7] 40 CFR 80.1453
[8] California Code of Regulations (CCR) § 95491.1
[9] OAR 340-253-0600(2)

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Building C, Suite 310
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F 303-858-8431
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Establishment of Emissions Rate for Sustainable Aviation Fuel.
Section §45Z(b)(1)(B)(iii) provides that the lifecycle greenhouse gas emissions of sustainable aviation fuel shall be determined in accordance with the Carbon Offsetting and Reduction Scheme for International Aviation or "any similar methodology which satisfies the criteria under § 211(o)(1)(H) of the Clean Air Act (42 U.S.C. 7545(o)(1)(H)), as in effect on the date of enactment of this section." What methodologies should the Treasury Department and IRS consider for the lifecycle greenhouse gas emissions of sustainable aviation fuel for the purposes of § 45Z(b)(1)(B)(iii)(II)?

The Greenhouse gases, Regulated Emissions, and Energy use in Transportation (GREET) model developed by Argonne National Laboratory[10] (ANL) clearly satisfies the robust modeling criteria required to accurately calculate the lifecycle greenhouse gas emissions for SAF, as it is already the documented choice for both clean hydrogen and non-aviation fuel. **Using the GREET model simplifies implementation for the Department of Treasury, aligns the policy with other emerging clean fuels policies in the U.S., and provides certainty for fuel producers and stakeholders, including investors.**

- GREET is a state-of-the-art, world-leading methodology developed by the U.S. government and academic researchers through an executive agency of the U.S. government (U.S. Department of Energy) and is a clear choice to implement the new **U.S. specific** tax incentives §45Z for both non-aviation fuels and aviation fuel.
- ANL has the same qualifications and research to model aviation fuel, as other transportation fuels and hydrogen.
- GREET is considered the "gold standard" for life cycle analysis and has been labeled as "exactly the right tool" to model SAF[11] by ANL directly; there is no evidence of any shortcomings in ANL GREET's modeling capabilities for SAF.
- GREET models the lifecycle greenhouse gas emissions for SAF consistent with biofuels in the non-aviation fuel §45Z category that are already allowed to utilize GREET for modeling.

[10] For the core LCA: https://www.icao.int/environmental-protection/CORSIA/Documents/CORSIA_Eligible_Fuels/ICAO%20document%2007%20-%20Methodology%20for%20Actual%20Life%20Cycle%20Emissions%20-%20June%202022.pdf, Section 2, paragraph 1
[11] https://www.energy.gov/eere/bioenergy/articles/greet-dawn-new-day-sustainable-aviation-fuels

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F 303-858-8431
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- The GREET model is continuously being updated with new technology pathways and emissions factors based on the latest science.

GREET is in alignment with the requirements of the Clean Air Act[12] by ensuring all greenhouse gas emissions within the standard well-to-wheel LCA are accounted for within the transportation fuel models, including iLUC.

- GREET accounts for all greenhouse gases innovative decarbonization strategies that are leveraged by SAF companies today, including, but not limited to:
    - Regenerative agriculture;
    - Carbon capture & sequestration (CCS);
    - Renewable natural gas (RNG) process energy;
    - Low-CI electricity; and
    - Low-CI hydrogen.
- The GREET Feedstock Carbon Intensity Calculator (FD-CIC) can be used to calculate farm-specific carbon intensity.
- The GREET Carbon Calculator for Land Use from Biofuels Production (CCLUB) can be used to calculate emissions from induced land use change (iLUC).

Non-aviation transportation fuels utilize the GREET model, including GREET's iLUC values calculated in GREET's CCLUB. Unlike CORSIA's static iLUC value, GREET's CCLUB uses soil data that is specific to the United States down to the county level and is updated every 1-2 years, ensuring that iLUC values are changing with updated and recent modeling efforts. Treasury must be clear that SAF producers can elect GREET as a "similar" model under §45Z.

International Civil Aviation Organization (ICAO) is a global platform which created CORSIA. It is governed by representatives from 193 countries and is not a U.S.-based organization. Gevo does not agree that this policy is appropriate to be leveraged under §45Z, which requires U.S. production of fuel. We believe the intent of the IRA is to recognize the benefit of including best-in-class U.S.-based models, like GREET, to model both the core LCA and the U.S. feedstocks' iLUC emissions most accurately, with U.S. specificity and accuracy for this U.S. tax incentive. ICAO's consensus-based approach to

[12] GREET satisfies the criteria under section 211(o)(1)(H) of the Clean Air Act (42 U.S.C. 7545(o)(1)(H)), which defines "lifecycle greenhouse gas emissions" for purposes of the Renewable Fuels Standard ("RFS") under the Clean Air Act ("CAA"). The definition requires the RFS to consider the "aggregate quantity of [GHG] emissions" including "direct emissions and significant indirect emissions" for the "full fuel life cycle." EPA also included GREET (and other models) when it expanded the RFS in 2010 (*See* 74 Fed. Reg. 24,904 at 24,916 (May 26, 2009).)

345 Inverness Drive South
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F 303-858-8431
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iLUC calculations that averages assumptions from two different iLUC models, one European and one American, results in calculations that do not reflect the perspective or knowledge base of agriculture in the U.S.

If guidance were to GREET to be utilized for non-aviation transportation fuels but not providing for the same consistency and allowance for aviation fuels (including SAF), it would allow certain LCA reductions to be accounted for in non-aviation fuels (*e.g.*, corn grain ethanol) but not for similar-feedstock aviation fuels (*e.g.*, corn grain SAF).

This could create a clear disadvantage and arbitrary penalty for SAF decarbonization efforts, some of which are identical to non-aviation fuels (*e.g.*, Ethanol). CORSIA's SAF-specific LCA methodology currently excludes decarbonization efforts that are captured as part of a lifecycle greenhouse emissions analysis in GREET. CORSIA-excluded decarbonization efforts currently include:

- Carbon capture and sequestration (CCS),
- Low-carbon electricity,
- Low-carbon (green) hydrogen; and
- Climate-smart agriculture practices.

While the CORSIA methodology allows the inclusion of these decarbonization efforts in the LCA for petroleum-based aviation fuels (Low Carbon Aviation Fuels), it specifically excludes them for SAF. These decarbonization strategies are included in GREET and can be captured by other and similar biofuels in the non-aviation category (*e.g.*, ethanol). It would be particularly damaging if Treasury were to allow only the CORSIA methodology – or a similarly exclusionary model - that doesn't allow SAF to capture these decarbonization efforts (*e.g.*, CCS, clean hydrogen) towards the CORSIA eligible fuel's LCA. The very technologies the IRA is trying to promote and expand through these incentives would not recognize their benefits for related credits. By excluding these decarbonization mechanisms in the SAF's LCA, Treasury should consider that SAF companies won't be incentivized to leverage these decarbonization technologies that directly tie to their business as a whole:

- CCS for the CO_2 produced during fermentation;
- Hydrogen needed to convert alcohols to jet fuel; and
- Low-CI electricity to reduce fossil fuel consumption.

345 Inverness Drive South
Building C, Suite 310
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T 303-858-8358
F 303-858-8431
gevo.com

It's counterintuitive for IRA to provide a special incentive for SAF producers – presumably to meet the SAF Grand Challenge goal - but then deny SAF producers access to the LCA benefits reaped by other fuels and hydrogen. This may also disincentivize companies to produce SAF and instead may revert to simpler, more established biofuels that are allowed to capture more tax incentives, without penalty, by using GREET.

Provisional Emissions Rates.

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.

(a) At what stage in the production process should a taxpayer be able to file a petition for a provisional emissions rate?

Gevo supports independent model review prior to operations commencement and at any time thereafter to ensure accuracy in the emissions rate.

Certification should be required annually. More frequent certification is only required as needed to address any significant feedstock or plant design changes that impact the emissions rate.

- SAF producers should be allowed and encouraged to secure an initial certification before operations commence (and operational data collection begins) based on engineering designs and estimates.
- SAF producers should be allowed to reach steady-state operations before the first annual certification is completed with actual, operating data.

In alignment with the current §45Q certification process, a SAF producer should be able to complete their provisional pathway internally, using an approved lifecycle greenhouse gas emissions model.

- A qualified, independent modeling expert shall certify or validate their model and emission rate.
- Thereafter, the SAF producer can use this independent party certification to self-certify their emission rate and annual SAF volumes related to the §45Z credit to Treasury with their tax return.

345 Inverness Drive South
Building C, Suite 310
Englewood, CO 80112

T 303-858-8358
F 303-858-8431
gevo.com

SAF providers shouldn't have to file a petition, but rather should be able to self-certify with Treasury - the same way §45Q participants are able to self-certify the CO_2 mass balance under the independently verified CSA/ANSI ISO 27916:2019 certification mechanism/methodology.

- Gevo supports independent certification and self-reporting to Treasury.
- Taxpayers shouldn't have to petition for a provisional emissions rate approval.
    - There should be consistency with §45Q's mass balance certification requirements that don't require Treasury's approval.

As with the CSA/ANSI ISO 27916:2019 or Subpart RR §45Q requirements[13], Treasury should seek only the documentation that certification occurred and shall not impose that a petition process be completed by the biofuel or clean hydrogen producers to Treasury; Treasury should not impose an approval process.

- Treasury should recognize an approval process could artificially delay or penalize §45Z or §45V participants with an unnecessary administrative delay not required for §45Q participants.
- Treasury should rely on this independent certification without oversight.
    - Treasury doesn't have fuel lifecycle greenhouse gas emissions modeling expertise.
- To assist with consistency and to simplify implementation for Treasury, §45Z and §45V shouldn't have more burdensome certification requirements than §45Q.
    - **No petition process should exist.**
    - **No approval should be required.**

(b) What criteria should be considered by the Secretary to determine the provisional emissions rate?

Gevo supports the ability to calculate each part of the provisional emissions rate with accuracy. Models that incorporate the latest science and recognition of decarbonization practices, like GREET (which includes ANL GREET FDCIC and ANL GREET CCLUB as outlined above) are best.

- The provisional emission rate should include the latest emission factors associated with regenerative agricultural practices (*e.g.*, feedstock) to processing (*e.g.*, low-CI electricity, RNG) to other decarbonization efforts (*e.g.*, CCS).

[13] https://www.govinfo.gov/content/pkg/FR-2021-01-15/pdf/2021-00302.pdf, Pg. 4769, § 1.45Q–3 (d)

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Building C, Suite 310
Englewood, CO 80112

T 303-858-8358
F 303-858-8431
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- Gevo recommends GREET given it is frequently updated with the latest scientific emission factors and economic models.
- Gevo recommends avoiding models that use static look-up tables that are not updated every one to two years.
    - These can become outdated very quickly and create issues as policy updates are slow or delayed.
- Gevo recommends the full recognition of *negative* emissions rates that result from a multitude of decarbonization efforts and the latest developments in ANL GREET's lifecycle greenhouse gas modeling strategies.
    - Note: As such, Treasury should ensure that negative emission rates for SAF will be credited under §45Z.

Gevo supports flexibility and a common-sense approach in the criteria used to determine the provisional emissions rate – to reduce redundancy in effort and expense. Additionally, most (if not all) U.S. SAF producers participate in several U.S. based low-carbon fuels programs which have strict and robust reporting and verification requirements of lifecycle analysis models, including site-specific operational data.

- These programs include, but aren't limited to, the:
    - California Low-Carbon Fuel Standard (LCFS);
    - Oregon Clean Fuels Program (CFP);
    - Washington Clean Fuels Standard (CFS); and/or
    - Verified Carbon Standard (Verra), Carbon Offset Programs.
- Under these programs, accredited independent verifiers review site-specific emissions data and complete on-site visits of the SAF production facility on an annual (or otherwise prescribed) basis to ensure accurate claims of operations and site-specific emissions reductions credits.
    - It should be noted that SAF producers also participate in the Federal Renewable Fuel Standard (RFS). However, the RFS verification program (QAP) does not include review of site-specific emissions reductions claims and therefore EPA's analysis and/or QAP audits are not adequate to verify claims under §45Z.
- Participation and verification under these programs can be capital intensive.

Gevo supports mitigating redundancies in independent verification practices and costs – associated with LCAs.

345 Inverness Drive South
Building C, Suite 310
Englewood, CO 80112

T 303-858-8358
F 303-858-8431
gevo.com

Gevo supports an additive approach to establishing the provisional emissions rate, to reduce redundancy in duplicative site-visit requirements and assist in alleviating substantial independent verification and review costs. If a company participates in a low-carbon fuels program, regulated or voluntary, where independent review of any portion of the lifecycle greenhouse gas emissions occurs, the company should be allowed to utilize any portion of that LCA and document it as "certified". Understanding the LCA models must align with the inherent lifecycle greenhouse gas emissions requirements of §45Z.

Additional Comments to Treasury:

B. Clean Hydrogen and Renewable Energy Certificates

Gevo supports the inclusion of low-CI electricity for (green) hydrogen classification through the utilization of Renewable Energy Certificates (RECs) for incorporation and recognition in the calculated greenhouse gas emissions model.

- This is consistent with LCFS low-CI electricity §95488.8 (h)(1) requirements.
- GREET also models emission reductions for renewable energy purchased through RECS.
    - By purchasing RECs, low-carbon electricity projects across the U.S. are incentivized to expand to support projects like the IRA, a win-win.

Special Rules.

Section §45Z(f)(1) provides several requirements for a taxpayer to claim the § 45Z credit, including for sustainable aviation fuel a certification from an unrelated party demonstrating compliance with the general requirements of the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) or in the case of any similar methodology, as defined in § 45Z(b)(1)(B)(iii)(II), requirements that are similar to CORSIA's requirements. With respect to this certification requirement for sustainable aviation fuel, what certification options and parties should be considered to support supply chain traceability and information transmission requirements?

Gevo as a SAF producer will participate in several low-carbon fuels programs, including but not limited to:

- ICAO CORSIA
- EPA Renewable Fuel Standard (RFS)
- California Low-Carbon Fuel Standard (LCFS);
- Oregon Clean Fuels Program (OR CFP); and

345 Inverness Drive South
Building C, Suite 310
Englewood, CO 80112

T 303-858-8358
F 303-858-8431
gevo.com

- Washington Clean Fuels Standard (WA CFS).

Not just Gevo, but most (if not all) U.S. SAF producers participate in several of the U.S. based low-carbon fuels programs above which have strict and robust reporting and verification requirements of lifecycle analysis models and site-specific operational data. Where relevant, §45Z reporting and certification requirements should recognize that SAF producers are already measuring emissions reductions through participation in these programs and being verified by independent certification bodies on an annual or otherwise prescribed basis.

- Under these programs, accredited independent verifiers review site-specific emissions data and complete on-site visits of the SAF production facility on an annual (or otherwise prescribed) basis to ensure accurate claims of site-specific emissions reductions and credits.
- Where possible, §45Z requirements should leverage and harmonize with existing frameworks to reduce administrative compliance burden and costs, as noted above.
- As noted previously, SAF producers also participate in the Federal Renewable Fuel Standard (RFS). However, the RFS verification program (QAP) doesn't include review of site-specific emissions reductions claims and therefore QAP audits are not adequate to verify claims under §45Z.

SAF producers *may choose* to participate in ICAO CORSIA verification audits. In CORSIA, ICAO approves the sustainability criteria and certification bodies. **Not all U.S. aviation fuel will require CORSIA certification given that many airlines can balance out their emission reductions to meet ICAO's climate targets across their global fleet of aircraft.** However, if a SAF producer does participate in CORSIA, we support the suggestion in alignment with our peers that Treasury accept any ICAO-approved independent certification scheme, for relevant parts of the lifecycle greenhouse gas emissions rate. Both the Roundtable on Sustainable Biomaterials (RSB) and International Sustainability and Carbon Certification (ISCC) administer ICAO-approved certification schemes for demonstrating compliance with CORSIA requirements.[14]

[14] https://www.icao.int/environmental-protection/CORSIA/Documents/ICAO%20document%2004%20-%20Approved%20SCSs.pdf

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T 303-858-8358
F 303-858-8431
gevo.com

Gevo believes that a way to reduce costs and maintain program integrity is to recognize and harmonize with existing low-carbon fuels policy and (regulatory or voluntary) verification procedures alike. Where there is overlap between policies, the IRS should leverage SAF producer participation in like-kind verification programs to confirm emissions reduction claims under §45Z but, allow SAF producer to fill any gaps in the lifecycle greenhouse gas emissions rate (typically modeled through the up-to-date and comprehensive GREET model). This ensures comprehensive and full incorporation of decarbonization efforts that aren't modeled, aren't up-to-date (aka: aren't modeled accurately) in the other program's methodologies.

Negative Lifecycle Greenhouse Gas Emissions Rate:

Treasury should confirm that SAF tax credit rates of more than $1.75/gallon are potentially available under SEC. 45Z when implementation of multiple decarbonization strategies and technologies results in negative lifecycle GHG emission rates.

Congress placed an explicit statutory cap on the §40B SAF credit applicable supplementary amount available for blending of SAF into aviation fuels beginning January 1, 2023, thereby limiting the total potential value of the SAF credit under IRC §40B. **However, reading of the plain language of §45Z, and application of the statutory formula to calculate potential credit rates for fuels with CI below zero demonstrates that the SAF credit available under §45Z can exceed $1.75/gallon. This indicates that SAF is encouraged and incentivized to achieve a negative lifecycle greenhouse gas emissions rate as allowed under the LCA methodology.**

To reach climate goals, GREET should be utilized, accurately accounting for many of the decarbonization strategies that could result in a negative GHG emissions rate, further incentivizing climate change mitigation strategies to support the overall IRA initiative.

Some of the strategies that could result in a negative GHG emission rate in GREET include, but are not limited to:

- Carbon Capture and Sequestration (CCS) – also incentivized under §45Q
- Green Hydrogen or Clean Hydrogen – also incentivized under §45V; and

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F 303-858-8431
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- Renewable Natural Gas (RNG) projects that use biomaterial to offset fossil-based natural gas.

Coordinating Rules.

Section §45Z(f)(4) states that under regulations prescribed by the Secretary, rules similar to the rules of § 52(d) apply in the case of estates and trusts. Section §45Z(f)(5) states that rules similar to § 45Y(g)(6) apply to patrons of agricultural cooperatives. Section §45Z(f)(6)(A) states that rules similar to the rules of § 45(b)(7) apply for the prevailing wage requirement. Section 45Z(f)(7) states that rules similar to the rules of § 45(b)(8) apply for the apprenticeship requirement. Is the application of the cross-referenced rules for purposes of the § 45Z credit adequately clear? What aspects of the cross-referenced rules should apply to the § 45Z credit without modification and what aspects should be modified?

Gevo requests that guidance clarify the application of the IRC §45Z tax credit coordination rule (see §45Z(d)(4)). According to the statute, a qualified clean fuel production facility "means a facility used for the production of transportation fuels, and does not include any facility for which one of the following credits is allowed under §38 for the taxable year:

(i) The credit for production of clean hydrogen under §45V.
(ii) The credit determined under §46 to the extent that such credit is attributable to the energy credit determined under §48 with respect to any specified clean hydrogen production facility for which an election is made under subsection (a)(15) of such section.
(iii) The credit for carbon oxide sequestration under section 45Q."

While a reading of the plain language of the statute does not point toward any prohibition on the taxpayer electing between credits under §45Z and §45Q on an annual basis, the adoption by the Congress of a dissimilar regime in §45V (see IRC sec. 45V(d)(2)) with different rules has led to sufficient confusion in the marketplace that guidance would be appreciated in this regard. Gevo suggests that the guidance should affirm that the taxpayer, if eligible, may elect to take either the §45Q or the §45Z credits annually with regard to the same facility.

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F 303-858-8431
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Multiple Owners.

How should production from a qualifying facility with more than one person having an ownership interest in such facility be allocated to such persons for purposes of § 45Z(f)(2)? Should rules similar to the rules under § 45(e)(3) apply for this purpose? If so, which aspects of § 45(e)(3) should apply without modification for this purpose and which aspects should be modified?

Definition of Qualified Facility

Gevo also recommends that Treasury interpret the definition of qualified facility narrowly to allow clean fuel facility developers and related industry sector service providers to lay out and operate these production plants in the most capital and environmentally efficient way possible. Conversely, arbitrarily requiring developers to segment clean fuel production projects into separate clean highway fuel, CCS, SAF, and clean hydrogen production projects located at different places, and losing significant synergies and efficiencies, purely to avoid controversy with the tax rules should be avoided.

Clean Fuels Produced for Use as a Feedstock for Sustainable Aviation Fuel

As per above, to allow the credits to function as intended by Congress, Gevo requests that guidance clarify the definition of "qualified facility" with regards to several common scenarios that developers are encountering when setting forth their clean energy business plans. One fact pattern involves a clean fuel or sustainable aviation fuel production facility wherein one industrial process is performed to manufacture a clean highway transportation fuel (e.g. ethanol) that is suitable for use as a fuel in a highway vehicle (thereby satisfying the test laid out in sec. 45Z(d)(5)(A)(i), and then the taxpayer subsequently utilizes that liquid fuel as a feedstock in a second industrial manufacturing process to produce a sustainable aviation fuel. Presuming all applicable tests are satisfied, Gevo requests that the guidance make clear that the taking of a clean fuel production credit for the production of the ethanol would not preclude the taxpayer from taking a clean fuel production credit for the production of the sustainable aviation fuel in the same year.

Industrial Processes Performed by Multiple (different) Taxpayers Should Allow for Appropriate Credit Allocation:

Similarly, questions regarding the definition of a qualified facility presents themselves when several taxpayers own and operate equipment installed at the same general

345 Inverness Drive South
Building C, Suite 310
Englewood, CO 80112

T 303-858-8358
F 303-858-8431
gevo.com

location but performing different industrial processes in the production of a clean fuel. This fact pattern commonly occurs in the instance that one taxpayer plans to develop and operate a clean fuel production facility, with another unrelated taxpayer owning and operating equipment to capture and sequester carbon, together with related pipelines and sequestration facilities. In such a case, guidance should narrowly construe the clean fuel production facility to be the industrial process equipment that produces the clean fuel, and it should be made clear that the equipment and geologic storage facilities owned and operated by the second taxpayer constitute a separate facility for the purposes of determining the application of sec. 45Z(d)(4). In such a scenario, the first taxpayer would be eligible to take the 45Z production credit on the clean fuel produced, and the second taxpayer would be eligible to take the 45Q credit for carbon sequestration. Similarly, if a sec. 45Z credit would be allowed for hydrogen produced offsite and transferred to the clean fuel production facility for the production of sustainable aviation fuel, the sec. 45Z definition of qualified facility should not be interpreted in such a way as to prohibit the efficient colocation of the hydrogen production equipment at or adjacent to the SAF production plant.