December 3, 2022

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

Re: Notice 2022-58, Request for Comments on Credits for Clean Hydrogen and Clean Fuel Production

Dear Secretary Yellen:

As a broad coalition of aviation industry stakeholders—including passenger and cargo carriers, clean fuel producers, engine and aircraft manufacturers, labor unions, airports, business and general aviation, airline passengers, trade associations, and think tanks—committed to building a robust sustainable aviation fuel (SAF) industry and decarbonizing aviation, we appreciate the opportunity to comment on the above-referenced notice regarding the Section 45Z Clean Fuel Production Credit (CFPC) recently enacted under the Inflation Reduction Act (IRA).[1] As the 45Z credit shares many provisions with the Section 40B SAF Blender's Tax Credit (SAF BTC) that was also enacted in the IRA and will be effective beginning in January 2023, we respectfully request that Treasury also consider our comments as it implements the SAF BTC.

Our organizations applaud the passage of the IRA's SAF tax credit provisions. The 40B SAF BTC provides a refundable credit of $1.25-$1.75 per gallon in 2023 and 2024 for SAF with at least a 50% lifecycle greenhouse gas (GHG) emission reduction that is blended with conventional jet fuel, and the 45Z CFPC creates a similar performance-based SAF credit from 2025-2027 for SAF with a lifecycle GHG rate below 50kg CO_2e/mmBTU.[2] If appropriately implemented and extended by Congress, these SAF tax credits can provide a critical foundation to achieving the Administration's goal under the SAF Grand Challenge to produce 3 billion gallons of SAF production by 2030 and establish a trajectory of SAF production to meet 100% of aviation fuel demand by 2050, representing an estimated 35 billion gallons.[3] We are keenly interested in working with Treasury to ensure that both credits are implemented in a manner consistent with the intent of both Congress and the Administration to promote and accelerate investment in the nascent domestic SAF industry, which must scale rapidly over the next several years to reach 3 billion gallons by 2030.

We recommend that Treasury consider several principles as it implements the SAF tax credits. First, timely guidance for both 40B and 45Z SAF credits is imperative. The 40B credit will be operative in less than thirty days and expedited implementation of both 40B and 45Z will provide certainty to affected stakeholders in order to spur investment decisions. With project timelines spanning three to five years for construction of a SAF facility and the 45Z credit currently set to expire at the end of 2027, it is critical that guidance for 45Z be provided well ahead of the 2025 statutory deadline, ideally by early next year. Second, as both SAF credits are based on lifecycle GHG emissions reductions to drive innovation in the sector, Treasury must

[1] Our coalition informally refers to itself as the "SAF BTC Coalition." Any comments referencing comments of the SAF BTC Coalition refer to these comments.

[2] We appreciate the issuance of Notice 2022-50 on Elective Payment of Applicable Credits and Transfer of Certain Credits, which provided an initial opportunity to comment on the credit monetization needs for 45Z in the absence of a direct pay option for SAF project developers and look forward to forthcoming guidance.

[3] https://www.faa.gov/sites/faa.gov/files/2021-11/Aviation_Climate_Action_Plan.pdf; https://www.whitehouse.gov/briefing-room/statements-releases/2021/09/09/fact-sheet-biden-administration-advances-the-future-of-sustainable-fuels-in-american-aviation/

implement science-based lifecycle methodologies that incentivize all methods and approaches for reducing GHG emissions from the SAF supply chain, are transparent, and incorporate well-accepted scientific research on lifecycle emissions. These methodologies should provide for granular carbon intensity calculation and recognize farm-level reductions from biofuel feedstocks, when applicable.

We believe the Greenhouse gases, Regulated Emissions, and Energy Use in Technologies (GREET) model, a state-of-the-art model developed and regularly updated by the U.S. Department of Energy's (DOE) Argonne National Laboratory and already explicitly incorporated for the 45V hydrogen production credit and the 45Z credit for transportation fuels other than SAF, should be confirmed as a suitable lifecycle methodology for SAF under both 40B and 45Z.

We provide more detailed comments on specific 45Z and 40B provisions below:

1. DOE's GREET Model and Other Models Meet the Statutory Criteria under 45Z and 40B

Both 45Z and 40B rely on the same criteria for determining lifecycle GHG emissions from SAF. Lifecycle GHG emissions can either be determined in accordance with the criteria set forth by the International Civil Aviation Organization's Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), or based on "any similar methodology which satisfies the criteria under section 211(o)(1)(H) of the Clean Air Act."[4] The referenced criteria refer to the Clean Air Act's definition of "lifecycle greenhouse gas emissions," which requires inclusion of direct and significant indirect emissions (such as significant emissions from land use change) for the full fuel lifecycle from production to end use.[5]

As an initial matter, DOE's GREET model, which incorporates direct emissions and indirect emissions from land use change, clearly meets these requirements. Indeed, inclusion of GREET for SAF is particularly appropriate because GREET is already required for other transportation fuels that will also be produced at SAF facilities. The 45V clean hydrogen credit and the non-aviation transportation fuel provisions under 45Z reference the very same Clean Air Act definition of lifecycle GHG emissions and require the use of GREET to calculate emission under that definition, implicitly determining that GREET satisfies the criteria under 211(o)(1)(H) of the Clean Air Act.[6] Adopting GREET for 40B and the 45Z SAF provision will also lead to ease of administration by the IRS. IRS agents administering these provisions will already be familiar with GREET as it is required under section 45V and 45Z. Further, as hydrogen as a critical input to SAF production, it would be consistent to use values derived under the 45V provisions to calculate hydrogen lifecycle greenhouse gas emissions under 45Z.

While Congress did not explicitly name GREET in the 40B and 45Z SAF provisions, this merely demonstrates breadth and it is indisputable that GREET is a "similar methodology" to CORSIA and satisfies the Clean Air Act criteria. In addition to GREET, the U.S. Environmental Protection Agency's (EPA) lifecycle methodology

[4] *See* 45Z(b)(1)(B(iii)(II) and 40B(e)(2). We note that IRA requires Treasury to approve at least one non-CORSIA methodology. Treasury does not have discretion to choose to rely only on values determined under CORSIA.

[5] We urge Treasury to exercise its wide discretion in determining what methodologies meet the Clean Air Act criteria. Although Congress cross-referenced a definition under the Clean Air Act, it clearly intended for Treasury to make the determinations and did not call for consultation or vest authority in any other department or agency. This differs from 45Q, where Congress required consultation with DOE and EPA on LCA determinations.

[6] *See* 45Z(b)(1)(B) (defining lifecycle greenhouse gas emissions under all provisions of 45Z pursuant to Clean Air Act Section 211(o)(1)(H)); *See* 45V(c) (noting that "the term 'lifecycle greenhouse gas emissions' has the same meaning given such term under subparagraph (H) of section 211(o)(1) of the Clean Air Act.")

under the Renewable Fuel Standard (RFS) program, which was established to meet the same Clean Air Act definition at section 211(o)(1)(H) and incorporates elements of GREET, constitutes a "similar methodology."

Accordingly, we urge Treasury to adopt a broad view of allowable models for SAF. Specifically, we ask that in determining lifecycle GHG emissions under both 40B(E)(2) and 45Z(b)(1)(B)(iii), Treasury provide for the use of GREET and EPA's RFS methodology. We also request that Treasury provide flexibility in allowing for other methodologies meeting Clean Air Act criteria, including methodologies developed under state low carbon fuel standards in California, Oregon, and Washington.

2. Treasury Must Develop a Clear and Efficient Process for Provisional Emissions Rates

In addition to the publication of annual emissions rate tables under 45Z, which should be as granular as possible, section 45Z(b)(1)(D) provides that where an emissions rate has not been established for a transportation fuel, a taxpayer producing the fuel may file a petition with the Secretary for determination of the emissions rate with respect to its fuel.

Treasury should establish a broadly applicable process for allowing producer-specific values under its 45Z(b)(1)(D) authority to develop provisional emissions rates. Such a process is also needed for the 40B SAF BTC, which does not refer to the publication of emissions tables. Provisional emissions rates should be available both for SAF pathways (a combination of feedstock and conversion process) that may not yet be covered by the annual tables under 45Z and for producer-specific pathways where the producer can demonstrate better lifecycle emissions reductions than the published pathways. With eight ASTM-approved pathways for SAF currently eligible under 40B and 45Z, many additional ASTM pathways that will become eligible upon ASTM approval, and numerous potential lifecycle GHG permutations within each pathway, producer-specific lifecycle GHG calculations must be a key component of the SAF tax credits.

Providing an efficient process for provisional emissions rates that recognizes all emissions reductions is critical to realizing the promise of the performance-based SAF tax credits. Such a process need not be resource intensive for Treasury. To ease administrative burdens, Treasury should broadly recognize producer-specific values determined by third parties, including third-party certified values determined under CORSIA or GREET, as well as any value already approved under EPA's RFS program, California's LCFS program, or any other methodology that Treasury determines is similar to that agreed under CORSIA and meets the Clean Air Act criteria. We recommend that Treasury simply approve use of third-party lifecycle GHG values and allow taxpayers to keep lifecycle GHG documentation on file or submit at time of filing for the 40B and 45Z credits.

If Treasury determines that it must actually approve provisional emissions rates via a formal petition process, a SAF producer should be able to apply for a provisional emissions value at any time so long as it can demonstrate its fuel meets the statutory definition of SAF. We respectfully request that Treasury include a provision for acting on a petition by a date certain. For example, a petition could be deemed granted if not acted upon within 180 days, similar to the procedure in place for Superfund excise taxes under Revenue Procedure 2022-26.[7]

[7] *See* Rev. Proc 2022-26, (requiring final determination on requests to add or remove substances from list of taxable substances within 180 days of filing), available at https://www.irs.gov/pub/irs-drop/rp-22-26.pdf

3. Certification of Sustainable Aviation Fuel

Section 45Z(f)(1)(A)(i)(II)(aa) provides that a SAF producer provide Treasury with a certification (in such form and manner as the Secretary shall prescribe), from an unrelated party demonstrating compliance with certain requirements related to SAF. Section 40B(f) includes identical requirements. Under both 40B and 45Z, Congress enacted a structure that parallels the lifecycle GHG methodology provisions discussed above. SAF producers choosing to use the CORSIA methodology for determining lifecycle GHG emissions must also ensure their fuel is certified by an unrelated party demonstrating compliance with requirements established under CORSIA. For SAF producers choosing to demonstrate lifecycle GHG reductions pursuant to a similar methodology meeting the criteria under the Clean Air Act definition of lifecycle GHG emissions, the third-party certification must also demonstrate compliance with requirements that are "similar" to those required under CORSIA. This parallel structure demonstrates that Congress desired that options independent of CORSIA be available for SAF producers for all aspects of the 40B and 45Z credits, and we urge Treasury to be mindful of these independent mechanisms as it moves forward with implementation.

For SAF producers opting to use lifecycle GHG values derived under CORSIA, we suggest that Treasury accept any ICAO-approved third-party certification scheme—currently, 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—or certification by any accredited third party certifier.[8] For SAF producers choosing to demonstrate lifecycle GHG reductions under a similar methodology that meets the Clean Air Act criteria, we suggest that Treasury interpret the certification requirement broadly and allow a variety of existing third party certification programs already used in the renewable fuels industry. Specifically, we recommend that Treasury also allow these producers the option of using a CORSIA third party certification scheme (provided use of a CORSIA certification does not impact Treasury's recognition of a non-CORSIA lifecycle GHG value to calculate the amount of the 40B or 45Z credit) and also similar non-CORSIA programs administered by RSB, ISCC, and others. Treasury should further allow use of an EPA-approved Quality Assurance Program under the RFS or approved verification bodies under the California Low Carbon Fuel Standard. All of these programs include provisions ensuring supply chain traceability (i.e. chain of custody) and information transmission to downstream parties and should be accepted by Treasury.

4. Treasury Should Clarify that Negative Lifecycle GHG Values are Contemplated Under 45Z

Using techniques like carbon capture and sequestration (CCS), use of renewable energy, and innovative farming practices, lifecycle GHG emissions from SAF can be well below zero. We urge Treasury to clarify that the 45Z credit will reward innovation and credit carbon negative fuels with more than $1.75/gallon.

The plain language, context, and history of 45Z clearly demonstrate that Congress intended to encourage production of carbon negative fuels. 45Z(a) requires calculation of the credit based on the "emissions factor" of the fuel multiplied by the "applicable amount," which for SAF facilities meeting prevailing wage and apprenticeship requirements is $1.75 per gallon. The "emissions factor" is in turn calculated by subtracting the "emissions rate" from 50 Kg CO_2e/mmBTU and dividing that number by 50 kg CO_2e/mmBTU. As this formula is consistent with negative emission rates for SAF, Treasury should explicitly

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

clarify that negative emissions will be credited.[9] This also aligns with the underlying policy approach in both 40B and 45Z, which provide higher credit values for lower-GHG fuels to incentivize production of the least emitting fuels.

The provisions on rounding of emissions rates are also properly interpreted to provide for negative emissions rates. 45Z(b)(C)(ii) states that in the case of an emissions rate between 2.5 kg CO_2e/mmBTU and -2.5 kg CO_2e/mmBTU, the Secretary **may** round the rate to zero.[10] As an initial matter, this provision demonstrates that Congress clearly envisioned crediting fuel with negative emissions rates, though in the case of rates near zero it granted Treasury discretion to round to zero. However, Congress did not extend the discretion to round to zero for emissions rates below -2.5 kgCO_2e/mmBTU, demonstrating Congressional intent to credit fuels with more than marginally negative emissions fully. Had Congress intended for all emissions rates to be no lower than zero and for the 45Z credit to not exceed $1.75/gallon for SAF, it would have explicitly stated as much as it did elsewhere in the IRA. Indeed, Congress explicitly limited the 40B SAF BTC to $1.75/gallon. It did not do so under 45Z, and Treasury must credit carbon negative fuels under 45Z. Accordingly, we respectfully request that Treasury provide a declarative statement or example that shows negative emissions will be factored into the section 45Z credit calculation.

5. Coordination with 45Q and 45V

Under the section of the notice relating to clean hydrogen, Treasury sought comment on circumstances where a single facility with multiple unrelated process trains could qualify for both 45V and 45Q. This question is equally relevant to 45Z, which excludes from the definition of "qualified facility" any facility where the 45V hydrogen credit (or an election to take the investment credit) or the 45Q credit for carbon oxide sequestration is allowed.

We strongly encourage Treasury to interpret the definition of qualified facility narrowly to allow development of clean fuel production facilities in the most capital and environmentally efficient way possible and not perversely incentivize segmentation of projects into separate clean fuel, hydrogen production, and CCS facilities (or encourage exports of fuel at SAF facilities with carbon sequestration or hydrogen production). One potential approach would be to interpret "qualified facility" as referring only to the SAF production unit and not to adjacent production facilities that are not required for the production of SAF but are co-located to provide efficiencies. Thus, if a 45Z credit would be allowed for hydrogen produced offsite and brought to the SAF facility to be used as process input, Treasury should not preclude efficiently locating the hydrogen production at or adjacent to the SAF facility. We encourage a similar construction that would allow co-location and efficient siting of carbon capture equipment. Further, Treasury should clarify that an owner of carbon capture equipment under 45Q can claim the 45Q credit while the owner of a co-located SAF production facility can claim the 45Z credit.

6. Under 45Z, Treasury Should Confirm that Domestic Requirements Only Apply to the SAF Product

45Z(f)(1)(A) requires that any transportation fuel, including SAF, be produced in the United States to be eligible. We encourage Treasury to clarify that feedstocks, including intermediate feedstocks for the

[9] For example, a fuel producer manufacturing SAF with an emissions rate of -20kg CO_2e per mmBTU would calculate its 45Z credit as follows: 50 kg CO2e – (-20 kg CO_2e/ mmBTU) / 50 kg CO_2e/mmBTU = $2.45/gallon
[10] *See* 45Z(b)(C)(ii)(emphasis added)

production of SAF, can be sourced from outside the United States for use in SAF produced in the United States. We suggest that Treasury review the relevant ASTM provisions at ASTM 7566 and 1655 to determine what production steps are relevant to SAF and what steps fall under feedstock procurement.[11]

7. Under 40B, Treasury Should Clarify That Any SAF Blended and Uplifted in the U.S. Qualifies

Under the 40B SAF BTC, a "qualified mixture" must be produced in the United States, used or sold for use in an aircraft as part of the ordinary course of business of the taxpayer, and transferred to the fuel tank of an aircraft in the United States.[12] Thus, as is the case for the existing blender's tax credit for biodiesel and renewable diesel under section 40A, only the blending of the qualified mixture needs to occur in the United States and imported SAF is an eligible component of the mixture.

40B differs from the existing 40A blender's tax credit in that the resulting qualified mixture must be used in an aircraft in the United States. We respectfully request that Treasury declaratively state that any qualified mixture uplifted in the United States is eligible, regardless of whether the flight is domestic or international. This would be inclusive of SAF mixtures with tax exempt "foreign" status that are moved under bond for use in aircraft on international flights departing the U.S.

8. Treasury Should Allow for Book and Claim Accounting for Both SAF Feedstocks and Process Inputs

Treasury requested comment in the hydrogen section of the notice on acceptance of book and claim accounting, and we encourage Treasury to accept book and claim accounting under 40B and 45Z as well. Book and claim accounting is a common practice where the sustainability attributes of a product or input are separated from the physical flows of a feedstock, energy input, or final product. Under book and claim, the production and use of sustainability attributes are documented in a robust manner to ensure attributes are not double counted. There are many examples of book and claim accounting in the regulatory context, including the treatment of renewable natural gas under both EPA's RFS and the California LCFS.

We strongly encourage Treasury to provide for book and claim accounting both for SAF feedstocks, such as RNG, and for SAF process inputs like hydrogen, electricity, and natural gas (via RNG). Book and claim accounting not only drives supply chain efficiency and ensures adequate supply is available where it is needed, but it also can significantly reduce transport emissions from the SAF supply chain, supporting the emission reduction goals of both the 40B and 45Z credits.

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[11] The Commercial Aviation Alternative Fuels Initiative (CAAFI), a public private partnership composed of airlines, aircraft and engine manufacturers, energy producers, researchers, international participants and U.S. government agencies, maintains a useful list of SAF pathways under ASTM 7566 and 1655 that outlines feedstocks and processing steps. https://www.caafi.org/focus_areas/fuel_qualification.html

[12] *See* 40B(c)(1-4)

Our organizations appreciate the opportunity to comment on the 45Z and 40B SAF credits, which we hope will send a robust investment signal and enable achievement of our shared decarbonization goals. 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.

Sincerely,

Advanced Biofuels Association
Aemetis, Inc.
Air Company
Air Line Pilots Association
Aircraft Owners and Pilots Association
Airline Passenger Experience Association
Airlines for America
Alaska Airlines
Alder Fuels
American Airlines
American Association of Airport Executives
American Express Global Business Travel
Association of Flight Attendants - CWA
Avfuel
Biotechnology Innovation Organization
Boeing
Bombardier
Boom
Cargo Airline Association
Delta Air Lines
DHL
DG Fuels
FedEx Express
Fulcrum BioEnergy
GE Aerospace
General Aviation Manufacturers Association
Gevo
Global Business Travel Association
Green Plains, Inc.
Growth Energy
Hawaiian Airlines
Helicopter Association International
Honeywell
Infinium
International Air Transport Association
International Flight Services Association
LanzaJet
LanzaTech
Marquis Sustainable Aviation Fuel
National Air Carrier Association
National Air Transportation Association
National Business Aviation Association
Neste
NetJets Association of Shared Aircraft Pilots
Port of Portland
Port of Seattle/Seattle-Tacoma International Airport
Regional Airline Association
Renewable Fuels Association
San Francisco International Airport
Signature Aviation
SkyNRG
Southwest Airlines
Third Way
Travelers United
United Airlines
United Parcel Service
U.S. Travel Association
Velocys
World Energy
World Fuel Services