Sustainable
Aviation
Fuel

Procedures for Quantification, Reporting, and Verification of Greenhouse Gas Emissions Associated with the Production of Domestic Agricultural Commodities Used as Biofuel Feedstocks

U.S. Department of Agriculture

Request for Information in Docket No. USDA-2024-003

Comments on behalf of The SAF Coalition

The SAF Coalition is a nonprofit, nonpartisan coalition of airlines, low-carbon fuel companies, manufacturers, technology developers, airports, and more, who share the objective of accelerating the development and deployment of sustainable aviation fuels in the United States. The SAF Coalition has over 50 members and seeks to represent the entire SAF value chain. The breadth and diversity of the coalition's membership are evidence of the deep support that SAF enjoys across many industries and stakeholders.

The SAF Coalition appreciates the U.S. Department of Agriculture (USDA) soliciting public input on the procedures for the quantification, reporting, and verification of the effect of climate-smart farming practices on the greenhouse gas (GHG) net emissions estimates associated with the production of domestic agricultural commodities used as biofuel feedstocks.

The SAF Coalition urges USDA to consider four overarching principles as it considers information on practices that have the potential to mitigate GHG emissions and/or sequester carbon, and the quantification, reporting, and verification approaches for the GHG outcomes associated with domestic agricultural commodities used as biofuel feedstocks—

1) SAF has the potential to significantly reduce aviation CO_2 and other emissions, to establish new markets for wastes and agricultural products, to improve US competitiveness and energy security, and to foster technological innovation. However, these beneficial outcomes are dependent on broad SAF utilization and domestic production. Therefore, USDA should ensure federal policies governing SAF utilization are achievable, science-based, and data driven in order to develop, demonstrate, and deploy sustainable aviation fuels at scale and satisfy the Congressional intent provided by the 40B and 45Z tax credits.
2) To that end, SAF deployment at scale depends on technology and feedstock neutrality with the aim of reducing carbon intensity in a realistic and verifiable way. Biomass-based fuels are critical to achieving this goal. In order to harness the full potential of low-carbon biomass feedstocks, it is critical to unbundle the specific agricultural practices that receive carbon reduction credits that will incentivize agricultural producers and encourage farmers to reduce their products' carbon intensity.
3) It is essential that whatever rules are put into place are sufficiently flexible to accommodate new feedstocks and technologies. We should have a system that will encourage innovation at every level of the SAF production value chain from feedstock to feedstock producer, to SAF manufacturer, to the infrastructure enabled to transport the finished product. Since technological shifts happen quickly and often in unforeseen ways, public policy should anticipate unanticipated improvements

and set forth systems that can account for new crops and methodologies that may significantly improve environmental performance.

4) SAF development and deployment also hinges on simple and clear administrative practices (e.g., recordkeeping, verification, auditing, etc.) that are implementable and manageable, both in terms of cost and practicality, while also providing the necessary level of assurance and credibility. Such systems should not overburden clean fuel producers and inadvertently serve as a *de facto* subsidy for the fossil-based fuel producers that do not need to produce comparable documentation.

As USDA considers a rulemaking to establish voluntary standards for quantifying, reporting, and verifying GHG outcomes for domestic agricultural commodities, USDA should build on the progress achieved in the final 40B guidance and establish new guidance that accounts for a more comprehensive range of carbon reduction options throughout the SAF supply chain, including more climate-smart feedstock production practices and more renewable energy options for the fuel production process.

As USDA's RFI notes, there is an opportunity to improve the empirical basis and verifiability of the effects of climate-smart farming practices on net GHG emissions. The objective is to quantify net GHG emissions reductions more specifically to those feedstocks grown with such practices, and create a tracking mechanism where such benefits will only be realized if the verifiability and quantification methods are implementable, practical, and not cost prohibitive

In USDA's consideration of ways to promote greater adoption of climate-smart farming practices and looking ahead to 45Z guidance, it is important that both USDA's guidance and 45Z guidance expand and improve on the climate smart agriculture crediting initiated in 40B and streamline agricultural record-keeping requirements. For corn feedstocks, for instance, the guidance on the 40B credit takes an all-or-nothing approach to climate smart agriculture, requiring the use of three specific practices bundled together to be deemed eligible to receive a fixed carbon reduction credit for the feedstock. But one size does not fit all farms, and farmers need more options and greater flexibility to use practices that reduce feedstock intensity. They also need to be able to account for the full value of those practices, and not a simple default reduction of, for example, the 10g CO_2e/MJ credited to corn produced in accordance with the USDA Climate Smart Agriculture Pilot Program. Thus, USDA's procedures for the quantification, reporting and verification of climate-smart farming practices—and the 45Z guidance—should leverage tools to allow farmers to receive credit for additional beneficial farming practices and ease the reporting and record-keeping burden on farmers.

Below we provide specific responses to the questions raised in the USDA Request for Information.

Qualifying Practices

(1) Which domestic biofuel feedstocks should USDA consider including in its analysis to quantify the GHG emissions associated with climate smart farming practices? USDA is considering corn, soybeans, sorghum, and spring canola as these are the dominant biofuel feedstock crops in the United States. USDA is also considering winter oilseed crops (brassica carinata, camelina, pennycress, and winter canola). Are there other potential biofuel feedstocks, including crops, crop residues and biomaterials, that USDA should analyze?

The model should provide flexibility on acceptable feedstocks, provided that they meet rigorous sustainability standards. It should also accommodate and account for any practice that has been demonstrated to reduce GHG emissions. Since practices used today may differ from those used tomorrow, the model must have a mechanism for accommodating new crops, technologies and practices so long as they can demonstrate GHG reductions.

In addition, USDA should pursue the broadest possible universe of feedstocks that can be converted to SAF. In the 45Z registration process released in late May, the IRS listed well over 100 different feedstocks that they were considering as possible ways that fuel producers could generate a credit under that program. We believe that USDA should adopt a similarly broad approach with feedstocks they are considering under this RFI.

Moreover, some biofuel facilities are considering the use of biomass feedstocks, like corn stover and forestry residues, for biomass-based power for biofuel production. As biorefineries seek innovative plant practices that can reduce the carbon intensity of the finished fuel, there needs to be a recognition of the value of these resources like corn stover and other biomass sources that can be used to generate low carbon power, while also improving the health of the soil by making better use of plant material left after harvest, which reflects recent USDA research.

(2). Which farming practices should USDA consider including in its analysis to quantify the GHG emissions outcomes for biofuel feedstocks?

(3) For practices identified in question 2, how should these practices be defined? What parameters should USDA specify so that the GHG outcomes (as opposed to other environmental and economic benefits) resulting from the practices can be quantified, reported, and verified?

As with our answer to Question (1) above, we support the inclusion of any and all practices which can demonstrate quantifiable carbon reduction benefits to the subject commodity and ultimately the finished fuels. We note the extensive list of activities identified in "Climate-Smart Agriculture and Forestry (CSAF) Mitigation Activities List"[1] and in principle would support recognition of any of these activities. In general,

[1] https://www.nrcs.usda.gov/sites/default/files/2023-10/NRCS-CSAF-Mitigation-Activities-List.pdf

USDA should aim for a broad selection of practices that allows farmers optionality to implement practices that make sense for their region and crop system and avoid requiring specific combinations of practices be used together in an overly prescriptive manner. For example, the one-size-fits-all approach taken in the CSA Pilot Program in the 40B guidance excludes many farmers who have or who are adopting CSA practices, deterring incremental changes in practice improvement, and reducing farm participation. For example, while cover cropping is a beneficial practice, it may not be an effective practice for all areas; in northern areas of the corn belt, farmers have a very short window to plant and establish a cover crop after harvest and before the ground freezes. With bundling, only those farms situated in optimal conditions can feasibly implement specific combinations of practices.

Quantification

(5) What scientific data, information, and analysis should USDA consider when quantifying the greenhouse gas emissions outcomes of climate-smart agricultural practices and conventional farming practices? What additional analysis should USDA prioritize to improve the accuracy and reliability of the GHG estimates? How should USDA account for uncertainty in scientific data? How should USDA analysis be updated over time?

We recognize that data and analysis on CSA is still in development and that there will necessarily be uncertainty in the quantification of benefits for any individual or collection of CSA practices. However, we believe that uncertainty should not prevent the recognition of CSA practices and that methods such as applying risk and uncertainty adjustments to the quantification analysis can be applied and still have a credible and verifiable methodology. In addition, because the data and analysis will be evolving, it is necessary that USDA implement a process for reviewing and updating the models periodically over time and ensuring those updated models are applied in a reasonable timeframe, if the scientific understanding has materially changed.

Argonne GREET's FD-CIC is a good example of how analysis has come together to create a robust quantification tool: allows for regional variability in soil carbon results according to different climate and soil conditions; default values are derived from literature reviews of the latest science on GHG quantification of practices and FD-CIC is regularly updated to incorporate new data and practices.

(6) Given the degree of geographic variability associated with each practice, on what geographic scale should USDA quantify the GHG net emissions of each practice (e.g., farm- level, county-level, state, regional, national)? What are the pros and cons of each scale? How should differences in local and regional conditions be addressed?

The USDA should allow for at least two options: 1) to quantify the GHG net emissions of each practice using inputs and yield within the FD-CIC model in GREET, which utilizes county-level soil carbon data, or 2) to quantify the GHG net emissions of each acceptable practice based upon the default values using a national average.

Soil Carbon

(12) How should the GHG outcomes of soil management practices that can increase carbon sequestration or reduce carbon dioxide emissions (e.g. no-till, cover crops) be quantified? What empirical data exist to inform the quantification? Over what time scale should practices that sequester soil carbon be implemented to achieve measurable and durable GHG benefits? (13) For practices that can increase soil carbon sequestration or reduce carbon dioxide emissions, how should the duration and any interruptions of practice (e.g., length of time practice is continued, whether the practice is put in place continually or with interruptions) be considered when assessing the effects on soil carbon sequestration?

Models supported by empirical data such as GREET FD-CIC or COMET-Farm should be used to quantify outcomes and benefits of soil management practices. The use of models, rather than requiring direct soil carbon measurement on every participating farm/field, will make the program more scalable and reduce the cost of implementation. However, tools for quantifying outcomes of soil management practices must be based on science and informed by empirical data from direct measurements to the greatest extent possible.

While recognizing that soil practices implemented for longer durations have increased soil benefits, USDA should not require a specific duration of practice for a practice to be credited. Each practice implemented adds incremental improvement in outcomes, but any attempt to choose a specific time frame over which this improvement "counts" will be arbitrary. Farmers maintain these practices in part because of the investment required to implement new practices, but also because once practices are established, farmers realize other benefits in the form of healthier soils, more resilient crops, and lower input costs. Policy certainty also supports farmers in maintaining these beneficial practices. At the same time, farmers need the flexibility to adapt their management systems in the short-term in the face of exigent weather and other environmental conditions beyond their control. This is a simple reality in agriculture that any crediting policy must accommodate.

<u>Verification and Recordkeeping</u>

(15) What records, documentation, and data are necessary to provide sufficient evidence to verify practice adoption and maintenance? What records are typically maintained, why, and by whom? Where possible, please be specific to recommended practices (e.g., refer to practices identified in question two). (17) Are there existing reporting structures that can potentially be leveraged?

Agriculture feedstocks produced in the 2024 calendar year will be used in 2025 fuel production, but farmers will not know what specific records and data need to be collected and maintained in 2024 until the growing season has ended and harvest is likely complete. Broader use of attestations will be a useful placeholder for the first year of the credit until specific record and data requirements are established.

For program scalability and long-term viability, use on-farm technology solutions can greatly aid in documentation collection and maintenance and reporting specific to fields and farms and facilitates farmers providing any required documentation and records to the fuel producer. Since there is no universal way to operate a farm, it is critical the program offers flexibility in the type of records or documentation collected and maintained to support the claims made.

(18) Should on-site audits be used to verify practice adoption and maintenance and if so, to what extent, and on what frequency?

We would encourage avoiding mandatory on-site verifications given the shortage of verification resources. Instead, remote verification methods should be utilized where risk assessments would indicate a need for site review. The remote verifications may include data analysis, screen shares of software/data tracking processes, and video call options. This approach will ensure efficiency and broaden the reach of the verification process. If there are significant risks in a particular client, the site visit should be left as an option, but not a requirement. To the extent that site audits are necessary and incorporated into the program, these audits should be integrated or coordinated with the independent sustainability certification verification audits required by 40B and 45Z tax credits to minimize any burdens on farmers and the administrative cost of the CSA program.

(20) What system(s) should be used to trace feedstocks throughout biofuel feedstock supply chains (e.g., mass balance, book and claim, identity preservation, geolocation of fields where practices are adopted)? What data do these tracking systems need to collect? What are the pros and cons of these traceability systems? How should this information be verified?

The requirement in the Section 40B CSA Pilot Program that a participating farmer have a direct contract with the fuel producer for that quantity of CSA feedstock is unnecessary. This requirement is a barrier to scalability of accounting for and crediting the CI attributes of feedstocks in biofuel policy and will discourage fuel producers from sourcing CSA feedstock. While fuel producers may choose to directly contract with farmers, a direct contract should not be a requirement. Furthermore, specific identity preservation or separation of CSA feedstocks is also unnecessary. There is no need to physically separate CSA feedstocks because the same outcome can be accomplished through accounting, and identity preservation or separation would not be possible without large storage investments. The environmental benefits of CSA remain in the field and the ecosystem and are not physical attributes of the feedstock. We support the use of mass balance and book and claim accounting methods for feedstocks produced using CSA practices, with appropriate controls put in place to prevent double counting of CSA feedstocks.

Verifier Qualifications/Accreditation Requirements

(21) How could USDA best utilize independent third parties (i.e., unrelated party certifiers) to bolster verification of practice adoption and maintenance and/or supply chain traceability? What standards or processes should be in place to prevent conflicts of interest between verifiers and the entities they oversee? (22) What qualifications should independent third-party verifiers of practice adoption and/or supply chain traceability possess? (23) What independent third-party verification systems currently exist that may be relevant for use in the context of verifying climate-smart agricultural practices (as identified under questions 1 and 2) and/or biofuel supply chains? (24) How should oversight of verifiers be performed? What procedures should be in place if an independent third-party verifier fails to conform to verification and audit requirements, or otherwise conducts verification inappropriately?

It is important that requirements in a biofuel feedstock policy, such as Section 45Z, are not overly prescriptive in dictating specific verifier and verification criteria or checklists for qualification. Flexibility is required to deploy a large-scale level of fuel producer verification and certification of compliance for any applicable feedstock CSA program and traceability requirements. Instead, the verifier and verification company should be empowered to develop detailed verification procedures and checklists that meet the overall program goals as set out by Treasury and the IRS in guidance. This approach is consistent with many existing biofuel audit programs, such as in the RFS, ISCC-EU and CA-LCFS. Section 40B and Section 45Z each have independent third-party certification and verification requirements. Any additional requirements necessary to implement recognition for CSA practices under those programs should integrate with the procedures and requirements of the 40B and 45Z programs.