February 10, 2023



U.S. Environmental Protection Agency EPA Docket Center Docket ID No. EPA-HQ-OAR-2021-0427 1200 Pennsylvania Avenue NW Washington DC 20460

RE: Renewable Fuel Standard (RFS) Program: RFS Annual Rules, Docket ID No. EPA-HQ-OAR-2021-0427

Dear Administrator Regan:

On behalf of the Advanced Biofuels Association (ABFA), thank you for the opportunity to comment on EPA's proposed Renewable Fuels Standard Program (RFS); Standards for 2023-2025 and other changes.

I. Introduction

ABFA is a 501(c)6 non-profit trade association founded in 2007 representing more than forty companies from the U.S and around the world who are primary stakeholders in the biofuels industry. ABFA represents advanced biofuels in all modes of the US transportation sector, including jet fuel (SAF), renewable gasoline, renewable diesel, biodiesel, ethanol, heating oil, renewable gas, and dimethyl ether. We currently represent the largest producers of renewable diesel, biodiesel, and jet fuel in the United States. Annually our members produce more than 4 billion gallons of advanced biofuels globally, and that number is growing rapidly particularly in the renewable diesel (RD) space.

II. Comments

EPA's "SET" rulemaking process (setting the program standards and direction for 2023 and beyond) can and should support a recalibration of the RFS program. It can be constructed to further expand and expedite the transition to a lower carbon future for liquid transportation fuels. The Agency references, in several sections, the statutory intent to support increasing volumes of renewable fuels and furthering the RFS program's direction under the Clean Air Act for 2023 and beyond. The Agency has specifically acknowledged the law's intent to support and enable the positive impacts on factors such as "climate change and energy security". Despite this acknowledgment, with this proposal, the Agency has ignored the opportunity to reshape the Renewable Fuel Standard Program (RFS) in a way that is advantageous to the Agency, the Administration's goals to reduce greenhouse gas emissions and to incentivize and move the advanced renewable energy sector forward.

III. Proposed Volumes

This proposal instead has flatlined volumes and ultimately ignored the capabilities of proven production technologies and instead prioritizes incentivizing electricity as a "fuel" -- something that clearly stretches the Agency's authority envisioned by the law. The law was not intended to drive growth of the electric car industry, it was to decarbonize fossil-based fuels used for transportation. This extension to electricity supports that goal, however it is being derived and implemented in a completely different approach than has been applied to all other fuel producers. On the one hand, the Agency has gone to great lengths to expand the interpretation of the law, *and* to provide significant expansion and adaptation of regulatory flexibility to do so. On the other hand, the Agency has continued to design and implement unnecessary regulatory provisions that impede progress of advanced liquid fuels that can be used in hundreds of millions

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of combustion engines already in use. The Agency has completely overlooked more pragmatic and rational regulatory flexibilities to support the expansion of advanced liquid renewable fuels. This is blatantly obvious and increasingly troubling.

To be clear, ABFA doesn't oppose innovative interpretation of the law to support GHG reductions. It does, however, want equal application of the law applied to ensure a level playing field, and to utilize the full capability of the carbon-reducing liquid transportation fuel supply chain that is already available to consumers today. We vehemently oppose actions and inactions that inhibit the ability of the advanced fuel technology and production sectors to move forward under the law. Discounting and arduously limiting those that are fully capable of providing better performing and significantly more volumes of lower GHG transportation fuels is simply counter to the law and the stated intention of this Administration. Already approved and proven advanced fuels -- produced with proven technologies, readily available feedstocks utilizing expansive and existing supply and distribution infrastructure should be the priority, not the exception.

Overall, the Agency's focus seems to have been on proposing to grant RINs for renewable electricity, to power a very small electric vehicle subset of our transportation sector. Further, the Agency has shifted away from their chosen compliance approach for RIN generation by only allowing the RINs to be generated by the "manufacturer" of the vehicle instead of the producer of the fuel. Significant allowances were made in this proposal to support this new approach while the Agency has and continues to maintain and further develop contrived regulatory impediments for the other sectors that have proven, logical, supportable, and fully implementable approaches that would support deployment, expansion, and use of advanced biofuels. This new eRIN proposal rewards a "select few" in an industry that has not been obligated, nor will it have any obligations under this program. Given the original equipment vehicle manufacturers (OEM's) will be the <u>only</u> generator of the RINs and are positioned without obligation, this creates a significant imbalance in the market and is of concern to many in the supply chain, especially obligated parties. While the Agency has taken every step to justify this part of the proposal and has gone to great lengths to incentivize eRIN generation, alternatively it has flat-lined the other advanced and cellulosic fuel product sector.

ABFA and its members strongly object to the proposed advanced category volumes. EPA's flatlining of the volumes for proven advanced biofuels, both in the D4 and D5 categories are overtly indefensible. While the Agency has gone to great lengths to expand legal interpretations of the law, supporting unique and creative programmatic flexibilities to drive electric vehicle sales through the creation of eRINs, alternatively, it has fully ignored and discounted the liquid transportation fuels sector that has been producing the fuels and demonstrated its capabilities to expand the production and use of much greater volumes of lower carbon fuels for the existing and new fleet. It is clearly indefensible to claim that feedstocks and production capacity are insufficient to support growth in the advanced category, including those to produce SAF and renewable diesel and biodiesel.

This proposal skews the market in favor of a limited and transitional approach to controlling GHG emissions. The Agency's proposal is counter to its core mission, the Administrations stated goals and impedes the markets potential to provide more fuels, better performing fuels and societal benefits. It inhibits the industries that have invested and would continue to evolve to achieve greater societal benefits under the law. The government should not be designing programs that pick market winners and losers.

ABFA believes the data clearly demonstrates significantly more volumes of advanced biofuels are justified in the final rulemaking. Our association commissioned two feedstock studies by respected independent organizations (These studies are included as appendices to our comments for inclusion in the docket). These, and a multitude of other data sets that have been developed and released from well-respected sources, should be a focal point for your review and incorporation into the analysis for establishing the final volumes. ABFA's first analysis is a global feedstock overview, conducted by LMC, of available fats, oils, greases, and tallows up to 2025 (Appendix 1). This study addresses the reality of food versus F=fuel debate and how it should not be considered a limiting factor under the RFS program. The second, conducted by Lipow Oil Associates, a highly respected international firm in Houston Texas, is on the projected production capacity of renewable diesel in 2023, 2024 and 2025 (Appendix 2). Third, the Department of Energy just released its projections on February 3 affirming significant increases over the next 3 years. All of these studies clearly demonstrate more than sufficient feedstocks are available to produce the 6.4 billion gallons of projected and expected renewable diesel by 2025.

	2023	2024	2025
Cellulosic	.72	1.42 (+.72)	2.13 (+.71)
Biomass-Based Diesel (BBD)	2.82	2.89 (+.07)	2.95 (+.06)
Advanced	5.82	6.62 (+.8)	7.43 (+.81)
Total	20.82	21.87	22.68 (+.81)

Proposed RVO

Projected Capacity, per Lipow Oil Associates

	2023	2024	2025
Renewable Diesel	4.238 billion	5.591 billion	6.34 billion
Biodiesel	1.5 billion (2.25)	1.5 billion (2.25)	1.5 billion (2.25)
Overseas Production	1.43 billion	1.43 billion	1.43 billion
RINs Generated	7.2046 billion	9.5047 billion	10.778 billion

With the projected production capacities included and current biodiesel production volume maintained in the D4 pool the total is estimated at around 8 billion gallons. Every one of those gallons has an energy density multiplier of 1.5 or 1.7. On a RIN equivalent, this equates to 12.578 billion of advanced RIN production capacity in 2025, or well beyond double the 5.3 billion non-cellulosic advanced RINs currently proposed.

It would seem reasonable to us given there is sufficient feedstock and more than enough production capacity already in place and up and running to, at a minimum, increase the D4 biomass-based diesel pool significantly. EPA should increase the D4 biomass-based diesel pool by 500 million gallons each year 2023 (3.26 billion), 2024 (3.76 billion) and 2025 (4.26 billion). Accordingly, with the additional RIN generation capacity and corresponding feedstock availability, the non-cellulosic advanced category could provide an additional 250 million D5 RINs per year in 2023, 2024, and 2025 to achieve a total 8 billion non-cellulosic advanced RINs by 2025.

We strongly encourage you to revisit this set of calculations before finalizing the final volumes.

IV. Blendwall

Another way to acknowledge and support the move towards more advanced fuels is to shift non ethanol conventional volumes, above the blendwall, to the advanced category. By the Agency's own accord, in the preamble, the Agency asks whether the conventional category should be set at the ethanol blendwall while maintaining the total renewable fuel volume as proposed. ABFA, at minimum, believes the Agency should adopt this approach. In previous discussions with EPA, ABFA has suggested something similar, requesting the Agency evaluate the volumes of ethanol that actually satisfy the conventional category and then shift the remaining volumes (i.e., non-ethanol – the difference being ethanol minus other fuels satisfying that obligation) to the advanced category. This not only reflects the reality of the market and its capabilities but also follows the Congressional intent for the market to shift towards advance and cellulosic fuels over time. This approach logically supports that goal. Further, it does not prohibit ethanol from being a compliant fuel as long as it isn't restricted under the law and meets an advanced LCA qualification. This may further benefit the environment by shifting even base volumes to be cleaner.

From the perspective of the cost to comply with the RVO, if setting the conventional volume at a level equal to ethanol blending; that will allow the value of the D6 RIN to trade independent of the D4/D5 values. With the current proposal already recognizing the need for advanced RINs to assist in filling the conventional mandate (due to the blend wall restriction), will see D6 RINs trade near D4/D5 RIN values. This potential higher D6 RIN value has occurred when the incremental RIN for compliance in the conventional category needs to come from the D4/D5 supply. We believe accurately reflecting the conventional volume at the ethanol blend wall, while moving that excess volume to the Biomass Based Diesel pool to keep the Total Renewable Fuel volume whole, should allow the cost of compliance for the conventional category (D6) and overall compliance costs, to be reduced significantly while continuing to encourage blending of advanced biofuels with no impact to the cost of compliance for the advanced (D4/D5) category.

V. Recordkeeping and Feedstock Aggregation

In the proposal, the Agency proposes Alternative recordkeeping requirements for separated yard waste, separated MSW, and biogenic waste oils/fats/greases. ABFA and its members have engaged with the Agency for several years regarding compliance provision options for waste feedstock collection and use. We have offered, on multiple occasions and through multiple meetings and documents, more pragmatic and acceptable approaches to satisfy the Agency's oversight concerns. What the Agency has proposed does not reflect the concerns of the industry and the reality of how competitive markets inhibit the ability to comply with what the Agency has proposed. ABFA and its affected members remain extremely concerned with the proposed set of rules for aggregated waste oils, fats, and grease feedstocks. As currently written, they are needlessly over-burdensome and would result in changing the very system and supply chain that currently exists to deliver these feedstocks to the production facilities that make the fuel. Further, our members want to ensure that domestic and foreign feedstock aggregation and oversight is overseen and enforced on a level playing field. In the end unless properly reformed, this will reduce the number of small companies in the market and reduce the availability of feedstocks that deliver a 50% GHG reduction.

The record keeping requirements for separated yard waste, separated food waste, segregated municipal solid waste and biogenic waste oils/fats and greases as currently written are overly burdensome for a renewable fuel producer. We support the EPA's desire to prevent fraud, but both the current regulations and proposed regulations are so arduous that if adopted could shut down the ability to legally use used cooking oil as a feedstock in the United States.

Per 40 CFR 80.1454(j)(1)(i) and (ii)), a renewable fuel or biointermediate producer that produces fuel must keep all the following records:

(1) For separated yard waste, separated food waste and biogenic waste oils/fats/greases:

(i) Documents demonstrating the amounts, by weight, purchased of separated yard waste, separated food waste, or biogenic waste oils/fats/greases for use as a feedstock in producing renewable fuel.

(ii) Documents demonstrating the location of any establishment(s) from which the waste stream consisting solely of separated yard waste, separated food waste, or biogenic waste oils/fats/greases is collected.

The EPA met with representatives from the ABFA, auditors, renewable fuel producers, and other trade associations, all of whom explained because of the structure of the industry, it is very difficult for renewable fuel producers to obtain the required records. To that end, the EPA received a white paper prepared by UCO aggregators explaining how the used cooking oil (UCO) industry works and why the reporting requirements in 40 CFR 80.1454(j) do not align with industry practice and ability (Appendix 3).

The EPA's proposed option under which, in lieu of renewable fuel producers needing to hold records, feedstock suppliers and renewable fuel producers would both participate in the QAP program using the same QAP provider. We have several concerns with EPA's proposed approach. Most importantly, there are currently not enough QAP providers to meet the need of the industry. The EPA has recently added additional a biointermediate and eRIN program, both of which require QAP participation.

We appreciate the EPA's willingness to listen to our concerns and address them in a meaningful way. ABFA supports the EPA's desire to be consistent with the California Air Resources Board's (CARB) approach to verification for similar feedstock under their low carbon fuel standard (LCFS). However, the current proposal missed the mark, and it remains very different from the approach taken by CARB.

The point of confusion seems to be around CARB's LCFS joint application process. The joint application process is used when a feedstock supplier and a fuel producer are looking to reduce their carbon intensity score by providing specifics about their feedstock versus the standard GHG model assumptions. The joint application process is not used to validate feedstock records. Moreover, this method is rarely used for UCO because a renewable fuel producer could source UCO from 60 plus suppliers.

Instead, under the LCFS, a renewable fuel producer applies for a pathway to produce renewable fuel using separated food waste as a feedstock. The renewable fuel producer ensures access to any necessary records and data to be produced upon request by the regulatory authority or verification body certified by the regulatory authority. The renewable fuel producer does not need to physically maintain copies of these records. During the annual audit, the verification bodies are then required to take a risk-based approach to provide reasonable assurance regarding feedstock qualification without requiring every feedstock supplier submit to an extensive, costly and time-consuming regulatory audit.

The industry needs an immediately workable solution. The ABFA recommends that the EPA carry out its stated intention to replicate CARB's approach for verification of similar feedstocks whereby feedstock suppliers are provided the option to maintain the separated food waste keep records demonstrating the location of any establishment from which separated food waste is collected. And then, during the Renewable Fuel Producer's annual attest, their auditor can request access to those records and review.

However, if that is not palatable, the EPA should consider more reasonable options that could both allow the industry to continue working while also providing the EPA with the records it needs. Long term, ABFA supports the creation of a technology-based solution. There are several technology solutions that the industry can use to ensure all separated food waste is made from renewable biomass. If this approach is chosen, then the EPA needs to be crystal clear on what is needed to meet this requirement to ensure that the industry can quickly, and with limited expense, meet this requirement.

If the EPA were to choose a technology-based solution, then ABFA recommends an interim solution to ensure the industry continues to be able to produce renewable fuel from UCO until technology is available. One suggestion is the use of a system of self-declarations. Restaurants/collection points would sign a self-declaration that their product is made from renewable biomass and submit that to the Used Cooking Oil (UCO) collector. The UCO collector would maintain all the self-declarations and then write its own self-declaration that all the material they collected satisfied this requirement and provide this to the renewable fuel producer. During the annual attest of the renewable fuel producer, the auditor can speak with the UCO collector to confirm compliance.

The final regulations need to define the term feedstock supplier as it is referenced many times with no definition. Moreover, the final proposal, regardless of the solution, should allow for the ability for a trader to act as a middleman between the feedstock supplier and then renewable fuel producer.

Finally, enclosed with these comments is a UCO industry white paper highlighting that documentation levels vary across the industry and the volume of potentially relevant information is immense. See Appendix 3, p. 8: UCO collectors (1) may estimate the volume of UCO they collect, (2) do not always contract directly with renewable fuel producers, (3) would potentially be required to provide renewable fuel producers millions of documents to implement the current recordkeeping requirement, and (4) are extremely reluctant to share collection point information with producers that may compete with the UCO collection industry. (Appendix 3)

VI. Blending and RIN Separation Restrictions for Biodiesel

Another proposed change in the December package proposes limiting the allowances for blended biodiesel capping it at blends of 20 percent or less. It then limits the ability to separate only 1.5 RINs per gallon, which is a significant change from the current regulatory program allowances, and potentially challenges the opportunity for some fuel blenders to participate and utilize these carbon reducing advanced biofuels. The Agency fails to explain its rationale for such changes and ABFA members encourage the Agency not to finalize this change currently. Several of our members are submitting detailed impact assessments of this proposed action.

ABFA supports the National Energy & Fuel Institute (NEFI)'s comments on this subject (Appendix 4).

VII. Definition of Renewable Biomass

ABFA appreciates EPA's intent to provide a clear definition of "produced from renewable biomass" to provide greater certainty for emerging technology providers to assist and guide them through how compliance with this core provision may apply to them. ABFA members are somewhat split on how this revision may impact existing pathways as well as future pathways. Generally, members are concerned that the proposal adds new complexity and uncertainty to the impacts on equivalence values and GHG lifecycle assessments. Modification as proposed is likely to have significant and unintended consequences and while ABFA is not offering a definitive position, we strongly encourage the Agency to take the necessary time to evaluate the overall impacts, maintain broad and flexible consideration under the

definition and to, if necessary consider delaying a final determination until such time that all due consideration is made as to what, if any changes are merited.

VIII. Phased Blending Approach

While ABFA recognizes the challenges EPA faces in this initial SET rulemaking, the Agency must recognize the opportunities and significant potential the SET process offers to enhance the RFS program's ability to deliver more carbon reduction. Last year, ABFA proposed a "Framework" for all potential liquid and gaseous transportation fuels as a means of phasing in more renewable content into every gallon. As innovative technologies come online and the types of feedstocks expand, this would allow the markets to achieve greater volumes through higher blending limits, resulting in much deeper carbon reductions – all under the existing laws and authorities available to the Agency.

As the Agency is aware, many of these renewable fuels can be used neat or blended at elevated levels. In some cases, the neat fuels can meet the same ASTM standards or can be blended and can maintain the necessary ASTM and Agency specifications of the blended fuels. Renewable products, like renewable diesel and renewable aviation fuels (SAF) compare directly to that of traditional diesel, aviation fuel and heating oil. We believe the Agency has significant authority under the law to consider these or other beneficial approaches. ABFA would like to re-engage with EPA to discuss these and other options for the Agency to Consider in future regulatory actions.

IX. Net Zero - Rewarding More Carbon Reduction Through Modeling and RIN Incentives

With adoption of net zero ambitions, which are supported holistically by this Administration, many new facilities are planning to come online with net zero emission plans. One of ABFA's members has already broken ground on its facility in South Dakota. Additionally, four of our large refining members have officially announced their intention to achieve net zero by 2050. Adopting flexibilities that support and account for greater feedstock and production GHG reductions would accelerate adoption of better practices, financing new technologies and reaping greater societal benefits.

We believe the SET process allows EPA the flexibility to consider rewarding greater value (i.e., RIN credits or some other metric) to fuel producers that exceed minimum carbon reductions. This can be achieved in several ways, including facility design, process systems, energy sources, and feedstock production practices, all leading and supporting net zero and lower carbon indexed fuels. Offering companies that produce better performing fuels extra economic support through the selected metric valuations will act to "incentivize" use of better performing feedstocks, conversion technologies and fuels – all supporting the overall goals of the program and supporting the Administrations goals of 3 billion gallons of SAF by 2030.

Carbon Capture and Sequestration (CCS) is another example of a viable and highly beneficial technology that should be approved and can enable greater volumes of advanced biofuels, including the production of SAF. EPA has in the past engaged on CCS options but has yet to move forward with them. ABFA encourages EPA to update the models and methodology used to calculate carbon reductions and expand and incorporate such tools to account for these expanded benefits. These should be science based and deliver a range of certainties that can be defended around the globe. If we are to spend billions of dollars to reduce carbon, then the models and the foundation of understanding of what we are achieving needs to be more precise and up to date. It is also the basis of rewarding commercial entities for achieving carbon reduction beyond the current minimum requirements. We are very supportive of consideration to establishing an approach that provides additional RIN values for exceeding the minimum requirements.

X. Reflecting Actual Volumes and The Importance of Bio-intermediates:

ABFA supports EPA setting multi-year RVO standards. We are opposed to you also setting volumes for 2026. Four years is too far in the future to take the risk of being off target on actual volumes. The inconsistency and regulatory uncertainty of the program over the last decade has slowed industry's ability to influence the development and expansion of the market. This said, the Agency needs to acknowledge production capacity appropriately and accurately, feedstock availability and other factors in setting the standards – not discounting them. EPA has and continues to significantly under project advanced fuels capabilities and has gone to great lengths to unnecessarily inhibit development through additional and unnecessary regulations. As one example, and as an area of great importance and significant opportunity are in Bio-intermediate feedstocks. We are again appreciative of the fact that the Agency established allowances for the use of Bio-intermediate feedstocks in last year's rulemaking. And while those allowances were a great baseline for moving in the right direction, additional work needs to be done. There are many easy and very pragmatic and implementable provisions that could set the opportunity for current and future feedstocks to be used to attain much higher carbon reduction fuel. ABFA will continue to meet with the Agency going forward to support re-evaluation of some unnecessary restrictions and to establish the appropriate programmatic adjustments and allowances to move forward. Bio-intermediates represent a significant opportunity for volumes and a broader range of feedstocks in our future. They should certainly not be limited to one customer nor to a single transfer, particularly intra-company. No other fuels or feedstocks face that restriction. We suggested last year that given the small number of companies in this sector at this time that you could use the Part 80 process to provide the necessary compliance provisions to ensure there is no double counting of RINS.

XI. Co-Processing and Hydrogen

This proposal is very expansive and contains a myriad of important and impactful technical changes. Our members are concerned with how you are discussing the use of hydrogen in co-processing efforts. Further, we are concerned broadly with the potential impacts on what constitutes co-processing and with the lines that appear to have been drawn with respect to the use of renewable hydrogen and what would be covered under the program. Our members are providing detailed comments on this and we encourage EPA to carefully evaluate their comments prior to making final decisions.

XII. Conclusion

As the world population grows and mobility continues to expand, we will undoubtedly need an "all of the above" approach to carbon reduction from the transportation sector. There is no silver bullet. EPA's regulatory mission and expertise will be essential in how the United States navigates the nation's path forward on this matter. We are prepared to discuss in-depth a set option sets for addressing many of these topics as it moves forward with this initial Set rulemaking. We do, however, strongly believe the Agency needs to look to taking additional supportive actions in a subsequent proposal.

ABFA member companies are submitting, under separate cover, additional specific comments related to many sections of the proposal. We refer the Agency to their comments to ensure that additional and individual details associated with the proposal are taken into consideration as you finalize this rule.

The focus and approach ABFA members have taken in responding to the Agency's proposal is twofold: first, to address at a high level, the key areas the Agency needs to address as it moves to make final the volumes and other regulatory actions in this rulemaking; and second, to identify several key areas of significant opportunity and focus the Agency must consider as it moves to finalize this initial SET rule. ABFA strongly recommends the Agency keep all options open under this proposal and subsequent actions that can support adoption of greater flexibility and more rational regulatory structures to achieve greater benefits under this law.

As always, we welcome the opportunity for additional engagement on this rule and to support making the best decision as the Agency moves toward finalizing the actions contained in it.

With Regards,

Michael Thet Dan

Michael McAdams, President Advanced Biofuels Association On behalf of ABFA Member Companies

Appendices:

- 1. The Outlook for Global Lipid Feedstocks to 2025, LMC International, February 2023.
- 2. Analysis from Lipow Oil Associates on Projected Renewable Fuel Capacity, 2023-2025.
- 3. Letter from the Advanced Biofuels Association to EPA regarding waste feedstock traceability, July 14, 2022.
- 4. Comments to EPA from the National Energy & Fuels Institute (NEFI) regarding RIN generation, February 10, 2023.

Appendix 1.



Ġ GlobalData.

The Outlook for Global Lipid Feedstocks to 2025

Prepared for:

Advanced Biofuels Association Washington, DC

February 2023

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While LMC International has endeavored to ensure the accuracy of the data, estimates and forecasts contained in this study, any decisions based on them (including those involving investment and planning) are at the user's own risk. LMC International/GlobalData UK Limited can accept no liability regarding the information, analysis and forecasts contained in the study.

LMC Outlook for Lipid Feedstocks to 2025

Rationale for the Study

In December 2021, LMC International¹ submitted a report to EPA assessing the lipid feedstock outlook to 2030 with the goal of answering the critical question: *Will there be enough lipid feedstock to meet Advanced Biofuels Association goals for biomass-based diesel (BBD)?* The results of that study indicated that lipid feedstock for at least 9 billion gallons of BBD would be available to the U.S.²

Here we examine the ways in which short-term lipid supply to 2025, and in particular the supply of RFS-approved feedstocks, has been affected by external factors. We explain how they change our forecast for 2025 compared to the forecast in the 2021 report. In this analysis we have concluded that forecast supplies of lipid feedstocks in 2025 will be higher than forecast in the 2021 report.

Key conclusions

SUPPLY:

- Contrary to some expectations, market factors of the last year have increased, not reduced, our forecast of the global supply of all lipid feedstocks³ in 2025. (This conclusion is the result of extensive, in-depth analysis of the impact of many market factors, outlined below.)
- The revised total forecast of supply for all uses is 290 million metric tons up by 3.7 million metric tons compared to our 2021 forecast, equivalent to over 1 billion gallons RD⁴.
- Of this total, global supply of RFS-approved lipid feedstocks has risen to 149 million metric tons in 2025 – up by 10.3 million metric tons from the previous report, equivalent to almost 3 billion gallons RD.

DEMAND:

- First, we forecast global demand for lipids for foods and industrial uses, then the demand for biofuels in four countries other than the U.S. with strong environmental biofuel policies⁵. The resulting forecast: Global demand for lipids for these uses in 2025 is projected at 222 million metric tons.
- From the 290 million metric tons of total global lipid supply, this leaves 68 million metric tons available for use in biofuels in the U.S. and elsewhere (other than the four countries) – equivalent to over 19 billion gallons of RD.

CONCLUSION:

Based on LMC's latest forecasts of supply and demand to 2025, feedstock supplies available for use in the U.S. are more than enough to allow a significant increase in U.S. BBD demand, after accounting for food. We include all lipid sources in our analysis to form a full picture of the global market^{3,4}, separating RFS-approved and other feedstocks. Diagram 1 presents LMC's latest forecasts.



Diagram 1: Global oils and fats supply forecasts, 2022-2025

Key influences on lipid supply in 2022

- The most important development was **Russia's invasion of Ukraine**. Immediately it cut sunflower oil supplies from Ukraine, the world largest exporter, and the effects will linger beyond 2025, but it is not approved as a feedstock in the RFS; therefore, sunflower oil does not feature in the supply-demand balance for U.S. BBD.
- Other major negative consequences of Putin's war include forcing up diesel and fertilizer prices. In the case of diesel, that cloud has a silver lining in that **high diesel prices** support the prices of BBD, and these feed into BBD feedstock prices, stimulating their supply.
- The **leap in fertilizer prices** also has a silver lining. Higher fertilizer prices increase the attractions of soybean's nitrogen-fixing properties, and this promotes the planting of soybeans at the expense of grains.
- On balance, Russia's invasion has increased the prices of oils and fats, which support their production, and boosted the planting of soybeans as a nitrogen-fixing crop.
- A significant factor behind a generally disappointing 2022 crop was the persistence of La Niña. This reduced oil crop yields through a combination of droughts in the Americas and excessive rainfall in eastern Asia.

- Looking ahead, the Oceanic Niño Index cycle is now turning. The return of U.S. soybean yields to their long-run trend will add 4.5% to production. There will be further upside potential if an El Niño appears, lifting yields further. Canola will benefit similarly.
- The use of canola as a feedstock for RD has now been approved by the EPA. This opens a significant source of supply to meet growing U.S. capacity.
- Among the other vegetable oils approved as RFS feedstocks, very little has happened to change the forecasts from the volumes estimated in 2021.
- The world's largest source of vegetable oils is palm oil, which is not an RFS-approved feedstock. Palm oil production has been held back by difficulties in recruiting labor for harvesting and, more generally, by a sharp slowdown in new plantings. However, as with sunflower oil, problems with palm oil production do not affect the supply-demand balance for RFS-approved feedstocks.
- The biggest single boost to the supply of feedstocks approved in the RFS arises from fats and greases that are not used significantly for food. The output of most fats and greases has not been affected by the turmoil caused by Russia. Animal fats are a by-product of meat rendering and their availability changes very gradually. Distillers' corn oil supply is a function of North American corn ethanol output, which is governed by mandates.
- The non-food lipid that responded strongly to higher vegetable oil prices has been used cooking oil. The **collection and export of UCO** in Asia, led by China, have grown rapidly, even though Chinese catering establishments have struggled with repeated lockdowns. As pandemic restrictions continue to be lifted this should allow further growth in the coming years.

Lipid supply outlook to 2025

Taking these factors into account leads to these results for supply:

- The key contributors to the increases in forecasts of RFS-approved worldwide supply were those affecting soybean oil, canola oil, and used cooking oil (UCO). The two oils whose 2025 estimates were lowered were sunflower and palm oils, which are not RFS-approved.
- Focusing on the RFS-approved feedstocks, the primary reason for the higher soybean and canola projections in 2025 was the end of La Niña, which will enable yields to regain their long-run trends. A further influence for soybeans is its benefit as a nitrogen-fixing crop. For UCO, rising fats prices promoted higher collection rates, with China leading the way.
- The latest forecasts of the supply of the three RFS2-approved lipids, which drive the increase in forecasts for 2025, add a combined 4.6 million metric tons to U.S. and Canadian supply and 10.1 million metric tons to world supply that year.
- Sunflower oil output is the victim of Putin's war, while palm oil is suffering labor shortages.

- Our forecast of global lipid supply has increased from 286 million metric tons in our 2021 report, to 290 million metric tons in 2025, up by 3.7 million metric tons, equivalent to over 1 billion gallons RD.
- Of this total, RFS-approved lipid feedstock supply has risen to 149 million metric tons in 2025, up by 10.3 million metric tons, from 139 million metric tons in our 2021 report, equivalent to almost 3 billion gallons RD.

Key influences on lipid demand in 2022

Since 2021, there have been a number of changes to global biofuels policy that could impact demand for lipids over the next three years.

We focus on biofuel demand in Canada, Brazil, the EU and UK, outside of the U.S., as this demand is seen as strong as it is primarily based on lowering carbon emissions rather than supporting domestic agriculture.

- Both Canada and Brazil have increased targets in the last year. Canada delayed the implementation of their Clean Fuel Standard, but increased the goals for 2030, which is expected to lead to higher biomass-based diesel demand by 2025.
- In Brazil, the planned increase to biodiesel blending mandates has been brought forward. The nationwide blend will rise from 10% to 15% in March 2023, increasing demand for lipid-based fuels in the short term.
- The EU on the other hand has seen several countries roll back mandates in 2022 and 2023 in response to high prices and food scarcity concerns driven by the war in Ukraine.

Lipid demand outlook to 2025

Taking these factors into account leads to these results for demand:

- Total demand for lipids from biofuels in the four key countries is forecast to reach 33.3 million metric tons in 2025, 1.6 million metric tons higher than our previous forecast.
- Global demand for non-biofuel end uses (food, feed, and chemicals) is forecast to reach 188 million metric tons in 2025 this is unchanged from last year.
- Accounting for global demand for lipids from food as well as industrial uses globally and biofuels in four countries⁵ other than the U.S. with strong environmental biofuel policies, global demand for lipids is in 2025 estimated at 221 million metric tons.
- This leaves 68 million metric tons of lipid supply available for use in biofuels in the U.S. and elsewhere, equivalent to over 19 billion gallons of RD. (This includes the current outlook for BBD use in the U.S. in 2025). This is an additional 2.5 billion gallons of RD compared the same calculation for 2022 lipid supply.

Based on LMC's forecasts of supply and demand to 2025, feedstock supplies available for use in the U.S. are more than enough to allow a significant increase in U.S. BBD demand, after accounting for food.



Diagram 2: Global lipid market forecast to 2025, supply vs. demand



- ¹ LMC International specializes in global economic and market analysis of agricultural feedstocks and their major end products, with a focus on biofuels.
- ² Available lipid supplies are considered after taking into account the global demand for lipids for foods and industrial uses, and also the demand for lipids in biofuels in four countries other than the U.S. that have a high demand for biofuels⁵.
- ³ We include all oils, even if not approved for the RFS or other biofuel policies, such as palm, because they are a significant source of vegetable oil for a range of end uses around the world. Therefore, it is essential to include all oils when evaluating total global demand.
- ⁴ The exact amount of lipids required for biomass-based diesel will depend on the type produced, the feedstock, and the technology used, as conversions vary with each factor. To put everything on a comparable basis, we present volumes of biofuel per volume of lipids in renewable diesel (RD) equivalents.
- ⁵ We assess the requirement for lipid feedstocks to fulfill biofuel policies in four other markets, the EU, UK, Brazil, and Canada. These markets all have strong biofuel policies based on environmental targets that do not get amended easily. Given their policies and incentives, they represent competition for lipid feedstocks for the U.S., and bidding supplies away from them will be costly.

Company	Location	Feedstock	Dec 2019 Capacity	Dec 2020 Capacity	2021	2022	2023	2024	2025	Other	Cost	Comments
			MMG/YR	MMG/YR	MMG/YR	MMG/YR	MMG/YR	MMG/YR	MMG/YR	Proposed	\$/gallon	
Alabama												
Vertex	Saraland	soybean oil, corn oil, tallow, yellow wax, grease and UCO					215	215	215		0.55	Announced May 27, 2021 an \$85 MM hydrocracker conversion to 10 MBD by 4Q 2022 and 14 MBD by mid 2023. As of November 8, 2022, mechanical completion is 1Q 2023, start up is 2Q 2023 Cost now \$90-\$100MM. Idemitsu to take all of the RD product for 5 years. Pretreatment unit planned for Myrtle Grove LA
California												
Aemetis	Riverbank						45	45	90			Received CA Tax exmption Jan 2019 for cellulosic ethanol plant. Now RD and SAF. Plans to construct 90 MMG/yr plant in two phases: first phase in early 2023, second phase in 2025
Chevron	El Segundo				30	30	153	153	153			Announced March 3, 2020 plans to co-process bio-feed in the FCC later in 2020. Sept 26, 2022 Letter From EPA states 10%, not to exceed 20% which is about 7.5/15.0 MBD. As of August 2, 2021,plan to co process 10 MBD by end of 2021. As of Feb 28, 2022 presentation, plan to convert diesel hydrotreater by end 2022
												https://chevroncorp.gcs-web.com/static-files/20c2a7dc- e42f-4ada-991e-b36a5e224556
Global Clean Energy Holdings	Bakersfield	Veg Oil					150	220	220		2.70	Purchased the Delek refinery for \$40MM in May 2020 expected Jan 2022 start up. Retooling Cost of \$365 MM Offtake to multi national of 85 + 20 at buyers option. Backed by Orion Energy Partners, GCM Grosvener, Voya Investment Management. Delek has option to buy 33%. Exxon to take 5000 MB/yr for 5 years announced April 22, 2021. In April 2021 XOM said it will take 5000 MB per year. Capacity per website is 15 MBD. As of Novmber 14, 2022 SEC Filing, start up now delayed to 1H 2023 and may be limited to 12 MBD by hydrogen availability

Company	Location	Feedstock	Dec 2019 Capacity	Dec 2020 Capacity	2021	2022	2023	2024	2025	Other	Cost	Comments
												ĺ
Indaba Renewable Fuels California	Imperial	Veg Oil, greases, animal fat						100	100			Announced Jan 15, 2022. Predevelopment Jan 2022, Lance Capital Funding Jan 2022, Construction to begin Feb 2022, expected on line April-June 2024. Haldor Topsoe technology
Kern Oil Refining	Bakersfield		6	6	6	6	6	6	6			Co-processing tallow since 2014
Marathon/Neste	Martinez						735	735	735		2.72	Announced July 31, 2020 indefinite idling of refinery. On August 3, 2020 announced conversion to 48 MBD Renewable diesel. As of Feb 2021, expect 17 MBD end 2022 and the balance by end 2023. Total Capital Cost \$2 B. As of Nov 2022 expect Phase mechanically complete end 2022. Start up 1Q 2023. Phase 2 start up end 2023
											ļ	
PBF	Martinez									???		February 2020 Evaluating project to use idled equipment
Phillips66	Rodeo	UCO, fats, tallow, soybean oil			120	138	138	800	800		1.00	Announced in Nov 6, 2019 Investor Day presentation. Announced July 31, 2020 conversion of a hydrotreater to produce 9,000 B/D of RD by mid 2021. Announced Aug 12, 2020 shutting refinery , FID by 1Q 2022 at a cost of \$750-800 MM and will produce an additional 680 MMG by 1Q 2024. Began production Apr 2021 will ramp up to 9 MBD rates by 3Q 2021.
Vallery Green Fuels	Kern County									230		Company organized December 30, 2019. Plan was to be on stream 1H 2023
World Energy (Alt Air)	Paramount	Tallow/small amts of veg oil and animal fat	45	45	45	45	45	45	45	261	1.34	Announced Oct 24, 2018 plans to spend \$350 MM to expand to 306 MMG of which 150 MMG will be SAF. Permits out for public comment Sep 2021. Construction is expected to take about 2 years. Secured permits April 2022.
Illinois												

Company	Location	Feedstock	Dec 2019 Capacity	Dec 2020 Capacity	2021	2022	2023	2024	2025	Other	Cost	Comments
St Joseph Renewable Fuels	Newton									0	1.00	Proposed as early as Sept 2018 Announced May 12, 2020 plans to build \$400 MM plant. Backed by Lance Capital
lowa												
HOBO Renewable Diesel LLC (Multifuels 50%)	Waterloo								120			Website indicates 9.3 MBD Midwest project by 2Q 2025. HOBO has filing with Iowa Sec of State with Waterloo Registered Agent. Stonepeak (Evolve Transiition Infrastructure) investing \$600 MM in HOBO in Nov 2021 subject to tolling agreement
Readi-Fuels (Applied Research Associates/C&N Biofuels)	Hull	UCO/Corn Oil								34	1.71	Announced Feb 21, 2019 to construct new \$58 MM plant also producing renewable naphtha. Originally expected to begin construction in 2019 and be on stream 2021. Technology contract awarded to Chevron Lummus and ARA June 2021. Seeking \$80 MM fund raise as of Aug 2022
Kansas												
CVR	Coffeyville									125		Announced Nov 3, 2020 that it could convert a high pressure hydrotreater, pending succesful RD production at Wynnewood. RD 125, SAF 25. As of Jan 2022 Board approved completing process design
East Kansas Agri Energy	Garnett		3	3	3	3	3	3	3			Came on line in 2017
WB Services/Green Energy Products	Sedgwick											Operated a 3 MMG plant until they declared bankruptcy in 2016.
Seaboard Energy (High Plains Bioenergy)	Hugoton	animal fats, veg oils				85	85	85	85		4.12	Announced end April 2021 plans to convert idled cellulosic ethanol site by end 2021 to produce 85 RD and 8.5 naphtha. Equipment shipped to site in July 2021. Cost \$350 MM per englobal.com websiter Dec 2021 video. On stream Feb 2022

Company	Location	Feedstock	Dec 2019 Capacity	Dec 2020 Capacity	2021	2022	2023	2024	2025	Other	Cost	Comments
Louisiana												
Diamond Green Diesel(Valero/Darling International)	Norco	Tallow, UCO, Corn Oil	275	290	690	690	690	690	690		2.75	began construction Oct 2011. Project cost \$330MM with a \$241MM DOE Loan Guarantee. Makes Renewable Diesel thru a UOP process. 125 MMG, \$190 MM.Expansion on stream Aug 2018. Approved 400 MMG RD plus 30 MMG renew naphtha expansion Nov 5, 2018 at a cost of \$1100M. began start up Oct 2021.
Emorald Diofuels	Disquemine									0E		Approximated May 2012 to construct DD plant at Dow
	Plaquemine									65		Chemical Plaquemine location. UOP Process
Greentech Materials, LLC	Baton Rouge	Soybean/Palm Oil								336-378	1.32- 1.49	Announced January 17, 2020 for possible \$500 MM plant on 164 acres in the Port of BR located west of the Genesis Energy terminal.
Gron Fuels/Fidelis New Energy	Baton Rouge	Soybean, Corn oil, Tallow								920	1.36	Announced Nov 10, 2020 to spend up to \$9.2 billion. First phase of 60 MBD for \$1.25 B on stream in 2025. FID expected in 2021. Received Air Permit April 2021. On Oct 25, 2021 was going to spend \$2.1 B to produce 46 MBD SAF, 14MBD RD. FID expected 1H 2022.
Louisiana Green Fuels/Strategic Biofuels	Port of Colombia, Caldwell Parish									32	87.50	Announced April 2021 to spend \$700 MM. Moving into engineering phase August 2021. FID planned for late 2022 would come on stream in 2025. Receivd LA approval Sept 2022 to issue \$1.1 B bonds. Total cost now \$2.8 B
PBF	Chalmette	Soybean oil, corn oil, fats					307	307	307		1.80	Announced Feb 11, 2021 potential project to convert idled hydrocracker and produce 15-20 MBD. On June 24, 2021 said it would cost \$550 MM. Selected Honeywell UOP Ecofining process. On April 28, 2022 said they had completed engineering and permitting, securced some long lead time equipment, expect 1H 23 start up
Chevron REGI Geismar	Geismar	High and Low Fatty acid feedstocks	75	90	90	90	90	340	340		3.30	Broke ground Oct 2008. Came on stream November 2010. In May 2018 REG said considerring spending \$660 MM to expand. On Oct 6, 2020 announced they would proceed with 250 MMG expansion with mechanical

Company	Location	Feedstock	Dec 2019 Capacity	Dec 2020 Capacity	2021	2022	2023	2024	2025	Other	Cost	Comments
												completion end 2023 and on line in 2024 at a cost of \$825 MM. Broke ground Oct 2021.
Shell	Convent	Veg Oil, Animal Fat							584		2.53	Per OPIS Story October 15, 2021, Shell considerring repurposing refinery. Confirmed by Shell Feb 24, 2022 in The Advocate. Filed Title V Air Permit modification August 31, 2022. Will produce RD, SAF and naphtha. Will process up to 6,000 tons per day= 584 MMG/yr. Cost \$1.48 B
Mississippi												
JaxOn Energy	Jackson	Corn Oil		38	38	38	38	38	38			Constructed 2500 B/D plant in 2019
Missouri												
Indaba Renewable Fuels California		Veg Oil, greases, animal fat								100		Announced Jan 15, 2022 in planning stages
Montana												
Calumet	Great Falls	tallow, soybean oil				77	185	276	276		0.93	Announced February 16, 2021 potential project to convert hydrocracker to process 10 to 12 MBD feedstock. Began production Nov 5, 2022.Adding pretreater in 1Q 2023. Capacity is 15 MBD, will operate at 12 MBD. (9 RD, 2 SAF, 1 Naphtha). Can expand to 20 MBD capacity, 18 MBD (12 RD, 4 SAF, 1.5 RN) run rate in July 2024 increasing hydraulic capacity. Cost \$200MM Opex including transportation is 62 cpg from March 2021 presentation. Oaktree investing \$300 MM. Rail to PNW and CA is 8-12 cpg. Started up Sep 2022
Nebreeke												
пергаѕка												

Company	Location	Feedstock	Dec 2019 Capacity	Dec 2020 Capacity	2021	2022	2023	2024	2025	Other	Cost	Comments
Heartwell Renewables (Cargill/Musket JV)	Hastings	UCO, tallow, animal fat						80	80			Announced April 20, 2021 to come on stream Spring 2023. Let contract to Worley May 2022. Broke ground Nov 3, 2022 now expected on line summer 2024
Nevada												
Golden Gate Petroleum	McCarran									???		Announced Dec 17, 2018 5 MBD plant (there is a ULSD hydrotreater at this site built in 2016)
Ryze Renewables	Las Vegas	Waste streams of veg oils and animal fats		0	0	0	???	100	100		2.80	Announced Aug 27, 2018 construction Las Vegas 2020 cost is \$280 MM. 70% complete as of Oct 2020. Repurposing a biodiesel facility
New Rise Renewables Reno LLC (ex Encore D.E.C. LLC New Rise Renewables Reno)	Reno (McCarran)	Waste streams of veg oils and animal fats		0	0	0	44	44	44		6.97	Announced Aug 27, 2018 construction Reno is 2019 Cost \$150 MM. 95% complete as of Dec 2021. Pretreater is 30% complete as of Dec 2021. As of April 2022, entered ground and leaseback sale with Twain Financial Partners. Construction expected to be complete in Nov 2022 at a total cost of \$300 MM. According to Aug 10, 2022 Press release, they began opeartions
New Mexico												
Cetane Energy	Carlsbad		3	3	3	3	3	3	3			
Holly Frontier	Artesia	soybean oil and other feedstocks.				125	125	125	125		2.80	Announced May 31, 2019 adding new unit. Filed Public Notice on July 2, 2019 with NMDEQ. Proceeding with project as of Nov 2019 at a cost of \$350 MM. On stream 2Q 2022. Pre-treatment unit on stream 1Q 2022
North Dakota												

Company	Location	Feedstock	Dec 2019 Capacity	Dec 2020 Capacity	2021	2022	2023	2024	2025	Other	Cost	Comments
AIC Energy	Trenton	soybean and canola oil								100		Announced June 2021 to construct plant near Savage Trenton rail port. Filed conditional use application permit April 2021
Marathon	Dickinson	Refined Soybean oil 80%, corn oil 20%		185	185	185	185	185	185		2.53	Announced Aug 2018 Converting refinery to 12 MBD renewable diesel expected on line late 2020. Capital Cost = \$455 MM. Starting up Nov 2020. Achieved 90% of design capacity in 1Q 2021. achieved full capacity in 2Q 2021
Ohio												
SG Preston	Van Wert									120	3.33	Announced August 2014 a \$400 MM RD project to be completed 2017. As of Feb 2022, still not constructed
Oklahoma												
CVR	Wynnewood	soybean oil, corn oil				100	100	100	100		1.10	Announced May 7, 2020 looking at potential project at its refineries utilizing excess hydrogen and equipment. Project approved Dec 2020 to spend \$110MM. On stream April 20, 2022. Converting hydrocracker. As of August 8, 2022 \$60 MM pre treater to be in service 2H 2023. July 3.6 MBD, 3Q 4.65 MBD
Oregon												
Red Rock Biofuels	Lakeview	wood waste cellulosic process					16	16	16		20.00	Broke ground July 2018 with completion expected April 2021. As of June 2021 construction halted due to lack of funds and may not recommence until 2023. Produces jet and dsl. Shell will take the product and market it.Cost is \$320 MM
Next Renewable Fuels (Waterside Energy Development)	Clatskanie (Port Westward)	UCO. Tallow, seed oil, soy oil, fish oil								575 up to 750	3.33	Announced \$1100 MM project in 2016. Announced Feb 2019 will sell volumes to Shell and others. Plant to come on line in 2021. BP to supply feedstock. Raising \$1.5 Billion as of April 2020. Cost estimate rose to \$2 B in June 2021. As of Sept 2021, Oregon DEQ held a public engagement session for comments on the permit. As of Sept 28, 2022, cost is \$2.5B. Expected permitting to complete in 2023 and on stream 2025.

Company	Location	Feedstock	Dec 2019 Capacity	Dec 2020 Capacity	2021	2022	2023	2024	2025	Other	Cost	Comments
												https://www.oregon.gov/deq/Programs/Pages/NEXT- Renewable-Fuels.aspx
Riverside Renewables	Clatskanie											Project moved from Cowlitz County, Washington
Pennsylvania												
Delta	Trainer					24	24	24	24			Co-Processing in a distillate hydrotreater beginning August 2022 per June 2022 DEP letter
Texas												
Diamond Green Diesel(Valero/Darling International)	Port Arthur					470	470	470	470		3.09	Announced Sept 9, 2019 cost study for 400 MMG/yr plant coming on line in 2024. Project approved at a cost of \$1.45 B Jan 28, 2021 to come on line 1H 2023. Will produce 50 MMG renew naphtha. On stream Nov 2022
Emerald Biofuels	Port Arthur	Veg Oil, greases, animal fat								105	3.15	Filed TCEQ Permit 134821 in 2015 updated July 2021. Location is at GT Omniport 1998 highway 73. so may be the same as Steamboat. Will produce 105 RD and 20 other. Cost of \$315 MM. UOP Ecofining process. As of Jan 2022 construction start pushed back to summer 2022
Steamboat Biofuels	Port Arthur	corn oil, soyoil, grease								80		Filed TCEQ Permit 157861 Sept 2019. Location at GT Omniport 1998 Highway 73. Feedstock Capacity is 6500 B/D, assumed 80% renewable diesel Haldor Topsoe technology
Steamboat Fuels	La Porte									80		Filed TCEQ Permit April 2020 for new facility. RN 111029104 Permit 161051. Feedstock capacity = 6500 B/D assumed 80% renewable diesel
Washington												

Company	Location	Feedstock	Dec 2019 Capacity	Dec 2020 Capacity	2021	2022	2023	2024	2025	Other	Cost	Comments
BP	Cherry Point	tallow, soybean oil	44	44	44	109	109	109	109		0.52	Production based on Whatcom County June 3, 2021 letter. Hydrotreater #3 DHDS coprocessing. Announced Oct 4, 2021 project to increase production to 109 MMg/yr sometime in 2022 at a cost of \$45. Expansion on stream November 2022.
Par Pacific	Tacoma	soybean oil					34	34	34			Announced May 5, 2022 investor presentation co- processing project to be on line early 2023. 2250 B/D soybean oil feed
Phillips66/REG	Ferndale	animal fat, UCO, veg oil, grease			ххх	ххх	ххх	ххх	ХХХ	ххх		Announced Nov 1, 2018 plans to build a 250 MMG plant coming on line 2021. Canceled Jan 21, 2020
Riverside Renewables	Cowlitz County									XXX	3.33	Announced May 2017 plan to invest \$500 MM to construct 150 MMG plant. Project subsequently shelved and moved to Clatskanie Oregon
Wyoming												
HollyFrontier	Cheyenne					90	90	90	90		1.67	Announced June 1, 2020. Repurpose existing equipment at a cost of \$125-175 MM. Announced Nov 3, 2021 was to be mechanically complete by weekend. Was on stream as of Feb 2022. Pretreatment construction suspended to 2023
Sinclair (Wyoming Renewable Diesel)	Rawlings	Animal Fat/Soybean Oil	92	92	92	153	153	153	153			Built unit in 2018 to process 7500 B/D RBD soybean oil = 115 MMG/yr adding feed pretreatment in 2022. Per HFC acquisition, unit was recently expanded to 10 MBD
Slate Refinng/Starwood Energy Group	Douglas									100		Announced August 17, 2021 to convert exsting refinery to 100 MMG/yr renewable fuels plant

Company	Location	Feedstock	Dec 2019 Capacity	Dec 2020 Capacity	2021	2022	2023	2024	2025	Other	Cost	Comments
Total End of Year USA Capacity MMG/yr			543	796	1346	2461	4238	5591	6340	2272		
Neste	Singapore	UCO/Waste Residue	325	325	325	325	715	715	715			Announced Dec 12, 2017 expansion from 1.3 to 2.6 MMT/yr to come on line in mid 2022. Announced Aug 2020 expansion delayed to 1Q 2023. As of Dec 15, 2022 new start up date March 2023
	Rotterdam	UCO/Waste Residue	325	325	325	325	325	325	325			Announced June 27, 2022 expansion from 1.4 to 2.7 MMT/yr to come on line 1H 2026 at a cost of EUR 1.9 billion. Of the 2.7 capacity, 1.2 will be SAF
	Porvoo	UCO/Waste Residue	190	190	190	190	190	190	190			
	Debottleneck		100	100	100	200	200	200	200			Announced further de-bottlenking project expected on stream in 2022
Total End of Year Neste Capacity MMG/yr			940	940	940	1040	1430	1430	1430			
Canada												
Canada												
Cielo Waste Solutions	Aldershyde, AB	Wood Waste		0.4	0.4	0.4	0.4	0.4				On Stream as of Jan 2020
Cielo Waste Solutions	Halifax, NS										4.17	Announced Jan 9, 2020 to construct approx 9 MMG/yr at a cost of \$50MM
	Grande Paririe											Announced Jan 2020 JV with Renewable U Energy
	Dunmore (Medicine Hat)									23.1	4.30	Announced Nov 2019. JV with Renewable U Medicine Hat at a cost of CAD \$50 MM to produce 8.6 MMG/yr. In Nov 2020 announced expanding to 10,000 liters per hour

Company	Location	Feedstock	Dec 2019 Capacity	Dec 2020 Capacity	2021	2022	2023	2024	2025	Other	Cost	Comments
	Lethbridge											Announced July 2019 JV with Renewable U Lethbridge Inc
	Calgary	ĺ										
	Winnepeg											Announced March 2021 JV with Renewable U Energy Inc
	Kamloops											Announced March 2021 JV with Renewable U Energy Inc
	Ft Saskatchewan									26.4	4.51	Announced May 2021, three trains, total cost \$119 MM
Parkland	Burnaby, BC				23	46	46	46	46	77		Coprocessing 1500 B/D canola and animal fat in 2021 at the FCU. Coprocessing 3 MBD in 2022 with plans to double. plan to build new RD unit to come on line in 2026 adding another 5 MBD capacity. FID in 2023
Forge Hydrocarbon Corp	Sombra, Ontario	waste fats and oils				7.5	7.5	7.5	7.5		3.00	Announced Feb 27, 2020. Received an equity investment from Shell Ventures and Valent Low Carbon Technologies to build CAD \$30MM plant
Braya Renewable Fuels (Cresta Fund Management)	Come-By Chance NF						215	215	215			Cresta reported Feb 2021. Will produce 14 MBD. expected to be on line August 2022. ultmate expansion plans to 35 MBD including SAF. Total RD+SAF initially 260 MMG
Tidewater Midstream	Prince George BC	Tallow, Animal Fat, UCO, Canola, Soybean Oil					45	45	45		3.75	Announced March 11, 2021 considerring project to construct 3 MBD facility to come on line in 2023. Capital Cost C\$225 Million
Imperial Oil	Strathcona, Edmonton		Local Vegoils					307	307			Announced Aug 25, 2021 construction of new 20 MBD facility to come on stream in 2024
											1	

Company	Location	Feedstock	Dec 2019 Capacity	Dec 2020 Capacity	2021	2022	2023	2024	2025	Other	Cost	Comments
Federated Co-Op Ltd (FCL)	Regina, Saskatchewan		Canola							230		First announced March 2021 by True North who was aquired by FCL. FCL announced Jan 17, 2022 project to produced 15 MBD coming on stream in 2027. Will use Haldor Topsoe technology
Covenant Energy Ltd	Estevan Saskatchewan		Canola							80		Announced March 2021, Haldor Topsoe technology. Target on stream 2H 2023
Refuel Energy	Toronto Area		Waste Fats, oils, greases						46			Announced April 19, 2022. FID in 2023 and if approved on stream 2025. Haldor Topsoe Technology
Total End of Year Canada Capacity MMG/yr				0.4	23.4	53.9	313.9	620.9	666.5	436.5		

Appendix 3.

July 14, 2022



Mr. Byron Bunker Office of Transportation and Air Quality U.S. Environmental Protection Agency 1200 Pennsylvania Avenue, NW Washington, DC 20460

Dear Mr. Bunker,

On behalf of members of the Advanced Biofuels Association (ABFA), we sincerely appreciate the Environmental Protection Agency (EPA)'s engagement with industry stakeholders on waste feedstock traceability under the Renewable Fuel Standard (RFS). As a follow-up to ABFA's May 10, 2022 meeting with EPA on this topic, I am enclosing a memo authored by a number of aggregators identifying the supply chain complexities association with used cooking oil (UCO). Several of the Advanced Biofuels Association's member companies including Weaver assisted with coordination of this document, and appreciate EPA's consideration of these considerations and recommendations.

Please feel free to reach out with any questions on the material in this document. ABFA's members welcome opportunities to provide you with any additional technical information you may need to inform EPA's approach to RFS compliance in this unique market. I can be reached at (202) 469-5140 or via email at <u>michael@abfa.org</u> if you would like to speak further.

Sincerely,

Michael McAdams President Advanced Biofuels Association

cc: Kurt Gustafson

Thank you for allowing us to discuss the realities of the used cooking oil (UCO) industry's composition, operations, and competitive environment. By providing an overview of our industry, a generic description of our operations, and explaining the variability and complexity of our operations, we hope to work with the United States Environmental Protection Agency (EPA or the Agency) to develop compliance options for renewable fuel producers to demonstrate the authenticity of separated food waste, as required by 40 CFR §§ 80.1454(d) and 1454(n) that both achieve the Agency's objectives and reflect the reality of our industry.

This paper is divided into three sections: (1) an overview of the UCO collection sectors; (2) a generic description of our operations and business relationships; (3) short- and long-term compliance options that meet Agency objectives and align with UCO collection practices and business interests.

I. Overview of the used cooking oil collection industry

The used cooking oil (UCO) industry that collects, trades, and ships what becomes biomassbased diesel feedstock in the United States makes up nearly \$3 billion dollars of the \$54 billion restaurant waste management services industry.¹ UCO recycling creates nearly one-tenth the number of jobs as the entire coal industry across more than 200 collection companies, with many collection companies being "mom and pop" shops that directly employ less than 10 people. With over 670,000 restaurants in the United States disposing between 60-80 gallons of UCO per month at a current market price for cleaned UCO of nearly \$0.75 per pound, it is easy to believe that many UCO collectors are just printing money. However, most collectors have less than a few hundred customers and must sell their product at wholesale prices well below those seen for clean, finished UCO. For these average collectors, if the value of finished product drops to a point where the wholesale price a collector can demand from aggregators is below \$0.30 per pound, most collectors will be on a path to bankruptcy.

II. Overview of UCO collector operations

It is important to first understand that a "waste collector" typically refers to fats, oils, and grease (FOG) management companies who often remove UCO, clean grease traps, or hydro jet plumbing or power wash containment areas within and around a restaurant. Collectors typically have a field sales team, logistics team for collecting UCO, and a plant / facilities group that removes solid and liquid waste from the collected UCO so it is suitable for sale to aggregators or renewable fuel producers.

In general, the waste collection process begins when vegetable oil that was used in restaurant fryers is no longer suitable for use. The UCO is then removed from the fryers, is sometimes temporarily held in a small container within the restaurant, and is ultimately held in an indoor or outdoor containment unit or outdoor bin until it is collected. Bins and containment units will typically be provided, owned, and serviced by the UCO collector.

The type and size of container or bin delivered to each restaurant depends heavily on how much UCO a location is projected to produce and the rate at which the collector can come pick up the UCO produced by that location. The containers or bins provided by a UCO collector will

¹ Estimates of market size vary widely, with 2027 projections presented in a publicly accessible source here: <u>https://www.ibisworld.com/united-states/market-research-reports/cooking-oil-recycling-industry/</u>

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typically range between 50 gallons and 300 gallons, with larger bins made of steel or some other heavy-duty material. Once UCO is transferred from the fryers into a containment unit or collection bin provided and awaiting pickup by the collector, the UCO in the containment unit or collection bin transfers title to the collector.



Restaurant fryer



Temporary UCO container



Outdoor containment units



Outdoor collection bin

UCO collectors are responsible for the containment of oil in and around their containers or bins. To prevent overflowing or spills, collectors use a range of truck types to periodically remove UCO from the containers or bins and transport it to a processing facility. These trucks range from vacuum trucks that suck oil out of a container or bin when it is warm enough for the UCO to remain liquid, to dump trucks that lift bins up and dump them out when cold weather causes the grease inside to freeze into a solid block. The most important factor often determining the viability or success of a UCO collector is its ability to efficiently manage its fleet of containers or bins and collection trucks.

III. Route Management

UCO collectors typically service multiple locations throughout the day or night. Service or collection trucks, which typically range from 500 gallons to 6,000 gallons of capacity, will travel along collection routes that are either pre-planned or dynamically developed. When used most efficiently along routes where containment units or collection bins are all nearly full, one truck following one route will pick up from between two to forty restaurants.

Collection tracking varies widely throughout the industry. Nearly all collectors will:

- a. Record the time and location of each stop,
- b. Estimate by sight, sensor, or measure using a yardstick how full a collection bin is before emptying it, and
- c. Record the volume of material removed from the containment unit or collection bin based on that estimate.

For collectors with more staff or a sales strategy that entices customers either with rebates or service discounts, many collectors will:

- a. Use a phone or tablet-based software where drivers can record their estimate of the UCO volume collected at each stop,
- b. Collect pictures of the services they perform for compliance or other risk reduction purpose, and
- c. Use the software systems to generate compliance documentation or calculate rebate payments to users.

Regardless of whether a collector uses phone or tablet-based software to record operations, or instead relies on each driver to document their collections using pencil and paper, most collection vehicles are Department of Transportation regulated such that many larger collectors will:

- a. Verify where product was picked up based upon the GPS systems installed in most large collections vehicles,
- b. Weigh collection vehicles on certified scales both before and at the end of their collection route in order to determine how much UCO was collected, and
- c. Sample each tanker of UCO that arrives to the facility from any third-party.

IV. The Site Economics of UCO Collection

The UCO collection industry had fully transformed by the mid-2010s from one where restaurants paid to have their UCO removed to one where restaurateurs expect to be compensated by the collectors for the UCO they collect. Restaurant remuneration typically comes in two basic forms:

• Service Discounts. Each restaurant needs trap cleaning, line jetting, or power washing to occur regularly. Like any other labor-intensive service, restauranteurs must pay FOG management companies to perform these services. To secure a contract for picking up a restaurant's UCO, many FOG management companies offer discounts on the services they perform in exchange for an exclusive, multi-year right to pick up the restaurant's UCO.

- UCO Rebates. Market conditions are often suitable enough that a collector will be able to collect, transport, and sell its product for more than the break-even cost of \$0.30 per usable pound. Many collectors will entice restauranteurs to enter into collection contracts by offering "rebates" essentially profit sharing on the future sale of the material collected at that restaurant. Since the finished UCO market is highly variable and not every pound of material collected behind a restaurant becomes sellable, finished UCO, there are a wide range of strategies for calculating and offering UCO collection rebates. As example:
 - Since many collectors consistently observe that what is collected from a restaurant rarely yields more than 70% usable oil, some service contracts pay cash at the time of collection based upon the daily price per finished UCO multiplied by this 70% yield factor.
 - Collectors who weigh collection trucks before and after their routes can proportionally estimate the actual pounds per stop for every restaurant along that route. Some of these collectors will use these weights, multiply the weight by their demonstrated yield factor, and send checks each month based on the estimated amount of finished product yielded from each restaurant.
 - Collectors who weigh collection trucks, track UCO blending throughout the cleaning process, and regularly record tank levels within their processing facilities can often develop route-by-route estimates of weight collected and route specific yield. In these rare cases, some collections contracts are nearly tolling relationships where a restaurant received a direct cut of finished UCO profits.

With average yield factors of around 70% and production volumes that average between 60 gallons to 80 gallons per month, the average restaurant will see between \$25 to \$100 per month in either rebates or service discounts. The type of discount or rebate offered will often depend as heavily on the technology and compliance strategy used by each collector as it will the market conditions impacting the industry at the time of contract signing.

V. Operational Contracts and Compliance

Between the restauranteur and the end customer who will use UCO to produce products like renewable fuel, there are a number of relationships that exhibit important features.

First, finished UCO is bought and sold in pounds. Whether selling directly to a producer or an aggregator, any sales contract between a collector and its customer determines a price per pound and a requirement for evidence of the number of pounds delivered. The number of pounds delivered to a renewable fuel producer is typically calculated by having the truck which will be loaded with the product being sold get weighed before it is loaded and again after it has been loaded to establish origin weight. The difference between these tare and gross weights is accepted as the weight of the product delivered. It is often confirmed by the renewable fuel producer at destination using more scales or with an offloading meter.

The level of documentation generated or managed by a collector prior to this final sales agreement depends heavily on the technologies used by the collector and the level of vertical integration within the collection operation. Below is a figure highlighting where many contractual

or compliance validation points may exist in a fully distributed collection or aggregation operation.



Example of the various contractual and compliance obligations that could exist between various operators or suppliers within a UCO collection operation.

When a collector is vertically integrated (i.e. wholly controls everything from collection to cleaning to finished product sales), many of the internal processing uncertainties may not be fully documented. For example, some collectors may not weigh their collection trucks before and after each route, but instead track UCO volumes throughout the cleaning process. Auditing this approach will often rely more heavily upon standard conversion factors or rules of thumb when analyzing operations, yet produces defensible sales contracts so long as the final product is quality tested and accurately weighed.

When a collector operates in a distributed manner *(i.e.,* independent contractors run their own routes, independent collectors are compensated based on their weight they deliver to the facility, and the facility aggregates product from many independent sources), each transfer of UCO ownership must be appropriately documented. In these cases, receipts showing the estimated number of gallons picked up at each restaurant are generated and sent to each restauranteur, weight tickets that show the weight of the product dumped at the facility are used as the basis for paying each contract collector, and metrics like the pounds delivered per gallons estimated are used to evaluate contractor quantity. In these cases, where internal operations are far more complex than a vertically integrated "mom and pop" collection operation, more complete compliance documentation is more readily accessible.

No matter the level of collector complexity or aggregator involvement, restaurant level data for every truck or railcar that leaves a processing facility is unavoidably uncertain. While specifically addressed in the next section, this uncertainty is unavoidable because:

- Each truck shipping to a renewable fuel producer will be made up UCO collected from no less than 20 restaurants,
- Each railcar shipping to a renewable fuel producer will be made up of UCO collected from no less than 100 restaurants, and
- For UCO aggregation facilities that operate in some manner of continual flow, most will be complex weighted blends of UCO from hundreds if not thousands of restaurants at any point in time.

VI. Summary of General Industry Complexities

1. Collectors estimate UCO volumes they pick up

UCO is a difficult fluid to work with in a highly variable industry. There are no known tools that can automate the measurement of UCO levels in the collection bins outside most restaurants even when UCO is in a fluid state. In cold weather, UCO solidifies making flow meters or many types of floats unusable or inaccurate. Even when using internal collection tanks that are protected from the elements, integrated level sensors still require significant maintenance to ensure accurate operation, and there are currently no standardized calibration or certification requirements to ensure sensor accuracy. No matter the collection method, there is significant measurement uncertainty that is fundamentally unavoidable.

As detailed above, the UCO collection and refining processes vary widely among service providers. In discussions with many leading collectors and aggregators, processes, documentation, and rebate practices vary widely. From above, for example, some UCO collectors will charge for a service irrespective of the amount of UCO collected, while others may issue receipts upon pick up or pay rebates after the volume collected is estimated at the aggregator or processing facility.

Moreover, many aggregators depend on UCO collection trucks that can on average pickup UCO from twenty restaurants per route. At each location, the volume and contents of each bin are not perfectly known and may vary significantly. For example, a self-contained collection unit may have far less trash or water than an outside bin, yet the contents of both the inside tank and the outside bin are still estimated using volumetric approximations. In the case of a bin, these estimates are based on the driver's visual inspection, which may include tools like a yardstick or graduated bin markings to measure the height of a bin's unused volume. In the case of an inside tank, a flowmeter may be present on the service truck. Yet no matter the means or accuracy of the measurement, no known collector weighs a restaurant bin at the time it is being serviced or takes quality samples at a specific restaurant unless there is a known problem with the product coming out of a specific restaurant. Every collector records an estimated volume of the combined UCO, solid waste, and liquid waste collected from each bin or tank.

When a collector picks up UCO from multiple stops on the same route, these collections are irreversibly blended in the collection truck. Once mixed, it is impossible to tell exactly which gallon came from which stop. Aggregators use the estimated volume from each stop, divided by the total of all volume estimates from all stops, to estimate the percentage of the total product picked up along the route that came from each stop. The fact that every pickup effectively blends the contents of the truck means the uncertainty for any estimate of what is picked up from any specific location is directly dependent upon the number of pickups that occur during that specific route.

Some UCO collection trucks are weighed before their first pickup and again after their routes are finished. These light and heavy weights are used to calculate the total weight of the collected product that was picked up along the route. This weight, which includes all UCO, solid waste, and liquid waste picked up at the stops visited along that route, is measured using certified weigh scale, and is used as the basis to calculate the weight collected per stop by allocating fractions of that total route weight proportionally to the volumetric estimates recorded by the route driver. This proportional allocation of the route weight based on the driver's volumetric estimates produces an unavoidable source of uncertainty that is dependent on driver consistency, route length, and collected oil quality variability.

2. Some renewable fuel producers purchase volumes of finished UCO

It is common industry practice for large UCO collectors and aggregators to process multiple trucks worth of collected UCO in a single batch. This process separates the solid waste and water from the collected UCO using heating, settling, filtering, and sometimes drying, yielding finished UCO that can be sold to a renewable fuel producer. If a collector pays rebates, it is the market value of this finished UCO that defines how much is paid per stop, not the volume of waste material collected. The amount paid per stop is typically based upon the demonstrated yield per batch, multiplied by the estimated pounds collected per stop, calculated as a function of the observed volume recorded by each driver. The typical yield of cleaned and dried UCO can often be approximated as 70 wt% of the raw UCO collected by the uncertainty associated in any estimate for the weight and quality of the material picked up from any single bin. Documentation of estimated volume collected at each stop is considered supplemental information, rather than the key supporting metric of truck route weight by certified weigh scales.

3. Many UCO collectors sell to aggregators and, therefore, have no contractual relationship with renewable fuel producer

As written, the recordkeeping requirement set forth in 40 CFR § 80.1454(j) assumes that UCO collectors contract directly with renewable fuel producers. As explained above, many UCO collectors sell their material to aggregators. Those aggregators are responsible for processing the UCO into a finished form that is then sold to the renewable fuel producers. Consequently, there is often no contractual relationship between UCO collectors and renewable fuel producers.

4. Documentation levels vary across the industry and the volume of potentially relevant information is immense

Documentation levels will vary between UCO collectors and aggregators. For example, the volume collected could be documented in multiples ways, including:

- Many UCO collectors will produce a service contract to the aggregator proving the collector owns the UCO it is picking up;
- Some, but not all, restaurants, will receive a collection receipt with the pickup location and contact;
- Disposal records may document the weight of all product collected on a route when it is delivered to an aggregation facility;
- Aggregator tank level and status checks could document the volume of collected UCO that is refined into a finished product;
- Purchase and sale agreements could indicate all finished UCO product that is bought or sold; and
- BOLs and scale tickets could be generated and archived to facilitate shipping of the refined product; however, this documentation is already available to the renewable fuel producers when sold by the aggregators.

Some or all of these documents could form the basis of the package that would be associated with every load of finished product that would need to be sent to the renewable fuel producer.

The number of these additional documents a renewable fuel producer would be required to review could total in the millions and, in the end, these documents do not offer enough holistic visibility to validate the authenticity of any data that would be provided by a single UCO collector or aggregator.

5. The UCO collectors' customer list is confidential business information that cannot be provided to renewable fuel producers that may compete with our industry. Many UCO collectors and aggregators are unwilling to turn over the required documents to renewable fuel producers. First, many renewable fuel producers are also competitors to these collectors and aggregators. Providing lists of our restaurant locations poses significant commercial harm by exposing sensitive customer details to our competitors. In addition, if a renewable fuel producer knows the total amount of waste, fats, and greases amassed by a collector, then the renewable fuel producer would be able to determine its percentage of offtake from the UCO collector, giving the fuel producer negotiating leverage over the UCO collector.

Short-term Solutions. Discussions with UCO collectors and aggregators indicate that standard operator practice leads to the generation of document packages that are sufficient for identifying:

- 1. The time, date, location, and source of any UCO pickup event or receipt of any bulk UCO delivery, and
- 2. An auditable estimate for the pounds of finished product originating from each pickup location to within observably consistent certainty bounds.

Redacted versions of this compliance documentation for a single operator, when observed within the context of all data generated by the UCO collector and aggregator industry as a whole, is sufficient for spotting the kind of fraud or ingredient uncertainty that 80.1454(d) and 80.1454(j) are intended to prevent. Redacted information could be GPS coordinates or other identifying information for the restaurants and pricing. The UCO collector and aggregator industry is in agreement that a centralized repository where this kind of analysis can be done would be useful and valuable. The challenges are in who controls the data in this repository, what is immediately visible versus reasonably auditable, and how long access to sensitive data must be retained. Recent brainstorming sessions have concluded that the UCO collector and aggregator industry would be in favor of:

- Creating third-parties that are independent of the EPA and funded by renewable fuel producers to create, implement, and oversee data governance strategies used by these third-parties to validate that the compliance documents submitted to a third-party by a UCO collector or aggregator indicate adherence to the intent of 80.1454(d) and 80.1454(j) without threatening the confidentiality or commercial value of any data submitted to an individual third-party,
- Allowing third-party entities to create, refine, and maintain aggregated, anonymized evaluative tools for identifying when to perform a targeted audit of documents submitted by a UCO collector or aggregator to ensure compliance with 80.1454(d) and 80.1454(j), and
- 3. Allowing third-parties to manage a publicly verifiable, immutable record that can prove the digital originality of any compliance document held by a UCO collector or aggregator

so the third-party can minimize the time it must maintain sensitive documents while allowing each UCO collector or aggregator to control the protections is accepts for its sensitive data.

We believe these tasks can be significantly completed in less than 30 days, so seek relief from the requirements of 80.1454(d) and 80.1454(j) until these short-term measures can be implemented. While we believe that establishing third parties may be completed in 30 days, we request additional time for the UCO supplier industry to incorporate these changes. We believe another 90 days is workable.

Long-term Objectives. It is highly likely that a future rulemaking intent on updating 80.1454(d) and 80.1454(j) to take advantage of modern data management best practices could be of value. In preparation for such a rulemaking effort, we recommend a collaborative effort to explore how the industry should approach items including, but not limited to, the following:

- 1. Interoperability of compliance technologies, so the cost and innovation burden are neither shouldered by the EPA nor restricted to an entrenched private sector solution,
- Data governance and pseudonymization standards, so compliance does not inadvertently require the kinds of contextual data breaches that would lead to commercial harm,
- 3. Predictive certainty standards, so the precision of any tool used to evaluate compliance does not exceed economically accessible industry capabilities,
- Option for UCO aggregators and collectors to opt-in to the recordkeeping requirements on behalf of their renewable fuel off-takers, similar to the California Low Carbon Fuel Standard Joint Applicant procedure.

These long-term objectives could empower access to risk-based auditing strategies that would efficiently deliver the kind of meaningful industry insight at a greatly reduced cost which would spur innovation and stamp out fraudulent actions and actors.

We are hopeful that this clarification of current practice is useful, excited to further define short term solutions that allow an invaluable industry segment to continue contributing towards an energy independent, net-zero emission future for our Nation, and eager to participate in collaboratively reaching our shared goals of a more transparent renewable energy sector.

Appendix 4



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February 10, 2023

Via Electronic Filing (<u>www.regulations.gov</u>)

The Honorable Michael S. Regan Administrator U.S. Environmental Protection Agency EPA Docket Center Air Docket Mail Code 28221T 1200 Pennsylvania Avenue, NW Washington, DC 20460 ATTN: Docket ID No. EPA-HQ-OAR-2021-0427

Re: Renewable Fuel Standard (RFS) Program: Standards for 2023-2025 and Other Changes, 87 Fed. Reg. 80,582 (Dec. 30, 2022)

Dear Administrator Regan:

Thank you for the opportunity to comment on the U.S. Environmental Protection Agency's (EPA) proposed rule entitled "Renewable Fuel Standard (RFS) Program: Standards for 2023-2025 and Other Changes," published at 87 Fed. Reg. 80,582. In establishing the RFS program, Congress sought to promote advanced biofuels in the transportation fuel market, which were to increasingly contribute to the program. As part of the 2007 amendments, Congress provided for the ability of heating oil to generate Renewable Identification Numbers (RINs) as "additional renewable fuel" and, therefore, to also contribute toward meeting the RFS volume requirements. 42 U.S.C. § 7545(0)(1)(A). (5)(E). Heating oil currently can and does contribute to the advanced biofuel volume requirements, including biomass-based diesel and cellulosic biofuels, as applicable. We are concerned that EPA's proposed volumes for 2023, 2024 and 2025 do not accurately reflect the volume of advanced biofuel production that can be achieved and urge EPA to increase these volume requirements. In addition, we are very concerned with an unexplained change to 40 C.F.R. § 80.1429(b)(6) that was buried in the proposed regulatory language (87 Fed. Reg. at 80,747) that will severely impact the ability of the heating oil industry to participate in the RFS program. This unexplained change is coupled with other proposed changes that could further restrict supply to this market. In light of the clear incentives Congress included in the RFS program to increase advanced biofuel production and use in this country, we urge EPA to reject this change. While we believe this change is unwarranted, we note that EPA cannot make the change in the final rule without violating the Clean Air Act until, at a minimum, it provides for proper notice and opportunity for public comment.

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Comments of National Energy & Fuels Institute EPA Docket No. EPA-HQ-OAR-2021-0427 Submitted February 10, 2023 Page 2 of 12

I. About us

The National Energy & Fuels Institute (NEFI) has represented the liquid heating fuels industry and related services companies since 1942.¹ NEFI members include hundreds of independent Oilheat, propane, biofuel and motor fuel dealers and associated companies. Our industry delivers a safe, dependable, and efficient heating fuel to six million homes and businesses across the country. Of the five billion gallons of heating oil used on average in the United States each winter, 85-percent is utilized by homes and businesses in the Northeast from Maryland to Maine.² Many of our retail members, often referred to as "heating fuel dealers," provide both fuel delivery and heating, cooling, ventilation, and air conditioning (HVAC) services. These "full service" companies commonly sell, install, and service residential and commercial HVAC systems, including liquid fuel (i.e., oil- and biofuel-fired) furnaces, boilers, and water heaters.

The comments included in this letter are endorsed by the Advanced Biofuels Association (ABFA) and numerous state and local associations representing wholesale and retail heating fuel distributors. A complete list is provided at the end of this letter.

II. Transition to Renewable Liquid Heating Fuels

NEFI members are actively working to replace conventional home heating oil with renewable fuels to reduce greenhouse gas (GHG) emissions, support local economies, and contribute to American energy and environmental security. Advanced biofuels under the RFS program, which require at least a 50% reduction in lifecycle GHG emissions compared to petroleum fuels, are key to these efforts.

Many NEFI members now blend biodiesel into their fuel. Renewable diesel is also suitable for use in space heating applications, and next-generation cellulosic heating fuels are currently in development. Biodiesel, renewable diesel, and other advanced biofuels provide our mostly small family businesses with the opportunity to help achieve local, state, and federal climate goals while enhancing their competitiveness and preserving a future for themselves in the new energy economy. In addition, several Northeast states now require by law or regulation the use of blends of biofuel, including biodiesel and renewable diesel, in home heating oil. For example, the blending requirements in Connecticut, New York, and Rhode Island are to increase to as much as 50% by 2030.³

¹ NEFI changed its name and became a national association on July 1, 2020.

² This is based on data from the U.S. Census Bureau, American Community Survey (ACS), Fuel Oil Use by Occupied Housing Units, Five-Year Avg. (2013-2017). Percent (%) of homes is calculated as a percentage of total state occupied housing units.

³ See 296 CGS §16a-21b; NYCL ENV §19-0327; 23 RIGL §23-23.7.

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Renewable liquid heating fuels offer Northeast states an immediate "plug and play" solution to reducing GHG emissions in residential and commercial buildings. These fuels utilize existing and well-regulated storage and distribution infrastructure and, with minor and very low-cost modifications, work seamlessly in existing appliances to deliver immediate reductions in GHG emissions—all at little to no additional cost to the consumer.⁴

In other words, heating oil customers can help fight climate change without costly conversions of their entire home heating systems to other fuels or energy sources. The RFS program is vital to the heating oil industry's transition to a low carbon future. Moreover, it provides a substantial, alternative market for renewable fuels to meet this country's energy independence goals.

III. Comments on EPA's RFS Proposal.

A. EPA Must Increase the Volume Requirements to Ensure Incentives for Biodiesel and Renewable Diesel under the Advanced Biofuel Program, including Biomass-based Diesel.

Ensuring access to advanced biofuels is vital to the heating oil's efforts toward decarbonization. The RFS program largely establishes the market for advanced biofuels, particularly the biomass-based diesel fuels upon which heating oil suppliers and distributors currently rely for those efforts. Since the heating oil industry largely uses the same fuels that are used in the transportation fuel market (e.g., biodiesel) and the RINs generated are important economics for these biofuel producers, the operation of the RFS program and the growth of the volume requirements have significant implications for the availability of supply for heating oil. We are disappointed that EPA is only proposing 100 million ethanol-equivalent gallon increases for non-cellulosic advanced biofuels for 2023, 2024, and 2025.⁵ From the perspective of the heating oil industry, this is essentially no growth at all.

EPA indicates that, under its proposal, it expects the growth in non-cellulosic advanced biofuels each year to come from renewable diesel, as it anticipates decreases in

⁴ National Oilheat Research Alliance, *Developing a Renewable Biofuel Option for the Home Heating Sector: A Report to Congress, State Governments and Administrator of the Environmental Protection Agency*, at 18 (2015), *available at* <u>https://noraweb.org/wp-content/uploads/2015/10/Developing-a-Renewable-Biofuel-Option-May-2015-R2.pdf</u>.

⁵ Although EPA does not propose volume requirements for 2026, it provides possible volumes based on this same minimal increase for non-cellulosic advanced biofuels. As such, we believe EPA should hold off on finalizing volumes for 2026.

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biodiesel. 87 Fed. Reg. at 80,598. This means the annual increase under the RFS would only be about 60 million actual gallons of renewable diesel (while biodiesel supply contracts).⁶ Renewable diesel can be used for heating oil applications, but "[n]early all domestically produced and imported renewable diesel is used in California due to economic benefits under the Low Carbon Fuel Standard."7 Most of the heating oil market is in the Northeast, as shown in the following chart from the U.S. Energy Information Administration (EIA) below.⁸ Despite EPA's forecasts and increased demand for biomass-based diesel on the West Coast, the Northeast will continue to see growth in biodiesel demand as state laws increase blending requirements above 20-percent in Connecticut, New York, and Rhode Island and as other states in the region enact blending requirements or incentive programs.



Sales of residential heating oil by census region, 2020

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Data source: U.S. Energy Information Administration, Fuel Oil and Kerosene Sales, Adjusted Sales of Distillate eia⁹ Fuel Oil by End Use, February 2022

⁶ Most renewable diesel gallons under the RFS program have a 1.7 equivalence value, meaning fewer actual gallons will be needed to meet the advanced biofuel and biomass-based diesel requirements. Even though EPA is also proposing to adjust the conversion factor for determining compliance with the biomass-based diesel volumes, the proposed conversion factor is only 1.57 compared to the renewable diesel value of 1.7. ⁷ U.S. Department of Energy Alternative Fuels Data Center, *Renewable Diesel*,

https://afdc.energy.gov/fuels/renewable_diesel.html#:~:text=Renewable%20diesel%20can%20be%20used %20as%20a%20replacement,diesel%20and%20biodiesel%20are%20not%20the%20same%20fuel (last visited Feb. 3, 2023); see also EPA, Draft Regulatory Impact Analysis: RFS Standards for 2023-2025 and Other Changes, at 387 (2022).

⁸ EIA, *Heating Oil Explained: Use of Heating Oil*, <u>https://www.eia.gov/energyexplained/heating-oil/use-of-</u> heating-oil.php (last updated Feb. 23, 2022).

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We believe there needs to be robust volumes to ensure continued growth to serve all markets eligible to participate under the RFS program. As state laws to mandate or incentivize biofuel use in heating oil are implemented, it is especially important to ensure a continued *and growing* supply of advanced biofuels for heating oil uses throughout the country.

B. The heating oil industry strongly opposes EPA's unexplained proposed change to 40 C.F.R. § 80.1429(b)(6).

The biodiesel and heating oil industries have been operating under the same rules in the RFS for over 15 years.⁹ Because demand for heating oil depends on the weather, the heating oil industry, in particular, has had to invest in infrastructure and innovative and flexible distribution methods and business models to ensure compliance with these regulations and obtain the value of the incentives Congress provided. One key part of the RFS is how RINs can be separated and, for heating oil that is not an obligated fuel, how to obtain the value of those RINs to recoup investments being made. This value is an important consideration for biodiesel and heating oil suppliers and distributors as they determine: what markets to target; how to comply with state blending requirements; and whether to participate in efforts to decarbonize in the first instance. How these rules are structured will have significant implications on supply and on the availability of RINs to support the heating oil industry and to further the goals of the RFS program, as well as Northeast states' decarbonization efforts. Out of the blue, however, EPA is proposing to change those rules, appearing to limit blends of biodiesel to B20 or lower. EPA's unsupported and unexplained proposal violates the law, is not good governance, and is arbitrary.

Generally, RINs may be separated upon blending under 40 C.F.R. § 80.1429(b)(2). Because biodiesel can be blended with a minimal amount of diesel fuel for purposes of the blenders tax credit (e.g., B99) and further blending often occurred downstream for purposes of transportation fuel use, EPA required that the RIN separation for biodiesel occur at blend levels of **B80** or less.¹⁰ See 40 C.F.R. § 80.1429(b)(6). Since biodiesel producers are restricted in RIN separation¹¹ and the heating oil market typically does not involve obligated parties, the blending provision for RIN separation is an important avenue

⁹ In 2007, EPA promulgated the RFS1 Rules, which included a similar provision under 40 C.F.R. § 80.1129(b)(5). 72 Fed. Reg. 23,900, 23,998 (May 1, 2007). The RFS2 regulations continued to apply this rule starting in 2010. 75 Fed. Reg. 14,670, 14,879 (Mar. 26, 2010); 40 C.F.R. § 80.1429(b)(6). ¹⁰ EPA, *Regulation of Fuels and Fuel Additives: Renewable Fuel Standard Program – Summary and Analysis of*

Comments, at 5-30 to 5-31 (2007) (referred to as "RFS1 RTC").

¹¹ In certain cases, biodiesel producers are allowed to separate RINs if the biodiesel or biodiesel blend is used in that form without further blending. 40 C.F.R. § 80.1429(b)(4). However, EPA is also proposing, without explanation, to remove this allowance. 87 Fed. Reg. at 80,747 (proposed 40 C.F.R. § 80.1429(b)(4)(iii)).

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for the heating oil market to obtain the value of the RIN, which is intended to promote production but also to support investments in infrastructure for the distribution and use of renewable fuels. EPA imposed no such limitation on blending for purposes of separating RINs to any other biofuel, but it, nonetheless, currently allows suppliers to blend high levels of biodiesel for sale into the heating oil market. Without explanation, EPA is proposing to change this provision to provide that "RINs assigned to a volume of biodiesel can only be separated from that volume pursuant to paragraph (b)(2) of this section if such biodiesel is blended into diesel fuel at a *concentration of 20 volume percent biodiesel or less*." 87 Fed. Reg. at 80,747 (proposed 40 C.F.R. §80.1429(b)(6)) (emphasis added). Nowhere in the preamble to the proposed rule does the EPA offer a reason for this change. Nor is there one. EPA must not finalize this provision in the final rule.

What makes EPA's unexplained regulatory change more troubling is that EPA has coupled it with other proposed changes that will further impact the biodiesel market and how it operates today. In particular, we are concerned with the removal of the ability to sell "RINless" biodiesel by proposing to revise the limitations on the number of RINs that can be assigned and separated per gallon. This has been important to help expand the market and increase the use of biodiesel, as Congress sought. EPA has failed to provide a reasoned explanation for this change. Importantly, coupled with other unexplained changes, EPA has failed to consider an important aspect of the problem, and, as such, its proposal is arbitrary.

1. EPA's proposal violates notice and comment requirements.

First, EPA's proposal violates the notice and comment requirements of the Clean Air Act. A notice of proposed rulemaking requires "a statement of its basis and purpose." 42 U.S.C. § 7607(d)(3). Under the Clean Air Act, this must include (1) the factual data on which the proposed rule is based, (2) the methodology used in obtaining the data and in analyzing the data, and (3) the major legal interpretations and policy considerations underlying the proposed rule. *Id.* The purpose is to "give interested persons an opportunity to participate in the rule making through submission of written data, views, or arguments." 5 U.S.C. § 553(c), *quoted in Owner-Operator Indep. Drivers Ass'n v. Fed. Motor Carrier Safety Admin.*, 494 F.3d 188, 199 (D.C. Cir. 2007). While EPA provided the proposed regulatory language, EPA failed to provide the information necessary for the public to meaningfully comment, in violation of the notice and comment requirements.

It is without question that EPA has an obligation to do more than simply provide proposed regulatory language to make the change it proposes here. "These requirements, which serve important purposes of agency accountability and reasoned decisionmaking, impose a significant duty on the agency. Notice of a proposed rule must include sufficient detail on its content and basis in law and evidence to allow for meaningful and informed comment." *Am. Med. Ass'n v. Reno*, 57 F.3d 1129, 1132-33 (D.C. Cir. 1995) (citations

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omitted). The need to provide an explanation for the agency's position is arguably heightened when EPA is amending a regulation and, by definition, changing a prior (and relied on) position. "An agency may not, for example, depart from a prior policy *sub silentio* or simply disregard rules that are still on the books. … And of course the agency must show that there are good reasons for the new policy." *FCC v. Fox TV Stations, Inc.*, 556 U.S. 502, 515 (2009) (citation omitted). It is impossible for the public to be able to comment on a change in policy when the agency fails to explain its asserted "good reasons" for it.

The importance of following proper notice and comment procedures cannot be understated. Notice and comment rulemaking is a central tenet of administrative law and necessary to ensure good governance. "If the notice of proposed rule-making fails to provide an accurate picture of the reasoning that has led the agency to the proposed rule, interested parties will not be able to comment meaningfully upon the agency's proposals. As a result, the agency may operate with a one-sided or mistaken picture of the issues at stake in a rule-making." Conn. Light & Power Co. v. Nuclear Regulatory Com., 673 F.2d 525, 530 (D.C. Cir. 1982). The only discussion in the preamble we could find on RIN separation provisions for blending activities that might apply to biodiesel (40 C.F.R. § 80.1429(b)(2)) relates to the limits on the number of RINs that could be separated per gallon of liquid fuel (up to 2.5 RINs), which we also oppose.¹² 87 Fed. Reg. at 80,707. That discussion, however, makes no mention of biodiesel or, more importantly, of biodiesel blend levels. Because EPA did not provide the basis for this change, the public simply cannot provide the information that might be needed to refute EPA's rationale or to meaningfully comment on the proposed change to 40 C.F.R. § 80.1429(b)(6). As such, finalizing such a proposal would violate the notice and comment requirements of the Clean Air Act.

2. The proposed limitation on RIN assignment and separation does not comply with EPA's notice and comment obligations and is arbitrary.

We acknowledge that EPA has proposed to limit the assignment to and separation of RINs for a gallon of renewable fuel. 87 Fed. Reg. at 80,707. This proposal would change the current regulations that allow RINs to be assigned and separated up to 2.5 RINs to be limited to the equivalence value of the renewable fuel. *Id.* This change, however, is unrelated to the amount of fuel that could be blended and, thus, could not support EPA's proposed change to limit RIN separation for blenders of biodiesel. Moreover, we do not support this change.

If EPA somehow believes the discussion on limitations on RIN separations noted above applies to the proposed limits on RIN separation for biodiesel blending, EPA

¹² There are provisions related to separation of RINs for renewable electricity and renewable natural gas (RNG) that are unrelated to biodiesel blending.

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provided no facts or explanation necessary to support its claims. EPA discusses the socalled practice of "RIN-flashing" that EPA is claiming to address. EPA's explanation of "RINflashing," however, is confusing and fails to explain clearly and adequately why even the elimination of allowing to separate up to 2.5 RINs per gallon, which is the only proposed regulatory change actually discussed in the preamble, is needed. EPA's only concern appears to be ensuring transparency as to the origin of the RIN, even though EPA's regulations require that the facility producing the biofuel for which that RIN was generated be identified. Even if that might be a valid reason, which it is not, there is nothing to indicate that restricting blends of biodiesel to B20 or less addresses this issue versus, for example, revising the EMTS to better track these RINs or revising the product transfer documents to better identify the RINs. Moreover, the actions referenced are apparently acts between renewable fuel producers and obligated parties, not blenders. Obligated parties can separate RINs upon ownership and remain excluded from this limitation. Biodiesel producers typically only blend to B99 for purposes of the tax credit. There would seem to be no connection to the RIN separation provisions for blenders of biodiesel to EPA's claimed concern regarding "RIN-flashing." EPA cannot wait until the final rule to explain this connection. Moreover, blenders are the entities that are most likely to be adversely impacted by this change, which EPA does not appear to consider.

In addition, this explanation is insufficient to even support EPA's proposal to limit the number of RINs that could be assigned and separated per gallon of renewable fuel.¹³ There are markets for "RINless" biodiesel for designated uses and allowing RIN separation (and assignment) up to 2.5 RINs per gallon allows a biodiesel producer to serve all markets while contributing to meeting the volume requirements under the RFS program.

While we are not aware of the practice of RIN flashing between renewable fuel producers and obligated parties, renewable fuel producers may sell neat renewable fuel with 2.5 K1 RINs/gallon to non-obligated parties. Those non-obligated parties then blend the renewable fuel into a finished fuel such as B20 and then transfer back the 2.5 K2 RINs/gallon to the renewable fuel producer. This practice is beneficial to both parties. The renewable fuel producer can sell more fuel often at higher renewable fuel blend rates while the non-obligated party can offload their RIN risk to the renewable fuel producer. Renewable fuel producers often then sell their K2 RINs directly to obligated parties which

¹³ The only other rationale provided to remove the ability to assign and separate RINs up to 2.5 RINs per gallon is to make the RIN separation limits for liquid biofuels based on equivalence value to be the same as EPA is proposing for RNG—i.e., gaseous fuels. This is similarly an inadequate basis for this change. EPA has different rules for RNG throughout the RFS regulations, and separating RINs beyond those generated based on equivalence values for RNG makes little sense under those requirements or EPA's proposed changes to those requirements. The markets have developed differently based on long-standing rules, and there is no rational basis to change them in light of changes deemed necessary for an entirely different market.

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provides a direct link from the RIN being generated to the RIN being retired. This allows the RIN generator and the obligated party to be connected on the K2 RIN sale and provides EPA with a mechanism to address concerns about the ability of parties to ascertain the origin and validity of fuels and RINs.

The ability to sell "RINless" biodiesel is particularly important for the heating oil industry that involves numerous small businesses. Reducing the RIN separation limit on biodiesel to 1.5 K1 RIN per gallon, or the equivalence value of biodiesel, could impose significant RFS compliance costs on heating oil suppliers in order to supply the market. While EPA may claim that it is allowing such entities to "opt-out" of the RFS program through other proposed changes to 40 C.F.R. § 80.1426, we believe this misunderstands how supply in the fuels market works for diesel fuel, biodiesel, and heating oil. This option has also been an important way to ensure biodiesel can be marketed for heating oil, and its removal would have implications for the ability of the heating oil industry to participate in the RFS program. This would seem to be unexplored by EPA, rendering its proposal arbitrary.

As such, we also encourage EPA to maintain the current RIN separation and distribution limits to 2.5 K1 RINs per gallon for biodiesel instead of the proposed limitation to the equivalence value. Heating oil blended with biodiesel—referred to as Bioheat—often depends on the availability of RINless biodiesel, as bioheat suppliers do not have the resources to comply with the RFS as a registered RIN generator, including managing RIN sales and performing periodic audits as required by the RFS along with the resources of participating in the RIN market. Changing the existing distribution limit to the equivalence value of the fuel would be a major administrative burden for bioheat suppliers and could disrupt access to bioheat.

3. EPA's proposed change to restrict RIN separation for biodiesel blends above 20% is arbitrary.

Even if EPA could find an explanation for the proposed change, we do not believe it would be reasoned. "Normally, an agency rule would be arbitrary and capricious if the agency has relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise." *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983); *see also API v. EPA*, 684 F.3d 1342, 1347-48 (D.C. Cir. 2012). We believe EPA's proposal is arbitrary based on each of these grounds.

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Here EPA provided no explanation for the proposed change, and we are not aware of any relevant factor it could have considered or any plausible explanation to support a change now more than 15 years after EPA first established the rules on RIN separation under the RFS. As noted above, the heating oil industry is using advanced biofuels, including biodiesel, to move toward decarbonization. To meet those goals, heating oil can tolerate high blends of biodiesel with nominal changes to the existing furnace or boiler. Heating oil blended with biodiesel at higher levels than 20-percent report optimal system performance. Based on the current rules, the industry has taken numerous actions, including moving toward as much as B100 for use as heating oil through work with ASTM and UL. Just this year, the R.W. Beckett Corp. announced that beginning February 1, it will produce the first production run of burners with B100 compliant components with their full warranty.¹⁴ Further, there are no federal regulatory limits on the amount of biodiesel than can be blended into heating oil (or even transportation fuel).

While, at best, B20 is the most common blend of biodiesel sold in the transportation fuel market, the RFS is supposed to be promoting increased biofuel use. Indeed, EPA has stated: "We believe that biodiesel blended with diesel fuel *at any concentration*, including biodiesel in its neat form, should be available for compliance purposes under the RFS program."¹⁵ Moreover, this Administration, through the U.S. Department of Agriculture (USDA) is providing grants to support increased production and use of higher blends of biodiesel through the Higher Blends Infrastructure Incentive Program.¹⁶ EPA's proposed change is inconsistent with these efforts and could undermine them.

As explained above, EPA's only discussion of RIN separation that even may relate to biodiesel does not address this issue at all. If there was an issue with RIN separation for biodiesel, EPA should be able to provide the public with data and an analysis of the need and impact of these changes. But EPA did not do so.¹⁷ Importantly, EPA did not explain how or why this change promotes the goals of Congress.¹⁸

¹⁴ ICM, *B100 Burner from Beckett*, Indoor Comfort Marketing, Jan. 24, 2023, https://www.indoorcomfortmarketing.com/b100-burner-from-beckett/.

¹⁵ RFS1 RTC at 5-30 (emphasis added). The concern raised by EPA when it set the B80 or less requirement for RIN separation upon blending was ensuring access of RINs for obligated parties. Biodiesel blended for heating oil is an "additional renewable fuel" that increases the availability of RINs.

¹⁶ 87 Fed. Reg. 51,641 (Aug. 23, 2022). This program is not limited to blends up to B20. *See, e.g., id.* at 51,646. The heating oil industry is eligible for the USDA grants. *Id.* at 51,642.

¹⁷ Because of EPA's failure to provide this information, it cannot finalize the proposed change until it undergoes proper notice and comment. *See, supra* Section III.B.2.

¹⁸ It is clear that Congress had blenders of heating oil in mind for the credit program. Congress provided that EPA "may issue regulations providing: (i) for the generation of an appropriate amount of credits *by any*

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Most important, EPA has entirely failed to consider an important aspect of the problem. In particular, EPA ignores the potential impact of this change on the biodiesel market and on the heating oil market. As noted above, these markets have structured their distribution and business models based on the current rules in the RFS program. EPA's proposed change could lead to significant changes in how the entire market operates that will have negative impacts on supply of biodiesel into the heating oil markets.¹⁹

In short, the proposed change to 40 C.F.R. § 80.1429(b)(6) will harm small familyowned heating oil businesses and their ability to offer low carbon alternatives. Because of the RFS, biodiesel blends are lower cost and deliver immediate emissions reductions. This has significant implications for the ability of heating oil providers to comply with state requirements and may lead to them abandoning decarbonization efforts all together. None of this would be good for the industry or its consumers, the economy, the environment, or the country as a whole. Given the demand for low carbon heating fuels, we urge EPA to maintain the current limit and maximize the RFS as a tool to deliver higher blends of biodiesel in the heating sector.

IV. Conclusion

We believe the heating oil market presents an important opportunity to help meet this country's decarbonization goals. Toward those ends, Congress included "heating oil" as "additional renewable fuel" that could be used toward meeting the RFS volume requirements. This is an important incentive to help meet the Northeast region's decarbonization goals and enhance U.S. energy security and independence.

EPA's proposed limited growth in advanced biofuel volumes and the proposed limit on RIN separation for blending biodiesel can significantly impact the supply that may be available for use in the heating oil markets, especially in the Northeast. This will impact heating oil distributors and their customers. Given the importance of federal incentives to

person that refines, *blends*, or imports additional renewable fuels specified by the Administrator; and (ii) for the use of such credits by the generator, or the transfer of all or a portion of the credits to another person, for the purpose of complying with paragraph (2)." 42 U.S.C. § 7545(o)(5)(E) (emphasis added). While Congress gave EPA some discretion in determining the "appropriate amount" of credits (i.e., the number of credits, which EPA has done with respect to the creation of equivalence values), EPA does not provide any explanation how this would apply to potentially restrict the amount of blending or, even if it does, why use of its discretion here is needed, supported, or furthers the goals of the statute.

¹⁹ Currently, EPA also allows for RIN separation for neat biodiesel and biodiesel blends with diesel fuel that are not blended further downstream. 40 C.F.R. § 80.1429(b)(4). While EPA proposes to remove the ability of biodiesel producers to utilize this provision (again without explanation), we do not believe this provision solves the concerns of the industry. Much of the supply comes from blenders who would be restricted to B20 blends to separate the RINs, if higher blends were sought downstream. This would change the economics of the transaction and, in any event, would limit the ability to blend at higher levels.

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the heating oil industry's transition to renewable liquid heating fuels, we urge EPA to increase the volumes for advanced biofuels, particularly for biomass-based diesel, and to *not* finalize its proposed change to 40 C.F.R. § 80.1429(b)(6).

Thank you again for the opportunity to provide these comments. We stand ready to answer any additional questions or provide additional information as needed.

Sincerely,

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Other organizations endorsing these comments:

Advanced Biofuels Association Better Home Heat Council of the Lehigh Valley (Pennsylvania) Delaware Valley Energy Marketers Association (Pennsylvania) Energy Marketers Association of Rhode Island Maine Energy Marketers Association Massachusetts Energy Marketers Association New Hampshire Energy Marketers Association New York State Energy Coalition