

February 4, 2022

Attention: Docket ID No. EPA-HQ-OAR-2021-0324

The Honorable Michael Regan
Administrator
U.S. Environmental Protection Agency
EPA Docket Center
Office of Air and Radiation Docket
Mail Code 28221T
1200 Pennsylvania Ave NW
Washington, DC 20460

Via: www.regulations.gov

Re: Comments on Proposed Rule; *Renewable Fuel Standard (RFS) Program: RFS Annual Rules* (86 Fed. Reg. 72,436; December 21, 2021)

Dear Administrator Regan,

The Renewable Fuels Association (RFA) appreciates the opportunity to submit these comments regarding the U.S. Environmental Protection Agency's (EPA) proposed rule setting the 2021 and 2022 renewable volume obligations (RVOs) under the Clean Air Act's (CAA) Renewable Fuel Standard (RFS) and revising the previously finalized 2020 RVOs. EPA, *Renewable Fuel Standard (RFS) Program: RFS Annual Rules*; Proposed Rule (86 Fed. Reg. 72,436; December 21, 2021).

RFA is the leading trade association for America's ethanol industry. Its mission is to drive expanded demand for American-made renewable fuels and bioproducts worldwide. Founded in 1981, RFA serves as the premier organization for industry leaders and supporters. With over 300 members, we work every day to help America become cleaner, safer, and more economically vibrant.

From its beginning, the RFS has been a tremendously successful energy, carbon reduction, and economic development policy. Moving forward, expanding the use of low-carbon renewable fuels like ethanol is the most immediate and effective strategy for meeting the Administration's carbon reduction goals. Under the RFS program, biofuels use has resulted in the avoidance of nearly 1 billion metric tons of greenhouse gas emissions from the transportation sector. In addition, growth in renewable fuels production has stimulated the farm economy and rural communities, supporting job creation, increased tax revenue, and heightened household incomes.

Overall, we support many of the provisions within EPA's proposal and, on balance, we feel it is a step in the right direction for the RFS program. However, changes to the proposal are needed to get the RFS fully back on track and achieve the intent of the program, which is to reduce GHG emissions, bolster national energy security, and support rural economies through the increased production and use of renewable biofuels.

We are strongly supportive of the proposed volumes for 2022 for all categories of renewable fuel. We specifically commend EPA for proposing to set the implied requirement for conventional renewable fuels at the statutory level of 15 billion gallons and concur that it would stimulate increased demand for lower-carbon ethanol blends like E15 and E85.

Further, we support EPA's proposal to restore 500 million gallons of illegally waived RFS requirements from the 2016 RVO, as ordered by the D.C. Circuit Court in the *Americans for Clean Energy v. EPA* case. We believe EPA's plan to add 250 million gallons as a supplemental requirement in both 2022 and 2023 is reasonable and fair.

And while not the subject of this proposal, we strongly support the related proposed decision to deny all pending small refinery exemption (SRE) petitions based upon the unappealed holdings of the 10th Circuit Court decision in the *RFA v. EPA* case. In addition, we are encouraged that EPA proposes to evaluate future SRE petitions under these same criteria. We also support EPA's proposed provisions related to improved transparency and the disclosure of certain basic SRE petition information.

We are, however, very troubled by EPA's questionable proposed use of its "reset" authority to reopen the 2020 RVO. Doing so would set a dangerous precedent and contradict the agency's long-held position that it does not have the authority to retroactively adjust RFS standards once finalized. Moreover, the action is unwarranted since the RVO includes a self-correcting mechanism that caused actual renewable fuel volume requirements to adjust lower with reduced gasoline and diesel consumption stemming from the effects of COVID-19 (e.g., the 15-billion-gallon conventional renewable fuels requirement automatically adjusted to about 13.2 billion gallons). Therefore, there is no rationale or legal basis for the proposed cuts to the 2020 RVO.

We also have concerns regarding the proposed implied conventional renewable fuel RVO for 2021. Even if EPA's use of its "reset" authority to lower 2020 and 2021 volumes was justified, the agency grossly underestimated actual conventional ethanol consumption, according to the U.S. Energy Information Administration's latest data. EPA's proposed "actual use" estimate of 13.32 billion gallons of conventional renewable fuel is far below the latest EIA estimates. Therefore, in the event EPA decides to move forward with its inappropriate use of the "reset"

authority, we encourage the Agency to update its estimates of "actual consumption" for 2021 based on the newest EIA data and EPA's own RIN generation data.

If EPA's proposed cuts for 2020 and 2021 were finalized, they would have devastating results for our economy and environment. The proposed cuts could potentially erase 2.9 billion gallons of conventional renewable fuel blending requirements, reduce corn demand by 1.05 billion bushels, and increase gasoline consumption by as much as 2 billion gallons. If finalized, the proposed volumes could increase GHG emissions by an estimated 10.3 million metric tons—equivalent to the annual emissions of three coal-fired power plants or 2.1 million passenger cars.

Accordingly, we strongly urge EPA to employ the following actions in its final rule:

- 1. Expeditiously finalize the proposed 2022 volumes and proposed approach to restoring the 500-million-gallon remand;
- 2. Eliminate the proposed revision to the 2020 RVO and require obligated parties to comply with the 2020 standards finalized in 2019;
- 3. Revise 2021 volumes to reflect a more accurate accounting of actual renewable fuel use; and
- 4. Make official the denial of all pending SRE petitions and ensure future petitions are held to the same standards set forth in the unappealed holdings of the 10th Circuit Court decision in *RFA v. EPA*.

These issues and others are discussed more fully in the attached comments. Thank you again for the opportunity to comment on this important matter, and please do not hesitate to contact me at should you have questions.

Sincerely,

Geoff Cooper President & CEO

of Cooper



COMMENTS OF THE

RENEWABLE FUELS ASSOCIATION (RFA)

In Response to

RENEWABLE FUEL STANDARD (RFS) PROGRAM: RFS ANNUAL RULES;

PROPOSED RULE

DOCKET ID No. EPA-HQ-OAR-2021-0324

86 Fed. Reg. 72,436 (December 21, 2021)

The Renewable Fuels Association (RFA) submits these comments in response to the U.S. Environmental Protection Agency's (EPA) proposed rule setting the 2021 and 2022 renewable volume obligations (RVOs) under the Clean Air Act's (CAA) Renewable Fuel Standard (RFS) and revising the previously finalized 2020 RVOs. EPA, *Renewable Fuel Standard (RFS) Program: RFS Annual Rules*; Proposed Rule (86 Fed. Reg. 72,436; December 21, 2021).

I. EPA's proposed use of the "reset" authority to establish the 2021 RVO and retroactively adjust the final 2020 RVO is beyond the Agency's statutory authority, runs contrary to statutory intent, and is inconsistent with past positions and actions taken by the Agency.

EPA is proposing to use its waiver authority under CAA 211(o)(7)(F) ("reset authority") to retroactively reduce the final 2020 RVO and establish 2021 RVO volumes that are lower than the statutory requirements. RFA strongly opposes EPA's proposal to invoke its reset authority to reopen the 2020 volumes because doing so would exceed EPA's authority, run counter to the intent of the waiver authority provided by Congress, and contradict the Agency's past positions and actions.

To start, contrary to EPA's proposed use here, the statutory reset provision is meant to be a *prospective* waiver. The statute's language clearly indicates that the reset should operate prospectively by directing EPA to modify the volumes "for all years *following* the final year" in which the reset provision is triggered and, the statute requires that EPA finalize the reset volumes "no later than 14 months *before* the first year for which" the reset volumes will apply. Congress therefore did not intend for the reset provision to be used retroactively to address market anomalies such as the COVID-19 pandemic.

¹ 42 U.S.C. 7545(o)(7)(F) and 42 U.S.C. 7545(o)(2)(B)(ii) (emphasis added).

In addition, EPA's proposed reopening of the 2020 volumes is inconsistent with the position that EPA has taken repeatedly over the last decade that the annual standards cannot be reopened once they are finalized. In the proposal, EPA correctly recognizes that "retroactively adjusting the 2020 standards will disrupt market expectations created by the prior rule, for instance on the part of biofuel producers who made investments or other parties who transacted biofuels or RINs, based on the higher standards originally finalized." If EPA were to finalize such an approach to the 2020 standards, it would set a dangerous precedent that would create uncertainty and generate doubt about whether future standards will be similarly undermined after they are finalized by EPA.

Besides recognizing that reopening previously finalized volumes would be bad policy, EPA also has consistently acknowledged that it lacks the authority to retroactively adjust finalized RVOs. For example, in EPA's rule setting RVO standards for 2011, EPA states:

EPA believes the Act is best interpreted to require issuance of a single annual standard in November that is applicable in the following calendar year, thereby providing advance notice and certainty to obligated parties regarding their regulatory requirements. *Periodic revisions to the standards...would be inconsistent with the statutory text*, and would introduce an undesirable level of uncertainty for obligated parties.³

EPA has maintained this position in litigation as well, noting that "...periodically and retroactively altering the standards would not be consistent with the statutory requirement that EPA set the standards by November 30. And doing so would inappropriately render the standards a moving target." We agree that EPA's proposal to reopen the 2020 standards would set a negative precedent that could undermine the market certainty and stability intended by Congress. EPA should abandon this proposal and enforce the 2020 standards originally finalized in 2019.

a. EPA has not explained how the proposed reductions to the 2020 and 2021 RVOs are justified by the results of its statutorily required "reset" analysis of certain economic, environmental, and social factors.

When using the reset authority, the statute dictates that EPA "shall comply with the processes, criteria, and standards set forth in paragraph (2)(B)(ii)."⁵ That section of the Clean Air Act requires EPA to conduct an analysis of the impact of RFS volume requirements on numerous economic, environmental, and social factors. EPA conducted this required analysis, the results of which are presented primarily in the Draft Regulatory Impact Analysis (DRIA). However, there is no explanation of how or why EPA believes the

² 86 Fed. Reg. 72,449

³ 75 Fed. Reg. 76,804–05 (emphasis added).

⁴ EPA Brief at 59, Growth Energy v. EPA, 19-1023 (filed Mar. 5, 2020), ECF No. 1831996

⁵ 42 U.S.C. 7545(o)(7)(F)

results of these required analyses justify the specific revisions to the 2020, 2021, and 2022 RVOs proposed by EPA. In fact, many of the conclusions and findings in the DRIA regarding the benefits of renewable fuels would seem to justify maintaining the 2020 RVO at the originally finalized level and setting the 2021 RVO at the statutory level (after applying the cellulosic waiver).

b. Elements of EPA's statutorily required analysis of the impact of proposed volumes on certain economic, environmental, and social factors appear incomplete or lacking in balance.

Beyond the lack of explanation regarding the applicability of EPA's analysis of the statutory factors to the proposed 2020, 2021, and 2022 volumes, RFA believes the Agency's analysis of several of the factors is incomplete or lacking in balance. We provide more detailed comments on the DRIA in Section X below, and we hope EPA strengthens its analysis of the statutory factors as it prepares its RVO proposal for 2023 and beyond.

II. EPA should rescind its proposal to retroactively revise the 2020 RVO and leave in place the original finalized standards.

In addition to the lack of a legal basis for revising the 2020 standards (as described in Section I above), there is no practical justification or market-based rationale for retroactively lowering the 2020 volumes. More specifically, the 2020 standards had already "auto-corrected" lower to account for reduced fuel consumption resulting from COVID-19, and the RIN bank was sufficient to cover any "gap" between actual renewable fuel consumption and the self-adjusted RVO. Revising the 2020 RVOs would unfairly penalize those market participants who invested and acted in good faith to comply with the original requirements, while only benefitting those oil refiners who purposely avoided blending sufficient volumes of biofuel or purchasing RIN credits.

a. Because the RVO is a percentage, the actual volume of required renewable fuel blending in 2020 automatically adjusted lower with reduced gasoline and diesel consumption.

The annual RVOs are expressed as percentages of projected gasoline and diesel consumption, thus providing an auto-correcting mechanism to adjust to fuel consumption that is lower than originally expected. According to an analysis conducted by the EPA in connection with the proposal, if the percentage standards from the original final rule issued in December 2019 were applied to the actual volume of transportation fuel subject to the RFS in 2020, the total renewable fuel requirement would have been 18.38 billion gallons (BG) rather than the 20.09 BG envisioned in the original rule, and the implied conventional renewable fuel volume would have been 13.72 BG rather than 15.00 BG,⁶ assuming no

⁶ "Carryover RIN Bank Calculations for 2020-2022 Proposed Rule," memorandum from Nick Parsons to EPA Air Docket EPA-HQ-OAR-2021-0324.

small refinery exemptions (SREs) are granted for 2020 (despite the fact that roughly 770 million gallons (MG) of exemptions were projected). If the "prospective reallocation" of 2020 SREs were removed (i.e., because no SREs are granted), then the total renewable fuel requirement for 2020 (based on actual fuel consumption) would be 17.64 BG, and the implied conventional renewable fuel volume would be 13.17 BG.

However, EPA has proposed to revise the total renewable fuel requirement to just 17.13 BG and an implied conventional biofuel volume of 12.50 BG. The latter represents an additional cut of 1.22 BG from EPA's estimate of the 2020 implied conventional biofuel volume that would be required if the percentage standards set in December 2019 were left unchanged. It is also approximately 670 MG below RFA's estimate of the implied conventional biofuel volume that would pertain if the prospective reallocation of SREs were eliminated (i.e., because no exemptions are granted).

b. Notwithstanding concerns about the inappropriate use of the reset authority to reopen the 2020 RVO, EPA's estimate of actual conventional renewable fuel consumption is too low.

Even though EPA stated in the proposed rule that it was adjusting "the 2020 volumes and standards to reflect the actual volumes of renewable fuels and transportation fuel consumed in the U.S.," the 12.50 BG requirement that was proposed is less than the number of net RINs generated for conventional renewable fuels that were actually consumed in 2020 (i.e., D6 RINs). According to the Energy Information Administration's (EIA) January 2022 *Short-Term Energy Outlook* (STEO), 12.68 BG of ethanol were consumed in 2020. EIA estimates that 154 MG of ethanol was imported, which likely would have qualified as advanced biofuel (D5 RINs) and would be subtracted from total conventional biofuel consumption, as would the 26 MG of other advanced ethanol for which RINs were generated according to EPA data. However, the 130 million D6 RINs that were generated for conventional renewable fuels other than ethanol would be added. Thus, even while we believe such an approach would be inappropriate, if EPA were to revise the 2020 RVO to match actual consumption, the implied conventional biofuel volume would need to be set at 12.63 BG.

If the EPA proceeds with this unprecedented revision, it should, at a minimum, raise the requirement to 12.63 BG to match actual consumption. This is consistent with the

⁷ 86 Fed. Reg. at 72,438

⁸ U.S. Energy Information Administration. (2022, Jan. 11). *Short-Term Energy Outlook*. https://www.eia.gov/outlooks/steo/

⁹ U.S. Energy Information Administration. *U.S. Imports of Fuel Ethanol.* https://www.eia.gov/dnay/pet/hist/LeafHandler.ashx?n=pet&s=mfeimus1&f=m. Accessed 24 Jan. 2022.

¹⁰ U.S. Environmental Protection Agency. *RINs Generated Transactions*. https://www.epa.gov/fuels-registration-reporting-and-compliance-help/rins-generated-transactions. Accessed 6 Jan. 2022.
¹¹ *Id.*

statement in the proposed rule that "[f]or the final rule ... the projections for 2020 and 2021 will be derived from the latest version of the STEO." 12

c. Treatment of cellulosic biofuel carryover RINs.

Separately, RFA believes that if the EPA revises the 2020 RVOs, it should include the approximately 40 million cellulosic biofuel carryover RINs in the 2020 cellulosic biofuel volume requirement. In setting annual RVOs, the EPA uses its waiver authority to attempt to set the cellulosic biofuel requirement at the "projected volume available," as directed by the Energy Independence and Security Act of 2007. The carryover RINs simply reflect the difference between the EPA's previous projections and the actual volume of cellulosic biofuel that was available, and including cellulosic biofuel carryover RINs in the requirement would correct for this difference.

III. Notwithstanding concerns regarding EPA's inappropriate use of the reset authority to propose adjustments to the 2021 RVO, EPA's estimates of actual renewable fuel consumption in 2021 are far too low.

As elaborated in our comments above regarding the proposed 2020 RVOs, we do not believe it is appropriate for EPA to use its reset authority retroactively in setting the 2021 RVOs. However, to the extent that EPA attempts to finalize the proposed approach, it should, at a minimum, ensure the 2021 RVO requirements accurately reflect the renewable fuel volumes actually consumed.

The proposed implied conventional renewable fuel requirement of just 13.32 BG for 2021 is far below actual consumption. In its January 2022 Short Term Energy Outlook, the EIA estimated that 13.96 BG of ethanol were consumed domestically in 2021. RINgeneration data from EPA show that 60 MG of ethanol consumed was imported and qualified for D5 RINs, which is consistent with EIA and Census Bureau trade data, and RINs were generated for 27 MG of other advanced ethanol. Thus, of the ethanol consumed in the U.S. in 2021, 13.87 BG was conventional renewable fuel.

However, an additional 135 million D6 RINs were generated for conventional renewable fuels other than ethanol, meaning total domestic consumption of all conventional renewable fuels in 2021 was over 14.0 BG. Based on these updated statistics, if EPA moves forward with its proposal to base 2021 RVOs on actual consumption, the implied conventional renewable fuel volume would need to be raised to 14.01 BG—almost 700 MG above the volume proposed by the EPA.

IV. EPA should finalize the proposed 2022 RVOs for all categories of renewable fuel.

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¹² 86 Fed. Reg. at 72,465.

RFA strongly supports the proposed 2022 volumes for all categories of renewable fuels, and we commend the EPA for proposing to set the implied requirement for conventional renewable fuels at the statutory level of 15 BG, which would stimulate increased demand for lower-carbon ethanol blends like E15 and E85.

The implied conventional biofuel requirement and the supplemental standard proposed by the EPA are not only consistent with the law but also realistically achievable. In its January 2022 STEO, the EIA forecast that ethanol consumption in 2022 will be 14.31 BG, an increase of 350 MG from 2021 and only 240 MG below the record high achieved in 2019. Excluding ethanol that qualifies as advanced biofuel, consumption would be 14.18 BG, and this would translate to an equivalent number of RINs. In its DRIA, the EPA estimated that 558 million D6 RINs would be generated for renewable diesel. Accordingly, 14.73 billion net D6 RINs would be available, which is just 267 million RINs (1.8%) less than the implied conventional biofuel requirement.

Notably, EIA's STEO does not account for the impact that robust RFS standards would have on ethanol consumption in 2022, meaning that higher volumes of consumption are likely if EPA expeditiously finalizes the RVO. In addition, excess D4 and D5 RINs generated from excess volumes of other renewable fuels (e.g., biodiesel, renewable diesel) could be used to fill any minor "gap" between net generation of D6 RINs and the 15 BG implied requirement for conventional renewable fuel.

Moreover, carryforward RINs can also be used to meet the requirements. In the RIN bank memorandum accompanying the proposed rule, EPA estimated that 1.85 billion net RINs were carried over from 2019, of which nearly 1.80 billion were D6 RINs. The memo indicated that EPA expects that the same number carryover RINs would be available for compliance with the 2022 standards.

Overall, it is projected that the consumption of physical renewable fuels will provide sufficient RINs to meet the proposed 2022 RVOs, and as a result there will not be a significant change in the size of the RIN bank; however, carryover RINs could be used to meet any shortfall in actual biofuel usage without causing a significant change in the D6 RIN inventory.

V. EPA should finalize its proposal to apply a supplemental standard in 2022 and 2023 to address the U.S. Court of Appeals for the D.C. Circuit decision in *Americans for Clean Energy v. EPA*.

RFA is pleased to see EPA finally propose to address the 2017 vacatur and remand of the 2016 standards from the D.C. Circuit's decision in *Americans for Clean Energy v. EPA* ("*ACE*").¹³ This action is long overdue, as it comes only after RFA and the other biofuels groups involved in the *ACE* litigation filed a petition for mandamus in November 2020 requesting that the D.C. Circuit order EPA to comply with its mandate. EPA's

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¹³ 864 F.3d 691 (D.C. Cir. 2017)

proposed action to address the *ACE* remand is not only appropriate, it is also required by the court's clear directive in that case: to "vacate EPA's decision in the [2016] Rule to reduce the total renewable volume requirements for 2016 through use of the 'inadequate domestic supply' waiver authority." In the 2016 standards, EPA improperly reduced the volume requirements by 500 million gallons pursuant to the "inadequate domestic supply" waiver. Consequently, EPA's obligation is to account for those 500 million gallons.

We support EPA's proposal to apply a supplemental standard and believe it is reasonable to allow the use of 2021 and 2022 vintage RINs for compliance with such supplemental standard. This is precisely the remedy requested by RFA and the other petitioners in the petition for mandamus. By allowing the use of current vintage RINs, EPA's proposed approach to apply a supplemental standard avoids the so-called "burdens" described in the 2020 proposal. In addition, as EPA explains, by phasing in the 500-million-gallon supplemental standard over two compliance years, EPA's proposed approach will "lessen both the disruption to the market and the burden on obligated parties." ¹⁵

Nonetheless, alleviating "burdens" on refiners should not be EPA's primary concern; rather, EPA should focus on enforcing the RFS and obeying the D.C. Circuit's directive. The supplemental standard will achieve both of these objectives by restoring the 500 million gallons the D.C. Circuit determined were illegally waived from the 2016 standards and, as a consequence, incentivize increased use of renewable fuels. Even if obligated parties use carryover RINs to comply with some portion of the supplemental standard, the ultimate outcome would be to increase demand for renewable fuels in future years, thereby remedying the harm to the biofuels industry that was caused by EPA's unlawful waiver of the 2016 volumes.

VI. EPA should finalize its proposal to project SRE volumes for 2021 and 2022 using the same methodology used in the 2020 RVO final rule.

RFA supports EPA's proposal to use the methodology established in the final rule setting the 2020 RVO to prospectively account for projected SRE volumes, even when SREs are granted after finalization of the rule. EPA took an important step forward in the 2020 final rule by, for the first time, proposing to include projections of the volume of gasoline and diesel exempt (i.e., due to expected SREs) in the RVO calculations.

However, as RFA explained in comments to the 2020 proposed rule¹⁶, EPA's decision to base the projection of exempted volume on the volumes that would have been exempt "had EPA followed DOE's recommendations [regarding SREs] without deviation" would not ensure that the statutory volumes were met. Rather, under that approach, the projection of SREs would be significantly lower than the volumes actually exempted due to EPA's frequent deviation from DOE's SRE recommendations in past years.

¹⁵ 86 Fed. Reg. at 72,459.

¹⁴ Id. at 696-97

¹⁶ EPA-HQ-OAR-2019-0136-1998

RFA is therefore pleased to see that EPA has proposed to update the values here to more accurately project the exempted volume. Specifically, EPA proposes a range, where the low end of the range would be 0, based on the U.S. Court of Appeals for the Tenth Circuit's limitations on EPA's authority to grant SREs in *Renewable Fuels Association v. EPA* ("*RFA*")¹⁷, and the high end of the range would be based on the average exempted volume in 2016-2018 if EPA had followed DOE's recommendations.

RFA asks EPA to finalize the low end value of 0 based on the premise that EPA will not grant any small refinery exemptions in the future. In RFA, the Tenth Circuit held that "[1] EPA may grant relief only when it finds that the small refinery would suffer disproportionate economic hardship due to compliance with the RFS program, not due to other factors, and [2] EPA had failed to discuss how granting the exemptions was consistent with [EPA's] findings on RIN cost pass-through."18 RFA wholeheartedly agrees with EPA's conclusion that, "[w]ere EPA to follow these aspects of the RFA decision nationwide," EPA should "not anticipate granting any SREs for 2020, 2021, or 2022."19 RFA urges EPA to adopt these aspects of the RFA decision nationwide and to deny any future requests for SREs. In a separate but related action, EPA issued a Proposed Denial of Petitions for Small Refinery Exemptions.²⁰ As RFA will discuss in greater detail in comments in response to the SRE denial proposal, we strongly support EPA's decision to deny the 65 pending SREs, and believe that given EPA's findings regarding RIN cost pass-through, EPA should not entertain requests for SREs in the future. If EPA finalizes this proposal and denies all SREs for 2020, 2021, and 2022—as RFA believes it should—the number finalized to represent the volume exempt via SREs for the percentage standards formulae should reflect 0 volume exempted.

If, however, EPA determines that some number of SREs will be granted in the future and therefore that it must use the 2020 final rule methodology to project exempt volumes, RFA implores EPA to use the actual volumes exempted in the years used to calculate the projection, rather than the volumes that would have been exempted had DOE's recommendations been followed. As noted above, because EPA frequently deviated from DOE's recommendations in recent years, calculations based on DOE's recommendations do not result in an accurate projection.

VII. RFA generally supports the biointermediate provisions proposed by EPA, but encourages the Agency to leverage existing regulatory requirements and systems for tracking the use of undenatured ethanol.

Ethanol's high-octane, low-carbon properties make it an attractive candidate for further processing into other renewable fuels and chemicals, such as renewable ethylene or sustainable aviation fuel. Accordingly, RFA strongly supports the inclusion of undenatured

¹⁷ 948 F.3d 1206 (10th Cir. 2020)

¹⁸ 86 Fed. Reg. at 72,463.

¹⁹ *Id*

²⁰ EPA-HQ-OAR-2021-0566

ethanol as a biointermediate. To date, producers who use renewable ethanol as a feedstock to generate new and innovative renewable fuels have not had the ability to generate RINs or participate in the RFS program. Therefore, RFA supports the general aims of the proposed biointermediate provisions, which would help stimulate innovation and investment by opening the RFS to new renewable fuels that use ethanol and other biointermediates as the feedstock.

a. EPA should avoid creating an unnecessarily redundant supply chain tracking system for undenatured ethanol. The Agency should leverage existing Department of Treasury regulatory programs and tracking systems for undenatured ethanol.

Rather than developing new reporting and recordkeeping requirements that would be unnecessarily redundant, we encourage EPA to recognize and leverage the stringent reporting and tracking requirements that already exist for undenatured ethanol via other regulatory regimes. Producers and shippers of undenatured ethanol are already tightly regulated by the U.S. Department of Treasury's Alcohol and Tobacco Tax and Trade Bureau (TTB).

RFA recommends that EPA make use of TTB's existing regulatory program, which already tracks the production and shipment of all undenatured ethanol in the United States and requires the shipper to obtain a bond for the transfer of undenatured alcohol. In order to avoid paying extremely high beverage taxes, parties who produce and transfer non-beverage undenatured ethanol are highly motivated to comply with TTB's stringent reporting and recordkeeping regulations.

For the purposes of tracking the use of undenatured ethanol as a biointermediate, we believe EPA should rely on the registration, recordkeeping, and reporting systems already in place as part of TTB's existing regulatory scheme. Making use of the existing TTB regime would mitigate any possible EPA concerns over the integrity of movements of undenatured ethanol. EPA should not require the creation of a parallel supply chain when an effective system already exists. For the same reasons, the proposed segregation provisions should be eliminated for undenatured ethanol.

b. EPA should not limit biointermediate transfers to a single renewable fuel producer when the biointermediate is undenatured ethanol.

RFA opposes the limits on biointermediate transfers when the biointermediate is undenatured ethanol. We understand the spirit of this proposal from EPA and the desire to minimize opportunities for error or fraud. However, the existing TTB regulatory program already in place ensures that supply chain integrity is maintained for producers of undenatured ethanol who ship to more than one customer. The requirement proposed by EPA (called the "many-to-one" limitation) could reduce market opportunities for

biointermediate producers and undermine investments in new and novel low-carbon fuel technologies.

We understand the potential auditing complications of the "many-to-many" scenario for some biointermediates, but the production and shipment of undenatured ethanol is meticulously tracked through the existing TTB program. In addition, unlawful and fraudulent activities associated with RIN generation under the RFS program have been confined to the biodiesel industry and there have been no fraud cases involving ethanol producers. Therefore, we do not believe the "many-to-one" limitation proposed by EPA should apply to biointermediate producers where the biointermediate is undenatured ethanol.

c. EPA should ensure that renewable fuels produced from captured CO₂ originating from renewable biomass are eligible under the RFS.

Many existing ethanol facilities capture the carbon dioxide released during fermentation of renewable biomass. Today, that captured CO₂—which is greater than 99 percent pure—is marketed for a wide variety of industrial uses, including refrigeration, dry ice manufacturing, beverage carbonation, food processing, and others. However, in the future, that captured CO₂ itself could serve as a feedstock for further processing into renewable fuels. In other words, captured CO₂ should be considered as an eligible biointermediate when the CO₂ is derived from renewable biomass.

Thus, we are concerned by EPA's proposed definition of "produced from renewable biomass," which would appear to prohibit the use of captured biogenic CO₂ as a feedstock for renewable fuel. We encourage EPA to clarify its intent with this proposed definition and we urge the Agency to ensure that biogenic CO₂ from renewable biomass could be an eligible biointermediate (i.e., assuming all other requirements are satisfied).

VIII. EPA should finalize its proposal to enhance transparency by making public certain information about requests submitted under the RFS program.

We strongly support EPA's proposal to publicly disclose information about requests submitted under the RFS program and EPA's adjudication of those requests, and we agree with EPA that it would enhance transparency and integrity in the RFS program. RFA is particularly pleased to see EPA's proposal for increased transparency with regard to the Agency's adjudication of small refinery exemptions—something for which RFA has advocated over the past several years. EPA's past practice of secretly granting small refinery exemptions harmed biofuel producers by destabilizing the RIN market, while allowing dozens of refineries to avoid their RFS obligations.

IX. Severability

RFA supports EPA's proposal to make severable the key components of the rulemaking: (1) the volumes and percentage standards, (2) the 2022 supplemental volume

and standard, (3) the proposed provisions for biointermediates, and (4) the regulatory amendments discussed in Section VIII of the proposed rule.

However, RFA suggests that EPA also make severable the volumes and percentage standards for *each year* addressed by the proposal. Treating the volumes and percentage standards as severable will prevent the requirements for all three years from being impacted if legal challenges are brought as to the standards for one year. Moreover, it would be entirely consistent with past practice for EPA to treat the volumes and standards for each year as severable, as the annual standards are typically issued in independent rulemakings.

X. Draft Regulatory Impact Analysis

Much of the analysis used to inform EPA's proposed volumes for the 2020, 2021, and 2022 RVOs is found in the Draft Regulatory Impact Analysis (DRIA). Of particular importance is the "reset" analysis EPA conducted on the impact of the proposed volumes on the environmental, economic, and social factors specified in the statute. This section offers RFA's comments on some elements of the DRIA.

a. Baseline for Analysis

EPA used a baseline of the volumes actually supplied in 2020 to assess the impacts of the proposed rule. This seems like a uniquely unsuitable year to use as a baseline, since an oil price war between Saudi Arabia and Russia erupted early in the year, which was followed shortly by a once-in-a-century global pandemic. U.S. fuel consumption fell sharply, with usage of both gasoline and ethanol down 13% compared to 2019. Lockdowns were imposed in the spring of 2020, and RFA estimated that at one point nearly half of ethanol capacity was idled.

Additionally, in mid-2020 China began making record-large purchases of U.S. corn, and the corn market has also been affected by a series of weather issues over the last couple of years. The high prices that ensued were not the result of corn usage for ethanol, since ethanol production in 2020 was the lowest in seven years and it only partially recovered in 2021.

EPA indicated in Chapter 2 of the DRIA that a similar approach was used for the baseline in the RFS rulemaking for 2014-2016, but that period was not analogous to the one that the current EPA proposal covers, during which there was tremendous disruption and the ethanol industry experienced the worst downturn in its history. It is possible that 2019, the last year prior to the COVID-19 pandemic, would serve as a more appropriate baseline for conditions prior to the years that the proposed RVOs cover.

The EPA indicated that the preferred baseline would reflect conditions that would exist absent the RFS, but it stated, "[W]e have not been able to precisely quantify a No-RFS baseline at this time due to the complex market and regulatory dynamics associated with biofuels. Nonetheless, we present our preliminary views on what such a baseline might look

like ..." It then went on to say, "We believe that the No-RFS baseline for ethanol may be approximated by using the volumes associated with the E10 blend wall (e.g. ethanol volumes representing 10% of the gasoline pool)." However, this is an overly simplistic, back-of-the-envelope assumption.

In-depth analysis would be needed to estimate and forecast conditions in the fuel and agriculture markets absent the RFS. Some research on this topic already exists. For example, a 2020 study conducted by Purdue University and the National Center for Food and Agricultural Policy, which covered the time periods 2004-2011 and 2011-2016, determined that the RFS was binding on the market in the second period, finding, "[T] he RFS increased the demand for ethanol by 7% to 14% between 2011 and 2016. For example, in 2016 the actual consumption of ethanol was 14.3 billion gallons (BG) with a market based projection of 12.1 BG. This suggests that in this particular year the RFS increased consumption of ethanol by about 2.1 BG."²¹ Finished gasoline consumption was 143.2 BG that year.

b. Fuel Costs

EPA estimated that the use of ethanol reduced the cost of gasoline to consumers (i.e., at retail) by \$146 million in 2021 and that the proposed RFS biofuel volume requirements will reduce the cost by an additional \$24 million in 2022.²² Moreover, the analysis appears not to have properly allocated a credit to E15 for its blending value, resulting in an underestimation of the impact of ethanol usage on gasoline prices.

EPA should have assumed that E15 has a blending value similar to the \$0.65/gallon that was estimated for E10 based on an analysis by ICF and MathPro, since E15 currently is produced using the same sub-octane blendstock as E10 or by combining E10 with E85. As noted by EPA, refiners are able to reduce costs by producing such blendstock.

Moreover, it does not appear that EPA fully accounted for the impact of ethanol usage on the crude oil market and ultimately on retail gasoline prices in its analysis. In Chapter 9 of the DRIA, the EPA projected changes in petroleum imports due to increased renewable fuel consumption; however, it noted, "The change in crude oil volume and imported petroleum products is used for the energy security analysis." The impact on transportation fuel costs reflected only the cost of production, blending, distribution and retailing biofuels, as well as any impact on fuel economy.

In a 2019 study, energy economist Dr. Philip K. Verleger, Jr. used an econometric model to estimate the impacts of the RFS on crude oil and gasoline prices over the previous

²¹ Taheripour, F., Baumes, H., & Tyner, W. E. (2020). Impacts of the U.S. Renewable Fuel Standard on Commodity and Food Prices. https://www.gtap.agecon.purdue.edu/resources/download/10238.pdf

²² U.S. Environmental Protection Agency. (2021). *Draft Regulatory Impact Analysis: RFS Annual Rules*. https://www.epa.gov/sites/default/files/2021-12/documents/420d21002.pdf
²³ Id.

four years (2015-2018).²⁴ He determined that that by expanding fuel supplies, the RFS reduced the price of crude oil by an average of \$6/barrel from 2015 to 2018. In turn, gasoline prices were reduced by an average of \$0.22/gallon, the equivalent of \$250 annually for a typical household. According to the study, the RFS was responsible for putting roughly \$90 billion back into the pockets of U.S. consumers over the previous four years, increasing discretionary income and raising the nation's gross domestic product.

EPA's analysis of the cost impacts of the proposed RFS volumes also suffers from the use of outdated and incorrect assumptions about ethanol production. In Chapter 9 of the DRIA, EPA noted, "The operating costs and ethanol plant yields were based on a 2012 survey of corn ethanol plants." However, considerable progress has been made in ethanol facility operations in the decade since that survey was conducted.

Table 9.1.2.2-1 contained an ethanol yield of 2.83 gallons per bushel (gal/bu), but data from EIA and the U.S. Department of Agriculture (USDA) indicate that from January through October 2021 the average yield was 2.916 gal/bu.^{25 26} The DDG yield is now approximately 15 lbs/bu rather than the 15.7 lbs/bu assumed in the table. Distillers corn oil yield is now 0.88 lbs/bu at facilities that extract it; it is estimated that facilities representing approximately 95% of dry-mill capacity extract corn oil, meaning that the average yield across all dry mills is 0.84 lbs/bu. EPA assumed a corn oil yield of 0.53 lbs/bu and noted, "Of the corn ethanol plants in the 2012 survey, 74% were separating and selling corn oil so selling corn oil was assumed for 70% of the plant capacity."

EPA assumes electricity usage of 0.75 kilowatt hours (kWh) per gallon. However, the Greenhouse gases, Regulated Emissions, and Energy use in Technologies (GREET) model from Argonne National Laboratory reflects usage of 0.63 kWh/gal for dry mills with corn oil extraction, which is consistent with (actually slightly higher than) private surveys of the industry.²⁷

There are issues with other parts of the analysis in Chapter 9 as well:

• In section 9.1.4.1.2 Retail Costs, EPA stated that for lowa, "Retail stations offering E15 are estimated to sell 187 thousand gallons of E15 per year while each retail station offering E85 are estimated to sell 80 thousand gallons of E85 per year." However, based on an annual report from the lowa Department of Revenue, it can be calculated that the average E15 volume per station was approximately 298,800 gal. in 2020, and the average E85 volume per station was approximately 42,670 gal.

Verleger, P. (2019). The Renewable Fuel Standard Program: Measuring the Impact on Crude Oil and Gasoline Prices. https://ethanolrfa.org/wp-content/uploads/2019/09/Verleger-RFS-Impact-on-Oil-and-Gasoline.pdf
 U.S. Energy Information Administration. (2021, Dec. 31). *Petroleum Supply Monthly*.

https://www.eia.gov/petroleum/supply/monthly/

²⁶ U.S. Department of Agriculture. (2021). Grain Crushings and Co-Products Production. https://usda.library.cornell.edu/concern/publications/n583xt96p?locale=en

²⁷ Argonne National Laboratory. (2021). *Greenhouse gases, Regulated Emissions, and Energy use in Technologies* (GREET 2021). https://greet.es.anl.gov/index.php

(down from 54,370 gal. in 2019).²⁸ As a result, the calculated per-gallon cost of capital for retail equipment is overstated, at least for E15.

- The E15 sales estimates in Table 9.1.4.1.2-1 appear to be incorrect.
- As discussed previously, the changes in ethanol volumes in Table 9.3-2 are significantly below those in the latest EIA STEO, as are the gasoline consumption volumes in Table 9.4.2-3.
- In Table 9.4.1-1, the blending cost (actually a credit) credit for E15 should be similar that for E10. Currently, E10 and E15 are made with the same blendstock, or E15 is made by blending E10 with E85.
- The EPA noted that its cost estimates do not consider federal state or local
 infrastructure support funding (e.g., the USDA Higher Blends Infrastructure Incentive
 Program; HBIIP) supporting E85 and E15 retail station equipment." Ignoring this
 funding—particularly HBIIP—would likely result in an overstatement of capital costs
 for many retailers that have participated in such programs (and there are privatesector incentives as well).

Given all of the issues raised above regarding Chapter 9, it is highly likely that EPA overestimated the cost of ethanol, which would also have resulted in an underestimation of the cost savings versus gasoline.

c. Food Costs

Regarding food prices, EPA concluded in the DRIA, "Considering historical trends over the past two decades indicating the ability of production to rise to meet demand, the modest increases in ethanol volumes associated with this rulemaking, if they have any impact on the supply of corn to food, exports, or other uses, would only be expected to have only a small short-term effect." Specifically, it was estimated that the proposed RFS volumes would result in an increase in food expenditures of 0.15% in 2021 and 0.40% in 2022, but just over half of the 2021 change and less than one-third of the 2022 impact were associated with a change in the price of commodities associated with ethanol production: corn, sorghum and distillers grains. (Additionally, the supply of distillers corn oil can be expected to reduce the price of soybean oil.)

A study published in 2020 by researchers at Purdue University and the National Center for Food and Agricultural Policy examined market conditions and food prices in two time periods: 2004-2011 and 2011-2016. The authors concluded, "In both time periods, the long run effects of biofuel production and policy on food prices were negligible. Changes in commodity prices do not translate directly to changes in food prices. When the ethanol RFS or both ethanol and biodiesel requirements were removed, the food price index fell by

²⁸ Iowa Department of Revenue. (2020). *Retailers Motor Fuel Gallons Annual Report 2020*. https://tax.iowa.gov/retailers-motor-fuel-gallons-annual-report-2020

0.04%. In other words, the RFS was responsible for only tiny changes in the overall food price index."²⁹ It is also notable that the researchers found that the RFS increased farm incomes by more than \$1.4 billion in the first time period and \$2.4 billion in the second.

According to the Bureau of Labor Statistics, U.S. food prices rose 6.3% in 2021.³⁰ Based on the EPA's analysis, it can be estimated that only 0.08% of the increase was attributable to commodities associated with ethanol (consistent with the findings of Taheripour *et al.*), which indicates that ethanol was not a significant driver of food inflation compared to other factors such as supply chain issues. There was an even larger 49.6% increase in the price of gasoline in 2021, and as discussed above the use of ethanol saved consumers money.

The EPA noted that "low-income populations ... spend a larger portion of their income on food and fuel."³¹ However, the net effect of ethanol on food and fuel prices is small relative to overall consumer expenditures on those products, and there could be a reduction in combined costs to the consumer if the full impact of ethanol on fuel prices is considered.

d. Greenhouse gas emissions

Chapter 3 of the DRIA includes an "illustrative GHG scenario." EPA explains, "This section provides an illustrative scenario of the GHG impacts of biofuel consumption following the implementation of the proposed standards. This scenario is not EPA's assessment of the likely greenhouse gas impacts of this proposed rule."

Unfortunately, for corn starch ethanol, the Agency "directly use[d] EPA's prior emissions intensity analysis published in the March 2010 RFS2 rule for projected corn starch ethanol produced in 2022 using a natural gas fired dry mill process." This was done despite a consensus that the analysis is woefully out of date. Considerable refinements have been made to the life cycle analysis of corn ethanol in the intervening decade-plus, and as detailed previously, the ethanol production process has continued to become more efficient (as has feedstock production). As a result, estimates of ethanol's carbon footprint have continued to decline.

Over the last year, three studies have been published demonstrating the reduction in GHG emissions associated with corn ethanol. A study by researchers the Department of Energy's Argonne National Laboratory found the carbon intensity of corn ethanol shrank by 23% over the 2005-2019 timeframe. By 2019, corn ethanol reduced lifecycle GHG emissions by 44-52% compared to gasoline.³² In addition, a team of researchers from

²⁹ Taheripour, F., Baumes, H., & Tyner, W. E. (2020). Impacts of the U.S. Renewable Fuel Standard on Commodity and Food Prices. https://www.gtap.agecon.purdue.edu/resources/download/10238.pdf

³⁰ Bureau of Labor Statistics. (2022). Consumer Price Index Summary. https://www.bls.gov/news.release/cpi.nr0.htm ³¹ 86 Fed. Reg. at 72,441

³² Lee, U., Kwon, H., Wu, M. and Wang, M. (2021). Retrospective Analysis of the U.S. Corn Ethanol Industry for 2005–2019: Implications for Greenhouse Gas Emission Reductions. *Biofuels, Bioprod. Bioref.* https://doi.org/10.1002/bbb.2225.

Environmental Health & Engineering, Harvard University and Tufts University conducted a comprehensive review of the "state of the science" in the life cycle analysis of corn ethanol and determined that the "central best estimate" of its carbon intensity was 46% lower than the average for gasoline, with some corn ethanol on the market achieving a 61% reduction. Finally, a study conducted by Life Cycle Associates found that overall, the RFS reduced carbon dioxide emissions by a cumulative 980 million metric tons between 2008 (after the program was expanded) and 2020, a majority of which is due to the use of ethanol.

At the same time, RFA is encouraged that EPA is hosting a virtual public Workshop on Biofuel Greenhouse Gas Modeling on February 28 and March 1, 2022. The notice for the meeting indicated that the "information gathered as part of this workshop will be used to inform a range of current and future actions, including EPA's methodology for quantifying the greenhouse gas emissions under the Renewable Fuels Standard. Through this workshop, we will initiate a public process for getting input on ... how to incorporate the best available science into an update of our lifecycle analysis (LCA) of biofuels." RFA looks forward to participating in the workshop and would urge EPA to undertake a thorough update of its 2010 assessment.

e. Land Use Change

The DRIA also made several references to work by Wright *et al.* and Lark *et al.*, which alleges that cropland expansion has taken place in the central U.S. and tries to tie it to the use of biofuels in general and more specifically the RFS. This work has such fundamental flaws that it cannot be used as the basis for government rulemaking.

These flaws were examined in detail in two papers by researchers at the Laboratory for Applied Spatial Analysis at Southern Illinois University Edwardsville (SIUE-LASA). The first addressed a series of papers by Wright *et al.* and Lark *et al.* that suggested conversion of grassland and other "native" lands to cropland has occurred since the RFS was established.³³ However, their research relied heavily on the USDA Cropland Data Layer (CDL), which has shortcomings that render it poorly suited for this type of analysis, notably the inability to differentiate among grassland types. This is a problem the USDA itself has recognized, warning that the pasture and grass-related land cover categories in the CDL have "very low classification accuracy." Additionally, CDL-based methods are prone to reflecting "false change," in which a higher share of actual cropland is recognized in the newer, more-accurate CDL versions than in older, less-accurate versions, thus giving the appearance that cropland expanded. The authors from SIUE-LASA summarized their findings by saying, "There are major concerns regarding both the data and the methods that were used by the researchers, which call their findings into question."

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³³ Pritsolas J. and R. Pearson. (2019). *Critical Review of Supporting Literature on Land Use Change in the EPA's Second Triennial Report to Congress*. https://ethanolrfa.org/wp-content/uploads/2019/07/SIUE-Review-of-Land-Use-Change-Literature-07-2019.pdf

The second paper addressed a study by Zhang *et al.* (for which Lark was one of the authors) that assessed the environmental impacts of cropland expansion in the Midwest between 2008 and 2016, which built on previous research by Lark *et al.* that used the CDL to estimate the conversion of grassland to cropland. Echoing the first paper, this review determined, "The cropland expansion claimed ... has a high potential of being false change due to poor classification certainty in the earlier CDL." The researchers at SIUE-LASA went further and conducted an investigation into CDL classification certainty for different locations in lowa, which demonstrated the inability of the methods used in the Zhang and Lark studies to increase the CDL's accuracies.

f. Air Quality

Since the RFS was adopted in 2005, as ethanol consumption has more than tripled, carbon monoxide (CO) concentrations are down 23%, nitrogen dioxide is down 28%, ozone is down 16%, fine particulate matter is down 38%, and sulfur dioxide is down 86%. The levels of all of these pollutants have fallen below the national standard.

Although these reductions were not solely due to the use of renewable fuels, the trends strongly suggest that increased use of ethanol, which led to a simultaneous reduction in the use of aromatics and olefins, has played an important role in combating air pollution. These real-world data complement research that has been conducted regarding the effects of the use of ethanol in gasoline.

Starting in 2007, the U.S. Department of Energy (DOE) undertook a test program to evaluate the effects of mid-level ethanol blends on vehicle and fuel parameters. The research found that CO emissions were lower for 15% ethanol blends (E15) than ethanol-free gasoline (E0), while nitrogen oxide (NOx) and non-methane hydrocarbon (NMHC) emissions were not significantly different.³⁴

In 2016, a literature review indicated that the use of ethanol reduces emissions of toxic compounds and is advantageous for both short- and long-term NOx emissions, and it noted that "many studies have shown the beneficial effects of ethanol blending on fuel [particulate matter] emissions."³⁵ The report concluded, "When blended into gasoline, ethanol increases the octane rating of the fuel enabling higher efficiency engines and is shown to decrease the emissions of several harmful pollutants."

In addition, the forthcoming results of an emissions testing study by the University of California-Riverside will show that replacing E10 with E15 results in statistically significant reductions in the emissions of particulate matter, carbon monoxide, NMHC, total hydrocarbons (THC), and other harmful emissions. This study will be submitted to EPA when it becomes available.

³⁴ West, B.H., C. S. Sluder, K.E. Knoll, J.E. Orban, J. Feng, Intermediate Ethanol Blends Catalyst Durability Program, February 2012, ORNL/TM-2011/234, http://info.ornl.gov/sites/publications/files/Pub31271.pdf.

³⁵ Sobhani, S., Air Pollution from Gasoline Powered Vehicles and the Potential Benefits of Ethanol Blending, October 2016, http://energyfuturecoalition.org/wp-content/uploads/2016/12/final_clean-fuelsBOOK.pdf

Disadvantaged communities are disproportionately affected by the negative impacts of petroleum-based fuels on both air quality and GHG emissions. In the DRIA, EPA noted, "[A]nalyses of communities in close proximity to petroleum refineries have found that vulnerable populations near refineries may experience potential disparities in pollution-related health risk from that source. There is also substantial evidence that people who live or attend school near major roadways are more likely to be of a minority race, Hispanic ethnicity, and/or low socioeconomic status." Because renewable fuels displace petroleum fuels, the RFS is playing a direct role in improving the air quality in these communities.

XI. Conclusion

RFA appreciates the opportunity to submit these comments in response to EPA's proposed rule establishing RVOs for 2021 and 2022, and retroactively revising the 2020 RVO. We look forward to continued interaction with EPA as the Agency takes steps to finalize this proposal.