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February 10, 2023

Via online submission at www.regulations.gov

U.S. Environmental Protection Agency (EPA)
Office of Air and Radiation
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

**Re: Docket ID No. EPA-HQ-OAR-2021-0427, Proposed Rule: Renewable Fuel Standard (RFS)
Program: Standards for 2023–2025 and Other Changes**

Chevron appreciates the opportunity to review and comment on the referenced proposed rule. Chevron is a major refiner and marketer of petroleum and renewable products in the U.S. As an obligated party, a renewable fuel producer, and a renewable fuel blender, this proposed rule directly affects Chevron's compliance requirements under the Renewable Fuel Standard (RFS), which in turn impacts our transportation fuel business and customers.

Chevron is committed to providing affordable, reliable, and ever-cleaner energy to our customers. In 2021, Chevron announced the creation of Chevron New Energies, a new operating company dedicated to growing lower carbon businesses in hydrogen, carbon capture and sequestration, offsets, and other emerging technologies. In 2022, Chevron acquired Renewable Energy Group, a leading producer of biodiesel and renewable diesel. To establish a reliable supply chain from farmer to fueling station and to secure renewable feedstocks, Chevron formed a joint venture with Bunge North America. Chevron is also partnering with CalBio Energy, Brightmark and dairy farmers to market and produce renewable natural gas, which is used as compressed natural gas (CNG) for vehicle fueling. In January of 2023, Chevron acquired full ownership of Beyond6 with its network of 55 CNG stations across the United States.

Chevron supports technology neutral policies at the federal level that drive GHG emission reductions in the transportation sector. The RFS should focus on reducing GHG emissions and incentivizing production of lower carbon fuels, while aiming at accuracy in setting volume standards. We encourage EPA to explore opportunities to transform the RFS into a program that more effectively reduces GHG emissions from fuels used in transportation.

Chevron supports many of the proposals in the rulemaking. We agree with EPA's proposal to set standards for multiple years and to maintain the general and cellulosic waiver authorities. We encourage EPA to promptly finalize the RFS volume standards and percentages to provide certainty for compliance and to make appropriate business plans. Chevron supports EPA's decision to no longer

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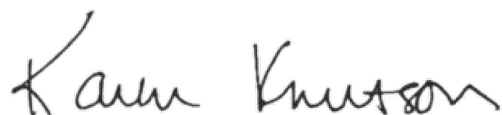
grant small refinery exemptions during the 2023-2025 period. Each of these elements promote the stability of the RFS. We appreciate EPA's request for comments on the direction of the RFS, including future changes to improve the carbon reduction performance of the program and the possibility of a renewable hydrogen fuel pathway.

The RFS proposal is complex and would have a fundamental effect on many parts of the program. Chevron is concerned about the scale, complexity, and ability to effectively implement the proposal in a timely manner. Some of our main concerns include: the lack of growth in the advanced biofuel category; new RIN separation limits; the requirements for recordkeeping and validation of separated food waste; specific elements of the eRIN proposal; the concurrent changes in the biogas regulatory reform section; the definition of "produced from renewable biomass"; and changes in the interpretation of co-processed renewable fuels. We provide comments and recommendations on these issues in the attachment to this letter.

Chevron is a member of American Petroleum Institute (API), American Fuel and Petrochemical Manufacturers (AFPM), The Coalition for Renewable Natural Gas (RNG Coalition), Clean Fuels Alliance America (CFAA), and Advanced Biofuels Association (ABFA). We support and incorporate by reference the full comments submitted by API in response to this proposal. Throughout our comments we will be endorsing views on specific topics to amplify the positions provided by these industry trade associations.

The RFS is in transition, moving from the statutorily defined period through 2022 into the future phase which is the subject of this proposal. Thank you for providing this opportunity to comment on the proposed rule. If you have any questions regarding our comments, please contact Bob Anderson (bob.anderson@chevron.com; 925-842-5317), Ezra Finkin (ezra.finkin@chevron.com; 515-766-8448) or Jason Larrabee (jasonlarrabee@chevron.com; 202-408-5853).

Sincerely,

A handwritten signature in black ink that reads "Kaim Knutson". The signature is written in a cursive, slightly slanted style.

**Docket ID No. EPA-HQ-OAR-2021-0427, Proposed Rule: Renewable Fuel Standard (RFS)
Program: Standards for 2023–2025 and Other Changes**

Comments Submitted by Chevron Corporation

February 10, 2023

1. Proposed Volume Standards

Regarding the volume standards, we support EPA's proposal to establish volume standards for a three-year period through 2025. The Set Rule is the opportunity to realign the volumes between the different biofuel categories. The program should focus renewable fuel growth on the advanced biofuel category. This is consistent with the original intent of the RFS and incentivizes the use of lower carbon intensity fuels. EPA should set the implied conventional biofuel volume based on a reasonable expectation of D6 RIN generation from ethanol and other conventional biofuels.

1.1. Focus program growth on advanced biofuels, with reasonable estimates of BBD growth

Regarding the biomass-based diesel standard, we encourage EPA to recognize readily available feedstock and production capacity that supports additional growth. The Chevron renewable diesel facility expansion at Geismar, LA, scheduled to be completed in 2024, will nearly satisfy the proposed growth in the biomass-based diesel category between 2023 and 2025. Other expansions, available feedstocks, and new crush capacity will support additional growth. The Chevron-Bunge joint venture will expand crush facilities and supply crop oil and protein to the market. Expanded soy production and crush capacity will also support the animal protein and dairy industry and enhance food security as noted below.

In addition, Chevron is making investments in lower carbon cover-crops for use in biofuels. We encourage EPA to recognize the benefits of these cover-crops that are additive to the renewable feedstock supply.

We support estimates that available feedstock and production capacity can accommodate an additional 500 million gallons per year of growth in biodiesel, renewable diesel, and sustainable aviation fuel in 2023, 2024 and 2025. We encourage EPA to recognize the effect of the tax treatment of sustainable aviation fuel included in the recently passed Inflation Reduction Act, that is expected to bring greater volumes of this fuel to the marketplace. The volume proposal for the advanced biofuels category should also recognize the likely growth of sustainable aviation fuel, particularly in 2025, as the Administration moves forward with the SAF Grand Challenge that establishes a goal of 3 billion gallons of the fuel by 2030.

As stated earlier, Chevron supports growth in the advanced biofuels category that is in keeping with the intent of the program. We encourage EPA to account for achievable growth of biodiesel, renewable diesel, and sustainable aviation fuel at 500 million gallons per year over the years outlined in this proposal in the advanced biofuels category.

1.2. Impact on food prices.

Chevron understands that EPA must account for the effect of the annual volume standards on several economic variables with the 6-factor analysis including food prices. Within that analysis we urge EPA to recognize the beneficial effect which increasing the supply of biomass-based diesel will have on food security. We believe ample feedstock growth, along with biofuel production capacity and the ability to process these feedstocks, will support higher volumes of biomass-based diesel. These trends have been identified in the proposed rulemaking. While novel feedstocks and waste fats, oils, and greases will be available, much of the growth in feedstocks is attributable to increasing yields from soy and canola, and these yields will directly benefit food security. The American Soybean Association estimates that expanded crush capacity expected to come online between 2023 and 2025 can support 700 million gallons of additional biomass-based diesel production from soybean oil alone.

The American Soybean Association and the Clean Fuels Alliance America both report new research¹ that demonstrates the beneficial effect of expanded soy production on food security by increasing the supply of meal delivered to the animal protein and dairy industries that may help lower meat prices and balance consumer costs.

2. RIN Separation and Distribution Limits

2.1. RIN Separation Limit to Biodiesel blends of 20 percent.

Chevron strongly opposes limiting RIN separation and distribution for non-biogas RINs, particularly D4 RINs. We urge EPA to maintain the existing limits on RIN separation to blends of B80 or lower per 80.1429(b)(6) unless the blend is designated as a transportation fuel in 80.1429(b)(4). There are current RFS eligible uses of biodiesel diesel blends greater than B20 that would be unduly restricted by a B20 RIN separation limit. These include state mandates and incentives for both diesel vehicles and home heating applications. Chevron is also engaging with ASTM and vehicle and rail OEMS to support higher biodiesel and biodiesel/renewable diesel blends containing more than 30 volume percent biodiesel. We encourage EPA to examine the comments on this topic provided by CFAA and the ABFA. The EPA should maintain the current requirement particularly as EPA has not included any reasoning behind reducing the limit from B80 to B20.

2.2. RIN Separation and Distribution Limit to the Equivalence Value of the Renewable Fuel

We also encourage EPA to maintain the current RIN separation and distribution limits to 2.5 K1 RINs per gallon for non-biogas/RNG renewable fuels instead of the proposed limitation to the equivalence value. While the proposed change attempts to treat all fuels equally, biogas is already treated differently from other renewable fuels in the RFS. Tailoring specific conditions and requirements for different fuels is consistent with existing RFS rules. Biodiesel suppliers often spend significant resources to manage the 2.5 K1 RIN per gallon RFS limit each quarter, often on behalf of customers who are not registered for the RFS or do not have the resources and knowledge base to manage RINs. These customers often include home heating oil distributors and other purchasers of biofuel. We direct EPA to the comments submitted by the Northeast Home Heating Oil Institute concerning the impact of the proposed RIN separation limit on the ability to supply bioheat to the region. Changing the existing

¹ Food and Fuel: Modeling Food System Wide Impacts of Increase in Demand for Soybean Oil, Jayson L. Lusk November 10, 2022 https://ag.purdue.edu/cfdas/wp-content/uploads/2022/12/report_soymodel_revised13.pdf

distribution limit in 80.1428 to the equivalence value of the renewable fuel would be a major administrative burden for the non-biogas RIN market.

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 (e.g. 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 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.

3. Separated Food Waste Recordkeeping Requirements

The recordkeeping requirements for separated yard waste, separated food waste, separated municipal solid waste, or biogenic waste oils/fats/greases are particularly burdensome for renewable fuel producers. We refer to the comments submitted by API, ABFA and CFAA that highlight the deficiencies of the proposed alternative compliance option for these feedstocks. We would like to underscore the fact that mandatory QAP, as required under the proposed alternative compliance option, is unworkable given the mandatory use of the QAP for other programs including biointermediates. We believe that mandatory use of QAP will overburden the limited number of QAP providers and deny bio-refiners workable access to used cooking oil feedstock in a timely manner. Also, the approach outlined by EPA does not approximate the approach adopted by the California Air Resources Board nor is it appropriate for EPA to repurpose the CARB Joint Application Process for verification of feedstock origination.

We encourage EPA to support multiple avenues for compliance as outlined in comments supplied by API, ABFA and CFAA. These alternatives provide EPA with access to source and origination documentation/data and provides used cooking oil suppliers and aggregators the assurance that confidential business information is not disclosed to bio-refiners. Permitting a system where used cooking oil suppliers can provide origination documentation to an electronic 3rd party database (while precluding bio-refiners from viewing confidential business information) will permit EPA data access. For those used cooking oil suppliers that are not be able to input information to a 3rd party database, a requirement that suppliers and aggregators keep on hand paper or electronic records for each transaction and work with a bio-refiner's auditor to access the records, will provide EPA with the appropriate information for these suppliers. Having these compliance options will meet the needs of the industry and provide EPA with fit for purpose data concerning the source and origination of separated food waste.

4. eRIN and Biogas Reform Proposal

Chevron has concerns with the proposed implementation of eRINs. We support the comments provided by API on this topic which discuss several shortcomings with the proposed implementation as well as alternatives that would allow for eRINs to be phased into the RFS program. Chevron disagrees with concentrating eRIN generation and separation with electric vehicle OEMs. We support AFPM's

comments opposing the OEM as RIN generator, especially regarding concerns about market power and RIN distribution. EPA should allow the RNG producer or electricity producer to act as the RIN generator consistent with existing liquid renewable fuels and utilize a book and claim approach where eRINS can only be separated after demonstrating that a commensurate amount of electricity has been used for fueling electric transportation vehicles. This encourages diversification of the number of parties that can generate eRINS rather than giving a large level of control to a limited number of parties that are new to the program and are neither obligated parties nor fuel producers.

EPA should also provide alternatives to their proposed biogas reform to ensure that it does not disrupt existing D3 RIN generation for RNG. The industry would benefit from having more flexibility by having additional parties generate and separate RINs while keeping the current RIN generation infrastructure in place. This includes maintaining the ability to separate RNG RINs as an obligated party, allowing for delegation of responsibilities in the RIN generation process to other parties, not imposing a “many to one” limitation, and permitting flexibility to produce RNG for CNG vehicles or electricity for EVs/PHEVs.

These elements facilitate broad participation in the RFS. Chevron and much of the industry have been operating through partnerships with multiple producers of RNG and would need to undergo significant changes to contractual obligations to accommodate the EPA’s proposals for biogas reform. We encourage EPA to provide an alternative that permits existing RNG D3 compliance even if utilizing that alternative makes Q-RIN generation mandatory for D3 RINS from RNG.

Chevron is also concerned about our ability, and our RNG partners’ ability, to continue storing RNG offsite, as EPA’s proposal limits credit generation to facilities storing RNG onsite at the time of registration. We request that the ability to store RNG off-site during registration remains in the program.

We endorse the positions on eRINS and biogas reform that are expressed in both the API and RNG Coalition comments. We support their suggested revisions to the EPA proposals on eRINS and biogas reform including deferral of implementation to January 2025. These revisions are imperative given the complexity, condensed comment period, and proximity between the expected final rule publication and the proposed implementation timeline.

5. Definition of “Produced from Renewable Biomass” and “Co-processing”

Chevron disagrees with EPA’s revision of the proposed definition of “produced from renewable biomass” and “co-processed”. Neither the changes to the definitions nor the changes to the associated regulatory text should be finalized due to the negative impacts on the RFS program. Again, we refer EPA to the comments provided by API.

5.1. Produced from Renewable Biomass

EPA’s historic interpretation for what constitutes “produced from renewable biomass” is based on feedstock analysis and correcting for non-biomass components that are blended with renewable fuels. This same approach should not be extended to consider the molecular structure of renewable fuels as proposed. We encourage EPA to withdraw this proposal and consider issuing a future proposal that more comprehensively discusses “produced from renewable biomass” in terms of greenhouse gas (GHG) reduction and life cycle analysis. EPA has pointed out that the CAA does not define “produced from renewable biomass”, and we continue to recommend that the term be defined broadly. A broad

interpretation would not artificially exclude fuels that contribute to GHG reductions where either the energy or mass is derived from qualified renewable biomass.

5.2. Co-processing

The EPA should not change the definition of co-processing from the current definition of "...renewable biomass or a biointermediate [that] was simultaneously processed with fossil fuels or other non-renewable feedstock in the same unit or units to produce a fuel that is partially derived from renewable biomass or a biointermediate". EPA does not adequately address the full implications of this change within the preamble nor explain the need for the extensive revisions to the regulatory text that are proposed. Redefining co-processing also has ramifications outside of the RFS. The EPA should maintain the current definition to ensure alignment with the use of the term in other regulatory, legislative, and business applications.

We oppose classifying all renewable diesel or fuels that contain energy from non-qualified feedstocks (e.g natural gas) as "co-processed fuel". For example, the proposal could be interpreted to mean that any renewable diesel hydrotreated with hydrogen from fossil natural gas would be classified as co-processed because fossil-based hydrogen would be considered a "non-renewable feedstock." This same logic could be applied to biodiesel produced with methanol derived from fossil natural gas, which would mean all bio-based diesel options on the market today would be considered co-processed fuel. Further, while the definition of non-ester renewable diesel has not changed, the definition of biomass-based diesel still says a co-processed renewable fuel cannot be biomass-based diesel and therefore would not qualify for a D4 RIN. This is one example of the many impacts that EPA did not discuss in the proposal.

EPA proposes alternatives to adjust the number of RINs generated for a gallon of renewable diesel including lowering the equivalence value to from 1.7 to 1.6 RINs per gallon or adjusting the BTUs per gallon to account for the fraction of non-renewable contributions. This is related to the discussion of produced from biomass and co-processing and their impacts on equivalence values. We recommend that the equivalence value for renewable diesel remain unchanged until there is more clarity regarding EPA's approach to produced from renewable biomass. Additional discussion is also needed to make it transparent whether lower heating value is being utilized or energy content that includes other considerations. For instance, the energy content values between Table VIII.G.1-1 and EPA-HQ-2005-0161-0046 are inconsistent. Within that discussion, we request inclusion of energy content of fuels such as renewable jet fuel, renewable naphtha, and renewable propane.

6. RFS Third-Party Oversight Enhancement

We oppose a requirement to have Third-Party Engineering Reviews completed after July 1. Most of our renewable fuel facilities participate in the California LCFS program which requires annual site visits, but those effectively must be done prior to July 1 due to the August 31 verification deadline. 3rd party verifiers generally perform site visits between February and June so this proposal would double site visits within the same year for many RFS participants without any benefit to the program.

7. Hydrogen Fuel Lifecycle Analysis

Chevron believes in the value of delivering large-scale hydrogen solutions that support lower carbon intensity transportation alternatives. We aim to deliver lower carbon intensity energy to a growing world by creating a profitable, large-scale, lower carbon intensity hydrogen business that builds on our existing assets, capabilities, and customers. We're well positioned to participate across the value chain to supply industrial, power, and heavy-duty transportation customers. Chevron encourages EPA to include hydrogen as an eligible transportation fuel within the RFS and offers the following input for EPA's consideration. We understand that EPA is considering hydrogen pathways on a case-by-case basis. Longer-term, we suggest that the agency should consider grouping pathways that are eligible for certain D-RINs by default as they already do for other biofuel pathways. A continued reliance on case-by-case review of projects will delay process approval, over-burden the agency, and discourage new applications and technology development.

Consistent utilization of GREET 2022 instead of the 2021 version of the model is important for evaluating the life-cycle analysis (LCA) of all hydrogen pathways. This is critical for hydrogen pathways given the addition of a standalone hydrogen module in GREET 2022, which contains updated industry data inputs that can have significant impacts on the results. For instance, the GREET 2022 version allows users to specify electricity grid mix for compression and liquification, which can change the well to wheels (WTW) results significantly. Hydrogen liquification impact can add 40 kg CO₂ per mmBTU of H₂ using US mix, but only 25 kg CO₂ per mmBTU of hydrogen using CA mix. Further, we noted that EPA misapplied GREET 2021 in Tables IX.H.2-2 and IX.H.2-3. Specifically, the difference between using GREET default values and NREL H2A assumptions should be small and in GREET 2022 the H2A option is removed. WTW results depend on whether onboard storage is 350 bar vs. 700 bar, and on whether precooling is required, and if so, to what precooling temperature (e.g., -40C, -20C). Please note that most fuel cell bus fueling is at 350 bar with no precooling required.

We support utilization of GREET 2022 for hydrogen LCA modeling and offer these specific recommendations for EPA that relate to hydrogen production and use in vehicles.

7.1. Hydrogen Production

GREET has default input values that represent average United States facilities. We support using GREET's 2022 inputs as defaults, while allowing applicants to input their own values for certain parameters. Hydrogen fuel production data, including co-product volumes, should be provided directly by the hydrogen production facility. It is also important to recognize that not all hydrogen plants using SMR technology have integrated pressure swing adsorption units. PSA is an expensive technology and some older hydrogen trains do not include it in their design.

Regarding the use of a mixed data approach where industry's fuel production process data is combined with "data from GREET on emissions upstream from biogas sourcing as well as downstream associated with the distribution and use of the finished biofuel," we are concerned that landfill biogas was the only feedstock modeled for all RNG pathways. Further, credits associated with avoiding methane leakage (from biogas) were not considered. This modeling approach results in carbon intensity values for RNG higher than zero across the board. We recommend that the agency also calculates carbon intensity (CI) values for hydrogen from RNG using dairy manure as a feedstock given

that the results are usually much lower. In fact, the California Air Resources Board has certified several RNG-to-Hydrogen pathways² with negative CI values with feedstock from dairy manure.

We believe that evaluation of hydrogen fugitive emissions is premature when the focus should be on lifecycle analysis for production, distribution and use in transportation.

7.2. Hydrogen Vehicle Use

Adjusting CI based on fuel cell vehicle (FCV) fuel economy improvement over ICEVs is important, since this targets transportation end use of hydrogen. Today, FCV LDVs provide 2.5 times fuel economy improvement over gasoline ICEs³. EPA should consider using the CARB fuel economy value (2.5 for FCV LDV) as an adjustment factor. For FCV HDVs, the fuel economy improvement factor over diesel ICEVs depends strongly on vehicle class and duty cycle. This factor can range from 1.2 to 3.0, depending on vehicle class and daily duty cycle. Again, following the CARB value (1.9 for FC HDV) for the adjustment of CI is a good starting point. Alternatively, EPA will need to establish a fuel economy ratio for each medium and heavy duty FCV class and vocation.

8. Conclusion

Thank you for providing this opportunity to comment on the proposed rule. If you have any questions regarding our comments, please contact Bob Anderson (bob.anderson@chevron.com; 925-842-5317), Ezra Finkin (ezra.finkin@chevron.com; 515-766-8448) or Jason Larrabee (jasonlarrabee@chevron.com; 202-408-5853).

² <https://ww2.arb.ca.gov/resources/documents/lcfs-pathway-certified-carbon-intensities>

³ See www.fueleconomy.gov for fuel economy of Toyota Mirai, Honda Clarity and Hyundai Nexo vs. their gasoline counterpart