



OFFICE OF AIR AND RADIATION

WASHINGTON, D.C. 20460

April 26, 2024

Mr. Robert Miller
President
InSitu DS
1217 River Beach Drive
Vero Beach, Florida 32967

Dear Mr. Miller:

InSitu DS (“InSitu”) petitioned the Agency to approve pathways for the generation of biomass-based diesel (D-code 4) RINs for renewable diesel and heating oil produced from distillers corn oil feedstock at their facility in Rochelle, IL (the “InSitu Rochelle Pathways”).

Through the petition process described under 40 CFR 80.1416, InSitu submitted data to the EPA, and the EPA performed a lifecycle greenhouse gas analysis of the fuel produced through the InSitu Rochelle Pathways. This analysis involved application of the same methodology, and much of the same modeling, used for previous RFS rulemakings, including the March 2010 RFS rule (75 FR 14670) and the February 2020 RFS rule (85 FR 7058). The feedstock and fuel type components of the InSitu Rochelle Pathways have been evaluated through previous RFS rulemakings. The difference between this analysis and the modeling completed for previous RFS rulemakings is the EPA’s evaluation of InSitu’s production process and we updated the background data as described in the attached determination.

The attached document, “InSitu DS Distillers Corn Oil to Renewable Diesel and Heating Oil Fuel Pathways Determination under the RFS Program” describes the data submitted by InSitu, the analysis conducted by the EPA, and our determination of the lifecycle greenhouse gas emissions associated with the fuel production pathway described in InSitu petition.

Based on our assessment, renewable diesel and heating oil produced from distiller corn oil through the InSitu Rochelle Pathways qualifies under the Clean Air Act (CAA) for biomass-based diesel (D-code 4) RINs, provided all applicable statutory and regulatory conditions are satisfied including those specified in the CAA and the EPA implementing regulations. The EPA is specifying additional conditions unique to the InSitu Rochelle Pathways in Section IV of the enclosed determination document that must be satisfied in order for InSitu to generate D-code 4 RINs.

This approval applies only to the InSitu facility in Rochelle, IL, and to the process, materials used, fuels produced, and process energy types and amounts outlined and described in the petition submitted by InSitu.

The OTAQ Reg: Fuels Programs Registration and OTAQ EMTS Application will be modified to allow InSitu to register and generate biomass-based diesel RINs for renewable diesel and heating oil produced from distillers corn oil through the “InSitu Rochelle Process.”

Sincerely,

Byron J. Bunker, Director
Implementation, Analysis, and Compliance Division
Office of Transportation and Air Quality

InSitu DS Distillers Corn Oil to Renewable Diesel and Heating Oil Fuel Pathways Determination
under the RFS Program

Office of Transportation and Air Quality

Summary: InSitu DS (“InSitu”) petitioned the Agency under the Renewable Fuel Standard (RFS) program to generate biomass-based diesel (D-code 4) RINs for renewable diesel and heating oil produced at a dry mill ethanol plant in Rochelle, IL (the “InSitu Rochelle Facility”). The renewable diesel and heating oil are produced from distillers corn oil through a process of filtration and addition of proprietary additives. We refer to this entire collection of steps, the feedstock, the facility, the process, and the fuels produced as the “InSitu Rochelle Pathways.”

Through the petition process described under 40 CFR 80.1416, InSitu submitted data to the EPA to perform a lifecycle GHG analysis of the InSitu Rochelle Pathways. This analysis involved application of the same methodology, and much of the same modeling, used for previous RFS rulemakings, including the March 2010 RFS rule (75 FR 14670) and the 2020 RFS rule (85 FR 7058). The feedstock and fuel type components of the InSitu Rochelle Pathways have been evaluated through previous RFS rulemakings. The difference between this analysis and the modeling completed for previous RFS rulemakings is the EPA’s evaluation of InSitu’s production process and we updated the background data as described in Section III.

The EPA previously evaluated distillers corn oil in the final rule published on March 26, 2010 (75 FR 14670) (the “March 2010 RFS rule”) and modeled in more detail the emissions associated with using distillers corn oil as a biofuel feedstock in the final rule published on February 6, 2020 (85 FR 7058) (the “February 2020 RFS rule”). Based on the data submitted by InSitu and the methodology for evaluating distillers corn oil developed in the February 2020 RFS rule, the EPA conducted a lifecycle assessment estimating that renewable diesel and heating oil produced through the InSitu Rochelle Pathways reduces lifecycle greenhouse gas (GHG) emissions compared to the statutory diesel baseline by 75%. Based on the results of our lifecycle GHG assessment, renewable diesel and heating oil produced through the InSitu Rochelle Pathways qualifies for biomass-based diesel (D-code 4) RINs, provided all applicable statutory and regulatory conditions are satisfied. In addition, in Section IV of this determination document specifies additional conditions unique to the InSitu Rochelle Pathways that must be satisfied in order for InSitu to generate D-code 4 RINs through these pathways.

This document is organized as follows:

- *Section I. Required Information and Criteria for Petition Requests:* This section contains information on the background and purpose of the petition process, the criteria the EPA uses to evaluate petitions, and the information that must be provided under the petition process as outlined in 40 CFR 80.1416. This section includes a general discussion of petitions submitted pursuant to 40 CFR 80.1416.
- *Section II. Available Information:* This section contains background information on the petitioner, the information provided in the petition, and how it complies with the petition requirements outlined in Section I.

- *Section III. Analysis and Discussion:* This section describes the lifecycle analysis done for this determination and identifies how it was unique compared to analyses performed for previous RFS rules. This section also describes how we have applied the lifecycle results to determine the appropriate D-code for fuel produced pursuant to the evaluated pathways.
- *Section IV. Conditions and Associated Regulatory Provisions:* This section describes the conditions and regulatory provisions associated with this petition determination.
- *Section V. Public Participation:* This section describes how this petition is an extension of the analysis done as part of previous actions that underwent a public notice and comment process.
- *Section VI. Conclusion:* This section summarizes our conclusions regarding the petition, including the D-codes that the petition may use in generating RINs for fuel produced through the evaluated pathways.

I. Required Information and Criteria for Petition Requests

A. Background and Purpose of Petition Process

The RFS program is set out in CAA 211(o). The EPA’s regulations implementing this program are published at 40 CFR part 80, subpart M. The RFS regulations implement the statutory requirements regarding the types of renewable fuels eligible to participate in the RFS program and specify the procedures by which renewable fuel producers and importers may generate RINs for the qualifying renewable fuels they produce through approved fuel pathways.

Pursuant to § 80.1426(f)(1) of the regulations, D codes must be used in RINs generated by producers or importers of renewable fuel according to approved pathways, which are laid out in Table 1 to § 80.1426. Table 1 lists the three critical components of a fuel pathway: (1) fuel type, (2) feedstock, and (3) production process. Each specific combination of the three components, or fuel pathway, is assigned a D code. The EPA may also independently approve additional fuel pathways not currently listed in Table 1 for participation in the RFS program, or a third party may petition for the EPA to evaluate a new fuel pathway in accordance with § 80.1416. In addition, renewable fuel producers qualified in accordance with 40 CFR 80.1403(c) and (d) for an exemption from the 20 percent GHG emissions reduction requirement of the Act for a baseline volume of fuel (“grandfathered fuel”) may generate RINs with a D-code of 6 pursuant to 40 CFR 80.1426(f)(6) for that baseline volume, assuming all other regulatory requirements are satisfied.¹

The petition process under § 80.1416 allows parties to request that the EPA evaluate a new fuel pathway’s lifecycle GHG reduction and provide a determination of the D code for which the new pathway may be eligible.

¹ “Grandfathered fuel” refers to a baseline volume of renewable fuel produced from a facility that commenced construction before December 19, 2007, and which completed construction within 36 months without an 18-month hiatus in construction and is exempt from the minimum 20 percent GHG reduction requirement that applies to general renewable fuel. A baseline volume of ethanol from a facility that commenced construction after December 19, 2007, but prior to December 31, 2009, qualifies for the same exemption if construction is completed within 36 months without an 18-month hiatus in construction and the facility is fired with natural gas, biomass, or any combination thereof. “Baseline volume” is defined in 40 CFR 80.1401.

B. Required Information in Petitions

As specified in 40 CFR 80.1416(b)(1), petitions must include all of the following information, as well as appropriate supporting documents such as independent studies, engineering estimates, industry survey data, and reports or other documents supporting any claims:

- The information specified under 40 CFR 1090.805 (Registration of refiners, importers or oxygenate blenders).
- A technical justification that includes a description of the renewable fuel, feedstock(s), biointermediate(s), and production process. The justification must include process modeling flow charts.
- A mass balance for the pathway, including feedstocks and biointermediates, fuels produced, co-products, and waste materials production.
- Information on co-products, including their expected use and market value.
- An energy balance for the pathway, including a list of any energy and process heat inputs and outputs used in the pathway, including such sources produced off site or by another entity.
- Any other relevant information, including information pertaining to energy saving technologies or other process improvements.
- The petition must be signed and certified as meeting all the applicable requirements of 40 CFR 80.1416 by the responsible corporate officer of the applicant company.
- Other additional information as requested by the Administrator to complete the lifecycle greenhouse gas assessment of the new fuel pathway.

In addition to the requirements stated above, parties who use a feedstock not previously evaluated by the EPA must also include additional information pursuant to 40 CFR 80.1416(b)(2). This information was not required for the InSitu petition because it requests evaluation of pathways that use a feedstock, distillers corn oil, that the EPA previously evaluated in the March 2010 RFS rule and the February 2020 RFS rule.

II. Available Information

A. Information Available Through Existing Modeling

The feedstock and fuel described in the InSitu petition have been evaluated as part of prior RFS rulemakings. The feedstock, distillers corn oil, was evaluated in the March 2010 and February 2020 RFS rules. The EPA previously evaluated renewable diesel and heating oil in the March 2010 RFS rule, the February 2020 RFS rule, and other RFS rules. Compared to these prior evaluations, our analysis for this determination considers the specific production process used by InSitu and the combination of these three components (feedstock, process, fuel) to form a fuel pathway that we have not previously

evaluated. This was a straightforward analysis based on existing modeling done for the March 2010 RFS rule and the February 2020 RFS rule, updating data sources, and evaluation of InSitu's mass and energy balance process data.

B. Information Submitted by InSitu

InSitu has supplied all the information as required in 40 CFR 80.1416 that the EPA needs to analyze the lifecycle GHG emissions associated with the InSitu Rochelle Pathways. The information submitted includes a technical justification that has a description of the fuel, feedstocks used, and InSitu's proprietary production process with modeling flow charts, a detailed mass and energy balance of the process, and other additional information as needed to complete the lifecycle GHG assessment. InSitu intends to seek registration for its renewable diesel under 40 CFR Part 79, as diesel fuel additive up to three percent volume.

III. Analysis and Discussion

A. Lifecycle Analysis

Determining a fuel pathway's compliance with the lifecycle GHG reduction thresholds specified in CAA 211(o) for different types of renewable fuel requires a comprehensive evaluation of the renewable fuel, as compared to the gasoline or diesel that it replaces, on the basis of its lifecycle GHG emissions. The GHG emissions assessments must evaluate the aggregate quantity of GHG emissions (including direct emissions and significant indirect emissions such as significant emissions from land use changes) related to the full lifecycle, including all stages of fuel and feedstock production, distribution, and use by the ultimate consumer.

In examining the full lifecycle GHG impacts of renewable fuels for the RFS program, the EPA considers the following:

- Feedstock production – based on modeling that includes direct and indirect impacts of feedstock production.
- Biointermediate production (when applicable).²
- Fuel production – including process energy requirements, impacts of any raw materials used in the process, and benefits from co-products produced.
- Fuel and feedstock distribution – including impacts of transporting feedstock from production to use, and transport of the final fuel to the consumer.
- Use of the fuel – including combustion emissions from use of the fuel in a vehicle.

² Provisions covering biointermediates were finalized in the 2020-2022 RFS Standards final rule (87 FR 39600). Revisions to the facility specific petition process defined under 40 CFR 80.1416, finalized under this rule, now require parties to submit for EPA's consideration information related to any biointermediates used in the requested pathways.

The EPA's evaluation of the lifecycle GHG emissions related to the InSitu Rochelle Pathways is consistent with the CAA's applicable requirements, including the definition of lifecycle GHG emissions and threshold evaluation requirements.

Our lifecycle analysis methodology for this evaluation is based on modeling that the EPA completed for the March 2010 and February 2020 RFS rules. We use the methodologies developed in these rules and update some of the data sources. Our lifecycle GHG analyses for the March 2010 RFS rule relied on version 1.8c of the Greenhouse gases, Regulated Emissions, and Energy use in Technologies (GREET) model for numerous emissions factors and assumptions. As a general matter, we have updated the emissions factors for raw materials (e.g., natural gas), electricity, and transportation and distribution based on data from the GREET-2022 model.³ A more recent version of the GREET model, R&D GREET-2023, was released as we were conducting our evaluation for this petition determination. We are using the GREET-2022 model for this determination as we have not had time to adequately review the updates in R&D GREET-2023. Based on our review of the summary of updates to the GREET model,⁴ we believe that updating from GREET-2022 to R&D GREET-2023 would not have had a material impact on our analysis for this determination. We do not believe that using the R&D GREET-2023 model would have changed our evaluation for purposes of determining the applicable D-codes or our conclusions for fuel produced through the InSitu Rochelle Pathways. Our analyses of each component of the lifecycle, and associated data updates, are described below.

Feedstock Production – The InSitu Rochelle Pathways use as feedstock distillers corn oil produced at the dry mill corn ethanol facility in Rochelle, IL. Distillers grains is a coproduct of the dry mill ethanol production process. The distillers corn oil is recovered from the distillers grains through mechanical extraction. The recovered distillers corn oil contains a high concentration of free-fatty acids, greater than ten percent by weight,⁵ and is unsuitable for human consumption without further refining. It can, however, be used without further refining as a biofuel feedstock or as an ingredient in animal feed. Our estimate of the GHG emissions associated with distillers corn oil includes three components: 1) oil extraction process energy, 2) livestock sector impacts and 3) oil transportation.

For oil extraction process energy, we assume 183 Btu of electricity is used per pound of corn oil extracted. This is based on the default assumption in GREET-2022 for an average U.S. corn ethanol dry mill with corn oil extraction. Extracting corn oil from distillers grains reduces electricity and natural gas use for other functions at the ethanol plant, such as distillers grains drying.⁶ As a conservative approach, we attribute the electricity used for corn oil extraction to the InSitu Rochelle Pathways but

³ Wang et al. (2022) Greenhouse gases, Regulated Emissions, and Energy use in Technologies Model[®] (2022 Excel). Computer Software. USDOE Office of Energy Efficiency and Renewable Energy (EERE). 10 Oct. 2022. Web. doi:10.11578/GREET-Excel-2022/dc.20220908.1.

⁴ Wang et al. (2023). Summary of Expansions and Updates in R&D GREET[®] 2023. December 2023. Systems Assessment Center, Energy Systems and Infrastructure Analysis Division, Argonne National Laboratory. <https://greet.anl.gov/files/greet-2023-summary>

⁵ Moreau et al. (2010). The Composition of Crude Corn Oil Recovered after Fermentation via Centrifugation from a Commercial Dry Grind Ethanol Process. *Journal of the American Oil Chemists' Society*. 87. 10.1007/s11746-010-1568-z.

⁶ Based on the data in GREET-2022, energy use for a dry mill ethanol plant without corn oil extraction is 25,034 Btu per gallon of ethanol, whereas energy use for a facility with corn oil extraction is 24,578, a 2% reduction.

do not attribute the other energy savings to the InSitu Rochelle Pathways. We believe this conservative approach is appropriate for the purposes of this evaluation.⁷

For livestock sector impacts, we estimate the emissions associated with supplying corn as livestock feed to substitute for the distillers corn oil. For the February 2020 RFS rule, the EPA evaluated the lifecycle GHG emissions associated with using distillers corn oil as a biofuel feedstock. This analysis included the market-mediated emissions related to removing this oil from the supply of livestock feed. Based on our analysis of available data, we assumed that using corn oil for biofuel production would be replaced with corn in livestock feed. We estimated the amount of corn that would substitute for corn oil in livestock feed markets. We then estimated the GHG emissions associated with supplying this corn for livestock feed based on our lifecycle GHG analysis of corn starch ethanol for the March 2010 RFS rule.⁸ For our evaluation of the InSitu Rochelle Pathways, we follow the same approach to estimate livestock sector emissions but with several data and emission factor updates.

For induced activity changes (e.g., changes in crop and livestock production), the livestock sector emissions estimates continue to rely on the FASOM and FAPRI-CARD corn ethanol modeling used for the March 2010 RFS rule, but with the following updates to the emissions factors applied to the activity data.

First, in places where the original analysis used data from a prior version of the GREET model, we replaced these data with the default estimates, without modification, from the GREET-2022 model. The GREET data updates were applied to the following elements: emissions factors for natural gas production and use, LPG production and use, coal production and use, nitrogen fertilizer production, phosphate fertilizer production, hydrogen production, herbicide and pesticide production and use, energy inputs and efficiency of soybean crushing, and feedstock transport energy use and emissions. Second, we updated the foreign land use change emissions factors based on more recent data on forest carbon stocks in Latin America, Sub-Saharan Africa, parts of Africa and Europe. We have used and explained these data updates in prior rules and Federal Register publications.⁹ Third, we updated our estimates of the GHG emissions associated with changes in foreign on-farm energy use based on 2019 data from FAO.¹⁰ Finally, we updated from using GWP values from the IPCC Second Assessment Report to values from the Fifth Assessment Report (AR5), which we apply for all of the stages of the InSitu Rochelle Pathways.

⁷ The purpose of lifecycle assessment under the RFS program is not to precisely estimate lifecycle GHG emissions associated with particular biofuels, but instead to determine whether or not the fuels satisfy specified lifecycle GHG emissions thresholds to qualify as one or more of the four types of renewable fuel specified in the statute. Where there is a range of possible outcomes and the fuel satisfies the GHG reduction requirements when “conservative” assumptions are used, then a more precise quantification of the matter is not required for purposes of a pathway determination.

⁸ Memorandum to EPA Air Docket. (2018). “Summary for the Final Rule of Key Assumptions for EPA’s Analysis of the Lifecycle Greenhouse Gas Emissions Associated with Biofuels Produced from Distillers Sorghum Oil.” July 20, 2018. Document number EPA-HQ-OAR-2017-0655-0092.

⁹ These updates are described in the following technical report available in a public docket: Harris, N.L. 2011. Revisions to Land Conversion Emission Factors since the RFS2 Final Rule. Report submitted to EPA. EPA-HQ-OAR-2011-0542-0058. They have been applied in the following actions: January 2012 Palm Oil NODA (77 FR 4300), December 2012 grain sorghum rule (77 FR 74592), October 2015 Jatropha Oil Notice (80 FR 61406), July 2015 Sugar Beets Notice (82 FR 34656), April 2022 Canola Oil Pathways NPRM (87 FR 22823).

¹⁰ These updates are explained in the April 2022 Canola Oil Pathways NPRM (87 FR 22834-22835). Data and estimates are available on the docket: “Canola RD Intl Ag Energy GHG NPRM v2” (EPA-HQ-OAR-2021-0845-0014).

For our evaluation of the InSitu Rochelle Pathways, we assumed zero emissions associated with transporting the distillers corn oil from the ethanol plant to the biofuel production facility, as the biofuel production facility is co-located with the ethanol production plant.

The feedstock production emissions estimates are summarized in Table 1, reported per pound of distillers corn oil supplied to the InSitu Rochelle Process.

Table 1: GHG Emissions Associated with Feedstock Production Emissions (kgCO₂e per pound of distillers corn oil)

Emissions Category	GHG Emissions
Livestock Sector Impacts	0.3
Oil Extraction	0.03
Feedstock Transportation	0.0
Total	0.33

Fuel Production– The InSitu Rochelle Process is relatively simple. The distillers corn oil is subjected to a two-step filtration process, first with a mechanical filter skid system and then with an ion exchange resin tower. A relatively small amount of electricity is used to power these processes. Before being marketed, the fuel receives small amounts of two proprietary additives. As a simplifying assumption, we use the diesel baseline emissions factor to estimate the emissions associated with the additives. Overall, we estimate that emissions from the InSitu Rochelle Process are 0.01 kgCO₂e per mmBtu of fuel output.

Fuel Transport – To evaluate the emissions associated with transporting and distributing the renewable diesel and heating fuel produced through the InSitu Rochelle Pathways, we used the emissions estimates from GREET-2022 for renewable diesel, of 0.4 kgCO₂e per mmBtu. We believe this provides a reasonably conservative estimate for the purpose of this petition evaluation.

Fuel Use – To evaluate the emissions associated with combusting the renewable diesel produced through the InSitu Rochelle Pathways, we used non-carbon dioxide the emissions estimates from GREET-2022 for renewable diesel of 0.8 kgCO₂e per mmBtu.¹¹ For heating oil combustion, we used the non-carbon dioxide emissions estimates for diesel fuel used in a commercial boiler, of 0.3 kgCO₂e per mmBtu. We recognize these fuel use emissions estimates rely on simplifying assumptions as they use emissions factors that were not estimated based on the precise chemical composition of InSitu’s fuel. While we recognize these limitations, we believe the simplified assumptions are

¹¹ Following the methodology developed for the March 2010 RFS2 rule, after notice, public comment, and peer review, the carbon in the fuel derived from renewable biomass is treated as biologically derived carbon originating from the atmosphere. In the context of a full lifecycle analysis, the uptake of this carbon from the atmosphere by the renewable biomass and the carbon dioxide emissions from combusting it cancel each other out. Therefore, instead of presenting both the carbon uptake and carbon dioxide combustion emissions, we leave both out of the results. Note that our analysis also accounts for significant indirect emissions associated with distillers corn oil, such as from land use changes, meaning we do not simply assume that biofuels are “carbon neutral.”

appropriate for the purpose of this analysis and that a more detailed assessment of the fuel use emissions would not result in a different determination regarding which D-code the fuels would qualify to generate.

Lifecycle GHG Results – Based on our analysis of the full fuel lifecycle for the InSitu Rochelle Pathways, described above, we estimated the lifecycle GHG emissions associated with renewable diesel and heating oil produced through the InSitu Rochelle Pathways. Table 2 summarizes the lifecycle GHG estimates. The percent reduction is based on a comparison with the lifecycle GHG emissions associated with the statutory 2005 diesel baseline of 97.7 kgCO₂e/mmBtu.

Table 2: Lifecycle GHG Emissions Associated with the InSitu Rochelle Pathways (kgCO₂e/mmBtu)¹²

Lifecycle Stage	Renewable Diesel	Heating Oil
Oil Extraction	1.5	1.5
Livestock Sector Impacts ¹³	17.7	17.7
InSitu Rochelle Process	0.01	0.0
Fuel Transport	0.4	0.4
Fuel Use	0.8	0.3
Total	20.4	19.9
Percent Reduction	79%	80%

B. Application of the Criteria for Petition Approval

InSitu provided all of the information required for this type of petition request. Based on the data submitted and information already available through analyses conducted for previous RFS rulemakings, the EPA conducted a lifecycle assessment of renewable diesel and heating oil produced through the InSitu Rochelle Pathways. The purpose of this analysis was to determine whether this fuel meets the 50 percent GHG threshold under the RFS program for biomass-based diesel. Based on the analysis described above, the EPA has determined the renewable diesel and heating oil produced through the InSitu Rochelle Pathways would be eligible for biomass-based diesel (D-Code 4) RINs, provided all of the fuels satisfy all of the associated regulatory requirements, including the conditions specified in Section IV of this determination.

IV. Conditions and Associated Regulatory Provisions

¹² Lifecycle GHG emissions are normalized per mmBtu of RIN-generating fuel produced. Totals may not be the sum of the rows due to rounding.

¹³ Livestock sector impacts are the emissions associated with replacing extracted corn oil with corn on a mass basis.

The EPA's approval of the InSitu Rochelle Pathways is predicated on the circumstances and analysis described in this document. To ensure that renewable fuel produced through these fuel pathways is produced in a manner consistent with those circumstances and analysis, we are prescribing certain conditions as described below. The authority for InSitu to generate RINs for renewable fuel produced through the InSitu Rochelle Pathways is expressly conditioned on InSitu satisfying all of the following conditions as detailed in this section, in addition to the other applicable requirements for renewable fuel producers set forth in the RFS regulations.

The conditions in this section are enforceable under the CAA. They are established pursuant to the informal adjudication reflected in this decision document, and also pursuant to any regulations cited below and 40 CFR 80.1426(a)(1)(iii), 40 CFR 80.1416(b)(1)(vii), 80.1450(i), and 80.1451(b)(1)(ii)(W). In addition or in the alternative to bringing an enforcement action under the CAA, the EPA may revoke this pathway approval if it determines that InSitu has failed to comply with any of the conditions specified herein. The EPA has authority to bring an action to enforce these conditions under 40 CFR 80.1460(a), which prohibits producing or importing a renewable fuel without complying with the RIN generation and assignment requirements. These conditions are also enforceable under 40 CFR 80.1460(b)(2), which prohibits creating a RIN that is invalid; a RIN is invalid if it was improperly generated. Additionally, pursuant to 40 CFR 80.1460(b)(7), generating a RIN for fuel that fails to meet all of the conditions set forth in this petition determination is a prohibited act. Unless all of the conditions specified in this section are satisfied, fuel cannot be validly produced through the pathways approved in this document.

The EPA may modify these, or place additional, conditions in the future as it deems necessary and appropriate to ensure that fuel produced pursuant to the InSitu Rochelle Pathways meets all applicable requirements, including the required lifecycle GHG reductions, as well as to make the conditions align with any future changes to the RFS regulations. If the EPA makes any changes to the conditions noted in this document for fuel produced pursuant to the InSitu Rochelle Pathways, the Agency will explain such changes in a public determination letter, similar to this one, and specify in that letter the effective date(s) of any such changes.

A. RIN Generation, Registration, Reporting and Recordkeeping Requirements

InSitu must adhere to the general RIN generation, registration, recordkeeping, and reporting requirements in 40 CFR Part 80, Subpart M that apply to renewable fuel producers, whether producing under a generally applicable pathway or a pathway approved through the petition process in 40 CFR 80.1416. These requirements are found at 40 CFR 80.1426 for RIN generation, 40 CFR 80.1450 for registration, 40 CFR 80.1451 for reporting, and 40 CFR 80.1454 for recordkeeping. In addition, the authority for InSitu to generate RINs for renewable fuel produced through the InSitu Rochelle Pathways is expressly conditioned on InSitu satisfying all of the following conditions related to RIN generation, registration, reporting and recordkeeping.

The authority for InSitu to generate RINs for renewable diesel produced through the InSitu Rochelle Pathways is expressly conditioned on InSitu satisfying all of the following conditions.

1. InSitu must comply with the applicable regulations at 40 CFR 80.1426(f)(17).

2. Before generating RINs for renewable diesel produced through the InSitu Rochelle Pathways, InSitu must submit and have the EPA accept a registration application for their fuel, under 40 CFR Part 79, to be registered as a diesel fuel additive.
3. Prior to RIN generation, InSitu must have the blending of the InSitu distillers corn oil fuel with diesel fuel, where the InSitu distillers corn oil fuel is less than five percent by volume of the finished blend, verified by an independent third-party auditor under a Quality Assurance Plan (QAP) pursuant to 40 CFR 80.1429. The independent third-party auditor must verify, under the QAP, that the fuel is blended for use as a transportation fuel, as defined at 40 CFR 80.2, and for no other purpose.

The authority for InSitu to generate RINs for heating oil produced through the InSitu Rochelle Pathways is expressly conditioned on InSitu satisfying all of the following conditions.

1. The heating oil must qualify as heating oil, as that term is defined at 40 CFR 80.2.¹⁴ InSitu's filtered distillers corn oil fuel does not satisfy the first paragraph of the heating oil definition because it is not commonly or commercially known or sold as heating oil, fuel oil, or similar trade names. For InSitu's fuel to satisfy the second paragraph of the heating oil definition, it would need to be used to heat or cool interior spaces of homes or buildings to control ambient climate for human comfort. The fuel oil must be liquid at standard temperature and pressure (i.e., 60 degrees Fahrenheit and 1 atmosphere of pressure) and must contain no more than 2.5% mass solids.
2. InSitu must obtain affidavits from the final end user or users of the fuel consistent with 40 CFR 80.1426(c)(7) and 40 CFR 80.1451(b)(1)(ii)(T)(2).¹⁵
3. InSitu's registration application must include affidavits from final end users of the fuel stating that it will be sold (or used) for the purposes of heating interior spaces of homes or buildings to control ambient climate for human comfort, and for no other purpose. See 40 CFR 80.1450(b)(1)(xi).
4. Prior to RIN generation, InSitu must have the ultimate end use of the heating oil verified by an independent third-party auditor under a Quality Assurance Plan (QAP) pursuant to 40 CFR 80.1429. The independent third-party auditor must verify, under the QAP, that the fuel is combusted as heating oil, as defined at 40 CFR 80.2, and used for no other purpose.

B. Equivalence Value

¹⁴ "Heating oil means any of the following: (1) Any No. 1, No. 2, or non-petroleum diesel blend that is sold for use in furnaces, boilers, and similar applications and which is commonly or commercially known or sold as heating oil, fuel oil, and similar trade names, and that is not jet fuel, kerosene, or MVNRLM diesel fuel. (2) Any fuel oil that is used to heat or cool interior spaces of homes or buildings to control ambient climate for human comfort. The fuel oil must be liquid at STP and contain no more than 2.5% mass solids." Source: 40 CFR 80.2 "Heating oil", [https://www.ecfr.gov/current/title-40/part-80/section-80.2#p-80.2\(Heating%20oil\)](https://www.ecfr.gov/current/title-40/part-80/section-80.2#p-80.2(Heating%20oil))

¹⁵ Per 40 CFR 80.1451(b)(1)(ii)(T)(2)(iv), the affidavits need to include a description of the finished fuel and a statement that the fuel meets all applicable standards and was sold for use as heating oil.

The authority for InSitu to generate RINs for renewable diesel or heating oil produced through the InSitu Rochelle Pathways is expressly conditioned on InSitu submitting, as part of its registration application, an equivalence value application pursuant to 40 CFR 80.1415(c). The regulations at 40 CFR 80.1415 list an equivalence value of 1.7 for non-ester renewable diesel conditional on the fuel having a lower heating value of at least 123,500 Btu/gal. InSitu's petition states that its fuel has a heating value greater than 123,500 Btu/gal and requests an equivalence value of 1.7. To ensure that the requested 1.7 equivalence value is appropriate for the renewable diesel produced through the InSitu Rochelle Pathways, InSitu must submit a new equivalence value application based on test results of a representative sample of renewable diesel produced by the InSitu Rochelle facility. Pursuant to 40 CFR 80.1415(b)(7), InSitu's authority to generate RINs for heating oil is conditioned upon InSitu submitting a new equivalence value application for its heating oil as part of its registration application.

V. Public Participation

The definition of advanced biofuel in CAA 211(o)(1) specifies that it means renewable fuel that has "lifecycle greenhouse gas emissions, as determined by the Administrator, after notice and opportunity for comment, that are at least 50 percent less than the baseline lifecycle greenhouse gas emissions..." As part of the July 29, 2019, Notice of Proposed Rulemaking, we took public comment on our lifecycle assessment of pathways involving the production of renewable diesel and heating oil from distillers corn oil (see 84 FR 36803). We did not receive any adverse comments. Thus, the above-described Notice provided an opportunity for public comment on a pathway analysis very similar to the analysis of the InSitu Rochelle Pathways described in this document.

In addition, in responding to this petition, we have relied on the same modeling that we conducted for the March 2010 and February 2020 RFS rules. We paired this prior modeling with adjustments and updates to account for the InSitu Rochelle's process data, and we updated background data from the GREET model. Thus, the fundamental analyses relied on for these decisions have been made available for public comment as part of previous rulemakings, consistent with the reference to notice and comment in the statutory definitions of "advanced biofuel." Our approach today is also consistent with the petition process for new RFS fuel pathways at 40 CFR 8014.1416, which was established in the March 2010 RFS final rule, after public notice and comment.

VI. Conclusion

Based on our evaluation, renewable diesel and heating oil produced from distillers corn oil through the InSitu Rochelle Process that is used as transportation fuel or heating oil qualifies under the CAA for biomass-based diesel (D-code 4) RINs. To be eligible for RINs, the fuel must satisfy the conditions in Section IV of this document and all applicable RFS regulations.

This approval applies specifically to InSitu DS, the InSitu Rochelle facility located in Rochelle, Illinois, and to the process, materials used, fuels produced, and process energy sources as outlined and described in the petition request submitted by InSitu.¹⁶ This approval is effective as of signature date.

¹⁶ As with all pathway determinations, this approval does not convey any property right of any sort, or any exclusive privilege.

RINs may only be generated for renewable fuel produced through the InSitu Rochelle Pathways that is produced after the date of activation of the registration for these new pathways.¹⁷

The OTAQ Reg: Fuels Programs Registration and OTAQ EMTS Application will be modified to allow InSitu to register and generate D-code 4 RINs for renewable diesel and heating oil produced from distillers corn oil at the InSitu facility located in Rochelle, Illinois, through the InSitu Rochelle Pathways using a production process of “InSitu Rochelle Process.”

¹⁷ A fuel pathway is activated under the RFS program when EPA accepts the registration application for the pathway, allowing it to be used in EMTS for RIN generation. When EPA accepts a registration application, an email is automatically sent from otaqfuels@epa.gov to the responsible corporate officer (RCO) of the company that submitted the registration application. The subject line of such an email includes the name of the company and the company request (CR) number corresponding with the registration application submission, and the body of the email says the company request “has been activated.”