Proposed RFS Small Refinery Exemption Decision

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United States Environmental Protection Agency

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EXECUTIVE SUMMARY

With this notice, EPA is seeking comment on a proposal to establish a change in our statutory interpretation of the Clean Air Act (CAA or "the Act") small refinery provisions and, applying this interpretation, to deny 65 pending petitions from small refineries seeking extensions of their small refinery exemptions (SREs) from the Renewable Fuel Standard (RFS) program. The petitions concern one or more compliance years between 2016 and 2021. This proposed adjudication and EPA's accompanying change in its interpretation of the relevant CAA provision are compelled by the 2020 ruling in *Renewable Fuels Association, et al. v. EPA*, 948 F.3d 1206 (10th Cir. 2020) (*RFA*), the Supreme Court's subsequent decision in *HollyFrontier Cheyenne Refining, LLC, et al. v. Renewable Fuels Ass'n, et al.*, 114 S.Ct. 2172 (2021), EPA's experience implementing the RFS program for more than a decade, and our exhaustive analysis of how the RFS credit market functions. EPA here proposes to establish that the small refineries with pending petitions before the Agency have failed to demonstrate the disproportionate economic hardship (DEH) that the CAA requires for EPA to grant such exemptions, and therefore the 65 pending SRE petitions should be denied.

The conclusions we rely on in presenting this proposal are: (1) Regardless of the mechanism by which small refineries and other obligated parties comply with their RFS obligations, the RFS compliance costs are the same for all obligated parties and thus no party bears RFS compliance costs that are disproportionate relative to others' costs; (2) Obligated parties, including small refineries, recover their compliance costs through the market price they receive when they sell their fuel products and thus do not bear a hardship created by compliance with the RFS program; and (3) With no disproportionality and no economic hardship, there can be no disproportionate economic hardship pursuant to the statute.

In addition to seeking comment on these conclusions, EPA requests comment on general as well as specific aspects of this proposed adjudication, including but not limited to the following[1]:

- The proposed conclusion that DEH must be caused by compliance with the RFS program to warrant an exemption.
- The proposed finding that the structure of the RFS program places a proportional burden on all obligated parties based on their gasoline and diesel fuel production volume.
- The proposed finding that the structure of the RFS compliance system EPA put in place, which enables the use of renewable fuel credits known as Renewable Identification Numbers (RINs), provides equal access to all obligated parties to the same means of compliance.
- The proposed finding that the fuel and RIN markets are competitive and that RIN costs per gallon are the same to all obligated parties regardless of their role in the market, their size, or whether they acquire RINs through blending renewable fuel or by purchasing RINs (credits) representing that volume of fuel.
- The proposed finding that RIN costs are passed through to consumers.

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[1] EPA has published a *Federal Register* notice that announces this proposed action and established a public docket to receive these comments (Docket ID No. EPA-HQ-OAR-2021-0566).

- The proposed conclusion that, since passed through to consumers, the compliance costs of the RFS program do not impose economic harm to obligated parties and, therefore, the RFS program does not cause DEH for small refineries or any obligated party.
- Additional data that may illustrate the relationship between RFS compliance costs and the price of transportation fuel and blendstocks.
- The proposed change in approach to SRE eligibility described in Section IV.
- The proposed decision to deny all pending SRE petitions for the reasons described herein.

CAA section 211(o)(9)(A)(i) exempted small refineries from the RFS program through compliance year 2010. CAA section 211(o)(9)(B)(i) authorizes the Administrator to temporarily extend those exemptions "for the reason of disproportionate economic hardship." Under CAA section 211(o)(9)(B)(ii), in evaluating SRE petitions, EPA shall "consider the findings" of a study conducted by the Secretary of Energy pursuant to CAA section 211(o)(9)(A)(2) and "other economic factors" to decide "whether compliance with the [RFS] requirements . . . would impose a disproportionate economic hardship on small refineries." The statute does not define DEH and identifies no particular "economic factors" to be considered, and case law establishes that EPA has substantial discretion in how it implements the SRE provision. Relying on this discretion, EPA's approach to SREs has evolved since 2011, shaped at various times by prevailing administration policies, litigation, and the increasing knowledge and real-world market data acquired through implementation of the RFS program.

The impetus for the statutory interpretation we are proposing for comment (while also seeking comment on the proposed SRE adjudications) is the *RFA* opinion issued by the U.S. Court of Appeals for the Tenth Circuit. The court acknowledged EPA's shifting approaches to SREs since 2011 and ruled that, for the SRE grants at issue before that court, EPA had exceeded its statutory authority by extending temporary exemptions to those small refineries. In remanding those actions, the court held that: (1) In granting exemptions based on economic factors unrelated to compliance with the RFS program, EPA had exceeded its statutory authority to exempt small refineries from their RFS obligations "for purpose of [DEH]" because the statute authorizes EPA to extend exemptions only where RFS compliance costs are the *cause* of the small refinery's hardship; and (2) EPA had acted arbitrarily and capriciously in granting exemptions without explaining whether and how the subject SRE grants were consistent with EPA's firmly established position that all parties subject to RFS obligations recover their compliance costs through a feature of the market EPA identified as "RIN cost passthrough."

Following the Tenth Circuit Court ruling, small refinery petitioners began submitting to EPA supplemental materials to support their requests for exemptions. Many petitioners argue that they bear comparatively high RFS compliance costs because they must buy more expensive RINs (the renewable fuel credits that are the currency of the RFS compliance market), compared to large integrated refiners that can acquire cheaper RINs by blending renewable fuel. Petitioners also argue that they are unable to increase the price they charge for the petroleum fuel[2] they

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[2] Generally, when we refer to "fuel" or "petroleum fuel" in this proposal, we are including in that term petroleum blendstocks. A "blendstock" is defined as "any liquid compound or mixture of compounds (not including fuel or fuel additive) that is used or intended for use as a component of a fuel." 40 CFR 1090.80.

produce to recover their higher compliance costs because they are "price takers" and do not control market prices. As we present in this proposal, EPA has carefully evaluated these claims; we find them not to be valid, and, in some cases, the supplemental submissions even provide support to our prior analyses, which the Tenth Circuit cited in *RFA* and which we propose to extend here.

Defeating the small refineries' claims at the threshold and at the same time fundamental to EPA's analyses are two economic phenomena in the RFS fuels market. Contrary to the first claim of the small refineries, we find that all RFS obligated parties, including small refineries, bear the same cost to acquire RINs whether the RINs are purchased in the market or acquired by blending renewable fuel. This occurs because parties that acquire RINs by blending renewable fuel must discount the price of the renewable fuel feedstocks (e.g., the ethanol in E10[3]) by the current market value of the RIN when they sell renewable fuel. Thus, a refinery that blends renewable fuel pays the market price for the RINs it acquires from blending by offering the discount it must give purchasers when it sells the renewable fuel. We refer to this first market phenomenon, where the market price of renewable fuel is discounted by the RIN price, as the "RIN discount."

The second phenomenon is refineries' recovery of the costs they bear in acquiring RINs in the prices they charge for the petroleum fuel they sell. Throughout this document we will refer to this economic outcome as "RIN cost passthrough" because refineries' RFS compliance costs are passed through in higher prices for the petroleum fuel (i.e., gasoline and diesel fuel) they produce. While it is true that small refineries have no control over the market price for the petroleum fuel they sell, the price that they receive in the market does reflect the full RFS compliance cost that is the same for all parties per gallon of fuel, allowing these costs to be passed through. Hence even as price takers, small refineries recover their RFS compliance costs when they receive the market price for the fuel they sell. Together, the two distinct market phenomena of the "RIN discount" and "RIN cost passthrough" reflect the cross-subsidy nature inherent to the RFS program. The "RIN discount" lowers the market price of renewable fuel to facilitate their sale while "RIN cost passthrough" raises the market price of petroleum fuel to recover those costs.

These economic outcomes are distinct, but are often conflated, especially in connection with blended fuels like E10 that include both elements (a discount in the price of the ethanol that is blended to make the fuel while the cost of the petroleum portion of the fuel increases). To help illustrate how these two distinct aspects of the fuels market operate for different market participants, the figure below shows the inputs and outputs of the fuels market for merchant refiners, blenders, and integrated refiners. In the following sections, we highlight which of these two phenomena—the "RIN discount" or "RIN cost passthrough"—we are referring to as we detail our evaluation of the information submitted by the small refinery petitioners.[4]

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[3] E10 is a finished fuel blend composed of 90% gasoline blendstock and 10% ethanol. The gasoline blendstock is often referred to as BOB (blendstock for oxygenate blending).

[4] A comprehensive discussion of the RIN market impacts on different obligated parties can be found in Section IV.D.2.c.

Figure ES-1: Simplified Illustration of Fuels Market Participants
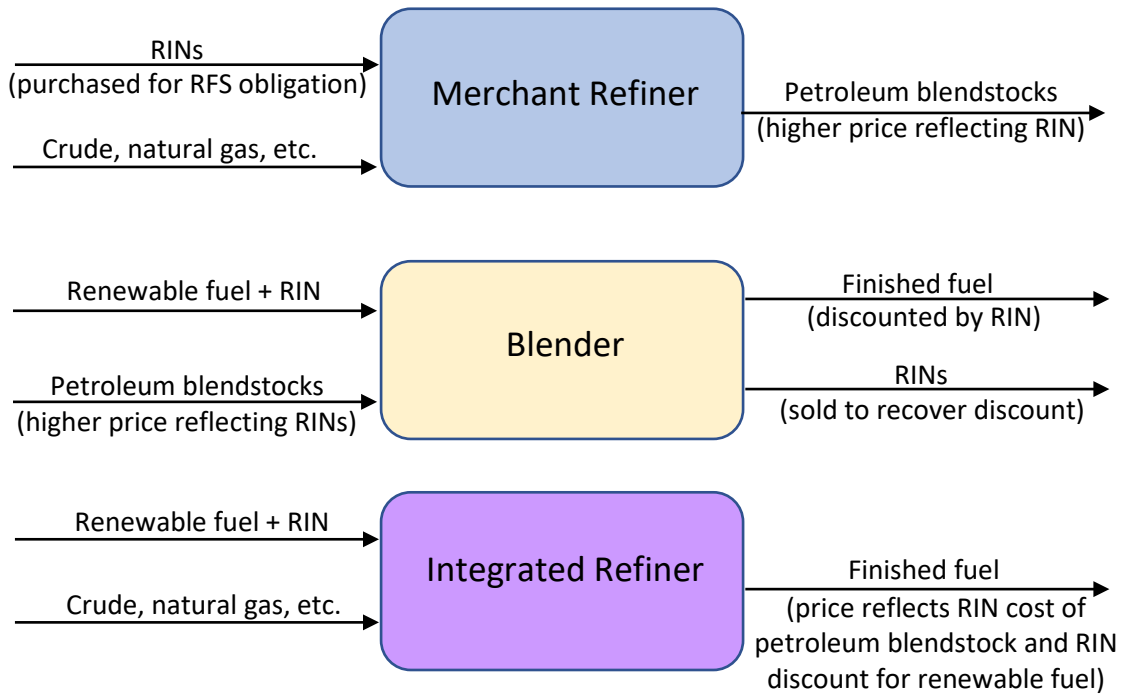
Before issuing this proposal, however, EPA exempted small refineries from their RFS obligations solely based on metrics that did not account for RIN cost passthrough. Thus, EPA did not require any demonstration that the DEH experienced by the refinery was due to the RFS program. Neither did EPA reconcile this reasoning with EPA's own finding that the costs of RINs used for compliance with the RFS program are the same for all obligated parties and passed through by all obligated parties to consumers (RIN cost passthrough).

Now, as briefly described above and based on the detailed analyses herein, EPA has reached the following proposed conclusions: (1) Regardless of the mechanism by which small refineries and other obligated parties comply with their RFS obligations, the RFS compliance costs are the same for all obligated parties and thus no party bears RFS compliance costs that disproportionate relative to others' costs; (2) Obligated parties, including small refineries, recover their compliance costs through the market price they receive when they sell their fuel products and thus do not bear a hardship created by compliance with the RFS program; and (3) With no disproportionality and no economic hardship, there can be no DEH pursuant to the statute. Further, because EPA is here proposing to alter its statutory interpretation of its CAA authority to extend SREs only to small refineries whose claimed DEH is caused by the cost of complying with the RFS program, and not by other factors, EPA is here proposing to deny all of the pending SRE petitions currently before the Agency. This proposed action is supported by extensive market data and analyses, including information provided to EPA through recent active engagement with small refineries.

We are departing from past practice regarding SRE decisions by inviting comment on aproposed adjudication of the pending petitions, along with the analysis we provide to support our proposal. The goal of this public notice and comment process is to achieve the broadest possible dissemination of EPA's preliminary analysis, to gain public input on the analysis, and to solicit any further data or evidence interested parties may be able to provide to inform the final decision EPA must issue with respect to the pending SRE petitions. Commenters are encouraged to provide input on any aspect of this new statutory interpretation and our proposed adjudication of the pending SRE petitions, including but not limited to the RIN market analysis and conclusions detailed herein. We particularly request information or data to bolster or refute our analysis of the RIN discount and RIN cost passthrough principles and our proposed decision to deny the pending SRE petitions based on that analysis. This notice is not a final agency action. EPA is requesting comment on general as well as specific aspects of this proposal.

I.   Proposed Adjudication and Request for Comment

EPA is proposing to require that small refineries: (1) Demonstrate that any DEH they experience is caused by compliance with the RFS program; and (2) Reconcile any such showing with RIN cost passthrough. This approach is described in more detail in Section III. The RIN cost passthrough phenomenon is explained in Section IV.D.2. EPA is also proposing to change its criteria for assessing a refinery's eligibility to receive an exemption from its RFS obligations. We are proposing to now require a small refinery to have received the original statutory exemption in order to be eligible to petition for an extension of that exemption, though a small refinery need not have had continuous exemptions since the original statutory exemption, consistent with the Supreme Court's holding in *HollyFrontier*[5] and as explained in Section IV.A.

EPA currently has 65 pending petitions from small refineries seeking SREs pursuant to CAA section 211(*o*)(9)(B) for one or more compliance years between 2016 and 2021.[6] EPA has completed its initial analysis of these petitions. After applying the new approach to DEH, and for the reasons described in this document, EPA is proposing to deny all of the pending SRE petitions as follows:

- Deny 1 SRE petition for the 2016 compliance year.
- Deny 1 SRE petition for the 2017 compliance year.
- Deny 3 SRE petitions for the 2018 compliance year.
- Deny 29 SRE petitions for the 2019 compliance year.
- Deny 28 SRE petitions for the 2020 compliance year.
- Deny 3 SRE petition for the 2021 compliance year.

In addition to proposing to deny all pending SRE petitions, EPA is proposing to make the following eligibility determinations for two refineries with pending petitions:[7]

- Determine that one refinery is ineligible to petition for an exemption for the 2019 and 2020 compliance years because it exceeded the crude oil throughput limit of 75,000 barrels per day in 2019, thereby making the refinery ineligible for an exemption in both 2019 and 2020 pursuant to applicable EPA regulations.[8]
- Determine that two refineries (including the one identified in the previous bullet) are ineligible to petition for an exemption for the 2019 and 2020 compliance years (and future compliance years) because they did not receive the original statutory exemption.

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[5] *See HollyFrontier Cheyenne Refining, LLC, et al. v. Renewable Fuels Ass'n, et al.*, 114 S.Ct. 2172, 2181 (2021) (*HollyFrontier*).
[6] Should we receive additional petitions for SREs subsequent to the release of this proposed action, we may decide to include those petitions in our final action, if appropriate.
[7] Though we are proposing to determine that these refineries are ineligible to petition for an exemption, we have also included them in the 65 pending petitions that would be denied by this proposed action because we are, in the alternative, also proposing to deny those petitions for the reasons described herein whether or not the small refineries are found to be eligible to petition for an exemption.
[8] 40 CFR 80.1401 & 80.1441(e)(2)(iii).

EPA requests comment on general as well as specific aspects of this proposed action in a notice published in the *Federal Register*, including but not limited to the following:

- The proposed conclusion that DEH must be caused by compliance with the RFS program to warrant an exemption.
- The proposed finding that the structure of the RFS program places a proportional burden on all obligated parties based on their gasoline and diesel fuel production volume.
- The proposed finding that the structure of the RIN system put in place by EPA provides equal access to all obligated parties to the same means of compliance.
- The proposed finding that the fuel and RIN markets are competitive and that RIN costs per gallon are the same to all obligated parties regardless of their role in the market, their size, or whether they acquire RINs through blending or by purchasing RINs.
- The proposed finding that RIN costs are passed through to consumers.
- The proposed conclusion that, since passed through to consumers, the compliance costs of the RFS program do not impose economic harm to obligated parties and, therefore, the RFS program does not cause DEH for small refineries or any obligated party.
- Additional data that may illustrate the relationship between RFS compliance costs and the price of transportation fuel and blendstocks.
- The proposed change in approach to SRE eligibility described in Section IV.
- The proposed decision to deny all pending SRE petitions for the reasons described herein.

In sum, EPA requests comment on all of these proposals and especially solicits any additional information that either supports or refutes the Agency's findings on RIN discount and/or on RIN cost passthrough. EPA in particular seeks information on the effects of these phenomena on diverse small refineries and on the extent to which small refineries suffer DEH as a result of compliance with their obligations. To be clear, this proposal seeks comment from the general public as well as comment and additional information and analysis from the individual petitioning refineries that supports or refutes these propositions as they apply to their respective petitions.

This notice is not a final agency action for purposes of CAA section 307(b)(1); it is not a rulemaking and is not subject to the various statutory and other provisions applicable to a rulemaking. Instead, this is a proposed adjudication of the 65 pending SRE petitions by: (1) Clearly articulating EPA's current interpretation of its statutory authority to grant SREs; (2) Presenting our analysis of all available data on RFS costs and market dynamics for public review and comment; and (3) Proposing to deny all of the pending petitions based on the current statutory interpretation and analysis described herein in a single action. EPA intends to take final action on the pending petitions based on the legal and factual analysis proposed herein, after considering the public comments submitted in response to this proposed adjudication.

This document is structured to provide a sequential explanation of EPA's new approach to SRE petition evaluation and of the data we analyzed to support this approach. It begins, in

Section II, by providing background on the RFS program, compliance with the RFS program, and the SRE provision of that program. Section II also provides a brief history of EPA's approach to evaluating SRE petitions and judicial review of EPA's SRE decisions. Section III presents the statutory requirements for EPA's evaluation of SRE petitions and EPA's new approach to SRE evaluation. Section IV provides EPA's analysis of the SRE eligibility and petition requirements and statutory construction of the CAA's SRE provision. It also presents a detailed explanation of RFS market economics including the costs of RFS compliance on obligated parties, and the implications of those costs on DEH. Section IV also includes a description of how EPA satisfied the statutory requirements for this proposed action,[9] then summarizes and responds to the arguments advanced by the petitioning small refineries to date as to how and why RFS compliance has caused their DEH. Section V provides EPA's proposed conclusions based on all the information presented herein.

II.   Background and Program Interpretation

A.   RFS Program

In 2005 and 2007, Congress amended the CAA to establish the RFS program.[10] Congress enacted this program to "move the United States toward greater energy independence and security" and to "increase the production of clean renewable fuels," among other purposes.[11] The statute specifies increasing annual "applicable volumes" for four categories of renewable fuel for the transportation sector: total renewable fuel, advanced biofuel, cellulosic biofuel, and biomass-based diesel.[12] The specified applicable volumes for renewable fuel, advanced biofuel, and cellulosic biofuel are prescribed for each year through 2022, and for biomass-based diesel through 2012; EPA must determine the applicable volumes for subsequent years.[13]

Congress directed EPA to establish a compliance program and annual percentage standards to ensure that the applicable volumes are used each year.[14] To calculate these percentage standards, EPA divides the applicable volume for each type of renewable fuel established in the CAA or determined by EPA[15] by the Energy Information Administration's estimate of the national volume of transportation fuel that will be introduced into commerce in that year.[16] For example, if EPA set the percentage standard for total renewable fuel at 10 percent, an obligated party that produced 1,000,000 gallons of gasoline one year would need to ensure that 100,000 gallons of renewable fuel was introduced into the market that year.

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[9] CAA section 211(*o*)(9)(B)(ii) requires EPA to: (1) Consult with the Secretary of Energy; and (2) Consider the findings of the DOE study performed under CAA section 211(*o*)(9)(A)(ii)(I) and "other economic factors."
[10] *See* Energy Policy Act of 2005 (EPAct), Pub. L. No. 109-58, 119 Stat. 594; Energy Independence and Security Act of 2007 (EISA), Pub. L. No. 110-140, 121 Stat. 1492
[11] 121 Stat. 1492.
[12] CAA section 211(*o*)(2)(B)(i)(I)-(IV).
[13] *Id.*
[14] *Id.*; CAA section 211(*o*)(2)(A)(i), (iii) & (3)(B)(i).
[15] CAA section 211(*o*)(2)(B), (7)(A), & (7)(D)-(F).
[16] CAA section 211(*o*)(3)(A).

Congress authorized EPA to place the obligation to satisfy the applicable percentage standards on "refineries, blenders, and importers, as appropriate."[17] By regulation, EPA determined that refineries and importers of gasoline and diesel fuel must fulfill the requirements of the RFS program.[18] These "obligated parties" apply the percentage standards to their own annual production or importation of gasoline and diesel fuel to calculate their individual renewable volume obligation (RVO or "RFS obligation") for each type of renewable fuel. Thus, the RFS standards absent SREs place the same obligation on all producers and importers of gasoline and diesel fuel in proportion to their production volume.

B.   Renewable Identification Number Credits

The CAA requires EPA to establish a credit trading program allowing obligated parties that acquire excess credits in one year to apply credits toward compliance in a subsequent year or to sell the credits to another obligated party for use in its own compliance.[19] In conjunction with EPA's authority under CAA section 211(o)(2)(B) to put in place implementing regulations for the RFS, and in compliance with CAA section 211(o)(5), we designed a much more flexible and comprehensive system of tradable credits (RINs). Section 211(o)(5) required only that EPA allow for the generation and trading of credits for obligated parties who refine, blend, or import excess renewable fuel. The RIN system fulfills that statutory provision, and also creates a fungible system of credit trading by not just obligated parties but also renewable fuel producers and others, creating an open, liquid market for RINs to allow obligated parties to comply with their RFS obligations. Under the RIN system, producers and importers of renewable fuel generate RINs for each gallon of renewable fuel they import or produce for use in the United States.[20] RINs are "assigned" to batches of renewable fuel by the producers and importers of renewable fuel.[21] RINs may be "separated" from those batches by a party that blends the renewable fuel into conventional fuel.[22] Once separated, RINs may be kept for compliance or sold.[23] A RIN may be used to demonstrate compliance during the calendar year in which it is generated, or the following calendar year (for up to 20% of an obligated party's RVO). Thereafter, the RIN is considered to be "expired" and cannot be used for compliance purposes.[24] Obligated parties meet their RFS obligations by accumulating RINs and "retiring" them in an annual compliance demonstration.[25] The statute and regulations also provide that, in lieu of retiring the requisite number of RINs to show compliance for a particular year, an obligated party may choose to carry a RIN deficit into the following year under certain conditions.[26] An obligated party may carry forward a RIN deficit equal to its full or partial RFS obligation.

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[17] CAA section 211(o)(3)(B)(ii)(I).
[18] 40 CFR 80.1406. For simplicity this document focuses on refiners; however, the same concepts of RIN costs, RIN cost passthrough, and RIN discount for blended fuel also apply to importers.
[19] CAA section 211(o)(5)(A)-(C).
[20] 40 CFR 80.1426(a).
[21] 40 CFR 80.1426(e).
[22] 40 CFR 80.1429(b).
[23] 40 CFR 80.1425-29.
[24] 40 CFR 80.1427(a)(6), 80.1428(c), & 80.1431(a).
[25] 40 CFR 80.1427(b).
[26] CAA section 211(o)(5)(D), 40 CFR 80.1427(b).

The price of the RIN is expected to reflect the marginal difference between the supply price for the renewable fuel and the demand price for the renewable fuel, which is the price the market is willing to pay for the renewable fuel as a transportation fuel.[27] In other words, if it costs more to produce the renewable fuel than consumers are willing to pay for the renewable fuel, the RIN price would be expected to match that cost difference so that, in the end, the fuel price for consumers is the same. The price of the RIN, therefore, allows the "discount" on the renewable fuel necessary to have the market consume the renewable fuel. This dynamic functions to incentivize blending and use of renewable fuel up to the mandated volume even if the market demand price for the renewable fuel would not cover the cost of its production. In this way, the RIN price facilitates greater use of renewable fuel as the RFS program was designed to do.

The design of the RIN trading system enabled parties that were already producing and blending renewable fuel to continue to do so. They could then sell excess RINs to obligated parties that lacked blending capability. This open trading market for RINs provides three main benefits. First, it allows all obligated parties, regardless of size or situation, equal ability to comply with their RFS obligations immediately without having to invest capital or resources. They can contract with others already providing the services and/or go into the open market to acquire RINs. Second, this system averts the need for each individual obligated party to purchase and blend renewable fuel into its own gasoline and diesel fuel.[28] Thus, the program was designed to "preserve[] existing business practices for the production, distribution, and use of both [petroleum] and renewable fuel."[29] Third, it levels the playing field for the cost of compliance, with all obligated parties having access to the RINs needed for compliance at the same cost, regardless of whether they acquire the needed RINs by purchasing them on the open market or by blending renewable fuel themselves. The RFS program, through the RIN system, was designed to avoid creating DEH based on whether compliance is obtained through blending of renewable fuel or through purchasing of RINs.

C.   RFS Compliance and RIN Market Dynamics

Congress structured the RFS program to impose proportional requirements on all obligated parties, including small refineries. The RFS obligations are established as a percentage of an obligated party's production;[30] therefore, by definition, the obligation is proportional to the quantity of gasoline and diesel fuel that party produces or imports each year.[31] Obligated parties must acquire RINs to meet their RFS obligations,[32] either through their own blending of

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[27] "A Preliminary Assessment of RIN Market Dynamics, RIN Prices, and Their Effect," Dallas Burkholder, Office of Transportation and Air Quality, US EPA, May 14, 2015 [hereinafter, "the Burkholder memo"].

[28] Complying with such a requirement would have been difficult, if not impractical for obligated parties, as different renewable fuels are blended into gasoline and diesel fuel and pipeline operators normally do not allow gasoline or diesel fuel containing renewable fuel to be transported through their pipelines.

[29] "RFS1 Summary and Analysis of Comments," EPA-420-R-07-006 at 1-6, April 2007.

[30] *See supra*, Sections II.A and B.

[31] *See* CAA section 211(*o*)(3)(B); 40 CFR 80.1407.

[32] For purposes of the RFS program, transportation fuel is defined as "fuel for use in motor vehicles, motor vehicle engines, nonroad vehicles, or nonroad engines (except fuel for use in ocean-going vessels)." 40 CFR 80.1401. The regulations at 40 CFR 80.1406 establish that "[a]n obligated party is any refiner that produces gasoline or diesel fuel

renewable fuel or through the purchase of RINs from other parties that produce or blend renewable fuel. Obligated parties must demonstrate compliance annually by retiring RINs requisite with their RFS obligations.

The cost of acquiring RINs is the same for all parties regardless of whether the RINs needed to comply are acquired by blending renewable fuel or by procuring RINs from others.[33] This occurs through the phenomena of RIN discount and RIN cost passthrough, introduced in the Executive Summary and explained in detail throughout this document. Parties that blend more renewable fuel than they need to satisfy their RFS obligations may show an apparent revenue source from the sale of those RINs. However, in the competitive fuels market, price competition prevents these parties from retaining the revenue from their RIN sales.[34] If parties that blend renewable fuel do not discount the price of their blended fuel by the market price of the RIN, then their blended fuel would be priced higher than the same fuel where the producer has discounted the fuel by the price of the RIN, and the non-discounted fuel would never sell. Therefore, in order to price their products competitively in the fuels market, parties that blend renewable fuel must reduce the price of their blended fuel by the price of the RIN (RIN discount). Thus, the revenue from the RIN sale is used to offset the discounted sales price of the blended fuel and is passed through to consumers through reduced market prices for the blended fuels. Moreover, the RFS program imposes the same cost on all parties that produce or import gasoline or diesel fuel nationwide,[35] so the market price for gasoline and diesel fuel increases to reflect this cost, much as it would increase in response to a new tax (RIN cost passthrough). This relationship between RIN prices and the market prices for blended fuels was first analyzed by EPA in 2015.[36]

In this document we refer to an obligated party's ability to recover the cost of the RINs it acquires for compliance as "RIN cost passthrough," since obligated parties are passing these costs through to consumers. We refer to the lower prices received for blended fuel (e.g., gasoline and diesel fuel blended with renewable fuel) enabled by the sale of RINs as "RIN discount," since the sale of the RIN allows blenders to discount the price of the blended fuel. We find that all types of obligated parties have the same cost to acquire RINs, and that all types of obligated parties recover these costs when they sell the gasoline and diesel fuel they produce or import at the market price (RIN cost passthrough). Further, we find that blenders use revenue from RIN

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within the 48 contiguous states or Hawaii, or any importer that imports gasoline or diesel fuel into the 48 contiguous states or Hawaii during a compliance period." The regulations at 40 CFR 80.1407 establish that, in practice, an RFS obligation is imposed only on gasoline and ultra-low sulfur diesel (ULSD) used in motor vehicles, nonroad engines, locomotives, and marine engines (historically called MVNRLM diesel fuel). Such gasoline and diesel fuel only incur an obligation if used in the RFS covered location as defined in 40 CFR 80.1401. Throughout this document we refer to fuel that incurs an RFS obligation (e.g., gasoline, diesel fuel) as "obligated fuel" and fuel that does not incur an RFS obligation (e.g., heating oil, jet fuel) as "non-obligated fuel."

[33] *See infra*, Section IV.D.2.

[34] "A Preliminary Assessment of RIN Market Dynamics, RIN Prices, and Their Effect," Dallas Burkholder, Office of Transportation and Air Quality, US EPA, May 14, 2015.

[35] In this document, the term "nationwide" refers to the RFS "covered location," which the regulations at 40 CFR 80.1401 define as "the contiguous 48 states of the United States, Hawaii, and any state or territory that has received an approval from the Administrator to opt-in to the RFS program under §80.1443."

[36] "A Preliminary Assessment of RIN Market Dynamics, RIN Prices, and Their Effect," Dallas Burkholder, Office of Transportation and Air Quality, US EPA, May 14, 2015.

sales to discount the price of blended fuel (RIN discount). We therefore conclude that compliance with the RFS program cannot cause a DEH for small refineries.[37]

D.   *History of SREs*

A small refinery is defined by the statute as "a refinery for which the average aggregate daily crude oil throughput for a calendar year . . . does not exceed 75,000 barrels."[38] Both the original RFS statutory provisions enacted pursuant to Energy Policy Act (EPAct), and the current text of the statute as amended by the Energy Independence and Security Act (EISA), provided all small refineries an initial blanket exemption from their obligations under the RFS program until calendar year 2011.[39] Under EPA's regulations, exempt small refineries were required to notify EPA that they qualified for the temporary exemption by submitting verification letters stating their average crude oil throughput rate during the applicable qualification period.[40] Furthermore, EPA's regulations allowed for small refineries that had submitted verification letters to qualify for the original statutory exemption under EPAct to also qualify under the SRE provision in EISA. The small refineries were not required to re-certify their throughput to maintain eligibility under the amended RFS program. Further discussion of EPA's past and current interpretation of small refinery eligibility criteria is provided in Section IV.A.[41]

The CAA includes two additional provisions regarding extensions of the small refinery exemption for the period after the initial blanket exemption expired:

1) Under the first statutory mechanism, applicable to 2011 and 2012, if DOE determined, through a study mandated under the CAA, that compliance with the RFS requirements would impose DEH on a small refinery, EPA was required to extend the small refinery's exemption by at least two years.[42] In 2009, DOE completed its study and found that, in a liquid and competitive RIN market, compliance with the RFS requirements would *not* impose DEH on any small refinery. Subsequently, some members of Congress directed DOE to revisit the 2009 DOE Small Refinery Study (hereinafter "the 2009 DOE Study") and in so doing to solicit input from the small refineries themselves.[43] In 2011, DOE completed a second study that used the small refinery input to develop a set of financial and operational metrics intended to inform DOE whether a small refinery was likely to experience DEH. Contrary to the 2009 DOE Study, the 2011 DOE Small Refinery Study (hereinafter "the 2011 DOE Study")[44] did not assume that RFS compliance costs would be the same for all refineries in a competitive market, and instead, assumed that small

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[37] The economic theory supporting EPA's findings on RIN cost passthrough and the RIN discount, the market data we have evaluated in reaching these findings, and more detailed explanations on how various parties in the fuels market are affected by the RFS program are discussed in greater detail in Section IV.D.2.

[38] CAA section 211(*o*)(1)(K).

[39] CAA section 211(*o*)(9)(A)(i).

[40] 40 CFR 80.1441(b).

[41] 40 CFR 80.1441(e)(2)(i); EPA, *Financial and Other Information to be Submitted with 2016 RFS Small Refinery Hardship Exemption Requests*, December 6, 2016.

[42] CAA section 211(*o*)(9)(A)(ii)(II).

[43] Senate Report 111-45, at 109 (2009).

[44] "Small Refinery Exemption Study, An Investigation into Disproportionate Economic Hardship," Office of Policy and International Affairs, U.S. Department of Energy, March 2011.

refineries could face higher compliance costs by purchasing RINs when compared to large integrated refiners that would acquire RINs through blending. Furthermore, neither study considered the possibility that refineries would recover the cost of RINs through higher prices for their products.[45] DOE organized the metrics into a two-part matrix with sections addressing "disproportionate impacts" and "viability impairment."[46] DOE also developed a scoring protocol for the matrix that required the score in both sections of the matrix to exceed an established threshold for DOE to find that DEH existed at a given refinery. Using this regime, the 2011 DOE Study found that DEH existed at 14 small refineries, but again, assumed the refineries did not recover RIN costs and did not address the cause of the hardship. As required by the statute, EPA granted those small refineries a two-year extension of the original exemption (through 2012).

2) The second statutory mechanism provided that small refineries "may at any time petition the Administrator for an extension of the exemption in [section 211(*o*)(9)(A)] for the reason of [DEH]."[47] The Supreme Court recently opined on the meaning of "extension" in the context of CAA section 211(*o*)(9)(B), overturning a holding by the U.S. Court of Appeals for the Tenth Circuit that required a small refinery to have continuous exemptions to be eligible for further exemption extensions.[48] The Act directs EPA to evaluate such petitions "in consultation with the Secretary of Energy[.]"[49] EPA is also to "consider the findings of the study under [CAA section 211(*o*)(9)(A)(ii)(I)] and other economic factors."[50] After DOE conducted its 2011 Study and EPA granted two-year extensions to the 14 refineries the study identified, additional refineries came forward to EPA to seek exemptions for 2011 and 2012. EPA shared these new petitions with DOE, which applied the matrix scoring methodology developed in the 2011 DOE Study and shared the scoring results with EPA. EPA chose to satisfy the statutory requirements for consultation and consideration of the DOE Study by using DOE's scoring results in its evaluation of each SRE petition. Consistent with the extensions of exemptions it granted to the 14 small refineries through the 2011 DOE Study, EPA then decided to grant an extension of the exemption to an additional ten small refineries for 2011, and to nine for 2012. Since 2013, EPA has shared all incoming SRE petitions with DOE, and DOE has continued to make recommendations to EPA based on its scoring matrix, which does not assess the degree to which small refineries recover the RFS compliance cost in higher prices for their refined products (i.e., it does not consider RIN cost passthrough).

In the years since 2013, DOE and EPA have changed their treatment of the scoring matrix several times as informed by direction from members of Congress, judicial review, and changing administration policies. For DOE, the most significant change in approach did not involve the matrix evaluation or the scoring methodology, but rather modified the recommendation DOE provided to EPA for a given score on the matrix (i.e., DOE implemented the direction from Congressional report language to recommend 50% exemptions, as opposed to

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[45] *See infra*, Section IV.D.
[46] 2011 DOE Study at 32-36.
[47] CAA section 211(*o*)(9)(B)(i).
[48] *See HollyFrontier*, 114 S.Ct. at 2181. Consistent with that decision, small refineries that have not received continuous exemptions remain eligible to petition for future exemptions.
[49] CAA section 211(*o*)(9)(B)(ii).
[50] *Id.*

exclusively 0% or 100%, as described further below). For EPA, the changes involved the weight EPA afforded DOE's recommendation relative to the "other factors" EPA considered when evaluating SRE petitions. However, in none of these years did EPA require small refineries to demonstrate that they faced RFS compliance costs that were higher than for other obligated parties (i.e., disproportionate), nor did EPA require a demonstration that the hardship was caused by compliance with the RFS program, including an explanation for how compliance costs harmed them in a market characterized by RIN cost passthrough.

In some prior decisions, DOE and EPA concluded that DEH existed only when a small refinery experienced both disproportionate impacts and viability impairment, as measured by the matrix. In response to concerns that the two agencies' threshold for establishing DEH was too stringent, Consolidated Appropriations Act report language directed DOE to recommend 50% relief when a small refinery's score on either section of the matrix exceeded the applicable threshold.[51] Subsequent Senate Report language directed EPA to follow DOE's recommendation, and to report to Congress if it did not.[52]

The Congressional direction, along with changing administration policies, prompted EPA to change its approach to finding DEH at a small refinery. Whereas EPA had previously exercised discretion in evaluating "other economic factors" in its analysis of a small refinery's petition, EPA changed its approach to rely on DOE's recommendation and began granting a full exemption whenever DOE findings indicated that the small refinery could receive at least 50% relief, based on its matrix score.[53] Under this approach, EPA exempted small refineries from their RFS obligations solely based on this DOE finding, which was based on metrics that did not account for RIN cost passthrough. Thus, neither EPA nor DOE required any demonstration that the DEH experienced by the small refinery was due to the RFS program. Nor did EPA reconcile this reasoning with EPA's own finding that the costs of RINs used for compliance with the RFS program are the same for all obligated parties and passed through by all obligated parties to consumers (RIN cost passthrough).

EPA's approach to evaluating SRE petitions has been challenged several times by small refineries and other parties in different U.S. Courts of Appeals, as well as in the Supreme Court

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[51] Consolidated Appropriations Act, 2016, Pub. L. No. 114-113 (2015). The Explanatory Statement is available at 161 Cong. Rec. H9693, H10105 (daily ed. Dec. 17, 2015): "If the Secretary finds that either of these two components exists, the Secretary is directed to recommend to the EPA Administrator a 50 percent waiver of RFS requirements for the petitioner."

[52] Senate Report 114-281, 71 ("When making decisions about small refinery exemptions under the RFS program, the Agency is directed to follow DOE's recommendations which are to be based on the original 2011 Small Refinery Exemption Study prepared for Congress and the conference report to division D of the Consolidated Appropriations Act of 2016. Should the Administrator disagree with a waiver recommendation from the Secretary of Energy, either to approve or deny, the Agency shall provide a report to the Committee on Appropriations and to the Secretary of Energy that explains the Agency position. Such report shall be provided 10 days prior to issuing a decision on a waiver petition.").

[53] We note that under this approach, EPA granted full SREs to some very profitable refineries. A substantial number of small refineries that showed no viability impairment on the matrix received a 50% waiver finding from DOE, based only on the small refinery's disproportionate impacts score.

of the United States.[54] The approach to evaluating DEH we propose in this action is informed by the outcome of litigation filed in the U.S. Court of Appeals for the Tenth Circuit Court in 2018. Biofuels groups led by the Renewable Fuels Association (RFA) challenged EPA's actions in granting three individual SREs, and the affected small refineries intervened on EPA's behalf.[55] The court vacated and remanded EPA's actions for three reasons. First, under the Tenth Circuit's reading of the CAA, a small refinery would be eligible for SRE relief only if it has received extensions of the initial exemption in every year since 2010.[56] Second, the court found that EPA may grant relief only when it finds that the small refinery would suffer DEH due to compliance with the RFS program and not due, even in part, to other factors.[57] Third, the court held that EPA had acted arbitrarily and capriciously by failing to explain how granting the exemptions was consistent with the Agency's longstanding findings on RIN cost passthrough.[58]

After the Tenth Circuit's *RFA* opinion, the small refinery intervenors petitioned the Supreme Court for a writ of certiorari, appealing only the Tenth Circuit's holding that, in order to be eligible for exemption, a small refinery needed a continuous, uninterrupted exemption history.[59] The Supreme Court granted the writ of certiorari and reviewed the Tenth Circuit's holding. EPA, which changed its prior litigation position, and RFA, filed briefs in opposition, arguing that the Court should uphold the Tenth Circuit's ruling. On June 25, 2021, the Supreme Court held that the term "extension" as used in CAA section 211(*o*)(9)(B) does not include a continuity requirement and reversed the Tenth Circuit opinion only on that issue.[60] The Supreme Court did not review the other two holdings in *RFA* as those were not appealed by the small refineries.

Since the Supreme Court issued its opinion in the *HollyFrontier* case, EPA has met with several of the petitioning small refineries in individual meetings, accepted additional supplemental information from the small refineries, made all petitioning small refineries aware that they have the opportunity to submit additional information to EPA for consideration, and conducted an open meeting among the small refineries, inviting them to participate and provide feedback. In this proposed action, we are again soliciting information from all interested parties to inform our final analysis and decision, especially seeking additional information that would support or refute the proposed finding that small refineries do not face disproportionate cost or economic hardship *caused* by compliance with the RFS program. We are also soliciting information demonstrating that the cost of compliance with the RFS program is the same for all obligated parties and passed on to consumers and that small refineries are not experiencing DEH caused by compliance with the RFS program.

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[54] *Hermes Consol., LLC v. EPA*, 787 F.3d 568 (D.C. Cir. 2015) (reversing EPA's action due to errors EPA admitted in calculating the small refinery's net income and net refining margins); *Lion Oil Co. v. EPA*, 792 F.3d 978 (8th Cir. 2015); *Sinclair Wyoming Refining Co. v. EPA*, 887 F.3d 986 (10th Cir. 2017); *Ergon-West Virginia, Inc. v. EPA*, 896 F.3d 600 (4th Cir. 2019) (*EWV-I*); *Ergon-West Virginia, Inc. v. EPA*, 980 F.3d 403 (4th Cir. 2020) (*EWV-II*); *Renewable Fuels Ass'n, et al. v. EPA*, 948 F.3d 1206 (10th Cir. 2020) (*RFA*).
[55] *RFA*, 948 F.3d 1206 (10th Cir. 2020).
[56] *RFA,* 948 F.3d at 1244-49.
[57] *Id.* at 1253-54.
[58] *Id.*
[59] Pet. for Writ of Certiorari at (i), *HollyFrontier*.
[60] *HollyFrontier*, 141 S.Ct. at 2183.

## III.	EPA's Proposed Approach to Determining DEH When Evaluating SRE Petitions

Section 211(*o*)(9)(B)(i) of the CAA authorizes the EPA Administrator to temporarily exempt small refineries from their RFS obligations for the reason of DEH. The statute directs EPA, in consultation with DOE, to consider the DOE Study and "other economic factors" in evaluating SRE petitions. The statute does not define "disproportionate economic hardship" and identifies no particular "economic factors" to be considered, giving EPA "substantial discretion" for purposes of implementing these exemption provisions.[61] EPA, however, must interpret these provisions in a reasonable manner, consistent with the purpose of the statutory provisions at issue.

EPA's previous approach to interpreting these statutory provisions and evaluating SRE petitions was that a small refinery could receive an exemption from its RFS obligations by demonstrating it was experiencing DEH for any reason, including reasons unrelated to RFS compliance.[62] In this action, EPA is proposing to change its approach to require the small refinery to demonstrate that compliance with the RFS program is the cause of the DEH experienced by the small refinery. EPA has previously performed analyses, and reviewed academic studies, on the RIN market that verify the passthrough of RFS compliance costs to consumers. However, our prior approach to evaluating SRE petitions did not rely on a showing that DEH was caused by RFS compliance because we concluded that our consideration of "other economic factors" extended beyond economic factors addressing DEH caused by RFS compliance. The Tenth Circuit in *RFA* clarified that EPA's prior approach was contrary to the language of the CAA authorizing exemptions only due to DEH *caused by* compliance with the requirements of the RFS program.[63] Under the approach we propose here, the small refinery must demonstrate a direct causal relationship between its RFS compliance costs and the DEH it alleges; assertions regarding other real but unrelated financial difficulties the refinery may be experiencing would not satisfy this requirement. Additionally, the small refinery must demonstrate how its specific RFS compliance costs are disproportionate compared to other refineries' RFS compliance costs and are of sufficient magnitude to warrant the exemption. EPA has weighed several considerations in proposing this new approach and this interpretation is consistent with the language of the Act, the purpose of the SRE provision, and is the most reasonable approach for implementing the RFS program.[64]

Our change in approach is primarily informed by the *RFA* opinion, which laid out a rationale for its conclusion that the statutory provisions require DEH to be caused by RFS compliance.[65] Additionally, the court in *RFA* held that EPA had acted arbitrarily and capriciously when the Agency ignored the relevant evidence and granted three SREs without addressing its long-standing position that RIN costs are passed through by refineries and

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[61] *Hermes*, 787 F.3d at 575 ("The statute gives no further instruction and identifies no particular economic factors or metrics to be considered. That sort of statutory silence about the particular factors that an agency must consider conveys 'nothing more than a refusal to tie the agency's hands' (internal citation omitted). As long as EPA consults with DOE and considers the 2011 Study and 'other economic factors,' EPA retains substantial discretion to decide how to evaluate hardship petitions.").

[62] *See supra*, Section II.D.

[63] *RFA*, 948 F.3d at 1253-54.

[64] *See infra*, Section IV.D.1.

[65] *Id*.

ultimately borne by consumers. After review of the court's decision, EPA agrees that these holdings both reflect a reasonable interpretation of the Act and comport with EPA's longstanding conclusions regarding RIN cost passthrough.[66]

Using this new approach, we evaluated the information and data available to us to assess whether any of the petitioning small refineries demonstrated DEH. The very market-based design of the RFS program with the RIN system for compliance has equalized the cost of compliance among all market participants, making it highly unlikely any one refinery would face a disproportionate cost of compliance.[67] We have evaluated an extensive amount of data and available literature, and our analysis shows the cost of RINs is the same whether refineries acquire the RINs by blending renewable fuel or by buying RINs on the open market.[68] The data and available literature also informed our finding that the RFS compliance cost is passed through in the price of refined products. Therefore, considering all of this information and analysis as more fully explained in later sections of this document, we are proposing to find that no small refinery experiences DEH due to their compliance with the RFS program.

When an agency changes its position, it must "provide a reasoned explanation for its action" and "display awareness that it is changing position."[69] Furthermore, EPA does not need to show "that the reasons for the new policy are *better* than the reasons for the old one; it suffices that the new policy is permissible under the statute, that there are good reasons for it, and that the agency *believes* it to be better, which the conscious change of course adequately indicates." (emphasis in the original).[70] This proposed approach is reasonable as it is supported by the language and construction of the CAA and data analyses performed by EPA and independent parties.[71] For the reasons described herein, EPA believes that this approach is the most logical interpretation of the statutory provisions and the most reasonable way to implement the SRE program.

IV.   EPA Evaluation

A.   *Eligibility to Petition*

In this action, we are proposing to find two refineries ineligible to petition for an SRE. One refinery is ineligible because its throughput exceeded 75,000 bpd in the petitioning year and the prior year and because it did not receive the initial exemption. The second refinery is ineligible because the refinery did not receive the initial exemption.

In this action, we are proposing to revert to our prior approach to eligibility to petition for an SRE on the basis of having received the initial exemption. We are proposing to read the

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[66] *See infra*, Section IV.D.2.
[67] *See supra*, Section II.B.
[68] *See infra*, Section IV.D.2.
[69] *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009).
[70] *Id.* (emphasis in the original).
[71] *See infra*, Section IV.D.

statute such that only small refineries that received the initial blanket exemption are eligible to petition for an extension of that initial exemption.[72]

1. Definition of Small Refinery

As part of EPAct, Congress defined a small refinery as "a refinery for which the average aggregate daily crude oil throughput for a calendar year (as determined by dividing the aggregate throughput for the calendar year by the number of days in the calendar year) does not exceed 75,000 barrels."[73] This definition was maintained in EISA.[74] These definitions informed EPA's implementing regulations in 2007 and 2010, which similarly defined a small refinery as processing less than 75,000 bpd in 2004 and 2006, respectively, for purposes of determining eligibility for the initial blanket statutory exemption.[75] In 2014, EPA promulgated regulations related to eligibility and requirements for SRE petitions.[76] In these regulations, EPA modified the eligibility requirements such that small refineries qualified for exemptions based on their crude oil throughput for the petition year and the prior year.[77] This means that, to qualify as a small refinery, a refinery must have processed no more than 75,000 bpd of crude oil in both the year for which the refinery requests an exemption and the prior year.[78]

2. Initial Blanket Statutory Exemption

In 2016, EPA deemed a refinery ineligible to petition for an exemption because the refinery did not exist in 2006, and, thus, could not have received the initial blanket exemption.[79] In that decision, EPA relied on the RFS regulations that state "a refiner may petition the Administrator for an extension of *its* small refinery exemption…." (emphasis added).[80] Additionally, EPA reasoned that "newer small refineries have the ability to consider whether they believe the establishment of the RFS program and its requirements will cause economic hardship before beginning operations." Beginning in 2017, EPA took a different approach to small refinery eligibility and granted exemptions for refineries that did not receive the initial exemption. We now propose to revert to the approach taken in 2016 – to be eligible to petition for an SRE, a refinery must have received the initial blanket exemption from the RFS program,

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[72] We are maintaining our approach to size-based eligibility, such that only small refineries with an average aggregate daily crude oil throughput that does not exceed 75,000 barrels per day (bpd) for the calendar year they petition, and the prior year, are eligible to petition for an SRE. *See* CAA section 211(*o*)(1)(K), 40 CFR 80.1401, 40 CFR 80.1441(e)(2)(iii).

[73] CAA section 211(*o*)(1)(K); EPAct of 2005, Pub. L. No. 109-58, 119 Stat. 594 (2005).

[74] EISA of 2007, Pub. L. No. 110-140, 121 Stat. 1492 (2007).

[75] 40 CFR 80.1101, 80.1141(a)(1), 72 FR 23900 (May 1, 2007); 40 CFR 80.1401, 80.1441(a)(1), 75 FR 14670 (March 26, 2010).

[76] 79 FR 42128 (July 18, 2014).

[77] 40 CFR 80.1441(e)(2)(iii), "In order to qualify to an extension of *its* small refinery exemption, a refinery must meet the definition of 'small refinery' in §80.1401 for the most recent full calendar year prior to seeking an extension and must be projected to meet the definition of 'small refinery' in §80.1401 for the year or years for which an exemption is sought. Failure to meet the definition of small refinery for any calendar year for which an exemption was granted would invalidate the exemption for that calendar year" (emphasis added). *See also* 79 FR 42128 (July 18, 2014).

[78] 40 CFR 80.1401. We are not proposing to modify this regulation in this action.

[79] *See* Petition for Review, *Dakota Prairie Refining, LLC v. EPA*, No. 16-2692, at 8 of 17 (8th Cir. June 13, 2016).

[80] 40 CFR 80.1441(e)(2).

though a small refinery need not have had a continuous exemption since the original statutory exemption, consistent with the Supreme Court's holding in *HollyFrontier*.

3.   Changed Approach to Eligibility

In this action, EPA is proposing to change its approach to SRE eligibility to require that a petitioning small refinery receive the initial statutory exemption through 2010 in order to qualify for an extension of the initial exemption under CAA section 211(*o*)(9)(B). We believe this policy aligns with the text of the CAA, which describes a small refinery's right "to at any time petition the Administrator for an extension of the exemption in subparagraph (A) for the reason of [DEH]."[81] Furthermore, we believe this policy aligns with policy interests of implementing the RFS program. This is particularly true since the exemptions would provide a significant windfall profit to the exempted small refinery.[82] Additionally, refineries that exceeded the 75,000 bpd throughput threshold in 2006 were not the intended recipients of the initial exemption for small refineries, and, thus, we are acting consistent with congressional intent by continuing to exclude these parties from receiving an SRE.

While the Supreme Court recently held that a small refinery need not have had a continuous exemption since the initial exemption, the Court's decision implies that an exemption must have existed at some point for it to be extended.[83] Regarding the definition of "extension," the Court agreed with the Tenth Circuit that, as used in CAA section 211(*o*)(9), the word has a temporal meaning (i.e., an extension of time), and not the alternative meaning of "extension" to grant or offer.[84] The Court, however, clarified that an extension may still be given after a lapse.[85] The Court applied several analogies to illustrate this, including that of a student requesting an extension of a deadline to submit a paper after the deadline has already passed.[86] Applying that analogy to a small refinery that did not receive the original exemption, but requests an extension of that exemption, would be like a student that was never in the class asking the professor for an extension of a deadline for a paper it was never assigned to begin with (i.e., there is no due date for the professor to extend just as there is no exemption period for EPA to extend). Thus, the language of the statute indicates that, without having received "the exemption under

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[81] CAA section 211(*o*)(9)(B)(i).

[82] *See infra*, Section IV.D.2

[83] *See HollyFrontier*, 141 S. Ct. at 2177 ("It is entirely natural—and consistent with ordinary usage—to seek an "extension" of time even after some lapse."); *id.* at 2181 ("And fairly read, the key phrase at issue before us—'A small refinery may at any time petition the Administrator for an extension of the exemption under subparagraph (A) for the reason of disproportionate economic hardship'—simply does not contain the continuity requirement the court of appeals supposed."); *id.* at 2184 (Barrett, J. dissenting) ("Yet, HollyFrontier insists, the term "extension" is not *always* used that way. Instead, it might *sometimes* refer to a "non-continuous extension"—in other words, an extension of something that used to exist but no longer does. . . . [T]he Court concludes that Holly-Frontier's reading must be right—which means that EPA can provide an "extension" of an exemption that is no longer in effect.").

[84] *See supra*, Section II.D.

[85] *HollyFrontier*, 141 S.Ct. at 2177 ("Ultimately, however, we agree with the renewable fuel producers and the court of appeals that subparagraph (B)(i) uses "extension" in its temporal sense—referring to the lengthening of a period of time."). The *HollyFrontier* decision is further discussed in Section II.D.

[86] *Id.* at 2177-78.

subparagraph (A)," there is nothing for a small refinery to petition EPA to extend temporally.[87] Ergo, if a small refinery did not receive the original statutory exemption, it is ineligible to have EPA extend the duration of that exemption.[88]

4.   Proposed Eligibility Determination for Two Petitioning Small Refineries.

EPA has received 2019 and 2020 SRE petitions from a refinery that exceeded the 75,000 bpd throughput limit in 2019, thereby making the refinery ineligible to petition for an SRE in both 2019 and 2020.[89] In this action, we propose to find this refinery ineligible to petition for an SRE in 2019 and 2020. In the alternative, even if the refinery were eligible to petition, we have reviewed the petitions and supplemental information supporting them and propose to find that the refinery did not demonstrate that it experienced DEH caused by its RFS compliance as described generally for all small refineries in Section IV.D.2.

EPA has received two 2019 and two 2020 SRE petitions from two refineries (including the one identified in the previous paragraph) that would be ineligible under the proposed changed approach described in Section IV.A.2 In this action, we propose to determine that these refineries are ineligible to petition for an exemption because these two refineries did not receive the initial exemption. In the alternative, even if the refineries were eligible to petition, EPA has reviewed the petitions and supplemental information supporting them and is proposing to find the refineries did not demonstrate that they experienced DEH caused by their RFS compliance described generally for all small refineries in Section IV.D.2.

B.   *Compliance with Petition Requirements*

When submitting an SRE petition to EPA, the small refinery bears the burden of demonstrating that compliance with the requirements of the RFS program causes DEH for that small refinery. EPA regulations require that an SRE petition specify the factors that demonstrate a "disproportionate economic hardship," provide a detailed discussion regarding the hardship the refinery would face in complying with the RFS requirements, and identify the date the refinery anticipates that compliance with the RFS requirements can reasonably be achieved at the small refinery.[90] Since the Tenth Circuit issued its opinion in *RFA*, many small refineries have contacted EPA to supplement their original SRE petitions and to provide additional information about their financial situations. EPA greatly appreciates this information. EPA has completed a preliminary evaluation of the data and information provided in the SRE petitions to determine if any of the petitioners have demonstrated that the cost of compliance with the RFS is the cause of the DEH, and that such costs are not passed through by that small refinery to the consumer under the RIN cost passthrough principle.

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[87] *Id.* at 2181-82 ("Indeed, the dissent finds it "odd" that our reading would permit hardship relief only to small refineries in existence in 2008 and not to new ones, *post*, at 2189-2190…Nor is there anything odd about the fact that Congress chose only to protect existing small refineries rather than new entrants. Often Congress chooses to protect existing market participants from shifts in the law while applying new restrictions fully to future entrants.")
[88] We note that this issue was neither before the courts in *RFA* or in *HollyFrontier* because the three small refineries at issue in those cases all received the initial blanket exemption.
[89] 40 CFR 40.1441(e)(2)(iii).
[90] 40 CFR 80.1441(e)(2).

C.   *DOE Consultation and EPA Consideration of the DOE Study and Other Economic Factors*

CAA section 211(*o*)(9)(A)(ii) required that EPA grant exemptions upon DOE's determination that a small refinery "would be subject to a disproportionate economic hardship."[91] Section 211(*o*)(9)(B), in contrast, provides that EPA must "consult[] with the Secretary of Energy," but does not dictate any particular action that EPA must take following consultation. It also does not provide any further direction on EPA's consultation with DOE, nor does it inform DOE on the form its consultation must take. In fact, "Congress placed no limits on how DOE should provide its consultation to EPA under [the RFS]."[92] This absence of direction provides "substantial discretion" to the agencies to determine how DOE will provide consultation for the pending SRE petitions.[93] Both agencies previously relied on DOE's findings through its application of the DOE scoring matrix to effectuate DOE's consultation on each SRE petition.[94] For this proposed action, EPA has consulted with DOE through discussions in meetings and phone conversations regarding the pending SRE petitions, the supplemental supporting information the small refineries provided, and the analysis and proposed determinations in this document.

In evaluating petitions for SREs under CAA section 211(*o*)(9)(B), EPA is directed to "consider the findings of the [DOE] study." DOE, in fact, conducted two studies, one in 2009 and an update to the study in 2011.[95] The original 2009 DOE Study concluded that small refineries would not face DEH from compliance with the RFS program given the proportional obligations of the program as a function of their gasoline and diesel fuel production and the opportunity for refineries to comply by blending or by purchasing RINs, provided that the RIN market proved to be liquid and competitive. The RIN market has developed to be open, competitive, liquid, and functioning as intended;[96] hence, the 2009 DOE Study accurately forecasted what was likely to occur given the highly competitive fuels market with which DOE was familiar.

When DOE expanded its study in 2011, it posited that small refineries could face DEH "*if* blending renewable fuel into their transportation fuel or purchasing RINs increase[d] their cost of products relative to competitors." (emphasis added).[97] DOE expressed a similar possibility another way noting, "*If* certain small refineries must purchase RINs that are far more expensive than those that may be generated through blending, this will lead to disproportionate economic hardship for those effected entities." (emphasis added).[98] Looking to a potential future where RIN prices rose significantly (as they have since done) DOE projected, "there are numerous circumstances when RIN prices could rise, increasing the cost of compliance and *perhaps* increasing the cost of compliance more for refineries that rely on RINs for compliance compared

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[91] *See supra*, Section II.D.

[92] *Hermes*, 787 F.3d at 577.

[93] *Id*. at 575.

[94] *See supra*, Section II.D.

[95] *See supra*, Section II.D.

[96] *See infra*, Section IV.D.2.

[97] 2011 DOE Study at vii.

[98] *Id*. at 2.

to those that do not." (emphasis added).[99] To make clearer the circumstances it was envisioning where such disproportionate costs *could* arise, DOE provided a detailed appendix, Appendix B, which laid out scenarios for three refiners in different circumstances relative to the RFS program.[100] The first case was a refiner that blends all its production with ethanol and does not have to purchase ethanol RINs. The second case was for a refiner that does not do any blending and must purchase RINs to meet all of its RVO. Finally, the third case was for a refiner with excess RINs to sell into the market. What Appendix B assumed was that the refiner that got its RINs through blending ethanol would get the RINs at nearly no cost, while the refiners that had to buy RINs would be forced to pay the higher market cost for compliance. In this way, DOE projected that some refineries *could* face a disproportionate cost of compliance. Through the matrices in its report, DOE evaluated whether those disproportionate costs rose to a level such that a refinery faced DEH due to those higher costs. DOE articulated bringing those two elements together thusly, "[d]isproportionate economic hardship must encompass two broad components: a high cost of compliance relative to the industry average, and an effect sufficient to cause a significant impairment of the refinery operations."[101] However, DOE did not assess in this study whether their assumptions that refiners bear different costs for RINs and that they may not be able to pass these costs on to consumers in the marketplace actually occurred.

A number of small refineries have stated to EPA that DOE's projection in the 2011 DOE Study is exactly what has come to pass. Ethanol (D6) RIN prices have risen significantly, and small refineries argue that they bear these higher RIN costs while integrated refiners (blenders) receive RINs at almost no cost. Further, they argue that these disproportionate costs are significant enough that they constitute DEH for the refineries just as DOE articulated. EPA has carefully reviewed data, contracts and other information from small refineries to evaluate if, as DOE posited in 2011, refineries that acquire RINs through blending get them at a lower cost than do refineries that purchase RINs on the open market.[102] What we have found is that the RIN discount phenomenon applies—blenders, in fact, discount their sales price for E10 by the market price of the RIN (i.e., the sales price of E10 reflects the cost to buy ethanol minus the market price for selling the RIN). Hence, while the blender gets the RIN for "free" when it purchases a gallon of ethanol, it has to discount the price of that ethanol when sold as E10 by the full current market price of the RIN. This means the blending refinery pays the full market cost of the RIN through the discount it gives in the price of the E10 it sells. The 2011 DOE Study did not consider that blending refineries would have to discount blended fuel by the price of the RIN, and hence, projected a potential outcome in finding DEH that has not occurred in practice. Rather, as the 2009 DOE Study anticipated, the competitive market forces have resulted in the same cost of compliance whether that cost comes in the purchase of RINs on the open market or through the discounting of the price blended fuel sold by blenders. Neither the 2009 DOE Study nor the 2011 DOE Study anticipated the even more significant finding that, without regard to how refineries experience the RFS compliance cost, the RIN cost passthrough phenomenon applies—refineries pass those higher costs through to their customers in higher prices for the refined products they sell.

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[99] *Id*. at 3.
[100] *Id*. at B-4.
[101] *Id*. at 3.
[102] *See infra*, Section IV.D.2.

For the reasons described above and after considering the "other economic factors" described in Sections IV.D.2 and 3, we propose to find small refineries do not face disproportionate costs to comply with RFS. Further, we propose to find there is no economic harm, much less a hardship significant enough to impair refinery operations, that qualifies as DEH caused by RFS compliance. For these reasons, we propose to find, consistent with the broad criteria for relief described in the 2009 and 2011 DOE Studies, that DEH is not demonstrated in the petitions EPA has evaluated.

D. *Hardship Must Be Caused by RFS Compliance*

1. The CAA Requires That DEH Must Be Caused by RFS Compliance

As discussed briefly above, the best reading of the statutory provisions at CAA section 211(o)(9) is that EPA's authority to grant an SRE "for the purpose of (DEH)" requires that the hardship be caused by RFS compliance. This interpretation aligns with both the statutory text and the purpose of the RFS program and the exemption.

a.   The Text of the Statute Provides That DEH Must Be Caused by Compliance with the RFS Program

EPA did not require that DEH be caused by compliance with the RFS program in prior decisions to grant SREs.[103] On January 24, 2020, the Tenth Circuit in *RFA* held that the EPA only has the authority to grant SREs when the refinery experiences DEH caused by the RFS program.[104] The court pointed to statements in the three decision documents at issue indicating that relief from the RFS obligations could relieve the refinery's hardship "in whole or in part," and concluded that granting relief on the basis of something other than DEH caused by RFS compliance was impermissible.[105] We have evaluated the court's opinion and the text of the statute, and, going forward, we propose to require that the petitioning small refineries demonstrate that DEH is caused by RFS compliance as discussed further in this section.

The CAA's SRE provision is structured in two sections. Section "(A) Temporary exemption" provides the blanket exemption to all small refineries through 2010 and then lays out the conditions in which a small refinery may receive an extension of the initial exemption based on the DOE study. Section "(B) Petitions based on [DEH]" addresses ongoing case-by-case SRE petitions and how EPA must evaluate those petitions.

Section A refers to the "requirements of paragraph [211(o)(2)]," which provides, among other things, the applicable annual volume targets for the required categories of renewable fuel. The "requirements of paragraph [211(o)(2)]" are utilized in describing what an exemption means: "The requirements of paragraph [211(o)(2)] shall not apply to small refineries until calendar year 2011,"[106] as well as identifying the subject of the DOE's study: "[T]he Secretary of Energy shall conduct for the Administrator a study to determine whether compliance with the

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[103] *See supra*, Section III.
[104] *RFA*, 948 F.3d at 1254.
[105] *Id.*
[106] CAA section 211(o)(9)(A)(i).

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requirements of paragraph [211(*o*)(2)] would impose a [DEH] on small refineries."[107] It also describes the basis under which an exemption can be extended: "[i]n the case of a small refinery that the Secretary of Energy determines under subclause (I) would be subject to a [DEH] *if required to comply with paragraph [211(o)(2)]*, the Administrator shall extend the exemption under clause (i) for the small refinery for a period of not less than 2 additional years." (emphasis added).[108] These references to paragraph 211(*o*)(2) indicate a direct link between the RFS requirements and DEH. Thus, the best reading of the statutory language is that compliance with the RFS program must be the impetus for DEH warranting an SRE under section A, meaning that a small refinery may not simply experience a year of poor economic performance or struggle with disadvantageous operational or market constraints to merit an SRE. Nor can a refinery rely on unplanned events like a fire, natural disaster, or planned events such as paying out stock dividends or other capital purchases/loans to qualify for relief from its RFS obligations.[109] Rather, section A of the SRE provision provides that DEH must be caused by the small refinery's compliance with the requirements of the RFS program.[110]

Section B of the SRE provision states that a small refinery may "at any time petition the Administrator for an extension of the exemption *under subparagraph (A)* for the reason of [DEH]."[111] By making any ongoing SREs mere "extension[s] of the exemption under subparagraph (A)," Congress carried over the causal requirement in section A to section B.[112] While section B uses the language "for the reason of [DEH]" without a modifying clause tying it to compliance with the RFS program, section B cannot be read outside of the context of section A; section B is merely providing an opportunity for small refineries to request continuation of the exemption in section A. Therefore, the causal requirement in section A tying DEH to RFS compliance applies to section B as well. Additionally, it is section A that provides the basis on which DEH must be founded: compliance with the RFS program. Thus, even if the exemption under section B could be interpreted as a distinct exemption from the exemption under section A, it must be "for the reason of [DEH]" as defined in section A as being "impose[d]" by, or existing "if [a small refinery was] required to comply with" its RFS obligations. In this way, the use and meaning of "disproportionate economic hardship" is the same in both sections A and B. Therefore, we agree with the Tenth Circuit that the "language of these provisions indicates that renewable fuels compliance must be the cause of any disproportionate hardship."[113] As described above, EPA believes this is the best interpretation of the inter-related provisions of CAA sections 211(*o*)(9)(A) and (B) and is therefore proposing to adopt this interpretation going forward.

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[107] CAA section 211(*o*)(9)(A)(ii)(I).

[108] "In the case of a small refinery that the Secretary of Energy determines under subclause (I) would be subject to a [DEH] if required to comply with paragraph [211(*o*)(2)], the Administrator shall extend the exemption under clause (i) for the small refinery for a period of not less than 2 additional years." CAA section 211(*o*)(9)(A)(ii)(II).

[109] *RFA*, 948 F.3d at 1254. ("Granting extensions of exemptions based at least in part on hardships not caused by RFS compliance was outside the scope of the EPA's statutory authority.")

[110] *Id*.

[111] CAA section 211(*o*)(9)(B)(i) (emphasis added).

[112] *RFA*, 948 F.3d at 1253.

[113] *Id*.

b.   The Purpose of the RFS Program Supports a Requirement That DEH Must Be Caused by Compliance with the RFS Program

Requiring that DEH be caused by RFS compliance also furthers the purpose of the RFS program, which exists to encourage the use of renewable fuel. Historically, SREs have resulted in reductions in the volume of renewable fuel used in the United States.[114] In general, hardship provisions exist to provide particular parties additional time to come into compliance with new regulations if they are expected to or are facing difficulties adjusting to a new regulatory requirement. This is historically how EPA has designed and implemented hardship provisions for other fuels programs, often with phase-out provisions (i.e., only available for a set number of years after implementation).[115] Therefore, it is logical to interpret the SRE provision to also provide initial time for small refineries to come into compliance, with the expectation that they would do so, and would only be eligible for an extension of the exemption if they suffered hardship specifically due to the RFS program itself.[116]

Additionally, allowing relief from RFS obligations for hardship completely unrelated to the RFS program would be an inappropriate use of an exemption provision, particularly one where the text of the statute requires demonstration of a causal relationship between the hardship and the program. Had Congress intended that EPA provide relief for hardship due to something other than the RFS program, the statutory language likely would have been more explicit in providing such broad authority. It would be illogical for the "temporary hardship" provision to have been established as an opportunity to prop up businesses and provide relief for reasons wholly unrelated to the RFS program, the program from which it is providing relief. It would only make sense that, in implementing the RFS program, we provide relief from impacts of the RFS program that result from the RFS program itself. It is hard to imagine that Congress intended the SRE provision be used to cure the financial distress some small refineries may otherwise face, especially when other legal and policy options exist to provide compliance flexibility, and, significantly, when that distress may be caused by a broad array of circumstances unrelated to the RFS program, ranging from difficult geography to adverse business decisions. Finally, the granting of SREs in light of RIN cost passthrough means that exempted small refineries are not only relieved of their RFS obligations, but also get a financial *benefit* through the sale of RINs obtained through blending, or through the sale of their petroleum fuel that includes the value of the RIN.[117] This windfall to small refineries does not further the goals of the RFS program, and only provides a disproportionate net benefit to small refineries granted exemptions in comparison to other refineries that are either ineligible to petition for exemption or are denied an exemption on the lack of merit of their petition.[118] Furthermore, when small refineries gain this benefit through exemption, RFS compliance is incrementally shifted to other

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[114] We acknowledge that beginning in 2020, we have projected the amount of SREs such that when the projections accurately reflect the volume of fuel exempted, the volume of renewable fuel required under the RFS program is not reduced by the granting of SREs.

[115] *See*, e.g., the diesel fuel hardship provisions at 40 CFR 80.560(a), which effectively allowed a delay of up to four years in complying with EPA's diesel fuel sulfur standards.

[116] We note that such an approach is consistent with Congressional intent for the SRE provision, whether that intent is considered to be a "funnel to compliance" or a "safety valve," as considered by the Supreme Court in deciding *HollyFrontier. See HollyFrontier*, 141 S. Ct. at 2181-82.

[117] *See infra*, Section IV.D.2.

[118] *See*, e.g., Comments from API on 2020 RFS Annual Rule, Docket Item No. EPA-HQ-OAR-2019-0136-0721.

parties, which, in turn, pass on that increment in their compliance costs to consumers. In essence, the significant financial benefit of exemptions granted to small refineries is paid for by consumers in still higher transportation fuel costs.[119]

2. DEH and RIN Cost Passthrough

An additional part of the Tenth Circuit's holding was that EPA failed to explain how a finding of DEH comports with EPA's findings on RIN cost passthrough.[120] In this action, we are proposing to adopt an interpretation of the statute that DEH must be caused by compliance with the RFS program. It follows, then, that in making a finding of DEH we would have to explain how the RFS program could cause DEH for a small refinery in light of EPA's longstanding and consistent findings on RIN cost passthrough.

After reviewing the available data and analysis, including analyses conducted by EPA and outside parties, as well as data and analyses submitted by petitioning small refineries, we propose to find that all obligated parties recover the cost of acquiring RINs by selling the gasoline and diesel fuel they produce at the market price, which reflects these RIN costs (RIN cost passthrough). Further, we propose to find that blenders use the revenue from RIN sales to discount the price of the blended fuel they sell (RIN discount). We further propose to find that, since refining and fuel blending markets are highly competitive, the RFS obligation is the same for every gallon of gasoline and diesel fuel, RINs are widely available in an open and liquid market, and the cost of acquiring RINs is the same for all parties, all types of obligated parties bear the same cost from compliance with the RFS program as these aspects of the RFS program and the RIN market facilitate the RIN cost passthrough and the RIN discount principles discussed above. While some parties dispute EPA's findings on RIN cost passthrough and the RIN discount, those same parties have not made business decisions over the last decade that would be logical if RIN cost passthrough and RIN discount were not occurring. For example, if RIN cost passthrough did not exist, we would expect to see refiners avoiding RFS obligations by shifting production to non-obligated fuel (e.g., heating oil, jet fuel) and/or export fuel. We would also expect to see actions to expand or modify their business models to include additional blending of renewable fuel to reap the alleged rewards that they claim independent blenders and marketers enjoy.[121] Taken together, we propose to conclude that the RFS program does not impose a DEH on small refineries.

Assessing the impact of the RFS program on refiners and blenders is complicated for several reasons. First, many parties may operate in several different roles, such as merchant refiners, integrated refiners, and blenders, in any given year.[122] Second, the impact of RIN costs

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[119] In the 2020 RFS Annual Rule, EPA finalized regulations that shift the projected exempted volumes for small refineries to the remaining obligated parties instead of reducing the renewable fuel volumes as had been common practice in prior years. 85 FR 7016 (February 6, 2020).

[120] *RFA*, 948 F.3d at 1256-57.

[121] There has been an expansion of independent gasoline blenders and marketers in recent years. We anticipate this trend will continue. This is driven by the gasoline market being oversupplied, making it economical for companies to invest in blending and purchase gasoline blendstocks on the spot market. The typical fraction of a cent return is sufficient to offset capital investments in blending infrastructure. The market dynamic has swung back and forth over the decades independent of the RFS program and RIN costs.

[122] *See infra*, Section IV.D.2.c.

on the price of fuels is not often apparent in the market pricing data.[123] Third, while market prices for renewable fuel with RINs attached are readily available in posted prices, renewable fuel is less commonly traded without RINs and hence prices of renewable fuel without the RIN are also rarely available outside of contracts between parties that are claimed as confidential.[124] Finally, terminology and accounting practices vary between different parties, often making apples to apples comparisons difficult.[125]

In this section, we present the data and analysis to support our proposed findings that small refineries do not suffer DEH from their RFS obligations because RIN costs are fully passed through to consumers. Further, we show that any such RFS compliance costs are not disproportionate because the cost to acquire RINs, whether via blending, or through the RIN market, are the same, making the costs of RIN acquisition the same for all parties. First, we provide a brief description of prior publications on RIN cost passthrough and the RIN discount. Second, we reiterate the general economic theory that supports the premises of RIN cost passthrough and the RIN discount. Third, we briefly discuss the different market participants, and how we expect their operations to be affected based on economic theory. Fourth, we analyze the most current data available to the Agency to determine whether the finished fuel and RIN markets move in the way the economic theory predicts.

Small refineries alleging DEH generally claim that: (1) They are unable to recover the cost of the RINs they purchase in the sales prices of the gasoline and diesel fuel they produce because of their geography or market position; and/or that (2) They face higher costs for acquiring RINs than their competitors (usually integrated refiners or non-obligated blenders) that acquire RINs by blending qualifying renewable fuel. In the first case, petitioners argue that they are unable to recover the added cost of RIN purchases needed for RFS compliance and/or that the market price for gasoline and diesel fuel does not fully reflect these costs. In the second case, petitioners argue that their competitors (non-obligated blenders and/or integrated refiners) do not have to discount the blended fuel they sell to consumers by the price of the RIN and, therefore, are able to acquire these RINs at a lower net cost than parties that purchase RINs. EPA has not found evidence to support either of these arguments, as shown by the data and analysis presented below. We note that the data we looked at in doing this analysis and the market behavior they describe are consistent across all the markets we observed.

a.   **Previous Assessments of RIN Market Dynamics**

The degree to which the cost is "passed through" to consumers (RIN cost passthrough) and revenue from RIN sales is used to discount the price of blended fuel (RIN discount) has been a longstanding area of interest, especially since D6 RIN prices increased dramatically in 2013. EPA first published results of an assessment of obligated parties' ability to "pass through" RIN costs and the impact of RIN prices on the price of blended fuel in a technical memorandum in 2015.[126] EPA explained the economic principles at work that enabled obligated parties to recover

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[123] *See infra*, Section IV.D.2.b.
[124] *See infra*, Section IV.D.2.d.
[125] *See infra*, Section IV.D.2.d.ii.
[126] "A Preliminary Assessment of RIN Market Dynamics, RIN Prices, and Their Effect," Dallas Burkholder, Office of Transportation and Air Quality, US EPA, May 14, 2015.

their RIN costs through RIN cost passthrough and the discount of renewable fuel blends by the price of the RIN. EPA then examined several sources of market data to test those principles. We concluded that both the costs in refined products and discounts in blended fuel prices due to RINs were being fully passed through to consumers.

EPA next considered this issue in the context of petitions to reconsider the point of obligation in the RFS program.[127] While RIN cost passthrough was not the only topic at issue in our consideration of changing the point of obligation in the RFS program, the degree to which RIN costs and the RIN discount were passed through to consumers was a central argument in the various petitions. In considering these requests, EPA again examined available market data, as well as studies by outside parties and numerous public comments.[128] Once again, EPA concluded that the RIN costs and RIN discount were fully passed through to consumers and reflected in the market prices of petroleum fuel and blended fuel, and that blenders used revenue from RIN sales to discount the price of blended fuel. This decision was reviewed and upheld by the U.S. Court of Appeals for the D.C. Circuit.[129]

In evaluating the SRE petitions currently before the Agency, EPA has again evaluated the available market data. EPA has examined data through 2020 to determine whether more recent data continues to support EPA's views on the economic principles at play in the RIN market and whether these new data reconfirm our prior conclusions about both RIN cost passthrough and the RIN discount. EPA's prior analyses were generally based on publicly available data reported by the Energy Information Administration (EIA), which reports spot fuel prices for large fuels markets such as the New York Harbor or the Gulf Coast. Several small refineries claimed that, while RIN cost passthrough and the RIN discount may occur in these larger and more competitive fuels markets, RIN cost passthrough and the RIN discount were not occurring in the local markets into which these small refineries sold gasoline and diesel fuel. To assess these claims, EPA analyzed the data we received, including data sets provided by some of the small refinery petitioners located in smaller markets. The petitioners submitted the datasets to disprove EPA's conclusions on RIN cost passthrough. However, EPA found that the data, including the more recent data through 2020, either could not be used to draw conclusions regarding RIN market dynamics, or *supported* the conclusions that RIN costs are passed through in higher

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[127] "Denial of Petitions for Rulemaking to Change the RFS Point of Obligation," EPA-420-R-17-008 at 21-31, November 2017.

[128] C.R. Knittel, B.S. Meiselman, & J.H. Stock, "The Pass-Through of RIN Prices to Wholesale and Retail Fuels under the Renewable Fuel Standard," Journal of the Association of Environmental and Resource Economists, 2017. C.R. Knittel, B.S. Meiselman, & J.H. Stock, "The Pass-Through of RIN Prices to Wholesale and Retail Fuels under the Renewable Fuel Standard: Analysis of Post-March 2015 Data," Working Paper. *See also* Letter from RaceTrac to Administrator McCarthy, August 17, 2016, Docket Item No. EPA-HQ-OAR-2016-0544-0014; Letter from QuikTrip to Administrator McCarthy, August 17, 2016, Docket Item No. EPA-HQ-OAR-2016-0544-0013; Presentation from Murphy USA to EPA, August 16, 2016, Docket Item No. EPA-HQ-OAR-2016-0544-0028.

[129] *Alon Refining Krotz Springs, Inc v. EPA*, 936 F.3d 628 (D.C. Cir. 2019). In its decision, the D.C. Circuit found that in determining whether refiners recover the cost of the RINs they purchase for RFS compliance, EPA "grounded that conclusion in studies and data in the record." *Id.* at 649. The D.C. Circuit also supported EPA's findings that there is a cost for integrated refiners and non-obligated blenders to acquire RINs, even if they do not purchase separated RINs, through lower prices for blended fuels. "In a competitive market there's no such thing as a free lunch, and blenders and integrated refiners pay their tab just as other do; they just do so indirectly. To offer finished fuel without attached RINs at a competitive price, these entities must discount their blended fuel by roughly the value of the RINs that they detach and kept for themselves." *Id.* at 650.

refined product prices and that blended fuel prices are discounted by the price of the RIN and, hence, passed through to consumers.[130] This means that no obligated party has a structural advantage or disadvantage from the RFS program. EPA found these conclusions held not only in the large fuels market previously assessed, but also in the smaller markets EPA examined using non-public market data, as well as the data submitted by the small refineries. Each of these assessments is discussed in further detail in the following sections.

b.   Economic Principles of RIN Cost Passthrough

The market for gasoline and diesel fuel in the United States is extremely competitive at all levels, including the retail and wholesale levels. At the retail level, there are currently about 145,000 retail stations across the United States.[131] The majority of these stations are owned by parties that own fewer than ten retail stations, and, in many cases, only a single retail station.[132] All of these parties are selling fungible products (gasoline and diesel fuel) to a consumer base that is very sensitive to fuel prices, with prices posted on large signs making prices transparent. At the wholesale level, there are 129 petroleum refineries in the United States.[133] The market for renewable fuel and RINs is similarly very competitive. In 2020, more than 300 companies generated RINs for qualifying renewable fuel.[134] On average, approximately 5 billion RINs are traded between registered parties each month.[135] Prices for petroleum fuel, renewable fuel, and RINs are regularly reported by a variety of price reporting services.[136]

Refineries within the United States compete with each other, as well as with many other refineries overseas, and importers capable of sourcing gasoline and diesel fuel from a global fuels market. Low transportation costs for gasoline and diesel fuel, enabled by an extensive pipeline network, and the low cost of shipping these fuels via pipeline, barge, and petroleum tankers, mean that fuels markets across the United States are linked and that refiners are not only competing with other local refineries, but with parties across the country and in many cases the world. This can be seen clearly in the structure of many fuel supply contracts across the country that establish pricing based on the price of fuel at a major market (such as Houston or New York Harbor) plus or minus transportation costs between the local market and the major market,

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[130] *See infra*, Section IV.D.2.d.

[131] National Association of Convenience Stores, *Convenience Stores Sell the Most Fuel*, March 24, 2021, https://www.convenience.org/Topics/Fuels/Who-Sells-Americas-Fuel.

[132] *Id*. According to this data, 57.1% of retail fuel stations are owned by parties that own only one station, and an additional 3.8% of all retail fuel stations are owned by parties that own 2-10 retail stations.

[133] According to data from EIA, there were 129 operable refineries in the United States as of January 1, 2021 (EIA, *When was the last refinery built in the United States?*, Frequently Asked Questions (FAQs), June 25, 2021, https://www.eia.gov/tools/faqs/faq.php?id=29&t=6). Some of these refineries are located outside of the RFS covered location or do not produce gasoline or diesel fuel, and thus are not subject to the RFS program.

[134] The number of companies that generated RINs is from data accessed from EPA's Moderated Transaction System (EMTS).

[135] RIN trade and price information reported to EMTS is available at: https://www.epa.gov/fuels-registration-reporting-and-compliance-help/rin-trades-and-price-information.

[136] *See*, e.g., fuel price data from EIA (https://www.eia.gov/dnav/pet/pet_pri_spt_s1_d.htm) and RIN price data from EPA (https://www.epa.gov/fuels-registration-reporting-and-compliance-help/rin-trades-and-price-information).

depending on the direction of product flow.[137] If a small refinery is facing competition in its local market from a larger remote market, the local price will typically be higher than the price in the major market, reflecting the cost of shipping the fuel to the local market from the larger remote market.[138] Conversely, if the small refinery is shipping its fuel to the larger market to sell, it will need to price its fuel below the remote market price to cover the cost of shipping the fuel to the remote market. Through thousands of decisions made by all the market participants each day, the prices between the markets equilibrate to the same level, offset by the transportation costs between the markets.

Economic theory suggests that in competitive markets like the fuels market, competitive market forces would drive market participants to pass through the costs and revenue from RINs to consumers in the prices of the products they sell. This means that higher RIN prices should not advantage any one group of refineries over another, and that RIN prices should not impact refining margins. As an initial assessment of the impact of RIN prices on refineries, EPA examined the refining margins for three groups of refineries—small refineries, large refineries, and all refineries—based on available public data (e.g., financial data from publicly traded companies) and confidential data, including data provided by petitioners. We compared these refining margins (operating profit per gallon of fuel produced) to the average RIN cost per gallon (the per gallon cost to acquire the RINs necessary to meet a refinery's RVO).[139] These data are presented in Figure IV.D.2.b-1. Consistent with the economic theory, we see no correlation between refining margins and RIN prices, nor do we see any indication that higher RIN prices put small refineries at an advantage or disadvantage relative to large refineries. Figure IV.D.2.b-1 also includes an estimate of the refining margin for small refineries if they received an exemption from their RFS obligations. The estimate was calculated by adding the RFS RIN compliance cost per gallon to the refining margins for small refineries each year, since exempting small refineries from their RFS obligations means they do not have to acquire RINs. This estimate demonstrates that exempting small refineries from their RFS obligations results in small refineries, as a class, having consistently higher refining margins than large refineries or the average of all refineries. This advantage is significant and increases as RIN prices increase.

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[137] Several small refinery petitioners included examples of contracts, some of which were based on the fuel price at a larger fuel market plus (or minus) transportation costs. This information has been claimed as confidential by the petitioners.

[138] This is because the price in the local market will be set by the marginal supplier of fuel. In a market with both a local and remote supplier, the marginal supply price will be no lower than the fuel sourced from the remote market, which will include transportation costs.

[139] We calculated the RIN cost per gallon based on the RFS obligation and the average RIN prices for each year.

Figure IV.D.2.b-1: Refining Margins and RIN Costs (2009-2019)[a]
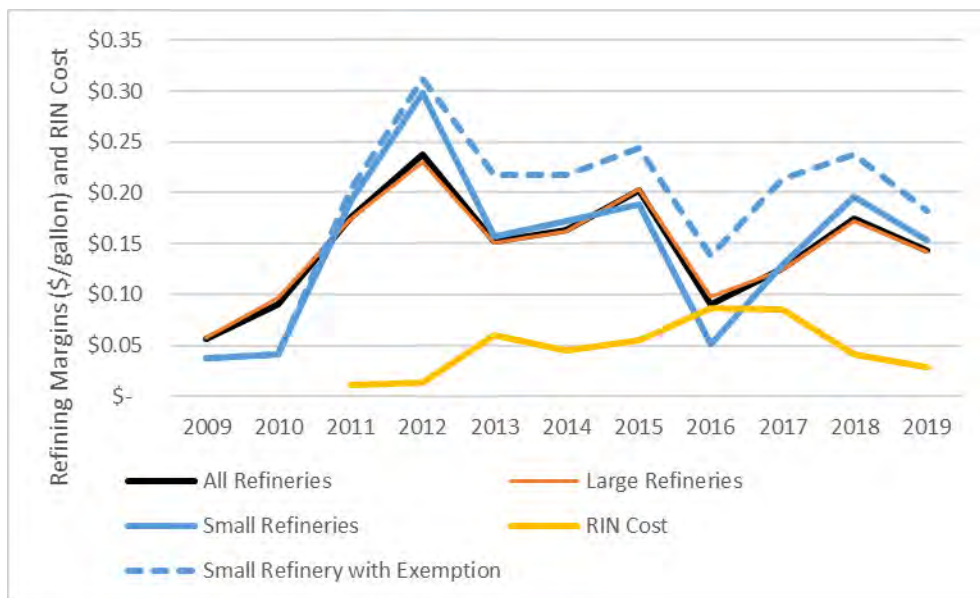
Data from SRE petitions and financial statements from publicly traded companies.
[a] The "Small Refinery with Exemption" line was calculated by adding the "RIN cost" line to the "Small Refineries" line. If a small refinery had already accounted for the financial benefit of an SRE in their reported margin for a given year, the effect would be to make the "Small Refinery with Exemption" line slightly less than shown for that year.

Understanding the impacts of the RFS program on the various parties that participate in the fuels market is complicated by the fact that different parties may participate in different activities within the fuels market. When analyzing the impact of the RFS program on the fuels market, we generally consider three different types of market participants: (1) Parties that produce and sell petroleum fuel, including blendstocks[140] (generally referred to as merchant refiners); (2) Parties that purchase petroleum fuel and renewable fuel, and sell blended fuel (blenders); and (3) Parties that produce petroleum fuel, purchase renewable fuel, and sell blended fuel (integrated refiners). A simplified version of the business activities each of these parties engage in, as well as the impact of the RFS program on their costs and revenue, is illustrated in Figure IV.D.2.b-2 below.

Merchant refiners produce, market, and sell petroleum fuel and buy the RINs they need for compliance with their RFS obligations; they do not purchase or blend renewable fuel. Integrated refiners also produce petroleum fuel, but unlike merchant refiners, they also purchase and blend renewable fuel to produce, and ultimately sell, blended fuel that contains some volume of renewable fuel. Integrated refiners generally do not purchase RINs, but instead purchase renewable fuel with attached RINs and acquire most of the RINs they need for compliance when they blend the renewable fuel.[141] Non-obligated blenders do not produce petroleum fuel

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[140] A "blendstock" is defined as "any liquid compound or mixture of compounds (not including fuel or fuel additive) that is used or intended for use as a component of a fuel." 40 CFR 1090.80.
[141] Very few, if any, integrated refiners acquire all the RINs they need by blending renewable fuel. Petroleum fuel is subject to an RFS obligation for all four categories of renewable fuel, but it is generally only blended with one type of renewable fuel (i.e., ethanol in the case of gasoline and biodiesel or renewable diesel in the case of diesel fuel).

components, but instead purchase these products from merchant refiners. They then purchase renewable fuel with attached RINs that they use to produce, and ultimately sell, blended fuel (e.g., E10 and B5).[142] Because these parties do not have RFS obligations, they can also sell the RINs associated with the renewable fuel they blend.

In practice there are few refineries that fall entirely into a single category, with most refiners having business interests that fall into at least two categories. Nevertheless, these distinctions help to clarify the context for RIN cost passthrough and the RIN discount in the price of blended fuel. While the RFS program results in new costs and revenue streams for various parties, we expect that, for each of these types of market participants (merchant refiners, integrated refiners, and blenders), these new costs are passed through in higher prices for refined products, while these new revenues from the sale of RINs are reflected in lower market prices for blended fuels, such that no refiner or blender realizes an advantage or disadvantage from the RFS program.[143]

Based on the 2020 RFS percentage standards, integrated refiners would generate a small amount of excess conventional biofuel (D6) RINs when blending ethanol as E10, but would need to purchase a small number of advanced biofuel (D5), biomass-based diesel (D4), and cellulosic biofuel (D3) RINs to meet the RFS obligation associated with the petroleum-based portion of the E10 blend. Similarly, integrated refiners that blend biodiesel as B5 would generate excess D4 RINs but would need to purchase D6 and D3 RINs to meet the RFS obligation associated with the petroleum-based portion of the B5 blend. In practice, nearly every gallon of blended fuel produced by an integrated refiner generates some quantity of excess RINs of one type and simultaneously incurs an obligation for other types of RINs.

[142] B5 refers to diesel fuel blended with 5% biodiesel.

[143] *See infra*, Section IV.D.2.c.

Figure IV.D.2.b-2: Simplified Illustration of Fuels Market Participants
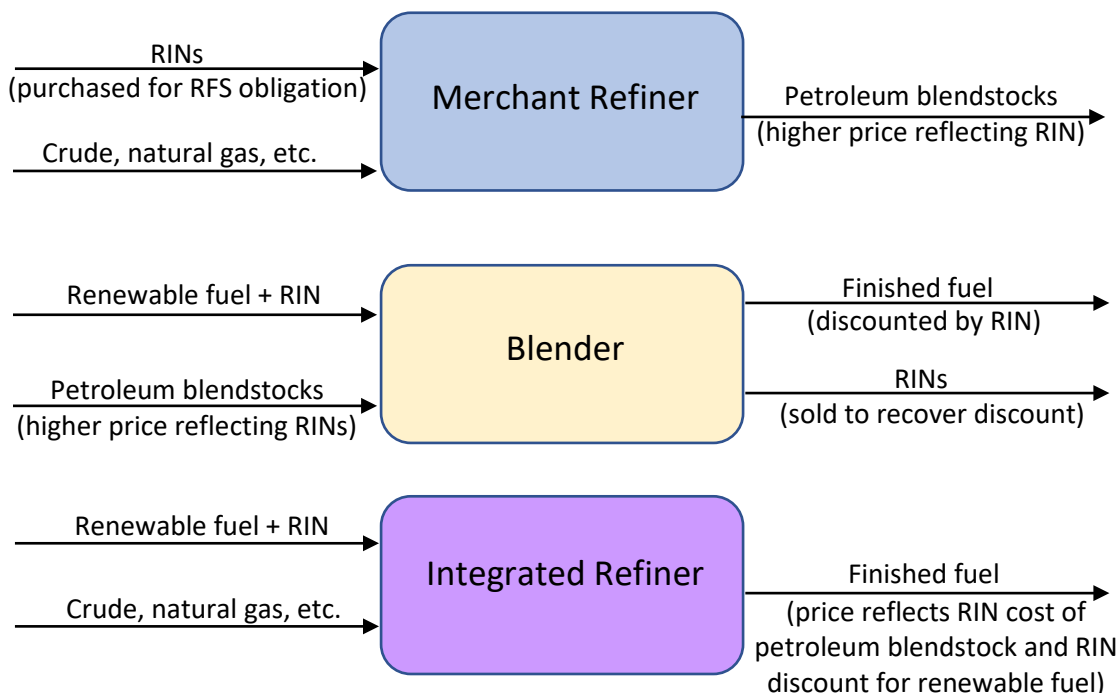
The place in the fuel supply chain where we can see the *cost* of the RIN being passed through to consumers is in the price of the petroleum products. Since all parties have the same cost to acquire RINs (on a per gallon basis),[144] whether they blend renewable fuel or purchase separated RINs, one would expect the price for petroleum fuel subject to an RFS obligation (i.e., gasoline and diesel fuel) to increase when RIN prices increase and to decrease when RIN prices decrease. Just as the prices of gasoline and diesel fuel increase if fuel taxes increase,[145] they also increase when RIN prices increase. Merchant refiners fully recover the cost of their RFS obligations when the difference between the market price of gasoline and diesel fuel and the market price for these fuel in the absence of the RFS obligation is equal to the cost of purchasing the RINs to satisfy the RFS obligation. Equations showing the expected RIN price impacts on the prices of gasoline and diesel fuel, assuming RIN costs are fully passed through, are shown below.

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[144] *See infra*, Section IV.D.2.c.
[145] EIA, *Gasoline explained: Factors affecting gasoline prices*, March 2, 2021, https://www.eia.gov/energyexplained/gasoline/factors-affecting-gasoline-prices.php.

Equation 1: Expected Impact on Gasoline (E0) Prices Assuming Full RIN Cost Passthrough

Gasoline Price = Gasoline Price with no RFS Obligation + RIN Costs

Equation 2: Expected Impact on Diesel Fuel (B0) Prices Assuming Full RIN Cost Passthrough

Diesel Fuel Price = Diesel Fuel Price with no RFS Obligation + RIN Costs

EPA once again examined these economic principles by looking at available market data, including more recent market data.[146] The data EPA examined show that the market prices for gasoline and diesel fuel operate as shown in Equations 1 and 2, supporting EPA's findings that all obligated parties recover the cost of their RFS obligations in the sale prices for the gasoline and diesel fuel they produce.[147] The ability for an obligated party to recover its RIN costs is not dependent on the obligated party's ability to set the price for these fuels in the markets where they are sold. Rather, because all obligated parties face the same RIN costs per gallon of gasoline and diesel fuel produced nationwide,[148] the market prices for these fuels rise and fall with changes in RIN prices in all markets by the same amount on any given day (after accounting for other factors that impact the prices of these fuels), such that all parties that sell gasoline and diesel fuel recover their RIN costs.[149]

The place in the fuel supply chain where we see the RIN discount is the point at which renewable fuel is blended with gasoline or diesel fuel and sold to fuel retailers. Parties that blend renewable fuel with gasoline or diesel fuel to produce transportation fuel must discount the price of the blended fuel by the price of the associated RIN.[150] These parties can then separate any RINs that are attached to the renewable fuel and either use these RINs to demonstrate compliance with their RFS obligations (if they are an obligated party) or sell these RINs to other parties. In either case, the point at which they acquired the RIN at the market price, or, rather, incurred a market rate cost for the RIN, is the point when they had to discount the blended fuel by the price of the RIN.

The sale of a RIN by a party that blends renewable fuel and separates the RIN creates a separate revenue stream in addition to the revenue from the sale of the blended fuel itself. Competitive forces require that blenders price their blended fuel based on the *net* price of renewable fuel, or the price of the renewable fuel less the price of the RIN associated with the fuel (e.g., net ethanol price = ethanol price – D6 RIN price; net biodiesel price = biodiesel – 1.5*D4 RIN price[151]). Any party that attempts to retain the revenue from the RIN sales, rather than passing it on to consumers via the RIN discount, is unable to offer blended fuel at a

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[146] EPA's analysis of the market data to determine the degree to which RIN costs are passed through to consumers through higher prices for gasoline and diesel fuel is provided in Section IV.D.2.d.i.

[147] *See infra*, Figures IV.D.2.d.i.1 through 4, where EPA compared the price difference between a fuel subject to an RFS obligation to a very similar fuel not subject to an RFS obligation and the RIN cost per gallon of diesel fuel.

[148] *See infra* Section IV.D.2.d.ii.

[149] *See infra* Section IV.D.2.d.i.

[150] Another way to think about the RIN discount is that, to remain competitive, parties that blend renewable fuel must base the final price for the blended fuel on the net price of the renewable fuel (after accounting for the sale of the RIN) rather than on the price they paid for the renewable fuel with an attached RIN.

[151] Each gallon of biodiesel generates 1.5 RINs.

competitive price. If the market price for blended fuel is equal to the prices of the fuels used to create the blended fuel (e.g., 0.9 gallons of gasoline blendstock and 0.1 gallons of ethanol in the case of E10) without discounting the price for the renewable fuel by the price of the RIN, the RIN sales would result in profits for the blender. In the competitive fuels market, however, blenders are forced to reduce the price of the blended fuel to be competitive, consistent with the RIN discount phenomenon. If they do not, their competitors will give up the revenue from the sale of RINs to gain a greater market share. These competitive forces require that blenders use the revenue from the RIN sales to effectively subsidize the price of the blended fuel they sell.

This market phenomenon has been relatively obvious to program participants looking at the market for biodiesel blends where it was understood from the start of the RFS2 program that a higher D4 RIN price was necessary to reduce the effective market price of biodiesel to make it equivalent to petroleum diesel fuel. Integrated refiners and non-obligated blenders pay the higher cost for renewable fuel through their purchase and blending. Merchant refiners pay the non-obligated blenders the incremental cost of the renewable fuel for doing the blending of renewable fuel on their behalf when they purchase the separated RINs. As an illustrative example, if petroleum diesel fuel is selling at $3.00 per gallon, and it costs $4.50 per gallon to produce biodiesel and generate 1.5 D4 RINs, the price of a D4 RIN would need to be $1.00 for biodiesel to compete with petroleum diesel fuel so that the revenue from the sale of the 1.5 D4 RINs for $1.50 would lower the effective cost of the biodiesel to match the cost of the petroleum diesel fuel.[152] Any blender attempting to retain the revenue from the sale of the D4 RINs (rather than using it to discount the price of the blended fuel) could not offer a competitively priced blended fuel, since any biodiesel the blender used in its product would increase the cost of the fuel blend.

As described in greater detail below both in terms of economic principles and the recent data EPA received from small refineries, this market dynamic was previously not well understood when applied to the blending of ethanol to make E10. From the start of the RFS program until recently, there was no need to discount ethanol to create parity with gasoline blendstocks because ethanol has been relatively inexpensive and highly valued as an octane improver when blended to produce E10. As a result, both in the period prior to the RFS program and for the early parts of the RFS program, the market price for E10 was simply the weighted price for gasoline blendstock and ethanol. When D6 RIN prices increased, it was not obvious to many program participants how these high RIN prices impacted E10 prices, which many program participants simply assumed should continue to reflect the weighted costs of gasoline blendstock and ethanol. In fact, what has happened is that the high RIN prices have increased the production cost of gasoline blendstock (i.e., the RIN cost passthrough described in the preceding section) while simultaneously lowering the net cost of ethanol in almost equal proportion (the RIN discount), resulting in little change in the actual cost of E10 to consumers. While this competitive market response has meant little change in E10 prices due to the RFS program, it has created confusion among market participants who perceive that D6 RINs are "free" to parties that blend E10 while obligated parties that must buy the D6 RINs at market prices bear a very high cost. Instead, as we will show here based both on economic theory and the new small refinery data submissions, all sellers of E10 discount the price of E10 by the *price* of the D6

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[152] In this example we are ignoring the impact of the federal biodiesel tax credit for simplicity. If we included the impact of the tax credit, it would reduce the RIN price needed to bring the net or effective price of biodiesel to parity with diesel fuel.

RIN, meaning fuel blenders pay for the RIN through this discounted E10 price at the same cost as if they purchased the RIN on the open market. As a result, parties that acquire RINs through fuel blending and parties that acquire RINs from the open market incur the same cost to acquire RINs.

Equations showing a generalized fuel blending example, and an example specific to E10, are provided below. These equations and the discussion that follows describe what one would expect if RIN prices are fully passed through to consumers. The subsequent sections examine market data to test these equations and determine the degree to which RIN prices are passed through to consumers.

Equation 3: Generalized Fuel Blending Example Assuming Full RIN Discount

Blended Fuel Price = PFP * PF% + (RFP – RIN Value) * RF%

Where: PFP = Petroleum Fuel Price

PF% = Petroleum Fuel Percentage in the fuel blend

RFP = Renewable Fuel Price

RIN Value = RIN Price * Equivalence Value[153]

RF% = Renewable Fuel Percentage in the fuel blend

Equation 4: Fuel Blending Example for E10 Assuming Full RIN Discount

E10 Price = Gasoline Blendstock Price * 90% + (Ethanol Price – D6 RIN Price) * 10%

EPA's analysis of the market data confirms these economic principles that the RIN value is passed through to consumers in the price of blended fuel.[154] The analysis—comparing the market prices for petroleum fuel, ethanol, RINs, and E10—shows that the market prices for blended fuel operate as shown in Equations 3 and 4, supporting EPA's findings that blenders are passing on the value of the RIN to consumers.[155] Importantly, this means that, although blenders do not purchase RINs directly, there is still a cost for blenders to acquire RINs. This cost is realized when blenders discount the price for the finished blended fuel, pricing it based on the net price of the renewable fuel, after accounting for the sale of any RINs attached to the renewable fuel. The data EPA analyzed support our finding that the RIN value is fully passed through from blenders to consumers, as described in Equations 3 and 4. Because the market is competitive, a blender cannot attempt to sell RINs at higher prices, consumers would merely go

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[153] The equivalence value is an RFS regulatory term that relates the number of RINs generated per gallon of renewable fuel produced. Ethanol has an equivalence value of 1.0. Other renewable fuels have equivalence values that are determined by their energy content relative to ethanol. For example, biodiesel has an equivalence value of 1.5 RINs per gallon of biodiesel reflecting that biodiesel has approximately 150% the energy content of ethanol.
[154] *See infra*, Section IV.D.2.d.
[155] *See infra*, Section IV.D.2.d.ii.

to a competitor selling at the market price. Thus, the cost of acquiring a RIN by blending renewable fuel and the cost of purchasing a separated RIN are equal as would be expected from the design of the RFS program and RIN system.

c.   Impacts on Different Market Participants

Before turning to the data that support EPA's proposed conclusion that RIN cost passthrough and the RIN discount are reflected in the prices of refined products and blended fuel, respectively, we first provide an illustrative example to examine the implications of RIN cost passthrough and the RIN discount on the three types of market participants described above: a merchant refiner, an integrated refiner, and a non-obligated blender. We present examples for producing both E10 and B5, two common fuel blends present in many fuels markets. Each of these parties produces, purchases, and sells different products within the E10 and B5 markets, but, as this example demonstrates, no party has a structural advantage or disadvantage since both the RIN cost and the RIN discount are passed through to consumers.

As previously discussed briefly, in reality very few parties fit entirely within only one of these three categories. Most refiners, both small and large, sell some volume of petroleum fuel (acting as merchant refiners) and blend some of their petroleum fuel with renewable fuel (acting as integrated refiners). Some also purchase gasoline or diesel fuel from other parties and blend it with ethanol to sell as E10 (acting as non-obligated blenders). Further, some refiners are also renewable fuel producers that produce the renewable fuel they blend rather than purchasing it from other parties and sell excess renewable fuel to others. Therefore, to better understand how various parties are affected by the RFS program and RIN prices, it is better to consider the role the party is playing in the fuels market (producing gasoline or diesel fuel, blending renewable fuel, etc.) than the predominant role of the company.

To illustrate the impact of the RFS program and RIN prices on parties acting in each of these roles, EPA evaluated scenarios with fuel prices, RIN prices, and RVOs as they existed on December 30, 2020. EPA also evaluated an alternative scenario where there was no RFS obligation. The fuel and RIN prices used in these scenarios, as well as the sources of these prices, are shown in Table IV.D.2.c-1 for the E10 example and Table IV.D.2.c-3 for the B5 example. The costs, revenue, and profit/loss for each party, both with and without the RFS program, are shown in Table IV.D.2.c-2 for E10 and Table IV.D.2.c-4 for B5.

The 2011 DOE Study included a very similar hypothetical value breakdown for various types of refiners in Appendix B of that study.[156] At the time DOE projected that *if* integrated refiners did not have to discount the E10 that they sell, then they could acquire RINs through blending at little or no cost. In this hypothetical scenario, integrated refiners that acquired RINs at little or no cost through blending renewable fuel would have a significant advantage relative to merchant refiners that purchased RINs at a higher market price. However, as the examples below illustrate, integrated refiners must compete with non-obligated blenders in the blended fuels market. To offer competitively priced blended fuel, integrated refiners (like blenders) must discount the price of the blended fuel by the price of the RIN attached to the renewable fuel contained in the blended fuel. Market data reviewed by EPA confirms that the price of blended

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[156] *See supra*, Section II.D.

fuel reflects the RIN discount.[157] Thus, contrary to the hypothetical example in the 2011 DOE Study,[158] we find that all obligated parties have the same cost to acquire RINs, whether they acquire RINs through blending renewable fuel or purchasing separated RINs.

Table IV.D.2.c-1: BOB[159], Ethanol, E10, and RIN Prices on December 30, 2020

Product	Price	Data Source
BOB Cost of Production	$1.34	Assumed to be equal to the BOB Market Price without RIN Cost
BOB Market Price without RIN Cost	$1.34	Calculated (BOB Market Price with RIN Cost less RIN Cost)
BOB Market Price with RIN Cost	$1.44	EIA
Ethanol Market Price	$1.50	OPIS
E10 Market Price with the RFS Program	$1.37	Calculated using BOB Market Price with RIN Cost, Ethanol Market Price, and D6 RIN Price
E10 Market Price without the RFS Program	$1.36	Calculated using BOB Market Price without RIN Cost and Ethanol Market Price
D6 RIN Price	$0.77	OPIS
RIN Cost per Gallon of BOB	$0.10	Calculated from 2020 RVO and OPIS RIN Prices
D6 RIN Cost per Gallon of E10	$0.06	Calculated from 2020 RVO and OPIS RIN Prices
D3, D4, and D5 RIN cost per gallon of E10	$0.03	Calculated from 2020 RVO and OPIS RIN Prices

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[157] *See infra*, Section IV.D.2.d.ii.

[158] DOE's example in Appendix B of the 2011 DOE Study included a comparison of Company A that blends all its production with ethanol and does not need to purchase ethanol RINs, with Company B that does not do any blending and must purchase RINs to meet its entire RFS obligation, and Company C that blends in excess of its obligation and has RINs to sell into the market. In DOE's hypothetical case, Company A acquired RINs at no cost (n/a in the estimate) while Company B faced a 15 cent per RIN cost to purchase RINs. 2011 DOE Study at B-4.

[159] BOB is an intermediate petroleum product that is used in making finished gasoline and is generally blended with ethanol to make E10. BOB represents the petroleum-based portion of blended gasoline that has a RIN obligation attached to it. Therefore, BOB can be used to show the price impacts of the RIN market on the petroleum component of blended fuel.

Table IV.D.2.c-2: Illustrative Costs, Revenue, and Profit for E10 Production

Line		Merchant Refiner		Integrated Refiner		Non-Obligated Blender	
		With RFS	No RFS	With RFS	No RFS	With RFS	No RFS
2-1	0.9*BOB Cost of Production	$(1.21)	$(1.21)	$(1.21)	$(1.21)	-	-
2-2	0.9*RIN Cost	$(0.09)	-	$(0.09)	-	-	-
2-3	0.9*BOB Market Price	$1.30	$1.21	-	-	$(1.30)	$(1.21)
2-4	0.1*Ethanol Market Price (with RIN)	-	-	$(0.15)	$(0.15)	$(0.15)	$(0.15)
2-5	0.1*Net Ethanol Market Price (no RIN)	-	-	$(0.07)	$(0.15)	$(0.07)	$(0.15)
2-6	E10 Market Price (per Gallon)	-	-	$1.37	$1.36	$1.37	$1.36
2-7	D6 RIN Purchases	$(0.06)	-	-	-	-	-
2-8	D3, D4, and D5 RIN Purchases	$(0.03)	-	$(0.03)	-	-	-
2-9	D6 RIN Sales	-	-	$0.02	-	$0.08	-
2-10	Profit/Loss per Gallon E10	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

Table IV.D.2.c-3: Diesel Fuel, Biodiesel, B5 and RIN Prices on December 30, 2020

Product	Price	Data Source
ULSD Cost of Production	$1.38	Assumed to be equal to the ULSD Market Price without RIN Cost
ULSD Market Price without RIN Cost	$1.38	Calculated (ULSD Market Price with RIN Cost less RIN Cost)
ULSD Market Price with RIN Cost	$1.48	EIA
Biodiesel Market Price	$3.66	OPIS
Biodiesel Tax Credit	$1.00	N/A
B5 Market Price with the RFS Program	$1.46	Calculated using ULSD Market Price with RIN Cost, Biodiesel Market Price, and D4 RIN Price, and Tax Credit Price
B5 Market Price without the RFS Program	$1.44	Calculated using ULSD Market Price without RIN Cost, Biodiesel Market Price, and Tax Credit Price
D4 RIN Price	$1.00	OPIS
RIN Cost per Gallon of ULSD	$0.10	Calculated from 2020 RVO and OPIS RIN Prices
D4 RIN Cost per Gallon of B5	$0.02	Calculated from 2020 RVO and OPIS RIN Prices
D3, D5, and D6 RIN cost per gallon of B5	$0.07	Calculated from 2020 RVO and OPIS RIN Prices

Table IV.D.2.c-4: Illustrative Costs, Revenue, and Profit for B5 Production

Line		Merchant Refiner		Integrated Refiner		Non-Obligated Blender	
		With RFS	**No RFS**	**With RFS**	**No RFS**	**With RFS**	**No RFS**
4-1	0.95*ULSD Cost of Production	$(1.31)	$(1.31)	$(1.31)	$(1.31)	-	-
4-2	0.95*RIN Cost	$(0.09)	-	$(0.09)	-	-	-
4-3	0.95*ULSD Market Price	$1.41	$1.31	-	-	$(1.41)	$(1.31)
4-4	0.05*Biodiesel Market Price (with RIN)	-	-	$(0.18)	$(0.18)	$(0.18)	$(0.18)
4-5	0.05*Tax Credit	-	-	$0.05	$0.05	$0.05	$0.05
4-6	0.95*Net Biodiesel Price			$(0.06)	$(0.13)	$(0.06)	$(0.13)
4-7	B5 Market Price (per Gallon)	-	-	$1.46	$1.44	$1.46	$1.44
4-8	D4 RIN Purchases	$(0.02)	-	-	-	-	-
4-9	D3, D5, and D6 RIN Purchases	$(0.07)	-	$(0.07)	-	-	-
4-10	D4 RIN Sales	-	-	$0.05	-	$0.07	-
4-11	Profit/Loss per Gallon E10	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

The illustrative examples presented in Tables IV.D.2.c-2 and 4 demonstrate several important points about the impact of the RFS program and RIN prices on merchant refiners, integrated refiners, and non-obligated blenders. First, since the RIN cost (lines 2-2 and 4-2) and the RIN discount (blended fuel prices based on net renewable fuel prices; lines 2-6 and 4-7) are fully passed through to consumers, no party benefits or is harmed by the RFS program, either in absolute terms or relative to their competitors.[160] This can be seen in lines 2-10 and 4-11. In each of the examples, the revenues and costs of various products change as a result of the RFS, but the profit/loss and, thus, the potential harm for each of these three parties is identical with and without the RFS.

Second, a merchant refiner's ability to recover its RIN costs in the price of the fuel it produces does not depend on its ability to be a "price setter" or to receive a price for its fuel that is above the market price. Instead, the market price for fuel increases to account for the RIN cost associated with producing the fuel (RIN cost passthrough). Whether and the degree to which a refiner is a "price setter" or "price taker" is not influenced by the RFS program. Rather, the RFS program merely shifts upward the price at which this competitive dynamic is at play. This price impact can be seen by comparing the market prices for gasoline and diesel fuel (lines 2-2 and 4-2, respectively) with and without the RFS program. Merchant refiners automatically receive a price for their fuel that reflects the cost increase due to the RFS program (i.e., the cost of the RIN) when they sell the fuel at the market price.

Third, if a refiner (merchant or integrated) has a higher cost of production than the market price without the RFS program, it will lose money for each gallon of fuel it produces. This is true both in the absence of the RFS program and with the RFS program. Any party that has a higher cost of production than the market price for the goods it produces will lose money when selling those goods. However, the higher market prices for fuels can obscure these underlying fundamentals. In the example presented in Table IV.D.2.c-1, if a merchant refiner's cost to produce 0.9 gallons of gasoline is $1.30, it may appear that the refiner would break even by selling gasoline at the market price (line 2-3) but for the RIN purchases (lines 2-7 and 2-8). Several petitioners have made this very claim, that their refineries would be profitable if they did not have to purchase RINs but are not profitable after accounting for their RIN costs. However, such claims ignore the fact that in the absence of the RFS program, the market price for 0.9 gallons of gasoline (line 2-3) would fall to $1.21, resulting in a $0.09 loss. If a refiner's cost of production exceeds the marginal supply price for its market, the refiner will lose money for every gallon of fuel it produces due to its high cost of production, regardless of the presence or absence of the RFS program. As demonstrated by the identical results for all parties in Tables IV.D.2.c-2 and 4, the RIN compliance costs associated with the RFS program do not have a differential impact on the refiner's situation.

Fourth, while integrated refiners that do their own blending have the same cost to acquire RINs as merchant refiners, they spend less on separated RIN purchases when they produce E10 or B5 (lines 2-7 and 4-8, respectively). Integrated refiners are acting both as merchant refiners (producing fuel that carries an RFS obligation) and as blenders (blending renewable fuel and separating the attached RINs) at the same time. However, rather than purchasing all the RINs

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[160] Throughout Section IV.D.2.c, references to "lines" are to Table IV.D.2.c-2 (lines beginning with 2-) and Table IV.D.2.c-4 (lines beginning with 4-).

they need from other parties or selling all the RINs they acquire through blending renewable fuel, integrated refiners acquire many of the RINs they need for compliance from blending renewable fuel rather than purchasing these RINs. The transfer of RINs from the blending operation of an integrated refiner to the refining operation is an internal transfer, rather than an external purchase or sale that is easier to see in financial reports. While it may appear that integrated refiners are at an advantage relative to merchant refiners under the RFS program because they purchase fewer RINs per gallon of fuel produced (see lines 2-7 and 4-8) than merchant refiners, they also sell fewer RINs than non-obligated blenders (lines 2-9 and 4-10). These two impacts—the higher RIN purchases relative to merchant refiners and the lower RIN sales relative to non-obligated blenders—offset each other such that integrated refiners neither benefit from the RFS program, nor are at a disadvantage relative to merchant refiners or non-obligated blenders under the RFS program.

Another way to understand the impact of the RFS program on integrated refiners is to consider the opportunity cost to these parties of selling blended fuel rather than petroleum fuel. Integrated refiners are competing with non-obligated blenders when they sell blended fuel (lines 2-6 and 4-7). These blenders must discount the price of the blended fuel they sell because of the revenue they realize when they sell the RINs associated with the renewable fuel (lines 2-9 and 4-10). Integrated refiners generally keep the RINs they acquire when they blend renewable fuel, so they do not have this revenue source to reduce the price of their blended fuel to compete with blenders. Instead of revenue from RIN sales, integrated refiners can use their own production of petroleum fuel, which has a lower cost of production than the market price for the fuel (lines 2-1 and 2-3 and lines 4-1 and 4-3), to produce blended fuel. Access to these lower-cost fuels allows integrated refiners the ability to offer blended fuel at the same price as non-obligated blenders—which use the revenue from RIN sales to discount the price of their blended fuel—despite the fact that they use the RINs they acquire through blending for RFS compliance, rather than selling them to other parties. In doing so they give up the opportunity to sell their petroleum fuel at the higher market rate, which reflects the RIN cost (lines 2-2 and 4-2).

Fifth, the fact that refiners are able to recover the cost of the RINs they need for compliance and that blenders pass through the RIN discount to consumers does not mean that the RFS program has no impact on fuel prices. The RFS program functions as a cross-subsidy, where RINs increase the market price of petroleum fuel (lines 2-3 and 4-3) and decrease the net price of renewable fuel (lines 2-5 and 4-6). This means that the RFS program reduces the market price for fuel with higher renewable fuel content (e.g., E85 or B20) and increases the market price for fuel with little or no renewable content (e.g., E0 or B0). Notably, the RIN cost and the RIN discount are not the same for all blended fuels. RIN costs (lines 2-2 and 4-2) are proportional to the quantity of petroleum fuel in the blended fuel while the RIN value used to discount the price of the renewable fuel is proportional to the quantity and type (D6 ethanol, D4 biodiesel, etc.) of renewable fuel in the blended fuel. In the two examples in Tables IV.D.2.c-2 and 4, the RIN cost and the RIN discount for E10 and B5 are very similar and as a result the prices for E10 and B5 with and without the RFS program (lines 2-6 and 4-7, respectively) are very similar. This is not the case for fuels with significantly higher or lower proportions of renewable fuel.

Finally, while non-obligated blenders realize revenue from RIN sales (lines 2-9 and 4-10), this revenue is not a windfall profit. Instead, RIN revenues result in lower net prices for renewable fuels (lines 2-5 and 4-6). The prices of the blended fuel (lines 2-6 and 4-7) then reflect the lower net cost for the renewable fuel under the RFS program. For fuels such as E10 and B5, when the RIN value of the renewable fuel in the blend is approximately equal to the RIN cost associated with the petroleum fuel in the blend, it can be difficult to see the impact of the RFS program in the blended fuel price. For fuels with significantly higher or lower renewable fuel content, the impact is more pronounced. RINs decrease the price for fuel with a high renewable content (e.g., B20 or E85), while RINs increase the price for fuel with little or no renewable content (e.g., E0 or B0). This is the mechanism by which the RFS program was intended to increase the production and use of renewable fuel in the United States.

In the calculations in Tables IV.D.2.c-2 and 4, we have made several simplifying assumptions. First, we have assumed that the fuel cost of production for both the merchant refiner and the integrated refiner (lines 2-1 and 4-1) is equal to the market price for the fuel without the RFS program. In practice, the marginal cost to supply fuel to any given market sets the market price. Each refiner's refining margin would, therefore, be determined by its actual fuel cost of production relative to the market price for the fuel. RIN costs increase the market price for the fuel by an amount equal to the RIN cost, since all parties have the same RIN costs. However, since the market price for fuel reflects the RIN cost, the merchant refiner's profit/loss is determined by its cost of production relative to the marginal cost of production for its market, with or without the RFS program. Said another way, different refineries in a market will have differing profit margins for the fuel they produce. But since the RFS compliance costs (i.e., RINs) apply equally to every gallon of fuel produced, these costs directly impact all gasoline and diesel fuel volumes equally, raising the marginal supply price for these products. Thus, RIN prices increase a refinery's costs and the market price for their production, but the difference between the refining margins for the different refineries will remain the same with and without the RFS program.

Similarly, in this example we have assumed no blending margin or cost for blending beyond the purchase of petroleum fuel and renewable fuel. This is a simplification that does not reflect the fact that, in addition to the cost of purchasing fuel, blenders also have operating costs and fixed costs. These costs include, among others, labor costs, maintenance costs, and capital recovery costs. Blenders must earn a margin when they sell blended fuel to cover these fixed and operating costs, and the market price for blended fuel reflects the fixed and operating costs of the marginal fuel blender. However, not all blenders will have the same fixed and operating costs. Much like the previous example, we would expect a blender's (or integrated refiner's) profit/loss for blending renewable fuel to be equal to its fixed and operating costs relative to the fixed and operating costs of the marginal blender. Blenders and integrated refiners with relatively low blending costs are expected to earn greater profits through blending, while blenders and integrated refiners with relatively high blending costs are expected to earn relatively lower profits (or losses) through blending. This is true independent of the RFS program, as RIN costs/revenues are neutral. Notably, the design of the RFS program enables the market to function efficiently by allowing those refiners that have relatively high fixed and operating costs of blending renewable fuel to purchase RINs from blenders that have lower fixed and operating costs of blending renewable fuel. We acknowledge this simplification and note that our decision

to exclude a blending margin from the examples presented in Tables IV.D.2.c-2 and 4 does not affect the conclusions highlighted above.

d.   EPA Evaluation of Available Market Data

EPA analyzed the available market data to verify the economic principles at work and to verify that the RIN cost and the RIN discount are being reflected in the retail price of blended fuel.[161] These analyses, including analyses conducted for previous assessments of the passthrough of both the RIN cost and the RIN discount, as well as new analyses using more recent data, are presented in this section. These analyses confirm that both the *cost* of the RINs—which is reflected in the prices for fuel and blendstocks—and the *discount* of the RINs are passed through to consumers in the marketplace in the price they pay for blended fuel.

i.   *Assessment of Data on RIN Cost Passthrough*

EPA first assessed available data to determine whether refiners are able to recover the *cost* of the RINs they need to demonstrate compliance with their RFS obligations through higher prices for the petroleum fuel they produce, as described in Equations 1 and 2. This analysis is complicated by the fact that the terms in Equations 1 and 2 for the gasoline price with no RFS obligation and the diesel fuel price with no RFS obligation cannot be found in market data from the United States, as the reported data will always reflect the cost of the RFS obligation. As described below, however, there are market data on the prices of fuels that are very similar (and in some cases identical) where one fuel has an RFS obligation and the other does not.

In 2015, EPA identified prices for near-identical fuels (in terms of technical fuel specifications, and, therefore, presumably cost of production) except for the fact that one fuel was subject to an RFS obligation while the other was not.[162] We then used the price of the non-obligated fuel to approximate what the cost of the obligated fuel would be in the absence of the RFS obligation. We then compared the price difference between these two fuels, which represents the increase in the market price of the obligated fuel as a result of its RFS obligation, to the RIN cost for producing or importing a gallon of fuel subject to an RFS obligation. The strong correlations between the price differences for similar fuels with and without an RFS obligation and the RIN cost per gallon of obligated fuel led to the conclusion that the market prices for gasoline and diesel fuel are higher than they would otherwise be in the absence of the RFS program. Further, the observed price difference was equal to the cost of purchasing the RINs needed to meet the compliance obligations for a gallon of gasoline or diesel fuel. We therefore concluded that all refiners recovered the full cost of the RINs they purchase through the prices of the fuel they sell.

EPA has since repeated the analytical techniques first developed in 2015 using more recent data from 2017–2020. Figure IV.D.2.d.i-1 shows the price difference in New York Harbor between ULSD, which is subject to an RFS obligation, and heating oil, which is essentially an identical product except that it is not subject to an RFS obligation. As expected, there is a very

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[161] *See supra*, Section IV.D.2.b.
[162] "A Preliminary Assessment of RIN Market Dynamics, RIN Prices, and Their Effect," Dallas Burkholder, Office of Transportation and Air Quality, US EPA, May 14, 2015.

strong correlation between these data sets, as shown in Figure IV.D.2.d.i-2. The market price premium for ULSD over that for heating oil consistently matches the RIN cost (i.e., the cost of purchasing the RINs needed to meet the RFS obligation).

Similarly, Figure IV.D.2.d.i-3 shows the price difference in the Gulf Coast between ULSD, which is subject to an RFS obligation, and jet fuel, which is not. However, as shown in Figure IV.D.2.d.i-4, the correlation between the price difference of ULSD and jet fuel and the RIN cost is not as strong as the correlation between the price difference of ULSD and heating oil and the RIN cost. This is to be expected, as there are more significant product quality differences between ULSD and jet fuel such that they are not one-for-one replacements of each other, and they are used primarily in different markets with distinct supply/demand issues that would also contribute to differences in their market prices.[163] Thus, there is more noise in these data, but a general relationship between the price difference among these fuels and the RIN cost can be seen. Also apparent in Figure IV.D.2.d.i-3 is the impact of the COVID-19 pandemic. In late March 2020 air travel and demand for jet fuel decreased dramatically, resulting in an over-supply of jet fuel and a spike in the price premium for ULSD over jet fuel.[164] Over time, as demand for jet fuel gradually increased and refiners adjusted their production to better match fuel demand, the price difference between jet fuel and ULSD returned to match the RIN cost. Taken together, these more recent data confirm EPA's original conclusion that the market prices for gasoline and diesel fuel reflect the RIN cost, and, therefore, all refiners are able to recover their RIN costs through the sales prices of these fuels.

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[163] Jet fuel generally contains more sulfur than ULSD. While the properties of jet fuel are closer to #1 diesel than to #2 diesel, EPA's public data does not contain prices for #1 diesel.

[164] EIA, *COVID-19's impact on commercial jet fuel demand has been significant and uneven*, Today in Energy (August 7, 2020), https://www.eia.gov/todayinenergy/detail.php?id=44676.

Figure IV.D.2.d.i-1: Price Difference Between ULSD and Heating Oil in New York Harbor and RIN Cost (2017-2020)[165]
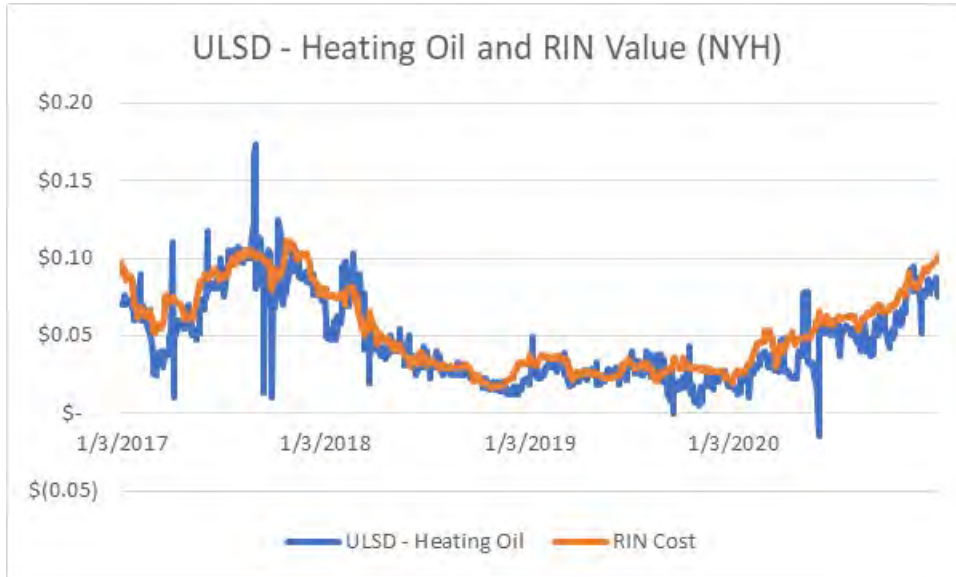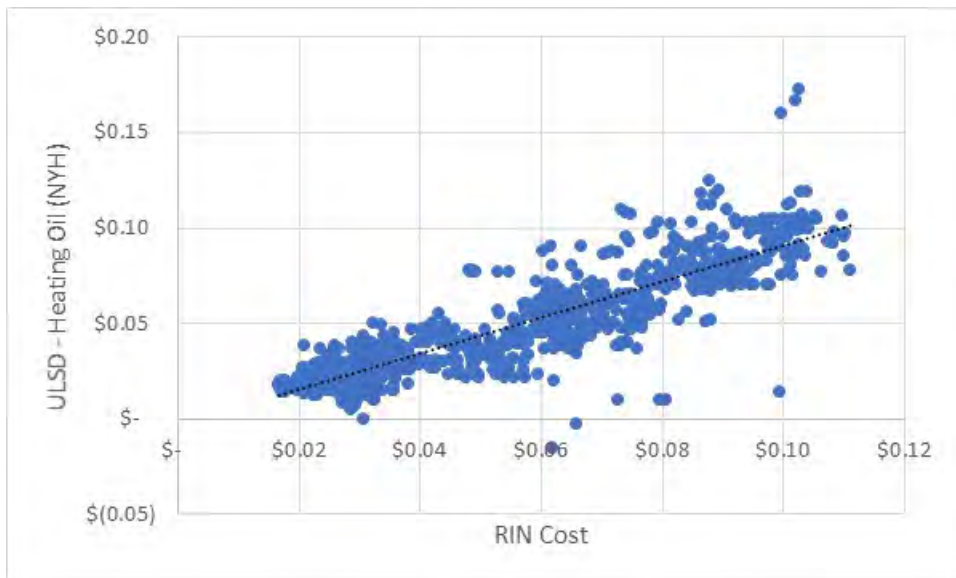

Figure IV.D.2.d.i-2: Correlation Between Price Difference of ULSD and Heating Oil and RIN Cost (2017-2020)

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[165] Prices for ULSD and heating oil are reported by EIA and are available at:
https://www.eia.gov/dnav/pet/pet_pri_spt_s1_d.htm.

Figure IV.D.2.d.i-3: Price Difference Between ULSD and Jet Fuel in the Gulf Coast and RIN Cost (2017-2020)[166]
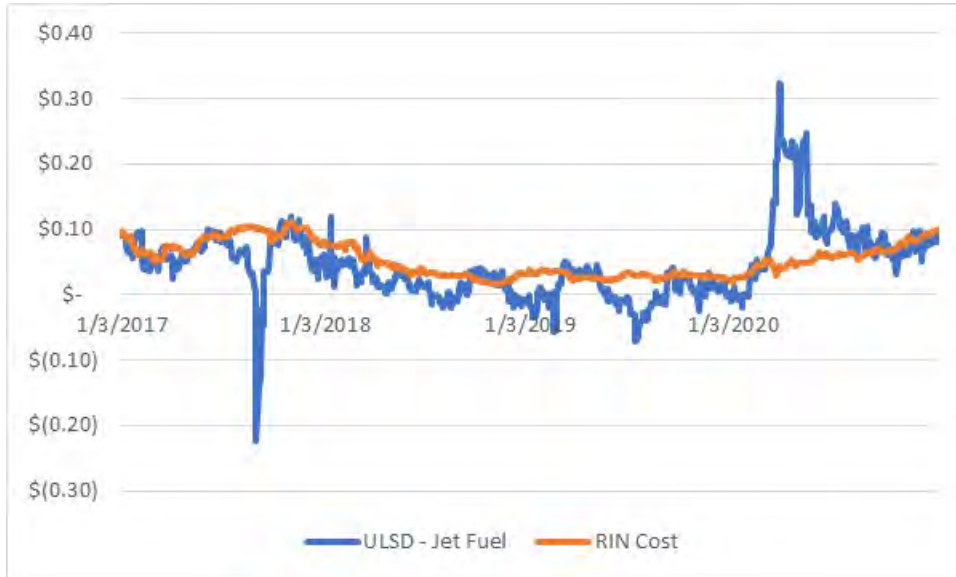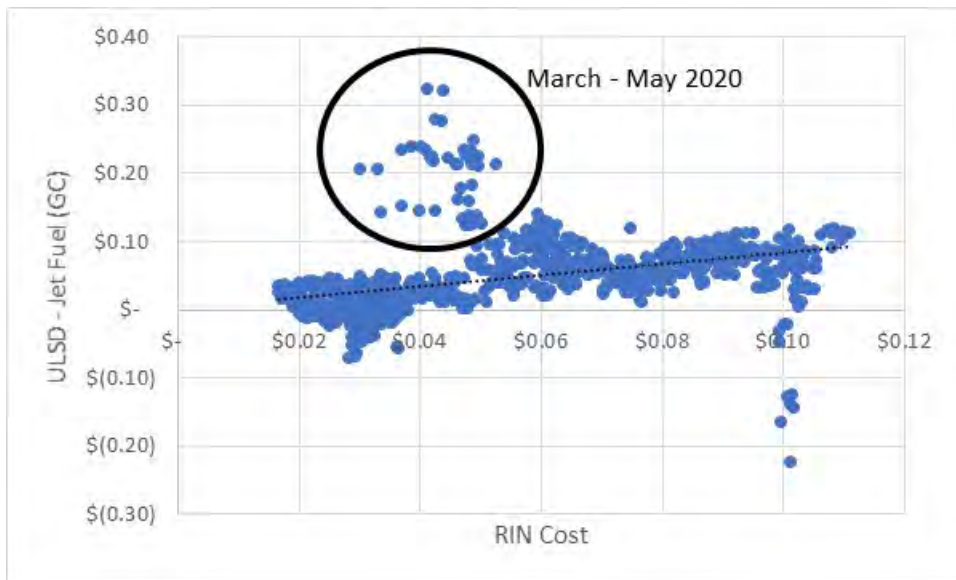

Figure IV.D.2.d.i-4: Correlation Between Price Difference of ULSD and Jet Fuel and RIN Cost (2017-2020)


   In their SRE petitions, several small refineries submitted examples of fuel pricing contracts in their local markets. Notably, many of these contracts indexed the sales price for fuel in the typically smaller markets into which the small refineries sell fuel to larger fuels markets, usually with the addition of transportation costs. The structure of these contracts supports EPA's

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[166] Prices for ULSD and jet fuel are reported by EIA and are available at:
https://www.eia.gov/dnav/pet/pet_pri_spt_s1_d.htm.

finding that the inclusion of the RIN cost in the price of obligated fuel is not unique to larger, coastal fuels markets, but is true across the United States. If the RIN cost is reflected in the sales price of fuel in New York Harbor and the Gulf Coast, it is certainly reflected in markets, including smaller markets, that *index* their pricing to these larger markets. Furthermore, because of the highly connected and competitive nature of fuels markets across the United States, one would expect every fuels market to reflect these same pricing dynamics. To date, no petitioning small refinery has provided EPA with data nor have we found other data that is in conflict with this expectation. In fact, small refineries that participate in both larger markets and smaller markets have consistently highlighted to EPA that they are in direct competition with larger and better resourced refineries regardless of their location. Even in cases where the small refineries themselves may not distribute fuel beyond a relatively small geographic area, the large integrated refiners with which they compete in those local markets do sell fuels into the larger distributed markets. It would not make economic sense for these large integrated refiners, which have access to larger fuels markets where market prices reflect the cost of RINs, to choose to sell into the smaller markets occupied by small refineries unless the market prices in those smaller markets also reflected the RIN cost.

Another important observation from these data is that neither the RIN cost nor the additional revenue a refiner receives for an obligated fuel compared to a non-obligated fuel (the premium for obligated fuel versus a similar non-obligated fuel) are static. There has been significant variation in these prices from 2017-2021, from approximately $0.10 per gallon in late 2017 and late 2020, to a low of approximately $0.03–0.04 per gallon throughout 2019. RIN prices have continued to increase in 2021, with prices for most RIN categories currently 50–100% greater than RIN prices at the end of 2020 (see Figure IV.D.2.d.i-5).

Figure IV.D.2.d.i-5: RIN Cost Per Gallon by RFS Category (2011-2020)
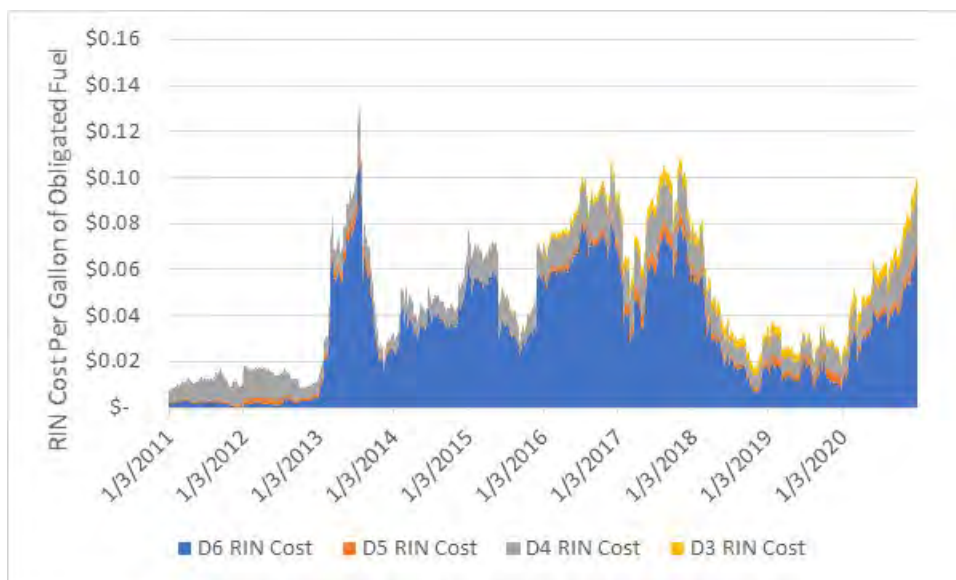
Obligated parties that choose to purchase the RINs they need for compliance on a ratable basis (i.e., purchase on a systematic, regular basis the number of RINs needed to satisfy their obligation for all the fuel sold each day) will recover the cost of the RINs they purchase in the

sales price of the petroleum fuel they sell. Conversely, obligated parties that choose to delay RIN purchases, or to purchase excess RINs in advance of producing or importing petroleum fuel, may recover more or less than the price they paid for RINs in the sales price of the petroleum fuel they sell, depending on whether the RIN price on the purchase date is higher or lower than the RIN price on the date the petroleum fuel is sold. For example, based on the data presented in Figures IV.D.2.d.i-1 and 3, an obligated party that sold fuel in July 2020 received approximately $0.06 per gallon more than it would have in the absence of the RFS program. If that obligated party delayed purchasing RINs until the end of 2020, the RIN cost would have been approximately $0.10 per gallon. Conversely, if the obligated party had purchased excess RINs in January 2020, the RIN cost would have been approximately $0.03 per gallon. Thus, the decision to delay RIN purchases until December 2020 would have cost an obligated party an additional $0.04 per gallon of fuel produced in July 2020; whereas purchasing excess RINs in January 2020 would have resulted in an additional $0.03 per gallon profit for every gallon of fuel produced in July 2020. By purchasing RINs ratably, all obligated parties have the ability to match their RIN costs with the price they receive when they sell their fuel (i.e., to pass through their RIN costs). Alternatively, refineries can try to time their purchases in the RIN market, which may result in greater or lesser RIN costs. EPA strongly disputes any notion that costs resulting from individual refinery's business decisions, including the choice to delay RIN procurement in hopes of receiving an SRE, or an attempt to time the transaction to profit from the fluctuation in the RIN market prices over time, represent DEH *caused* by the RFS program. Rather, individual business decisions made by an obligated party not to ratably accrue RINs as the obligation accrues, but instead to either purchase RINs in advance or delay RIN purchases until a later date, are speculation in the RIN market, a business activity not required to comply with the RFS program. Thus, these costs cannot be considered to represent DEH caused by compliance with the RFS program.

ii.   Assessment of Data on the RIN Discount

To verify that fuel blenders are passing through the RIN discount to consumers through the price of blended fuel as described by Equations 3 and 4, EPA considered information from a variety of sources. We evaluated the issue by analyzing market pricing data for petroleum fuel, renewable fuel, RINs, and blended fuel (including data submitted by petitioners), statements from blenders in publicly available earnings reports, and fuel pricing contracts submitted by petitioners. Each of these data sources support EPA's finding that revenue from RIN sales does not represent a windfall profit for fuel blenders. Rather, they demonstrate that blenders pass through the full value of the RIN to consumers in discounts on the price of the blended fuel they sell and, therefore, do not retain any revenue from the sale of RINs.

There are a limited number of markets where prices for each of these fuels are reported, but all of those we have seen confirm our conclusions that fuel blenders are passing through the RIN discount to consumers through the price of blended fuel.[167] In 2015, EPA analyzed market data from Des Moines, Iowa and demonstrated that there was a very strong correlation between the difference in the posted price for E10 in Des Moines and the calculated E10 price based on

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[167] This same point was raised in one small refinery's petition, along with data to illustrate it. The small refinery claimed its petition and all supporting information as confidential business information.

the component fuels (gasoline blendstock and ethanol), and the RIN price per gallon of E10.[168] These data indicated that fuel blenders are selling blended fuel based on the net price of the renewable fuel (after accounting for the sale of any associated RINs). This means that the price of the blended fuel was lower than the cost to purchase the components of the fuel blend (gasoline blendstock and ethanol with a RIN) and that revenue from RIN sales offset these costs. The result of this pricing behavior is that 100% of the revenue from RIN sales was passed on to consumers.

Two petitioning small refineries submitted data to EPA on fuel prices in their markets that enabled EPA to analyze current data in additional markets using a methodology similar to the analysis we conducted for Des Moines in 2015.[169] One small refinery used monthly gasoline and ethanol pricing data from a local terminal, along with RIN pricing data, to determine a monthly calculated E10 price from 2010 to the present using an equation nearly identical to Equation 2.[170] That petitioner then plotted these calculated E10 prices, which assume that 100% of the RIN value is passed through to consumers through lower prices for blended fuel, against the posted prices for E10 at that same terminal. The petitioner found an extremely strong correlation ($R^2 = 0.9976$) between the calculated E10 price (assuming 100% RIN passthrough) and the posted E10 price, demonstrating for this terminal that the RIN value has been fully passed through to consumers since 2010.[171]

Another petitioning small refinery's fuel pricing data allowed EPA to conduct a similar analysis for yet another market.[172] This small refinery provided daily pricing information for E10 from a local terminal, as well as daily pricing information for gasoline blendstock and ethanol from a nearby market along with the cost to transport these fuels to the refinery's local market. Daily prices were provided from January 1, 2019 through June 21, 2021. EPA used the data to calculate an E10 price using Equation 2 and compared these calculated E10 prices (assuming the E10 price was based on the net price of the ethanol, passing through 100% of the RIN in the discounted price of E10) to the posted E10 prices at the local terminal. As with the data provided by the other petitioning small refinery, we again find an extremely strong correlation ($R^2 = 0.9991$) between these two prices, further confirming our previous findings that the RIN price is fully passed through to consumers as a discount on the price of the renewable fuel when petroleum fuel and renewable fuel are blended and then sold.

Support for EPA's finding that the RIN discount is fully reflected in the price of blended fuels and is accordingly passed through to consumers by fuel blenders can also be found in

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[168] "A Preliminary Assessment of RIN Market Dynamics, RIN Prices, and Their Effect," Dallas Burkholder, Office of Transportation and Air Quality, US EPA, May 14, 2015.

[169] We do not present the data here because the petitioners have claimed it contains CBI.

[170] The only difference between Equation 2 and the equation used by the petitioner to determine the calculated E10 price was that the petitioner included an additional terminaling and throughput charge that applies regardless of the RFS program and is not relevant to this discussion.

[171] This petitioner acknowledged that the RIN was used to discount the price of blended fuel at their terminal. However, the petitioner further argued that the RIN cost could not be recovered in the cost of the gasoline and used to discount the price of the blended fuel. As discussed further in Section IV.D.2.c, both the economic principles and the market data demonstrate that this is incorrect. Refiners recover the cost of the RIN through the sales of their petroleum fuel and the RIN is used to discount the price of blended fuel.

[172] We do not present the data here because the petitioners have claimed it contains CBI.

public statements by the blenders themselves. Several parties directly involved in fuel blending supported EPA's findings in comments[173] on EPA's Point of Obligation denial.[174] More recently, R. Andrew Clyde, President, CEO & Director of Murphy USA, a large fuel blender and retailer, was asked if the recent high RIN prices positively affected Murphy USA's margins in a Q1 2021 earnings report. He responded:

> The reality is RINs and RIN prices are immaterial to our business. Historically, and you can look back over the last 3 years annual results, we've made $0.02 to $0.03 per gallon on product supply and wholesale net of RINs. And so during the quarter on the average, we generated about the equivalent of $0.07 a gallon per RIN, but net of the negative spot to rack margins of $0.04, we netted a little bit over $0.03…If RINs are high, the refiner gate price is high and like it was in this quarter, our refinery gate spot to rack margin is negative…So RIN prices don't matter. The product supply margin plus the RINs is going to be about $0.02 to $0.03.[175]

Mr. Clyde describes a market dynamic wherein blenders experience negative blending margins (due to competitive market forces requiring that the RIN price be reflected in the market price of blended fuel) that are offset by revenue from selling RINs, with total margins (including fuel blending and RIN sales) relatively stable and independent of RIN prices.[176] These dynamics are exactly what one would expect to see if blenders are passing through 100% of the RIN price as a discount to consumers in the price of blended fuel.[177]

Several petitioning small refineries also provided EPA with examples of contracts for fuel sales.[178] While there were some differences among these contracts, they generally showed that the sales price for blended E10 was discounted by the value of the RIN associated with the ethanol blended into the fuel blend. Many of the pricing formulas shown in these contracts looked very similar to Equation 4, with some referencing petroleum fuel and/or ethanol prices in nearby markets and including transportation costs. In some cases, the contracts stipulated that the purchase price would be the lower of the calculated price based on the prices of the petroleum fuel and the net price of ethanol (thus passing through 100% of the RIN price to consumers) or the posted price of E10 at the local terminal, whichever was lower. These contracts provide yet more evidence that the price of the RIN is reflected in the sales price for blended fuel, and further that the passthrough of the RIN price to consumers is not limited to any particular U.S. market.

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[173] *See* Letter from RaceTrac to Administrator McCarthy, August 17, 2016, Docket Item No. EPA-HQ-OAR-2016-0544-0014; Letter from QuikTrip to Administrator McCarthy, August 17, 2016, Docket Item No. EPA-HQ-OAR-2016-0544-0013; Presentation from Murphy USA to EPA, August 16, 2016, Docket Item No. EPA-HQ-OAR-2016-0544-0028.

[174] 81 FR 83776 (November 22, 2016) and 82 FR 56779 (November 30, 2017).

[175] Murphy USA Inc. FQ1 2021 Earnings Call Transcripts (April 29, 2021).

[176] Petitioners' claims of "RIN theft" and windfall profits from RIN sales by Murphy USA and other blenders are further addressed in Section IV.D.2.a.

[177] *See supra*, Section IV.D.2.b.

[178] We do not present the contract data here because the petitioners have claimed it contains CBI.

3.   EPA Responses to Small Refinery Arguments for Exemption

The petitioning small refineries raise many similar arguments in their petitions and in supplemental information they submitted to support receiving an exemption from their RFS obligations. Because these arguments are repeated by most, if not all, SRE petitioners, EPA is addressing them in this section at a level of generality needed to maintain the claims of CBI asserted by the small refineries in their respective petitions. The refineries generally argue eight overarching themes in their petitions and supplemental information. However, EPA recognizes that this list is not comprehensive. Some refineries provided information and perspective that we do not address in this proposal, primarily because we are still seeking the underlying data or additional explanation to understand and respond to the individual or market-specific circumstances the petitioners describe.

The general themes small refineries have articulated are: (a) They face unique challenges that prevent them from achieving RIN cost passthrough and that EPA must consider their specific circumstances; (b) EPA's Point of Obligation denial did not address their situations and does not apply to them; (c) The Point of Obligation denial is out of date and inapplicable; (d) The revenue from RIN sales allows large retailers to undercut small refineries; (e) Large integrated refiners set prices in fuels markets, undercutting small refineries on price because of their market position and because large integrated refiners have lower or no RIN costs; (f) EPA is incorrect about parity between the cost of obtaining a RIN through blending and the cost of buying a RIN on the market; (g) Single site refineries are disadvantaged relative to large integrated refiners because they only have access to a limited market; and (h) Small refineries that produce primarily diesel fuel are at a disadvantage since they cannot blend as much renewable fuel into their product as can refineries that produce gasoline.

EPA evaluates and responds to each of these general themes below.

a.   Small refineries face unique challenges that prevent them from passing through their RIN costs. EPA must consider each small refinery's specific situation.

Small refineries assert that "EPA must do more than cite to the Burkholder Report's conclusion 'that the refining industry *as a whole* is not burdened by rising RIN prices because refineries may pass that cost to purchasers of the blended fuel.' *Ergon-W. Va., Inc. v. EPA*, 896 F.3d 600, 613 (4th Cir. 2018) (emphasis added)."[179] The small refineries further assert that EPA has, in the past, ignored information specific to individual refineries that demonstrates that they cannot pass through the prices they pay for RINs due to unique operational or local market circumstances.

The small refineries misstate the holding from *EWV-I* and completely ignore the follow-up to that case, *EWV-II*. The court in *EWV-I* held that EPA had acted arbitrarily and capriciously when it "failed to squarely address Ergon's petition with regards to RIN costs"[180] and instead relied on the Burkholder memo "as the *sole basis* for its conclusion."[181] (emphasis added). The

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[179] Confidential submissions by several small refineries made this assertion.
[180] *EWV-I*, 896 F3d at 613.
[181] *EWV-II*, 980 F.3d at 417, *rev'd on other grounds*.

court found that EPA was not arbitrary and capricious in relying on the Burkholder memo as one of many factors considered in the decision, but rather, failed to adequately illustrate how the analysis in that study applied to the circumstances at a particular small refinery (Ergon-West Virginia). On remand, EPA reached the same conclusion as in its first decision and again faced challenge from Ergon before the Fourth Circuit. The court, in *EWV-II*, reviewed EPA's post-remand denial, which again relied heavily on the Burkholder memo, and found that "EPA's post-remand discussion of Ergon's evidence connected the dots left unaddressed in its original decision[,]" because "EPA thoroughly discussed Ergon's purported evidence of hardship, explained why it rejected Ergon's arguments, and set out other factors that led it to reach an opposite conclusion."[182] Accordingly, in this proposed action, EPA has again evaluated the question in depth, starting with an evaluation of the underlying structure of the RFS program and RIN system to ascertain whether and how it might be possible for compliance with the RFS program to cause DEH. EPA then conducted a careful analysis of how the cost and value of RINs would be expected to flow through to consumers, and analyzed a substantial amount of data, including available local market-specific data, that show how the findings in the Burkholder memo regarding the refining industry as a whole are true for all obligated parties, including small refineries in general and individual small refineries in particular.[183] However, due to the confidential nature of much of the information included in SRE petitions, we cannot present any refinery-specific data in this proposal. Nevertheless, we have reviewed the information in the SRE petitions, and nothing presented in them leads us to conclude that the small refineries are affected by RFS compliance differently than other obligated parties or that they are not able to pass along the RFS compliance cost to consumers. However, to ensure we base our decision on the best data available, we are in this proposed action requesting additional market data, including additional data specific to any petitioning small refinery.

The small refineries also state that there are many diverse factors that affect each refinery's profitability and ability to recover the full cost of fuel production, including their RFS compliance costs. The small refineries cite to the 2011 DOE Study to support their assertion, quoting the following language:

The degree to which the costs burdening small refineries will be passed through to the market depends on many factors, including the market power and the relative cost level of a small refiner relative to other market participants…. The cost for small refiners to comply with the RFS2 requirements can be substantial…. Their limited product slates coupled with an inability to blend renewable fuels means that many of the small refiners must enter the market to buy RINs. The cost to meet their individual RVO makes this aspect the most significant cost of compliance.[184]

EPA understands that there are, indeed, many diverse factors that affect refinery profitability; however, RFS compliance costs are not among them.[185] The metrics DOE included in the scoring matrix were only intended to identify small refineries that may face adverse

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[182] *Id.*
[183] *See supra,* Section IV.D.2.
[184] 2011 DOE Study at 22-23.
[185] *See supra*, Section IV.D.2.

business conditions,[186] and therefore potentially face DEH if they also experienced "a high cost of compliance relative to the industry average."[187]

The small refineries fail to acknowledge the fact that they may not be profitable or able to pass through the full cost of their fuel production *despite* their RIN costs being passed through. It is important to reiterate that independent market analyses, as well as EPA's own, support the premise that RIN costs are incorporated into the price of finished fuels.[188] This is to say that even *without* RFS compliance costs, these small refineries may not be profitable. This kind of economic hardship is not *caused* by the RFS program, but rather, by the refinery's business model, geographic location, or other factors independent of the RFS program. The CAA only speaks in terms of DEH caused by compliance with the RFS program. Congress tied SREs to compliance with the RFS program by using the language "compliance with the requirements of paragraph (2) would impose a [DEH]"[189] and "would be subject to a [DEH] if required to comply with paragraph (2)."[190] The CAA does not authorize or require EPA to subsidize through compliance exemptions any refinery whose economic hardship is not caused by compliance with the RFS program no matter the seriousness of the economic conditions the refinery may face, particularly since the magnitude of the RIN cost per gallon in comparison to typical refinery margins could turn the least profitable refineries into the most profitable ones.[191]

Additionally, the DOE language the small refineries quote comes from the "[o]ther observations from the interview process,"[192] which DOE "compiled through interviews with several industry participants, including two refineries, three importers, a fuel marketer, and a corn ethanol marketer."[193] This section does not state DOE's own conclusions, but rather summarizes what DOE heard from the stakeholders it reached out to. This language cannot be treated as DOE's findings, but rather, DOE's statement of the input it solicited and considered.

EPA believes the conclusions in the Burkholder memo are applicable to all gasoline and diesel fuel markets nationwide, and, therefore, also applicable to all refineries, including small refineries.[194] Nevertheless, some petitioning small refineries have provided refinery-specific supplemental information attempting to explain why the conclusions in the Burkholder memo don't apply to them. EPA has analyzed the supplemental information and found no evidence supporting the assertions from the petitioning small refineries that their RFS compliance costs are disproportionately greater than for other refineries or that they are not able to pass along the RFS compliance cost to consumers.[195] In fact, the data petitioners provided to EPA reflected the price behavior for both RINs and finished fuels that EPA would have expected based on

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[186] The adverse business conditions considered are quite varied and not directly related to the RFS compliance cost.
[187] 2011 DOE Study at 3.
[188] *See supra*, Section IV.D.
[189] CAA section 211(*o*)(9)(A)(ii)(I), paragraph (2) refers to the section where Congress provided the annual applicable renewable volume mandates.
[190] CAA section 211(*o*)(9)(A)(ii)(II).
[191] *See supra*, Section IV.D.2.b. *See also infra*, Section IV.D.3.e.
[192] 2011 DOE Study at 22.
[193] *Id*. at 21.
[194] *See supra*, Section IV.D.2.
[195] *See supra*, Section IV.D.2.

economic principles.[196] Additionally, other stakeholders with interest and expertise in RIN market behavior and RFS compliance have provided support for and approved of EPA's analysis and conclusions regarding RIN cost passthrough.[197]

b.   The small refineries' situations are distinguishable from the findings provided in the Point of Obligation denial, and the Point of Obligation denial did not address small refineries.

Petitioners claim that EPA's assessment of RIN cost passthrough in the Point of Obligation denial covered three categories of parties: integrated refiners, non-obligated fuel blenders, and merchant refiners. The petitioners note that small refineries as a group do not fit neatly within any of these categories. They further claim that EPA's conclusions about merchant refiners' ability to recover their RIN costs were based on representations from Valero, which they note is a large, international refiner with efficiency, geographic range, and pricing power. The petitioners state that while these types of merchant refiners may be able to recover the cost of purchased RINs, small refineries without these characteristics cannot.

EPA recognizes that few, if any, small refineries (or any refineries) fit neatly into a single category of integrated refiner, non-obligated blender, and merchant refiner.[198] Rather, we explain that refiners, whether large or small, may operate as an integrated refiner, non-obligated blender, and/or a merchant refiner in various fuels markets and in different aspects of their business operations. EPA demonstrates that because both the RIN cost and the RIN discount are ultimately passed through to consumers for all three categories, the RFS program does not advantage or disadvantage any of these parties over the others, regardless of how much of their operations fall into one or more of these categories. Importantly, a small refinery's ability to recover its RIN costs in the price of the fuel it produces does not depend on factors such as geographic range or pricing power.[199] Instead, the data and analysis EPA presents demonstrate that the market prices for both refined products and blended fuel reflect the cost of acquiring the RINs necessary to satisfy the RFS obligation associated with the fuel. Merchant refiners do not need to exercise market power and demand a price that is higher than the market price to recover their RIN costs; all parties selling into these competitive markets are recovering the cost of acquiring RINs when they sell their fuel at the market price. Thus, although size and market power can be an advantage for reasons other than RFS compliance, they provide no advantage to non-small refineries in recovering their RFS compliance costs.

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[196] *See supra*, Section IV.D.2.
[197] *See supra*, Section IV.D.2. *See also* Letter from RaceTrac to Administrator McCarthy, August 17, 2016, Docket Item No. EPA-HQ-OAR-2016-0544-0014; Letter from QuikTrip to Administrator McCarthy, August 17, 2016, Docket Item No. EPA-HQ-OAR-2016-0544-0013; Presentation from Murphy USA to EPA, August 16, 2016, Docket Item No. EPA-HQ-OAR-2016-0544-0028. *See also* Comments from API on 2020 RFS Annual Rule, Docket Item No. EPA-HQ-OAR-2019-0136-0721.
[198] *See supra*, Section IV.D.2.c.
[199] *See infra*, Section IV.D.3.e.

c.   EPA's assessment in the 2017 Point of Obligation Denial is out of date and not applicable in 2019 or 2020.

Many petitioners state that EPA could not rely on the conclusions of the assessment conducted in 2017 in the context of the Point of Obligation denial to evaluate their recent petitions. The petitioners state that the information considered in 2017 is now out of date and does not reflect the present realities of the fuels market.

We believe that the analyses conducted in 2017 continue to inform our understanding of the ways in which the RFS program affects small refineries and other fuels market participants, and we are not reconsidering or taking additional comments on EPA's decision not to initiate a rulemaking to change the point of obligation in the RFS program. The fact that the data reviewed in 2017 was consistent with what would be expected based on the design of the RFS program with its RIN system and economic principles is strong evidence that it is highly unlikely that the RFS program will cause DEH, and is strong evidence that the conclusions in that action remain true today. Our finding in that decision that the fuels market operates as we would expect in a competitive market remains relevant. As long as the fuels and RIN markets remain competitive, we do not anticipate that the RFS program will cause DEH to small refineries.

Nevertheless, in this proposed decision, we have considered more recent data since 2017—including data the small refinery petitioners themselves submitted—and we find that the more recent data are consistent with the data EPA reviewed in 2017.[200] These data continue to support our finding that both the RIN cost and the RIN discount are passed through to consumers and continue to show that the RIN market works in the same way for all market participants, including individual small refineries.

d.   Revenue from RIN sales allows large retailers to undercut small refineries.

Petitioners claim that EPA had not considered clear evidence that revenue from RIN sales enabled large retailers such as Murphy USA to undercut the small refineries they compete with that are unable to sell RINs for a profit. The petitioners argue that large retailers (which are generally not obligated parties) can sell blended fuel at a lower cost than the cost of the petroleum fuel and renewable fuel they are composed of because of the revenue they receive by selling RINs. Small refineries must price their blended fuel at the same price as large retailers to be competitive, but they do not receive the benefit of revenue from RIN sales.

Contrary to the petitioners' claims, EPA has considered the ability for non-obligated blenders to sell RINs and to use the RIN sales revenue to discount the price of blended fuel while remaining profitable.[201] We present an illustrative example of how RIN prices affect integrated refiners (which is the role small refineries are taking in the fuels market when they are blending the petroleum fuel they produce with renewable fuel) and non-obligated blenders in Section IV.D.2.c. As shown in Tables IV.D.2.c-2 and 4, neither integrated refiners nor non-obligated blenders benefit from, or are harmed by, higher RIN prices.

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[200] The data, and the conclusions we have drawn from the more recent data, are presented in Section IV.D.2.d.
[201] *See supra*, Section IV.D.2.

The petitioners' description of blenders using revenue from RIN sales to enable them to offer lower prices for the blended fuel they sell is consistent with EPA's findings (i.e., the RIN discount).[202] We also recognize that competitive forces require small refineries selling blended fuel to sell at the market price (which reflects the passthrough of the RIN price as a discount to consumers). In their claims about the advantages that the RFS program provides to non-obligated blenders, however, the petitioners have not considered the impact of RIN prices on the market price for fuels.

When small refineries produce and sell blended fuel from the petroleum fuel that they produce, they are acting as integrated refiners for that volume of fuel. Generally speaking, integrated refiners are not able to sell the RINs associated with the renewable fuel they blend, as they need these RINs to meet their RFS obligations. But unlike non-obligated blenders, integrated refiners do not typically purchase petroleum fuel to produce blended fuel; instead, they are producing the petroleum fuel themselves. This means that for an integrated refiner, the cost of the petroleum fuel is not the market price for these products (which reflects the marginal cost of production of the fuels plus the cost of purchasing the RINs needed to satisfy the RFS obligation associated with the fuel), but rather simply the cost of production for the petroleum diesel fuel. The lower cost of the petroleum fuel relative to the market price for these products allows the integrated refiner to price its blended fuel competitively with non-obligated blenders and still maintain a positive margin for producing blended fuel even though they do not realize revenue from RIN sales.[203]

Both the economic principles and the data EPA reviewed support our finding that the RFS program does not advantage non-obligated blenders over integrated refiners. While RIN sales provide an additional source of revenue for non-obligated blenders, this is offset by the higher price (which reflects the RIN cost) for the petroleum fuel that the blenders pay to merchant refiners to produce blended fuel. Integrated refiners, who are producing petroleum fuel rather than purchasing them at the market price, have access to lower cost petroleum fuel but do not realize revenue from RIN sales. Thus, while the RFS program impacts these parties in different ways, neither enjoys an advantage or disadvantage over the other.

e.   **Large integrated refiners set the prices in fuels markets, undercutting small refineries on price because of their market position and because the large, integrated operations have no or lower RIN costs.**

Petitioners claim that they compete in markets with large integrated refiners, and that they have no market pricing power relative to these parties. Petitioners also state that, because these large integrated refiners have no or lower RIN costs, they are able to undercut small refineries when they price their product. They further note several other advantages that large integrated refiners have relative to small refineries, such as a broader range of assets, economies of scale, and access to more fuels markets (including exports). We address each of these points in turn.

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[202] *See supra*, Section IV.D.2.

[203] A further description of the impact of the RFS program on merchant refiners, integrated refiners, and non-obligated blenders is provided in Section IV.D.2.c.

The market for gasoline and diesel fuel in the United States is extremely competitive.[204] EPA's finding that merchant refiners are able to pass through their RIN costs through higher market prices for the fuel they produce does not depend on merchant refiners having market pricing power in the markets where they sell fuel. Rather, we find that the market price for fuel reflects the RIN value, and therefore all parties in all markets that sell fuel recover their RIN costs when they sell their fuel (RIN cost passthrough).

In Section IV.D.2.c, EPA presented an example of the impact of higher RIN prices on merchant refiners, integrated refiners, and non-obligated blenders, and discussed the impact on each of these parties. In short, integrated refiners spend less money to purchase RINs than merchant refiners; unlike the non-obligated blenders they are competing with in the blended fuels market (i.e., large fuel retailers without refining or import businesses), they do not benefit from revenue from RIN sales. Merchant refiners do benefit from the higher market prices for gasoline and diesel fuel that are the result of higher RIN prices, but they must use this additional revenue to purchase RINs. Said another way, there is an opportunity cost when these integrated refiners blend renewable fuel with the petroleum fuel they produce instead of selling it unblended, because these parties sell blended fuel for a lower price than they could sell the petroleum fuel. This opportunity cost is equal to the savings these parties experience from acquiring RINs by blending renewable fuel rather than purchasing separated RINs.

The many factors mentioned by the petitioners, such as a broader range of assets (upstream, downstream, etc.), economy of scale, and access to more fuels markets, may in fact provide a competitive advantage to large integrated refiners. However, the fact that small refineries have continued to remain in the marketplace and compete with large integrated refiners is evidence of the fact that small refineries typically have other market advantages, such as access to local crude supplies and local markets lowering their distribution costs, specialty products, and niche markets with fewer competitors. None of these market advantages and disadvantages are the result of the RFS program. Each of these factors offered potential advantages (and potential liabilities) before the RFS program existed and continue to do so today. The petitioners have not presented any evidence, nor is EPA aware of any evidence, that would suggest that the RFS program has exacerbated any of the advantages large integrated refiners may have over small refineries.[205] In other words, the competitiveness of small refineries in the fuels market, be it favorable or unfavorable, does not change as a result of RFS compliance obligations.

On the other hand, granting SREs has provided small refineries a unique and significant competitive advantage. When small refineries are exempted from their RFS obligations, they continue to sell their petroleum fuel at the market price, which reflects the RIN cost via RIN cost passthrough. Thus, exempted small refineries recover the cost of the RINs (receive RIN revenue) through their product sales, but do not have any RIN costs when they are granted an exemption. The number of small refineries receiving exemptions, the total volume of gasoline and diesel fuel

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[204] *See supra*, Section IV.D.2.

[205] EPA acknowledges that the Tenth Circuit has found that Congress may have understood large integrated refiners to have certain advantages, and EPA has cited that decision itself in support of its prior approach to SRE decisions. However, as noted, EPA does not believe that the available evidence supports the conclusion that small refineries are structurally disadvantaged by the RFS program itself.

exempted, the total value of the exemptions, and the value of the exemptions on a per gallon basis are shown in Table IV.D.3-1. This table also shows the average net refining margins (an indicator of profitability) for the exempted small refineries, for comparison with the value of the exemptions. The value of the exemptions is typically significant relative to the average net refining margin. For all exemptions granted from 2013 through 2018, the average value of the exemptions (6.76 cents per gallon) was approximately 64% of the average net refining margin of the exempted refineries (10.61 cents per gallon). Any exemptions granted in 2021 would likely be of even greater value since current RIN prices, and therefore the current RIN cost per gallon of fuel produced, are higher than RIN prices when the exemptions for 2013-2018 were granted.

Table IV.D.3-1: Value of SREs (2013-2018)

Year	Number of Grants Issued	Volume of Gasoline and Diesel Fuel Exempted (billion gallons)	Total Value of the Exemptions ($ Million)[206]	Value of Exemptions (¢ per gallon)	Average Net Refining Margin for Exempted Refineries (¢ per gallon)[207]
2013	8	1.98	118	5.98	-0.65
2014	8	2.30	105	4.57	4.98
2015	7	3.07	171	5.57	12.05
2016	19	7.84	676	8.63	2.11
2017	35	17.05	1,459	8.56	11.76
2018	31	13.42	558	4.16	17.00
Total	108	45.66	3,088	6.76	10.61

f.   EPA's conclusion that there is parity between the cost of obtaining a RIN through blending and the cost of buying a RIN on the market is incorrect. It costs much more to buy RINs, which many small refineries must do.

Several petitioners claim that EPA's analyses are based on the assumption that the cost of obtaining a RIN through blending and the cost of purchasing a RIN is the same, and that this assumption is unfounded. To support this claim, the petitioners note that the cost to purchase RINs increased significantly in 2019, 2020, and 2021 and that the cost to purchase RINs in these years was much greater than the cost to blend renewable fuel. The petitioners further state that if there was no cost advantage to blending then there would be no reason for non-obligated parties to continue blending. Rather, these parties would stop blending if they could not recoup the loss by selling the RINs on the market.

We are aware that RIN prices increased significantly recently and we extended our analysis of the impact of RIN prices on the fuels market through the end of 2020 to determine

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[206] Based on annual average RIN prices calculated by EPA from OPIS data for D3, D4, D5 and D6 RINs.
[207] EPA often grants exemptions in the year(s) following the year for which an exemption is requested. Because of this time lag, refineries sometimes financially account for the value of their exemption in the following year(s). Thus, the value of the exemptions for some refineries may be included in the net refining margin for the following year(s). For example, EPA granted some 2013 exemption in 2014 or later years, so the value of some 2013 exemptions may be included in financial statements for 2014 or later.

whether our previous findings on RIN cost passthrough were supported by more recent data.[208] We concluded that all the data available to EPA, including data submitted by the petitioners, continues to support EPA's findings on RIN cost passthrough.

EPA's finding that there is parity between the cost to obtain a RIN through blending and the price to purchase a RIN is not an arbitrary assumption. Rather, it is strongly supported by both economic principles and the fuels market data. As stated previously, the market for blended fuel is highly competitive. If the cost of obtaining a RIN by blending renewable fuel was lower than the market price for a RIN, we would expect to see new blenders enter the market and/or existing blenders increasing their blending to capitalize on this profit opportunity. This activity would result in an increase in the supply of RINs for sale until the demand price for a RIN was equal to the cost of obtaining a RIN through blending. Competitive market situations where the sales price of a good is appreciably higher than the cost to produce a good are short-lived, as market participants will increase production to take advantage of this opportunity until the supply price and demand price are equal.

The market data EPA reviewed support this finding as well.[209] The cost to obtain a RIN by blending renewable fuel is not simply the fixed and operating costs for fuel blending (which are relatively minor), nor is it simply the price difference between renewable fuel and the petroleum fuel into which they are blended (e.g., the price difference between ethanol and gasoline or between biodiesel and diesel fuel). Instead, the cost to a blender to obtain a RIN is the price difference between the cost of the petroleum fuel (e.g., gasoline or diesel fuel) and the renewable fuel used to produce blended fuel and the sales price of the blended fuel (e.g., E10 or B5). The data presented in Section IV.D.2.d demonstrate that the difference between the cost of the petroleum fuel and the renewable fuel used to produce blended fuel and the sales price of the blended fuel is equal to the market price for the RINs associated with the blended fuel.[210]

The finding that there is parity between the cost of obtaining RINs by blending renewable fuel and purchasing RINs does not mean that RINs do not provide an incentive for the blending of renewable fuel. While blending renewable fuel does not result in windfall profits for blenders (since the revenue from RIN sales is passed through to consumers in a discount on the price for blended fuel), RIN revenue lowers the effective cost of renewable fuel, allowing blenders to offer blended fuel containing renewable fuel at lower prices. The examples presented in Section IV.D.2.c illustrate this point. In the E10 blending example, the price of the gasoline is $1.44 per gallon and the price of ethanol is $1.50 per gallon, which is higher than the price of the gasoline (prices from Table IV.D.2.c-2). However, the RIN discount allows E10 to sell for $1.37 per gallon, which is lower than the price of the gasoline (line E4 from Table IV.D.2.c-2). Similarly, in the B5 blending example, the price for ULSD is $1.48 and the price for biodiesel is $3.66 (prices from Table IV.D.2.c-3). Here again the RIN revenue, when combined with the federal tax credit, allows B5 to sell for a lower price ($1.46 from line B5 in Table IV.D.2.c-4) than the price of diesel fuel. Fuel buyers are extremely sensitive to prices. The incentive for blenders to continue to blend renewable fuel when there is parity between the cost of obtaining a RIN through blending and the cost to purchase a RIN is not that the revenue from the sale of the RIN

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[208] *See supra*, Section IV.D.2.
[209] *See supra*, Section IV.D.2.d.
[210] *See supra*, Figures IV.D.2.c-2 and 4.

represents a windfall profit, but rather that the RIN discount allows blended fuel to sell at a lower price relative to unblended fuel after passing through the revenue of the RIN sales to the consumer.

g.   **Single site refineries only have access to a limited market and are therefore at a disadvantage relative to large integrated refiners.**

Several petitioners claim that because they own a single refinery and have access to limited markets for their fuels, they are at a disadvantage compared to large integrated refiners. The petitioners claim that because of their size, they cannot set the market price in such a way as to recover their RIN costs, nor can they sell their fuel into other markets if their local market prices are unfavorable.

As previously discussed, a refiner's ability to recover its RIN costs does not depend on the refiner's ability to set the market price for the fuel it produces.[211] Rather, because all parties have the same cost to acquire RINs, whether they acquire RINs through blending renewable fuel or by purchasing RINs, the market price for fuel reflects the cost of the RINs.

We are aware that the economics of refining crude oil to produce transportation fuel changes over time, and that fuels markets vary in their profitability relative to other markets. At times it can be an advantage to be in limited markets, and at other times not. Refiners with better access to pipelines and other low-cost ways to transport the fuel they produce are better positioned to react to changes in market dynamics, whether these changes are positive, negative, short-term, or long-term in nature. These varying circumstances, and any hardship they might cause to small refineries, are independent of and not caused by compliance with the RFS program.

We received claims of disadvantage from small refineries in isolated markets where they were the main supplier of fuel, from small refineries in markets readily accessible to many other refineries, and from small refineries in every situation in-between. The identical claims from such a broad diversity of refinery situations demonstrates that a small refinery's market has nothing to do with potential impacts from the RFS program. As a result of the nationwide RIN trading program, all refineries have equal access to the RINs they need for compliance with the RFS program and at the same nationwide price.

h.   **Refineries that produce primarily diesel fuel are at a disadvantage since they generally cannot blend as much renewable fuel into their product as can refineries that produce gasoline.**

The claim that small refineries producing a disproportionately high amount of diesel fuel, relative to the amount of gasoline produced, suffer DEH from the RFS program presumes that parties that acquire RINs by blending renewable fuel do so at a lower cost than parties that purchase RINs. These small refineries generally assert that their ability to acquire RINs by

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[211] *See supra*, Sections IV.D.2 and IV.D.3.e.

blending biodiesel or renewable diesel is limited relative to their competitors that have the ability to blend greater quantities of ethanol into the gasoline they produce.

As previously discussed, all parties have the same cost to acquire RINs, whether they do so by blending renewable fuel or by purchasing RINs.[212] A party's cost of acquiring RINs, therefore, is unrelated to its ability to blend renewable fuel. Further, it is not necessarily the case that greater quantities of renewable fuel can be blended into gasoline relative to diesel fuel. With the exception of very small quantities of higher-level ethanol blends such as E15 and E85, blending of ethanol into gasoline is limited to 10% by volume. Conversely, many parties regularly sell diesel fuel blended with up to 20% biodiesel or renewable diesel.[213] Parties blending 20% biodiesel or renewable diesel into diesel fuel would acquire more RINs than parties blending 10% ethanol into gasoline, especially after accounting for the higher equivalence values of biodiesel and renewable diesel.

V.   Conclusion

Section 211(*o*)(9)(B) of the CAA and 40 CFR 80.1441(e)(2) give EPA the authority to grant an SRE petition only when a small refinery demonstrates it is experiencing DEH caused by compliance with the RFS program. Based on our detailed evaluation, careful consideration of all the available information, consultation with DOE, and consideration of the DOE study and other economic factors, EPA proposes to find that none of the 65 pending small refinery petitions have demonstrated DEH caused by the costs of compliance with the requirements of the RFS program.

The market-based design of the RFS program and the RIN-based compliance system have equalized the cost of compliance among all market participants, such that no refinery would face DEH from its RFS obligations.[214] We have evaluated an extensive amount of data and available literature and have concluded that the cost of RINs is the same for all obligated parties, whether the RINs are acquired by blending renewable fuel or by buying them on the market.[215] Hence, small refineries do not face a disproportionate cost of compliance when compared to other refineries, or to each other. Our analysis further shows that the costs of RFS compliance (i.e., RINs) are passed through in the prices of refined products. Hence, in recovering their RIN costs, refineries do not face economic hardship due to compliance with the RFS program. Finding no disproportionate cost of compliance and no economic hardship due to the RFS program, we conclude that small refineries do not face DEH. As such, EPA proposes to find that compliance with the RFS program does not cause DEH to small refineries and, accordingly, to deny all pending SRE petitions.

As stated above, this notice is not a final agency action for purposes of CAA section 307(b)(1). This action is not a rulemaking and is not subject to the various statutory and other provisions applicable to a rulemaking. Rather, the purpose of this proposal is to clearly articulate

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[212] *See supra*, Sections IV.D.2 and IV.D.3.f.
[213] *See*, e.g., diesel fuel offerings by Pilot Flying J—the largest diesel fuel retailer in the United States—available at: https://pilotflyingj.com/fuel-prices.
[214] *See supra*, Section II.B.
[215] *See supra*, Section IV.D.2.

the Agency's current interpretation of its statutory authority to grant SREs and to present our analysis of all available data on RFS costs and market dynamics for public review and comment.