COVINGTON & BURLING LLP

An Analysis of the Renewable Fuel Standard's RIN Market

White Paper

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Table of Contents

I. Introduction & Executive Summary

The Environmental Protection Agency's ("EPA") Renewable Fuel Standard ("RFS") is intended to use market-based regulatory requirements to increase the use of renewable fuels. Under the RFS, regulated entities, known as obligated parties, must obtain credits, known as Renewable Identification Numbers ("RINs"), that represent various types of renewable fuel blended into the transportation fuels supplied in the United States. EPA establishes each year by regulation the amount of RINs the industry as a whole must obtain and retire, and also publishes annual percentage standards based on the Energy Information Administration's projection of US gasoline and diesel demand. Obligated parties must submit to EPA sufficient RINs by applying the percentage standards to the volumes of gasoline and diesel fuel they supply; they are required by law to comply or else face significant monetary penalties. EPA first established this RIN market, and the basic rules under which it operates, in 2007. In reliance on that market structure, some companies have made compliance, investment, and operational decisions regarding blending operations such that they can generate their own RINs and even sell excess RINs to third parties. Others have instead decided to purchase RINs on the market to fulfill their statutory obligations.

Over the years, there have been multiple challenges to the existing RFS program. For example, relatively early in the life of the RFS program, one entity brought a challenge seeking to have RFS obligations placed on blenders rather than refiners, which the courts rejected.[1] Likewise, a number of companies filed petitions in 2016 requesting that EPA re-define which entities are obligated to demonstrate compliance with the RFS, which EPA denied.[2]

Most recently, public debate over the RFS program has shifted to potential "market reforms" that proponents claim will address what they perceive as high RIN prices and volatility over time in RIN prices. On October 11, 2018, President Trump directed EPA to consider "reforms" to the RIN market that some have asserted might lower RIN prices or reduce volatility.[3] The potential changes EPA was directed to consider include:

- Prohibiting entities other than obligated parties from purchasing separated RINs.
- Requiring public disclosure when RIN holdings held by an individual actor exceed specified limits.
- Limiting the length of time a non-obligated party can hold RINs.
- Requiring the retirement of RINs for the purpose of compliance be made in real time.

[1] *Monroe Energy, LLC v. EPA*, 750 F.3d 909, 919 (D.C. Cir. 2014).

[2] 81 Fed. Reg. 83,776 (Nov. 22, 2016) (describing Valero Energy Corporation and its subsidiaries, among a variety of other entities, as filing such a petition).

[3] White House, *President Donald J. Trump Is Expanding Waivers for E15 and Increasing Transparency in the RIN Market* (Oct. 11, 2018), *available at* https://www.whitehouse.gov/briefings-statements/president-donald-j-trump-expanding-waivers-e15-increasing-transparency-rin-market/

Others have advocated for these changes on behalf of those who are "short" on RINs and regularly purchase RINs. For example, Valero retained NERA, an economic consultant, to draft a paper that argues the RIN market is volatile and that rule changes similar to those proposed by the White House might address high RIN prices and volatility.[4]

While the RFS has failed to meet the advanced biofuel blending targets envisioned by the statute and the RIN market has exhibited periods of high RIN prices and volatility, the proposals under consideration by EPA both misdiagnose the problems and propose misguided and counterproductive cures.

No modifications should be made absent clear evidence that there is a problem to be fixed with respect to the RIN market rules (as opposed to broader issues concerning the RFS's structure as a whole). Both the Commodity Futures Trading Commission ("CFTC") and the EPA have explained that there is no evidence of market manipulation.[5] The CFTC has said it needs to study additional data before it could even begin to recommend potential rule changes that EPA could consider. Moreover, EPA's and others' studies have repeatedly found that RIN purchasers—even small and independent refineries—are generally able to recover their RIN costs in the price of the gasoline they sell. Accordingly, EPA has explained that there is no economic harm to RIN purchasers, even if RIN prices are high, because those costs are recouped in the gasoline blendstock and diesel.[6] For these reasons, EPA should be extremely cautious before embarking upon radical changes to the long-standing RIN market.

Moreover, to the extent there is a problem with high RIN prices or volatility, the consensus in the economic literature is that two basic factors, which these proposed changes would do nothing to fix and could even exacerbate, are responsible.

First, there is an inherent ceiling—referred to as the "blendwall"—on the quantity of ethanol fuel that the transportation fleet and fueling infrastructure can efficiently use. Significant practical difficulties hinder blending ethanol fuel into the motor gasoline fuel supply above the 10% threshold. When EPA sets renewable fuel mandates that approach or exceed that 10% barrier, the markets become more volatile and prices can sharply increase, because (1) compliance is a mandated legal requirement, but (2) it is difficult and costly to generate the RINs needed for compliance once the blendwall is reached.

Second, the RFS program is a government-imposed mandate divorced from the actual demand for transportation fuels: each year, EPA by regulatory decree establishes the renewable fuel mandates. Accordingly, EPA's setting of each year's fuels obligation, EPA proposals, leaks of information about what the agency intends to do, and other regulatory events can cause dramatic swings in prices. This issue has been extensively studied and informed observers agree that EPA's actions are a major source of RIN price volatility.

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[4] NERA Economic Consulting, *Ethanol RIN Market Analysis and Potential Reforms* (Oct. 18, 2018) ("NERA Report").

[5] *See* footnotes 93-99 and accompanying text, *infra*.

[6] *See* footnotes 54-57, 86-91, and accompanying text, *infra*.

The role of these two factors as the main drivers of RIN price volatility is underscored by a comparison of RIN markets to other markets for environmental credits. These markets all display similar issues with price volatility and periods of high prices, because in each of them the Government establishes a fixed demand that is binding on participants and the market then reacts to legal, political, and regulatory events, often referred to as "policy shocks", that alter the supply or demand within the market. This recurring issue of volatility in these types of markets is also recognized in the literature as being caused by Government mandates. Moreover, the issue recurs despite the fact the markets have different rules and have taken different approaches on the rule changes that EPA has been asked to consider. Other types of markets that some have suggested may provide an analogy, such as commodities markets regulated by the CFTC, are fundamentally different: in such markets, no government regulation imposes a legal requirement as to how much wheat or aluminum must be produced or consumed each year, and, unlike the RFS, buyers have access to a broad variety of substitute products.

Because the proposed reforms rest upon a flawed analysis of the drivers of price swings in the RIN market, they are unlikely to address RIN price volatility. Instead, the proposed regulatory changes are likely to create additional significant problems of their own. Indeed, history suggests that regulatory agencies should be extremely cautious in changing established rules in regulated markets. For example, the Federal Energy Regulatory Commission ("FERC") has rejected calls from market participants seeking to change the rules of electricity trading in response to high prices, explaining that doing so would stifle market signals and create additional uncertainty, and thus actually harm the market.[7]

That is not to say that EPA should do nothing. EPA can and should continue to improve the RIN market by continuing its incremental reforms consistent with relying on price signals to influence stakeholder behavior. For example, EPA has, in partnership with the CFTC, stepped up efforts to combat the generation of fraudulent RINs. Those efforts are laudable and should be continued. EPA also released on September 20, 2018, a new website making available significant RIN pricing and other data that were not previously publicly accessible.[8] EPA's release of this additional data is helpful. Rather than making changes to the RIN market, EPA ought to see whether and how the market changes in response to this additional data. Broader changes by Congress to the RFS's statutory design may also be appropriate, but are outside the scope of this analysis.

II. The Renewable Fuel Standard and RINs

A. The Renewable Fuel Standard Program

The RFS program seeks to "move the United States toward greater energy independence and security" and "increase the production of clean renewable fuels."[9] Congress established the

[7] *See* footnotes 137-138 and accompanying text, *infra*.

[8] EPA, *EPA Updates RFS Website to Improve Transparency* (Sept. 20, 2018), https://www.epa.gov/newsreleases/epa-updates-rfs-website-improve-transparency

[9] Energy Independence and Security Act of 2007, Pub. L. No. 110-140, 121 Stat. 1492 (2007) ("EISA").

RFS program in 2005 and expanded it two years later.[10] As amended, the program requires increasing volumes of renewable fuel to be introduced into the Nation's supply of transportation fuel each year, subject to waiver provisions and other limitations. The EPA is charged with administering the RFS program, which is codified in the Clean Air Act.

The RFS program affects nearly every participant in the market for ground transportation fuels. In general, there are six classes of actors in that market:

(i) refiners, who manufacture gasoline and diesel;

(ii) renewable fuel producers, who produce fuels generated from renewable biomass;

(iii) importers, who import gasoline, diesel, and renewable fuels;

(iv) blenders, who combine renewable fuels with gasoline and diesel to create transportation fuel for use in the US;

(v) retailers, who purchase the blended transportation fuel and sell it to consumers at gas stations; and

(vi) consumers, who purchase transportation fuel for their vehicles at gas stations.[11]

Some of these participants are regulated directly by the RFS program, while others are affected only indirectly by its requirements. For example, EPA regulations designate refiners and importers of gasoline and diesel fuels as the parties required to demonstrate compliance with the RFS program's volume requirements, commonly referred to as "obligated parties."

The RFS statute, codified at 42 U.S.C. § 7545(*o*), establishes annual targets for four classes of renewable fuel: total renewable fuel, advanced biofuel, biomass-based diesel, and cellulosic biofuel. These categories are nested, such that cellulosic biofuel and biomass-based diesel are subsets of advanced biofuel, which is in turn a subset of total renewable fuel.[12] The last and largest of those classes—total renewable fuel—includes any type of fuel "that is produced from renewable biomass and that is used to replace or reduce the quantity of fossil fuel present in a transportation fuel."[13] Corn starch ethanol is the primary source of conventional renewable fuel. Advanced biofuels, in contrast, are renewable fuels that generate lower lifecycle greenhouse gas emissions

[10] *See* Energy Policy Act of 2005, Pub. L. No. 109-58, § 1501, 119 Stat. 594, 1067-76 (2005); EISA §§ 201-202.

[11] *See Americans for Clean Energy v. EPA*, 864 F.3d 691, 697 (D.C. Cir. 2017) (*ACE*).

[12] *See id.* at 697-98.

[13] 42 U.S.C. § 7545(*o*)(1)(J).

than corn ethanol; these fuels include biomass-based diesel as well as ethanol derived from switchgrass, sugarcane, crop residues, vegetable oil, waste animal fats, and other similar sources.[14]

By law, EPA must issue annual regulations that translate the statute's volume targets into annual percentage standards, which in turn establish individual obligated parties' renewable volume obligations ("RVOs"). For example, for 2019, the statute prescribed a target volume of 28 billion RINs of total renewable fuel, 13 billion RINs of advanced biofuel, 8.5 billion RINs of cellulosic biofuel, and at least one billion RINs of biomass-based diesel.[15] The statute directs EPA to adjust these targets in several ways. Most notably, the statute requires EPA to reduce the cellulosic-biofuel volume to account for the actual level of production, which historically has been well below the statutory volumes.[16] The statute also authorizes the EPA to waive any volume requirements that would "severely harm the economy or environment of a State, a region, or the United States."[17] As a result of the annual cellulosic-biofuel adjustment, the RVOs for total renewable fuel, advanced biofuel, and cellulosic biofuel are frequently lower than the initial statutory target amounts.

Regulations governing the 2019 program year illustrate this dynamic. In contrast to the statutory target amounts noted above, EPA's 2019 final rule mandated 19.92 billion RINs of total renewable fuel, 4.92 billion RINs of advanced biofuel, 2.1 billion RINs of biomass-based diesel, and 418 million RINs of cellulosic biofuel.[18] EPA's annual rules convert these aggregate, nationwide volume requirements into percentage standards expressed as a fraction of total transportation fuel. For example, if the total renewable fuel obligation for a given year is 19.92 billion RINs and the total amount of non-renewable transportation fuel expected to be consumed in that year is 181.65 billion gallons, the percentage standard for total renewable fuel would be 10.97 percent.[19]

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[14] *See Am. Petroleum Inst. v. EPA*, 706 F.3d 474, 475-76 (D.C. Cir. 2013) (*API*); 42 U.S.C. § 7545(*o*)(1)(B).

[15] *See* 42 U.S.C. § 7545(*o*)(2)(B).

[16] "[T]here was no commercial-scale production at all" when Congress amended the RFS program in 2007, and the statutory targets "assum[e] significant innovation in the industry." *API*, 706 F.3d at 476. Every year since the RFS program's inception, EPA has significantly reduced the cellulosic-biofuel requirement due to lower-than-anticipated commercial production. *Compare, e.g.*, 82 Fed. Reg. 58,486, 58,487 (Dec. 12, 2017) (mandating 288 million gallons of cellulosic biofuel in 2018), *with* 42 U.S.C. § 7545(*o*)(2)(B)(i)(III) (targeting use of 7 billion gallons of cellulosic biofuel in 2018).

[17] 42 U.S.C. § 7545(*o*)(7). Additional provisions provide for waivers based on "inadequate domestic supply," *id.* § 7545(*o*)(7)(A)(ii), and allow EPA to grant exemptions to small refineries based on "disproportionate economic hardship," *id.* § 7545(*o*)(9)(B).

[18] *See* 83 Fed. Reg. 63,704, 63,705 (Dec. 11, 2018).

[19] The actual formula is more complicated and has a separate percentage for each renewable fuel category. *See* 40 C.F.R. § 80.1405 (setting forth formula); 83 Fed. Reg. at 63,739-40 (performing calculations for 2019).

Obligated parties—refiners and importers—satisfy the RFS program's annual requirements by meeting their individualized RVOs.[20] Each obligated party's RVO varies depending on how much gasoline and diesel fuel the party refines or imports for use within the US.[21] Obligated parties calculate the RVO for each category of renewable fuel by multiplying the amount of gasoline and diesel fuel they import or refine by the applicable percentage standard.[22] "If each obligated party meets the required percentage standards, then the Nation's overall supply of cellulosic biofuel, biomass-based diesel, advanced biofuel, and total renewable fuel will meet the total volume requirements set by EPA."[23]

The statute seeks to ensure adequate lead time for obligated parties by requiring EPA to publish the annual volume requirements for total renewable fuel, advanced biofuel, and cellulosic biofuel no later than November 30 of the preceding year.[24] EPA's annual regulations are subject to judicial review in the U.S. Court of Appeals for the District of Columbia Circuit and have been challenged by market participants, including obligated parties, renewable-fuel producers, and environmental groups.[25]

The end result of this regulatory framework is a government-mandated secondary market related to renewable fuels. Obligated parties—refiners and importers—must, on pain of very substantial monetary penalties for non-compliance, incorporate billions of gallons of renewable fuel into the transportation fuels they sell, or purchase credits from others who do so. That requirement creates guaranteed demand for biofuel producers, thus creating an incentive to finance new renewable-fuel infrastructure and bring renewable fuels to market.[26]

B. Compliance Credits: Renewable Identification Numbers

Obligated parties satisfy their RVOs by accumulating or purchasing a sufficient number of RINs for each renewable fuel type—total renewable fuel, advanced biofuel, cellulosic biofuel, and biomass-based diesel—and then "retiring" those RINs through an annual compliance demonstration conducted by EPA.[27] If an obligated party has more RINs than it needs to meet its RVOs, it may sell or trade the extra RINs or instead choose to "bank" them for use the following year. Conversely, if an obligated party does not have enough RINs to satisfy its RVOs at the end

[20] *See ACE*, 864 F.3d at 697-98.

[21] *Id.* at 697.

[22] *See* 40 C.F.R. § 80.1407.

[23] *ACE*, 864 F.3d at 699.

[24] *See* 42 U.S.C. § 7545(*o*)(3)(B)(i). A separate deadline, requiring 14 months' advance notice, applies to biomass-based diesel. *See id.* § 7545(*o*)(2)(B).

[25] *See, e.g.*, *Nat'l Petrochemical & Refiners Ass'n v. EPA*, 630 F.3d 145 (D.C. Cir. 2010); *Monroe Energy, LLC v. EPA*, 750 F.3d 909 (D.C. Cir. 2014).

[26] *See, e.g.*, 80 Fed. Reg. 77,420, 77,458 (Dec. 14, 2015) ("the RIN system … assists renewable fuel producers seeking to finance the construction of new facilities, especially facilities capable of producing cellulosic or advanced biofuels, by providing certainty that there will be a market for increasing volumes of renewable fuels").

[27] *ACE*, 864 F.3d at 713.

of a compliance year, the party may (i) purchase the requisite number of RINs on the open market, (ii) use banked RINs from the prior year, or (iii) carry over a RIN deficit to the next program year.[28] EPA tracks compliance with the RFS program's annual requirements through a credit-trading system.[29] Under this system, each batch of renewable fuel is assigned a unique set of credits, known as "Renewable Identification Numbers," or RINs, "that correspond to the volume of ethanol-equivalent fuel gallons in that batch."[30] For example, if a renewable-fuel manufacturer produces (or imports) 100 gallons of cellulosic biofuel, the manufacturer would assign the batch 100 cellulosic-biofuel RINs, assuming that the particular type of biofuel has an energy density equal to ethanol.[31] These RINs remain "attached to the fuel until [it] is purchased by an obligated party … or blended into a transportation fuel."[32] At that point, the RINs are "separated" from the fuel and are retained by the party that separated them, and may be used to demonstrate compliance with the party's RVOs or sold to third parties.[33]

As noted, obligated parties that fail to satisfy their RVOs are subject to substantial monetary penalties. "Any person who violates" the RFS statute "or the [implementing] regulations prescribed" by EPA is "liable to the United States for a civil penalty … for every day of such violation and the amount of economic benefit or savings resulting from the violation."[34] These penalties were originally $25,000 per day, but have been adjusted for inflation and are now $37,500 per day.[35] Thus, an obligated party that fails to meet one of its RVOs in a given year is subject to "a separate" fine in excess of $37,500 "for each day in the compliance period"—i.e., a fine of more than $13 million plus the value of the economic benefit or savings resulting from the violation.[36] A party that fails to meet multiple RVOs in a given year (e.g., total renewable fuel and advanced biofuel) would face even greater penalties. In addition to levying these penalties, EPA also has authority to seek injunctive relief "to restrain violations" of the RFS statute and regulations.[37] The

[28] *Id.* at 699-700.

[29] *See* 42 U.S.C. § 7545(*o*)(5)(A) (directing EPA to create a "credit program" as part of the RFS framework).

[30] *ACE*, 864 F.3d at 699 (quoting *Monroe Energy*, 750 F.3d at 913); *see also* 40 C.F.R. §§ 80.1425 - 80.1426.

[31] In practical terms, energy density refers to a fuel's ability to power a motor vehicle. Fuels with higher energy densities will allow a vehicle to travel more miles per gallon than fuels with lower energy densities.

[32] *ACE*, 864 F.3d at 699.

[33] *Id.*

[34] 42 U.S.C. § 7545(d)(1).

[35] *See* 40 C.F.R. § 19.4, Table 1; Federal Civil Penalties Inflation Adjustment Act, 28 U.S.C. § 2461 note.

[36] 40 C.F.R. § 80.1463(b).

[37] 42 U.S.C. § 7545(d)(2); 40 C.F.R. § 19.4.

courts have confirmed that the RFS statute gives the courts authority to order those who do not comply with the RFS to obtain RINs necessary for compliance.[38]

The RFS statute and EPA regulations limit the ability to carry over RIN surpluses and deficits in several respects. *First*, the statute provides that RINs "shall be valid to show compliance for the 12 months as of the date of generation."[39] This language ensures that each RIN is available for use in two compliance years—the year in which the RIN is generated, as well as the following year. *Second*, EPA regulations direct that an obligated party may satisfy "no more than 20 percent" of its RVO in a given year using banked RINs generated during the preceding year.[40] *Third*, a party may "carry forward" a RIN deficit from one year to the next, but must comply fully with its RVO in the second year and generate or purchase enough RINs "to offset the [RIN] deficit of the previous year."[41]

Additional rules govern other aspects of the RIN market. Congress prescribed in the RFS statute that "[a] person that generates [RINs] may use the credits, or transfer all or a portion of the credits to another person, for the purpose of complying with" the annual volume requirements.[42] EPA regulations likewise provide that obligated parties generally must replace fraudulent RINs at their own expense—even when the purchaser had "a good faith belief that the RINs were valid at the time they were acquired."[43]

C. RIN Markets and Reporting Requirements

The RFS statute and its implementing regulations create an open market for RIN trading.[44] Obligated parties with their own blending operations may generate and sell surplus RINs and may buy RINs from other market participants in years where their blending operations do not produce enough RINs to meet the applicable RVO. Similarly, obligated parties that lack blending capabilities may meet their RVOs by obtaining RINs on the open market. Over the longer term, these "short" parties may eliminate the need to purchase RINs from third parties by investing in and developing their own in-house RIN generation capabilities (e.g., blending operations). In both cases, the RFS program imposes a cost—the expense of acquiring RINs—that obligated parties generally recover through the price of their blendstock. This open structure harnesses market dynamics to allow each obligated party to adopt the most efficient and lowest cost means of compliance for its circumstances.

RINs may be traded on public exchanges, by private contracts, or through other types of transactions. EPA tracks production and use of RINs and publishes RIN transaction data through

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[38] *United States v. NGL Crude Logistics, LLC*, No. 16-1038, 2017 WL 2268324 (N.D. Iowa May 24, 2017).

[39] 42 U.S.C. § 7545(*o*)(5)(C).

[40] *ACE*, 864 F.3d at 715; *see also* 40 C.F.R. § 80.1427(c)(3).

[41] 42 U.S.C. § 7545(*o*)(5)(D).

[42] *Id.* § 7545(*o*)(5)(B).

[43] 40 C.F.R. § 80.1431(b).

[44] *See* 42 U.S.C. § 7545(*o*)(5)(B).

the EPA Moderated Transaction System (EMTS).[45] When a manufacturer produces a new batch of renewable fuel, it must report information regarding the batch, including the type and quantity of fuel, to EPA through the EMTS.[46] Likewise, each time any party buys, sells, separates, or retires RINs, the party must report the transaction—including the year in which the RINs were generated, the type of renewable fuel, the quantity of RINs involved, and the per-unit RIN price—through the EMTS.[47] This data is then organized by EPA and made available to the public on the agency's website in a variety of formats.[48]

RIN prices remained low throughout the RFS program's early years, as obligated parties could readily meet their RVOs by blending ethanol up to E10[49] or acquiring RINs on the open market.[50] However, as the program's volume requirements increased, they eventually reached the E10 "blendwall"—an "infrastructure and market-related constraint on ethanol demand" that "arises because most U.S. vehicle engines were not designed to handle gasoline consisting of more than 10 percent ethanol,"[51] and because "retail infrastructure"—such as appropriate dispensers and underground storage tanks approved for E15 use—is "a limiting factor in E15 supply."[52] As EPA has explained, RIN prices increased in response to this dynamic beginning in 2013, at which point prices were "largely driven by the marginal cost of blending and marketing ethanol as E85, or the cost of blending other non-ethanol renewable fuels where available, since nearly all gasoline sold in the United States already contained 10 percent ethanol."[53] In subsequent years RIN prices have fluctuated, with significant increases or decreases immediately following regulatory developments such as EPA rules setting annual volume requirements (and thus fixing by regulatory fiat the demand for RINs in the year ahead).

In late 2017, EPA carefully studied the effect of RIN prices on obligated parties and concluded in an exhaustive, 87-page memorandum that obligated parties "are able to recover the

[45] *See* EPA, *Public Data for the Renewable Fuel Standard*, https://www.epa.gov/fuels-registration-reporting-and-compliance-help/public-data-renewable-fuel-standard (accessed Feb. 12, 2019).

[46] *See* 40 C.F.R. § 80.1452(b).

[47] *See id.* § 80.1452(c).

[48] *See, e.g.*, EPA, *RIN Trades and Price Information*, https://www.epa.gov/fuels-registration-reporting-and-compliance-help/rin-trades-and-price-information (accessed Feb. 12, 2019).

[49] E10 refers to gasoline containing approximately ten percent ethanol.

[50] *See* Dallas Burkholder, EPA Office of Transportation and Air Quality, *A Preliminary Assessment of RIN Market Dynamics, RIN Prices, and Their Effects*, at 1 (May 14, 2015), *available at* https://www.regulations.gov/contentStreamer?documentId=EPA-HQ-OAR-2016-0004-3714&contentType=pdf (Burkholder 2015 Memorandum); *see also ACE*, 864 F.3d at 700.

[51] *ACE*, 864 F.3d at 700.

[52] EPA, *Renewable Fuel Standard Program – Standards for 2018 and Biomass-based Diesel Volume for 2019: Response to Comments*, No. EPA-420-R-17-007, at 123 (Dec. 2017), *available at* https://nepis.epa.gov/Exe/ZyPDF.cgi/P100TDDH.PDF?Dockey=P100TDDH.PDF

[53] Burkholder 2015 Memorandum at 1-2.

cost of these RINs in the price of the petroleum blendstocks they sell."[54] That conclusion applies equally to obligated parties that blend their own renewable fuels and those that "acquire RINs by purchasing" them on the open market, as the data show that "refiners … recover the cost of acquiring RINs through higher prices for gasoline and diesel they produce than would be the case with lower RIN prices."[55] As the EPA memorandum explains:

> Data clearly show higher market prices for RFS-obligated fuels (gasoline and diesel blendstocks sold for use in the United States) when compared to those of unobligated fuels that are very similar (such as gasoline and diesel sold for export, or heating oil and jet fuel). Before accounting for any potential RIN price impacts, one would expect obligated and unobligated fuels to have very similar market prices because of their very similar fuel properties. Gasoline is nearly identical whether used domestically or sold for export, and heating oil and diesel are also very similar chemically. However, in recent years, as RIN prices have become elevated, data show a gap opening up between the price of domestic gasoline and exported gasoline, and between the price of diesel and heating oil. The price of the obligated fuels is higher and the gap corresponds, for the most part, with RIN prices. Obligated parties—whether they are merchant refiners or integrated—are charging more for domestic gasoline and diesel to ensure they recoup the costs associated with RIN prices. So while a merchant refiner is directly paying for the RINs they buy on the market, they are passing that cost along in the form of higher wholesale gasoline and diesel prices.[56]

Although some obligated parties disputed these findings, EPA "carefully review[ed]" the data and determined that "[a]ll obligated parties, including merchant refiners, are generally able to recover the cost of the RINs they need for compliance with the RFS obligations through the cost of the gasoline and diesel fuel they produce."[57]

III. Price Changes in the RIN Market and Recovery of RIN Costs

A. What Causes Prices Changes in the RIN Market?

As noted above, there are two fundamental drivers of RIN prices, which are the principal causes of both price volatility and periods of high RIN prices.

First, as described above, EPA sets demand through its annual rulemaking process. That process—including the proposed rule identifying the proposed annual required amounts, the final rule fixing those amounts, any "leaks" of information during that process, and subsequent litigation—drives changes in the RIN market based on anticipated outcomes. Moreover, EPA actions outside of that annual process, such as statements indicating that EPA may alter RIN

[54] EPA, *Denial of Petitions for Rulemaking to Change the RFS Point of Obligation*, EPA-420-R-17-008, at 23 (Nov. 2017), *available at* https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100TBGV.pdf.

[55] *Id.*

[56] *Id.*

[57] *Id.* at 23-24.

market rules, the granting of small refinery exemption petitions (which effectively reduces RIN demand for a given year by reducing or eliminating particular small refineries' compliance obligations), and other actions likewise can have a significant impact on RIN pricing expectations.[58]

Second, the "blendwall" imposes significant constraints on the RIN market. As noted above, the blendwall refers to the fact that the U.S. transportation fuel system can readily incorporate gasoline-renewable blends only up to 10% renewable fuel content. Above 10%, there are significant constraints. Some of those constraints are physical: for example, there are practical fueling infrastructure related limitations (e.g., the need for different fueling station infrastructure for higher blends) and vehicle compatibility constraints (e.g., the inability to use high ethanol blends in many model year vehicles).[59] Other related constraints stem from a lack of consumer demand for higher-percentage blends. This combination of challenges means that when EPA's renewable-fuel obligation approaches or exceeds the blendwall, there can be dramatic adjustments in RIN price.

As the D.C. Circuit has explained: "beginning in 2013, the nature of the ethanol RIN market changed due to a so-called 'ethanol blendwall' or 'E10 blendwall.' Conventional engines can handle only a certain percentage (about 10%) of ethanol in fuel. In 2013, the statutory renewable fuels volume requirements exceeded the amount of ethanol that the transportation market could absorb. Because of the ethanol blendwall, RIN prices increased in 2013 and began to fluctuate widely."[60]

Beyond these two primary factors of EPA regulatory actions and the blendwall, other developments wholly unrelated to the RIN market's rules can have an impact on RIN pricing. For example, the biodiesel blending tax credit can incentivize additional production and blending of biodiesel, but has only been intermittently extended by Congress; as described below, shifting expectations surrounding the renewal of that tax credit have been linked to RIN price fluctuations.[61] Likewise, increased overall demand for gasoline and diesel can make achieving the

[58] For example, as of December 18, 2018, EPA had issued small refinery waivers for 790 million RINs in the 2016 compliance year, and for 1.46 billion RINs in the 2017 compliance year. Approximately 14.65 billion RINs were retired in the 2017 compliance year, and so EPA's small refinery waivers plainly had an impact on the RIN market, as is illustrated by declining RIN prices throughout most of 2018, when the small refinery exemptions were first reported. These data are available on EPA's RIN data website, https://www.epa.gov/fuels-registration-reporting-and-compliance-help/public-data-renewable-fuel-standard

[59] *See, e.g.*, James H. Stock, Columbia Center on Global Energy Policy, *Reforming the Renewable Fuel Standard*, at 10 (Feb. 2018) ("[F]or a substantial fraction of vehicles, there are questions about whether the engine and fuel systems can handle ethanol blends in excess of E10 either because of vehicle age or because of explicit warnings by some manufacturers against using higher blends. Moreover, the overwhelming majority of retail outlets are set up to sell E10 but not higher ethanol blends. These practical challenges to selling fuel with an ethanol content exceeding 10 percent became known as the E10 blend wall."), *available at* https://scholar.harvard.edu/files/stock/files/cgeprfsreformstock218_1.pdf

[60] *Hermes Consol., LLC v. EPA*, 787 F.3d 568, 573 (D.C. Cir. 2015).

[61] Markel et al., *Policy Uncertainty and the Optimal Investment Decision of Second-Generation Biofuel Producers*, Energy Econ. Vol. 76, at 89, 91 (2018) ("The blender's tax credit was first implemented in

RFS's statutory goals easier, when included prospectively in rule making, by increasing the volume of renewable fuels that can be blended with gasoline before the blendwall is reached.[62] However, because of the percentage-based nature of RVOs, the demand for renewable fuels will increase if transportation fuel demand increases retrospectively compared to the final rule. To the extent surplus RINs are carried forward (the RIN bank), or RIN deficits of individual obligated parties are carried forward, that can also affect the RIN market in the subsequent year. Finally, supply-side constraints such as the continued low volumes of cellulosic fuel production due to technological limitations, can also result in RIN price changes.[63]

Accordingly, the consensus of those who have studied the RFS is that these fundamental attributes of the RIN market drive price volatility:

- "To explain RIN price volatility, one does not need to resort to market irrationality or market manipulation; rather, one need look no further than the supply and demand for biodiesel, the setting of statutory volumes in the RFS, and the history of Congress intermittently extending, or not, the biodiesel tax credit."[64]

- Price changes in the RIN market relate in large part to "[u]ncertainty around potential changes to the Renewable Fuel Standard (RFS)" or other related policies, which "disrupts the logic of the market and creates RINs price movements and volatility not normally seen under similar market conditions."[65]

2005. However, lawmakers allowed the biodiesel blender's tax credit to expire in 2010, 2012, 2014 and 2015. Each year the tax credit is set to expire on December 31, leaving the market uncertain as to whether it will be granted an extension or allowed to expire.").

[62] Because the RFS statute establishes annual renewable fuel targets expressed in terms of absolute volumes, an uptick in total gasoline production and consumption makes compliance easier, because that fixed volume represents a lower percentage of the overall supply of transportation fuel supply. *See* Scott Irwin, *Fixing the RFS Is Getting Easier and Easier*, Farmdoc Daily Vol. 8, at 26 (Feb. 15, 2018), *available at* https://farmdocdaily.illinois.edu/2018/02/fixing-the-rfs-is-getting-easier-and-easier.html (explaining that if the trend of increased gasoline usage in the past five years continues, "[i]t is not out of the realm of possibility for the price of D6 [conventional ethanol] RINs to go back to their pre-2013 level of just a few cents," because the statutory volumes will be back below the blendwall).

[63] Lade et al., *Policy Shocks and Market-Based Regulations: Evidence from the Renewable Fuel Standard*, Am. J. of Agric. Econ. Vol. 100, Issue 3, at 707, 710-11 (Apr. 2018) ("Achieving the mandates laid out in EISA requires overcoming (at least) two significant challenges: *(a)* the development of a commercial-scale advanced biofuel industry; and *(b)* the blend wall. Lagging cellulosic production has plagued the program since its inception.").

[64] Irwin et al., National Bureau of Economic Research, *The Price of Biodiesel RINs and Economic Fundamentals*, at 20 (Dec. 2018), *available at* https://www.nber.org/papers/w25341

[65] Testimony of Paul Niznik, Argus Media, Inc., before the House Energy and Commerce Committee (July 25, 2018), *available at* https://docs.house.gov/meetings/IF/IF18/20180725/108610/HHRG-115-IF18-Wstate-NiznikP-20180725.pdf

- "[T]he uncertainty over the near and longer term future of the RFS has caused tremendous volatility in the RIN market. . . . These price fluctuations appear to be unrelated to any tangible cause other than regulatory and/or political uncertainty."[66]

- "[M]ost RIN price volatility since 2013 can be attributed to ever-changing blending targets and uncertainty regarding future mandate volumes."[67]

- "The basic economics of RIN prices shows why RIN prices are both high and volatile for ethanol fractions above the E10 blend wall."[68] Moreover, "rumors and market guesses," the "complex" "annual rulemaking process," and "extensive and regular litigation" over those annual rules all further contribute to price volatility.[69]

- "Policy uncertainty that manifests as a 'shock' or unanticipated event would be an example of the sort of event that could lead to a [price] jump. For example, in early December 2013, several new federal legislative initiatives were introduced in Congress, following the publication by the EPA in November of a proposed rule for the 2014 volume mandates. Our results suggest that the probability of at least one jump occurring in either the ethanol or biodiesel RINs markets was close to one [i.e., a near certainty] during this period."[70]

- "Major revisions in annual RFS obligations have been associated with sharp movements in RIN price. . . . RFS policy shocks in 2013 led to sharp declines in RIN price . . . . Leading up to and immediately following the presidential election of 2016, RIN price volatility spiked, as RIN market participants adjusted their expectations for the future strength of the RIN program. . . . . [B]iofuel policy uncertainty creates high volatility in RIN price . . . . [E]xpiration and reinstatement of blender tax credits along with annual revisions to the RFS, create volatile RIN prices"[71]

- Another study evaluated EPA's 2013 RFS activity and linked it to a series of price shocks directly attributable to EPA's action: "We study three events surrounding the proposed cuts to the RFS mandates for 2014 and beyond. The first event is the EPA's release of the

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[66] Sandra Dunphy, Waver & Tidwell, L.L.P, Response to Additional Questions for the Record, before the House Committee on Energy and Commerce (Oct. 4, 2018), *available at* https://docs.house.gov/meetings/IF/IF18/20180725/108610/HHRG-115-IF18-Wstate-DunphyS-20180725-SD042.pdf

[67] Testimony of Gabriel E. Lade, Iowa State University, before the House Energy and Commerce Committee (July 25, 2018), *available at* https://docs.house.gov/meetings/IF/IF18/20180725/108610/HHRG-115-IF18-Wstate-LadeG-20180725.pdf

[68] Stock, *Reforming the Renewable Fuel Standard* at 10.

[69] *Id.* at 12.

[70] Charles F. Mason & Neil A. Wilmot, *Price Discontinuities in the Market for RINs*, J. of Econ. Behavior & Org. Vol. 132, at 79, 95, 100 (2016).

[71] Markel et al., *Policy Uncertainty and the Optimal Investment Decision of Second-Generation Biofuel Producers*, Energy Econ. Vol. 76, at 89, 90, 100 (2018).

2013 final rule in August of 2013. In the rule, the EPA indicated for the first time that it would likely reduce the 2014 mandates. Shortly after, a news article leaked a draft of the proposed cuts, which is the second examined event. The final event is the release of the 2014 proposed rule in November 2013 in which the EPA officially proposed cuts to the biofuel mandates. We show that these events led to significant and sudden changes in RIN values. . . . Examples of other policy shocks abound. . . . RINs markets were again subject to 'policy shocks' following the release of the EPA's next three proposed and final rules in 2015 and 2016."[72]

- A follow-on study by the same authors looked at EPA's 2015 and 2016 RFS activity and found that history "repeated itself": "[W]e consider three additional 'policy shocks' that occurred in 2015 and 2016. The first is the long-delayed 2014-2016 Proposed Rule in May 2015. The rules were slightly altered and finalized in November 2015. Our last event is the 2017 Proposed Rules, released in June 2016. . . . The first two events correspond again with sharp changes in RINs prices, while the release of the 2017 Proposed Rules corresponds with a small, but notable, increase in RINs prices."[73]

- "The combination of expensive compliance options beyond the blend wall and uncertainty surrounding the level of the mandates has led to high volatility in RINs markets . . . ."[74]

- "Accusations of manipulation and fraud have been leveled at the RINs market this year. Despite the highly-charged rhetoric, there is actually a fairly straightforward explanation for RINs price increases in 2016. The starting point is . . . the E10 blend wall and related infrastructure constraints. . . . The charge that 'the mother of all short squeezes' has been pushing RINs prices higher does not seem to have much merit."[75]

The impact of regulatory or political developments on RIN prices is further illustrated in the chart appearing on page 16, which shows how prices have shifted up and down in response to political and regulatory activity related to the RFS. The line depicts ethanol RIN prices from 2015 to 2018, based on OPIS data. The numbered events shown on the chart refer to specific political events or regulatory developments that impacted RIN prices. For example:

- Event #1 was EPA's announcement and publication of its final 2014-2016 percentage standards. The final percentage standards for 2016 went above the blendwall for the first time, leading to the sharp increase in prices depicted.

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[72] Lade et al., *Policy Shocks and Market-Based Regulations: Evidence from the Renewable Fuel Standard*, Am. J. of Agric. Econ., Vol. 100, Issue 3, at 707-08, 726 (Apr. 2018).

[73] Lade et al., *Appendix to Policy Shocks and Market-Based Regulations*, at 13-14 (Apr. 2018).

[74] Lade et al., *Designing Climate Policy: Lessons from the Renewable Fuel Standard and the Blend Wall*, Am. J. Agric. Econ., Vol. 100, Issue 2, at 585, 591 (Mar. 2018).

[75] Scott Irwin, *What's Up with RIN Prices?* Farmdoc daily, Vol. 6, at 188 (Oct. 5, 2016), *available at* https://farmdocdaily.illinois.edu/2016/10/whats-up-with-rins-prices.html

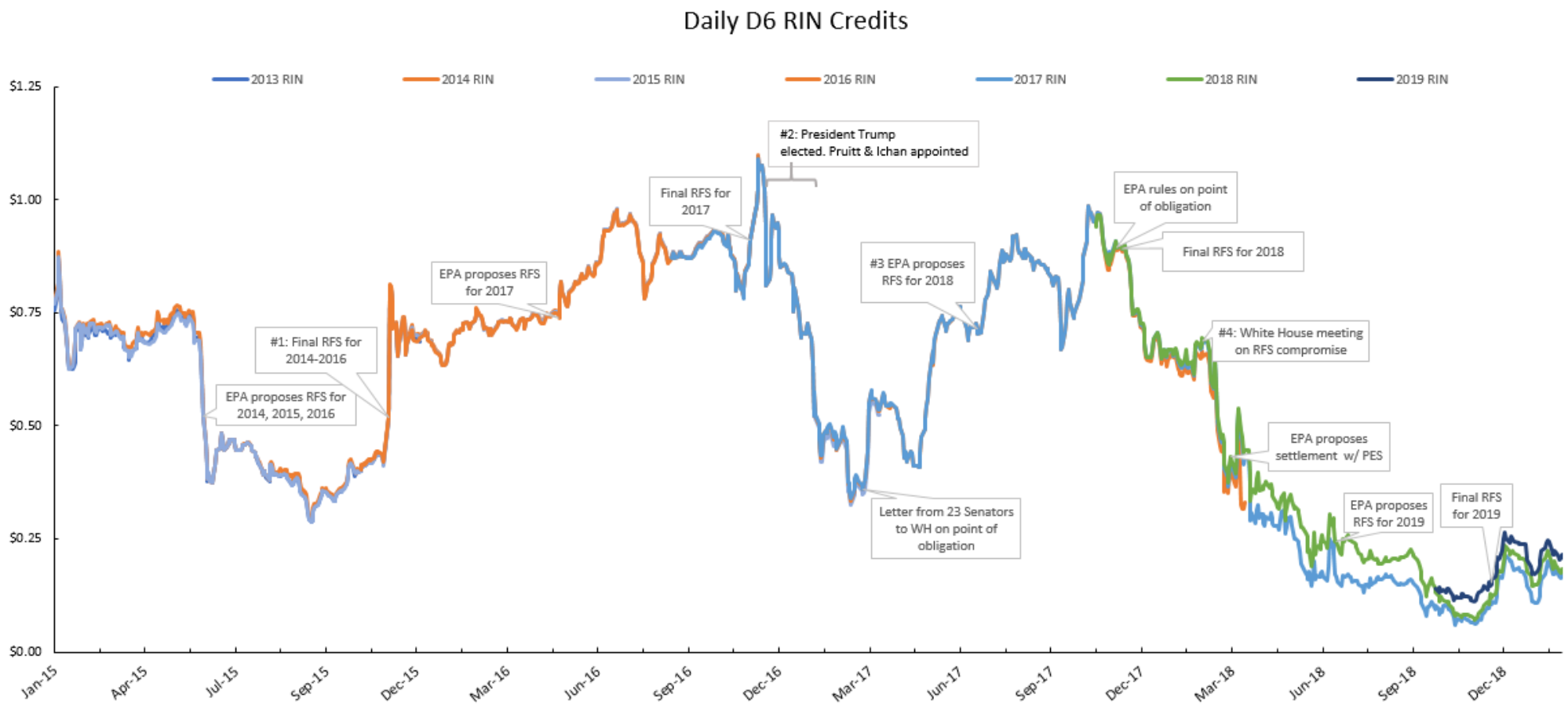
- Event #2 consists of President Trump's victory in the election, announcement of intent to appoint Scott Pruitt as EPA administrator, and appointment of Carl Icahn as a special advisor—all three were expected to attempt to implement policies designed to lower RIN prices, and RIN prices dropped during this period.[76]

- Event #3 was the first proposed annual volume requirements under the Trump Administration. Contrary to some expectations, the Administration's proposal maintained a percentage standard above the blendwall, leading to the increase in RIN prices.

- Event #4 was a White House Meeting between President Trump and a number of senators to discuss a potential RFS compromise, where no deal was reached and where President Trump suggested a price cap on RINs.

At bottom, this broad academic consensus indicates that the fundamental problems with the RFS relate to the blendwall, EPA's imposition of regulatory mandates to use particular volumes of biofuel, policy uncertainty, and ongoing policy changes. The potential market changes proposed in the NERA study will do nothing to address these fundamental market conditions.

[76] *See, e.g.*, Tom DiChristopher, CNBC, *Carl Icahn's Shares in CVR Energy Have Doubled Since Trump Won the Election* (Jan. 27, 2017), *available at* https://www.cnbc.com/2017/01/27/carl-icahns-cvr-energy-stake-doubled-after-trump-won-election.html



Data source: OPIS, used with permission. Event sources: U.S. EPA; www.reuters.com; www.grassley.senate.gov; www.npr.org

B. Absence of Evidence of Hoarding or Manipulation

In response to concerns some have raised regarding the RIN market, the CFTC has evaluated EPA's RIN market data, and has in place a Memorandum of Understanding with EPA allowing the agencies to share confidential information regarding the RIN market.[77] Testifying before Congress, the CFTC Chairman explained that the CFTC was "not able to find any misbehavior in the market."[78] The CFTC also indicated that additional data collection and evaluation would be necessary before it could advise EPA on any potential changes to the RIN market.[79] Likewise, EPA "has not seen evidence of manipulation in the RIN market."[80] In short, there is no concrete evidence of hoarding or market manipulation in the RIN market.

Consistent with EPA's and the CFTC's finding that there is no evidence of market manipulation, NERA's evaluation adduces no direct evidence that market hoarding or manipulation is taking place. Instead, NERA infers the potential for hoarding or manipulation through analysis of certain market trends. NERA, however, ignores alternative explanations for the market trends it observes—explanations that are consistent with the fundamental RIN market features described above.

For example, NERA contends that for short periods of time D6 RIN prices have diverged from D4 RIN prices and suggests this may be due to hoarding.[81] When the blendwall is approached, and there are unlikely to be enough D6 RINs to satisfy the conventional ethanol mandate, one would expect D6 (corn ethanol) RIN prices to approach D4 (biodiesel) RIN prices, because use of biodiesel RINs also satisfies the conventional ethanol mandate due to the "nested" structure of the RINs market, and because there are insufficient D6 RINs to satisfy the D6 mandate due to the blendwall.

Other economists have evaluated this issue and concluded that, as is to be expected once the blendwall is approached, the two RIN prices have closely tracked one another "with the exception of a few brief interludes when it appeared that cuts to the conventional ethanol mandate" might take place.[82] That is logical and consistent with fact that EPA sets demand under the RFS: if public observers believe that EPA will cut the conventional ethanol mandate below the blendwall, D6 RINs should drop significantly in price below D4 RINs, because it should be

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[77] CFTC-EPA MOU (Mar. 17, 2016), *available at* https://www.epa.gov/renewable-fuel-standard-program/cftc-epa-memorandum-understanding

[78] CFTC Chairman J. Christopher Giancarlo, Testimony before the United States Senate Committee on Agriculture, Nutrition, and Forestry (Feb. 15, 2018), at 1:03:35 ("Giancarlo Testimony"), *available at* https://www.agriculture.senate.gov/hearings/state-of-the-cftc-examining-pending-rules-cryptocurrency-regulation-and-cross-border-agreements.

[79] Giancarlo Testimony (Feb. 15, 2018), at 1:08:40.

[80] EPA, Denial of Petitions for Rulemaking to Change the RFS Point of Obligation, No. EPA-420-R-17-008, at 38 (Nov. 2017), *available at* https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100TBGV.pdf

[81] NERA Report at 21-26.

[82] Scott Irwin, *Fixing the RFS Is Getting Easier and Easier*, Farmdoc Daily, Vol. 8, at 26 (Feb. 2018), *available at* https://farmdocdaily.illinois.edu/2018/02/fixing-the-rfs-is-getting-easier-and-easier.html

relatively easy to generate sufficient D6 RINs to cover that reduced conventional ethanol mandate. If those expectations do not bear out, the prices should jump back up.

NERA also argues that "price differentials" where prior-year RINs are priced higher than current-year RINs also demonstrate a market flaw, because purchasers should place a greater value on current-year RINs, which will expire later.[83] However, NERA omits any discussion of longstanding literature observing that these sorts of "price inversions" are common even in conventional physical commodity markets, and represent "the market's signal for producers to sell" their product, because current prices are greater than future prices, meaning producers would be better off selling promptly than holding the physical commodity.[84]

Finally, NERA contends that RIN prices are significantly more volatile "than that of comparable energy markets," such as "oil, ethanol, and natural gas features," and repeatedly compares RINs markets to energy commodity markets.[85] NERA ignores, however, that the RIN market is fundamentally different from those markets due to EPA's setting of demand for renewable fuel as well as the existence of the blendwall. *See also* § IV.A, *infra*.

In short, NERA's conclusion that there is hoarding or market manipulation that plays a significant role in driving up RIN prices and causing volatility is belied by (1) the extensive literature finding that the blendwall and EPA's mandates are the principal causes of volatility, (2) the CFTC's and EPA's conclusions that there is no evidence of market manipulation, and (3) NERA's failure to adequately consider alternative explanations for its results and its inapt comparisons of the RINs market to distinct types of markets.

C. Obligated Parties Are Generally Able to Recover RIN Costs

As noted above, EPA has found that obligated parties, including merchant refiners and small refineries, "are charging more for domestic gasoline and diesel to ensure that they recoup the costs associated" with RFS compliance, and so on average there is no negative economic impact on RIN purchasers.[86] EPA has also noted that even assuming small refineries, which tend to rely on the RIN market, are unable to recoup their compliance costs, the estimated maximum compliance cost-to-sales percentage was at most ".006%," a negligible amount.[87] EPA thus concluded that "there is no net cost to small refiners resulting from the RFS program."[88] This is

[83] NERA Report at 16-20.

[84] Yoon & Brorsen, *Market Inversion in Commodity Futures Prices*, J. of Agric. and Applied Econ., Vol. 34, Issue 3, at 459, 474 (Dec. 2002), *available at* https://ageconsearch.umn.edu/bitstream/15077/1/34030459.pdf.

[85] NERA Report at 8, 11-15.

[86] EPA, Denial of Petitions for Rulemaking to Change the RFS Point of Obligation, No. EPA-420-R-17-008, at 23 (Nov. 2017), *available at* https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100TBGV.pd

[87] EPA, Renewable Fuel Standard Program – Standards for 2018 and Biomass-based Diesel Volume for 2019: Response to Comments, No. EPA-420-R-17-007, at 221 (Dec. 2017), *available at* https://nepis.epa.gov/Exe/ZyPDF.cgi/P100TDDH.PDF?Dockey=P100TDDH.PDF.

[88] EPA Screening Analysis, No. EPA-HQ-OAR-2017-0091-4974, at 11 (Nov. 30, 2017).

not a new finding. EPA reached the same conclusion in 2015,[89] and explained this analysis to the GAO in 2014.[90]

> Most recently, EPA reiterated this point in November 2018, explaining:
>
> > Commenters provided no new credible evidence to indicate that they do not or cannot recover the cost of RINs. Accordingly, we do not believe that the price paid for RINs is a valid indicator of the economic impact of the RFS program on these entities, since a narrow focus on RIN price ignores the fact that these parties are recovering the cost of RINs from the sale of their petroleum products. When the ability for obligated parties to recover the costs associated with acquiring RINs is considered, we do not believe that RIN prices have had a negative economic impact on obligated parties.[91]

These consistent EPA findings indicate that there is unlikely to be any significant economic impact on the vast majority of obligated parties from variations in the RIN market, because the costs of RINs are generally recovered through sales of gasoline and diesel. Of course, if parties that needed to purchase large quantities of RINs were able to secure RINs at a lower cost due to regulatory action, that would help their individual bottom line. But the desire of some market participants to gain a windfall on RIN pricing by skewing the market in favor of RIN purchasers is not a proper basis on which to reorder the RIN market. Moreover, if those entities short on RINs truly thought that RIN prices were inflated and manipulated, they presumably would have invested in their own RIN generation infrastructure to avoid the need to rely on the RIN market.

IV. A Comparison of the RIN Market to Other Markets

A. Commodity Futures Markets Regulated by the CFTC

Arguments that equate the RIN market to CFTC-regulated commodity futures markets are fundamentally flawed and do not support the radical alterations to the RIN market that some have suggested, for two basic reasons.

First, the CFTC's regulatory and enforcement authority relates to a market structure that is fundamentally different from the structure of the RIN market. The CFTC has regulatory and enforcement jurisdiction over commodity futures, which derive their value from the underlying spot market. While the CFTC has enforcement jurisdiction over the underlying spot market, that authority is limited to enforcement actions for fraud or manipulative activities. The RIN market

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[89] 80 Fed. Reg. 77,420, 77,516 (Dec. 14, 2015) ("[O]bligated parties, including small entities, are generally able to recover the purchase cost of the RINs necessary for compliance through higher sales prices of the petroleum products they sell than would be expected in the absence of the RFS program.").

[90] Letter from EPA to GAO (Mar 5., 2014), GAO Report No. 14-249, *available at* https://www.gao.gov/assets/670/661710.pdf

[91] EPA, *Renewable Fuel Standard Program – Standards for 2019 and Biomass-Based Diesel Volume for 2020: Response to Comments*, at 13-15 (Nov. 2018), *available at* https://www.epa.gov/sites/production/files/2018-11/documents/420r18019.pdf

could be considered, at most, a spot market. Most significantly, the markets underlying commodity futures operate according to basic supply and demand principles, including the axiom that as the price increases, demand decreases. Supply and demand in commodity futures markets are affected by a multitude of factors, and are not set primarily by regulatory fiat as in the RIN market.

Thus, supply and demand function differently in the RIN market than the commodity futures markets. Through regulatory action, the EPA establishes the demand for RINs every calendar year. There is uncertainty as to what that demand will be until EPA's rules are finalized each year (and to some extent thereafter, as EPA's rules are often challenged in court). Once that annual RFS rule is finalized, demand is set. It is mostly fixed, and does not vary with RIN price, with relatively minor exceptions.[92]

Second, and closely related to the above, the alterations that some have proposed to the RIN market, such as position limits and additional disclosure requirements, based on an analogy to the CFTC ignore that the CFTC imposes these requirements only as to *futures* contracts—not in connection with the spot market.[93] Futures contracts are traded on regulated exchanges and do not require actual delivery of the underlying commodity.[94] By contrast, forward contracts are bilateral in nature, do require delivery of the underlying commodity at a specified date, and are

[92] For example, obligated parties may carry over a RIN deficit for one year, but no longer. 40 C.F.R. § 80.1427(b). In addition, EPA may grant small refinery exemptions after establishing the annual renewable volume obligation.

[93] *See United States v. Reliant Energy Servs., Inc.*, 420 F. Supp. 2d 1043, 1061 (N.D. Cal. 2006) ("Spot market transactions are not presently subject to regulation under the commodity laws (other than for price manipulation and certain position limits)." (citation omitted)).

[94] While some commodity futures contracts are structured to settle through physical delivery, such contracts can always be offset without delivery. Indeed, very few commodity futures contract settle through delivery and the majority of commodity futures contracts settle financially.

part of the spot market.[95] Contracts for the sales of RINs at a future date are forward contracts, and essentially no RIN futures are traded.[96]

These fundamental differences between the two types of markets indicate that EPA should take a cautious approach and not simply import CFTC rules for futures markets into the RIN spot market context. Such dramatic changes could at best be ineffective and at worst could destabilize and impair the RIN market, given the fundamental differences between RINs and typical commodities.

Moreover, any restructuring of the RIN market would be premature. As noted above, the CFTC has evaluated EPA's RIN market data and was "not able to find any misbehavior in the market."[97] The CFTC Chairman also testified recently that additional data collection and evaluation would be necessary before it could advise EPA on any potential changes to the RIN market.[98] The CFTC is continuing to work with EPA in combatting fraud in the RIN market and otherwise advising EPA on RIN market issues pursuant to a 2016 MOU.[99]

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[95] The Commodity Exchange Act vests the CFTC with authority to regulate "contracts of sale of a commodity for future delivery," typically called "commodity futures contracts." 7 U.S.C. § 2(a)(1)(A). The term "future delivery" is defined not to include any sale of any cash commodity for deferred shipment or delivery. *Id.* § 1a(26). While trading in commodity futures is regulated by the CFTC, sales of a cash commodity for deferred shipment or delivery, otherwise known as a "commodity cash forward contract"—and sometimes called a spot, cash, physical, forward transaction, or simply a "forward"—are not so regulated. *See id.* § 1a(11); Elizabeth D. Lauzon, *What are "Contracts of Sale of a Commodity for Future Delivery" Within Meaning of Commodity Exchange Act (7 U.S.C.A. §§ 1 et seq.)*, 182 A.L.R. FED. 559 (2002). The prevailing rule in most jurisdictions is that "courts must focus on whether there is a legitimate expectation that physical delivery of the actual commodity by the seller to the original contracting buyer will occur in the future," in which case a contract is deemed to be a forward contract. *Andersons, Inc. v. Horton Farms, Inc.*, 166 F.3d 308, 318 (6th Cir. 1998); *CFTC v. Erskine*, 512 F.3d 309, 316 (6th Cir. 2008) ("[T]he prevailing rule . . . focuse[s] on whether the putative purchaser had a subjective intention of actually receiving delivery of the underlying commodity—if so, it [is] deemed a 'forward contract," but if not, it [is] deemed a 'futures contract." (citing *CFTC v. Co Petro Mktg. Grp., Inc.*, 680 F.2d 573 (9th Cir. 1982))). The CFTC does retain enforcement authority over fraud and market manipulation in spot markets. It is important to note that the "fraud" referred to in the RIN market relates to the creation of fraudulent or fake RIN contracts. This is different from the fraud that the CFTC has enforcement authority over in the spot markets (*e.g.*, misstatements regarding a forward contracts performance or the price of a given contract).

[96] Giancarlo Testimony (Feb. 15, 2018), at 1:03:20 (there is "virtually no" trading in RINs futures).

[97] *Id.* at 1:03:40.

[98] *Id.* at 1:09:50.

[99] CFTC-EPA MOU (Mar. 17, 2016), *available at* https://www.epa.gov/renewable-fuel-standard-program/cftc-epa-memorandum-understanding. It is important to note that the "fraud" referred to in the RIN market relates to the creation of fraudulent or fake RINs. This is different from the fraud that the CFTC has enforcement authority over in the spot markets (*e.g.*, misstatements regarding a forward contracts performance or the price of a given contract).

B. Other Environmental Credit Markets

Other environmental credit markets are similar to the RIN market in some respects, and different in other respects. We have not identified any U.S. environmental credit market that adopts the suite of changes suggested by some commentators (e.g., banning non-regulated parties from participating, imposing position and holding limits, requiring real-time retirement of instruments). Changes of this kind are particularly inappropriate in the context of a credit that, like RINs, may only be used for two compliance years—an exceedingly short shelf-life compared to other major environmental markets—and where annual compliance demonstrations for the full scope of an entity's obligation are required. Scholars have recognized that "attempts to 'corner' the market or otherwise manipulate prices" can pose a greater risk where credits have lengthier lives.[100] This makes intuitive sense, as the incentive to hoard instruments dissipates significantly if they will have no value after a certain date.

Environmental credit markets generally exhibit significant price volatility, which is regularly attributed to the fact that in all of these markets, as in the RIN market, demand is established by regulatory action. They are thus subject to significant price shocks as a result of, for example, new information being released by the regulator on its intention to revise the program and the contours of any proposed regulatory amendments; actions taken by parties and courts in lawsuits concerning elements of the program or its legality; or statements of a political body regarding the future of or changes to a program or the introduction of legislation to such ends. Additionally, many have observed that, due to the fact that demand is created by government mandate, these environmental markets have "vertical demand curves"—i.e., the price is very low when supply is abundant, and very high when supply is tight.[101] "The properties of vertical demand curves are well understood. Given fixed demand, the supply curve determines price. Any significant change in supply will cause price to change significantly. The result is volatile prices . . . ."[102] Accordingly, these other markets do not support the dramatic alterations of the RIN market that some have suggested.

Below we discuss several of these markets, focusing on the two that bear the strongest resemblance to the RIN market—the California Low Carbon Fuel Standard and carbon markets—because they apply to transportation fuel suppliers and result in costs that are passed along to consumers, but also briefly discussing other environmental markets—the Renewable Energy Credit and Regional Greenhouse Gas Initiative markets—which only apply to the electricity sector.

1. Low Carbon Fuel Standard

California's Low Carbon Fuel Standard ("LCFS") scheme does not support the various RIN market changes some advocate for. To begin with, the LCFS does not adopt any position or holding limits.

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[100] Frank A. Felder & Colin J. Loxley, *The Implications of a Vertical Demand Curve in Solar Renewable Portfolio Standards,* at 14, *available at* https://pdfs.semanticscholar.org/5c8d/732407c4db37d911f4df738506d583bf5a09.pdf

[101] *Id.* at 4.

[102] *Id.* at 5.

Further, the definition of a "regulated entity"[103] under the LCFS is much broader than the definition of "obligated party" under the RFS. As a consequence, the LCFS's prohibition on anyone who is not acting on behalf of a regulated entity from holding or purchasing credits[104] is simply unsuitable to, and much narrower than, the proposed prohibition on anyone other than an obligated party from purchasing separated RINs.

In addition, the LCFS has fundamental differences from the RFS market. Notably, credits may be retained indefinitely and have no expiration.[105] These differences are critical, and support the notion that, within the LCFS market, additional transparency and limitations on who may purchase credits and on how long they may be held might be needed, because LCFS credits could potentially be hoarded. By contrast, RINs may only be used to demonstrate compliance in a two-year period and compliance must be demonstrated annually, subject to a limited deficit carryover.[106]

The LCFS program does make public a variety of data quarterly, including total deficits and credits generated during the past quarter, total outstanding credits in the possession of regulated parties and total number of deficits carried over, and monthly average credit prices.[107] EPA's recent release of a dashboard of RIN trading data includes much of this type of information, including information on weekly average volumes and prices of traded RINs.[108]

Finally, the LCFS's limitations on who may purchase credits and the mandatory public disclosures have not resolved the LCFS's market volatility. As one report has noted, the LCFS market demonstrates "high volatility," with substantial variance in credit prices over the years.[109] Another study observed: "Outside the RFS, the price of tradeable credits for California's Low Carbon Fuel Standard (a similarly structured fuel mandate) has experienced similar volatility

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[103] Cal. Code Regs. tit. 17, § 95481(a)(121); *see also id*. § 95483.1 (allowing entities meeting certain criteria, including, *inter alia*, entities providing "clearing services" to "opt into" the LCFS program and thereby become a regulated entity able to purchase and hold LCFS credits, subject to limitations).

[104] *Id.* § 95487(a)(1)(B).

[105] *Id.* § 95487(a)(1)(A).

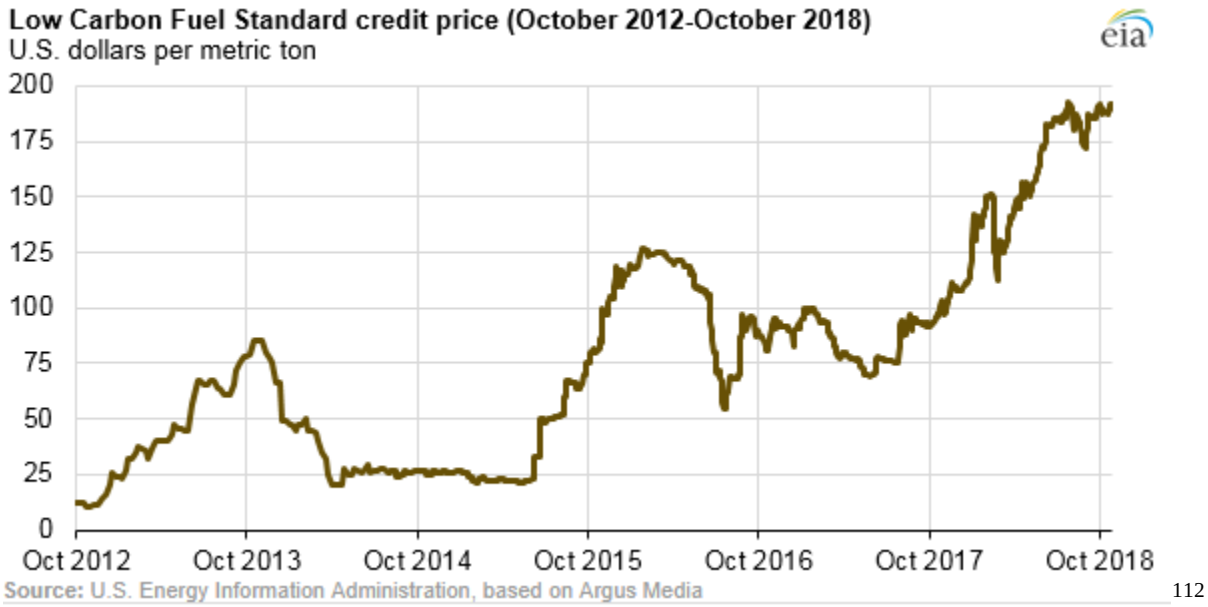
[106] In contrast, as a consequence of the "credit clearance market" recently added to the LCFS, a party who fails to retire sufficient credits prior to the year-end compliance deadline to obtain its pro rata share of the number of credits made available at a capped price in a state-run clearance market by July 31 of the subsequent year and, if it still is unable to do so, provides that the party will be deemed in compliance if it retires the remaining balance of its annual obligation, with interest, within five years. *See id*. § 95485(c)(1), (5).

[107] Cal. Code Regs. tit. 17, § 95487(c).

[108] EPA, *EPA Updates RFS Website to Improve Transparency* (Sept. 20, 2018), *available at* https://www.epa.gov/newsreleases/epa-updates-rfs-website-improve-transparency

[109] Miller et al., Goldman School of Public Policy, *Improving Market Certainty in California's Low Carbon Fuel Standard*, at 7 (May 2017), *available at* http://cgregorymiller.com/wp-content/uploads/2017/07/IPA_ARB-Final-Report_FinalVersion.pdf

following major court decisions and policy announcements."[110] This volatility is depicted in the figure below. For example, in November 2013 CARB "froze" the standards in light of a court decision, leading to a drop in price until CARB began a process to re-adopt the LCFS in July 2015.[111] In sum, because the LCFS involves an instrument issued by a government agency and demand for that instrument created by that same agency, it too is subject to the same volatility that has been observed in the RIN market.



[112]

2. Carbon Markets

California's cap-and-trade program and the Regional Greenhouse Gas Initiative ("RGGI") are both schemes that provide for the trading of carbon allowances. Neither supports the proposed radical alterations to the RIN market.

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[110] Lade et al., *Policy Shocks and Market-Based Regulations: Evidence from the Renewable Fuel Standard*, Am. J. of Agric. Econ. Vol. 100, Issue 3, at 707, 726. *See also* California Air Resources Board (CARB), Monthly LCFS Credit Price and Transaction Volume, slide 4 of Data Dashboard, *available at* https://www.arb.ca.gov/fuels/lcfs/dashboard/dashboard.htm

[111] *See* Sonia Yeh, Julie Witcover, *Status Review of California's Low Carbon Fuel Standard* (Apr. 2015), *available at* https://steps.ucdavis.edu/wp-content/uploads/2017/05/2015-UCD-ITS-RR-15-07.pdf; Yeh et. al., *A Review of Low Carbon Fuel Policies*, Energy Policy 97, at 226 (2016) ("Credit prices increased to $80 in 2013 as the standard's stringency increased, then declined to around $20–$25 per credit while court cases about the regulation were ongoing. Credit prices increased again beginning in July 2015, after ARB began the proceeding to re-adopt the LCFS and re-instate a compliance schedule . . . .").

[112] Energy Information Administration, *Renewable Diesel Is Increasingly Used to Meet California's Low Carbon Fuel Standard* (Nov. 13, 2018), *available at* https://www.eia.gov/todayinenergy/detail.php?id=37472

Under California's cap-and-trade program,[113] producers or importers of transportation fuels incur a compliance obligation for each ton of emissions (denominated in metric tons of carbon dioxide equivalent ($MTCO_2e$)) resulting from the combustion of the fuels they introduce into commerce.[114] Thus, petroleum refiners are in a similar position in the California carbon market as are refiners who must purchase RINs to comply with the RFS: For every volume of fuel produced or sold into California, a refiner must acquire a number of instruments— "allowances"—and the associated cost is generally passed on to customers in the price at the pump.[115]

California's program has a compliance structure that is significantly different from that of the RIN market: a covered entity's full compliance obligation only needs to be satisfied every three years (with a small—30 percent—annual surrender obligation), and allowances *never* expire.[116] Indeed, a central element of program design was to allow covered entities the flexibility of multi-year compliance periods and unlimited banking of allowances. Thus, for similar reasons as discussed in connection with the LCFS program above, the California carbon market poses a potential for hoarding that is not present in the RIN market due to the annual compliance obligation and short lifespan of RINs.

This potential for hoarding in the California carbon market caused the California Air Resources Board to impose "holding" (i.e., position) limits on the number of allowances of current and future vintages that can be held by any market participant and its corporate affiliates.[117] These holding limits do not apply to any futures or forward contracts. They also include a limited exemption,[118] which essentially allows a covered entity to hold allowances in an amount equivalent to its accrued emissions free of the limits' restrictions, once those allowances are transferred to its compliance account, from which they cannot be transferred and can only be used to satisfy the entity's obligation. A number of covered entities and, most prominently, the state's petroleum refiners have argued that the holding limits are extremely restrictive and make it very difficult for them to obtain the instruments they need to comply and should therefore be eliminated or loosened

[113] California's cap-and-trade program is implemented as part of the Western Climate Initiative (WCI), wherein linked jurisdictions, which currently include the Province of Québec and also included the Province of Ontario for a short period in 2018, hold joint auctions of allowances. Although market participants cannot distinguish between allowances issued by one jurisdiction or the other and the joint market essentially functions as a single market, we refer to the joint WCI market as the "California carbon market."

[114] Cal. Code Regs. tit. 17, §§ 95811(d), 95812(d)(1).

[115] OPIS reports "Cap-at-the-Rack" prices, in cents per gallon, representing the implied cost of allowances passed along in sales at the rack. *See* OPIS Carbon Market Report at 3-4 (Jan. 4, 2019), *available at* https://www.opisnet.com/wp-content/uploads/2019/01/carbon-market-report-sample.pdf

[116] Cal. Code Regs. tit. 17, §§ 95840, 95922.

[117] *Id.* § 95920.

[118] *Id.* § 95920(d)(2).

significantly.[119] Market observers, however, have argued that even these restrictions may not be adequate to shield the market from manipulation.[120]

To manage their compliance obligation without violating the holding limits, large covered entities have often found it necessary to engage in forward or futures transactions with liquidity providers, often banks, which agree to provide the allowances they will need for compliance when they need them, while hedging price risk. These "cost-of-carry" transactions are facilitated in part by the program's escalation of the auction reserve (or "floor") price, which rises by five percent plus the rate of inflation each year,[121] making such transactions an attractive investment for banks. As a consequence, a robust secondary market has developed for exchange-cleared over-the-counter and futures contracts on the Intercontinental Exchange.[122]

The development of this secondary market illustrates an inherent problem with the suggested suite of RIN market changes: In the California market, the holding limit was imposed to address the risk of hoarding created by the flexibility afforded by multi-year compliance periods and unlimited banking of instruments. The strictures imposed on covered entities by the holding limits then caused—indeed, necessitated—robust participation in the market by third-party liquidity providers in order to assure that covered entities can accrue a sufficient number of allowances to satisfy their compliance obligations and hedge price risk, without running afoul of the holding limit. (The agency itself has suggested forward procurement contracts as a means of assuring large entities can obtain the allowances they need without violating the holding limit.[123])

In contrast, for the RIN market, where the short shelf-life of RINs and annual compliance demonstration significantly reduce any risk of hoarding, proponents of market reform have nevertheless proposed the imposition of position limits, while at the same time proposing to restrict purchase of separated RINs to obligated parties and limiting the amount of time that non-obligated

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[119] *See*, *e.g.*, Western States Petroleum Association, Comments on Proposed Changes to ARB Regulations: Mandatory Reporting Rule (MRR), Cost of Implementation Rule (COI), and Cap and Trade (C/T) (Sep. 15, 2014), at 8 ("WSPA continues to be concerned that the current holding and purchase limits are extremely restrictive."), *available a*t https://www.arb.ca.gov/lists/com-attach/17-capandtrade14-AHdXIgd2VmRQCVAz.pdf

[120] *See* Borenstein et al., *Report of the Market Simulation Group on Competitive Supply/Demand Balance in the California Allowance Market and the Potential for Market Manipulation*, Energy Institute at Haas Working Paper no. 251, at 76-99 (July 2014) (explaining how the limited exemption to the holding limit creates a risk of withholding and market manipulation and proposing market reforms to reduce this risk), *available at* https://ei.haas.berkeley.edu/research/papers/WP251.pdf

[121] *See* Cal. Code Regs. tit. 17, § 95911(c)(3)(A).

[122] *See* Intercontinental Exchange, California Carbon Allowance Vintage 2019 Future (Feb. 12, 2019) (setting forth contract specifications for physical delivery of California Carbon Allowances), *available at* https://www.theice.com/products/53169040/California-Carbon-Allowance-Vintage-2019-Future

[123] *See* California Air Resources Board, Regulatory Guidance Document, Chapter 5 at 41 (Dec. 2012) (suggesting that a "utility can meet its forward commitments [to deliver allowances to generators] within the holding limit by," *inter alia*, "[u]sing forward procurement contracts with delivery dates close to the date the utility must make a transfer."), *available at* https://www.arb.ca.gov/cc/capandtrade/guidance/chapter5.pdf

parties may hold RINs. This would essentially foreclose third parties and liquidity providers from playing the critical role they have played within the California market, allowing covered entities to manage their compliance obligation without violating their holding limits. It is therefore entirely possible that, if the suite of proposed RIN market reforms were instituted, the same refiners who had advocated for such reforms would find themselves in a double-bind, with no ability to turn to other market participants to structure transactions that would enable them to hedge price risk and obtain the RINs they need while complying with the position limits.

Significant price volatility has not been observed in California's market due to the program's auction reserve or "floor" price,[124] which essentially prevents additional allowances from entering the market if demand should fall below the floor price. Demand in the California market has nevertheless been subject to the same type of policy "shocks" observed in other environmental markets. In particular, as a consequence of the legal risk presented by a lawsuit that challenged the program as an unlawful tax, several quarterly auctions failed to clear, with a significant number of allowances remaining unsold.[125] Once that lawsuit was resolved,[126] and the future of the program was confirmed by the California legislature through 2030,[127] demand stabilized and the auctions have continued to clear above the floor. Thus, even with artificial constraints on supply created by both an absolute "floor" and "soft" and "hard" ceilings on the price at which allowances may enter the market,[128] the California carbon market nevertheless experienced volatility in demand, with abrupt drop-offs in demand during successive quarterly auctions attributable to participants' assessment of legal and political risks to the program's durability.[129]

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[124] Borenstein et al., *Expecting the Unexpected: Emissions Uncertainty and Environmental Market Design*, Energy Institute at Haas, Working Paper 274R, at 2-3 (June 2018), *available at* https://ei.haas.berkeley.edu/research/papers/WP274.pdf

[125] For an illustration of the number of allowances that remained unsold as a consequence of the perceived legal risk to the program's continued implementation, *see* Chris Busch, *Oversupply Grows in the Western Climate Initiative Carbon Market* (Dec. 2017), at 15, Figure 1, *available at* https://energyinnovation.org/wp-content/uploads/2018/02/WCI-oversupply-grows-February-update.pdf

[126] *Cal. Chamber of Commerce v. State Air Resources Bd.*, 10 Cal. App. 5th 604 (2017).

[127] Assembly Bill (AB) 398 (2017) (amending the California Global Warming Solutions Act of 2006 (AB 32), *inter alia*, "extend the [cap-and-trade program] from January 1, 2021, to December 31, 2030, inclusive"); Cal. Health and Safety Code § 38501(i).

[128] The California program includes both an "allowance price containment reserve," which operates as a "soft" collar on allowance prices by making additional allowances available only to covered entities at fixed prices, as well as a "hard" price ceiling, at which an unlimited number of metric tons are made available to covered entities at a fixed price. *See* Cal. Code Regs. tit. 17, § 95913 (establishing process for sales of allowances from the allowance price containment reserve); Cal. Health and Safety Code § 38562(c)(2)(A)(ii)(II) (requiring that CARB "shall offer covered entities additional metric tons at the price ceiling if needed for compliance.").

[129] Chris Busch, *Recalibrating California's Cap-and-Trade Program to Account for Oversupply: an original quantitative analysis and policy recommendations*, at 2 Fig. 1, 4 (Mar. 2017), *available at* https://energyinnovation.org/wp-content/uploads/2017/04/RecalibratingCA_Cap-Trade_2017.pdf

Similar to the California carbon market, RGGI likewise has a three-year compliance period and allows for allowances to remain banked indefinitely.[130] Yet RGGI imposes no position limits on market participants and allows for broad participation in the market by entities without a compliance obligation. Despite the absence of such restrictions, the RGGI market monitor has found "no evidence that hoarding is a significant concern."[131] RGGI has seen significant volatility in 2016 and 2017, some of which was attributable to announced changes in program rules.[132]

3. RECs

Renewable Energy Credits/Certificates ("RECs") in use in many state electricity markets bear some similarities to RINs. They are generated as an attribute of renewable electricity production, represent the renewable aspects of such electricity, and once generated can be traded separately from the underlying electricity. RECs are a core component of state Renewable Portfolio Standards, which establish minimum quantities of electricity that must be generated from various types of renewable electricity. For example, California requires, after 2021, for at least 33% of retail electric sales to be from renewable sources, with compliance demonstrated by retirement of RECs.[133] Accordingly, demand for RECs is established by regulation.

RECs markets have generally been observed to exhibit price volatility. For example, one paper recounts price drops from above $300 a credit to under $50 within an 18 month period in both Ohio and Pennsylvania.[134] Much of this volatility has been attributed to the fact that the government regulators establish demand-side mandates, just as in the RFS program.[135] As another scholar has explained: "Typically RPS annual requirements are fixed and they do not vary with the price of RECs, although they may increase over time[.] The result is that REC prices are unnecessarily volatile, result in uncompetitive market outcomes, increase the cost of solar financing and therefore the cost of RECs, and make it more difficult to evaluate solar policy."[136]

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[130] RGGI, Model Rules §§ xx-1.2, xx-6.6, *available at* https://www.rggi.org/sites/default/files/Uploads/Design-Archive/Model-Rule/2017-Program-Review-Update/2017_Model_Rule_revised.pdf

[131] RGGI, *Annual Report on the Market Allowances for CO2:2017*, at 42 (May 2018), *available at* https://www.rggi.org/sites/default/files/Uploads/Market-Monitor/Annual-Reports/MM_2017_Annual_Report.pdf

[132] *Id*. at 22.

[133] *See* CPUC, *33% RPS Procurement Rules*, *available at* http://www.cpuc.ca.gov/RPS_Procurement_Rules_33/

[134] Khazaei et al., *Adapt: A Price-Stabilizing Compliance Policy for Renewable Energy Certificates*, at 5 (Dec. 2016), *available at* https://pdfs.semanticscholar.org/48c6/b857de68ff9f695fb8e7af306730ee1e9710.pdf

[135] *Id.* at 2.

[136] Frank A. Felder & Colin J. Loxley, *The Implications of a Vertical Demand Curve in Solar Renewable Portfolio Standards*, at 1-2, *available at* https://pdfs.semanticscholar.org/5c8d/732407c4db37d911f4df738506d583bf5a09.pdf

The similarities between RECs and RINs—in terms of both the nature of having demand created by regulatory mandate and the resulting volatility in prices—prove inapt NERA's assumption that the RIN market should behave like other physical fuel commodity markets.

V. Flawed Potential Alterations of the RIN Market

A number of potential drastic alterations of the RIN market have been proposed. These suffer from a variety of legal, economic, and practical flaws. As a threshold matter, these various proposals are founded on a mistaken premise: that hoarding and market manipulation are driving up RIN prices and causing price volatility. Both EPA and the CFTC have made clear that they do not have any information suggesting that hoarding or manipulation is affecting the RIN market. Moreover, the consensus in the literature that is the blendwall and EPA's mandates are the drivers of volatility and high prices. In the absence of evidence of hoarding or manipulation, it would be imprudent for EPA to make major changes to the operation of the RIN market, which has been in place for over a decade and has created significant reliance interests based on its longstanding structure. That is particularly so given EPA's repeated findings that obligated parties, including small and merchant refiners that are "short" on RINs, generally recover the costs of the RINs they purchase in the gasoline they sell.

Indeed, precedent from other markets suggests regulators should be cautious in engaging in significant changes to longstanding market rules because some participants are unhappy with high prices or periods of volatility. For example, the Federal Energy Regulatory Commission ("FERC") has explained, in the context of electricity markets, that "[w]hen market-based rates exceed cost-based rates, it is not market failure but rather a signal for the construction of new generation and/or transmission, as well as the implementation of demand-side solutions," and noting that altering the rules in an attempt "mute[] the price signals of the market," would "stifle[] efficiency," "create[] tremendous uncertainty," and "inhibit new entry" of entities into the market.[137] The D.C. Circuit agreed with FERC's analysis that these types of changes would "restrain legitimate market revenues earned by some generators" without a finding that those generators are exercising market power and would stifle the necessary price signaling function served by market-based rates.[138] Unlike electricity markets, generation of additional RINs is not readily possible by all market participants due to the blendwall, so high RIN prices might signal the need for EPA to lower its mandate levels, rather than alter the market's basic rules. Scholars have suggested similar solutions in the context of RECs, indicating that when prices are high, the RPS requirement should be decreased, to reduce demand—a scheme that is already in use in the context of electricity capacity markets.[139]

[137] Order Denying Complaint, *Blumenthal v. ISO New England*, ¶ 85 (FERC Oct. 11, 2006).

[138] *Blumenthal v. FERC*, No. 07-1130, slip op. at 17 (D.C. Cir. Jan. 23, 2009).

[139] Frank A. Felder & Colin J. Loxley, *The Implication of a Vertical Demand Curve in Solar Renewable Portfolio Standards*, at 10.

A. Prohibiting or Limiting Non-Obligated Parties' Ability to Engage in RIN Trading

Some have called for a ban on non-obligated parties holding or trading RINs. EPA rejected this approach on multiple grounds when it originally designed the RIN market in 2007. EPA noted that prohibiting non-obligated parties from engaging in trading would in fact *increase* any risk of market manipulation, by consolidating market power.[140] EPA also explained that allowing non-obligated parties to trade in RINs would facilitate market liquidity and make it *easier* for obligated parties to obtain RINs.[141] That is because independent brokers and other traders in RINs could facilitate trading in RINs, particularly from smaller non-obligated RIN generators (e.g., blenders) that might otherwise not be capable or economically incentivized to engage in RIN trading on their own with obligated parties.[142] EPA has also observed that there was little risk of hoarding because RINs' "limited life" of two years before they must be retired.[143] As discussed above in the context of other environmental credit markets, EPA's analysis is well-founded: third-parties play an important role in ensuring liquidity, and hoarding is unlikely given the nature of the RIN market.

The inability of third parties to trade RINs would also have other negative impacts on the RIN market. Decreased liquidity would reduce or eliminate the ability of both RIN generators and obligated parties to engage in hedging.[144] Hedging is important for obligated parties to reduce uncertainty: for example, an obligated party could enter into a contract with a RIN broker to pay a fixed price months in the future for a fixed quantity of RINs, limiting the obligated party's exposure to potential fluctuations in the RIN market. Reducing the number of participants in the market would reduce the opportunities for parties to engage in hedging because there would be fewer counterparties available with which to transact. Decreased liquidity would also result in reduced price discovery, given the presence of fewer market participants and transactions.

B. Real-Time Compliance

Another potential change would be to require real-time demonstration of compliance by obligated parties. To begin with, it is far from clear that this change would be consistent with the statute, which requires compliance on "an average annual basis," and not more frequently.[145] EPA has thus made clear from the beginning of the RFS program that because the statutory renewable fuel volumes "are required by the Act to be consumed in whole calendar years, each obligated party must likewise calculate its [renewable volume obligation] on an annual basis."[146]

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[140] 72 Fed. Reg. 23,900, 23,944 (May 1, 2007).

[141] *Id.*

[142] *Id.*

[143] *Id.*

[144] Providing exemptions for bona-fide hedging might reduce this problem, but would introduce unnecessary complexities regarding the nature of that exception and disputes over its applicability in various circumstances.

[145] 42 U.S.C. § 7545(*o*)(2)(A)(i).

[146] 72 Fed. Reg. at 23,932.

Moreover, we are unaware of *any* environmental credit market where real-time compliance is required. As a practical matter, real-time compliance would impose significant cost and operational burdens on both obligated parties and EPA to continually ensure compliance. Real-time compliance would also be problematic in that there is significant seasonal variation in gasoline demand, and short-term events (e.g., refinery outages) could cause still further variation. This variation also points to another problem with real-time compliance: it would significantly reduce, if not eliminate, the flexibility of obligated parties to respond to unexpected developments (e.g., refinery shutdowns, surges in gasoline demand). Indeed, EPA has acknowledged that calculation of an obligated party's compliance obligations is "necessarily retrospective, since the total gasoline volume that it produces in a calendar year will not be known until the year has ended," and that "unforeseen circumstances (e.g., hurricane, unit failure, etc.)" can affect compliance obligations.[147] Thus, real-time compliance would impose unnecessary costs on obligated parties and on the RIN market as obligated parties would need to hastily act to buy or sell RINs to address these short-term fluctuations. In short, real-time compliance does not appear to be a viable market reform.

C. Public Disclosure of RIN Holdings

Another proposal would require public disclosure of RIN holdings once certain thresholds were exceeded. Requiring public disclosure would undermine the operation of the RIN market, because confidential business information of participants would be disclosed. That would allow competitors (particularly RIN purchasers) to "squeeze" those who have significant RIN holdings, particularly in light of RINs' limited lifespan. EPA has already increased transparency into RIN markets by making more data available online, and there is no indication that additional data needs to be published for market functionality. Indeed, EPA has recognized that its increases in transparency must be limited by its "obligations to protect confidential business information."[148]

D. Position Limits

Imposing limits on the amount of RINs that could be held or traded by any one party, known as position limits, would also harm RIN markets. There are a number of valid reasons why RIN market positions may exceed the proposed position limits. Obligated parties may want to carry forward surplus RINs to the next year to maintain a compliance margin. Obligated parties may also unexpectedly generate RINs in excess of any cap during refinery outages or supply disruptions.

Moreover, there are already sufficient incentives to not "hoard" RINs: RINs expire the year after they are generated, so market participants have little incentive to try to hoard vast quantities of RINs. Recognizing these considerations, EPA rejected a suggestion by commentators to impose

[147] 72 Fed. Reg. at 23,914.

[148] 82 Fed. Reg. at 58,525.

position limits in 2010.[149] Similarly, position limits have been traditionally used in the commodity futures markets, as opposed to spot markets.

E. Central RIN Repository and RIN Auctions

NERA also suggests that a central repository that holds periodic RINs could be workable. However, NERA fails to provide any analysis that a meaningful number of RINs would be traded through this system. NERA points to four potential sources of RINs, each of which is unlikely to be a significant contributor. First, NERA points to valid RINs that expire unused, which are likely to be very low in number since they would represent an economic loss to the RIN owner. Second, NERA notes that there could be valid RINs that would be retired due to industrial accidents. Once again, there is no reason to think that there is any significant number of RINs that fall into this category. Third, NERA posits that perhaps registered entities would voluntarily participate in such auctions. Here too there is little reason to think that there would be substantial voluntary participation by RIN sellers.

Finally, NERA suggests that RINs in excess of position limits or carryover limits could be supplied at auction. This is the heart of NERA's proposal, which is to force those entities "long" on RINs to sell. Either those entities would need to "voluntarily" sell RINs, likely at a discount, to avoid a position or carryover limit, or would *de facto* be forced to sell those RINs via an auction mechanism.

As support for this centralized scheme, NERA cites EPA's Acid Rain program. However, allowance programs like the Acid Rain program are very different: in those programs, the *Government* generates allowances in the first instance, and then auctions them off or otherwise provides them to entities that can use them for compliance or trade them in secondary markets.[150] By contrast, the RFS program does not have government-created allowances; only the market participants can actually generate RINs, and there are no "extra" government-generated RINs that can be used.[151]

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[149] EPA, RFS2 Response to Comments Document at 3-241, EPA-420-R-10-003 (Feb. 2010) ("[W]e do not believe it would be appropriate to limit the number of RINs that any party can own, and either of these changes could significantly alter the operation of the RIN market."), *available at* https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1007GC4.pdf.

[150] For example, in the Acid Rain Program, EPA established by regulation the amount of initial allowances for each plant, which could then be traded. 40 C.F.R. § 73.10. EPA does hold additional allowance auctions, but those come from "an Auction Allowance Reserve of approximately 2.8 percent of the total annual allowances allocated to all units." EPA, *SO2 Allowance Auctions*, https://www.epa.gov/airmarkets/so2-allowance-auctions#tab-2

[151] While California's LCFS includes a credit clearance market, whereby regulated entities who are short can purchase credits needed to comply at a capped price, a credit generator's participation in the credit clearance market is wholly voluntary; owners of surplus credits are subject to no obligation to pledge them for sale in the clearance market. *See* footnote 106, *supra*.

The RFS does require EPA to "make available for sale cellulosic biofuel credits" in years where EPA waives part of the cellulosic biofuel standard.[152] However, those credits are nontransferable and may only be used for current-year cellulosic RVOs.[153] Moreover, the fact that Congress specified that EPA itself may sell cellulosic biofuel credits in certain limited circumstances but did not provide such authority relating to other types of renewable fuels indicates that EPA lacks statutory authority to itself conduct RIN auctions.

VI. Potential Useful Reforms

As noted above, EPA has embarked on two significant and beneficial reforms, and its work on that front should continue.

First, in 2016 EPA entered into a memorandum of understanding with the CFTC, focused on combatting RIN fraud. RIN fraud is wholly illegitimate and warrants intense EPA enforcement action. Indeed, RIN fraud has potentially destabilizing effects on the RIN market, because fraudulent or otherwise invalid RINs may not be used for compliance even when the purchaser had "a good faith belief that the RINs were valid at the time they were acquired."[154] Accordingly, EPA's efforts to ensure confidence in the integrity of the RIN market by vigorously pursuing and prosecuting RIN fraud should be continued and enhanced.[155]

Second, as noted above, in September 2018 EPA decided to publish significant amounts of data on its website relating to RINs, and to continue to update that information going forward. The published data include: (1) aggregated monthly data on the number of RIN transactions, (2) aggregated monthly volume data regarding renewable fuel production, (3) weekly average volume-weighted RIN price data, (4) weekly aggregated RIN transaction volume data, and (5) information about small refinery exemptions, including the number of RINs exempted.[156] These data reflect a significant portion of the information that various parties have called on EPA to make available. EPA should continue to release information regarding the RIN market, except to the extent that the information constitutes confidential business information or would cause competitive harm.

The release of this information is also significant because EPA does not yet have enough experience to determine how the markets operate in response to this new information. Rather than rushing forward with ill-advised changes to the basic, longstanding rules of the RIN market, EPA,

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[152] 42 U.S.C. § 7545(*o*)(7)(D).

[153] 40 C.F.R. § 80.1456.

[154] *Id.* § 80.1431(b).

[155] EPA has brought a number of recent enforcement actions, including one relating to the generation of invalid RINs that was settled for $25 million dollars and a requirement that the defendant purchase 36 million RINs to offset its invalid RINs. EPA, *Civil Enforcement of the Renewable Fuel Standard*, https://www.epa.gov/enforcement/civil-enforcement-renewable-fuel-standard-program#nglcrude

[156] *See* EPA, *Public Data for the Renewable Fuel Standard*, https://www.epa.gov/fuels-registration-reporting-and-compliance-help/public-data-renewable-fuel-standard

the CFTC and others ought to continue to evaluate the market's operation, particularly in light of this new repository of information that was previously not available to market participants.

VII. Conclusion

The RFS program has undoubtedly encountered implementation difficulties and fallen short of Congressional goals for increasing the use of innovative renewable fuels.[157] Actions by EPA and interested stakeholders have, however, produced a functional RIN market and driven more than a decade's worth of investment and adaptation of business processes. Proposals to rework certain features of the RFS program's RIN market to address complaints by one group of stakeholders would be a serious policy misstep. Improving the position of some obligated parties at the expense of other obligated parties is not a valid goal of public policy. Indeed, to the extent the proposed changes to the RIN market might have the effect of compelling parties to sell surplus RINs at a cost that is less than the cost of generating the RINs, they could undermine the goals of the RFS program. Adopting changes to the RIN market designed to advantage net buyers of RINs would be particularly unjustified given EPA's determination that buyers of RINs generally recover the cost of the RINs through increased prices for gasoline and diesel. Relying on markets to drive commercial activity requires all stakeholders to react to the price signals those markets send. Measures that purport to smooth the rough edges of those signals, such as the proposals under consideration by EPA, will only worsen the situation and require additional changes in the future.

[157] *See* 83 Fed. Reg. at 63,719 (noting that production of cellulosic biofuel "has consistently fallen short of the statutory targets by 95 percent or more").

Appendix A: Project Team & Authors

Kevin Poloncarz: Kevin is recognized as one of the nation's leading climate change attorneys and has extensive experience in matters involving markets for environmental commodities, including California Carbon Allowances and offset credits, Low Carbon Fuel Standard credits, Renewable Energy Credits and Renewable Identification Numbers. He has represented major utility- and refining-sector clients on the development of market-based regulatory programs and in related compliance and enforcement matters. He regularly advises major investment banks and funds on their participation in environmental markets.

Stephen Humenik: Steve leads the firm's futures and derivatives practice. He has extensive experience on matters involving the U.S. Commodity Futures Trading Commission (CFTC) and markets for derivatives and physical and financial commodities. Prior to joining Covington, Mr. Humenik was general counsel and chief regulatory officer of an interest rate swap derivatives market, where he oversaw the legal and regulatory affairs of the exchange, including the exchange's designation as a contract market, and ongoing compliance with CFTC regulations, and the exchange's connectivity to its clearing house.

James Dean: James has extensive experience with issues arising in organized electricity markets overseen by the Federal Energy Regulatory Commission ("FERC"). He also regularly advises clients on the antitrust issues involved with trading strategies and compliance with market manipulation rules.

Kevin King: Kevin is a key member of the Covington team that has litigated various aspects of the RFS program, and advised on a range of regulatory issues concerning RINs and other aspects of the program.

Thomas Brugato: Thomas is also a key member of the team that litigates RFS issues. He has also advised clients on a variety of aspects of the RFS program, including potential changes to the RIN market floated by the Trump Administration. He is also familiar with various other EPA credit-trading schemes (e.g., the Acid Rain program, the Clean Air Mercury Rule, the Transport Rule, and various fuels and mobile source trading programs).