



## A primer on RINs and why the RFS is working

While most people are not familiar with renewable identification numbers (RINs), some oil-state politicians and refiners have commonly used RIN costs as a rallying cry to attack the Renewable Fuel Standard (RFS).

This primer explains what RINs are and why ideas recently floated to cap or waive RINs would reduce biofuel use, hurt farmers already suffering from low prices, and jeopardize rural manufacturing workers who depend upon the RFS.

### **What is a RIN?**

A RIN is a serial number biofuel producers are required to assign to every batch of ethanol or biodiesel they make so EPA can track whether it has been blended with petroleum and enforce compliance with the RFS program.

The RFS requires “obligated parties” to blend a specified volume of biofuel, such as ethanol or biodiesel, with the gasoline or diesel they produce or import on an annual basis. Obligated parties are defined as refiners and importers of gasoline or diesel fuel.

Each RIN serial number contains a “D code” identifying which type of biofuel refiners have blended. D3 RINs denote cellulosic biofuel, D4 RINs apply to biodiesel and D5 RINs represent advanced biofuel. D6 RINs apply to renewable fuel (mostly a reference to corn-based ethanol).

### **RINs give RFS compliance flexibility to refiners**

During the RFS rulemaking process, some refiners argued that instead of blending it would be more economical for them to purchase RIN “credits” to meet their annual obligation. EPA agreed and therefore allows refiners to purchase RINs as a substitute for blending ethanol or biodiesel into their own fuel.

EPA also lets obligated parties “store” RINs for RFS compliance at a later date. Approximately 2 billion RINs are currently stockpiled by obligated parties.

### **How do RINs work? Simple. Refiners that don't want to blend biofuel can purchase RINs instead**

Refiners and importers can satisfy their annual RFS obligation in one of two ways:

- Blend ethanol or biodiesel with the fuel they produce or import, or
- Purchase RIN credits from fellow obligated parties that have blended biofuel with their petroleum products

After ethanol has been blended with gasoline, the RIN can be “separated” and submitted to EPA as proof of RFS compliance.

Refiners that blend the required volume of ethanol with their own gasoline simply turn the detached RINs into EPA to satisfy their obligations.

Refiners that fulfill their annual RFS obligation *and choose to blend more ethanol than they are required* (which is common because of ethanol's low price) generate excess RIN credits. These surplus RINs can be stockpiled for compliance at a later date or sold to fellow refiners that find it more economical to purchase RINs instead of blending ethanol. This forms the basis of the RIN market.

Refiners that fall short of their blending obligation must purchase RINs to make up the difference.

**How much do RINs cost and what impact do they have on pump prices?**

In 2017, the price of D6 (ethanol) RINs averaged 70 cents. So far in 2018 the price of these RINs has fallen to approximately 45 cents. The buying and selling of RINs is not limited to refiners or importers. Any company can trade RINs, provided that it is registered with EPA to participate in the RFS program.

In fact, because some refiners have refused to blend ethanol with their gasoline, a market of Midwest wholesalers that do it for them has emerged. While not required to blend ethanol, these marketers are capitalizing on the economic opportunity to acquire RINs and using the proceeds to reduce pump prices. In other words, they retain the RIN and subtract its value from the ethanol-blended fuel they supply to retailers resulting in a low net fuel price. For example, if a gallon of ethanol is selling for \$1.45 and a RIN is worth 45 cents, a wholesaler can supply “RINless” ethanol-blended fuel for a net price of just \$1.00 per gallon. This helps retailers make blends such as E15 and E85 price competitive for their customers. It also helps them afford equipment upgrades to sell higher ethanol blends.

**Several refiners have reduced RIN costs by purchasing fuel blending assets (some have not)**

Many refiners own or operate assets to blend and distribute their gasoline and diesel fuel while others, often referred to as “merchant” refiners, historically have not owned these downstream assets.

According to EPA, both standalone (merchant) refiners and integrated refiners with downstream assets have annual RFS obligations and both recover compliance costs through the market price of petroleum products.

But in response to RIN prices, many merchant refiners are reducing their RFS compliance costs by investing in assets to blend and distribute fuels. Examples of this include:

- CVR CEO Dave Lamp said the company’s 2018 objectives include “building a wholesale and retail business to reduce our RIN exposure and install biodiesel blending at all our racks.”<sup>1</sup>
- Delek US Holdings announced a joint venture in 2018 to expand its biofuel blending capacity and reduce the company’s need to buy RIN credits.<sup>2</sup>
- Monroe Energy (wholly owned subsidiary of Delta Airlines) said in 2016 it would begin selling gasoline and diesel at rack terminals in the northeast to help generate its own RINs.<sup>3</sup>
- PBF Energy acquired a products terminal in 2017 driven in part by the company’s desire to increase its ethanol blending capacity and reduce RINs costs.<sup>4</sup>
- Valero CEO Joseph Gorder said the company is continuing to invest in assets that allow the refiner to blend and export more (ethanol).<sup>5</sup>

**Why didn’t Philadelphia Energy Solutions (PES) adapt like other merchant refiners?**

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<sup>1</sup> CVR eyes expansion into wholesale, retail fuel sectors to erase RIN exposure. February 22, 2018. OPIS.

<sup>2</sup> New JV seen expanding Green Plains sales, cutting Delek RIN buys. February 22, 2018. OPIS.

<sup>3</sup> New JV seen expanding Green Plains sales, cutting Delek RIN buys. February 22, 2018. OPIS.

<sup>4</sup> New JV seen expanding Green Plains sales, cutting Delek RIN buys. February 22, 2018. OPIS.

<sup>5</sup> Valero discusses RFS, RIN policy during investor call. October 26, 2017. Ethanol Producer Magazine

In January 2018, Philadelphia Energy Solutions (PES), a refining company owned by Sunoco and the Carlyle Group, a global private equity fund, filed for Chapter 11 bankruptcy protection, blaming RFS compliance costs (RINs) for their financial trouble.

RINs might be a convenient excuse for PES' bankruptcy filing but the inconvenient truth is that while other merchant refiners adapted their business model to reduce RIN costs by blending ethanol, PES kept doing things the same way they've always done them and now it expects to be rescued by EPA or Congress.

If it isn't because of RIN prices, what are the real reasons PES is in financial trouble?

PES sacrificed RFS compliance for big investor payouts. According to Reuters, since 2015, PES paid at least \$594 million to the owners of a rail terminal regardless of whether the refinery benefitted from oil shipments through the terminal and much of the cash flowed to the Carlyle Group, the same global private equity firm that owns both PES and the rail terminal. "The deal in effect guaranteed payouts to Carlyle. When oil market conditions made the rail shipments unprofitable, the refinery took heavy losses while its investors continued to take large distributions." Bankruptcy filings show that in November of 2017, "PES took on more debt to finance more payouts to investors, borrowing a total of \$160 million in two loans against the rail terminal and delivering the proceeds to its Carlyle-led backers."<sup>6</sup> According to Christina Simeone, Director of Policy and External Affairs, at the Kleinman Center for Energy Policy at the University of Pennsylvania, "PES has a long history of being unprofitable and investors sacrificed the refinery in favor of their larger and more lucrative investments, specifically the Bakken Pipeline project and Sunoco's operations."<sup>7</sup>

Location and age hurt PES. PES is the nation's oldest refinery and has been on the brink of collapse for the last 10 years. Its antiquated technology cannot process heavy Canadian crude (which is cheap compared to North Sea imports). East Coast refiners typically have lower profit margins than Midwest and Gulf Coast refiners because they rely on imports of more expensive crude oil from West Africa and the North Sea (Brent). These heavier crudes are more costly to ship and refine into gasoline. In the fall of 2017, eastern refiners paid about \$6 per barrel more for crude than Midwest refiners. Phil Verleger, a renowned oil economist, says PES is scape-goating the RFS for its financial woes instead of properly attributing its problems to the end of the crude oil export ban, antiquated equipment, and a lack of investment to keep the refinery competitive.<sup>8</sup> "The owners of PES gambled that the large discount of its U.S. crude to world prices would continue enabling the refinery to continue earning profits." PES lost the gamble and the expansion of U.S. crude exports has made it unprofitable to move midcontinent crude to East Coast refineries.

PES gambled and lost in the RINs market. According to PES public statements, in 2016, PES sold RIN credits and disclosed it had a \$110 million "short" position, hoping that RIN prices would fall before PES had to turn RINs into EPA for RFS compliance. In 2017, "they actually held sufficient RIN credits to meet their compliance needs. Nearly a quarter of a billion dollars in 2017 RINs were dumped on the RFS exchange from a single large East Coast seller on Jan. 19, 2018. Everyone knew that PES was

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<sup>6</sup> Refiner goes belly up after big payouts to Carlyle Group. February 20, 2018. Jarrett Renshaw. Reuters. <https://www.reuters.com/article/us-usa-biofuels-pes-bankruptcy-insight/refiner-goes-belly-up-after-big-payouts-to-carlyle-group-idUSKCN1G40I1>

<sup>7</sup> 4-part blog series on the bankruptcy of Philadelphia Energy Solutions. <https://kleinmanenergy.upenn.edu/blog/2018/02/02/part-1-philadelphia-energy-solutions-bankruptcy-basics>

<sup>8</sup> Verleger: PES bankruptcy judge could inflict Lehman-like moment. February 6, 2018. OPIS.

selling. It looks like the company sold the RINs in an attempt to raise cash after they decided they were going to enter Chapter 11 reorganization, and banked on a political strategy to modify the RFS to erase their volume obligations. Could PES have been trying to short the RIN market and sell RINs at high value, then try to move the market downward by lobbying the White House and EPA to relax the obligations and thereby move the value lower, then buy the RINs back in time to close their short position and meet their obligations?”<sup>9</sup>

**In a “huge win” for PES, EPA has agreed to forgive PES of some RIN compliance costs**

When PES filed for chapter 11 bankruptcy protection it asked a judge to waive approximately \$350 million in RIN compliance costs under the RFS.

In a settlement between EPA and PES on Monday, March 12, “EPA and PES agreed that the refiner would only have to satisfy about half those costs, but face more scrutiny going forward. EPA said PES could comply with the RFS by turning over its available credits (RINs) and would be excused from any shortfall, a huge win for the refiner.”<sup>10</sup>

After exiting bankruptcy, PES will need to submit RIN compliance to EPA every six months.

**EPA and economists confirm RIN costs do not harm refiners, whether merchant or integrated**

- “Merchant refiners, who largely purchase separated RINs to meet their RFS obligations, should not be disadvantaged by higher RIN prices, as they are recovering these costs in the sale price of their products.” – EPA, May 2015<sup>11</sup>
- “Refiners capture back RIN compliance costs by raising the prices they charge for wholesale gasoline and diesel.” – Scott Irwin, Department of Agricultural and Consumer Economics, University of Illinois<sup>12</sup>
- “EPA has invested significant resources evaluating the impacts of high RIN prices on refiners. After reviewing the available data, EPA has concluded that refiners are generally able to recover the cost of RINs in the prices they receive for their refined products, and therefore high RIN prices do not cause significant harm to refiners.” – EPA, November 2017<sup>13</sup>
- According to a Dec. 1, 2017 OPIS report, “EPA said its review of data on refinery closures from 2013 to 2017, a period of elevated RIN prices, failed to show a threat to merchant refiners’

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<sup>9</sup> What’s the real story behind Philadelphia Energy Solutions’ bankruptcy, crude oil, and the RFS? February 1, 2018. Joelle Simonpietri. <http://www.biofuelsdigest.com/bdigest/2018/02/01/whats-the-real-story-behind-philadelphia-energy-solutions-bankruptcy-crude-oil-and-the-renewable-fuel-standard/>

<sup>10</sup> Bankrupt Philadelphia refiner settles biofuel obligation with EPA: court filing. March 12, 2018. Jarrett Renshaw. Reuters. <https://www.reuters.com/article/us-usa-biofuels-pes/bankrupt-philadelphia-refiner-settles-biofuel-obligation-with-epa-court-filing-idUSKCN1GO2PT>

<sup>11</sup> EPA Preliminary assessment of RIN market dynamics, RIN prices and their effects. May 2015

<sup>12</sup> Oldest east coast refiner blames RFS for its woes. January 24, 2018. Reuters. <https://www.agweb.com/article/oldest-east-coast-refiner-blames-rfs-for-its-woes-blmg/>

<sup>13</sup> EPA Response to comments: RFS proposed rule for 2018. November 2017

operations. If the RFS program were causing refinery closures through high RIN prices, they would have been most likely to occur during these years.”<sup>14</sup>

- “Most independent refiners enjoy a net benefit from RINs. Bottom line performance appears positive for most independent refiners as the vast majority of the cost of RINs is embedded in refining margins. Any disadvantage facing independent refiners versus their more integrated counterparts will narrow as the financial incentive (RIN) to build out wholesale and retail ethanol blending infrastructure persists.” Roger D. Read, Wells Fargo Securities<sup>15</sup>
- “EPA is not persuaded by arguments that merchant refiners are disadvantaged in comparison to integrated refiners in terms of their cost (RIN) of compliance.” – EPA, November 2017<sup>16</sup>

**If the goal is to reduce RIN prices, RVP relief for E15 is the solution**

The quickest way to reduce RIN prices is to increase the supply of RINs. The quickest way to increase the supply of RINs is to blend more ethanol. The quickest way to blend more ethanol is to provide Reid vapor pressure (RVP) relief for E15.

Currently, in nearly two-thirds of the geographical U.S., an antiquated RVP limit prevents retailers from selling E15 to their customers in the summer months. EPA and Congress are examining options for fixing this problem and enabling the year-round sale of E15.

Harvard University economist James Stock has said “extending Reid vapor pressure relief to E15 and higher blends would facilitate additional corn ethanol being blended into the fuel supply and make it easier to comply with the RFS because more D6 RINs would become available for compliance.”

Mike Lorenz, executive vice president for retailing giant Sheetz, has said retailers “want to offer our customers options, including lower-cost, higher-octane ethanol blends. An RVP waiver lifts needless regulations on retailers, generates growth opportunities for American farmers and makes more RINs available to refiners.”<sup>17</sup>

University of Illinois economist Scott Irwin indicates “If bringing down the RIN price is a policy objective, allowing year-round sales of E15 and not capping RIN prices may accomplish it.”<sup>18</sup>

If EPA or Congress is truly looking for a ‘win-win’ solution to take pressure off RIN prices that doesn’t involve dismantling the RFS, the solution is to update the antiquated RVP limit which currently restricts E15 use.

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<sup>14</sup> EPA Denial of petitions for rulemaking to change the RFS point of obligation. November 2017. <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100TBGV.pdf>

<sup>15</sup> Independent Refiners: The crack ate my RINs—policy and profit implications. November 2017. Wells Fargo Securities.

<sup>16</sup> EPA Denial of petitions for rulemaking to change the RFS point of obligation. November 2017. <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100TBGV.pdf>

<sup>17</sup> Second White House meeting on RFS ends without a deal on RINs. March 1, 2018. OPIS.

<sup>18</sup> Irwin, S. "The Grand Bargain? Trading an E15 RVP Waiver for a RINs Price Cap." *farmdoc daily* (8):35, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, February 28, 2018. <http://farmdocdaily.illinois.edu/2018/02/the-grand-bargain-trading-an-e15-rvp-waiver.html>

### **Waiving or capping RIN credits would devastate farmers and jobs in rural America**

Some politicians in Washington are talking about a so-called deal whereby EPA allows the year-round sale of E15 (by cutting the RVP regulation) in exchange for waiving or capping RIN prices.

Economists at Iowa State University, the University of Illinois and Purdue University have recently examined the economic implications of such a trade off. In brief, they all find that capping the price of RINs would strike at the heart of the RFS by erasing the incentive obligated parties have to blend ethanol. It would reduce ethanol demand to 10 percent, hurt farmers, and put jobs at risk in rural America.

The Center for Agricultural and Rural Development at Iowa State University analyzed the impacts of capping ethanol RIN prices at 10-20 cents in addition to providing an RVP waiver allowing the year-round sale of E15. In summary, the analysis finds that such a “deal” would result in reduced ethanol consumption, a 25 cent per bushel drop in corn prices (a \$4 billion hit to farm income and likely \$1 billion loss in tax revenue), and an effective cut of 5 percent to the RFS conventional renewable fuel requirement.<sup>19</sup> Key findings include:

- “While year-round sales of E15 would encourage retailers to sell the fuel, capping D6 RIN prices would reduce consumption of E15 and E85.”
- “A cap on D6 RIN prices between \$0.10/gal to \$0.20/gal would likely reduce the effective ethanol mandate by at least 700 million gallons in 2018.”
- “Capping RIN prices at low levels makes it implausible that retailers would invest in E15 even with the assurance that they could sell the fuel throughout the year. Under the proposed compromise, therefore, (refiner) compliance costs will fall, but E15 and E85 sales will also decrease. The result would be lower compliance cost and a lower effective blending mandate.”
- “Corn prices under this scenario would drop, in the short-run, by around 25 cents per bushel.”

According to Scott Irwin, an economist with the University of Illinois, “the RINs price and the RFS volume level are directly related – one cannot be changed without changing the other. Reductions in the RFS volumes will reduce the RINs price, and reductions in the RINs price will reduce the volume produced, effectively reducing the RFS.”<sup>20</sup>

Irwin concluded “the RINs price cap would remove all incentives for blending E15 and E85” and “a RINs price cap on biodiesel would be catastrophic.” Without the biodiesel tax credit, a RIN cap could erase the production of biodiesel in the U.S.

Similarly, Wally Tyner of Purdue wrote “Any of the options employing a RIN price cap would prevent achieving the objectives of the RFS. The RIN cap reduces overall ethanol blending. The year-round RVP waiver for E15 would do little to ameliorate the situation in the near term.”<sup>21</sup>

### **What is a waiver credit?**

The Purdue paper also explores the idea of allowing refiners to purchase a waiver credit to avoid blending biofuel. “If the proposed ethanol waiver credit were to function like the cellulosic waiver credit

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<sup>19</sup> CARD Policy Brief. E15 and E85 demand under RIN price caps and an RVP waiver. Gabriel E. Lade, Sebastien Pouliot, and Bruce Babcock. March 2018. <https://www.card.iastate.edu/products/publications/pdf/18pb21.pdf>

<sup>20</sup> Irwin, S. “[The Grand Bargain? Trading an E15 RVP Waiver for a RINs Price Cap.](#)” *farmdoc daily* (8):35, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, February 28, 2018.

<sup>21</sup> Wallace E. Tyner and Farzad Taherpour. Impacts of options for modifying the Renewable Fuel Standard. Purdue University.

and both the RIN cap and waiver credit prices were set at \$0.10 per gallon, then the total cost of avoiding ethanol blending would be \$0.20. With this option, blending very likely would fall from current levels. If the obligated parties were required only to purchase the waiver credit (without a requirement to also purchase a RIN), blending would fall substantially to render total ethanol consumption less than the blend wall. In other words, the original objectives of the RFS could not be achieved. Also, there is a good faith argument that private sector investors built up the U.S. ethanol capacity believing the government would maintain the RFS. If the credit waiver were included, some of the plants would likely go out of business because the waiver credit effectively reduces the renewable fuel mandate.”

Valero paid for a study by Charles Rivers that actually makes the case “at least four times that waiver credits would ensure ethanol blends remain below the 10 percent volume.”<sup>22</sup>

#### **EPA does not have the legal authority to waive or cap RIN prices**

Jonathon Coppess, director of the Bock Agricultural Law Program at the University of Illinois, has written an opinion on the legality of a RINs cap, stating “There is nothing in the statute that addresses the costs of the credits and certainly no explicit authority for EPA to institute a cap on prices for the credits. We are skeptical that the proposal to cap RIN prices would survive a court challenge because the cap is fundamentally a waiver on RFS volumes by any other means and this type of waiver is not explicitly granted in the RFS statutes.”<sup>23</sup>

Most refiners actually oppose capping RIN prices. The idea is supported by a small but vocal handful of merchant refiners.

#### **Steps could be taken to improve the transparency and function of the RINs market**

While RVP relief for E15 would help increase the supply of D6 RINs and reduce their price, steps can be taken by the federal government to improve the transparency of the RINs market.

The Commodity Futures Trading Commission (CFTC) has authority to investigate claims of market manipulation. In March of 2016, EPA has signed a Memorandum of Understanding with CFTC to investigate and identify any market abuse by RIN traders.

Some have suggested that EPA, USDA, and CFTC could consider disclosing the number of detached RINs in a market at one time, gathering data on how many speculators are trading RINs, limiting the buying and selling of RINs by investment banks and speculators, and adding an external oversight system to the RIN market.

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<sup>22</sup> Oil industry study makes ethanol industry’s case on motive, impact. March 10, 2018. Chris Clayton. DTN. <https://www.dtnpf.com/agriculture/web/ag/news/article/2018/03/09/oil-industry-study-makes-ethanol>

<sup>23</sup> Irwin, S., and J. Coppess. "Still Another Wrinkle in the RFS: A RINs Price Cap." *farmdoc daily* (7):233, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, December 21, 2017. <http://farmdocdaily.illinois.edu/2017/12/still-another-wrinkle-in-the-rfs-rins-price-cap.html>