

## CRA Review of EPA's Memorandum on Assessment of Waivers for Severe Economic Harm & BBD Prices

### Summary

In late November 2017, the EPA published a memorandum addressing the topic of waivers under the Renewable Fuels Standard (RFS) as they may apply to renewable fuel volumes in 2018.<sup>1</sup> The memorandum accompanied the published 2018 volume standards in December 2017. EPA did not use its severe economic harm general waiver authority nor its Biomass-Based Diesel (BBD) waiver authority.

Regarding severe economic harm, the memo states that EPA does not believe there is evidence that the 2018 implied RFS volume standards will bring such harm to a State, a region or the US. It defends this decision with citations to comments and an investigation of certain broad economic indicators. Regarding BBD prices, the EPA does not believe prices are likely to increase significantly, despite the continued lack of a biodiesel blenders tax credit and changes to tariffs on imported volumes.

The waiver decisions were based on EPA's economic considerations and their legal interpretations. In this review of the EPA memo, we focus on the general waiver decision and the key supporting economic considerations. In particular, we review the key comments, interpretations and analyses cited by the EPA as influencing their decision. The following summarizes our key findings:

- **Comments suggesting that the RFS provides a net benefit to the economy misapplied the results of a recent study.** The study cited by EPA showed a benefit to the agricultural sector, but was not comprehensive enough to evaluate overall economic benefit. In fact, the same study showed that in 2015 the RFS led to zero net carbon emissions reductions and to significant price increases for corn (34% higher) and soybeans (9% higher). A comprehensive study would have followed these price increases through the economy.
- **The EPA puts too much reliance on "overcompliance."** RIN generation greater than the mandate in a year is not a reliable sign of a lack of economic harm. First, overcompliance is expected when RIN prices are high, as those who separate RINs seek additional profits. In a way, overcompliance may actually be an indicator of conditions that cause economic harm. Second, even in times of economic harm, it can still make sense to generate additional RINs due to strategic RIN banking to manage risk.
- **EPA ignores the base economic harms of demand reductions (impacting refiners) and increased gasoline prices (impacting consumers).** The first level impact of the RFS on the refining industry is a significant reduction in demand. Even though this impact was intended, it remains a harm, and its degree is more than expected due to a leveling of motor gasoline demand in the country. The added unrecovered RIN costs are on top of the volume losses experienced by refiners. This should be considered when evaluating harm to a specific industry. From the consumer perspective, there is a base level of harm caused by the higher price of ethanol per unit of energy than petroleum feedstock.

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<sup>1</sup> EPA Office of Transportation and Air Quality, "Assessment of Waivers for Severe Economic Harm or BBD prices for 2018", EPA Air Docket EPA-HQ-OAR-2017-0091, November 30, 2017.

- **The EPA’s review of broad economic indicators is meaningless.** The EPA begins its review of its broad indicators with an admission of limitations to its approach. Quite simply, the indicators are too broad to see any signs of economic harm, even at severe levels. Whether fuel prices and crop prices were higher in 2012 than 2017 was dependent on many variables beyond RIN prices. The question should be whether 2017 prices were higher than they would have been without the RFS in place. A simple graph of prices over time cannot answer this question.

These findings suggest that the memorandum does not support the EPA’s conclusion of no severe economic harm. The EPA has not put forth a persuasive economic argument to deny the claims of multiple stakeholders that the RFS has caused and will continue to cause them such harm.

The remainder of this memorandum provides more detail on our findings summarized above.

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### **Commenters suggesting EPA should not use waiver authority**

The EPA only highlighted a few points from the comments opposing the general waiver. We review each of the points below:

*“Several [commenters] point to indications that the RFS program provides a benefit to the economy, and reference a recent study on economic impacts of the RFS”*

The study referenced by these comments was published in September 2017 by several authors associated with Iowa State University (hereafter the “ISU Study”).<sup>2</sup> It is based on a model of a variety of agricultural and energy sectors, including international trade impacts in several of the sectors. While the model is fairly expansive compared to those use in many other academic studies of the RFS, it is by no means comprehensive and leaves out the consumption sectors that are most important for considering RFS impacts on the U.S. economy.

The key finding cited by commenters from the ISU Study is that US welfare improves in a scenario with the RFS over a scenario without the RFS. This finding is *entirely driven* by trade effects in the model.<sup>3</sup> In a model that only includes producing sectors, US welfare benefits from higher prices for exported goods, such as corn and soybean oil, and by lower prices for imported feedstock goods, such as crude oil. The authors note that in the model results the 2015 RFS led to a 34% increase in corn prices, a 9% increase in soybean prices, and a 1.4% decrease in crude prices, relative to a scenario with no RFS in place.

A key question should be what happens across the US economy as a result of these price increases? Consumers are only represented as “demand elasticities” in the ISU model. If they were included, it’s not clear that the economy as a whole would benefit from a 1/3 increase in price for a critical input to many other sectors of the economy.<sup>4</sup> Based on the model description, it’s possible that even an RFS-

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<sup>2</sup> G. Moschini, H. Lapan and H. Kim, “The Renewable Fuel Standard in Competitive Equilibrium: Market and Welfare Effects”, *American Journal of Agricultural Economics*, Volume 99, Issue 5, 1 October 2017, Pages 1117–1142.

<sup>3</sup> ISU Study at page 27.

<sup>4</sup> As the aggregate benefits appear to be entirely from trade effects, this would appear to be driven from an increase in crop prices (for which the US is a net exporter) and a small decrease in crude prices (for which the US is a net importer). However, the representation of other sectors of the economy (which is in effect the entire rest of

driven 100% increase in corn prices would improve “US welfare”, since the model does not account for other deadweight losses in crop consuming sectors.

A key finding in the ISU Study that did not get cited by these commenters was that “The RFS impact on reducing carbon emission... turns out to be nil once we account for the leakage effect (due to the increase in the rest of the world’s fossil fuel consumption).”<sup>5</sup> In other words, the decrease in crude oil prices from the RFS increases demand in other parts of the world, thus canceling out any emissions benefits from reduced crude use in the US. This was not a comprehensive emissions study, but that finding should raise flags.

Another interesting key finding was the clear preference of the model for corn ethanol over other biofuels. The authors concluded that “To further improve welfare from the 2015 mandate levels, the model suggests that corn ethanol production should be increased, whereas biodiesel production should be decreased.”<sup>6</sup> While we have already disputed the use of welfare from this model as an indication of societal benefit, it is still illuminating that the study shows harm from biodiesel. The EPA’s 2018 standards implicitly promote biodiesel volumes above the fuel’s targets, since biodiesel is the marginal fuel used to meet ethanol targets above the blendwall (adjusted for E0, E15 and E85 volumes). The study therefore suggests that EPA is increasing economic harm by exceeding the blendwall.

*“Some stakeholders acknowledged that the RFS program may produce benefits for some parties or sectors and disbenefits to others, but nevertheless argued that the net impact of the RFS program on the economy was positive”*

That there would be sector-level winners and losers from the RFS was known from the beginning. Ethanol producers would gain a market for their product, and crop producers would receive higher prices. Petroleum product producers would lose demand due to substitution by biofuels. What was not entirely clear was whether there would be a net benefit to society, with higher costs for transportation fuels being compared to benefits from fuel security and emissions reductions. The ISU Study in fact suggests that these benefits are negligible, with minimal net emissions benefits and with fuel security issues largely addressed by the significant increase in US domestic oil and gas production from shale and other unconventional resources. There is no credible proof that the RFS program has a net economic benefit to the economy.

### **Commenters suggesting EPA should use waiver authority**

The EPA addressed two main points raised by stakeholders supporting a waiver. We discuss each below.

#### *The E10 blendwall*

Many commenters suggested that severe economic harm occurs as the blendwall is exceeded, which has arguably occurred since 2013. In response, the EPA starts its analysis with a comparison of the 2018 targets with previous years (2012 and 2016), and hence hinges its analysis on the premise that severe economic harm has not occurred from 2013 through 2017. First, it is possible that severe economic harm has indeed happened in that previous period. Second, breaching the blendwall sharply increased

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the economy) is far too simplified to evaluate the deadweight losses in other sectors of the economy outside of crop and biofuel production.

<sup>5</sup> ISU Study at page 2.

<sup>6</sup> *ibid.*

ethanol RIN prices to BBD RIN price levels. It is during this period of higher pricing when severe economic harm is most likely, so the relationship with the blendwall should indeed be considered.

The EPA notes “overcompliance” by non-ethanol fuels as a sign that there was not severe economic harm, but it is precisely that “overcompliance” that indicates a threat of economic harm to refiners. Bringing greater amounts of biodiesel into the market for “overcompliance” is much more expensive than adding ethanol up to the blendwall (under current feedstock prices). This means that RIN prices are much higher than they would be without the blendwall breach. Higher RIN prices create higher risks of RIN value holdback along the value chain, and thus more risk of economic harm to obligated parties.

#### *Harm to a specific industry*

This section of the EPA memo focuses on the claims by merchant refiners that they are harmed by not being able to recover their RIN costs. CRA has previously put forth evidence of incomplete pass-through of RIN costs after the breaching of the blendwall in 2013. The EPA disputes that finding, but has not put forth any convincing arguments or evidence to the contrary.

The EPA also absolves the RFS of causing any harm to refiners by attributing falling refining margins to an excess supply of refined products, which we assume is referring to the increase in domestic crude production during a time of leveling motor gasoline demand. This misses the point that the RFS is a driver of leveling demand by shifting up to 10% of the demand for refined motor gasoline products to biofuels. Additionally, it is during periods of low refining margins that RFS-caused harm can go from mild to severe. If the RFS is the last straw to break a refiner’s back, the harm is certainly severe, even if the RFS is less to blame than other market conditions.

#### **EPA Investigation of Broad Economic Indicators**

The EPA conducted some simple data analytics on broad economic indicators to identify signs of economic harm. The EPA begins this section of the memo with an admission of the limitations to this method. The most severe limitation is that these broad indicators are too broad to detect economic harm from the RFS. A second limitation that is not discussed is that these analyses only look at actual market outcomes. They do not include a “but for” comparison to a scenario in which there is no RFS, which is the proper comparison for determining economic harm of a policy.

The EPA begins with the presumption that in 2016 the RFS had no economic harm due to “overcompliance” with the mandates, which we assume is referring to the generation of more RINs than were retired for compliance. Such “overcompliance” and economic harm to specific industries are not mutually exclusive. There are many reasons why biofuel volumes could exceed mandates in times of economic harm. One example is strategic RIN banking when mandates are expected to rise. Another reason would be over-blending by blenders hoping to benefit from high RIN prices. “Overcompliance” merely implies that ethanol producers and blenders were incentivized to generate and separate more RINs than required, but only the mandated levels were retired by obligated refiners. This is something one would expect to see when RIN value is captured at the blending level.

We briefly consider each of EPA’s broad indicators analyzed:

#### *Fuel prices*

The EPA directly acknowledges the major flaw in trying to infer anything from retail gasoline price changes over time: RFS compliance cost impacts are a single variable influencing fuel prices and can be dwarfed by others, such as changes in crude prices. It is entirely possible the economic harm is unobservable in volatile energy prices. The observation that fuel prices in 2017 were lower than in 2012 has no bearing on whether there was economic harm relative to a scenario with no RFS in place.

#### *Fuel supply*

The fact that supply meets demand in the gasoline and diesel markets would not be expected to change from economic harm from the RFS. Supply will meet demand. The concern is the price at which it will meet demand and the impacts on various entities elsewhere in the economy.

#### *Crop prices*

The EPA analysis is far too simplistic to detect impacts from the RFS on crop prices. They simply compare prices between 2012 and 2017, suggesting that lower prices in 2017 suggest no harm. That is the wrong comparison. The proper comparison is crop prices in 2017 compared to what they would have been without the RFS in place. The ISU study cited by commenters estimated a 34% increase in corn prices in 2015.

#### *Refinery closures*

Refineries can experience economic harm without closing. That said, closings do not occur based on single year economic harm, but rather on expectations for future economic gains or losses. Waiting for relief on RFS obligations is a reasonable approach for struggling refineries, but it cannot last indefinitely. We do not currently have specific insight into refinery economics that would suggest when this breaking point may occur.

#### *Disclaimer*

The study was commissioned by Monroe Energy. The research, analysis, results and conclusions were all developed independently by the authors. The conclusions set forth herein are based on independent research and publicly available material.

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