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Another Wrinkle in the RFS: The Small Refinery Exemption

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2017 has been a busy year for the Renewable Fuel Standard (RFS). In July, the D.C. Circuit rejected EPA's interpretation of its general waiver authority (*farmdoc daily*, [August 9, 2017](#); [August 18, 2017](#)). In September, EPA issued a Notice of Data Availability that sought comment and data exploring further avenues to reduce the portions of the advanced mandate (*farmdoc daily*, [October 5, 2017](#); [October 12, 2017](#); [October 19, 2017](#)). A week ago, EPA finalized the RFS volume obligations that maintained the statutory mandates in line with its proposed rule ([EPA News Release, Nov. 30, 2017](#)). On November 22, 2017, EPA also denied requests from petitioning interests to change the point of obligation for compliance with the RFS mandates ([EPA Response, Nov. 22, 2017](#)). Finally, a recent court decision by the Tenth Circuit Court of Appeals ([Sinclair Wyoming Refining Co. v. U.S. E.P.A, Aug. 15, 2017](#)) may add yet another wrinkle to administration of the RFS. In that decision, a federal court concluded that EPA's denial of a waiver for small refineries was improper. This article reviews the small refinery issue and its potential implications for the RFS standards.

Legal Discussion

When Congress created the RFS in the Energy Policy Act of 2005 ([P.L. 109-58](#)) it included a temporary exemption for small refineries from the mandate through 2011. Small refineries were defined as those with less than 75,000 barrels of crude oil throughput in a calendar year. The revised and expanded version of the RFS created in 2007 did not alter this exemption ([P.L. 110-140](#)). In 2011, EPA extended the blanket exemption through 2013 in response to demands from Congress for a reassessment of the impacts on small refineries ([40 CFR Part 80, Regulation of Fuels and Fuel Additives: 2012 Renewable Fuel Standards; Final Rule](#), at 1340).

In addition to the blanket waiver through 2013, the statute also provided authority to EPA to grant an extension of the exemption to any small refinery. An exemption was to be based upon petition and due to "disproportionate economic hardship" to the refinery ([7 U.S.C. §7545 \(o\)\(9\)](#)). Sinclair petitioned EPA to extend the exemption for its two small refineries in Wyoming but EPA denied the petition. It was this denial that the Tenth Circuit Appellate Court reviewed.

The decision making process includes the Department of Energy (DOE), specifically DOE evaluates the impacts on small refineries and provides recommendations to EPA (*Sinclair Wyoming Refining v. EPA*). DOE's analysis includes a scoring matrix for assessing the impacts, which includes measurements

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related to the viability of the refinery under the RFS mandates. EPA focused its conclusion for denying the petitions on the viability aspect of the DOE assessment. EPA rejected DOE's recommendations and concluded that Sinclair did not meet the "disproportionate economic hardship" requirement. EPA's decision rested on a conclusion that it was necessary for a small refinery to demonstrate that complying with the RFS threatened the long-term viability of the refinery. In other words, to grant an extension a refinery would have to prove to EPA that the RFS mandate threatened its long-term survival.

The court concluded that EPA improperly interpreted the requirement. The court concluded that EPA's view was too narrow an interpretation of the statute and that it created too high of a hurdle. The court held that making viability of the refinery a necessary component for exemption went beyond the statute's requirement of disproportionate economic hardship (*Sinclair Wyoming Refining v. EPA*).

On its own, the Tenth Circuit decision appears minor. It requires EPA to make use of a more reasonable standard for extending exemptions for small refineries from the RFS mandate. The bigger question may be the extent to which EPA can make use of the authority and court decision.

In the 2010 regulation implementing the RFS renewable volume obligations (RVO) for the 2011 calendar year, EPA provided the formula for calculating the yearly volume requirements ([40 CFR, Regulation of Fuels and Fuel Additives: 2011 Renewable Fuel Standards; Final Rule](#) (Dec. 9, 2010)). The RVO calculation includes an estimation of the amount to be produced by small, exempted refineries. Thus, known or expected exemptions are to be taken into account in setting the obligations and would effectively shift some of the obligation to larger refineries.

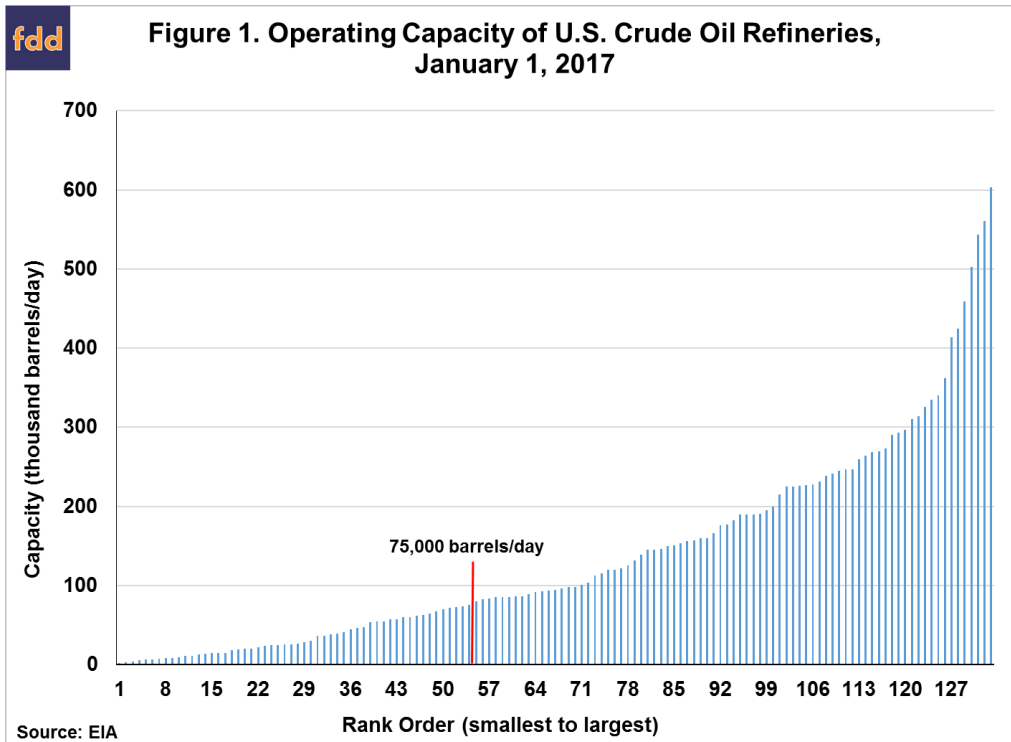
EPA explained, however, that if any small refineries are granted an extension after the annual rulemaking is finalized, "the parties in question would be exempted but we would not intend to modify the applicable percentage standards" for the remaining non-exempt refineries (*Id.*, at 76804). EPA goes on to add that the RFS is best implemented with a single annual standard and not be revised periodically based upon waivers. More to the point, in its discussion of small refineries, EPA writes that it does "not intend to revise the 2011 standards applicable to other obligated parties to require that they make up for volumes that will not be attained by the exempt refineries" (*Id.*, at 76805).

In the 2017 RVO final rule, EPA noted that it had not approved any exemptions for 2017 and had calculated the volumes without any adjustments for exempted volumes ([40 CFR, part 80, Renewable Fuel Standard Program: Standards for 2017 and Biomass-Based Diesel Volume for 2018](#) (Dec. 12, 2016)). EPA added that if it approves any exemptions after the final rule, those amounts "will not be reflected in the percentage standards that apply to all gasoline or diesel produced or imported in 2017" (*Id.*, at 89800). EPA noted that this adheres to the 2011 final rule that it will not revise the requirements for non-exempt obligated parties.

Combined with its treatment of exemption extensions after the final rule, the Tenth Circuit decision may provide a backdoor method by which EPA could reduce the mandate without using waiver authority. Given EPA's persistent efforts to expand its waiver authority, this possibility may be more than mere speculation. Now that the final obligations have been established, if EPA grants exemption extensions to small refineries the obligations for those small refineries would effectively disappear from the RFS mandate. Depending on how EPA uses its authority, exempting small refineries could have large implications for the RFS and RINs markets. These implications are discussed in further detail below.

Analysis of Expanded Exemptions

The impact of expanding the number of small refinery exemptions for the RFS depends on the number and capacity of small refineries. The U.S. Energy Information Administration (EIA) conducts an annual survey of U.S. refineries and publishes the results in the [Annual Refinery Report](#). Figure 1 presents the capacity of all U.S. crude oil refineries operating on January 1, 2017, ranked from smallest to largest in terms of capacity (thousands of barrels per day). According to this survey, there is a total of 133 operating refineries in the U.S. with an aggregate capacity of 18.314 million barrels per day. Of the 133 refineries, 54 have a capacity less than the 75,000 barrel per day threshold defined by the RFS as a small refinery. The total capacity of the 54 "small" refineries is 1.81 million barrels per day, or 9.9 percent of capacity for all operating refineries. For perspective, a 75,000 barrel per day refinery has an annual capacity of 1.15 billion gallons and the annual capacity of all small refineries is 27.756 billion gallons.



Now consider a scenario where the EPA issues a blanket exemption for all small refineries in 2018. If capacity tracks gasoline and diesel consumption, the blanket exemption would remove from RFS compliance approximately 10 percent of total petroleum gasoline and diesel consumption in 2018. Since the fractional mandates have already been established in the final rulemaking for 2018, applying the previous EPA logic of “not intend[ing] to modify the applicable percentage standards,” this would effectively reduce all of the volumetric mandates because the base for applying the fixed percentage standard would be lowered. The precise impact on final obligated volumes is complicated and depends on how the exemptions impact the physical consumption of ethanol and biomass-based diesel. The simplest assumption is no change from EPA projections, which seems reasonable for ethanol but less so for biomass-based diesel, due to the differing market competitiveness of the two biofuels. The net impact for RFS compliance purposes would be a reduction of obligated petroleum gasoline and diesel consumption from the 180.74 billion gallons estimated in the recent final rulemaking for 2018 to 161.64 billion gallons, a drop of 19.6 billion gallons.

Table 1 compares 2018 volume and percentage standards under the final EPA rulemaking and an alternative scenario where a blanket exemption is given to all small refineries. As outlined above, we assume no change in physical market consumption of gasoline, diesel, ethanol, or biomass-based diesel from EPA assumptions for the final rulemaking under the alternative scenario. Changing these assumptions will not alter the basic thrust of the results. The reduction in the volume mandates under the blanket exemption scenario is by construction a bit less than 11 percent. This translates into a 2.09 billion gallon reduction in the total RFS mandate, a 0.47 billion gallon reduction in the advanced mandate, a 1.63 billion gallon reduction in the (implied) conventional ethanol mandate, a 230 million gallon reduction in the biomass-based diesel mandate, and a 31 million gallon reduction in the cellulosic mandate. All of these reductions are non-trivial, particularly when considered in light of recent controversies about reducing the mandate levels by smaller amounts.

All of the mandate reductions under the blanket exemption scenario would be negative for RINs prices, but the 1.63 billion gallon reduction in the conventional ethanol mandate, from 15.0 to 13.37 billion gallons, would be especially consequential. As several previous *farmdoc daily* articles (e.g., [December 4, 2015](#)) have highlighted, when the conventional ethanol mandate is below the E10 blend wall, D6 ethanol RINs tend to trade for only a few cents because the blending margin on ethanol generally is positive. However, when the conventional ethanol mandate is above the E10 blend wall the valuation of D6 ethanol RINs changes completely. The reason is that the gap between the blend wall and the mandate has to be filled by a higher-ordered non-ethanol biofuel, and to date, that has been almost exclusively biomass-based diesel. This implies biomass-based diesel is the “marginal” gallon for filling the conventional mandate, and consequently, D6 ethanol RINs are of equivalent value to D4 biomass-based

diesel RINs. Essentially, this is what happened in early 2013 when D6 ethanol RINs prices exploded from a few cents to almost \$1.50 per gallon.

Table 1. 2018 RFS Volume and Percentage Standards under Alternative Scenarios

| | <u>Final EPA Rulemaking</u> | | <u>Blanket Small Refinery Exemption</u> | | <u>Volume Change</u> |
|----------------------|-----------------------------|-------------------|---|-------------------|----------------------|
| | <u>Volume</u> | <u>Percentage</u> | <u>Volume</u> | <u>Percentage</u> | |
| Total | 19.29 | 10.67 | 17.20 | 10.67 | -2.09 |
| Advanced | 4.29 | 2.37 | 3.82 | 2.37 | -0.47 |
| Conventional Ethanol | 15.00 | 8.30 | 13.37 | 8.30 | -1.63 |
| Biomass-Based Diesel | 2.10 | 1.74 | 1.87 | 1.74 | -0.23 |
| Cellulosic | 0.288 | 0.159 | 0.257 | 0.159 | -0.031 |

Note: All volumes are reported in billion gallons.

Returning to Table 1, a blanket exemption would reverse the pattern in recent years of the conventional mandate exceeding the E10 blend wall. There is always some uncertainty in estimating the E10 blend wall but a reasonable estimate for 2018 is 14.3 billion gallons. Under a blanket exemption, the conventional ethanol mandate would be almost a billion gallons below this estimate of the blend wall. Since ethanol blending margins are currently positive the implication is that D6 ethanol RINs would return to pre-2013 levels of only a few cents, a huge change from recent levels in the \$0.80 - \$0.90 range. It is also interesting to consider that it would not take a full blanket exemption to push the conventional ethanol mandate below 14.3 billion gallons. A total of only 8.5 billion gallons of small refinery exemptions would drop the conventional mandate to 14.3 billion gallons for 2018. Exempting the 33 smallest refineries would be sufficient to exclude the 8.5 billion gallons in 2018. Finally, please note that the actual RINs market reaction to a blanket small refinery exemption could be smaller than projected here due to uncertainty about how these exemptions would affect the calculation of future RFS obligations for non-exempted refineries.

Implications

A seemingly obscure provision of the RFS that allows the EPA to exempt small refineries in the U.S. from RFS compliance could have surprisingly large impacts on mandate levels and RINs prices in 2018. Small refineries are defined by the RFS as those with a daily processing capacity of 75,000 barrels or smaller. A blanket exemption of all small refineries would remove about 10 percent of total refining capacity from RFS obligations. The EPA has previously signaled that it would not adjust the percentage standards for any exemptions issued after a final annual rulemaking. Since the 2018 percentage standards have been finalized, this could effectively provide a backdoor procedure for reducing all of the 2018 RFS volume mandates without waiving the requirements. The reduction in the conventional ethanol mandate could be large enough to push the mandate below the E10 blend wall, which could potentially drive D6 ethanol RINs prices back down to the pre-2013 level of just a few cents per gallon. Whether the EPA will take this backdoor remains to be seen, but it is also likely a move that it could make only once. Given how strictly courts have viewed EPA's authority under the RFS, it is difficult to conclude that the EPA could use this method repeatedly to lower the mandates. A blanket small refinery exemption in 2018 would likely be a one-time move that the computation of future standards would have to take into account. After 2018, we expect that the mandate obligations of exempted small refineries would be shifted to non-exempted refineries.

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