Waiver Authority Under the Renewable Fuel Standard (RFS)

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Summary

Transportation fuels are required by federal law to contain a minimum amount of renewable fuel each year. This renewable fuel standard (RFS), established by the Energy Policy Act of 2005 (EPAct, P.L. 109-58) and amended by the Energy Independence and Security Act of 2007 (EISA, P.L. 110-140), requires that 15.2 billion gallons of renewable fuels be blended into gasoline and other transportation fuels in 2012. Most of this mandate (87% for 2012) will be met using corn-based ethanol. Other biofuels used to meet the remainder of the mandate include cellulosic biofuels, biomass-based diesel fuels, and other advanced biofuels. Questions have been raised over whether the overall mandate diverts enough corn supply from food/feed production to dramatically raise prices in those markets, and whether there is enough feedstock supply and production capacity to meet the carveouts for fuels other than corn ethanol.

The Environmental Protection Agency (EPA) has the authority to waive the RFS requirements, in whole or in part, if certain conditions outlined in the law are present. In 2008 the governor of Texas requested a waiver of the RFS because of high grain prices, although that waiver request was denied because EPA determined that the RFS requirements alone did not "severely harm the economy of a State, a region, or the United States," a standard required by the statute. A similar waiver petition was filed by the governors of Arkansas and North Carolina in August 2012. Under EPAct, the EPA administrator must approve or disapprove the petition within 90 days of receipt. Because the governor of Arkansas submitted a petition letter to EPA on August 13, 2012, EPA must respond by November 11, 2012. EPA requested comments on the petition, and extended that comment period through October 11, 2012.

In February 2010, as part of a final rulemaking implementing the RFS as expanded by EISA, EPA waived most of the 2010 cellulosic biofuel carveout—EISA set the mandate at 100 million gallons but EPA only required 6.5 million gallons, more than 90% less than scheduled by EISA. EPA cited a lack of current and expected production capacity, driven largely by a lack of investment in commercial-scale refineries. Further, for 2011 and 2012, EPA has reduced the cellulosic mandate to 6.6 million and 8.65 million gallons, respectively, well below the 250 million and 500 million gallons scheduled in EISA.

This report provides a brief overview of the RFS program and discusses the process and criteria for EPA to approve a waiver petition.

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Introduction

The Energy Policy Act of 2005 (EPAct, P.L. 109-58) established a renewable fuel standard (RFS), requiring the use of biofuels (such as ethanol) in the nation's fuel supply. The Energy Independence and Security Act of 2007 (EISA, P.L. 110-140) significantly expanded this mandate. The RFS mandate has been a major impetus to the development of U.S. biofuels industries, especially the ethanol industry. As a result, ethanol production capacity and the demand for corn as a biofuel feedstock have grown dramatically over the past few years. In 2005, the United States produced 3.9 billion gallons of ethanol, requiring roughly 1.4 billion bushels of corn; in 2007, those numbers had increased to 6.5 billion gallons and 2.3 billion bushels. In 2007, roughly one-quarter of the U.S. corn crop was directed to ethanol production. In 2011, production had increased to roughly 14 billion gallons using approximately 5 billion bushels of corn or 40% of the 2011 crop.

Increasing demand for corn for biofuels, the rise in energy prices, and other supply concerns in international grain markets led to rapid increases in corn and other grain prices in 2008. These higher grain prices raised concern globally over food prices and availability. Because of these concerns, there was interest among some policymakers to amend or eliminate the RFS. Under the provisions of EPAct and EISA, the administrator of the Environmental Protection Agency (EPA) has the authority to waive the RFS requirements in whole or in part, in response to a petition by a state or a fuel provider, or on her own motion.

On April 25, 2008, Texas Governor Rick Perry sent a letter to EPA Administrator Stephen Johnson, petitioning for a 50% waiver from the RFS requirements.[1] In his letter, Governor Perry stated that he initiated the petition because of the negative effect of the requirements on the Texas economy and on global food prices. In August 2008 EPA denied the waiver request because the agency found that the effects of the RFS on food, feed, and fuel prices was minimal, and thus the economic effects of the RFS "could not be categorized as severe."[2] In 2012, Arkansas governor Mike Beebe and North Carolina governor Beverly Eaves Perdue submitted petition letters to EPA requesting full or partial waivers of the 2012 and 2013 RFS mandates. The letters were submitted on August 13[3] and August 14,[4] respectively. The governors cited the effects of the 2012 drought, further compounded by the increased grain demand from the RFS, as leading to severe economic harm to their states, especially their livestock producers.

Within the overall RFS there are secondary mandates for the use of cellulosic biofuels, biomass-based diesel fuels, and other advanced biofuels. However, questions have been raised over whether there is enough feedstock supply and production capacity to meet some of these carveouts, especially the cellulosic biofuel carveout. In February 2010, as part of a final rulemaking implementing the RFS as expanded by EISA, EPA waived most of the 2010 cellulosic

[1] Rick Perry, governor of Texas, *Letter to The Honorable Stephen L. Johnson, Administrator, U.S. Environmental Protection Agency*, April 25, 2008.

[2] U.S. Environmental Protection Agency, *EPA Decision on Texas Request for Waiver of Portion of Renewable Fuel Standard (RFS)*, EPA420-F-08-029, Washington, DC, August, 2008, http://www.epa.gov/otaq/renewablefuels/420f08029.htm.

[3] Letter from Mike Beebe, Governor of Arkansas, to Lisa P. Jackson, EPA Administrator, August 13, 2012, http://www.epa.gov/otaq/fuels/renewablefuels/documents/arkansas-rfs-waiver-request.pdf.

[4] Letter from Beverly Eaves Perdue, Governor of North Carolina, to Lisa P. Jackson, EPA Administrator, August 14, 2012, http://www.epa.gov/otaq/fuels/renewablefuels/documents/north-carolina-rfs-waiver-request.pdf.

biofuel carveout—EISA set the mandate at 100 million gallons but EPA only required 6.5 million gallons, more than 90% less than scheduled by EISA. EPA cited a lack of then-current and expected production capacity, driven largely by delays in production plans and a lack of investment in commercial-scale refineries.[5] Similarly, EPA finaized cellulosic biofuel mandates of 6.6 and 8.65 million gallons for 2011 and 2012, respectively—97% and 98% lower than the amounts scheduled in EISA.[6]

Current RFS Requirements

Currently, the RFS requires the blending of 15.2 billion gallons of renewable fuel in transportation fuels in 2012—corn ethanol is limited to counting for 13.2 billion gallons of the 2012 mandate. The RFS increases to 36 billion gallons by 2022 with an increasing share coming from "advanced biofuels"—biofuels produced from feedstocks other than corn starch—including cellulosic biofuel and bio-based diesel substitutes. As has been the case in previous years, in 2012 the vast majority of the mandate is expected to be met with U.S. corn ethanol (and a smaller amount of biodiesel, as well as sugarcane ethanol from Brazil).

By 2015 corn ethanol's share of the RFS is effectively capped at 15 billion gallons per year. The EISA amendments to the RFS specifically mandate the use of cellulosic biofuel (16 billion gallons by 2022) and biomass-based diesel fuel (at least 1.0 billion gallons annually by 2012). However, advanced biofuels, especially cellulosic fuels, have been slow to develop and fuel production lags the EISA's mandate schedule.

Waiver Provisions

As amended by EISA, section 211(o)(7) of the Clean Air Act[7] gives the EPA administrator the authority to waive, in whole or in part, the total volume of renewable fuel mandated by the RFS if, in her determination, there is inadequate domestic supply to meet the mandate, or if "implementation of the requirement would severely harm the economy or environment of a State, a region, or the United States."[8] Further, under certain conditions, the EPA administrator may waive (in whole or in part) the specific carve-outs for cellulosic biofuel and biomass-based diesel fuel.

[5] U.S. Environmental Protection Agency, *Regulation of Fuels and Fuel Additives: Changes to Renewable Fuel Standard Program; Final Rule*, EPA-HQ-OAR-2005-0161, Washington, DC, February 3, 2010, pp. 173-174, http://www.epa.gov/otaq/renewablefuels/rfs2-preamble.pdf.

[6] Environmental Protection Agency, "Regulation of Fuel and Fuel Additives: 2011 Renewable Fuel Standards; Final Rule," 75 *Federal Register* 76790, December 9, 2010; and Environmental Protection Agency, "Regulation of Fuels and Fuel Additives: 2012 Renewable Fuel Standards; Final Rule," 77 *Federal Register* 1320, January 9, 2012.

[7] 42 U.S.C. 7545(o)(7).

[8] 42 U.S.C. 7545(o)(7)(A)(i).

General Waiver

On the petition of a state or a fuel provider, or at her own discretion,[9] the administrator may waive the overall RFS requirement for a given year. If a waiver is granted, any adjustment applies to total national requirement. Regardless of who initiates the waiver petition, all fuel suppliers' quotas would be reduced by a similar percentage. As the law is written, EPA may not waive the requirement for an individual state or supplier within a state, but must reduce the entire national mandate.

To grant the waiver, the EPA administrator must determine, in consultation with the Secretaries of Agriculture and Energy, that one of two conditions has been met:

- there is inadequate domestic renewable fuel supply; or
- implementation of the requirement would severely harm the economy or environment of a State, a region, or the United States.

However, it is unclear how EPA will interpret these criteria. In its May 1, 2007, final rule for 2007 onward,[10] EPA explicitly stated that it would not establish more specific criteria for the waiver:

> While EPA realizes that the criteria provided by the statute are quite general, the rationales of severe environmental or economic harm or inadequate domestic supply are sufficient for a basic framework upon which a petition can be built and evaluated. Each situation in which a waiver may be requested will be unique, and promulgating a list of more specific criteria in the abstract may be counter-productive.[11]

Within 90 days of receipt of the waiver petition, EPA must act to approve or disapprove the petition, after public notice and opportunity for comment. If EPA does grant a waiver, the waiver expires after one year, but may be extended by the EPA administrator in consultation with the Secretaries of Agriculture and Energy.

As of September 2012, EPA was in the process of reviewing and receiving public comments on the waiver petitions from the governors of Arkansas and North Carolina. Severe droughts across much of the United States in the summer of 2012 which cut into corn yields, along with high worldwide demand for food and feed grains, had pushed December 2012 corn futures prices up from roughly $5.30 per bushel in early July 2012 to above $8.00 per bushel in mid-August. By mid-September prices had moderated somewhat to the mid-$7.00's.[12] Those high prices raise the feed costs of cattle and other livestock, which could lead to higher consumer meat prices. EPA must determine whether the current situation has led to "severe economic harm," and whether the RFS mandates are responsible for that harm such that waiving the mandates would alleviate the harm.

[9] Under EPAct, only states could petition EPA for the waiver. EISA amended the RFS to allow fuel providers to file a petition, and to give the EPA administrator authority to initiate the process on her own motion.

[10] EPA, *Regulation of Fuels and Fuel Additives: Renewable Fuel Standard Program; Final Rule*, May 1, 2007. 72 Federal Register 23899-24014.

[11] 72 Federal Register 23928.

[12] CME Group, *Corn Futures*, Accessed September 24, 2012, http://www.cmegroup.com/trading/agricultural/grain-and-oilseed/corn.html.

Cellulosic Biofuel Waiver

As part of the RFS, EISA established a specific mandate for the use of cellulosic biofuels—ethanol or other fuels produced from woody or fibrous materials such as grasses, trees, etc. The cellulosic carveout was to start in 2010 at 100 million gallons, and increase to 16.0 billion gallons by 2022. Current cellulosic biofuel production is limited, with no commercial-scale plants in operation. Because of uncertainties over production capacity and cellulosic biofuel supply, in its February 2010 rulemaking, EPA reduced the cellulosic mandate from 100 million gallons to 6.5 million gallons for 2010.[13] EPA set cellulosic mandates of 6.6 million and 8.65 million gallons for 2011 and 2012, respectively, well below the scheduled amounts of 250 million and 500 million gallons for those years.

If the EPA administrator determines that the projected production volume of cellulosic biofuel for a given year is less than the mandated amount, she may reduce the carve-out. If she is going to do so, the administrator must reduce the required amount by November 30 of the preceding calendar year. If the administrator does reduce the mandated amount of cellulosic biofuel, she may also reduce the required amount of advanced biofuel as well as the total volume required for that year under the RFS by an equal or lesser amount, but she is *not required* to do so. In the specific case of the 2010 level, EPA retained the overall RFS level mandated in EISA.[14]

Unlike the general wavier, only the EPA administrator may initiate a decision on a cellulosic biofuel waiver.

Biomass-Based Diesel Waiver

Similar to the cellulosic biofuel carve-out, EISA also established a specific mandate for the use of biomass-based diesel (BBD) fuel. Currently, most of this fuel is "biodiesel"—a diesel fuel substitute produced from soybean oil and other vegetable oils through a process called "transesterification"—but other fuels, some of which are termed "renewable diesel," would also qualify. The BBD carve-out started in 2009 at 0.5 billion gallons and increases to a minimum of 1.0 billion gallons by 2012. Approximately 475 million gallons of biodiesel were produced in the United States in 2008. Because the EPA's rule was not finalized until 2010, the Agency established a combined biomass diesel mandate for 2009 and 2010 of 1.15 billion gallons.[15] For 2012, the BBD carveout is set at 1.0 billion gallons. Because there is domestic capacity to

[13] For example, EPA cited projections from the Energy Information Administration (EIA) that roughly 5 million gallons of cellulosic fuels could be produced in 2010, although some of that fuel would be cellulosic diesel fuel, which generates more credits per gallon due to its higher energy content. As finalized in the rule, the RFS requirements are based on ethanol-equivalent gallons, and the 5 million gallon number from EIA translates to roughly 6.5 million ethanol-equivalent gallons. U.S. Environmental Protection Agency, *Regulation of Fuels and Fuel Additives: Changes to Renewable Fuel Standard Program; Final Rule*, EPA-HQ-OAR-2005-0161, Washington, DC, February 3, 2010, p. 174, http://www.epa.gov/otaq/renewablefuels/rfs2-preamble.pdf.

[14] In general, the excess amount of advanced biofuel required because of the cellulosic waviers has been met using biomass-based diesel in excess of the biomass-based diesel carveout, as well as other fuels defined as advanced biofuels under EISA, including ethanol produced from Brazilian sugarcane.

[15] In this way, biomass-based diesel credits generated in 2009 can be used for compliance in 2009-2010. If the rule applied only to 2010, those credits generated by fuel blenders in 2009 would have been useless.

produce BBD beyond the 1.0 billion gallon floor, EPA has finalized a 2013 BBD mandate of 1.28 billion gallons.[16]

If the EPA administrator (in consultation with the Secretaries of Energy and Agriculture) determines that there are significant market circumstances (including feedstock disruptions) "that would make the price of BBD fuel increase significantly," the administrator may reduce the amount mandated for up to 60 days.[17] The administrator may extend the waiver for no more than an additional 60 days.

Reductions in the RFS

If the administrator waives a significant share of the above requirements, she must reduce the required volumes in all subsequent years. Specifically, she must reduce the applicable amounts in future years if she waives any of the above requirements by

- 20% or more for two consecutive years; or
- 50% or more in a single year.

For example, if the administrator reduced the overall RFS requirement by 6.0 billion gallons in both 2017 and 2018, then she would be required to reduce the total RFS requirement by 6.0 billion gallons in 2019 and beyond. The one exception is that these reductions in the RFS would not apply to the requirements before calendar year 2016.

Effects of a Waiver

Questions have been raised over how a waiver approval would affect food and fuel markets. As these markets are extremely complex, there is no simple answer. The effects of a waiver would likely depend on many factors:

- the degree to which the RFS requirements are relaxed under the waiver;
- the duration of the waiver;
- the scope of the waiver (cellulosic biofuel, biomass-based diesel, or the entire program);
- whether the waiver is extended; and
- prevailing supply and prices for oil, gasoline, biofuels, and feedstock commodities.

In the specific case of the 2010 waiver for cellulosic biofuel, a key question was whether this waiver would undermine the credibility of the mandates in future years and undercut investment. As EPA noted in the final rule establishing the expanded RFS, "In the proposal, we did a

[16] Environmental Protection Agency, *Regulation of Fuels and Fuel Additives: 2013 Biomass-Based Diesel Renewable Fuel Volume*, Prepublication Version, Washington, DC, September 14, 2012, http://www.epa.gov/otaq/fuels/renewablefuels/documents/rfs-biomass-diesel-std-fr.pdf.

[17] However, the amount may not represent more than 15% of the total required amount for that year.

preliminary assessment of the cellulosic biofuel industry to arrive at the conclusion that it was possible to uphold the 100 million gallon standard in 2010 based on anticipated production."[18]

In the final rule on the RFS expansion, EPA did not state whether or not the agency believed there would be sufficient capacity to meet the cellulosic mandates in coming years (250 million gallons in 2011, 500 million gallons in 2012, and 1 billion gallons in 2013), although EPA stated that "it is remarkable how much progress the industry has made in such a short time, and there is a tremendous growth opportunity for cellulosic biofuels over the next several years."[19] Ultimately, for 2010 thorough 2012, EPA found that there was insufficient production capacity to meet the scheduled levels of cellulosic biofuel, a situation likely to be continued in 2013. If EPA continues to find that mandates in later years likewise are unachievable, and if investors assume that future waivers are unavoidable, further investment in cellulosic biofuel refineries may be limited.

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[18] U.S. Environmental Protection Agency, *Regulation of Fuels and Fuel Additives: Changes to Renewable Fuel Standard Program; Final Rule*, EPA-HQ-OAR-2005-0161, Washington, DC, February 3, 2010, p. 173, http://www.epa.gov/otaq/renewablefuels/rfs2-preamble.pdf.

[19] Ibid. p. 178.