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Waiver Authority Under the Renewable Fuel Standard (RFS)

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January 21, 2014

Congressional Research Service
7-5700
www.crs.gov
RS22870

CRS REPORT
Prepared for Members and
Committees of Congress

Summary

Transportation fuels are required by federal law to contain a minimum amount of renewable fuel each year. The 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), required that a total of 16.55 billion gallons of renewable fuels be used to offset gasoline and diesel fuel in 2013. Under EISA, the scheduled mandates grow each year (to 36 billion gallons in 2022). However, the ability of fuel suppliers to meet the growing RFS mandates has been questioned. For 2014, instead of a total of 18.15 billion gallons scheduled in EISA, the Environmental Protection Agency (EPA) has proposed using waiver authority within the statute to lower the mandate to 15.21 billion gallons. Within the overall RFS there are sub-mandates (or "carveouts") for advanced and cellulosic biofuels. EPA has proposed lowering these as well.

Most of the overall RFS mandate (84% for 2013) is currently met using corn-based ethanol. The vast majority of the ethanol supplied to meet the RFS is blended into gasoline at the 10% level (E10). However, there is a limit to the amount of ethanol that can be blended into gasoline at this level, and other options for supplying ethanol (e.g., higher-level ethanol blends such as E15 and E85) are currently constrained because of infrastructure and other impediments. In prior years this had not been a problem because the volume of biofuels needed to meet the RFS mandate was below the maximum amount of ethanol that could be supplied as E10; but stakeholders were especially concerned about the possibility of facing the "blend wall" in either 2013 or 2014.

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. Under EISA the overall RFS is scheduled to grow to 18.15 billion gallons in 2014. In November 2013 EPA proposed using its general authority to lower the RFS mandates in cases of "inadequate supply." In this case, they interpreted "inadequate supply" to include an inability to *deliver* the necessary biofuels to consumers, even if there is sufficient *production* of said biofuels. Gasoline and diesel fuel suppliers and other stakeholders have generally been supportive of EPA's proposal, while biofuel producers and corn growers believe that EPA is overstepping its authority.

Questions have also 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. 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 several states in August 2012. That petition was denied for similar reasons.

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—as they have in each subsequent year. In cases where EPA projects inadequate production of cellulosic biofuels to meet the schedule in EISA, the agency must lower the mandate to the projected level, although EPA's process for doing so has been controversial, and the agency's 2012 cellulosic mandate was remanded by the U.S. Court of Appeals for the D.C. Circuit.

This report provides a brief overview of the RFS program and discusses the process and criteria for EPA to waive various parts of the RFS.

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Background and Recent History

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.[1] 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.[2] 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."[3] In August 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.[4] Governors of several other states joined that petition.[5] 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. However, EPA denied these petitions for similar reasons as in 2008.[6]

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[1] For more information on the RFS, see CRS Report R40155, *Renewable Fuel Standard (RFS): Overview and Issues*, by Randy Schnepf and Brent D. Yacobucci, and CRS Report R43325, *The Renewable Fuel Standard: In Brief* , by Kelsi Bracmort

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

[3] 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.

[4] 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. 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.

[5] New Mexico, Georgia, Texas, Virginia, Maryland, Delaware, Utah, and Wyoming. The governor of Florida wrote EPA in support of the waiver requests. 77 *Federal Register* 70754.

[6] U.S. Environmental Protection Agency, "Notice of a Decision Regarding Requests for a Waiver of the Renewable

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Another factor that could lead the EPA Administrator to waive certain parts of the RFS is the "blend wall." The vast majority of the RFS is met using ethanol blended into gasoline at the 10% level (E10). However, there is a limit to the amount of ethanol that can be blended into gasoline at this level, and other options for supplying ethanol (e.g., higher-level ethanol blends such as E15 and E85) are currently constrained because of infrastructure and other impediments. In prior years this had not been a problem because the volume of biofuels needed to meet the RFS mandate was below the maximum amount of ethanol that could be supplied as E10; but stakeholders were especially concerned about the possibility of facing this "blend wall" in either 2013 or 2014. In November 2013 EPA proposed using its general authority to lower the RFS mandates in cases of "inadequate supply."[7] EPA proposed an overall mandate of 15.21 billion gallons for 2014, instead of the 18.15 billion gallons of biofuels scheduled for 2014 in EISA, and below the 2013 mandate of 16.55 billion gallons.

Within the overall RFS there are sub-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.[8] 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 then-current and expected production capacity, driven largely by delays in production plans and a lack of investment in commercial-scale refineries.[9] Similarly, EPA finalized cellulosic biofuel mandates of 6.0 and 10.45 million gallons for 2011 and 2012, respectively—97% and 98% lower than the amounts scheduled in EISA.[10]Because of a lack of commercial cellulosic biofuel production capacity—no cellulosic production was registered in the RFS in 2011 and only about 20,000 gallons were registered in 2012—gasoline and diesel fuel producers challenged the lowered mandates in court. In January 2013, the U.S. Court of Appeals for the D.C. Circuit vacated the 2012 cellulosic mandate and remanded the rule back to EPA.[11] EPA subsequently set the 2012 level at zero and has proposed doing the same for 2011. For 2013, EPA finalized a cellulosic mandate of 6.0 million gallons (instead of 1 billion gallons), and this lowered mandate is also subject to a court challenge.[12] For 2014, EPA has proposed a cellulosic mandate of between 8 and 30 million gallons, instead of 1.75 billion gallons scheduled in the statute.

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Fuel Standard," 77 *Federal Register* 70752-70776, November 27, 2012.

[7] U.S. Environmental Protection Agency, "2014 Standards for the Renewable Fuel Standard Program; Proposed Rule," 78 *Federal Register* 71732-71784, November 29, 2013.

[8] For more information on cellulosic biofuels, see CRS Report R41106, *Meeting the Renewable Fuel Standard (RFS) Mandate for Cellulosic Biofuels: Questions and Answers*, by Kelsi Bracmort.

[9] 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.

[10] 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.

[11] API v. EPA, 706 F.3d 474 (D.C. Cir. 2013).

[12] Erin Voegele, "API Challenges 2013 RFS Cellulsoic Volume Requirement," *Biomass Magazine*, October 8, 2013.

Current RFS Requirements

The RFS requires the use of 16.55 billion gallons of renewable fuel in transportation fuels in 2013—corn ethanol is limited to counting for 13.8 billion gallons of the 2013 mandate. The RFS is scheduled to increase 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 2013 the vast majority of the mandate will be met with U.S. corn ethanol (and a smaller amount of biodiesel, as well as sugarcane ethanol from Brazil). For 2014, the overall mandate is scheduled to increase to 18.15 billion gallons, with 3.75 billion gallons of that coming from advanced biofuels, and 1.75 billion gallons of the advanced biofuel mandate coming from cellulosic biofuels. In November 2013, EPA proposed lowering all three of the mandates, to 15.21 billion gallons, 2.20 billion gallons, and 17 million gallons, respectively.[13]

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, some advanced biofuels, especially cellulosic fuels, have been slow to develop and fuel production lags EISA's mandated schedule.

Waiver Provisions

As amended by EISA, section 211(o)(7) of the Clean Air Act[14] 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."[15] 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.[16]

General Waiver

On the petition of a state or a fuel provider, or at her own discretion,[17] 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.

[13] U.S. Environmental Protection Agency, "2014 Standards for the Renewable Fuel Standard Program; Proposed Rule," 78 *Federal Register* 71732-71784, November 29, 2013.

[14] 42 U.S.C. 7545(o)(7).

[15] 42 U.S.C. 7545(o)(7)(A)(i).

[16] 42 U.S.C. 7545(o)(7)(D)-(E).

[17] 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.

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,[18] 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.[19]

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.

Waiver Petitions

In November 2012, EPA denied waiver petitions from the governors of Arkansas, North Carolina, and several other states. 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.[20] Those high prices raised the feed costs of cattle and other livestock, which may have led to higher consumer meat prices. EPA determined that the RFS requirements alone did not cause severe harm, and a waiver would do little to alleviate any problems in the states. According to EPA,

> it would not be sufficient for EPA to determine that there is severe harm to the economy of a State, region or the United States; rather, EPA must determine that RFS implementation would severely harm the economy. Furthermore, EPA interprets the word "would" as requiring a generally high degree of confidence that implementation of the RFS program would severely harm the economy of a State a region, or the United States. EPA interprets "severely harm" as specifying a high threshold for the nature and degree of harm. Although there are many factors that affect an economy, the RFS waiver provisions call for EPA to evaluate the impact of the RFS mandate itself. EPA does not evaluate the impact of the RFS volume requirements in isolation, but instead evaluates them in the context of all of the relevant circumstances, including in this case the impact of the drought. However the

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

[19] 72 *Federal Register* 23928.

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

purpose of this analysis is to characterize the impact of the RFS mandate itself, within this context.[21]

Proposed Waiver of 2014 Standards

In November 2013, EPA, under its own authority, proposed lowering the 2014 overall RFS mandate from 18.15 billion gallons to 15.21 billion gallons, and the advanced biofuel mandate from 3.75 billion gallons to 2.20 billion gallons.[22] As noted above, most of the RFS mandate is met through the use of ethanol blended in gasoline at the 10% level (E10), and the volume of gasoline consumed in the United States is basically fixed. Thus, the maximum amount of ethanol that can be supplied in that gasoline is also fixed.[23] Some stakeholders raised concerns that the scheduled volumes for 2014 would exceed the "blend wall" limitations. Others argued that maintaining the levels set in EISA would provide the necessary incentive for the development of infrastructure to provide fuels other than E10.

EPA has proposed using its general authority to lower the RFS mandates in cases of "inadequate supply." In this case, they interpreted "inadequate supply" to include an inability to *deliver* the necessary biofuels to consumers, even if there is sufficient *production* of said biofuels. As noted by EPA,

> [W]e believe that this ambiguous provision is reasonably and best interpreted to encompass the full range of constraints that could result in an inadequate supply of renewable fuel to the ultimate consumers, including fuel infrastructure and other constraints. This would include, for instance, factors affecting the ability to produce or import qualifying renewable fuels as well as factors affecting the ability to distribute, blend, dispense, and consume those renewable fuels.
>
> The waiver provision at CAA 211(o)(7)(A)(ii) is ambiguous in several respects. First, it does not specify what the general term ''supply'' refers to. The common understanding of this term is an amount of a resource or product that is available for use by the person or place at issue. [footnote omitted] Hence the evaluation of the supply of renewable fuel, a product, is best understood in terms of the person or place using the product. In the RFS program, various parties interact across several industries to drive the ultimate use of renewable fuel by consumers of transportation fuel. For example, supplying renewable fuel to obligated parties and terminal blenders is one part of this process, while supplying renewable fuel to the ultimate consumer as part of transportation fuel is a different and later aspect of this process. This is clearly the case with respect to the renewable fuels ethanol and biodiesel, which are typically supplied to the obligated parties and terminals as a neat fuel, but in almost all cases are supplied to the consumer as a blend with conventional fuel (ethanol and gasoline or biodiesel and diesel). The waiver provision does not specify what product is at issue (for example, neat renewable fuel or blended renewable fuel with transportation fuel) or the person or place at issue (for example, obligated party or ultimate consumer), in determining whether there is an "inadequate domestic supply."[24]

[21] U.S. Environmental Protection Agency, "Notice of a Decision Regarding Requests for a Waiver of the Renewable Fuel Standard," 77 *Federal Register* 70756, November 27, 2012.

[22] U.S. Environmental Protection Agency, "2014 Standards for the Renewable Fuel Standard Program; Proposed Rule," 78 *Federal Register* 71732-71784, November 29, 2013.

[23] For more information, see CRS Report R40445, *Intermediate-Level Blends of Ethanol in Gasoline, and the Ethanol "Blend Wall"*, by Brent D. Yacobucci.

[24] U.S. Environmental Protection Agency, "2014 Standards for the Renewable Fuel Standard Program; Proposed Rule," (continued...)

Gasoline and diesel fuel suppliers and other stakeholders have generally been supportive of EPA's proposal,[25] while many biofuel producers believe that EPA is overstepping its authority.[26]

Cellulosic Biofuel Waiver[27]

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 few 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.[28] EPA set cellulosic mandates of 6.0 million gallons, 10.45 million gallons, and 6.0 million gallons for 2011, 2012, and 2013 respectively, well below the scheduled amounts of 250 million gallons, 500 million gallons, and 1.0 billion gallons for those years. EPA has proposed a 2014 standard of 17 million gallons, significantly lower than the scheduled level of 1.75 billion gallons.

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. For 2010 through 2013, EPA retained the overall RFS and advanced biofuel levels mandated in EISA.[29] For 2014, EPA has determined that there would be insufficient advanced biofuel supply to make up the shortfall in cellulosic supply, and has proposed lowering both the advanced biofuel and overall RFS.

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78 *Federal Register* 71755-71756, November 29, 2013.

[25] American Petroleum Institute, *Industry, Consumer Groups Say EPA Took Steps to Protect Consumers from Blend Wall, but More Needs to Be Done*, Washington, DC, November 2013, http://www.api.org/news-and-media/news/newsitems/2013/nov-2013/epa-took-steps-to-protect-consumers-from-blend-wall-but-more-needs-to-be-done.

[26] Holly Jessen, "Examining EPA's Authority to Reduce RFS Volume Requirements," *Ethanol Producer Magazine*, November 22, 2013, http://www.ethanolproducer.com/articles/10489/examining-epas-authority-to-reduce-rfs-volume-requirements.

[27] For more information on cellulosic fuels, see CRS Report R41106, *Meeting the Renewable Fuel Standard (RFS) Mandate for Cellulosic Biofuels: Questions and Answers*, by Kelsi Bracmort.

[28] 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.

[29] 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.

Unlike the general waiver, only the EPA administrator may initiate a decision on a cellulosic biofuel waiver (as opposed to, e.g., a state). Because of a lack of commercial cellulosic biofuel production capacity—no cellulosic production was registered in the RFS in 2011 and only about 20,000 gallons were registered in 2012—gasoline and diesel fuel producers challenged the lowered mandates in court. In January 2013, the U.S. Court of Appeals for the D.C. Circuit vacated the 2012 cellulosic mandate and remanded the rule back to EPA.[30] EPA subsequently set the 2012 level at zero and has proposed doing the same for 2011.

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. 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.[31] For 2012, the BBD carveout is set at 1.0 billion gallons. Because there is domestic capacity to produce BBD beyond the 1.0 billion gallon floor, EPA finalized a 2013 BBD mandate of 1.28 billion gallons,[32] and has proposed the same level for 2014 and 2015.[33]

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.[34] The administrator may extend the waiver for no more than an additional 60 days. To date EPA has not exercised this authority.

It should be noted that tax credits that have supported the development of biomass-based diesel fuels expired at the end of 2013.[35] Without the credits, it is unclear how much BBD will be produced in 2014. It is possible that the expiration of the credit could constrain BBD supply in 2014 or later years. The tax credits have expired and been extended (sometimes retroactively) several times.

[30] API v. EPA, 706 F.3d 474 (D.C. Cir. 2013).

[31] 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.

[32] 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.

[33] U.S. Environmental Protection Agency, "2014 Standards for the Renewable Fuel Standard Program; Proposed Rule," 78 *Federal Register* 71737, November 29, 2013.

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

[35] For more information on BBD tax credits and other biofuels incentives, see CRS Report R42566, *Alternative Fuel and Advanced Vehicle Technology Incentives: A Summary of Federal Programs*, by Lynn J. Cunningham et al.

Reductions in the RFS

Starting in 2016, 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 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."[36]

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."[37] Ultimately, for 2010 thorough 2013, EPA found that there was insufficient production capacity to meet the scheduled levels of cellulosic biofuel, a situation likely to be continued in 2014. If EPA continues

[36] 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.

[37] Ibid., p. 178.

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.

Similarly, EPA's proposal to partially waive the overall RFS requirements for 2014 may hamper investment in biofuels production capacity. On the other hand, requiring smaller amounts of biofuels in 2014 may put downward pressure on corn demand and corn prices, which could affect many other markets.

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