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March 11, 2010

EPA FINALIZES CHANGES TO RENEWABLE FUEL STANDARD PROGRAM

I. Introduction

The Environmental Protection Agency ("EPA") has finalized regulations that update the Renewable Fuel Standard ("RFS") Program, pursuant to the Energy Independence and Security Act of 2007 ("EISA," Pub. L. No. 110-140).[1] The initial RFS Program ("RFS1"), established by the Energy Policy Act of 2005 (Pub. L. No. 109-58), required a minimum volume of renewable fuel to be blended into gasoline each year.[2] The new program ("RFS2") now applies to all transportation fuel, increases the volume standard and creates new fuel categories and eligibility requirements, including mandatory greenhouse gas ("GHG") reduction thresholds for select fuels.[3]

RFS2 expands on the purposes originally set forth by RFS1. By mandating minimum volumes of renewable fuel in the U.S. fuel supply, it is expected that greenhouse gas emissions will decrease, greater independence from imported petroleum will be achieved, and the nation's renewable fuels sector will grow considerably.[4] EPA has projected that by 2022, when the required volume of renewable fuels increases to **36 billion gallons** ("bg"), there will be new and expanded markets for agricultural products, like corn and soybeans, and cellulosic feedstock, as well as markets for advanced biofuels and conversion technologies.[5]

To further encourage growth in the biofuel sector, the U.S. Department of Agriculture is considering increasing funding for companies that want to convert biomass to bio-energy and bio-based products.[6] The EPA is also reviewing a Clean Air Act waiver request that, if approved, would permit the ethanol content of gasoline to be increased from

[1] Envtl. Prot. Agency, EPA-420-F-10-007, Factsheet: EPA Finalizes Regulations for the Nat'l Renewable Fuel Standard Program for 2010 and Beyond 1 (2010) [hereinafter EPA, Finalizes], *available at* http://www.epa.gov/otaq/renewablefuels/420f10007.pdf.

[2] Envtl. Prot. Agency, EPA-HQ-OAE-2005-0161, Preamble: Regulation of Fuels and Fuel Additives: Changes to Renewable Fuel Standard Program, I.A.1. (2010) [hereinafter EPA, PREAMBLE], *available at* http://www.epa.gov/otaq/renewablefuels/rfs2-preamble.pdf.

[3] EPA, Finalizes, *supra* note 1.

[4] *Id.*

[5] *Id.*

[6] Press Release, United States Department of Agriculture, Biomass Crop Assistance Program to Spur Production of Renewable Energy, Job Creation (Feb. 3, 2010), *available at*: http://www.usda.gov/wps/portal/!ut/p/_s.7_0_A/7_0_1RD?printable=true&contentidonly=true&contentid=2010/02/0046.xml.

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10 percent to 15 percent.[7] This would allow the market to better absorb the increase in biofuels. Though EPA does not expect to issue a decision until mid-2010, the Agency has indicated the "need" to approve such an increase.[8]

This all coincides with the expansion and promotion of renewables. As mentioned earlier, the RFS2 program now applies to all transportation fuel. This includes gasoline and diesel for use in motor vehicles, motor vehicle engines, nonroad vehicles and nonroad engines.[9] It also includes marine diesel, heating and jet fuel.[10] This means that refiners, except for small refiners that fall into the statutory exclusion, and importers who produce or import such gasoline or diesel fuel within the 48 contiguous states or Hawaii have to comply with the standards set out in RFS2.[11] In areas where a U.S. territory opts in, the standards also apply.[12]

The new regulations set out in this recent final ruling will apply starting on or after July 1, 2010. However, with regards to the volume standards each obligated party must meet, the compliance period runs from January 1, 2010 to December 31, 2010.[13]

II. Notable Changes

As mentioned above, RFS2 expands RFS1. Most notably, it extends the program's application to all transportation fuels (as already detailed), increases and modifies the volume standards and establishes new definitions and criteria for renewable fuels and feedstock.

The volume of fuel required by obligated parties has not just increased for 2010 – each subsequent year, the volume requirement becomes more considerable until it reaches a requisite 36 bg in 2022.[14]

The total renewable fuel requirement has also been divided into four separate categories, each with its own volume requirement.[15] These categories of fuels also have to meet certain GHG emission performances and be made from feedstocks that meet the new definition of renewable biomass which includes certain land use restrictions.[16]

The specific details for these requirements are found below.

III. Volume Standards

For 2010, the volume of renewable fuels required to be produced or imported in the designated U.S. states is **12.95bg**.[17] This total volume must consist of specific amounts in each of the following fuel categories: cellulosic biofuel, biomass-based diesel and advanced biofuel. The remaining volume falls into the "renewable fuel" category.[18]

6.5 million gallons ("mg") or 0.0065 bg of cellulosic biofuel is required for this year.[19] EISA originally mandated 0.1 bg for 2010, but EPA has the discretion to lower this amount based on the amount of cellulosic biofuel the Energy Information Agency ("EIA") expects to be available.[20] Since the EIA estimated only 5.04 mg of cellulosic biofuel would be produced in 2010 (6.5 million ethanol-equivalent gallons), EPA set the volume standard accordingly. However, EPA plans to monitor and assess the growth of the cellulosic biofuel industry and will evaluate and reset the standard each year by notice-of-proposed rulemaking ("NPRM"). Because of this necessary adjustment, cellulosic credits will be available to obligated parties for end-of-the-year compliance at $1.56 per gallon up to the difference between the volume EISA initially required and what has been mandated for

[7] Letter from Gina McCarthy, Assistant Administrator, Environmental Protection Agency to General Wesley Clark and Jeff Broin, Co-chairman, Growth Energy (November 30, 2009), *available at*: http://www.epa.gov/otaq/regs/fuels/additive/lettertogrowthenergy 11-30-09.pdf.

[8] EPA letter to Growth Energy in response to the latter's E15 waiver petition states, "It is clear that ethanol will need to be blended into gasoline at levels greater than the current limit of 10 percent." *Id.* at 1.

[9] Regulation of Fuels and Fuel Additives: Changes to Renewable Fuel Standard Program, 40 C.F.R. §80.1401 (2010).

[10] *Id.*; *id.* at §80.1403, 9-11 (there are exemptions to certain fuels as detailed in §80.1403).

[11] *Id.* at §80.1406(a)(1); id. at §80.1401, 80.1411 (a small refinery is defined as "a refinery for which the average aggregate daily crude oil throughput for calendar year 2006 does not exceed 75,000 barrels" and is exempted for the 2010 compliance year only).

[12] *Id.* at §80.1406(a)(2).

[13] *Id.* at §80.1400.

[14] EPA, Preamble, *supra* note 2, at I.A.1.

[15] *Id.*

[16] *Id*; Regulation, *supra* note 9, at §80.1401.

[17] EPA, Finalizes, *supra* note 1, at 1.

[18] EPA, Preamble, *supra* note 2, at I.A.2.a; Regulations, *supra* note 9, at §80.1406(a)(1) (Volumes based on equivalence volume, not actual volume. Equivalence values for denatured ethanol are 1.0; biodiesel 1.5, butanol =1.3 and non-ester renewable diesel with lower heating value of at least 123,500 Btw/gal =1.7.).

[19] EPA, Finalizes, *supra* note 1, at 4.

[20] Energy Independence & Sec. Act of 2007, Pub. L. No. 110-140, §202 (2007); EPA, Preamble, *supra* note 2, at I.A.2., II.E.1.a.

2010. While section 211(o)(7)(D) of EISA specifically requires that the cellulosic standard be set based on volume projected to be available the following year and production has fallen short this year, as the chart below indicates, cellulosic biofuel is expected and intended to make up the majority of the advanced biofuel requirement by 2022 with the standard currently set for that year at 16.0 bg. Thus, it is evident that the cellulosic biofuel requirement is meant to increase considerably with each year.

The volume standard for biomass-based diesel has essentially been set at 1.15 bg for this year.[21] The 2010 requirement is only 0.65 bg but because compliance mechanisms were not previously in place, obligated parties are required to meet a combined 2009/2010 requirement by the end of the 2010 compliance year.[22] Because the 2009 volume requirement was 0.5 bg, the volume requirement by the end of 2010 is 1.15 bg. The current chart caps biomass-based diesel at 15.0 bg by 2022.

Advanced biofuel is set at 0.95 bg for 2010. Advanced biofuel is defined as renewable fuel, other than ethanol derived from cornstarch, and has a lifecycle GHG emission of 50% less than baseline lifecycle GHG.[23] The cellulosic biofuel and biomass-based diesel volume requirements are nested in the advanced biofuel requirement.[24] This means that the cellulosic biofuel and biomass-based diesel volume can contribute to meeting the total required advanced biofuel volume set by the regulations.[25]

As noted above, the total renewable fuel must add up to 12.95 bg. The other fuels are also nested in this total so any renewable fuel that meets the requirement for advanced biofuel is also valid for meeting the total renewable fuel requirement.[26] However, the renewable fuel must now meet new definitions detailed in the next section.

While the 2010 standards are set, subsequent standards may be reset each year by EPA according to NPRM procedures. EIA or stakeholders may provide EPA with data that prompts EPA to modify the standards.[27] For instance, each year, EIA estimates the volume of transportation fuel that will be consumed for the following year as well as the amount of renewable fuel that may be available. Because such data may vary annually, EPA is open to resetting standards. As the second chart indicates (see footnotes a & b), EPA is prepared to make adjustments.

Standards for 2010[28]		
Fuel Category	Percentage of Fuel Required to be Renewable	Volume of Renewable Fuel (in billion gal)
Cellulosic biofuel	0.004%	0.0065
Biomass-based diesel	*1.10%	*1.15
Total Advanced biofuel	0.61%	0.95
Renewable fuel	8.25%	12.95

* Combined 2009/2010 Biomass-Based Diesel Volumes Applied in 2010

[21] EPA, Finalizes, *supra* note 1, at 4.
[22] *Id.*
[23] Regulation, *supra* note 9, at §80.1401.
[24] EPA, Preamble, *supra* note 2, at I.A.1.
[25] *Id.*
[26] *Id.*
[27] *Id.* at I.A.2., II.E.1.a.
[28] EPA, Finalizes, supra note 1, at 4.

EISA Renewable Fuel Volume Requirements (billion gallons)[29]				
Year	Cellulosic biofuel requirement	Biomass-based diesel requirement	Advanced biofuel requirement	Total renewable fuel requirement
2008	n/a	n/a	n/a	9.0
2009	n/a	0.5	0.6	11.1
2010	0.1	0.65	0.95	12.95
2011	0.25	0.80	1.35	13.95
2012	0.5	1.0	2.0	15.2
2013	1.0	A	2.75	16.55
2014	1.75	A	3.75	18.15
2015	3.0	A	5.5	20.5
2016	4.25	A	7.25	22.25
2017	5.5	A	9.0	24.0
2018	7.0	A	11.0	26.0
2019	8.5	A	13.0	28.0
2020	10.5	A	15.0	30.0
2021	13.5	A	18.0	33.0
2022	16.0	A	21.0	36.0
2023+	B	B	b	b

[a] To be determined by EPA through a future rulemaking, but no less than 1.0 billion gallons.
[b] To be determined by EPA through a future rulemaking.

IV. New Definition

As mentioned, a renewable fuel must now meet new definitions. According to the new regulations, a renewable fuel must (i) be produced from renewable biomass, (ii) replace or reduce the quantity of fossil fuel present in a transportation fuel, heating oil, or jet fuel and (iii) have a lifecycle GHG emission at least 20 percent less than baseline lifecycle greenhouse gases, unless the fuel is exempted.[30] The second component merely refers to the use of the renewable fuel that falls under this rule and the third component will be addressed in the next section.

Renewable biomass is also newly defined in the regulations.[31] Feedstock for renewable fuel must come from the following enumerated list:

- Planted crops and crop residue harvested from existing agricultural land cleared or cultivated prior to December 19, 2007 and that was nonforested and either actively managed or fallow on December 19, 2007
- Planted trees and tree residue from a tree plantation located on non-federal that was cleared at any time prior to December 19, 2007 and actively managed on December 19, 2007

[29] *Id.* at 3.
[30] Regulation, *supra* note 9, at §80.1401. Exempted fuel detailed in §80.1403.
[31] EPA, FINALIZES, supra note 1, at 6.

- Animal waste material and animal byproducts
- Slash and pre-commercial thinnings from non-federal forestland that is not ecologically sensitive forestland
- Biomass obtained from the immediate vicinity of buildings and other areas regularly occupied by people, or of public infrastructure, in an are at risk of wildfire
- Algae
- Separated yard waste or food waste, including recycled cooking and trap grease and materials described in §80.1426(f)(5)(i)[32]

However, more approved feedstocks are mentioned in the next section.

Both domestic and foreign producers in the non-agricultural sector (planted trees and tree residues, animal waste material and byproducts, slash and pre-commercial thinnings) must comply with specific recordkeeping and reporting requirements for their facilities to ensure their feedstocks comply with renewable biomass requirements. Alternatively, producers may form a consortium to fund a third party to conduct an annual survey subject to EPA approval. Domestic agricultural sector (planted crops and crop residues) will not have to do any recordkeeping. EPA will monitor agricultural land data each year and if a set baseline level of land used is exceeded, then domestic non-agricultural producers will have to do individual recordkeeping and reporting or use a consortium. Foreign producers in the agricultural sector must elect either individual or aggregate recordkeeping and reporting.[33]

V. Lifecycle GHG

The GHG emission threshold is a new requirement starting this year. To qualify as a renewable fuel, the lifecycle of GHG emissions of a fuel must be less than the lifecycle GHG emissions of the 2005 baseline average gasoline or diesel fuel that it replaces by a set percentage.[34]

To be more specific, the average amount of GHG emitted from cellulosic biofuel throughout its lifecycle must be 60% less than the average amount of GHG emitted by gasoline or diesel as measured in 2005 to qualify as "cellulosic biofuel" under the new regulations.[35] For biomass-based diesel, the lifecycle GHG emission must be 50% less than the 2005 baseline; for advanced biofuel, the amount must also be 50% less. To qualify as a renewable fuel, the fuel must emit 20% less GHG over its lifetime than gasoline or diesel according to the 2005 baseline.[36] The 20% standard only applies to renewable fuel from facilities that began construction after December 19, 2007 as the ones that began construction prior to the December date are grandfathered under EISA.[37] Natural gas or biomass-fueled ethanol facilities that began construction prior to December 19, 2009, are exempted under the new regulations.[38]

Lifecycle GHG Thresholds Specified in EISA (percent reduction from 2005 baseline) [39]	
Renewable fuel	20%
Advanced biofuel	50%
Biomass-based diesel	50%
Cellulosic biofuel	60%

Evaluation of a fuel's lifecycle emissions requires extensive study.[40] EPA looks at the aggregate GHG emissions from a fuel's full lifecycle, including direct and significant indirect emissions (even international land use change), all stages of fuel and feedstock production and distribution, and use by the ultimate consumer.[41] EPA acknowledges that science in this area continues to evolve so the Agency is open to reassess its regulations according to its petition process detailed in the next section and by annual NPRM.

The EPA has found that several fuel pathways meets or exceeds required minimum GHG reduction

[32] *Id.*
[33] Regulation, *supra* note 9, at §80.1401; EPA, Preamble, *supra* note 2, at I.A.3.c.
[34] EPA, Finalizes, supra note 1, at 4.
[35] *Id.*
[36] *Id.*
[37] EPA, Preamble, *supra* note 2, at I.A.3.a.
[38] Regulation, *supra* note 9, at §80.1403(c).
[39] EPA, Preamble, *supra* note 2, at Table I.A.3.1.
[40] EPA, Finalizes, *supra* note 1, at 5.
[41] EISA refers to definition of lifecycle GHG emissions from Clean Air Act Section 211(o)(1).

standards.[42] Thus, the following pathways qualify as renewable fuels without any further evaluation:

- Corn based ethanol plants, including ethanol produced from corn starch at new (or expanded capacity) natural gas, biomass, or biogas-fired facility using new efficient technologies (complies with 20% threshold)
- Biobutanol from corn starch (complies with 20% threshold)
- Soy based biodiesel or renewable diesel (complies with 50% threshold for biomass-based diesel category)
- Biodiesel or renewable diesel made from waste grease, oils, and fats (complies with 50% threshold for biomass-based diesel category)
- Sugarcane based ethanol (complies with 50% threshold for advanced fuels)
- Diesel produced from algal oils (complies with 50% threshold for biomass-based diesel category)
- Cellulosic ethanol and cellulosic diesel based on modeled pathways (complies with 60% threshold)

In addition to the feedstocks mentioned in the above section, fuels made from the following feedstocks have been determined by EPA to cause little or no indirect land change and based on its performance in other aspects with relation to GHG emissions, are expected to meet GHG requirements and meet the definition of a renewable fuel:[43]

- Corn residues such as corn stover, wheat straw, rice straw and citrus residue
- Forest material including eligible forest thinnings and solid residue remaining from forest product production
- Secondary annual crops planted on existing crop land such as winter cover crops
- Separate food and yard waste including biogenic waste from food processing
- Perennial grasses including switchgrass and miscanthus

In other words, ethanol made from any of the above feedstocks, like switchgrass, would meet the requirements of a renewable fuel and can be used to meet the volume requirements of the RFS program.

VI. EPA Plans & Petition Process

The RFS program is a continuing process and will be constantly reassessed. EPA expects to update its regulations as more data becomes available, and each year, it will engage in the NPRM process to set new standards.[44] Notice of proposed rulemaking will be given in the spring and a final rule will be issued by November 30 of each year.[45]

EPA is currently seeking expert advice from National Academy of Sciences and other experts with regards to its approach in determining lifecycle GHG emissions and may make modifications to its GHG assessment based on the advice it will receive.[46] However, EPA estimates that the National Academy of Sciences may take up to two years to evaluate its plan.[47]

Even if the EPA learns of a need to reanalyze its criteria based on updated information, EPA will not penalize already functioning facilities. Any changes will go through rulemaking and apply only to future facilities.[48]

Meanwhile, EPA is planning on doing future modeling to determine if other fuel pathways not yet approved of will meet the new definitions and criteria set forth by RFS2. The Agency anticipates that within 6 months, it will likely approve of grain sorghum ethanol, woody pulp ethanol, and palm oil biodiesel.[49]

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[42] EPA, Finalizes, *supra* note 1, at 2, 5; Envtl. Prot. Agency, EPA-420-F-10-006, Factsheet: EPA Lifecycle Analysis of Greenhouse Gas Emissions from Renewable Fuels 2, (2010) [hereinafter EPA, LIFECYCLE], *available at* http://www.epa.gov/otaq/renewablefuels/420f10006.pdf.

[43] EPA, Lifecycle, at 2.

[44] EPA, Preamble, *supra* note 2, at I.A.2.

[45] *Id.*

[46] EPA, Lifecycle, *supra* note 40, at 4.

[47] EPA, Preamble, *supra* note 2, at I.A.3.a.

[48] *Id.* at I.A.3.c.

[49] EPA, Lifecycle, *supra* note 40, at 3.

If not "preapproved" in the new regulations, a biofuel producer can petition the EPA to consider whether a product is eligible or not.[50] EPA will consider petitions from parties who have at least reached a stage in their business process where it can be demonstrated that the fuel pathway can feasibly be implemented and it seems likely that the petitioning party will move forward with production. The petition must also contain enough information about the fuel pathway to permit EPA to effectively assess its lifecycle GHG emissions.[51]

VII. Compliance Procedures

As previously mentioned, regulations apply to all renewable fuel produced on or after July 1, 2010, though the compliance year runs from January 1, 2010 to December 31, 2010.

To determine compliance with the RFS program, EPA is continuing its usage of the Renewable Identification Number (RIN) system.[52] Parties that have been subject to RFS1 already have a RIN that they can use for 2010. A RIN is a unique number generated to represent a volume of renewable fuel.[53] Those who have not taken part of the RFS program before must register with EPA and get a RIN generated for each type of fuel they produce or import.[54] Any new RINs generated on or after July 1, 2010 will then be subject to RFS2.[55]

The volume requirements are achieved by obtaining the appropriate RINs.[56] Obligated parties must show they have obtained enough RINs to satisfy their compliance for the 2010 calendar year by February 28, 2011.[57] EPA will then keep track of the RINs using the EPA Moderated Transaction System (EMTS).[58] Any deficit may be carried into the following year but only that one year.[59] Alternatively, if an obligated party acquires more RINs than it needs, it may carry a certain percentage (generally 20%) over to the next year or transfer them to another party.[60] Obligated parties will also have to comply with reporting and recordkeeping procedures as noted above.[61] Civil penalties may ensue for violation of the RFS program for each day and for each type of violation.[62]

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[50] *Id.*; Regulation, *supra* note 9, at §80.1416.
[51] EPA, Preamble, *supra* note 2, at I.A.3.c., V.C.
[52] *Id.* at I.A.2.b.; *See* Regulation, *supra* note 9, at §80.1425-32.
[53] Regulation, *supra* note 9, at §80.1401.
[54] *Id.* at §80.1450.
[55] *Id.* at §80.1400.
[56] *Id.* at §80.1427.
[57] EPA, Preamble, *supra* note 2, at I.A.2.b.
[58] *Id.* at §80.1452.
[59] Regulation, *supra* note 9, at §80.1427(b).
[60] EPA, Preamble, *supra* note 2, at II.G.
[61] *See* Regulation, *supra* note 9, at §80.1451, §80.1454.
[62] *Id.* at §80.1463.

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