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EPA Issues New Renewable Fuels Standard

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On February 3, 2010, the U.S. EPA finalized its long-awaited amendments to the National Renewable Fuel Standard program ("RFS2"), increasing mandated quotas of ethanol, biodiesel and other biofuels in the U.S. transportation fuel supply.¹ The RFS was originally created in the 2005 federal energy bill and substantially modified by the Energy Independence and Security Act of 2007 ("EISA").² Refiners, importers and blenders of transportation fuels, as well as producers of biofuels, should look closely at the RFS2 to understand the new obligations and determine if the rule is consistent with their business needs. Agency petition processes and legal challenges may be available to modify the RFS2 requirements.

Refiners and importers that are "obligated parties" under the new rules will want to ensure that they have an adequate supply of renewable fuel credits to meet the quota requirements or seek an EPA waiver if adequate supplies are not available. Regulated entities should review the final rule to make sure that compliance and enforcement rules are sufficiently clear, and that their existing production and internal procedures will work with the fuel volume compliance mechanisms mandated by the final rule.

Biofuel producers, biomass feedstock providers, technology providers (such as enzyme suppliers) and investors in next-generation fuel technologies will want to ensure that their technology and products qualify under the new rule. EPA has prequalified a number of common fuel pathways, and a petition process is available for pathways that EPA has not yet modeled.

Background:

The RFS2 program sets quotas for biofuels in U.S. fuel supply starting at 12.95 billion gallons in 2010 with an ultimate goal of 36 billion gallons of renewable fuel by 2022.³ The rule includes nested sub-quotas for advanced biofuels, cellulosic biofuels and biomass-based diesel, with the goal for cellulosic fuels at 21 billion gallons by 2022. RFS2 also credits certain electricity from renewable biomass that is used in lieu of transportation fuels (for example, in electric vehicles). The policy goals of the RFS2 include energy independence through displacing imported petroleum, increased domestic energy supplies, reductions in greenhouse gases and increased farm income. However, the rule will increase particulate matter and ozone concentrations in some areas, and will increase U.S. food prices by \$10 per person.

Renewable Fuels and Life Cycle Analysis

Renewable fuels are those derived from "renewable biomass" which is defined both in terms of types of biomass as well as sources of production. Generally, biomass must come from crops or crop residues, animal wastes or byproducts, separated food and yard waste, and forest biomass such as slash and pre-commercial thinnings. In order to address global warming concerns, the RFS2 also requires fuels to meet certain greenhouse gas reduction targets compared to traditional fossil-fuel gasoline and diesel, based on a controversial life-cycle analysis ("LCA") (see below). The LCA requires EPA to consider significant direct and indirect emissions from all stages of the fuel cycle, including feedstock production, distribution and ultimate combustion. The analysis includes "indirect land-use" calculations in the lifecycle greenhouse gas analysis. For example, the LCA requires accounting for the release of greenhouse gases when forest land is cleared in other countries to compensate for lowered exports when American agricultural cropland is turned to fuel crops (such as corn ethanol) rather than food crops because these forests contain sequestered carbon that can be released when forests are converted to agriculture (for example, by slash and burn methods). EPA's 2009 proposed rule would have disqualified most corn ethanol as a renewable fuel based on LCA, but adjustments to the formula in the final rule will now credit corn ethanol produced from "new or expanded capacity from an existing natural gas-fired facility using advanced efficient technologies" as meeting the 20% greenhouse gas emission threshold.

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Lifecycle GHG Thresholds Specified in EISA

(Percent reduction from 2005 baseline)

Renewable fuel* - 20%

Advanced biofuel - 50%

Biomass-based diesel - 50%

Cellulosic biofuel - 60%

**The 20% criterion generally applies to renewable fuel from new facilities that commenced construction after December 19, 2007.*

Source: U.S. EPA

RINs

The RFS affects refiners, importers and blenders of traditional petroleum-based fuels and creates a captive market for producers of biofuels, including corn ethanol, biomass-based diesel, cellulosic biofuels and algae. The RFS2 is implemented through a trading mechanism using the currency of "RINs" (i.e., renewable identification numbers) which are an environmental attribute similar to renewable energy certificates in the renewable energy sector. Each refiner or importer must hold RINs representing increasing percentages of renewable fuels. Percentages for 2010 are: 8.25% renewable fuel, 0.61% advanced biofuel, 1.1% biodiesel and 0.004% cellulosic. Percentages increase annually until 2022. RINs may be separated from actual gallon of fuel and traded independently. The new trading and tracking rules will take effect July 1, 2010.

Cellulosic Biofuels

EISA requires EPA to set the cellulosic biofuel standard for the next year based on the lesser of the volume specified in EISA or the projected volume of biofuel production based on estimates for that year. Under the final rule, EPA has revised the standard downward to 6.5 million gallons, well below the 100 million gallon standard in EISA and the proposed rule. Because the revised standard is less than that required by EISA, EPA is required to make available for sale to obligated parties cellulosic credits, which it calls "Cellulosic Biofuel Waiver Credits," in order to allow obligated parties to meet their renewable volume obligations under EISA. EISA requires the price to be an inflation-adjusted price that is the higher of \$0.25 per gallon or the amount by which \$3.00 per gallon exceeds the average wholesale price of a gallon of gasoline in the United States. Based on this formula, EPA stated it will make available these Cellulosic Biofuel Waiver Credits for a price of \$1.58⁴ per gallon-RIN for compliance year 2010.

Significant features of the final rule and changes from the proposed rule include:

- Indirect land-use LCA was modified to include all countries, which results in lower impacts.
- The 20% LCA for corn starch-based ethanol will be met by gas-fired plants, but not coal-fired.
- Other fuels qualifying for various categories are: sugarcane ethanol; biobutanol from corn starch; soy-based biodiesel; biodiesel from waste grease, oils and fats; algae-based fuel; and most cellulosic ethanol and diesel.
- A petition process has been established for other fuels to demonstrate that they meet RFS2 standards.
- The continuation of equivalence values as the measure of the number of gallons necessary for compliance and adoption of a new energy equivalence formula.
- The original 2010 ethanol targets have been retained.
- The original 2010 target for cellulosic ethanol was revised downward from 100 million gallons to 6.5 million gallons.⁵
- Cellulosic Biofuel Waiver Credits will be made available for to obligated parties for year-end compliance for a price of \$1.58 per gallon-RIN.
- The standard for biomass-based diesel is set at 1.15 billion gallons (combining the 2009 and 2010 quotas).

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- Coverage of the RFS2 has been expanded to fuel used in nonroad vehicles, locomotives and marine engines (but does not include aviation fuels).
- Definitions of “renewable biomass” have been revised to comport with changes made in EISA.
- Biofuel producers must keep records of feedstock sources to prove that inputs qualify as renewable biomass.

The RFS2 represents a major change in the gasoline and diesel markets, and significantly affects petroleum refiners, companies with interests in ethanol production (feedstock production, enzymes, distillation) and investors in next-generation fuel technologies. The rule is complex and controversial, and some aspects of the rule are likely to be challenged in court. The rule will be published in the Federal Register imminently, and legal challenges must be filed by early April.

For more information, please contact Alan Bickerstaff.

1. Regulation of Fuels and Fuel Additives: Changes to Renewable Fuel Standard Program; Proposed Rule, 74 Fed. Reg. 24904 (May 26, 2009); Regulation of Fuels and Fuel Additives: Changes to Renewable Fuel Standard Program; Final Rule, 75 Fed. Reg. ____ (Feb. ____, 2010). The changes in EISA are reflected in section 211o of the Clean Air Act, 42 U.S.C. § 7511o, and the RFS2 rules will be codified at 40 C.F.R. Part 80, Subpart M. The initial RFS1 program was implemented by rules promulgated by EPA at 72 Fed. Reg. 23900 (May 1, 2007), and the EISA revisions were due by December 19, 2008, [but EPA missed this deadline by over a year].

2. 2005 Energy Policy Act, Pub. L. 109-58; 2007 Energy Independence and Security Act, Pub. L. 110-140.

3. The original RFS1 created under the EPCA 2005, by comparison, mandated 4.0 billion gallons in 2006 ramping up to 7.5 billion gallons by 2012.

4. Although EPA's regulatory announcement states the waivers will be priced at \$1.56 per gallon-RIN, the actual final rule states that the price is \$1.58 per gallon-RIN.

5. Based on ethanol equivalent gallons.