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Regulation of Fuels and Fuel Additives: Renewable Fuel Standard Program; Final Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 80

[EPA–HQ–OAR–2005–0161; FRL–8299–9]

RIN 2060–AN76

Regulation of Fuels and Fuel Additives: Renewable Fuel Standard Program

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: Under the Clean Air Act, as amended by Section 1501 of the Energy Policy Act of 2005, the Environmental Protection Agency is required to promulgate regulations implementing a renewable fuel program. The statute specifies the total volume of renewable fuel that the regulations must ensure is used in gasoline sold in the U.S. each year, with the total volume increasing over time. In this context, this program is expected to reduce dependence on foreign sources of petroleum, increase domestic sources of energy, and help transition to alternatives to petroleum in the transportation sector. The increased use of renewable fuels such as ethanol and biodiesel is also expected to have the added effect of providing an expanded market for agricultural products such as corn and soybeans. Based on our analysis, we believe that the expanded use of renewable fuels will provide reductions in carbon dioxide emissions that have been implicated in climate change. Also, there will be some reductions in air toxics emissions such as benzene from the transportation sector, while some other emissions such as oxides of nitrogen are expected to increase.

This action finalizes regulations designed to ensure that refiners, blenders, and importers of gasoline will use enough renewable fuel each year so that the total volume requirements of the Energy Policy Act are met. Our rule describes the standard that will apply to these parties and the renewable fuels that qualify for compliance. The regulations also establish a trading program that will be an integral aspect of the overall program, allowing renewable fuels to be used where they are most economical while providing a flexible means for obligated parties to comply with the standard.

DATES: This final rule is effective on September 1, 2007. The incorporation by reference of certain publications listed in the rule is approved by the Director of the Federal Register as of September 1, 2007.

ADDRESSES: EPA has established a docket for this action under Docket ID No. EPA–HQ–OAR–2005–0161. All documents in the docket are listed in the *www.regulations.gov* Web site. Although listed in the index, some information is not publicly available, e.g., confidential business information (CBI) or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically through *www.regulations.gov* or in hard copy at the EPA Docket Center, EPA/DC, EPA West, Room 3334, 1301 Constitution Ave., NW., Washington, DC. This Docket Facility is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566–1744 and the telephone number for the EPA Docket Center is (202) 566–1742.

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SUPPLEMENTARY INFORMATION:

I. General Information

Entities potentially affected by this action include those involved with the production, distribution and sale of gasoline motor fuel or renewable fuels such as ethanol and biodiesel. Regulated categories and entities could include:

Category	NAICS [1] codes	SIC [2] codes	Examples of potentially regulated entities
Industry	324110	2911	Petroleum Refineries.
Industry	325193	2869	Ethyl alcohol manufacturing.
Industry	325199	2869	Other basic organic chemical manufacturing.
Industry	424690	5169	Chemical and allied products merchant wholesalers.
Industry	424710	5171	Petroleum bulk stations and terminals.
Industry	424720	5172	Petroleum and petroleum products merchant wholesalers.
Industry	454319	5989	Other fuel dealers.

[1] North American Industry Classification System (NAICS).
[2] Standard Industrial Classification (SIC) system code.

This table is not intended to be exhaustive, but provides a guide for readers regarding entities likely to be regulated by this action. This table lists the types of entities that EPA is now aware could potentially be affected by this action. Other types of entities not listed in the table could also be affected. To decide whether your organization might be affected by this action, you should carefully examine today's notice and the existing regulations in 40 CFR part 80. If you have any questions regarding the applicability of this action to a particular entity, consult the persons listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

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I. Introduction

Through today's final rule, we are putting in place a compliance and enforcement program that implements the renewable fuel program, also known as the Renewable Fuel Standard (RFS) program. This program accomplishes the statutory goal of increasing the volume of renewable fuels that are required to be used in vehicles in the U.S. as required in Section 211(o) of the Clean Air Act (CAA) enacted as part of the Energy Policy Act of 2005 (the Energy Act or the Act). This final rule resulted from a collaborative effort with stakeholders, including refiners, renewable fuel producers, and distributors, who together helped to design a program that is simple, flexible, and enforceable.

As a result of the favorable economics of renewable fuels in comparison to conventional gasoline and diesel, renewable fuel volumes are expected to exceed the requirements of the RFS program. We have evaluated the impacts of a range of renewable fuel volumes as high as 10 billion gallons in 2012. This represents a significant increase over the volume of renewable fuel used in 2004 which was approximately 3.5 billion gallons, and this increase is estimated to produce a number of significant effects. For instance, we estimate that the transition to renewable fuels will reduce petroleum consumption by 2.0 to 3.9 billion gallons or approximately 0.8 to 1.6 percent of the petroleum that would otherwise be used by the transportation sector.

The increased use of renewable fuels is also expected to produce reductions in some regulated pollutants. Carbon monoxide emissions from gasoline powered vehicles and equipment will be reduced by 0.9 to 2.5 percent and emissions of benzene (a mobile source air toxic) will be reduced by 1.8 to 4.0 percent.[1] At the same time, other emissions may increase. Nationwide, we estimate between a 41,000 and 83,000 ton increase in VOC + NO_X emissions. However, the effects will vary significantly by region with some major metropolitan areas experiencing small emission benefits, while other areas may see an increase in VOC emissions from 4 to 5 percent and an increase in NO_X emissions from 6 to 7 percent from gasoline powered vehicles and equipment.

The use of renewable fuel will likewise reduce greenhouse gas emissions such as carbon dioxide by 8.0 to 13.1 million metric tons, about 0.4 to 0.6 percent of the anticipated greenhouse gas emissions from the transportation sector in the United States in 2012. Greenhouse gas emissions contribute to climate change, and thus, increased renewable use is an important step in addressing this issue.

Finally, we estimate that increases in the use of renewable fuels will increase net farm income and the nation's energy security. Net U.S. farm income is estimated to increase by between $2.6 and $5.4 billion through transfers from users of gasoline and consumers of agricultural products used to produce ethanol. However, as feedstocks used in the production of renewable fuels expand beyond the corn and soybeans that are most common today, the renewable fuels industry is expected to continue to diversify and grow in its ability to benefit the nation's environment and economy.

[1] These reductions are relative to the Mobile Source Air Toxics (MSAT) standards in effect. Additional benzene emission reductions will occur as a result of the recently finalized MSAT2 standards (72 FR 8428, February 26, 2007).

A. The Role of Renewable Fuels in the Transportation Sector

Renewable fuels have been an important part of our nation's transportation fuel supply for many years. Following the CAA amendments of 1990, the use of renewable fuels, particularly ethanol, increased dramatically. Several key clean fuel programs required by the CAA established new market opportunities for ethanol. A very successful mobile source control strategy, the reformulated gasoline (RFG) program, was implemented in 1995. This program set stringent new controls on the emissions performance of gasoline, which were designed to significantly reduce summertime ozone precursors and year round air toxics emissions. The RFG program also required that RFG meet an oxygen content standard. Several areas of the country began blending ethanol into gasoline to help meet this new standard, such as Chicago and St. Louis. Another successful clean fuel strategy required certain areas exceeding the national ambient air quality standard for carbon monoxide to also meet an oxygen content standard during the winter time to reduce harmful carbon monoxide emissions. Many of these areas, such as Denver and Phoenix, also blended ethanol during the winter months to help meet this new standard.

Today, the role and importance of renewable fuels in the transportation sector continue to expand. In the past several years as crude oil prices have soared above the lower levels of the 1990's, the relative economics of renewable fuel use have improved dramatically. In addition, since the vast majority of crude oil produced in or imported into the U.S. is consumed as gasoline or diesel fuel in the U.S., concerns about our dependence on foreign sources of crude oil have renewed interest in renewable transportation fuels. The emergence of more in-depth understanding of the impacts of human activities on climate change has also focused attention on the various ways that renewable fuels can reduce the consumption of fossil fuels. The passage of the Energy Policy Act of 2005 demonstrated a strong commitment on the part of U.S. policymakers to consider additional means of supporting renewable fuels as a supplement to petroleum-based fuels in the transportation sector. The RFS program is one such means.

The RFS program was debated by the U.S. Congress over several years before finally being enacted through passage of the Energy Policy Act of 2005. The RFS program is first and foremost designed

to increase the use of renewable fuels in motor vehicle fuel consumed in the U.S. In this context, it is expected to simultaneously reduce dependence on foreign sources of petroleum, increase domestic sources of energy, and diversify our energy portfolio to help transition to alternatives to petroleum in the transportation sector. Based on our analysis, we also believe that the expanded use of renewable fuels will provide reductions in carbon dioxide emissions that contribute to climate change and in air toxics emissions such as benzene from the transportation sector, while other emissions such as hydrocarbons and oxides of nitrogen are projected to increase. The increased use of renewable fuels such as ethanol and biodiesel is also expected to have the added effect of providing an expanded market for agricultural products such as corn and soybeans. The expected increase in cellulosic ethanol production will also expand the market opportunities to a wider array of feedstocks.

The requirement for use of a specified volume of renewable fuels complements other provisions of the Energy Act. In particular, the required volume of renewable fuel use will offset any possible loss in demand for renewable fuels occasioned by the Act's repeal of the oxygen content mandate in the RFG program while allowing greater flexibility in how renewable fuels are blended into the nation's fuel supply. The RFS program also creates a specific annual level for minimum renewable fuel use which increases over time, ensuring overall growth in the demand and opportunity for renewable fuels.

Because renewable fuels such as ethanol and biodiesel are not new to the U.S. transportation sector, the expansion of their use is expected to follow distribution and blending practices already in place. For instance, the market already has the necessary production and distribution mechanisms in place in many areas and the ability to expand these mechanisms into new markets. Recent spikes in ethanol use resulting first from the state MTBE bans, and now the virtual elimination of MTBE from the marketplace, have tested the limits of the ethanol distribution system. However, future growth is expected to move in a more orderly fashion since the use of renewable fuels will not be geographically constrained and, given EIA volume projections, investment decisions can follow market forces rather than regulatory mandates. In addition, the increased production volumes of ethanol and the expanded penetration of ethanol in new markets may create new opportunities for blending of E85, a blend of 85 percent ethanol and 15 percent gasoline, in the long run. The increased availability of E85 will mean that more flexible fueled vehicles (FFV) can use this fuel. Of the approximately 5 million FFVs currently in use in the U.S, most are currently fueled with conventional gasoline rather than E85, in part due to the limited availability of E85.

Given the ever-increasing demand for petroleum-based products in the transportation sector, the RFS program also moves the nation in the direction of replacing part of this demand with renewable energy. The RFS program provides the certainty that at least a minimum amount of renewable fuel will be used in the U.S., which in turn provides some certainty for investment in production capacity of renewable fuels. However, it should be understood that the RFS program is not the only factor currently impacting demand for ethanol and other renewable fuels. As Congress was developing the RFS program in the Energy Act, several large states were adopting and implementing bans on the use of MTBE in gasoline. As a result, refiners supplying reformulated gasoline (RFG) in those states switched to ethanol to satisfy the oxygen content mandate for their RFG, causing a large, sudden increase in demand for ethanol. Even more importantly, with the removal of the oxygen content mandate for RFG, refiners elected to remove essentially all MTBE from the gasoline supply in the U.S. during the spring of 2006. In order to accomplish this transition quickly, while still maintaining gasoline volume, octane, and gasoline air toxics performance standards, refiners elected to blend ethanol into virtually all reformulated gasoline nationwide. This caused a second dramatic increase in demand for ethanol, which in the near term was met by temporarily shifting large volumes of ethanol out of conventional gasoline and into the RFG areas.

Perhaps the largest impact on renewable fuel demand, however, has been the increase in the cost of crude oil. In the last few years, both crude oil prices and crude oil price forecasts have increased dramatically. This has resulted in a large economic incentive for the use of ethanol and biodiesel. The Energy Information Administration (EIA) and others are currently projecting renewable fuel demand to exceed the minimum volumes required under the RFS program by a substantial margin. In this context, the effect of the RFS program is to provide a minimum level of demand to support ongoing investment in renewable fuel production. However, market demand for renewable fuels is expected to exceed the statutory minimums. We believe that the program we are finalizing today will operate effectively regardless of the level of renewable fuel use or market conditions in the energy sector.

B. Requirements in the Energy Policy Act

Section 1501 of the Energy Policy Act amended the Clean Air Act and provides the statutory basis for the RFS program in Section 211(o). It requires EPA to establish a program to ensure that the pool of gasoline sold in the contiguous 48 states contains specific volumes of renewable fuel for each calendar year starting with 2006. The required overall volumes for 2006 through 2012 are shown in Table I.B–1 below.

TABLE I.B–1.—APPLICABLE VOLUMES OF RENEWABLE FUEL UNDER THE RFS PROGRAM

Calendar year	Billion gallons 2006
2006	4.0
2007	4.7
2008	5.4
2009	6.1
2010	6.8
2011	7.4
2012	7.5

In order to ensure the use of the total renewable fuel volume specified for each year, the Agency must set a standard for each year representing the amount of renewable fuel that each refiner, blender, or importer must use, expressed as a percentage of gasoline sold or introduced into commerce. This yearly percentage standard is to be set at a level that will ensure that the total renewable fuel volumes shown in Table I.B–1 will be used based on gasoline volume projections provided by the Energy Information Administration (EIA). The standard for each year must be published in the **Federal Register** by November 30 of the previous year. Starting with 2013, EPA is required to establish the applicable national volume, based on the criteria contained in the statute, which must require at least the same overall percentage of renewable fuel use as was required in 2012.

The Act defines renewable fuels primarily on the basis of the feedstock. In general, renewable fuel must be a motor vehicle fuel that is produced from plant or animal products or wastes, as opposed to fossil fuel sources. The Act

specifically identifies several types of motor vehicle fuels as renewable fuels, including cellulosic biomass ethanol, waste-derived ethanol, biogas, biodiesel, and blending components derived from renewable fuel.

The standard set annually by EPA is to be a single percentage applicable to refiners, blenders, and importers, as appropriate. The percentage standard is used by obligated parties to determine a volume of renewable fuel that they are responsible for introducing into the domestic gasoline pool for the given year. The percentage standard must be adjusted such that it does not apply to multiple parties for the same volume of gasoline. The standard must also take into account the use of renewable fuel by small refineries that are exempt from the program until 2011.

Under the Act, the required volumes in Table I.B–1 apply to the contiguous 48 states. However, Alaska and Hawaii can opt into the program, in which case the pool of gasoline used to calculate the standard, and the number of regulated parties, would change. In addition, other states can request a waiver of the RFS program under certain conditions, which would affect the national quantity of renewable fuel required under the program.

The Act requires the Agency to promulgate a credit trading program for the RFS program whereby an obligated party may generate credits for over-complying with their annual obligation. The obligated party can then use these credits to meet their requirements in the following year or trade them for use by another obligated party. Thus the credit trading program allows obligated parties to comply in the most cost-effective manner by permitting them to generate, transfer, and use credits. The trading program also permits renewable fuels that are not blended into gasoline, such as biodiesel, to participate in the RFS program.

The Agency must determine who can generate credits, under what conditions credits may be traded, how credits may be transferred from one party to another, and the appropriate value of credits for different types of renewable fuel. If a party is not able to generate or purchase sufficient credits to meet their annual obligation, they are allowed to carry over the deficit to the next annual compliance period, but must achieve full compliance in that following year.

C. Development of the RFS Program

Section 1501 of the Energy Act prescribed the RFS program, including the required total volumes, the timing of the obligation, the parties who are obligated to comply, the definition of renewable fuel, and the general framework for a credit trading program. Various aspects of the program require additional development by the Agency beyond the specifications in the Act. The Agency must develop regulations to ensure the successful implementation of the RFS program, based on the framework spelled out in the statute.

Under the RFS program the trading provisions comprise an integral element of compliance. Many obligated parties do not have access to renewable fuels or the ability to blend them, and so must use credits to comply. The RFS trading program is also unique in that the parties liable for meeting the standard (refiners, importers, and blenders of gasoline) are not generally the parties who make the renewable fuels or blend them into gasoline. This creates the need for trading mechanisms that ensure that the means to demonstrate compliance will be readily available for use by obligated parties.

The first step we took in developing the proposed program was to seek input and recommendations from the affected stakeholders. There were initially a wide range of thoughts and views on how to design the program. However, there was broad consensus that the program should satisfy a number of guiding principles, including, for example, that the compliance and trading program should provide certainty to the marketplace and minimize cost to the consumers; that the program should preserve existing business practices for the production, distribution, and use of both conventional and renewable fuels; that the program should be designed to accommodate all qualifying renewable fuels; that all renewable volumes produced are made available to obligated parties for compliance; and that the Agency should have the ability to easily verify compliance to ensure that the volume obligations are in fact met. These guiding principles and the comments we received on our Notice of Proposed Rulemaking (NPRM) helped to move us toward the program in today's final rule.

We published a Notice of Proposed Rulemaking on September 22, 2006 (71 FR 55552) which described our proposed approach to compliance and the trading program, as well as preliminary analyses of the environmental and economic impacts of increased use of renewable fuels. The program finalized today largely mirrors the proposed program, with some revisions reflecting continued input from stakeholders during the formal comment period.

II. Overview of the Program

Today's action establishes the final requirements for the RFS program, as well as our assessment of the environmental and economic impacts of the nation's transition to greater use of renewable fuels. This section provides an overview of our program and renewable fuel impacts assessment. Sections III through V provide the details of the structure of the program, while Sections VI through X describe our assessment of the impacts on emissions of regulated pollutants and greenhouse gases, air quality, fossil fuel use, energy security, economic impacts in the agricultural sector, and cost from the expanded use of renewable fuels.

A. Impacts of Increased Reliance on Renewable Fuels

In a typical major rulemaking, EPA would conduct a full assessment of the economic and environmental impacts of the specific rule that it is promulgating. However, as discussed in Section I.A., the replacement of MTBE with ethanol and the extremely favorable economics for renewable fuels brought on by the rise in crude oil prices are causing renewable fuel use to far exceed the RFS requirements. Given these circumstances, it is important to assess the impacts of this larger increase in renewable use and the related changes occurring to gasoline. For this reason we have carried out an assessment of the economic and environmental impacts of the broader changes in fuel quality resulting from our nation's transition to greater utilization of renewable fuels, as opposed to an assessment that is limited to the RFS program itself.

To carry out our analyses, we elected to use 2004 as the baseline from which to compare the impacts of expanded renewable use. We chose 2004 as a baseline primarily due to the fact that all the necessary refinery production data, renewable fuel production data, and fuel quality data were already in hand at the time we needed to begin the analysis. We did not use 2005 as a baseline year because 2005 may not be an appropriate year for comparison due to the extraordinary impacts of hurricanes Katrina and Rita on gasoline production and use. To assess the impacts of anticipated increases in renewable fuels, we elected to look at what they would be in 2012, the year the statutorily-mandated renewable fuel volumes will be fully phased in. By conducting the analysis in this manner, the impacts include not just the impact of expanded renewable fuel use by itself, but also the corresponding decrease in the use of MTBE, and the

potential for oxygenates to be removed from RFG due to the absence of the RFG oxygenate mandate. Since these three changes are all inextricably linked and are occurring simultaneously in the marketplace, evaluating the impacts in this manner is both necessary and appropriate.

We evaluated the impacts of expanded renewable fuel use and the corresponding changes to the fuel supply on fuel costs, consumption of fossil fuels, and some of the economic impacts on the agricultural sector and energy security. We also evaluated the impacts on emissions, including greenhouse gas emissions that contribute to climate change, and the corresponding impacts on nationwide and regional air quality. Our analyses are summarized in this section.

1. Renewable Fuel Volume Scenarios Analyzed

As shown in Table I.B–1, the Act stipulates that the nationwide volumes of renewable fuel required under the RFS program must be at least 4.0 billion gallons in 2006 and increase to 7.5 billion gallons in 2012. However, we expect that the volume of renewable fuel will actually exceed the required volumes by a significant margin. Based on economic modeling in 2006, EIA projected renewable fuel demand in 2012 of 9.6 billion gallons for ethanol, and approximately 300 million gallons for biodiesel using crude oil prices forecast at $48 per barrel.[2] Therefore, in assessing the impacts of expanded use of renewable fuels, we evaluated two comparative scenarios, one representing the statutorily required minimum, and another reflecting the higher levels projected by EIA. Although the actual renewable fuel volumes produced in 2012 may differ from both the required and projected volumes, we believe that these two volume scenarios together represent a reasonable range for analysis purposes.[3]

The Act also stipulates that at least 250 million gallons out of the total volume required in 2013 and beyond must meet the definition specified for cellulosic biomass ethanol. As described in Section VI, there are a number of companies already making plans to produce ethanol from cellulosic feedstocks and/or waste-derived energy sources that could potentially meet the definition of cellulosic biomass ethanol. Accordingly, we anticipate a ramp-up in production of cellulosic biomass ethanol production in the coming years, and for analysis purposes we have assumed that 250 million gallons of cellulosic biomass ethanol will be used in 2012.

As discussed in Section VI, we chose 2004 to represent current baseline conditions. However, a direct comparison of the fuel quality impacts on emissions and air quality that are expected to occur once the RFS program is fully phased in required that changes in overall fuel volume, fleet characterization, and other factors be constant. Therefore, we created a 2012 reference case from the 2004 base case for use in the emissions and air quality analysis that maintained current fuel quality parameters while incorporating forecasted increases in vehicle miles traveled and changes in fleet demographics. The 2012 fuel reference case was developed by growing out the 2004 renewable fuel baseline according to EIA's forecasted energy growth rates between 2004 and 2012.

For the analyses, we created two 2012 scenarios representing expanded renewable fuel production. The ''RFS Case'' represents volume levels designed to exactly meet the requirements of the RFS program, and includes the effects of higher credit values for cellulosic ethanol and biodiesel. Since higher credit values mean that one gallon of renewable fuel counts as more than one gallon for compliance purposes, less than 7.5 billion gallons of renewable fuel is needed to meet the 7.5 billion gallon statutory requirement, but credits equivalent to 7.5 billion gallons of renewable fuel would still be available for compliance purposes. The ''EIA Case'' represents volume levels based on EIA projections. A summary of the assumed renewable fuel volumes for the scenarios we evaluated is shown in Table II.A.1–1. Details of the calculations used to determine these volumes are given in Chapter 2 of the Regulatory Impact Analysis (RIA) in the docket for this rulemaking.

TABLE II.A.1–1.—RENEWABLE FUEL VOLUME SCENARIOS (BILLION GALLONS)

	2004 base case	2012		
		Reference case	RFS case	EIA case
Corn-ethanol	3.548	3.947	6.421	9.388
Cellulosic ethanol	0	0	0.25	0.25
Biodiesel	0.025	0.030	0.303	0.303
Total volume	3.573	3.977	6.974	9.941

2. Emissions

We evaluated the impacts of increased use of ethanol and biodiesel on emissions and air quality in the U.S. relative to the reference case. We estimated that nationwide VOC emissions in 2012 from gasoline vehicles and equipment will increase by about 0.3% in the RFS Case and about 0.7% in the EIA Case. For NO_X, we estimated that nationwide annual emissions in 2012 will increase about 0.9% for the RFS Case and 1.6% for the EIA Case. These increases are equivalent to an additional 18,000 to 43,000 tons of VOC per year, and an additional 23,000 to 40,000 tons of NO_X per year.

We also estimated the change in emissions in those areas which are projected to experience a significant change in ethanol use; i.e., where the market share of ethanol blends was projected to change by 50 percent or more. We focused on July emissions since these are most relevant to ozone formation and modeled 2015 because our ozone model is based upon a 2015 emissions inventory (though we would expect similar results in 2012). Finally, we developed separate estimates for RFG areas, low RVP areas (i.e., RVP standards less than 9.0 RVP), and conventional gasoline areas with a summer 9.0 RVP standard. For areas with a significant change in ethanol use,

[2] $48/barrel from Annual Energy Outlook 2006, Energy Information Administration, Department of Energy.

[3] Subsequent to the analysis for this final rule, EIA has released its 2007 AEO forecasts for ethanol use, which increase the projection to 11.2 billion gallons by 2012.

compared to the reference case, VOC emissions in RFG areas increased by up to 2.3%, while NO_X emissions increased by up to 1.6%. In low RVP areas, VOC emissions increased by up to 4.6%, while NO_X emissions increased by up to 6.2%. In 9.0 RVP areas, VOC emissions increased by up to 4.6%, while NO_X emissions increased by up to 7.3%.

Unlike VOC and NO_X, emissions of CO and benzene from gasoline vehicles and equipment were estimated to decrease in 2012 when the use of renewable fuels increased. Reductions in emissions of CO varied from 0.9% percent to as high as 2.5% percent for the nation as a whole, depending on the renewable fuel volume scenario. Similarly, benzene emissions from gasoline vehicles and equipment were estimated to be reduced from 1.8% to 4.0% percent.

We do not have sufficient data to predict the effect of ethanol use on levels of either directly emitted particulate matter (PM) or secondarily formed PM. The increased NO_X emissions are expected to lead to increases in secondary nitrate PM, but at the same time reduced aromatics resulting from ethanol blending are likely to lead to a decrease in secondary organic PM, as discussed in Section VIII.C. In addition, biodiesel use is expected to result in some reduction in direct PM emissions, though small in magnitude due to the relatively small volumes.

The emission impact estimates described above are based on the best available data and models. However, it must be highlighted that most of the fuel effect estimates are based on very limited or old data which may no longer be reliable in estimating the emission impacts on vehicles in the 2012 fleet with advanced emission controls.[4] As such, these emission estimates should be viewed as preliminary. EPA hopes to conduct significant new testing in order to better estimate the impact of fuel changes on emissions from both highway vehicles and nonroad equipment, including those fuel changes brought about by the use of renewable fuels. We hope to be able to incorporate the data from such additional testing into the analyses for other studies required by the Energy Act, and into a subsequent rule to set the RFS program standard for 2013 and later.

We used the Ozone Response Surface Model (RSM) to estimate the impacts of the increased use of ethanol on ozone levels for both the RFS Case and the EIA Case. The ozone RSM approximates the effect of VOC and NO_X emissions in a 37-state eastern area of the U.S. Using this model, we projected that the changes in VOC and NO_X emissions could produce a very small increase in ambient ozone levels. On average, population-weighted ozone design value concentrations increased by about 0.05 ppb, which represents 0.06 percent of the standard. Even for areas expected to experience a significant increase in ethanol use, population-weighted ozone design value concentrations increased by only 0.15 to 0.18 ppb, about 0.2 percent of the standard. These ozone impacts do not consider the reductions in CO emissions mentioned above, or the change in the types of compounds comprising VOC emissions. Directionally, both of these factors may mitigate these ozone increases.

We investigated several other issues related to emissions and air quality that could affect our estimates of the impacts of increased use of renewable fuels. These are discussed in Section VIII and in greater detail in the RIA. For instance, our current models assume that recent model year vehicles are insensitive to many fuel changes. However, a limited amount of new test data suggest that newer vehicles may be just as sensitive as older model year vehicles. Our sensitivity analysis suggests that if this is the case, VOC emissions could decrease by as much as 0.3%, instead of increasing by up to 0.7%. NO_X emissions could increase by up to 4.2%, up from a 1.6% increase. We also evaluated the emissions from the production of both ethanol and biodiesel fuel and determined that they will also increase with increased use of these fuels. Nationwide, emissions related to the production and distribution of ethanol and biodiesel fuel are projected to be of the same order of magnitude as the emission impacts related to the use of these fuels in vehicles.

Finally, a lack of emission data and atmospheric modeling tools prevented us from making specific projections of the impact of renewable fuels on ambient PM levels. As mentioned, however, ethanol use may affect ambient PM levels due to the increase in NO_X emissions and the reduction in the aromatic content of gasoline, which should reduce aromatic VOC emissions. All of these issues will be the subject of further study and analysis in the future.

3. Economic Impacts

In Section VII of this preamble, we estimate the cost of producing the extra volumes of renewable fuel anticipated through 2012. For corn ethanol, we estimate the per gallon cost of ethanol to range from $1.26 per gallon in 2012 (2004 dollars) in the RFS Case to $1.32 per gallon in the EIA Case. These costs take into account the cost of the feedstock (corn), plant equipment and operation and the value of any co-products (distiller's dried grain and solubles, for example). For biodiesel, we estimate the per gallon cost to be between $1.89 and $2.06 per gallon if produced using soy bean oil, and less if using yellow grease ($1.11 to $1.56 per gallon) or other relatively low cost or no-cost feedstocks. The price paid for ethanol, however, is reduced by the $0.51 per gallon federal tax subsidy as well as any state subsidies that might apply. Similarly the price paid for biodiesel is reduced due to the $1.00 per gallon federal tax subsidy biodiesel produced from soy bean oil and $0.50 per gallon tax subsidy for biodiesel produced from yellow grease. We also note that these costs represent the production cost of the fuel and not the market price. In recent years, the prices of ethanol and biodiesel have tended to track the prices of gasoline and diesel fuel, in some cases even exceeding those prices.

These renewable fuels are then blended in gasoline and diesel fuel. While biodiesel is typically just blended with typical petroleum diesel, additional efforts are sometimes necessary and/or economically advantageous at the refiner level when adding ethanol to gasoline. For example, ethanol's high octane reduces the need for other octane enhancements by the refiner, whereas offsetting the volatility increase caused by ethanol may require removal of other highly volatile components. Section VII examines these fuel cost impacts and concludes that the net cost to society in 2012 in comparison to the reference case will range from an estimate of 0.5 cent to 1.0 cent per gallon of gasoline due to the increased use of renewable fuels and their displacement of MTBE. The resulting total nationwide costs in 2012 are $823 million per year for the RFS case and $1,739 million per year for the EIA case. This total excludes the effects of the 51 cent/gal federal excise tax credit as well as state tax subsidies.

Our estimates of fuel impacts do not consider other societal benefits. For example, the displacement of petroleum-based fuel (largely imported) by renewable fuel (largely produced in the United States), should reduce our use of imported oil and fuel. We estimate that 95 percent of the lifecycle petroleum reductions resulting from the use of renewable fuel will be met

[4] Advanced emission controls include close-coupled, high-density catalysts and their associated electronic control systems for light-duty vehicles, and NO_X adsorbers and PM traps for heavy-duty engines.

through reductions in net petroleum imports. In Section IX of this preamble we estimate the value of the decrease in imported petroleum at about $2.6 billion in 2012 for the RFS Case and $5.1 billion for the EIA Case, in comparison to our 2012 reference case. Total petroleum import expenditures in 2012 are projected to be about $698 billion.

Furthermore, the above estimate on reduced petroleum import expenditures only partly assess the economic impacts. One of the effects of increased use of renewable fuel is that it diversifies the energy sources used in making transportation fuel. To the extent that diverse sources of fuel energy reduce the dependence on any one source, the risks, both financial as well as strategic, of a potential disruption in supply reflected in the price volatility of a particular energy source are reduced. As indicated in the proposal, EPA has worked with researchers at Oakridge National Laboratory to update a study they previously published and which has been used or cited in several government actions impacting oil consumption. A draft report is being made available in the docket at this time for further consideration. This analysis only looks at the impact of reduced petroleum imports on energy security. Other energy security issues could arise with the wider use of biofuels. For example, ethanol's production and costs are determined by the availability of corn as a feedstock. Corn production, in turn, is weather-dependent. Also, the use of biofuels may increase the use of natural gas. A full integrated analysis of the energy security implications of the wider use of biofuels has yet to be undertaken.

While increased use of renewable fuel will reduce expenditures on imported oil, it will also increase expenditures on renewable fuels and in-turn, on the sources of those renewable fuels. The RFS program attempts to spur the increased use of renewable transportation fuels made principally from agricultural crops produced in the U.S. As a result, it is important to analyze the consequences of the transition to greater renewable fuel use in the U.S. agricultural sector. To perform this analysis, EPA selected the Forest and Agricultural Sector Optimization Model (FASOM) developed by Professor Bruce McCarl of Texas A&M University and others over the past thirty years. FASOM is a dynamic, nonlinear programming model of the agriculture and forestry sectors of the U.S. (For this analysis, we focused on the agriculture portion of the model.)

Due to the greater demand for corn as a feedstock for ethanol production, corn prices are estimated to increase in 2012 by 18 cents per bushel for the RFS Case and 39 cents per bushel of corn for the EIA Case from $2.32 (in 2004 dollars) in the Reference Case. Although soybean prices are expected to rise slightly, the increased cost is likely due to higher input costs, such as land prices. We estimate a price increase of 18 cents (RFS Case) to 21 cents (EIA Case) per bushel of soybeans from a Reference Case price of $5.26 per bushel. These higher commodity prices are predicted to also result in higher U.S. farm income. Our analysis predicts that farm income will increase by $2.6 billion annually by 2012 for the RFS Case and $5.4 billion for the EIA Case, roughly a 5 to 10 percent increase.

Due to higher corn prices, U.S. exports of corn are estimated to decrease by $573 million in the RFS Case and by $1.29 billion in the EIA Case in 2012. With higher commodity prices, we would expect some upward pressure on food costs as the higher cost of corn and soybeans is passed along to consumers. We estimate a relatively modest increase in annual household food costs associated with the higher price commanded by corn and soybeans. For the RFS Case, annual per capita wholesale food cost are estimated to increase by approximately $7, while the higher renewable fuel volumes anticipated by the EIA Case will result in a $12 annual increase in the per capita wholesale food cost. This equates to roughly a $2.1 to $3.6 billion increase in nationwide food costs in 2012.

4. Greenhouse Gases and Fossil Fuel Consumption

There has been considerable interest in the impacts of fuel programs on greenhouse gases implicated in climate change and on fossil fuel consumption due largely to concerns about dependence on foreign sources of petroleum. Therefore, in this rulemaking we have undertaken an analysis of the greenhouse gas and fossil fuel consumption impacts of a transition to greater renewable fuel use. This is the first analysis of its kind in a high profile rule, and as such it may guide future work in this area.

As a result of the transition to greater renewable fuel use, some petroleum-based gasoline and diesel will be directly replaced by renewable fuels. Therefore, consumption of petroleum-based fuels will be lower than it would be if no renewable fuels were used in transportation vehicles. However, a true measure of the impact of greater use of renewable fuels on petroleum use, and indeed on the use of all fossil fuels, accounts not only for the direct use and combustion of the finished fuel in a vehicle or engine, but also includes the petroleum use associated with production and transportation of that fuel. For instance, fossil fuels are used in producing and transporting renewable feedstocks such as plants or animal byproducts, in converting the renewable feedstocks into renewable fuel, and in transporting and blending the renewable fuels for consumption as motor vehicle fuel. Likewise, fossil fuels are used in the production and transportation of petroleum and its finished products. In order to estimate the true impacts of increases in renewable fuel use on fossil fuel use, we must take these steps into account. Such analyses are termed lifecycle analyses.

There is also no consensus on the most appropriate approach for conducting such lifecycle analyses. We have chosen to base our lifecycle analysis on Argonne National Laboratory's GREET model for the reasons described in Section IX. However, there are other lifecycle models in use. The choice of model inputs and assumptions all have a bearing on the results of lifecycle analyses, and many of these assumptions remain the subject of debate among researchers.

With these caveats, we compared the lifecycle impacts of renewable fuels to the petroleum-based gasoline and diesel fuels that they replace. This analysis allowed us to estimate not only the overall impacts of renewable fuel use on petroleum use, but also on emissions of greenhouse gases such as carbon dioxide from all fossil fuels. In comparison to the reference case, we estimate that the increased use of renewable fuels in the RFS and EIA cases will reduce transportation sector petroleum consumption by about 0.8 and 1.6 percent, respectively, in the transportation sector in 2012. This is equivalent to 2.0–3.9 billion gallons of petroleum in 2012. We also estimated that greenhouse gases from the transportation sector will be reduced by about 0.4 and 0.6 percent for the RFS and EIA cases, respectively, equivalent to about 8–13 million metric tons. These reductions are projected to continue to increase beyond 2012 since crude oil prices have been projected by EIA to continue to be high relative to the prices of the 1990's, and as a result there is expected to be an economic advantage to using renewable fuels beyond 2012. These greenhouse gas emission reductions are also highly dependent on the expectation that the majority of the future ethanol use will be produced

from corn. If advances in the technology for converting cellulosic feedstocks into ethanol allow cellulosic ethanol use to exceed the levels assumed in our analysis, then even greater greenhouse gas reductions may result.[5]

5. Post 2012 RFS Standards

The Energy Policy Act of 2005, in addition to setting the standards to be adopted through 2012, requires EPA, in coordination with the Departments of Agriculture and Energy, to determine the applicable volume for the renewable fuel standard for the year 2013 and subsequent calendar years. This determination is to be based on a review of the program's implementation in 2006 through 2012 as well as review of the impact of renewable fuels on the environment, air quality, energy security, job creation, rural economic development and the expected annual rate of renewable fuel production, including production of cellulosic ethanol.

In today's final rulemaking, we do not suggest any specific renewable fuel volumes for 2013 and beyond that may be appropriate under the statutory criteria. However, we would note that the President, in his State of the Union address this January, set specific goals reducing the amount of gasoline usage in the United States by 20 percent in the next 10 years. This would be accomplished by reforming and modernizing fuel economy standards for cars and setting mandatory fuels standard equivalent to requiring use of 35 billion gallons of renewable and alternative[6] fuels in 2017. Therefore, given the necessity to address the post-2013 period under the Energy Act and the prospect of continued attention by the Administration and Congress to this issue, EPA will continue to devote attention to the issue of renewable and alternative fuel volumes in the post-2013 period.

From a program structure perspective, we believe that what we are putting in place today will remain useful as part of a 2013 and later program. For example, EPA considers that the identification of renewable fuel via a Renewable Identification Number (RIN), the determination of liable parties, the averaging, banking and trading system and the recordkeeping and reporting system would all be elements of a post-2013 program. Depending on the structure of any final legislation approved by Congress and signed into law, such elements could also be incorporated into an expanded renewable and alternative fuels program.

B. Program Structure

The RFS program being finalized today requires refiners, importers, and blenders (other than oxygenate blenders) to show that a required volume of renewable fuel is used in gasoline. The required volume is determined by multiplying their annual gasoline production by a percentage standard specified by EPA. Compliance is demonstrated through the acquisition of unique Renewable Identification Numbers (RINs) assigned by the producer or importer to every batch of renewable fuel produced or imported. The RIN shows that a certain volume of renewable fuel was produced or imported. Each year, the refiners, blenders and importers obligated to meet the renewable volume requirement (referred to as ''obligated parties'') must acquire sufficient RINs to demonstrate compliance with their volume obligation. RINs can be traded, thereby functioning as the credits envisioned in the Act. A system of recordkeeping and electronic reporting for all parties that have RINs ensures the integrity of the RIN pool. This RIN-based system will both meet the requirements of the Act and provide several other important advantages:

- Renewable fuel production volumes can be easily verified.
- RIN trading can occur in real time as soon as the renewable fuel is produced rather than waiting to the end of the year when an obligated party would determine if it had exceeded the standard.
- Renewable fuel can continue to be produced, distributed, and blended in those markets where it is most economical to do so.
- Instances of double-counting of renewable fuel claimed for compliance purposes can be identified based on electronically reported data.

Our RIN-based trading program is an essential component of the RFS program, ensuring that every obligated party can comply with the standard while providing the flexibility for each obligated party to use renewable fuel in the most economical ways possible.

1. What Is the RFS Program Standard?

EPA is required to convert the aggregate national volumes of renewable fuel specified in the Act into corresponding renewable fuel standards expressed as a percent of gasoline production or importation. The renewable volume obligation that will apply to an individual obligated party will then be determined based on this percentage and the total gasoline production or import volume in a calendar year, January 1 through December 31. EPA will publish the percentage standard in the **Federal Register** each November for the following year based on the most recent EIA gasoline demand projections. However, for compliance in 2007 we are publishing the percentage standard in today's action. The standard for 2007 is 4.02 percent. Section III.A describes the calculation of the standard.

2. Who Must Meet the Standard?

Under our program, any party that produces or imports gasoline for consumption in the U.S., including refiners, importers, and blenders (other than oxygenate blenders), will be subject to a renewable volume obligation that is based on the renewable fuel standard. These obligated parties will determine the level of their obligation by multiplying the percentage standard by their annual volume of gasoline production or importation. The result will be the renewable fuel volume which each party must ensure is blended into gasoline consumed in the U.S., with credit for certain other renewable fuels that are not blended into gasoline.

For 2007, we are requiring that the renewable fuel volume obligation be determined by multiplying the percentage standard by the volume of gasoline produced or imported prospectively from September 1, 2007 until December 31, 2007. While the standard will not apply to all of 2007 gasoline production, we are nevertheless confident that the total volume of renewable fuel used in all of 2007 will still exceed the volume specified in the Act due to expectations that the demand for renewable fuel will exceed the RFS requirements.

In determining their annual gasoline production volume, obligated parties must include all of the finished gasoline which they produced or imported for use in the contiguous 48 states, and must also include reformulated blendstock for oxygenate blending (RBOB), and conventional blendstock for oxygenate blending (CBOB). For refiners and importers this includes unfinished gasoline produced or imported that will become gasoline upon addition of an oxygenate downstream of the refiner. Other producers of gasoline, such as blenders,

[5] Cellulosic ethanol is estimated to provide a comparable petroleum displacement as corn derived ethanol on a per gallon basis, though the impacts on total energy and greenhouse gas emissions differ.

[6] While the RFS program is specific to renewable fuels, the president's goal of 35 billion gallons by 2017 would include not only renewable fuels, but also other types of alternatives fuels.

will count as their gasoline production only the volumes of blendstocks which become gasoline upon their addition to finished gasoline, unfinished gasoline, or other blendstocks. Renewable fuels blended into gasoline by any party will not be counted as gasoline for the purposes of calculating the annual gasoline production volume.

Small refiners and small refineries are exempt from meeting the renewable fuel requirements through 2010. All gasoline producers located in Alaska, Hawaii, and noncontiguous U.S. territories and parties who import gasoline into these areas will be exempt indefinitely. However, if Alaska, Hawaii or a noncontiguous territory opts into the RFS program, all of the refiners (except for exempt small refiners and refineries), importers, and blenders located in the state or territory will be subject to the renewable fuel standard.

Section III.A provides more details on the standard that must be met, while Section III.C describes the parties that are obligated to meet the standard.

3. What Qualifies as a Renewable Fuel?

We have designed the program to cover the range of renewable fuels produced today as well as any that might be produced in the future, so long as they meet the Act's definition of renewable fuel and have been registered and approved for use in motor vehicles. In this manner, we believe that the program provides the greatest possible encouragement for the development, production, and use of renewable fuels to reduce our dependence on petroleum as well as to reduce the carbon dioxide emissions that contribute to climate change. In general, renewable fuels must be produced from plant or animal products or wastes, as opposed to fossil fuel sources. Valid renewable fuels include ethanol made from starch seeds, sugar, or cellulosic materials, biodiesel (mono-alkyl esters), non-ester renewable diesel, and a variety of other products. Both renewable fuels blended into conventional gasoline or diesel and those used in their neat (unblended) form as motor vehicle fuel will qualify. Section III.B provides more details on the renewable fuels that will be allowed to be used for compliance with the standard under our program.

4. Equivalence Values of Different Renewables Fuels

One question that we faced in developing the program was what value to place on different renewable fuels and on what basis should that value be determined. The Act specifies that each gallon of cellulosic biomass ethanol and waste-derived ethanol be treated as if it were 2.5 gallons of renewable fuel for compliance purposes, but does not specify the values for other renewable fuels. Although in the NPRM we considered a range of options including straight volume, energy content, and requested comment on the merit and basis for setting ''Equivalence Values'' on several metrics including lifecycle energy or greenhouse gas emissions, for this final rule we are requiring that the ''Equivalence Values'' for the different renewable fuels be based on their energy content in comparison to the energy content of ethanol, and adjusted as necessary for their renewable content. The result is an Equivalence Value for corn ethanol of 1.0, for biobutanol of 1.3, for biodiesel (mono alkyl ester) of 1.5, for non-ester renewable diesel of 1.7, and for cellulosic ethanol and waste-derived ethanol of 2.5. The proposed methodology can be used to determine the appropriate Equivalence Value for any other potential renewable fuel as well. Section III.B.4 provides details of the determination of Equivalence Values.

5. How Will Compliance Be Determined?

Under our program, every gallon of renewable fuel produced or imported into the U.S. must be assigned a unique RIN. A block of RINs would be assigned to any batch of renewable fuel that is valid for compliance purposes under the RFS program. These RINs must be transferred with renewable fuel as ownership of a volume of renewable fuel is initially transferred through the distribution system. Once the renewable fuel is obtained by an obligated party or actually blended into a motor vehicle fuel, the RIN can be separated from the batch of renewable fuel and then either used for compliance purposes, held, or traded.

RINs represent proof of production which is then taken as proof of consumption as well, since all but a trivial quantity of renewable fuel produced or imported will be either consumed as fuel or exported. For instance, ethanol produced for use as motor vehicle fuel is denatured specifically so that it can only be used as fuel. Similarly, biodiesel is produced only for use as fuel and has no other significant uses. An obligated party demonstrates compliance with the renewable fuel standard by accumulating sufficient RINs to cover their individual renewable volume obligation. It will not matter whether the obligated party used the renewable fuel themselves. An obligated party's obligation will be to ensure that a certain amount of renewable fuel was used, either by themselves or by someone else, and the RIN is evidence that this occurred for a certain volume of renewable fuel. Exporters of renewable fuel will also be required to acquire RINs in sufficient quantities to cover the volume of renewable fuel exported. RINs claimed for compliance purposes by obligated parties will thus represent renewable fuel actually consumed as motor vehicle fuel in the U.S.

RINs are valid for compliance purposes for the calendar year in which they are generated, or the following calendar year. This approach to RIN life is consistent with the Act's prescription that credits be valid for compliance purposes for 12 months as of the date of generation, where credits are generated at the end of a year when compliance is determined. An obligated party can either use RINs to demonstrate compliance, or can transfer RINs to any other party. If an obligated party is not able to accumulate sufficient RINs for compliance in a given year, it can carry a deficit over to the next year so long as the full deficit and obligation is covered in the next year.

In order to ensure that previous year RINs are not used preferentially for compliance purposes in a manner that would effectively circumvent the limitation that RINs be valid for only 12 months after the year generated, we are setting a cap on the use of RINs generated the previous year when demonstrating compliance with the renewable volume obligation for the current year. The cap will mean that no more than 20 percent of a current year obligation can be satisfied using RINs from the previous year. In this manner there is no ability for excess renewable fuel use in successive years to cause an accumulation of RINs to significantly depress renewable fuel demand in any future year. In keeping with the Act, excess RINs not used in the year they are generated or in the subsequent year will expire.

Section III.D provides more details on how obligated parties must use RINs for compliance purposes.

6. How Will the Trading Program Work?

Renewable fuel producers and importers will be required to generate RINs when they produce or import a batch of renewable fuel (unless, for importers, the RINs have been assigned by a foreign producer registered with EPA). They will then be required to transfer those RINs along with the renewable fuel batches that they represent whenever they transfer ownership of the batch to another party. Likewise any other non-obligated party

that takes ownership of a volume of renewable fuel with RINs will be required to transfer those RINs with a volume of renewable fuel. The RIN can be separated from renewable fuel only by obligated parties (at the point when they take ownership of the batch) or a party that converts the renewable fuel into motor vehicle fuel (such as upon blending with gasoline or diesel).

Once a RIN is separated from a volume of renewable fuel, it can be used for compliance purposes, banked, or traded to another party. Separated RINs can be transferred to any party any number of times. Recordkeeping and reporting requirements will apply to any party that takes ownership of RINs, whether through the ownership of a batch of renewable fuel or through the transfer of separated RINs.

Thus obligated parties can acquire RINs directly through the purchase of renewable fuel with assigned RINs or through the open market for RINs that is allowed under this proposal. Section III.E provides more details on how our RIN trading program will work.

7. How Will the Program Be Enforced?

As in all EPA fuel regulations, there is a system of registration, recordkeeping, and reporting requirements for obligated parties, renewable producers and importers (RIN generators), and any parties that procure or trade RINs either as part of their renewable purchases or separately. In most cases, the recordkeeping requirements are not significantly different from what these parties might be doing already as a part of normal business practices. The lynch pin to the compliance program, however, is the unique RIN number itself coupled with an electronic reporting system where RIN generation, RIN use, and RIN transactions will be reported and verified. Thus, EPA, as well as industry can have confidence that invalid RINs are not generated and that there is no double counting.

C. Voluntary Green Labeling Program

In the proposal EPA asked for comments on the idea of creating a voluntary labeling program to encourage the adoption and use of practices that minimize the environmental concerns associated with renewable fuel production. The proposal suggested adding a ''G'' (for green) to the end of the RIN of a fuel to indicate that a gallon of renewable fuel was produced with the combination of best farming practices and environmentally friendly production methods and facilities. EPA received a number of comments on this idea.

The majority of respondents were very supportive of voluntary labeling and encouraged EPA to establish this program through this final rulemaking. Two commenters opposed the labeling concept, telling EPA that the number and complexity of issues associated with fuel production, and particularly with farming practices, would make such a program impractical and difficult to implement. EPA also was told that it would be hard to audit such a program. Most commenters agreed that using the RIN to host the label makes sense, however the use of ''G'' for green fuel is insufficient to capture the full range of environmental impacts of renewable fuel production and that it would be difficult for EPA to establish an appropriate cut-off point for determining which fuel qualified for a ''G'' designation. Several respondents suggested that EPA instead use a more continuous scale based on energy or lifecycle greenhouse gas emissions.

A well designed voluntary labeling program could permit producers and blenders to distinguish their fuels in the marketplace and allow consumers to express preferences for ''green'' products through their fuel purchases. While such a program could be valuable to producers, blenders, and consumers, given the range of comments received on the topic, we believe it is important first to continue the dialogue with the various stakeholders to ensure that the program adequately addresses the issues raised prior to putting any such program in place. Thus we are not finalizing a voluntary labeling program. We will continue to investigate the issues surrounding a voluntary labeling program and the various ways in which it could be designed. In particular we are interested in further exploring methods to incorporate lifecycle impacts into a voluntary labeling program and consumer expectations for such ''green'' labeling.

III. Complying With the Renewable Fuel Standard

According to the Energy Act, the RFS program places obligations on individual parties such that the renewable fuel volumes shown in Table I.B–1 are used as motor vehicle fuel in the U.S. each year. To accomplish this, the Agency must calculate and publish a standard by November 30 of each year which is applicable to every obligated party. On the basis of this standard each obligated party determines the volume of renewable fuel that it must ensure is consumed as motor vehicle fuel. In addition to setting the standard, we must clarify who the obligated parties are and what volumes of gasoline are subject to the standard. Obligated parties must also know which renewable fuels are valid for RFS compliance purposes, and the relative values of each type of renewable fuel in terms of compliance. This section discusses how the annual standard is determined and which parties and volumes of gasoline will be subject to the requirements.

Because renewable fuels are not produced or distributed evenly around the country, some obligated parties will have easier access to renewable fuels than others. As a result, the RFS program depends on a robust trading program. This section also describes all the elements of our trading program.

A. What Is the Standard That Must Be Met?

1. How Is the Percentage Standard Calculated?

Table I.B–1 shows the required total volume of renewable fuel specified in the Act for 2007 through 2012. The renewable fuel standard is based primarily on (1) the 48-state gasoline consumption volumes projected by EIA (as the Act exempts Hawaii and Alaska, subject to their right to opt-in, as discussed in Section III.C.4), and (2) the volume of renewable fuels required by the Act for the coming year. The renewable fuel standard will be expressed as a volume percentage of gasoline sold or introduced into commerce in the U.S., and will be used by each refiner, blender or importer to determine their renewable volume obligation. The applicable percentage is set so that if each regulated party meets the percentage and total gasoline consumption does not fall short of EIA projections then the total amount of renewable fuel used will meet the total renewable fuel volume specified in Table I.B–1.

In determining the applicable percentage for a calendar year, the Act requires EPA to adjust the standard to prevent the imposition of redundant obligations on any person and to account for the use of renewable fuel during the previous calendar year by exempt small refineries, defined as refineries that process less than 75,000 bpd of crude oil. As a result, in order to be assured that the percentage standard will in fact result in the volumes shown in Table I.B–1, we must make several adjustments to what is otherwise a simple calculation.

As stated, the renewable fuel standard for a given year is basically the ratio of the amount of renewable fuel specified in the Act for that year to the projected 48-state non-renewable gasoline volume

for that year. While the required amount of total renewable fuel for a given year is provided by the Act, the Act requires EPA to use an EIA estimate of the amount of gasoline that will be sold or introduced into commerce for that year. The level of the percentage standard is reduced if Alaska, Hawaii, or a U.S. territory choose to participate in the RFS program, as gasoline produced in or imported into those states or territories would then be subject to the standard. Should any of these states or territories opt into the RFS program, the projected gasoline volume would increase above that consumed in the 48 contiguous states.

In the proposal, we stated that EIA had indicated that the best estimation of the coming year's gasoline consumption is found in Table 5a (U.S. Petroleum Supply and Demand: Base Case) of the October issue of the monthly EIA publication Short-Term Energy Outlook which publishes quarterly energy projections. Commenters on this issue supported the use of the October issue of EIA's Short-Term Energy Outlook (STEO), Table 5a, for the purpose of estimating the next year's gasoline consumption, and we have used the October 2006 STEO values for estimating 2007 gasoline consumption for this final rule.

The gasoline volumes in the STEO include renewable fuel use. As discussed below in Section III.C.1, the renewable fuel obligation does not apply to renewable blenders. Thus, the gasoline volume used to determine the standard must be the non-renewable portion of the gasoline pool, in order to achieve the volumes of renewables specified in the Act. In order to get a total non-renewable gasoline volume, we must subtract the renewable fuel volume from the total gasoline volume. EIA has indicated that the best estimation of the coming year's renewable fuel consumption is found in Table 11 (U.S. Renewable Energy Use by Sector: Base Case) of the October issue of the STEO. As with the gasoline projections discussed above, we have used the October 2006 STEO values for estimating 2007 renewable fuel values for this final rule.

The Act exempts small refineries [7] from the RFS requirements until the 2011 compliance period. As discussed in Section III.C.3.a, as proposed, EPA is also exempting small refiners [8] from the RFS requirements until 2011, and is treating small refiner gasoline volumes the same as small refinery gasoline volumes. Since small refineries and small refiners are exempt from the program until 2011, EPA is excluding their gasoline volumes from the overall non-renewable gasoline volume used to determine the applicable percentage. EPA believes this is appropriate because the percentage standard should be based only on the gasoline subject to the renewable volume obligation. Because small refineries and small refiners are exempt (unless they waive exemption) only through the 2010 compliance period when the exemption ends, calculation of the standard for calendar year 2011 and beyond will include small refinery and small refiner volumes.[9] Using information from gasoline batch reports submitted to EPA, EIA data, and input from the California Air Resources Board regarding California small refiners, we are finalizing a small refiner exemption adjustment to the standard of a constant 13.5%,[10] consistent with the proposal.

The Act requires that the small refinery adjustment also account for renewable fuels used during the prior year by small refineries that are exempt and do not participate in the RFS program. Accounting for this volume of renewable fuel would reduce the total volume of renewable fuel use required of others, and thus directionally would reduce the percentage standard. However, as discussed in the proposal, there are no such data available, the amount of renewable fuel that would qualify (i.e., that was used by exempt small refineries and small refiners but not used as part of the RFS program) is expected to be very small and would not significantly change the resulting percentage standard. Because whatever renewables small refiners and small refineries blend will be reflected as RINs available in the market, there is no need for a separate accounting of their renewable fuel use in the equation used to determine the standard. We thus proposed that this value be zero, and we are finalizing the equation as such.

We also proposed not to include renewable fuel used in Alaska, Hawaii, or U.S. territories when subtracting renewable fuel volumes from the anticipated total gasoline volumes in EIA projections. The Act requires that the renewable fuel be consumed in the contiguous 48 states unless Alaska, Hawaii, or a U.S. territory opt-in. However, because renewable fuel produced in Alaska, Hawaii, and U.S. territories is unlikely to be transported to the contiguous 48 states, including their renewable fuel volumes in the calculation of the standard would not serve the purpose intended by the Act of ensuring that the statutorily required renewable fuel volumes are consumed in the 48 contiguous States. We are finalizing the exclusion of these areas' renewable fuel use as proposed.

We stated that any deficit carryover from 2006 would increase the 2007 standard. Since renewable fuel use in 2006 exceeded the 2.78 percent default standard, there is no deficit to carry over to 2007. Beginning with the 2007 compliance period, when annual individual party compliance replaces collective compliance, any deficit is calculated for an individual party and is included in the party's Renewable Volume Obligation (RVO) determination, as discussed in Section III.A.4.

In summary, the total projected non-renewable gasoline volumes from which the annual standard is calculated is based on EIA projections of gasoline consumption in the contiguous 48 states, adjusted by a constant percentage of 13.5% to account for small refinery/refiner volume, with built-in correction factors to be used when and if non-contiguous states and territories opt-in to the program. If actual gasoline consumption were to exceed the EIA projection, the result would be that renewable fuel volumes will exceed the statutory requirements. Conversely, if actual gasoline consumption was less than the EIA projection for a given year, theoretically a renewable fuel shortfall could occur. However, our projections of renewable fuel use due to market demand would make a shortfall extremely unlikely regardless of the error in gasoline consumption projections.

The following formula will be used to calculate the percentage standard:

[7] Under the Act, small refineries are those with 75,000 bbl/day or less average aggregate daily crude oil throughput.

[8] Small refiners are those entities who produced gasoline from crude oil in 2004, and who meet the crude processing capability (no more than 155,000 barrels per calendar day, bpcd) and employee (no more than 1500 people) criteria as specified in previous EPA fuel regulations.

[9] As discussed in section III.C.3.a of this preamble, the small refinery exemption may be extended under 211(o)(9)(A)(ii) or (B) of the Clean Air Act as amended by the Energy Policy Act.

[10] ''Calculation of the Small Refiner/Small Refinery Fraction for the Renewable Fuel Program,'' memo to the docket from Christine Brunner, ASD, OTAQ, EPA September 2006.

$$RFStd_i = 100 \times \frac{RFV_i - Cell_i}{(G_i - R_i) + (GS_i - RS_i) - GE_i}$$

Where:

$RFStd_i$ = Renewable Fuel standard in year i, in percent.

RFV_i = Annual volume of renewable fuels required by section 211(o)(2)(B) of the Act for year i, in gallons.

G_i = Amount of gasoline projected to be used in the 48 contiguous states, in year i, in gallons.

R_i = Amount of renewable fuel blended into gasoline that is projected to be consumed in the 48 contiguous states, in year i, in gallons.

GS_i = Amount of gasoline projected to be used in Alaska, Hawaii, or a U.S. territory in year i if the state or territory opts-in, in gallons.

RS_i = Amount of renewable fuel blended into gasoline that is projected to be consumed in Alaska, Hawaii, or a U.S. territory in year i if the state or territory opts-in, in gallons.

GE_i = Amount of gasoline projected to be produced by exempt small refineries and small refiners in year i, in gallons (through 2010 only unless exemption extended under §§ 211(o)(9)(A)(ii) or (B)). Equivalent to $0.135*(G_i - R_i)$.

$Cell_i$ = Beginning in 2013, the amount of renewable fuel that is required to come from cellulosic sources, in year i, in gallons (250,000,000 gallons minimum).

After 2012 the Act requires that the applicable volume of required renewable fuel specified in Table I.B–1 include a minimum of 250 million gallons that are derived from cellulosic biomass. As shown in Table III.A.2–1 below, we have estimated this value (250 million gallons) as a percent of an obligated party's production for 2013. Thus, an obligated party will be subject to two standards in 2013 and beyond, a non-cellulosic standard and a cellulosic standard. We are therefore also finalizing the following formula for calculating the cellulosic standard that is required beginning in 2013:

$$RFCell_i = 100 \times \frac{Cell_i}{(G_i - R_i) + (GS_i - RS_i)}$$

Where, except for $RFCell_i$, the variable descriptions are as discussed above. The definition of $RFCell_i$ is:

$RFCell_i$ = Renewable Fuel Cellulosic Standard in year i, in percent

Note that after 2012 cellulosic RINs cannot be used to satisfy the non-cellulosic RFS standard ($RFStd_i$). The amount of renewable fuel that is required to come from cellulosic sources ($Cell_i$) is a fixed amount.

We are not finalizing regulations that would specify the criteria under which a state could petition the EPA for a waiver of the RFS requirements, nor the ramifications of Agency approval of such a waiver in terms of the level or applicability of the standard. As discussed in the proposal, there was no clear way to include such a provision in the context of the program being finalized. As a result, the formula for the standard shown above does not include any components to account for Agency approval of a state petition for a waiver of the RFS requirements. Should EPA grant such a waiver in the future, it will determine at that time what adjustments to make to the standard.

2. What Are the Applicable Standards?

As discussed in the proposal, EPA will set the percentage standard for each upcoming year based on the most recent EIA STEO projections, and using the other sources of information as noted above. EPA will publish the standard in the **Federal Register** by November 30 of the preceding year. The standards are used to determine the renewable volume obligation based on an obligated party's total gasoline production or import volume in a calendar year, January 1 through December 31. The percentage standards do not apply on a per gallon basis. An obligated party will calculate its Renewable Volume Obligation (discussed in Section III.A.4) using the annual standard.

In the NPRM, we estimated the standards for 2007 and later using data available at the time and the formulas discussed above.[11] We have revised these values based on more recent data, and using EIA's October 2006 STEO gasoline and renewable fuel consumption projections.[12] In the proposal, we had used the lower heating value of ethanol for converting from Btu to gallons of ethanol for the purpose of calculating the standard. However, for this final rule, we have used the higher heating value of ethanol as recommended by commenters, to be consistent with EIA practices.[13] [14] Variables related to state or territory opt-ins were set to zero since we do not have any information related to their participation at this time. As mentioned earlier, we estimate the small refinery and small refiner fraction to be 13.5%. The exemption for small refineries and small refiners ends at the end of the 2010 compliance period, unless extended as discussed in Section III.C.3.a. Based on all of these factors, the standard for 2007 is 4.02%. Projected values of the standard for 2008 and beyond are shown in Table III.A.2–1.

TABLE III.A.2–1.—PROJECTED STANDARDS

Year	Projected standard	Cellulosic standard
2008	4.63%	Not applicable.
2009	5.21%	Not applicable.
2010	5.80%	Not applicable.
2011	5.38%	Not applicable.
2012	5.42%	Not applicable.
2013+	5.24% min. (non-cellulosic)	0.18% min.

[11] ''Calculation of the Renewable Fuel Standard'' memo to the docket from Christine Brunner, ASD, OTAQ, EPA, September 2006.

[12] ''Calculation of the Renewable Fuel Standard—Revised'' memo to the docket from Christine Brunner, ASD, OTAQ, EPA, April 2007.

[13] The higher (or gross or upper) heating value is used in all Btu calculations for EIA's Annual Energy Review and in related EIA publications (see discussion in EIA's Annual Energy Review, Appendix A, Thermal Conversion Factors).

[14] The lower heating value (LHV) is used to represent energy content in the context of setting Equivalence Values as described in Section III.B.4 because it more accurately reflects the energy available in the fuel to produce work.

As discussed in Section II.A.5, for calendar year 2013 and thereafter, the applicable volumes will be determined in accordance with separate statutory provisions that include EPA coordination with the Departments of Agriculture and Energy, and a review of the program during calendar years 2006 through 2012. The Act specifies that this review consider the impact of the use of renewable fuels on the environment, air quality, energy security, job creation, and rural economic development, and the expected annual rate of future production of renewable fuels, including cellulosic ethanol. We intend to conduct another rulemaking as we approach the 2013 timeframe that would include our review of these factors. That rulemaking will present our conclusions regarding the appropriate applicable volume of renewable fuel for use in calculating the renewable fuel standard for 2013 and beyond. The program finalized by today's rule will continue to apply after 2012, though some elements may be modified in the rulemaking setting the standards for 2013 and beyond. Today's rule does not contain a mechanism for establishing a post-2012 standard.

3. Compliance in 2007

The Energy Act requires that EPA promulgate regulations to implement the RFS program, and if EPA did not issue such regulations then a default standard for renewable fuel use would apply in 2006. On December 30, 2005 we promulgated a direct final rule to interpret and implement the application of the statutory default standard of 2.78 percent in calendar year 2006 (70 FR 77325). However, the Act provides no default standard for any other year.

In the NPRM we stated our expectation that, due to the limited time available for this rulemaking, we would be unable to publish the final rule and have it become effective by January 1, 2007. We discussed several ways that we could specify how, and for what time periods, the applicable standard and other program requirements would apply to regulated parties for gasoline produced during 2007. We discussed a collective compliance approach similar to that applied in 2006, as well as a ''full year'' approach that would have based the renewable volume obligation for each obligated party on all gasoline produced starting on January 1, 2007 regardless of the effective date of the rule. However, due to a number of issues with these approaches, we proposed a ''prospective'' approach in which the renewable fuel standard would be applied to only those volumes of gasoline produced after the effective date of the final rule. Essentially the renewable volume obligation for 2007 would be based on only those volumes of gasoline produced or imported by an obligated party prospectively from the effective date of the rulemaking forward, and renewable producers would not have to begin generating RINs and maintaining the necessary records until this same date.

We received no comments supporting the alternative ''full year'' approach to 2007 compliance. However, several parties expressed a preference for either a collective compliance approach for 2007, or if not that then delaying implementation of the comprehensive program to January 1, 2008. They argued that regulated parties needed additional time to put into place the sophisticated RIN tracking systems that would be required. The additional time would also allow regulated parties to debug the systems, train personnel, and put support programs into place. The American Coalition for Ethanol also argued that the prospective approach did not guarantee that the total renewable fuel volumes required by the Act for 2007 would actually be used in 2007, whereas a collective compliance approach would. Parties in favor of a collective compliance approach argued that EPA has the authority to implement such an approach despite the fact that the Act does not explicitly give EPA this authority, and also argued that there was no need to include any form of credit carryover under a collective compliance approach.

However, a number of refiners and their associations opposed a collective compliance approach to 2007 and expressed strong support for the proposed prospective approach. They argued that a start date at least 60 days from the date of publication of the final rule would provide sufficient time to obligated parties for making the necessary adjustments for compliance. They also argued that they should be afforded the opportunity to participate as soon as possible in the trading program, which the collective compliance approach used for 2006 would preclude for 2007.

We continue to believe that a collective compliance approach is not appropriate for 2007. The Energy Act requires us to promulgate regulations that provide for the generation of credits by any person who over complies with their obligation. It also stipulates that a person who generates credits must be permitted to use them for compliance purposes, or to transfer them to another party. These credit provisions have meaning only in the context of an individual obligation to meet the applicable standard. Delaying a credit program until 2008 would mean the credit provisions have no meaning at all for 2007, since under a collective compliance approach no individual facility or company would be liable for meeting the applicable standard. Including a ''collective'' credit or deficit carryforward as part of a collective compliance program would also not fully implement the credit provisions of the Act. The prospective compliance approach, in contrast, not only provides obligated parties with the opportunity to generate credits, but also provides the industry with the certainty they need to comply and is relatively straightforward to implement.

Rather than requiring the program to begin on the effective date of the rule as proposed (60 days following publication in the **Federal Register**), we are finalizing a start date of September 1, 2007. From this date forward, the renewable fuel standard will be applicable to all gasoline produced or imported, and all renewable fuels produced or imported will have to be assigned a RIN. All regulated parties must be registered by this date, and the recordkeeping responsibilities will also begin. By setting such a date, industry will be able to plan with confidence to start complying upon signature of the rule, rather than having the start date depend upon the timing of publication of this final rule in the **Federal Register**. We recognize the concerns expressed in comments that time is needed to prepare Information Technology (IT) systems to comply with the program. However, we believe that a September 1, 2007 start date will provide sufficient time. The final rule is in most respects consistent with the NPRM, and based on discussions with industry, plans for implementation are already underway. Furthermore, a September 1, 2007 start date will likely provide regulated parties some additional time to prepare in comparison to simply setting the start date as 60 days following publication of the rule.

As stated in the NPRM, we recognize that the prospective approach to 2007 compliance will not guarantee by regulation that the total renewable fuel volumes required by the Act for 2007 would actually be used in 2007. However, current projections from the Energy Information Administration (EIA) on the volume of renewable fuel expected to be produced in 2007 indicate that the Act's required volumes will be exceeded by a substantial margin due to the relative economic value of renewable fuels in comparison to gasoline. We are confident that the combined effect of the regulatory

requirements for 2007 and the expected market demand for renewable fuels will lead to greater renewable fuel use in 2007 than is called for under the Act. Current renewable production already exceeds the rate required for all of 2007, and as discussed in Section VI, capacity is expected to continue to grow. Furthermore, refiners and importers are not required to meet any requirements under the Act until EPA adopts the regulations, and EPA is authorized to consider appropriate lead time in establishing the regulatory requirements.[15] Under this option we believe there will be reasonable lead-time for regulated parties to meet their 2007 compliance obligations. While no option before us is perhaps totally consistent with all of the provisions of the Act, we believe the rule as adopted does the best job possible given the circumstances of implementing all of the provisions of the Act for 2007.

4. Renewable Volume Obligations

In order for an obligated party to demonstrate compliance, the percentage standards described in Section III.A.2 which are applicable to all obligated parties must be converted into the volume of renewable fuel each obligated party is required to satisfy. This volume of renewable fuel is the volume for which the obligated party is responsible under the RFS program, and is referred to here as its Renewable Volume Obligation (RVO).

The calculation of the RVO requires that the standard shown in Table III.A.2–1 for a particular compliance year be multiplied by the gasoline volume produced by an obligated party in that year. To the degree that an obligated party did not demonstrate full compliance with its RVO for the previous year, the shortfall is included as a deficit carryover in the calculation. The equation used to calculate the RVO for a particular year is shown below:

$$RVO_i = Std_i \times GV_i + D_{i-1}$$

Where:

RVO_i = The Renewable Volume Obligation for the obligated party for year i, in gallons.

Std_i = The RFS program standard for year i, in percent.

GV_i = The non-renewable gasoline volume produced by an obligated party in year i, in gallons.

D_{i-1} = Renewable fuel deficit carryover from the previous year, in gallons.

The Energy Act only permits a deficit carryover from one year to the next if the obligated party achieves full compliance with its RVO including the deficit carryover in the second year. Thus deficit carryovers could not occur two years in succession. They could, however, occur as frequently as every other year for a given obligated party.

The calculation of an obligated party's RVO is necessarily retrospective, since the total gasoline volume that it produces in a calendar year will not be known until the year has ended. However, the obligated party will have an incentive to project gasoline volumes, and thus the RVO, throughout the year so that it can spread its efforts to comply across the entire year. Most refiners and importers will be able to project their annual gasoline production volumes with a minimum of uncertainty based on their historical operations, capacity, plans for facility downtimes, knowledge of gasoline markets, etc. Even if unforeseen circumstances (e.g., hurricane, unit failure, etc.) significantly reduced the production volumes in comparison to their projections, their RVO will likewise be reduced proportionally and their ability to comply with the RFS requirements will be only minimally affected. Each obligated party's projected RVO for a given year becomes more accurate as that year progresses, but the obligated party should nevertheless have a sufficiently accurate estimate of its RVO at the beginning of the year to allow it to begin its efforts to comply.

B. What Counts as a Renewable Fuel in the RFS Program?

Section 211(o) of the Clean Air Act defines ''renewable fuel'' and specifies many of the details of the renewable fuel program. The following section provides EPA's views and interpretations on issues related to what fuels may be counted towards compliance with the RVO, and how they are counted.

1. What Is a Renewable Fuel That Can Be Used for Compliance?

The statutory definition of renewable fuel includes cellulosic ethanol and waste derived ethanol. It includes biodiesel, as defined in the Energy Act.[16] It also includes all motor vehicle fuels that are produced from biomass material such as grain, starch, oilseeds, animal, or fish materials including fats, greases and oils, sugarcane, sugar beets, tobacco, potatoes or other biomass (such as bagasse from sugar cane, corn stover, and algae and seaweed). In addition, it includes motor vehicle fuels made using a feedstock of natural gas if produced from a biogas source such as a landfill, sewage waste treatment plant, feedlot, or other place where decaying organic material is found.

According to the Act, the motor vehicle fuels must be used ''to replace or reduce the quantity of fossil fuel present in a fuel mixture used to operate a motor vehicle.'' Some motor vehicle fuels can be used in both motor vehicles or nonroad engines or equipment. For example, highway gasoline and diesel fuel are often used in both highway and off-highway applications. Compressed natural gas can likewise be used in either highway or nonroad applications. For purposes of the renewable fuel program, EPA considers a fuel to be a ''motor vehicle fuel'' and to be ''a fuel mixture used to operate a motor vehicle,'' based on its potential for use in highway and nonroad vehicles, without regard to whether it, in fact, is used in a highway vehicle application. EPA does not believe that the much more complex and costly regulatory scheme that would be needed to track motor vehicle fuel use versus off-road fuel use would be justified. (As discussed further below, heaters and boilers are not considered highway or nonroad engine applications and renewable fuel produced or imported specifically for use in such equipment is not valid for compliance purposes under the RFS program.) If it is a fuel that could be used in highway vehicles, it will satisfy these parts of the definition of renewable fuel, whether it is later used in highway or nonroad applications. This will allow a motor vehicle fuel that otherwise meets the definition to be counted towards a party's RVO without the need to track it to determine its actual application in a highway vehicle, and provided only that the producer does not know that the fuel will be used for a purpose other than highway and nonroad engine applications. This is also consistent with the requirement that EPA base the renewable fuel obligation on estimates of the entire volume of gasoline consumed, without regard to whether it is used in highway or nonroad applications.

Renewable fuel as defined, may be made from a number of different types of feedstocks. For example, the Fisher-Tropsch process can use methane gas from landfills as a feedstock, to produce diesel or gasoline. Vegetable oil made

[15] The statutory default standard for 2006 is the one exception to this, since it directly establishes a renewable fuel obligation applicable to refiners and importers in the event that EPA does not promulgate regulations.

[16] As discussed below, for purposes of this rulemaking, the regulations separate ''biodiesel'' as defined in the Energy Act, into biodiesel (diesels that meet the Energy Act's definition and are a mono-alkyl ester) and renewable diesel (other diesels that meet the Energy Act's definition but are not mono-alkyl esters).

from oilseeds such as rapeseed or soybeans can be used to make biodiesel or renewable diesel. Methane, made from landfill gas (biogas) can be used to make methanol, or can be used directly as a fuel in vehicles with engines designed to run on compressed natural gas. Also, some vegetable oils or animal fats can be processed in distillation columns in refineries to make gasoline; as such, the renewable feedstock serves as a ''renewable crude,'' and the resulting gasoline or diesel product would be a renewable fuel. This last example is discussed in further detail in Section III.B.3 below.

As this discussion shows, the definition of renewable fuel in the Act is broad in scope, and covers a wide range of fuels. While ethanol is used primarily in combination with gasoline, the definition of renewable fuel in the Act is not limited to fuels that can be blended with gasoline. Various fuels that meet the definition of renewable fuel can be used in their neat form, such as ethanol, biodiesel, methanol or natural gas. Others, including ethanol may be used to produce a gasoline blending component (such as ETBE). At the same time, the RFS regulatory program is to ''ensure that gasoline sold or introduced into commerce * * * contains the applicable volume of renewable fuel.'' This applicable volume is specified as a total volume of renewable fuel on an aggregate basis. Congress also clearly specified that one renewable fuel, biodiesel, could be counted towards compliance even though it is not a gasoline component, and does not directly displace or replace gasoline. The Act is unclear on whether other fuels that meet the definition of renewable fuel, but are not used in gasoline, could also be used to demonstrate compliance towards the aggregate national use of renewable fuels.

EPA interprets the Act as allowing regulated parties to demonstrate compliance based on any fuel that meets the statutory definition for renewable fuel, whether it is directly blended with gasoline or not. This would include neat alternative fuels such as ethanol, methanol, and natural gas that meet the definition of renewable fuel. This is appropriate for several reasons. First, it promotes the use of all renewable fuels, which will further the achievement of the purposes behind this provision. Congress did not intend to limit the program to only gasoline components, as evidenced by the provision for biodiesel, and the broad definition of renewable fuel evidences an intention to address more renewable fuels than those used with gasoline. Second, in practice EPA expects that the overwhelming volume of renewable fuel used to demonstrate compliance with the renewable fuel obligation would still be ethanol blended with gasoline. Finally, as discussed later, EPA's compliance program is based on assigning volumes at the point of production, and not at the point of blending into motor vehicle fuel. This interpretation avoids the need to track renewable fuels downstream to ensure they are blended with gasoline and not used in their neat form; the gasoline that is used in motor vehicles is reduced by the presence of renewable fuels in the gasoline pool whether they are blended with gasoline or not. Comments received on this interpretation were favorable towards it. EPA continues to believe, therefore, that this approach is consistent with the intent of Congress and is a reasonable interpretation of the Act. One commenter indicated that a logical extension of this reasoning would provide that renewable fuel that could be used in motor vehicles is still a renewable fuel under the Act when used by renewable fuel producers in a boiler or heater. EPA disagrees. The term ''renewable fuel'' means ''motor vehicle fuel that * * * is used to replace or reduce the quantity of fossil fuel present in a fuel mixture used to operate a motor vehicle.'' We believe that all but a trivial quantity of renewable fuels that can be used in motor vehicles will ultimately be used as motor vehicle fuel. Producers of ethanol biodiesel and other products that can be used as motor vehicle fuel can generally assume, therefore, that their products will be used in that way, and can assign RINs to their product without tracking its ultimate use. However, renewable fuel used onsite in a boiler or heater by a renewable fuel producer clearly is not a motor vehicle fuel used to replace or reduce the quantity of fossil fuel present in a fuel mixture used to operate a motor vehicle.

Under the Act, renewable fuel includes ''cellulosic biomass ethanol'' and ''waste derived ethanol'', each of which is defined separately. Ethanol can be cellulosic biomass ethanol in one of two ways, as described below.

a. Ethanol Made From a Cellulosic Feedstock

The simplest process of producing ethanol is by fermenting sugar in sugar cane or beets, but ethanol can also be produced from starch in corn and other feedstocks by first converting the starch to sugar. Ethanol can also be produced from complex carbohydrates, such as the cellulosic portion of plants or plant products. The cellulose is first converted to sugars (by hydrolysis); then the same fermentation process is used as for sugar to make ethanol. Cellulosic feedstocks (composed of cellulose and hemicellulose) are currently more difficult and costly to convert to sugar than are starches. While the cost and difficulty are a disadvantage, the cellulosic process offers the advantage that a wider variety of feedstocks can be used. Ultimately with more feedstocks available from which to make ethanol more volume of ethanol can be produced.

The Act provides the definition of cellulosic biomass ethanol, which states:

> ''The term 'cellulosic biomass ethanol' means ethanol derived from any lignocellulosic or hemicellulosic matter that is available on a renewable or recurring basis, including:
> (i) Dedicated energy crops and trees;
> (ii) Wood and wood residues;
> (iii) Plants;
> (iv) Grasses;
> (v) Agricultural residues;
> (vi) Animal wastes and other waste materials, and
> (viii) Municipal solid waste.''

Examples of cellulosic biomass source material include rice straw, switch grass, and wood chips. Ethanol made from these materials would qualify under the definition as cellulosic ethanol. In addition to the above sources of feedstocks for cellulosic biomass ethanol, the Act's definition also includes animal waste, municipal solid wastes, and other waste materials. ''Other waste materials'' generally includes waste material such as sewage sludge, waste candy, and waste starches from food production, but for purposes of the definition of cellulosic ethanol discussed in III.B.1.b below, it can also mean waste heat obtained from an off-site combustion process.

Although the definitions of ''cellulosic biomass ethanol'' and ''waste derived ethanol'' both include animal wastes and municipal solid waste in their respective lists of covered feedstocks, there remains a distinction between these types of ethanol. If the animal wastes or municipal solid wastes contain cellulose or hemicellulose, the resulting ethanol can be termed ''cellulosic biomass ethanol.'' If the animal wastes or municipal solid wastes do not contain cellulose or hemicellulose, then the resulting ethanol is labeled ''waste derived ethanol.'' This is discussed further in Section III.B.1.c below.

b. Ethanol Made From Any Feedstock in Facilities Using Waste Material To Displace 90 Percent of Normal Fossil Fuel Use

The definition of cellulosic biomass ethanol in the Act also provides that ethanol made at any facility—regardless of whether cellulosic feedstock is used or not—may be defined as cellulosic if at such facility ''animal wastes or other waste materials are digested or otherwise used to displace 90 percent or more of the fossil fuel normally used in the production of ethanol.'' The statutory language suggests that there are two methods through which ''animal and other waste materials'' may be considered for displacing fossil fuel. The first method is the digestion of animal wastes or other waste materials. EPA has interpreted the term ''digestion'' to mean the conversion of animal or other wastes into methane, which can then be combusted as fuel. We base our interpretation on the practice in industry of using anaerobic digesters to break down waste products such as manure into methane. Anaerobic digestion refers to the breakdown of organic matter by bacteria in the absence of oxygen, and is used to treat waste to produce renewable fuels. We note also that the digestion of animal wastes or other waste materials to produce the fuel used at the ethanol plant does not have to occur at the plant itself. Methane made from animal or other wastes offsite and then purchased and used at the ethanol plant would also qualify.

The second method is suggested by the term ''otherwise used'' which we interpret to mean (1) the direct combustion of the waste materials as fuel at an ethanol plant, or (2) the use of thermal energy that itself is a waste product; e.g., waste heat that is obtained from an off-site combustion process such as a neighboring plant that has a furnace or boiler from which the waste heat is captured. With respect to the first meaning, ''other waste materials'' includes but is not limited to waste materials from tree farms (tops, branches, limbs, etc.), or waste materials from saw mills (sawdust, shavings and bark) as well as other vegetative waste materials such as corn stover, or sugar cane bagasse, that could be used as fuel for gasifier/boiler units at ethanol plants. Since these materials are not also used as a feedstock to starch-based ethanol plants, they are truly waste materials. Although these waste materials conceivably could be feedstocks to a cellulosic ethanol plant, their use in that manner is sufficiently challenging at the current time that EPA believes that such use does not subvert the intent of the definition.[17] Since corn kernels can readily be used as a feedstock in a typical ethanol production facility, their use as a fuel for gasified/boiler units at a corn ethanol plant would not be considered use of ''other waste material'' for purposes of the definition of cellulosic biomass ethanol.

Regarding the use of waste heat as a source of thermal energy, we note that there may be situations in which an off-site furnace, boiler or heater creates excess or waste heat that is not used in the process for which the thermal energy is employed. For example, a glass furnace generates a significant amount of waste heat that often goes unused. We have therefore included in the regulatory definition of cellulosic biomass ethanol waste heat generated from off-site sources in the definition of ''other waste materials'' that can be used to displace 90% of the fossil fuel otherwise used at an ethanol production facility.

Several commenters argued that because the source of the waste heat is ultimately a fossil fuel in most cases that it should not be considered an ''other waste material''. The Agency recognizes that fossil fuel is ultimately the source of most waste heat, but it is also the case that waste heat that is uncaptured represents a loss of energy that could otherwise displace fossil fuel use elsewhere. Specifically, waste heat used at an ethanol plant would result in displacement of fossil fuel use at the plant. In writing the proposed rule, we were aware of the concern raised by the commenters and therefore proposed to restrict waste heat to off-site sources only. We believe that this approach minimizes the concern. We disagree with another commenter that such restriction would create a perverse incentive for facilities near ethanol plants to oversize its combustion units to sell waste heat to the neighboring ethanol facilities where it would be used to displace fossil fuel. It is highly unlikely that businesses would incur the additional expense of building an oversized combustion unit for the sale of waste heat. Also, the 2.5 gallon value given for one gallon of cellulosic ethanol as provided by the Act extends only through 2012. Any additional market value for waste heat used to qualify ethanol as cellulosic would therefore be of relatively short duration and not likely to warrant investment in oversized combustion units.[18]

The term ''fossil fuel normally used in the production of ethanol'' means fossil fuel used at the facility in the ethanol production process itself, rather than other phases such as trucks transporting product, and fossil fuel used to grow and harvest the feedstock. Therefore the diesel fuel that trucks consume in hauling wood waste from sawmills to the ethanol facility would not be counted in determining whether the 90% displacement criterion has been met. We are interpreting it in this way because we believe the accounting of fuel use associated with transportation and other life cycle activities would be extremely difficult and in many cases impossible.[19]

Based on the operation of ethanol plants, we are viewing this definition to apply to waste materials used to produce thermal energy rather than electrical energy. Electrical usage at ethanol plants is used for lights and equipment not directly related to the production of ethanol. Also, the calculation of fossil fuel used to generate such electrical usage would be difficult because it is not always possible to track the source of electricity that is purchased off-site. Therefore, the final regulations consider displacement of 90 percent of fossil fuels at the ethanol plant to mean those fuels consumed on-site and that are used to generate thermal energy used to produce ethanol.

One commenter suggested that electricity from cogeneration (i.e., combined heat and power) units be considered in determining the percentage of fossil fuel use that is displaced. The commenter claims that allowing consideration of electricity use would provide an incentive for cogeneration to be used at ethanol plants. Our findings regarding the use of electricity at ethanol plants remain the same—that is, it is not used as part of

[17] On the other hand, wood from plants or trees that are grown as an energy crop may not qualify as a waste-derived fuel in an ethanol facility because such wood would not qualify as waste materials under this portion of the definition. Under the definition of renewable fuels and cellulosic biomass ethanol, however, such wood material could serve as a feedstock in a cellulosic ethanol plant, since these definitions do not restrict such feedstock to waste materials only.

[18] The term ''other waste materials'' is also included in the portions of the definitions of ''cellulosic biomass ethanol'' and ''waste-derived ethanol'' that identify feedstocks. The inclusion of off-site generated waste heat in the definition of ''other waste materials'', however, applies only to the portion of the definition of cellulosic biomass ethanol that relates to displacement of fossil fuels, and does not apply to the term ''other waste materials'' as otherwise used in these definitions.

[19] In Section IX of today's preamble we discuss our analysis of the lifecycle fuel impacts of the RFS rule, with respect to greenhouse gas (GHG) emissions. While we do account for fuel used in hauling materials to ethanol plants in our analysis, we are using average nationwide values, rather than data collected for individual plants.

the heat source in ethanol production for economic reasons. We note also that the commenter did not present any evidence to the contrary. As such, we continue to maintain that electricity is not ''normally used in the production of ethanol'' and we are therefore only considering the displacement of fossil fuels associated with thermal energy at the plant.

Owners who claim their product qualifies as cellulosic biomass ethanol based on the 90 percent fossil fuel displacement through the use of waste materials (i.e., animal wastes, and other waste materials) are required under today's rule to keep records of fuel (waste-derived and fossil fuel) used for thermal energy for verification of their claims. They will also be required to track the fossil fuel equivalent of any off-site generated waste heat that is captured and which displaces fossil fuel used in the ethanol production process. Since such waste heat would typically be purchased through agreement with the off-site owner, we do not feel it burdensome for owners to track such information. Owners will therefore calculate the amount of energy in Btu's associated with waste-derived fuels (including the fossil fuel equivalent waste heat), and divided by the total energy in Btus used to produce ethanol in a given year. Ethanol produced from such facilities will get the benefit of the 2.5 ratio. (Section III.D.3.e discusses the requirements for owners of facilities that claim to have produced cellulosic ethanol under the 90 percent displacement provision, but which fail to meet those requirements.)

c. Ethanol That Is Made From the Non-Cellulosic Portions of Animal, Other Waste, and Municipal Waste

''Waste derived ethanol'' is defined in the Act as ethanol derived from ''animal wastes, including poultry fats and poultry wastes, and other waste materials; * * * or municipal solid waste.'' Both animal wastes and municipal solid waste are also listed as allowable feedstocks for the production of ''cellulosic biomass ethanol.'' When such feedstocks do not contain cellulose, however, the resulting ethanol is waste derived. Both waste-derived and cellulosic ethanol both are considered equivalent to 2.5 gallons of renewable fuel when determining compliance with the renewable volume obligation.

d. Foreign Producers of Cellulosic and Waste-Derived Ethanol

Some commenters stated that foreign ethanol producers should not be able to have their cellulosic or waste-derived ethanol treated in the same manner as domestic cellulosic or waste-derived ethanol under the RFS program because of the difficulty in verifying their compliance with the provisions discussed above. Today's rule allows such producers to participate, provided they meet the requirements discussed in Section IV.D.2. of the preamble. The requirements for foreign producers of cellulosic or waste-derived ethanol are different than for domestic producers and allow for verification of compliance.

2. What Is Biodiesel?

The Act states that ''The term 'renewable fuel' includes * * * biodiesel (as defined in section 312(f)) of the Energy Policy Act of 1992.'' This definition, as modified by Section 1515 of the Energy Act states:

> The term ''biodiesel'' means a diesel fuel substitute produced from nonpetroleum renewable resources that meets the registration requirements for fuels and fuel additives established by the Environmental Protection Agency under section 7545 of this title, and includes biodiesel derived from animal wastes, including poultry fats and poultry wastes, and other waste materials, or municipal solid waste and sludges and oils derived from wastewater and the treatment of wastewater.

This definition of biodiesel would include both mono-alkyl esters which meet the current ASTM specification D–6751–07 [20] (the most common meaning of the term ''biodiesel'') that have been registered with EPA, and any non-esters that are intended for use in engines that are designed to run on conventional, petroleum-derived diesel fuel, have been registered with the EPA, and are made from any of the feedstocks listed above.

To implement the above definition of biodiesel in the context of the RFS rulemaking while still recognizing the unique history and role of mono-alkyl esters meeting ASTM D–6751, we have divided the Act's definition of biodiesel into two separate parts: Biodiesel (mono-alkyl esters) and non-ester renewable diesel. The combination of ''biodiesel (mono-alkyl esters)'' and ''non-ester renewable diesel'' in the regulations fulfills the Act's definition of biodiesel. Commenters supported EPA's approach in defining biodiesel in this manner.

[20] In the event that the ASTM specification D–6751 is succeeded with an updated specification in the future, EPA may revise the regulations accordingly at such time. Regulations cannot be promulgated that only reference ''the most recent version'' of an ASTM standard, since doing so would place the American Society for Testing and Materials in the position of a regulatory body.

a. Biodiesel (Mono-Alkyl Esters)

Under today's rule, the term ''biodiesel (mono-alkyl esters)'' means a motor vehicle fuel which: (1) Meets the registration requirements for fuels and fuel additives established by the Environmental Protection Agency under section 7545 of this title (Clean Air Act Section 211); (2) is a mono-alkyl ester; (3) meets ASTM specification D–6751–07; (4) is intended for use in engines that are designed to run on conventional, petroleum-derived diesel fuel, and (5) is derived from nonpetroleum renewable resources.

b. Non-Ester Renewable Diesel

The term ''non-ester renewable diesel'' means a motor vehicle fuel which: (1) Meets the registration requirements for fuels and fuel additives established by the Environmental Protection Agency under section 7545 of this title (Clean Air Act Section 211); (2) is not a mono-alkyl ester; (3) is intended for use in engines that are designed to run on conventional, petroleum-derived diesel fuel, and (4) is derived from nonpetroleum renewable resources. Current examples of a non-ester renewable diesel include: ''Renewable diesel'' produced by the Neste or UOP process, or diesel fuel produced by processing fats and oils through a refinery hydrotreating process.

3. Does Renewable Fuel Include Motor Fuel That Is Made From Coprocessing a Renewable Feedstock With Fossil Fuels?

Renewable fuels can be produced by processing biologically derived wastes such as animal fats, as well as other nonpetroleum based feedstocks in a traditional refinery—that is, a refinery that normally uses crude oil or other fossil fuel-based blendstocks as feeds to processing units. Such wastes are pre-processed so that they are in liquid form to enable their further processing in units at a traditional refinery. In the proposed rule, we defined such feedstocks as ''biocrudes'' and included a discussion on how the fuels resulting from these feedstocks should be counted. Our basic approach remains the same. We have changed the term ''biocrudes'' to ''renewable crudes'', since we believe it is more accurate. We are providing additional discussion in this preamble on how renewable fuels are made from renewable crudes.

The fuels resulting from the co-processing of the pre-processed liquid form of these renewable crudes (i.e., those feedstocks listed in the definition of ''renewable fuel'' and, for biodiesel, in the statutory definition of ''biodiesel'') in a traditional refinery are

themselves indistinguishable from the gasoline and diesel products produced from crude oil. As such, the treatment of any resulting renewable fuel presents a particular complication in terms of RFS program compliance—namely, if such fuels are indistinguishable from gasoline and diesel produced from crude oil feedstocks, how are the volumes to be measured? Also, some renewable feedstocks are used to produce renewable diesel (discussed in Section III.B.2 above). In other circumstances renewable feedstocks are processed in dedicated facilities or units—that is, in either (1) facilities other than refineries that process fossil fuels, (2) equipment located within a traditional refinery but which is dedicated to renewable feedstocks, or (3) equipment located within a traditional refinery that processes renewable and conventional feedstocks but solely for the production of motor vehicle fuels.

The processing approach for the renewable feedstock dictates whether the resulting fuel is distinguishable from crude oil-based fuels by virtue of its being made and stored separately from fossil fuels as discussed in further detail below. Therefore, our method for counting renewable fuels made from renewable feedstocks differ based on how the renewable feedstock is processed

a. Definition of ''Renewable Crudes'' and ''Renewable Crude-Based Fuels''

Under some circumstances renewable feedstocks can be preprocessed into a liquid that is similar to petroleum-based feedstocks used in traditional refineries. We are classifying such liquids as ''renewable crudes,'' and any motor vehicle fuel that is made from such liquids is defined broadly as ''renewable crude-based fuel''.

There are three approaches that can be taken to making renewable fuels from renewable crudes. The first would include gasoline or diesel products resulting from the processing of renewable crudes in production units within refineries that simultaneously process crude oil and other petroleum based feedstocks. In these cases, the final product consists of a mixture of renewable fuel and fossil-based fuel, and may include both motor vehicle fuel and non-motor vehicle fuel. The second approach would include diesel and other products resulting from processing renewable crudes at a stand-alone facility that does not process any fossil fuels, or at a facility dedicated to renewable crudes within a traditional refinery.[21] In this case, a batch of renewable crude used as feedstock to a production unit would replace crude oil or other petroleum based feedstocks which ordinarily would be the feedstock in that process unit. The third approach would be non-ester renewable diesel fuel produced by processing fats and oils through a refinery hydrotreating process. All three approaches can produce renewable fuel that is valid for compliance purposes under the RFS program, but the measurement of volumes produced and/or their associated Equivalence Values may differ.

b. How Are Renewable Crude-Based Fuel Volumes Measured?

As discussed above, some renewable feedstocks are processed in facilities other than refineries, or in equipment located within a traditional refinery but which is dedicated to renewable feedstocks. The resulting product is ''renewable diesel'' (and such units may in the future also produce ''renewable gasoline'' though none is currently made in such dedicated facilities). In other situations, renewable crudes are coprocessed along with crude oils in traditional refineries, resulting in gasoline or diesel products that may be combinations of renewable and non-renewable fuels.

In the case of renewable crude coprocessed with fossil fuels in refineries, we are assuming that all of the renewable crude used as a feedstock in a refinery unit will end up as a renewable crude-based fuel that is valid for RFS compliance purposes. We are taking this approach because renewable crudes that are processed through distillate hydrotreaters are first pre-processed so that they are in liquid form, and such liquid produces diesel fuel in volumes approximately equal to the amount that is input to the hydrotreater. We are assuming that renewable crudes could also be processed in other process units at refineries to make gasoline. The renewable crude processed at a refinery is functionally equivalent to crude oil, and the end products (gasoline and/or diesel) are indistinguishable from products made from crude oil. Thus, rather than requiring the refiner to document what portion of the renewable crude-based fuel is renewable fuel, we are requiring that the volume of the renewable crude itself count as the volume of renewable fuel produced for the purposes of determining the volume block codes that are in the RIN (discussed in further detail in Section III.D).[22] The general counting procedure for renewable crude-based fuels that are not derived through coprocessing with fossil fuels is that the volumes of renewable fuel produced are measured directly, and an appropriate Equivalence Value is assigned according to the methodology discussed in Section III.B.4.

4. What Are ''Equivalence Values'' for Renewable Fuel?

One question that EPA needed to address in developing the regulations was how to count volumes of renewable fuel in determining compliance with the renewable volume obligation. The Act stipulates that every gallon of waste-derived ethanol and cellulosic biomass ethanol should count as if it were 2.5 gallons for RFS compliance purposes. The Act does not stipulate similar values for other renewable fuels, but as described below we believe it is appropriate to do so.

We are requiring that the ''Equivalence Values'' for renewable fuels other than those for which specific values are set forth in the Act be based on their energy content in comparison to the energy content of ethanol, adjusted as necessary for their renewable content. The result is an Equivalence Value for corn ethanol of 1.0, for biobutanol of 1.3, for biodiesel (mono alkyl ester) of 1.5, and for non-ester renewable diesel of 1.7. However, the methodology can be used to determine the appropriate equivalence value for any other potential renewable fuel as well.

This section describes why the use of the Equivalence Value approach in today's rule is appropriate under the Act, and our conclusions regarding the possible future use of lifecycle analyses as the basis of Equivalence Values.

a. Authority Under the Act To Establish Equivalence Values

We are requiring that Equivalence Values be assigned to every renewable fuel to provide an indication of the number of gallons that can be claimed for compliance purposes for every physical gallon of renewable fuel. An Equivalence Value of 1.0 means that every physical gallon of renewable fuel counts as one gallon for RFS compliance purposes. An Equivalence Value greater than 1.0 means that every physical gallon of renewable fuel counts as more than one gallon for RFS compliance

[21] Renewable crude-based fuels will need to be registered under the provisions contained in 40 CFR 79 Part 4 before they can be sold commercially.

[22] We are considering the volumes of renewable crude itself, not the feedstocks that are made into renewable crude.

purposes, while a value less than 1.0 counts as less than one gallon.

We have interpreted the Act as allowing us to develop Equivalence Values according to the methodology discussed below. We believe that the use of Equivalence Values based on energy content in comparison to the energy content of ethanol is consistent with the intent of Congress to treat different renewable fuels differently in different circumstances, and to provide incentives for use of renewable fuels in certain circumstances, as evidenced by those specific circumstances addressed by Congress. The Act has several provisions that provide for mechanisms other than straight volume measurement to determine the value of a renewable fuel in terms of RFS compliance. For example, 1 gallon of cellulosic biomass or waste derived ethanol is to be treated as 2.5 gallons of renewable fuel. EPA is also required to establish an ''appropriate amount of credits'' for biodiesel, and to provide for ''an appropriate amount of credit'' for using more renewable fuels than are required to meet your obligation. EPA is also to determine the ''renewable fuel portion'' of a blending component derived from a renewable fuel. These statutory provisions provide evidence that Congress did not limit this program solely to a straight volume measurement of gallons in the context of the RFS program.

In response to the NPRM, some commenters supported our view that the Act provides sufficient context and direction to permit the use of Equivalence Values, while other commenters opposed this view. Some parties commented that the methodology proposed in the NPRM did not go far enough. These parties argued that instead of energy content, EPA should be using lifecycle impacts to set the Equivalence Values. Lifecycle analyses are discussed in more detail in Section III.B.4.c.

Parties that opposed our proposed approach to Equivalence Values argued that since the Act did not explicitly give EPA the authority to set Equivalence Values for renewable fuels other than cellulosic biomass ethanol and waste-derived ethanol, EPA had no authority to do so. In their view, the explicit inclusion of a 2.5 credit value for cellulosic and waste-derived ethanol and the omission of any credit values for other renewables fuels should be taken as evidence that Congress intended all other renewable fuels to have Equivalence Values of 1.0.

We disagree that our discretion is so strictly limited. The Act specifically gave EPA the authority to determine an ''appropriate'' credit for biodiesel, and also establishes a 2.5 value for cellulosic biomass ethanol and waste-derived ethanol. As ethanol and biodiesel were likely the two primary renewable fuels envisioned in the near-term under the Act, it would seem normal for Congress to have focused on these. However, Congress also clearly allowed for other renewable fuels to participate in the RFS program, and it is appropriate for EPA to consider how they should be treated under the Act. Furthermore, in addition to the Act's direction that EPA determine an appropriate level of credit for biodiesel, the Act also directs EPA to determine the ''appropriate'' amount of credit for renewable fuel use in excess of the required volumes, and to determine the ''renewable fuel portion'' of a blending component derived from a renewable fuel. These statutory provisions lend further support to our belief that Congress did not limit the RFS program solely to a straight volume measurement of gallons. Having concluded that it is appropriate to determine an appropriate level of credit for biodiesel based on energy content as compared to ethanol, EPA is using a consistent approach for other types of renewable fuels for which a specific statutory credit value is not prescribed.

Another reason given by parties opposing our approach to Equivalence Values was that Equivalence Values higher than 1.0 would result in actual volumes of renewable fuel being less than the volumes required by the Act. Although it is true that the Act specifies the annual volumes of renewable fuel that the program must require and directs EPA to promulgate regulations ensuring that gasoline sold each year ''contains the applicable volume of renewable fuel,'' the Act also contains language that makes the achievement of those volumes imprecise. For instance, the deficit carryover provision allows any obligated party to fail to meet its RVO in one year if it meets the deficit and its RVO in the next year. If many obligated parties took advantage of this provision, it could result in the nationwide total volume obligation for a particular calendar year not being met. In addition, the calculation of the renewable fuel standard is based on projected nationwide gasoline volumes provided by EIA (see Section III.A). If the projected gasoline volume falls short of the actual gasoline volume in a given year, the standard will fail to create the demand for the full renewable fuel volume required by the Act for that year. The Act contains no provision for correcting for underestimated gasoline volumes, and as a result the volumes required by the Act may not be consumed in use.

Some commenters disagreed with our belief that there will only be very limited additional situations where an Equivalence Value other than 1.0 is used. They expressed concern that the provision for Equivalence Values will interfere with meeting the total national volume goals for usage of renewable fuel.

While in the long term we agree that renewable fuels with an Equivalence Value greater than 1.0 may grow to become a larger portion of the renewable fuel pool, we do not believe that this is likely to be the case before 2013, the time period when the statute specifies the overall national volumes. EPA will be issuing a new rule prior to 2013, and can reconsider its approach to Equivalence Values for renewable fuel at that time if it is appropriate to do so. For instance, EIA projects that biodiesel volumes will reach 300 million gallons by 2012. With the Equivalence Value of 1.5 that we are finalizing today, this means that the 7.5 billion gallons required by the Act for 2012 could be met with 7.35 billion gallons of renewable fuel. However, this result is well within the variability in actual volumes resulting from the other statutory provisions described above, and would still result in 7.5 billon gallons of ethanol-equivalent (in terms of energy content) renewable fuel being consumed. Congress explicitly recognized the expected use of credits for biodiesel, as it did for cellulosic ethanol. By requiring or authorizing EPA to assign credit values for such products, Congress recognized that the national volumes specified in the Act would not necessarily be met on a gallon per gallon basis. For the very limited number of other renewable fuels not covered by these express statutory provisions, assigning an equivalence value is consistent with this overall approach. Moreover, EIA is projecting that the total volume of renewable fuel will exceed the Act's requirements by a substantial margin due primarily to the favorable economics of ethanol in comparison to gasoline. Under such projections, the existence of renewable fuels with Equivalence Values higher than 1.0 will have no impact on the demand for renewable fuel.

Finally, the Act also contains language indicating that EPA has flexibility in determining how various renewable fuels should count towards meeting the required annual volumes. For instance, valid renewable fuels are defined as those that ''replace or reduce the quantity of fossil fuel present in a fuel mixture used to operate a motor

vehicle.'' Fossil fuels such as gasoline or diesel are only replaced or reduced to the degree that the energy they contain is replaced or reduced. We do not believe it would be appropriate to treat a renewable fuel with very low volumetric energy content as being equivalent to a renewable fuel with very high volumetric energy content, since the impact on motor vehicle fossil fuel use is very different for these two renewable fuels. The use of Equivalence Values based on volumetric energy content helps to achieve this goal.

A case in point would be butanol. It is produced from the same feedstocks as ethanol (i.e., starch crops such as corn) in a similar process. However, it results in an alcohol with a higher volumetric energy content than ethanol. If we were to give butanol an Equivalence Value of 1.0, it would provide an economic disincentive for corn to be used to produce butanol instead of ethanol.

As a result, we continue to believe that the assignment of Equivalence Values other than 1.0 to some renewable fuels is a reasonable way for the RFS program to establish ''appropriate'' credit values while also ensuring that the Act's volume obligations, read together with the Act's directions regarding credit values towards fulfillment of that obligation, are satisfied. This approach is consistent with the way Congress treated the various specific circumstances noted above, and thus is basically a continuation of that process.

b. Energy Content and Renewable Content as the Basis for Equivalence Values

To appropriately account for the different energy contents of different renewable fuels as well as the fact that some renewable fuels actually contain some non-renewable content, we are requiring that Equivalence Values be calculated using both the renewable content of a renewable fuel and its energy content. This section describes the calculation methodology for Equivalence Values.

In order to take the energy content of a renewable fuel into account when calculating the Equivalence Values, we must identify an appropriate point of reference. Ethanol is a reasonable point of reference as it is currently the most prominent renewable fuel in the transportation sector, and it is likely that the authors of the Act saw ethanol as the primary means through which the required volumes would be met in at least the first years of the RFS program. By comparing every renewable fuel to ethanol on an equivalent energy content basis, each renewable fuel is assigned an Equivalence Value that precisely accounts for the amount of petroleum in motor vehicle fuel that is reduced or replaced by that renewable fuel in comparison to ethanol. To the degree that corn-based ethanol continues to dominate the pool of renewable fuel, this approach allows actual volumes of renewable fuel to be consistent with the volumes required by the Act.

Equivalence Values also account for the renewable content of renewable fuels, since the presence of any non-renewable content impairs the ability of the renewable fuel to replace or reduce the quantity of fossil fuel present in a fuel mixture used to operate a motor vehicle. The Act specifically states that only the renewable fuel portion of a blending component should be considered part of the applicable volume under the RFS program. As described in more detail below, we have interpreted this to mean that every renewable fuel should be evaluated at the molecular level to distinguish between those molar fractions that were derived from a renewable feedstock, versus those molar fractions that were derived from a fossil fuel feedstock. Along with energy content in comparison to ethanol, the relative energy fraction of renewable versus non-renewable content is thus used directly as the basis for the Equivalence Value.

We are requiring that the calculation of Equivalence Values simultaneously take into account both the renewable content of a renewable fuel and its energy content in comparison to denatured ethanol. To accomplish this, we are requiring the following formula:

$$EV = (R_{RF} / R_{Eth}) \times (EC_{RF} / EC_{Eth})$$

Where:

EV = Equivalence Value for the renewable fuel.
R_{RF} = Renewable content of the renewable fuel, in percent of molecular energy.
R_{Eth} = Renewable content of denatured ethanol, in percent of molecular energy.
EC_{RF} = Energy content of the renewable fuel, in Btu per gallon (LHV).
EC_{Eth} = Energy content of denatured ethanol, in Btu per gallon (LHV).

Instead of the higher heating value, the lower heating value (LHV) is used to represent energy content because it more accurately reflects the energy available in the fuel to produce work.

R is a measure of that portion of the renewable fuel molecules which can be considered to have come from a renewable source. Since R (that is, R_{RF} and R_{Eth}) is being combined with relative energy content in the formula above, the value of R cannot be based on the weight fraction of the atoms in the molecule which came from a renewable feedstock (the ''renewable atoms''), but rather must be based on the energy inherent in that portion of the molecules comprised of renewable atoms. To identify the renewable atoms within the molecules that comprise the renewable fuel, we must examine the chemical process through which the renewable fuel was produced. A detailed explanation of calculations for R and several examples are given in a technical memorandum in the docket.[23]

In the case of ethanol, denaturants are added to preclude the ethanol's use as food. Denaturants are generally a fossil-fuel based, gasoline-like hydrocarbon in concentrations of 2–5 volume percent, with 5 percent being the most common historical level. One commenter argued that the Equivalence Value of ethanol must be specified as 0.95 for this very reason. However, as described in the NPRM, we believe that the Equivalence Value for ethanol should be specified as 1.0 despite the presence of a denaturant. First, as stated above, ethanol is expected to dominate the renewable fuel pool for at least the next several years, and it is likely that the authors of the Act recognized this fact. Thus it seems likely that it was the intent of the authors of the Act that each physical gallon of denatured ethanol be counted as one gallon for RFS compliance purposes. Second, the accounting of ethanol has historically ignored the presence of the denaturant. For instance, under Internal Revenue Service (IRS) regulations the denaturant can be counted as ethanol by parties filing claims to the IRS for the federal excise tax credit. Also, EIA reporting requirements for ethanol producers allow them to include the denaturant in their reported volumes. The commenter arguing for the use of an Equivalence Value of 0.95 for ethanol provided no additional information to counter these arguments.

Since we are requiring that denatured ethanol be assigned an Equivalence Value of 1.0, this must be reflected in the values of R_{Eth} and EC_{Eth}. We have calculated these values to be 93.1 percent and 77,550 Btu/gal, respectively. Details of these calculations can be found in the aforementioned technical memorandum to the docket. The final equation to be used for calculation of Equivalence Values is therefore:

$$EV = (R / 0.931) * (EC / 77{,}550)$$

Where:

EV = Equivalence Value for the renewable fuel.

[23] ''Calculation of equivalence values for renewable fuels under the RFS program'', memo from David Korotney to EPA Air Docket OAR–2005–0161.

R = Renewable content of the renewable fuel, expressed as a percent, on an energy basis, of the renewable fuel that comes from a renewable feedstock.

EC = Energy content of the renewable fuel, in Btu per gallon (lower heating value).

For the specific case of biogas which cannot be measured in volumetric units, we are specifying that 77,550 Btu of biogas will be considered to be the equivalent of one gallon of renewable fuel.

The calculation of the Equivalence Value for a particular renewable fuel can lead to values that deviate only slightly from 1.0, and/or can have varying degrees of precision depending on the uncertainty in the value of R or EC_{RF}. In the NPRM we proposed several simplifications to streamline the application of Equivalence Values in the context of the RFS program. These included the use of pre-specified bins, rounding, and the use of an Equivalence Value of 1.0 when the calculated value was close to 1.0. We received some comments suggesting that these three simplifications unnecessarily complicated the determination of Equivalence Values. Based on comments received, we have determined for the final rule to simplify the application of Equivalence Values by only requiring the calculated values be rounded to the first decimal place. Also, based on consideration of comments received on how such products should be counted, for renewable diesel produced by processing fats and oils through a refinery hydrotreating process, we have determined that the default Equivalence Value should be 1.7 consistent with renewable diesel produced through other processes. This approach recognizes that hydrotreating produces a product consistent with our definition of non-ester renewable diesel. Furthermore, based on comments received, the volume of the final product is expected to be comparable to the volume of the input renewable crude. Therefore, the volume of renewable crude will be used as a surrogate for the volume of the final product. With the exception of renewable diesel produced through hydroteating fats or oils which is identical to renewable diesel, none of the specific Equivalence Values proposed in the NPRM have changed as a result of this simplification. The final values are shown in the table below.

TABLE III.B.4–1.—EQUIVALENCE VALUES FOR SOME RENEWABLE FUELS

	Equivalence value (EV)
Cellulosic biomass ethanol or waste-derived ethanol[24]	2.5
Ethanol from corn, starches, or sugar	1.0
Biodiesel (mono alkyl ester)	1.5
Non-ester renewable diesel and hydrotreated renewable crudes	1.7
Butanol	1.3
Renewable crude-based fuels	1.0

Consistent with the NPRM, the Equivalence Value for renewable crude-based fuels is 1.0. Although some renewable crude-based fuels might warrant a higher value based on their energy content, it is also likely that some of the renewable crude does not end up as a motor vehicle fuel. Rather than requiring the refiner to document what portion of the biocrude-based renewable fuel is other than diesel or gasoline (e.g., jet fuel), we are combining the Equivalence Value of 1.0 with a requirement that the volume of the renewable crude itself count as the volume of renewable fuel produced for the purposes of determining the volume block codes that are in the RIN (discussed in further detail in Section III.D). While this approach may result in some products such as jet fuel being counted as renewable fuel, we believe the majority of the products produced will be motor vehicle fuel because we assume refiners who elect to use biocrudes would do so to help meet the requirements of this rule. Furthermore, both diesel and gasoline presently make up about 85 percent of the product slate of refineries on average. This amount that has been steadily increasing for over time, and we expect that the percentage will continue to increase as demand for gasoline and diesel increases. Thus the designation of an Equivalence Value of 1.0 balances out the potentially higher energy content of renewable crude-based fuels with the potential for lower yields of renewable fuel produced as motor vehicle fuel. We received no comment on this issue and are finalizing it as proposed.

Since there are a wide variety of possible renewable fuels that could qualify under the RFS program, there may be cases in which a party produces a renewable fuel not shown in Table III.B.4–1. A party may also produce a renewable fuel listed in the above table, but which has a different renewable content or energy content than the values assumed for our calculations. For such cases we have created a regulatory mechanism through which the producer may submit a petition to the Agency describing the renewable fuel, its feedstock and production process, and the calculation of its Equivalence Value. The Agency will review the petition and approve an appropriate Equivalence Value based on the information provided. We will publish newly assigned Equivalence Values in the **Federal Register** at the same time as the annual standard is published each November.

In the NPRM, we also described an additional approach to setting the Equivalence Value for biodiesel (mono alkyl esters). Since ethanol derived from waste products such as animal wastes and municipal solid waste will be assigned an Equivalence Value of 2.5 based on a requirement in the Act, we pointed out that it might be appropriate to create a parallel provision for biodiesel made from wastes. Under this approach, biodiesel made from waste products would have been assigned an Equivalence Value of 2.5 through 2012. Supporters of 2.5 Equivalence Value argued that it would place the treatment of waste-derived biodiesel on the same level as waste-derived ethanol, and that it would be good Agency policy to encourage and reward parties that turn materials that would otherwise be wasted into usable motor vehicle fuel. While some of these arguments may have merit, we nevertheless believe that it is most appropriate to maintain the general methodology applicable to renewable fuels at this time and reserve the 2.5:1 valuation for just the fuel specified by Congress. Therefore, we have not finalized a 2.5 Equivalence Value for waste-derived biodiesel.

For the specific case of ETBE, we have chosen for this final rule to eliminate a uniquely determined Equivalence Value. As described in Section III.D.2.b, ETBE is generally made from ethanol to which RINs will have already been assigned. An ETBE producer, therefore, would need only assign the RINs received with the ethanol to the ETBE made from that ethanol. In this case, there will be no need to generate new RINs, and therefore no need for a separate Equivalence Value.

Except for cellulosic biomass ethanol and waste-derived ethanol, the Equivalence Values shown in Table III.B.4–1, or any others approved through the petition process, will be applicable for all years. However, beginning in 2013, the 2.5 to 1 ratio no longer applies for cellulosic biomass

[24] The 2.5 value is specified by the Energy Act, and is not based on the EV formula discussed earlier.

ethanol. The Act is unclear about whether the 2.5 to 1 ratio for waste-derived ethanol will apply after 2012, though it might be appropriate to treat cellulosic biomass ethanol and waste-derived ethanol in a consistent manner. Nevertheless, in the subsequent rulemaking mentioned above, we will address this issue explicitly. In today's final rule we are only specifying the ratio for cellulosic biomass and waste-derived ethanol prior to 2013.

c. Lifecycle Analyses as the Basis for Equivalence Values

In the NPRM we also described an alternative approach in which Equivalence Values for renewable fuels would be based on lifecycle analyses. We described both the merits and challenges associated with such an approach and requested comment. Based on the comments received we continue to believe that lifecycle analyses could provide a means of reflecting the relative benefits of one renewable fuel in comparison to another. However, we are not, in this action, establishing Equivalence Values on a lifecycle basis. Rather, we intend to continue evaluating and updating the tools and assumptions associated with lifecycle analyses in a collaborative effort with stakeholders. This rulemaking makes no determination and should not be interpreted to make any determination regarding whether EPA has the legal authority under section 1501 of the Energy Act, as incorporated in section 211(o) of the Clean Air Act, to use lifecycle analysis in establishing Equivalence Values in general or Equivalence Values specifically related to greenhouse gas or carbon dioxide emissions. This section describes some of the comments we received on the use of lifecycle analyses and our responses.

Lifecycle analyses involve an examination of fossil fuel used, and emissions generated, at all stages of a renewable fuel's life. A typical lifecycle analysis examines production of the feedstock, its transport to a conversion facility, the conversion of the feedstock into renewable motor vehicle fuel, and the transport of the renewable fuel to the consumer. At each stage, every activity that consumes fossil fuels or results in emissions is quantified, and these energy consumption and emission estimates are then summed over all stages. By accounting for every activity associated with renewable fuels over their entire life, we can assess renewable fuels in terms of not just their impact within the transportation sector, but across all sectors and thus for the nation as a whole. In this way, lifecycle analyses provide a more complete picture of the potential impacts of different fuels or different fuel sources. While the use of energy content to establish Equivalence Values is an improvement over a simple gallon-for-gallon approach, a lifecycle basis would provide a further level of sophistication in assessing the net energy input and output of fuels and the emissions associated with the use of different fuels.

Supporters of the use of lifecycle analyses for setting the Equivalence Values of different renewable fuels pointed to several advantages of this approach. First, doing so could create an incentive for obligated parties to choose renewable fuels having a greater ability to reduce fossil fuel use or resulting emissions, since such renewable fuels would have higher Equivalence Values and thus greater value in terms of compliance with the RFS requirements. The preferential demand for renewable fuels having higher Equivalence Values could in turn spur additional growth in production of these renewable fuels. Second, using lifecycle analyses as the basis for Equivalence Values could orient the RFS program more explicitly towards reducing petroleum use, fossil fuel use or emissions.

However, the use of lifecycle analyses to establish the Equivalence Values for different renewable fuels also raises a number of issues, generally acknowledged by supporters of the use of lifecycle analyses. For instance, lifecycle analyses can be conducted using several different metrics, including total fossil fuel consumed, petroleum energy consumed, regulated pollutant emissions (e.g., VOC, NO_X, PM), carbon dioxide emissions, or greenhouse gas emissions. Each metric would result in a different set of Equivalence Values. At the present time there is no consensus on which metric would be most appropriate for this purpose or the purposes of the Act.

There is also no consensus on the approach to lifecycle analyses themselves. Although we have chosen to base our lifecycle analyses on Argonne National Laboratory's GREET model for the reasons described in Section IX, there are a variety of other lifecycle models and analyses available. The choice of model inputs and assumptions all have a bearing on the results of lifecycle analyses, and many of these assumptions remain the subject of debate among researchers. Lifecycle analyses must also contend with the fact that the inputs and assumptions generally represent industry-wide averages even though energy consumed and emissions generated vary widely from one facility or process to another.

There currently exists no organized, comprehensive dialogue among stakeholders about the appropriate tools and assumptions behind any lifecycle analyses. We will be initiating more comprehensive discussions about lifecycle analyses with stakeholders in the near future.

Another issue related to using lifecycle analyses as the basis for Equivalence Values pertains to the ultimate impact that the RFS program would have on petroleum use, fossil fuel use, regulated pollutant emissions, and/or emissions of GHGs. With a fixed volume of renewable fuel required under the RFS program, any renewable fuel with an Equivalence Value greater than 1.0 would necessarily mean that fewer actual gallons would be needed to meet the RFS standard. Thus, the advantage per gallon may be offset with fewer overall gallons, resulting in no overall additional benefit under the chosen metric for using fuels with higher Equivalence Values unless the RFS standard was simultaneously adjusted by Congress.

Based on comments received in response to our NPRM, we continue to believe that the current state of scientific inquiry surrounding lifecycle analyses is not sufficiently robust to warrant its use to set Equivalence Values in this final rule. Since renewable fuel use is expected to far exceed the standards being finalized today, a higher equivalence value for those renewables with greater lifecycle benefits will likely do little to stimulate their use. However, if in the future the RFS standard more closely matches renewable demand, this could be important. We are committed to continuing our investigations into lifecycle analyses.

C. What Gasoline Is Used To Calculate the Renewable Fuel Obligation and Who Is Required To Meet the Obligation?

1. What Gasoline Is Used To Calculate the Volume of Renewable Fuel Required To Meet a Party's Obligation?

The Act requires EPA to promulgate regulations designed to ensure that ''gasoline sold or introduced into commerce in the United States (except in noncontiguous states or territories)'' contains on an annual average basis, the applicable aggregate volumes of renewable fuels as prescribed in the Act.[25] To implement this provision, today's final rule provides that the volume of gasoline used to determined the renewable fuel obligation must include all finished gasoline (RFG and

[25] CAA Section 211(o)(2)(A)(i), as added by Section 1501(a) of the Energy Policy Act of 2005.

conventional) produced or imported for use in the contiguous United States during the annual averaging period and all unfinished gasoline that becomes finished gasoline upon the addition of oxygenate blended downstream from the refinery or importer. This would include both unfinished reformulated gasoline, called ''reformulated gasoline blendstock for oxygenate blending,'' or ''RBOB,'' and unfinished conventional gasoline designed for downstream oxygenate blending (e.g. sub-octane conventional gasoline), called ''CBOB.'' The volume of any other unfinished gasoline or blendstock, such as butane, is not included in the volume used to determine the renewable fuel obligation, except where the blendstock is combined with other blendstock or finished gasoline to produce finished gasoline, RBOB, or CBOB. Where a blendstock is blended with other blendstock to produce finished gasoline, RBOB, or CBOB, the total volume of the gasoline blend is included in the volume used to determine the renewable fuels obligation for the blender. Where a blendstock is added to finished gasoline, only the volume of the blendstock is included, since the finished gasoline would have been included in the compliance determinations of the refiner or importer of the gasoline.

Gasoline produced or imported for use in a noncontiguous state or U.S. territory [26] is not included in the volume used to determine the renewable fuel obligation (unless the noncontiguous state or territory has opted-in to the RFS program), nor is gasoline, RBOB or CBOB exported for use outside the United States.

For purposes of this preamble, the various gasoline products (as described above) that are included in the volume of gasoline used to determine the renewable fuel obligation are collectively called ''gasoline.''

The final rule excludes the volume of renewable fuels contained in gasoline from the volume of gasoline used to determine the renewable fuels obligation. In implementing the Act's renewable fuels requirement, our primary goal was to design a program that is simple, flexible and enforceable. If the program were to include renewable fuels in the volume of gasoline used to determine the renewable fuel obligation, then every blender that blends ethanol downstream from the refinery or importer would be subject to the renewable fuel obligation for the volume of ethanol that they blend. There are currently approximately 1,200 such ethanol blenders. Of these blenders, only those who blend ethanol into RBOB are regulated parties under current fuels regulations. Designating all of these ethanol blenders as obligated parties under the RFS program would greatly expand the number of regulated parties and increase the complexity of the RFS program beyond that which is necessary to carry out the renewable fuels mandate under the Act.

The Act provides that the renewable fuel obligation shall be ''applicable to refiners, blenders, and importers, as appropriate.'' [27] For the reasons discussed above, we believe it is appropriate to exclude downstream renewable fuel blenders from the group of parties subject to the renewable fuel obligation and to exclude renewable fuels from the volume of gasoline used to determine the renewable fuel obligation. This exclusion applies to any renewable fuels that are blended into gasoline at a refinery, contained in imported gasoline, or added at a downstream location. Thus, for example, any ethanol added to RBOB or CBOB downstream from the refinery or importer would be excluded from the volume of gasoline used to determine the obligation. Any non-renewable fuel added downstream, however, would be included in the volume of gasoline used to determine the obligation. This approach has no impact on the total volume of renewable fuels required (which is specified in the Act and must be met regardless of the approach taken here), but merely on the number of obligated parties. As discussed earlier, this volume of renewable fuel is likewise excluded from the calculation performed each year by EPA to determine the applicable percentage.

The NPRM was unclear with regard to whether obligated parties are to determine their renewable fuel obligation based on the gasoline production of all of their facilities in the aggregate, or each facility individually. As discussed above, EPA has discretion under the Energy Act to determine the renewable fuels obligation applicable to parties, ''as appropriate.'' We believe that allowing obligated parties to determine their obligation based on either their facilities in the aggregate or individually is appropriate, since allowing this flexibility will not affect compliance with the RFS. Although some commenters expressed concern that obligated parties with multiple facilities could gain an economic advantage over obligated parties with only a single facility if aggregate compliance is allowed, we do not believe that this will be the case given the unrestricted trading allowed under our program. We also believe that clarification in the regulations regarding the basis on which the obligation may be determined is a necessary and logical outgrowth of the proposal. As a result, the regulations have been modified in the final rule to clarify that the renewable fuels obligation may be determined based on the gasoline production of all of an obligated party's facilities in the aggregate, or each facility individually.

We received comment that EPA should clarify when obligated parties must include imported gasoline that is used as ''gasoline treated as blendstock'', or GTAB, in the volume of gasoline used to determine the party's renewable fuel obligation. As stated in the preamble to the proposed rule, GTAB is to be treated as a blendstock with regard to the RFS rule. Where the GTAB is blended with other blendstock (other than only renewable fuel) to produce gasoline, the total volume of the gasoline blend, including the GTAB, is included in the volume of gasoline used to determine the renewable fuel obligation. Where the GTAB is blended with finished gasoline, only the GTAB volume is included in the volume of gasoline used to determine the renewable fuel obligation (since the finished gasoline will already be included in the RFS calculations of the refiner of that gasoline). For purposes of compliance demonstrations, the RFS rule treats GTAB in a manner that is consistent with the reformulated gasoline (RFG) and conventional gasoline (CG) regulations. Under the RFG/CG regulations, importers who designate imported gasoline as GTAB must be registered with EPA as both an importer and a refiner. The importer submits separate compliance reports to EPA, one in its capacity as an importer, and one in its capacity as a refiner. The GTAB is blended by the importer and included in the importer's compliance calculations in its capacity as a refiner of the GTAB, and is excluded from the importer's compliance calculations in its capacity as an importer. The RFS rule treats GTAB in a similar manner; i.e., the importer includes the GTAB in the volume of gasoline used to determine the renewable fuel obligation of the importer in its capacity as a refiner of the GTAB, and excludes the GTAB in the volume of gasoline used to

[26] The noncontiguous states are Alaska and Hawaii. The territories are the Commonwealth of Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Marianas.

[27] CAA Section 211(o)(3)(B), as added by Section 1501(a) of the Energy Policy Act of 2005.

determine the renewable fuel obligation of the importer in its capacity as an importer. The regulations have been clarified with regard to how GTAB is used to determine the GTAB importer's renewable fuels obligation.

We received comment that EPA should clarify that the terms RBOB and CBOB include ''blendstocks for oxygenate blending'' that are designed to comply with state fuels requirements, such as CARBOB (California), AZRBOB (Arizona), and LVBOB (Las Vegas). As discussed in Section III.C.1, all gasoline, and all unfinished gasoline that becomes finished gasoline upon the addition of oxygenate, that is produced or imported for use in the contiguous United States is included in the volume of gasoline used to determine an obligated party's renewable fuels obligation. As such, any finished gasoline, or unfinished gasoline that becomes finished gasoline upon the addition of oxygenate, that is produced or imported to comply with state fuels programs must also be included in the volume of gasoline used to determine an obligated party's renewable fuels obligation. The regulations have been clarified in this regard.

2. Who Is Required To Meet the Renewable Fuels Obligation?

Under the final rule, any person who meets the definition of refiner under the fuels regulations, which includes any blender who produces gasoline by combining blendstocks or blending blendstocks into finished gasoline, is subject to the renewable fuels obligation. Any person who brings gasoline into the 48 contiguous states from a foreign country or from an area that has not opted-in to the RFS program, or brings gasoline from a foreign country or an area that has not opted-in to the RFS program into an area that has opted-in to the RFS program, is considered an importer under the RFS program and is subject to the renewable fuels obligation. As noted above, a blender who only blends renewable fuels downstream from the refinery or importer is not subject to the renewable fuel obligation. Any person that is required to meet the renewable fuels obligation is called an ''obligated party.'' We generally refer to all of the obligated parties as refiners and importers, since the covered blenders are all refiners under the regulations.

A refiner or importer located in a noncontiguous state or U.S. territory is not subject to the renewable fuel obligation and thus is not an obligated party (unless the noncontiguous state or territory opts-in to the RFS program). A party located within the contiguous 48 states is an obligated party if it ''imports'' into the 48 states any gasoline produced or imported by a refiner or importer located in a noncontiguous state or territory.

We received comment that EPA should clarify how the RFS rule applies to transmix processors and blenders. Transmix processors and blenders are treated like any other blenders under the RFS rule. Transmix processors are parties that separate the gasoline portion of the transmix from the transmix and either sell the gasoline portion as finished gasoline or blend it with other components to produce gasoline. Transmix processors exclude the gasoline portion of the transmix from the volume that is used to determine the party's renewable fuel obligation, since the gasoline portion of the transmix would have been included in the volume used to determine the renewable fuels obligation of the refiner or importer of the gasoline. In calculating the volume used to determine its renewable fuel obligation, the transmix processor would include any blendstocks (other than renewable fuels) that are added to the gasoline separated from the transmix. Where the transmix processor combines the gasoline portion of the transmix with purchased finished gasoline, both the gasoline portion of the transmix and the finished gasoline would be excluded, since the finished gasoline would have been included in the volume used to determine the renewable fuels obligation of the refiner or importer of the finished gasoline. Transmix blenders are parties that blend small amounts of unprocessed transmix into gasoline. Transmix blenders are not obligated parties if they only blend transmix into finished gasoline. If the transmix blender adds blendstocks to the transmix, the transmix blender would be an obligated party with regard to the volume of blendstocks added. The regulations have been clarified with regard to how the RFS rule applies to transmix processors and blenders.

3. What Exemptions Are Available Under the RFS Program?

a. Small Refinery and Small Refiner Exemption

The Act provides an exemption from the RFS standard for small refineries during the first five years of the program. The Act defines small refinery as ''a refinery for which the average aggregate daily crude oil throughput for a calendar year (as determined by dividing the aggregate throughput for the calendar year by the number of days in the calendar year) does not exceed 75,000 barrels.'' [28] Thus, any gasoline produced at a refinery that qualifies as a small refinery under this definition is not counted in determining the renewable fuel obligation of a refiner until January 1, 2011. Where a refiner complies with the renewable fuel obligation on an aggregate basis for multiple refineries, the refiner may exclude from its compliance calculations gasoline produced at any refinery that qualifies as a small refinery under the RFS program. This exemption applies to any refinery that meets the definition of small refinery stated above regardless of the size of the refining company that owns the refinery. Based on information currently available to us we expect 42 small refineries to qualify for this exemption. Beginning in 2011, small refineries will be required to meet the same renewable fuel obligation as all other refineries, unless their exemption is extended pursuant to § 80.1141(e).

In addition to small refineries as defined in the Act, we proposed to extend this relief to refiners who, during 2004: (1) Produced gasoline at a refinery by processing crude oil through refinery processing units; (2) employed an average of no more than 1,500 people, including all employees of the small refiner, any parent company and its subsidiary companies; and (3) had a total average crude oil processing capability for all of the small refiner's refineries of 155,000 barrels per calendar day (bpcd). These size criteria were established in prior rulemakings and were the result of our analyses of small refiner impacts. Based on information currently available to us, we believe that there are only three gasoline refineries owned by small refiners that meet these criteria and that currently exceed the 75,000 bpcd crude oil processing capability defined by the Act.

We received comments supporting the proposed extension of the small refinery exemption to small refiners, and we also received comments opposing the proposed provision. Commenters that supported the provision generally stated that they believe that a small refiner exemption is necessary as those entities (i.e., companies) that would qualify as small refiners are generally at an economic disadvantage due to their company size—whereas the Act only recognizes facilities, based on the size of each location. These commenters also stated that they have concerns with the cost and the availability of credits under this program, and believe that provisions for small refiners are

[28] CAA Section 211(o)(a)(9), as added by Section 1501(a) of the Energy Policy Act of 2005.

necessary to help mitigate any significant adverse economic impact on these entities. Commenters that opposed the provision stated that they believe that EPA exceeded its discretionary authority, that there appears to be no basis on which the Agency can legitimately expand this statutory exemption to add small refiners, and that Congress ''clearly did not intend that the exemption be broadened to also include small refiners.'' One commenter also stated that it does not believe that small refiner provisions are necessary because this rule does not require costly capital investments like previous fuel regulations.

As stated in the proposal, we believe that we have discretion in determining an appropriate lead-time for the start-up of this program, as well as discretion to determine the regulated refiners, blenders and importers, ''as appropriate.'' We continue to believe that some refiners, due to their size, generally face greater challenges compared to larger refiners. The Small Business Regulatory Enforcement Fairness Act (SBREFA) also recognizes this and requires agencies, during promulgation of new standards, to assess the potential impacts on small businesses (as defined by the Small Business Administration (SBA) at 13 CFR 121.201). For those instances where the Agency cannot certify that a rule will not have a significant economic impact on a substantial number of small entities, we are required to convene a SBREFA Panel. A SBREFA Panel process—which generally takes at least six months to complete—entails performing outreach with entities that meet the definition of a small business to develop ways to mitigate potential adverse economic impacts on small entities, in consultation with SBA and the Office of Management and Budget (OMB).

''Small refiners'' have historically been recognized in EPA fuel regulations as those refiners who employ no more than 1,500 employees and have an average crude oil capacity of 155,000 bpcd. These refiners generally have greater difficulty in raising and securing capital for investing in capital improvements and in competing for engineering resources and projects. This rulemaking does not require that refiners make capital improvements, however there are still significant costs associated with meeting the standard. While we were not required to assess the impacts on small businesses under the Energy Policy Act, we are required to do so under SBREFA. Based on our own analysis and outreach with small refiners, our assessment is that this rule will not impose a significant adverse economic impact on small refiners if they are given the small refinery exemption. Further, as noted above, we believe that no more than three additional refiners that do not meet the Energy Policy Act's definition of a small refinery will qualify as small refiners for this rule. Therefore, we are finalizing the proposed provision that the small refinery exemption will be provided to qualified small refiners. This exemption does not mean that less renewable fuel will be used than is required in the Energy Policy Act; rather, it just means that small refiners will not be obligated to ensure that those volumes are attained during the period of their exemption.

We also proposed to allow foreign refiners to apply for a small refinery or small refiner exemption under the RFS program. We requested comment on the provision and related aspects, and we received some comments in which commenters stated that they believe that there is no reason to extend the small refinery exemption to these refiners. One commenter even stated that it believes that such an allowance would be unlawful. We proposed this provision for consistency with prior gasoline-related fuel programs (anti-dumping, MSAT, and gasoline sulfur) which allowed foreign refiners to receive such exemptions, and we are finalizing the provision in this action. Under this provision, foreign small refiners and foreign small refineries can apply for an exemption from the RFS standards such that importers would not count the small refiner or small refinery gasoline volumes towards the importer's renewable volume obligation. The Energy Policy Act does not prohibit EPA from granting this avenue of relief to foreign entities, and EPA believes it is consistent with the spirit of international trade agreements to provide it.

In the proposal we stated that applications for a small refinery exemption must be received by EPA by September 1, 2007 for the exemption to be effective in 2007 and subsequent calendar years. We proposed that the application should include documentation that the small refinery's average aggregate daily crude oil throughput for calendar year 2004 did not exceed 75,000 barrels; and that eligibility would be based on 2004 data (rather than 2005). Further, we proposed that the small refinery exemption would be effective 60 days after receipt of the application by EPA unless EPA notifies the applicant that the application was not approved or that additional documentation is required. We received comments on this provision in which commenters stated that requiring small refinery applications was inconsistent with the language set out in the Act. The commenters stated that small refineries should not be obligated parties in 2007 even if they do not submit a small refinery application by September 1, 2007. We agree with these statements, and believe that the Energy Policy Act did in fact intend to provide this exemption without the need for small refineries to submit applications. However, in order to ensure that this provision is not being misused, we believe that it is necessary for refiners to verify that their refineries meet the definition set out in the Act. Therefore, we are finalizing that the small refinery exemption will become active immediately upon the effective date of the rule. Refiners will only be required to send a letter to EPA verifying their status as a small refinery. We did not receive any comments on our proposal to base eligibility on 2004 data, nor did we receive comments on whether a multiple-year average should be used. We believe that eligibility should be based on 2004 data rather than on 2005 data, since it was the first full year prior to passage of the Energy Act. In addition, some refineries' production may have been affected by Hurricanes Katrina and Rita in 2005. We are thus finalizing our proposed approach to base eligibility on 2004 data.

As discussed above, we proposed that refiners that do not qualify for a small refinery exemption under the 75,000 bpcd criteria, but nevertheless meet the criteria of a small refiner may apply for small refiner status under the RFS rule. We proposed that the applications must be received by EPA by September 1, 2007 for the exemption to be effective in 2007 and subsequent calendar years (similar to the small refinery exemption). We also proposed that small refiner status would be determined based on documentation submitted in the application which demonstrates that the refiner met the criteria for small refiner status during the calendar year 2004 and that EPA would notify a refiner of approval or disapproval of small refiner status by letter.

The final rule provides that qualified small refiners receiving the small refinery exemption will also receive the exemption immediately upon the effective date of the rule. These refiners must also submit a verification letter showing that they meet the small refiner criteria. This letter will be similar to the small refiner applications required under other EPA fuel programs (and must contain all the required elements

specified in the regulations at § 80.1142), except the letter will not be due prior to the program. Small refiner status verification letters for this rule that are later found to contain false or inaccurate information will be void as of the effective date of these regulations. Unlike the case for small refineries, small refiners who subsequently do not meet all of the criteria for small refiner status (i.e., cease producing gasoline by processing crude oil, employ more than 1,500 people or exceed the 155,000 bpcd crude oil capacity limit) as a result of a merger with or acquisition of or by another entity are disqualified as small refiners, except in the case of a merger between two previously approved small refiners. As in other EPA programs, where such disqualification occurs, the refiner must notify EPA in writing no later than 20 days following the disqualifying event.

The Act provides that the Secretary of Energy must conduct a study for EPA to determine whether compliance with the renewable fuels requirement would impose a disproportionate economic hardship on small refineries. If the study finds that compliance with the renewable fuels requirements would impose a disproportionate economic hardship on a particular small refinery, EPA is required to extend the small refinery's exemption for a period of not less than two additional years (i.e., to 2013). The Act also provides that a refiner with a small refinery may at any time petition EPA for an extension of the exemption for the reason of disproportionate economic hardship. In accordance with these provisions of the Act, we are finalizing the provision that refiners with small refineries may petition EPA for an extension of the small refinery exemption. As provided in the Act, EPA will act on the petition not later than 90 days after the date of receipt of the petition. Today's regulations do not provide a comparable opportunity for an extension of the small refinery exemption for small refiners. Therefore, all parties temporarily exempted from the RFS program on the basis of qualifying as a small refiner, rather than a small refinery, must comply with the program beginning January 1, 2011 (unless they waive their exemption prior to this date).

During the initial exemption period for small refineries and small refiners and any extended exemption periods for small refineries, the gasoline produced by exempted small refineries and refineries owned by approved small refiners will not be subject to the renewable fuel standard.

We proposed that the automatic exemption to 2011 and any small refinery extended exemptions may be waived upon notification to EPA; and we are finalizing this provision. Gasoline produced at a refinery which waives its exemption will be included in the RFS program and will be included in the gasoline used to determine the refiner's renewable fuel obligation. If a refiner waives the exemption for its small refinery or its exemption as a small refiner, the refiner will be able to separate and transfer RINs like any other obligated party. If a refiner does not waive the exemption, the refiner could still separate and transfer RINs, but only for the renewable fuel that the refiner itself blends into gasoline (i.e. the refinery operates as an oxygenate blender facility). Thus, exempt small refineries and small refiners who blend ethanol can separate RINs from batches without opting in to the program in the same manner that an oxygenate blender is allowed to do.

b. General Hardship Exemption

In recent rulemakings, we have included a general hardship exemption for parties that are able to demonstrate severe economic hardship in complying with the standard. We proposed not to include provisions for a general hardship exemption in the RFS program. Unlike most other fuels programs, the RFS program includes inherent flexibility since compliance with the renewable fuels standard is based on a nationwide trading program, without any per gallon requirements, and without any requirement that the refiner or importer produce the renewable fuel. By purchasing RINs, obligated parties will be able to fulfill their renewable fuel obligation without having to make capital investments that may otherwise be necessary in order to blend renewable fuels into gasoline. We believe that sufficient RINs will be available and at reasonable prices, given that EIA projects that far greater renewable fuels will be used than required. Given the flexibility provided in the RIN trading program, including the provisions for deficit carry-over, and the fact that the standard is proportional to the volume of gasoline actually produced or imported, we continue to believe a general hardship exemption is not warranted. As a result, the final rule does not contain provisions for a general hardship exemption.

c. Temporary Hardship Exemption Based on Unforeseen Circumstances

In recent rulemakings, we have included a temporary hardship exemption based on unforeseen circumstances. We proposed not to include such an exemption in the RFS program. The need for such an exemption would primarily be based on the inability to comply with the renewable fuels standard due to a natural disaster, such as a hurricane. However, in the event of a natural disaster, we believe it is likely that the volume of gasoline produced by an obligated party would also drop, which would result in a reduction in the renewable fuel requirement. We, therefore, reasoned in the NPRM that unforeseen circumstances, such as a hurricane or other natural disaster, would not result in a party's inability to obtain sufficient RINs to comply with the applicable renewable fuels standard.

We received several comments regarding the inclusion of a temporary hardship exemption based on unforeseen circumstances. One commenter believes it would be of value to have a mechanism for selectively waiving or modifying the RFS downward on a temporary basis in the event of unforeseen circumstances such as significant drought affecting potential crop production. The commenter believes that crop shortages could have an impact on a national level, or a major disaster may impact logistics of renewable fuel distribution regionally, necessitating a more rapid response from EPA than is provided in the Energy Act. Another commenter believes that a temporary hardship exemption based on unforeseen circumstances should be included in the rule since it is impossible to predict how the RFS program will impact small refiners. Another commenter believes that, given the variety of potentially challenging unforeseen events during the last several years, it is not inconceivable that man-made or natural circumstances could adversely impact the RFS program. A natural disaster in the agricultural section, for example, may make it difficult to meet the renewable fuels mandate which, in turn, could drive the price of RINs high enough to disrupt the gasoline market. The commenter believes that a mechanism built into the program from the outset would provide a more flexible and less disruptive way to address unforeseen circumstances than the more time-consuming waiver process provided in the Energy Act.

Under other EPA fuels programs, compliance is based on a demonstration that the fuel meets certain component or emissions standards. Unforeseen circumstances, such as a natural disaster, may affect an individual refiner's or importer's ability to produce or import fuel that complies with the

standards. As a result, we have included in other fuels programs provisions for a temporary hardship exemption from the standards in the event of an unforeseen natural disaster that affects a party's ability to produce gasoline that complies with the standards. Unlike most other fuels programs, compliance under the RFS program is based on a demonstration that a party has fulfilled its individual renewable fuels obligation on an annual basis, as compared to meeting specific gasoline content requirements. The renewable fuels obligation can be met through the use of purchased RINs, and there is a deficit carry forward provision allowing compliance to be shown over more than one year. In the event of a natural disaster, the volume of gasoline produced by an obligated party is also likely to drop, which would result in a reduction in the party's renewable fuel obligation. As a result, we believe that an individual party would be able to meet its renewable fuel obligation even in the event of a natural disaster that affects the party's refinery or blending facility. Therefore, unlike other fuels programs, we do not believe there is a need to include a temporary hardship exemption in the RFS rule to address an individual party's inability to comply with its renewable fuels obligation due to unforeseen circumstances.

Most of the concerns raised by the commenters relate to problems that would have a more regional or national effect, as compared to affecting one or a few individuals. In the event that unforeseen circumstances do occur which result in a shortage of renewable fuel and available RINs, we believe that Congress provided an adequate mechanism for addressing such situations in the Energy Act.[29] The Energy Act provides that on petition by one or more States, EPA, in consultation with the Departments of Agriculture and Energy, may waive the required aggregate renewable fuels volume obligation in whole or in part upon a sufficient showing of economic or environmental harm, or inadequate supply. As a result, we believe that a renewable fuel supply problem that affects all parties can be addressed using this statutory provision. We have carefully considered the comments; however, we do not believe that the comments provide a compelling rationale for providing a temporary hardship exemption from the RFS obligation based on unusual circumstances that goes beyond the provisions that Congress included in the Energy Act. As a result, the final rule does not contain provisions for a temporary hardship exemption based on unforeseen circumstances.

4. What Are the Opt-in and State Waiver Provisions Under the RFS Program?

a. Opt-in Provisions for Noncontiguous States and Territories

The Act provides that, upon the petition of a noncontiguous state or U.S. territory, EPA may apply the renewable fuels requirements to gasoline produced in or imported into that noncontiguous state or U.S. territory at the same time as, or any time after the promulgation of regulations establishing the RFS program.[30] In granting such a petition, EPA may issue or revise the RFS regulations, establish applicable volume percentages, provide for generation of credits, and take other actions as necessary to allow for the application of the RFS program in a noncontiguous state or territory. We believe that approval of the petition does not require a showing other than a request by the Governor of the State or the equivalent official of a Territory to be included in the program.

Today's final rule will implement this provision of the Act by providing a process whereby the governor of a noncontiguous state or territory may petition EPA to have the state or territory included in the RFS program. The petition must be received by EPA on or before November 1 for the noncontiguous state or territory to be included in the RFS program in the next calendar year. A noncontiguous state or territory for which a petition is received after November 1 would not be included in the RFS program in the next calendar year, but would be included in the RFS program in the subsequent year. For example, if EPA receives a petition on September 1, 2007, the noncontiguous state or territory would be included in the RFS program beginning on January 1, 2008. If EPA receives a petition on December 1, 2007, the noncontiguous state or territory would be included in the RFS program beginning January 1, 2009. We believe that requiring petitions to be received by November 1 is necessary to allow EPA time to make any adjustments in the applicable standard. The method for calculating the renewable fuels standard to reflect the addition of a state or territory that has opted into the RFS program is discussed in Section III.A. Because today's regulations make EPA approval of an opt-in petition automatic if it is signed by the appropriate authority and properly delivered to EPA, EPA does not envision providing an opportunity to comment on an opt-in request, although we will provide notice in the publication of the standard for the following year.

We received several comments regarding when a noncontiguous state or territory should be able to opt-in to the RFS program. One commenter supported the approach in this final rule that EPA use the EIA Short-term Energy Outlook published each October to assist in determining the percentage standard and therefore a state can only opt-in beginning with the first full compliance period of 2008. Another commenter believed we should include a provision to allow noncontiguous states or territories to opt-in to the first compliance period which starts September 1, 2007. While we see the merits of allowing a noncontiguous state or territory to opt-in to the first compliance period, we intend to maintain the current approach and allow noncontiguous states and territories to opt-in beginning with the 2008 compliance year. The statute clearly states that the program may apply to noncontiguous states and territories (that have petitioned EPA) at any time after these regulations have been promulgated. Given the short period of time between publication of the final rule and the effective date of the program, the need for a state and regulated parties to discuss opting-in with knowledge of the final version of the rule, and the requirement for EPA to notify obligated parties with sufficient lead time to any change in the standard, EPA believes 2008 is the earliest practical date for an opt-in to be effective. In addition, EPA notes that none of the noncontiguous states or territories indicated a strong interest in opting-in for the remainder of the 2007 compliance period.

Where a noncontiguous state or territory opts-in to the RFS program, producers and importers of gasoline for that state or territory will be obligated parties subject to the renewable fuel requirements. All refiners and importers who produce or import gasoline for use in a state or territory that has opted-in to the RFS program will be required to comply with the renewable fuel standard and will be able to separate RINs from batches of renewable fuels in the same manner as other obligated parties.

Once a petition to opt-in to the RFS program is approved by EPA, the state or territory would remain in the RFS program and be treated as any of the 48 contiguous states. We received a comment asserting that once a state or

[29] CAA section 211(o)(7), as added by Section 1501(a) of the Energy Policy Act of 2005.

[30] CAA Section 211(o)(2)(A)(ii), as added by Section 1501(a) of the Energy Policy Act of 2005.

territory opts-in, they should be required to remain in the program for at least 5 years. As stated earlier, EPA will recognize a state or territory that opts-in to the program as identical to any of the 48 states. The current regulations do not allow a state to opt-out and the only form of relief from the program is a waiver, in whole or in part, of the national renewable fuel volume requirement. Noncontiguous states and territories should be aware of the obligations of the program and should only choose to opt-in if they expect to meet those obligations for the indefinite future. If in the future a state believes EPA should change its regulations and allow an opt-out the state could petition EPA to change the regulations. As in other situations where a party petitions EPA to revise its regulations, EPA would be in a position at that point to consider the concerns raised by the state as well as other interested stakeholder and to determine whether it would be appropriate to revise the regulations.

b. State Waiver Provisions

The Energy Act provides that EPA, in consultation with the U.S. Department of Agriculture (USDA) and the Department of Energy (DOE), may waive the renewable fuels requirements in whole or in part upon a petition by one or more states by reducing the national quantity of renewable fuel required under the Act.[31] The Act also outlines the basic requirements for such a waiver, such as a demonstration that implementation of the renewable fuels requirements would severely harm the economy or environment of a state, a region, or the United States or that there is an inadequate domestic supply of renewable fuel.

If EPA, after public notice and opportunity for comment, approves a state's petition for a waiver of the RFS program, the Act stipulates that the national quantity of renewable fuel required (Table I.B–1) may be reduced in whole or in part. This reduction could reduce the percentage standard applicable to all obligated parties. However, there is no provision in the Act that would permit EPA to reduce or eliminate any obligations under the RFS program specifically for parties located within the state that petitioned for the waiver. Thus all refiners, importers, and blenders located in the state would still be obligated parties if they produce gasoline. In addition, an approval of a state's petition for a waiver may not have any impact on renewable fuel use in that state since it would not be a prohibition on the sale or consumption of renewable fuels in that state. In fact, the Act prohibits the regulations from restricting the geographic areas in which renewable fuels may be used.[32] Renewable fuel use in the state in question would thus continue to be driven by natural market forces and, perhaps if the economics of ethanol blending were less favorable than today, the nationally-applicable renewable fuel standard.

Given that state petitions for a waiver of the RFS program appear unlikely to affect renewable fuel use in that state, we have not finalized regulations providing more specificity regarding the criteria for a waiver or the ramifications of Agency approval of such a waiver in terms of the level or applicability of the standard. However, states can still submit petitions to the Agency for a waiver of the RFS requirements under the provision in the Energy Act and such petitions will be addressed by EPA on a case-by-case basis.

We received several comments objecting to the decision to not propose regulations detailing the waiver process and our rationale for not doing so. One commenter stated that nothing in the statute prevents relief from being directed toward a state which has requested the waiver by reducing the renewable fuel obligation of refiners, blenders, and importers who market gasoline in the affected state. Contrary to the commenter's assertion, the statute states that, ''[t]he Administrator * * * may waive the requirements * * * by reducing the national quantity of renewable fuel required''.[33] Congress's clear intent was to limit EPA's authority to provide relief under the state waiver provision of section 211(o)(7). Relief under that provision is limited to reducing the total national volume required under the RFS program. Thus, the renewable volume obligation for regulated parties would be reduced, but the reduced obligation would still apply to all obligated refiners, blenders and importers, including those in the state that requested the waiver. This may provide some relief to the part of the country submitting the petition, but EPA is not authorized to grant other more targeted relief such as reducing the percentage for some refiners and not others or refusing to count towards compliance renewable fuel that is produced or used in certain parts of the country. It should be noted here that this approach holds true for states or territories which have opted-in to the program as well. Once a state or territory has opted-in to the program, they will be treated as identical to any other state and specific relief will not be provided to regulated parties serving these areas after the approval of a waiver. Noncontiguous states and territories should consider this in discussions with regulated parties before opting-in to the program.

Another commenter stated that EPA should publish regulations outlining specific criteria that will be considered in reviewing a petition, so that the public would have a more meaningful opportunity to participate in the process. 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. Communication between the petitioning state(s), EPA, DOE, USDA, and public and industry stakeholders should begin early in the process, well before a waiver request is submitted. This communication will supply these federal agencies with a knowledgeable background of the situation prompting the potential waiver request. The waiver request may even prove unnecessary after an initial investigation and analysis of the situation. If not, and if the state continues to believe that a valid basis for submission of a petition exists, federal agencies can instruct the state(s) as to what more detailed information is needed for waiver approval. Petitions will be published in the **Federal Register**, as required by statute, to provide public notice and opportunity for comment.

A third commenter raised the point that there is no provision in the Act that would permit EPA to waive any obligations for specific entities in a state that has petitioned for a waiver, and in the case of an emergency, such as a natural disaster, specific relief may be warranted. The commenter is correct in the observation that EPA cannot waive obligations for specific entities or locations. However, the Act does authorize EPA to waive the obligations of the program as it applies to all obligated parties, in whole or in part, depending on the severity of the situation.

[31] CAA Section 211(o)(7), as added by Section 1501(a) of the Energy Policy Act of 2005.

[32] CAA Section 211(o)(2)(iii), as added by Section 1501(a) of the Energy Policy Act of 2005.

[33] CAA Section 211(o)(7), as added by Section 1501(a) of the Energy Policy Act of 2005.

D. How Do Obligated Parties Comply With the Standard?

Under the Act, EPA is to establish a renewable fuel standard annually, expressed as a percentage of gasoline sold or introduced into commerce, that will ensure that overall a specified total national volume of renewable fuels will be used in gasoline in the U.S. The Act does not require each obligated party to necessarily do the blending themselves in order to comply with this obligation. Rather, under the credit trading program required by the Act, each obligated party is allowed to satisfy its obligations either through its own actions or through the transfer of credits from others who have more than satisfied their individual requirements.

This section describes our final compliance program. It is based on the use of unique renewable identification numbers (RINs) assigned to batches of renewable fuel by renewable fuel producers and importers. These RINs can then be sold or traded, and ultimately used by any obligated party to demonstrate compliance with the applicable standard. Excess RINs serve the function of the credits envisioned by the Act and also provide additional benefits, as described below. We believe that our approach is consistent with the language and intent of the Act and preserves the natural market forces and blending practices that will keep renewable fuel costs to a minimum.

1. Why Use Renewable Identification Numbers?

Once renewable fuels are produced or imported, there is very high confidence that all but de minimus quantities will in fact be blended into gasoline or otherwise used as motor vehicle fuels, except for exports. Renewable fuels are not used for food, chemicals, or as feedstocks to other production processes. In fact the denaturant that must be added to ethanol is designed specifically to ensure that the ethanol is primarily used as motor vehicle fuel. In discussions with stakeholders prior to release of the NPRM, it became clear that other renewable fuels, including biodiesel and renewable fuels used in their neat (unblended) form, likewise are not used in appreciable quantities for anything other than motor vehicle fuel. Therefore if a refiner ensures that a certain volume of renewable fuel has been produced, in effect they have also ensured that this volume will be blended into gasoline or otherwise used as a motor vehicle fuel. Focusing on production of renewable fuel as a surrogate for use of such fuel has many benefits as far as streamlining the program and minimizing the influence that the program has on the operation of the market.

In order to implement a program that is based on production of a certain volume of renewable fuels, we are finalizing a system of volume accounting and tracking of renewable fuels. We are requiring that this system be based on the assignment of unique numbers to each batch of renewable fuel. These numbers are called Renewable Identification Numbers or RINs, and are assigned to each batch by the renewable fuel producer or importer.

The use of RINs allows the Agency to measure and track renewable fuel volumes starting at the point of their production rather than at the point when they are blended into conventional fuels. Although an alternative approach would be to measure renewable fuel volumes as they are blended into conventional gasoline or diesel, measuring renewable fuel volumes at the point of production provides more accurate measurements that can be easily verified. For instance, ethanol producers are already required to report their production volumes to EIA through Monthly Oxygenate Reports. These data provide an independent source for verifying volumes. The total number of batches and parties involved are also minimized in this approach. The total number of batches is smallest at the point of production, since batches are commonly split into smaller ones as they proceed through the distribution system to the place where they are blended into conventional fuel. The number of renewable fuel producers is also far smaller than the number of blenders. Currently there just over 100 ethanol plants and 85 biodiesel plants in the U.S., compared with approximately 1200 blenders [34] based on IRS data.

The assignment of RINs to batches of renewable fuel at the point of their production also allows those batches to be identified according to various categories important for compliance purposes. For instance, the RIN will contain a component that specifies whether a batch of ethanol was made from cellulosic feedstocks. This RIN component will be of particular importance for 2013 and beyond when the Act specifies a national volume requirement for cellulosic biomass ethanol. The RIN will also identify the Equivalence Value of the renewable fuel which will often only be known at the point of its production. Finally, the RIN will identify the year in which the batch was produced, a critical element in determining the applicable time period within which RINs are valid for compliance purposes.

Although production volumes of renewable fuels intended for blending into gasoline are a reasonably accurate surrogate for volumes ultimately blended into gasoline, changes can occur at various times throughout the year in the volumes of renewable fuel that are in storage. These stock changes involve the temporary storage of renewable fuel during times of excess and can affect the length of time between production and ultimate use. While there may be seasonal fluctuations in stocks due to seasonal demand, these stock changes always have a net change of zero over the long term since there is no economic benefit to stockpiling renewable fuels. As a result there is no need to account for stock changes in our program.

Exports of renewable fuel represent the only significant distribution pathway that could impair the use of production as a surrogate for renewable fuel blending into gasoline or other use as a motor vehicle fuel. However, our approach accounts for exports through an explicit requirement placed upon exporters (discussed in Section III.D.4 below). As a result, we are confident that our approach satisfies the statutory obligation that our regulations impose obligations on refiners and importers that will ensure that gasoline sold or introduced into commerce in the U.S. each year will contain the volumes of renewable fuel specified in the Act. By tracking the amount of renewable fuel produced or imported and subtracting the amount exported, we will have an accurate accounting of the renewable fuel actually consumed as motor vehicle fuel in the U.S. Exports of renewable fuel are discussed in more detail in Section III.D.4.

a. RINs Serve the Purpose of a Credit Trading Program

According to the Act, we must promulgate regulations that include provisions for a credit trading program. The credit trading program allows a refiner that overcomplied with its annual RVO to generate credits representing the excess renewable fuel. The Act stipulates that those credits can then be used within the ensuing 12 month period, or transferred to another refiner that had not blended sufficient renewable fuel into its gasoline to satisfy its RVO. In this way the credit trading program permits current blending practices to continue wherein

[34] Those blenders who add ethanol to RBOB are already regulated under our reformulated gasoline regulations.

some refiners purchase a significant amount of renewable fuel for blending into their gasoline while others do little or none, thus providing a means for all refiners to economically comply with the standard.

Our RIN-based program fulfills all the functions of a credit trading program and thus meets the Act's requirements. If at the end of a compliance period a party had more RINs than it needed to show compliance with its renewable volume obligation, these excess RINs would serve the function of credits and could be used or traded in the next compliance period. RINs can be transferred to another party in an identical fashion to a credit. However, our program provides additional flexibility in that it permits all RINs to be transferred between parties before they are deemed to be in excess of a party's annual RVO at the end of the year. This is because a RIN serves two functions: It is direct evidence of compliance and, after a compliance year is over, excess RINs serve the function of credits for overcompliance. Thus the RIN approach has the advantage of allowing real-time trading without having to wait until the end of the year to determine excess.

As in other motor vehicle fuels credit programs, we are also requiring that any renewable producer that generates RINs must use an independent auditor to conduct annual reviews of the party's renewable production, RIN generation, and RIN transactions. These reviews are called ''attest engagements,'' because the auditor is asked to attest to the validity of the regulated party's credit transactions. For example, the reformulated gasoline program requires attest engagements for refiners and importers, and downstream oxygenate blenders to verify the underlying documentation forming the basis of the required reports (40 CFR part 80, subpart F). In the case of RIN generation, the auditor is required to verify that the number of RINs generated matched the volume of renewable fuels produced, that any extra value RINs are appropriately generated, and that RIN numbers are properly transferred with the renewable fuel as required by the regulations.

b. Alternative Approach to Tracking Batches

If we had not implemented a RIN-based system for uniquely identifying, measuring, and tracking batches of renewable fuel, the RFS program would necessarily require that we measure renewable fuel volumes at the point in the distribution system where they are actually blended into conventional gasoline or diesel or used in their neat form as motor vehicle fuel. The NPRM described a number of significant problems that this approach would create, including the potential for double-counting, increasing the number of parties subject to enforcement provisions, and the loss of a distinction between cellulosic ethanol and other forms of ethanol. We concluded that a blender-based approach to tracking volumes of renewable fuel was inferior to our proposed program focusing on the point of production and importation. We did not receive any comments supporting a blender-based approach and, consistent with the rationale provided in the proposed rule, have decided not to implement it.

2. Generating RINs and Assigning Them to Batches

a. Form of Renewable Identification Numbers

Each RIN is generated by the producer or importer of the renewable fuel and uniquely identifies not only a specific batch, but also every gallon in that batch. The RIN consists of a 38-character code having the following form:

RIN: KYYYYCCCCFFFFFBBBBB
RRDSSSSSSSSEEEEEEEE

Where:
K = Code distinguishing assigned RINs from separated RINs.
YYYY = Calendar year of production or import.
CCCC = Company ID.
FFFFF = Facility ID.
BBBBB = Batch number.
RR = Code identifying the Equivalence Value.
D = Code identifying cellulosic biomass ethanol.
SSSSSSSS = Start of RIN block.
EEEEEEEE = End of RIN block.

In response to the NPRM, one commenter requested that the full RIN generation date, not just the year, be included in the RIN. We believe that this is unnecessary and would unduly lengthen the RIN. Compliance with the standard is determined on a calendar year basis, and the year of RIN generation is necessary in order to ensure that RINs are used for compliance purposes only in the calendar year generated or the following year. See Section III.D.3.b. The full RIN generation date, while a potentially useful piece of information in the context of potential enforcement activities, is not necessary as a component of the RIN since recordkeeping requirements contain this same information and can be consulted in the enforcement context.

The company and facility IDs are assigned by the EPA as part of the registration process as described in Section IV.B. Company IDs will be used primarily to determine compliance, while the inclusion of facility IDs allows the assignment of batch numbers unique to each facility. The use of both company and facility IDs is also consistent with our approach in other fuel programs. The batch number is chosen by the producer and includes five digits to allow for facilities that produce up to a hundred thousand batches per year. In the NPRM we proposed that batch numbers be sequential values starting with 00001 at the beginning of each year. Following release of the NPRM, some stakeholders expressed the desire to be able to align RIN batch numbers with numbers used in other aspects of their business. As a result, we have determined that the requirement that the batch numbers be sequential is not necessary so long as each batch number is unique within a given calendar year. Batches are described more fully in Section III.E.1.a.

The RR, D, and K codes together describe the nature of the renewable fuel and the RINs that are generated to represent it. The RR code simply represents the Equivalence Value for the renewable fuel, multiplied by 10 to eliminate the decimal place inherent in Equivalence Values. Equivalence Values form the basis for the total number of RINs that can be generated for a given volume of renewable fuel, and are described in Section III.B.4.

The D code identifies cellulosic biomass ethanol batches as such. Since the Act requires that a minimum of 250 million gallons of cellulosic biomass ethanol be consumed starting in 2013, obligated parties will need to be able to distinguish RINs representing cellulosic biomass ethanol from RINs representing other types of renewable fuel. This requirement is discussed in more detail in Section III.A.

In the NPRM, the K code served to distinguish between standard-value RINs and extra-value RINs, and it was placed in the middle of the RIN. As described more fully in Section III.E.1.a, our final rule eliminates the need for a distinction between standard-value RINs and extra-value RINs, but requires a distinction between RINs that must be transferred with a volume of renewable fuel (assigned RINs) and RINs that can be transferred without renewable fuel (separated RINs). Thus for the final rule we have changed the purpose of the K code. As described in Section III.E.2, we are requiring that RINs separated from volumes of renewable fuel be identified as such, by changing the K code from a value of 1 to a value of 2. Placing the K code at the beginning of the RIN

makes this process more straightforward for obligated parties and oxygenate blenders who will be responsible for changing the K code after separating a RIN from renewable fuel.

The RIN also contains two codes SSSSSSSS and EEEEEEEE that together identify the ''RIN block'' which demarcates the number of gallons of renewable fuel that the batch represents in the context of compliance. Depending on the Equivalence Value, this may not necessarily be the same as the actual number of gallons in the batch. The methodology for designating the SSSSSSSS and EEEEEEEE values is described in Section III.D.2.b below.

In the NPRM we assigned six digits to the RIN block codes to allow batches up to a million gallons in size. Based on comments received, we have decided to expand the number of digits to eight to accommodate batches up to 100 million gallons in size. Although it is highly unlikely that a single tank would hold this volume, we are adding a definition of ''batch'' to our final regulations that would allow this high volume to be counted as a single batch for the purposes of generating RINs.

In the NPRM we pointed out that ''RIN'' can refer to either the number representing an entire batch or the number representing one gallon of renewable fuel in the context of compliance. In order to make the distinction clear, we are defining the latter as a gallon-RIN, and a batch-RIN will represent multiple gallon-RINs. In the case of a gallon-RIN, the values of SSSSSSSS and EEEEEEEE will be identical. A batch-RIN, on the other hand, will generally have different values for SSSSSSSS and EEEEEEEE, representing the starting and ending values of a batch of renewable fuel. Examples of RINs are presented in the next section.

b. Generating RINs

As described in Section III.E.1.a, we have eliminated the distinction between standard-value RINs and extra-value RINs for this final rule. Instead, all gallon-RINs must be assigned to batches of renewable fuel by the producer or importer. Consistent with the NPRM, each gallon-RIN will continue to represent one gallon of renewable fuel in the context of compliance.

Also consistent with the NPRM, we are requiring that RIN generation begin at the same time that the renewable fuel standard becomes applicable to obligated parties. Thus RINs must be generated for all renewable fuel produced or imported on or after September 1, 2007. Since many producers and importers will have renewable fuel in inventory at the start of the program that was produced prior to September 1, 2007, we are also allowing them to generate RINs for such renewable fuel. This provision ensures that every gallon that a producer or importer sells starting on September 1, 2007 can have an assigned RIN, and obligated parties that take ownership of renewable fuel directly from a producer or importer will have greater assurance of having access to RINs at the start of the program. Other volumes of ethanol in inventory in the distribution system on September 1, 2007 will continue to be sold and distributed without RINs.

In order to determine the number of gallon-RINs that must be generated and assigned to a batch by a producer or importer, the actual volume of the batch must be multiplied by the Equivalence Value to determine an applicable ''RIN volume'':

$$V_{RIN} = EV \times V_s$$

Where:

V_{RIN} = RIN volume, in gallons, representing the number of gallon-RINs that must be generated (rounded to the nearest whole gallon).

EV = Equivalence value for the renewable fuel.

V_s = Standardized volume of the batch of renewable fuel at 60 °F, in gallons.

When RINs are first assigned to a batch of renewable fuel by its producer or importer, the RIN block start for that batch will in general be 1 (i.e., SSSSSSSS will have a value of 00000001). The RIN block end value EEEEEEEE will be equal to the RIN volume calculated above. The batch-RIN then represents all the gallon-RINs assigned to the batch. Table III.D.2.b–1 provides some examples of the number of gallon-RINs that would be assigned to a batch under different circumstances.

TABLE III.D.2.B–1.—EXAMPLES OF BATCH-RINS [35]

Batch volume: 2000 gallons corn ethanol. Equivalence value: 1.0. Gallon-RINs: 2000. Batch-RIN: 1–2007–1234–12345–00001–10–2–00000001–00002000.
Batch volume: 2000 gallons biodiesel. Equivalence value: 1.5. Gallon-RINs: 3000. Batch-RIN: 1–2007–1234–12345–00002–15–2–00000001–00003000.
Batch volume: 2000 gallons cellulosic ethanol. Equivalence value: 2.5. Gallon-RINs: 5000. Batch-RIN: 1–2007–1234–12345–00003–25–1–00000001–00005000.

The RIN block will often represent the actual number of gallons in the batch, for cases where the Equivalence Value is 1.0. In other cases, the RIN block start and RIN block end values in the batch-RIN will not exactly correspond to the volume of the batch. For instance, in cases where the Equivalence Value is larger than 1.0, the number of gallon-RINs generated will be larger than the number of gallons in the batch. In such cases the batch will have a greater value in terms of compliance than a batch with the same volume but an Equivalence Value equal to 1.0. Likewise, a batch with an Equivalence Value less than 1.0 will have a smaller value in terms of compliance than a batch with the same volume but an Equivalence Value equal to 1.0. In the context of our modified approach to RIN distribution as described in Section III.E.1, however, the transfer of RINs with batches will be straightforward regardless of the number of gallon-RINs assigned to a particular volume of renewable fuel, as every gallon-RIN will always have the capability of covering one gallon of an obligated party's RVO.

In response to the NPRM, some obligated parties requested that fractional RINs be used for cases in which the Equivalence Value is less than 1.0. Under this approach, every gallon in a batch would still have an assigned gallon-RIN, but those gallon-RINs would represent only a fraction of a gallon for compliance purposes. The commenters also argued that our proposed system in which RINs are assigned to only a portion of a batch would be unworkable given the need to ensure that RINs remain assigned to batches as they travel through the distribution system.

We continue to believe that the most straightforward system calculates the number of gallon-RINs representing a batch as the product of the Equivalence Value and the actual volume of the batch. Then every gallon-RIN will have the capability of covering one gallon of an obligated party's RVO, and thus every gallon-RIN has the same value. This is true both for renewable fuels with Equivalence Values less than 1.0, and renewable fuels with Equivalence Values greater than 1.0. Also, as described in Section III.E.1, we have modified our approach to the distribution of RINs assigned to volumes of renewable fuel. As a result, the batch-splitting and batch-merging protocols have become largely irrelevant, and thus the transfer of renewable fuels having an

[35] RIN codes have been separated by hyphens in this table for demonstrative purposes only. In actual use, no hyphens would be present in the RIN.

Equivalence Value less than 1.0 has become greatly simplified. We are therefore finalizing our proposed approach in which renewable fuels having an Equivalence Value less than 1.0 result in fewer assigned gallon-RINs than gallons in a batch.

Following release of the NPRM, we also identified some cases in which the generation of RINs for a partially renewable fuel or blending component would result in double-counting of RINs generated. For instance, ethyl tertiary butyl ether (ETBE) is made from combining ethanol with isobutylene. The ethanol is generally from corn, and the isobutylene is generally from petroleum. The ETBE producer may purchase ethanol from another source, and that ethanol may already have RINs assigned to it. In such cases it would not be appropriate for the ETBE producer to generate additional RINs for the ETBE made from that ethanol. Even if the ETBE producer purchased ethanol without assigned RINs, our program design ensures that either RINs were generated for the ethanol and separated prior to purchase by the ETBE producer, or RINs were legitimately not assigned to the ethanol. The NPRM did not address the potential for generating RINs twice for the same renewable fuel in these cases. Therefore, we are finalizing a provision prohibiting a party from generating RINs for a partially renewable fuel or blending component that it produces if the renewable feedstock used to make the renewable fuel or blending component was acquired from another party. Any RINs acquired with the renewable feedstock (e.g. ethanol) must be assigned to the product made from that feedstock (e.g. ETBE). This approach is consistent with comments submitted by Lyondell Chemical Company.

c. Cases in Which RINS Are Not Generated

Although in general every batch of renewable fuel produced or imported must have an assigned batch-RIN, there are several cases in which a RIN may not be assigned to a batch by a producer or importer. For instance, if the renewable fuel was consumed within the confines of the production facility where it was made, it would not be acquired by either an obligated party or a gasoline blender. In such cases, the RIN could not be separated from the batch and transferred separately since producers do not have this right. A RIN is assigned to renewable fuel when ownership of the renewable fuel is transferred to another party. Since no such transfer would occur in this case, no RIN should be generated.

A second case in which some renewable fuel would not have an assigned RIN would occur for small volume producers. We are allowing renewable fuel producers who produce less than 10,000 gallons in a year to avoid the requirement to generate RINs and assign them to batches. Such producers would not contribute meaningfully to the nationwide pool of renewable fuel, and we do not believe that the very small business operations involved should be subject to the burden of recordkeeping and reporting. Although two commenters disagreed that these small volume producers should be exempt from the requirement to generate RINs, they did not provide compelling evidence that the exemption would create a problem in the distribution system or provide an unfair advantage to small producers. As a result we are finalizing this provision as proposed. Note that if a small producer chooses to register as a renewable fuel producer under the RFS program, they will be subject to all the regulatory provisions that apply to all producers, including the requirement to assign RINs to batches.

In the NPRM we proposed that a renewable fuel producer which also operated as an exporter would not be required to generate and assign a RIN to any renewable fuel that it produced and exported. However, one commenter pointed out that this approach could lead to confusion regarding which gallons should have an assigned RIN and which should not, given the complex nature of tracking volumes of renewable fuel. As a result we have determined that this provision should be eliminated. Our final regulations require that producers assign RINs to all renewable fuel, regardless of whether it is exported. Exports of renewable fuel are discussed further in Section III.D.4.

3. Calculating and Reporting Compliance

Under our program, RINs form the basis of the volume accounting and tracking system that allows each obligated party to demonstrate that they have met their renewable fuel obligation each year. This section describes how the compliance process using RINs works. Our approach to the distribution and trading of RINs is covered separately in Section III.E below.

a. Using RINs To Meet the Standard

Under our program, each obligated party must determine its Renewable Volume Obligation (RVO) based on the applicable percentage standard and its annual gasoline volume as described in Section III.A.4. The RVO represents the volume of renewable fuel that the obligated party must ensure is used in the U.S. in a given calendar year. Since the nationwide renewable fuel volumes shown in Table I.B–1 are required by the Act to be consumed in whole calendar years, each obligated party must likewise calculate its RVO on an annual basis.

Since our program uses RINs as a measure of the amount of renewable fuel used as motor vehicle fuel that is sold or introduced into commerce within the U.S., obligated parties must meet their RVO through the accumulation of RINs. In so doing, they will effectively be causing the renewable fuel represented by the RINs to be consumed as motor vehicle fuel. Obligated parties are not required to physically blend the renewable fuel into gasoline or diesel fuel themselves. The accumulation of RINs is the means through which each obligated party shows compliance with its RVO and thus with the renewable fuel standard.

For each calendar year, each obligated party is required to submit a report to the Agency documenting the RINs it acquired and showing that the sum of all gallon-RINs acquired is equal to or greater than its RVO. This reporting is discussed in more detail in Section IV. In the context of demonstrating compliance, all gallon-RINs have the same compliance value. The Agency can then verify that the RINs used for compliance purposes are valid by simply comparing RINs reported by producers to RINs claimed by obligated parties. We can also verify simply that any given gallon-RIN was not double-counted, i.e., used by more than one obligated party for compliance purposes. In order to be able to identify the cause of any double-counting, however, additional information is needed on RIN transactions as discussed in Section IV.

If an obligated party has acquired more RINs than it needs to meet its RVO, then in general it can retain the excess RINs for use in complying with its RVO in the following year or transfer the excess RINs to another party. The conditions under which this is allowed are determined by the valid life of a RIN, described in more detail in Section III.D.3.b below. If, alternatively, an obligated party has not acquired sufficient RINs to meet its RVO, then under certain conditions it can carry a deficit into the next year. Deficit carryovers are discussed in more detail in Section III.D.3.d.

The regulations prohibit any party from creating or transferring invalid RINs. Invalid RINs cannot be used in demonstrating compliance regardless of

the good faith belief of a party that the RINs are valid. These enforcement provisions are necessary to ensure the RFS program goals are not compromised by illegal conduct in the creation and transfer of RINs.

As in other motor vehicle fuel credit programs, the regulations address the consequences if an obligated party is found to have used invalid RINs to demonstrate compliance with its RVO. In this situation, the refiner or importer that used the invalid RINs will be required to deduct any invalid RINs from its compliance calculations. The refiner or importer will be liable for violating the standard if the remaining number of valid RINs is insufficient to meet its RVO, and the obligated party may be subject to additional monetary penalties if it used invalid RINs in its compliance demonstration. See Section V of this preamble for further discussion regarding liability for use of invalid RINs.

Just as for RIN generators, we are also requiring that obligated parties conduct attest engagements for the volume of gasoline they produce and the number of RINs procured to ensure compliance with their RVO. In most cases, this should amount to little more than is already required under existing EPA gasoline regulations. In the case of renewable fuel exporters, the attest engagement will verify the volume of renewable fuel exported and therefore the magnitude of their RVO. Attest engagement reports must be submitted to the party that commissioned the engagement and to EPA. See Section IV of this preamble for further discussion of the attest engagement requirements.

b. Valid Life of RINs

The Act requires that renewable fuel credits be valid for showing compliance for 12 months as of the date of generation. This section describes our interpretation of this provision in the context of our program wherein excess RINs fulfill the Act's requirements regarding credits.

As discussed in Section III.D.1.a, we interpret the Act such that credits would represent renewable fuel volumes in excess of what an obligated party needs to meet their annual compliance obligation. Given that the renewable fuel standard is an annual standard, obligated parties will determine compliance shortly after the end of the year, and credits would be identified at that time. Obligated parties will typically demonstrate compliance by submitting a compliance demonstration to EPA. Given the 12-month life of a credit as stated in the Act, we interpret this provision as meaning that credits would only be valid for compliance purposes for the following compliance year. Hence if a refiner or importer overcomplied with their 2007 obligation they would generate credits that could be used to show compliance with the 2008 compliance obligation, but the credits could not be used to show compliance for later years. Since RINs fulfill the role of credits, the statutory provisions regarding credits apply to RINs

The Act's limit on credit life helps balance the risks between the needs of renewable fuel producers and obligated parties. Producers are currently making investments in expanded production capacity on the expectation of a statutorily guaranteed minimum quantity demanded. Under the market conditions we are experiencing today that make ethanol use more economically attractive, the annual volume requirements in the RFS program will not drive consumption of renewable fuels. However, if the price of crude oil dropped significantly or the use of ethanol in gasoline became otherwise less economically attractive, obligated parties could use stockpiled credits to comply with the program requirements. As a result, demand for renewable fuel could fall well below the RFS program requirements, and many producers could end up with a stranded investment. The 12 month valid life limit for credits minimizes the potential for this type of result.

For obligated parties, the Act's 12 month valid life for credits provides a window within which parties who do not meet their renewable fuel obligation through their own physical use of renewable fuel can obtain credits from other parties who have excess. This critical aspect of the trading system allows the renewable fuels market to continue operating according to natural market forces, avoiding the possibility that every single refiner would need to purchase renewable fuel for blending into its own gasoline. But the 12 month life also provides a window within which banking and trading can be used to offset the negative effects of fluctuations in either supply of or demand for renewable fuels. For instance, if crude oil prices were to drop significantly and natural market demand for ethanol likewise fell, the RFS program would normally bring demand back up to the minimum required volumes shown in Table I.B–1. But in this circumstance, the use of ethanol in gasoline would be less economically attractive, since demand for ethanol would not be following price but rather the statutorily required minimum volumes. As a result, the price of credits as represented by RINs, and thus ethanol blends, could rise above the levels that would exist if no minimum required volumes existed. The 12 month valid life creates some flexibility in the market to help mitigate price fluctuations. The renewable fuels market could also experience a significant drop in supply if, for instance, a drought were to limit the production of the feedstocks needed to produce renewable fuel. Obligated parties could use banked credits to comply rather than carry a deficit into the next year.

In the context of our RIN-based program, we have been able to accomplish the same objective as the Act's 12 month life of credits by allowing RINs to be used to show compliance for the year in which the renewable fuel was produced and its associated RIN first generated or for the following year. RINs not used for compliance purposes in the year in which they were generated will by definition be in excess of the RINs an obligated party needed in that year, making excess RINs equivalent to the credits referred to in the Energy Act. Excess RINs are valid for compliance purposes in the year following the one in which they initially came into existence.[36] RINs not used within their valid life will expire. This approach satisfies the Act's 12 month duration for credits.

Thus we are requiring that every RIN be valid for the calendar-year compliance period in which it was generated or the following year. If a RIN was created in one year but was not used by an obligated party to meet its RVO for that year, the RIN can be used for compliance purposes in the next year (subject to certain provisions to address RIN rollover as discussed below). If, however, a RIN was created in one year and was not used for compliance purposes in that year or in the next year, it will expire. In response to the NPRM, this approach was supported by a number of obligated parties and their representative associations. These commenters agreed that allowing RINs to be used for the year generated or the following year was not only supported by the statutory language, but was also an element of program flexibility that would be critical for offsetting the negative effects of potential fluctuations in either supply of or demand for renewable fuels.

[36] The use of previous-year RINs for current year compliance purposes will also be limited by the 20 percent RIN rollover cap under today's final rule. However, as discussed in the next section, we believe that this cap will still provide a significant amount of flexibility to obligated parties.

However, in response to our NPRM, other commenters said that the Energy Act's 12-month credit life provision should be interpreted as applying retrospectively, not prospectively. Under this approach, the 12-month timeframe in the Act would be interpreted to refer to the full calendar year within which a credit was generated. Under this alternative approach no RINs could be used for compliance purposes beyond the calendar year in which they originally came into existence. As discussed below, we do not believe that this approach is appropriate.

Commenters who supported the retrospective approach to the Act's 12-month credit life provision argued that the Energy Act could have been written to explicitly allow a valid life of multiple years if that had been Congress' intent. In response, the Act explicitly indicates that obligated parties may either use the credits they have generated or transfer them. For a party to be able to use credits generated, such credit use must necessarily occur in a compliance year other than the one in which the credit was generated. Thus we do not believe that a retrospective approach to the Act's 12-month credit life provision is consistent with the explicit credit provisions of the Act. In addition, we believe that an interpretation leading to a valid life of one year after the year in which the RIN was generated is most consistent with the program as a whole. In comparison to a single-year valid life for RINs, our approach provides some additional compliance flexibility to obligated parties as they make efforts to acquire sufficient RINs to meet their RVOs each year. This flexibility will have the effect of keeping fuel costs lower than they would otherwise be.

In the comments we received on the NPRM, one objection to our proposed approach was that the use of RINs generated in one compliance period to satisfy obligations in a subsequent compliance period could result in less renewable fuel used in a given year than is set forth in the statute. While this is true, we believe this approach is most consistent with the Act, as described above. The Act clearly set up a credit program with a credit life, meaning Congress intended parties to use credits in some cases instead of blending renewable fuel. The Act is best read to harmonize all of its provisions. In addition, we note that other provisions of the Act may lead to less renewable fuel use in a given year than the statutorily-prescribed volumes, but Congress adopted them and intended that they could be used. For instance, the deficit carryover provision allows any obligated party to fail to meet its RVO in one year if it meets the deficit and its RVO in the next year. If several obligated parties took advantage of this provision, it could result in the nationwide total volume obligation for a particular calendar year not being met. In a similar fashion, the statutory requirement that every gallon of cellulosic biomass ethanol be treated as 2.5 gallons for the purposes of compliance means that the annually required volumes of renewable fuel could be met in part by virtual, rather than actual, volumes. Finally, the calculation of the renewable fuel standard is based on projected nationwide gasoline volumes provided by EIA (see Section III.A). If the projected gasoline volume falls short of the actual gasoline volume in a given year, the standard will fail to create the demand for the full renewable fuel volume required by the Act for that year. The Act contains no provision for correcting for underestimated gasoline volumes. Additional responses to the issues raised by commenters on RIN life can be found in the S&A document.

c. Cap on RIN Use To Address Rollover

As described in Section III.D.3.b above, RINs are valid for compliance purposes for the calendar year in which they are generated or the following year. We believe that this approach is most consistent with the Act's prescription that credits be valid for compliance purposes for 12 months as of the date of generation. Our approach is intended to address both the risk taken by producers expecting a guaranteed demand to cover their expanded production capacity investments and the risk taken by obligated parties who need a guaranteed supply in order to meet their regulatory obligations under this program.

However, the use of previous year RINs to meet current year compliance obligations does create an opportunity for effectively circumventing the valid life limit for RINs. This can occur in situations wherein the total number of RINs generated each year for a number of years in a row exceeds the number of RINs required under the RFS program for those years. The excess RINs generated in one year could be used to show compliance in the next year, leading to the generation of new excess RINs in the next year, causing the total number of excess RINs in the market to accumulate over multiple years despite the limit on RIN life. The NPRM included examples of how this ''rollover'' might occur. The rollover issue would in some circumstances essentially make the applicable valid life for RINs virtually meaningless in practice.

RIN rollover also undermines the ability of a limit on credit life to guarantee a market for renewable fuels. As described in Section III.D.3.b, if the natural market demand for ethanol was higher than the volumes required under the RFS program for several years in a row, as may occur in practice, obligated parties could amass RINs that, in the extreme, could be used entirely in lieu of actually demanding ethanol in some subsequent year.

As described in the NPRM, we believe that the rollover issue must be addressed. The Act's provision regarding the valid life of credits is clearly intended to obtain the benefits associated with a limited credit life. Any program structure in which some RINs effectively have an infinite life, regardless of the technical life of individual RINs, does not appropriately achieve the benefits expected from the Act's provision regarding the 12-month life of credits. The authority to establish a credit program and to implement a limited life for credits includes the authority to limit actions that have the practical effect of circumventing this limited credit life.

To be consistent with the Act, we believe that the rollover issue should be addressed in our regulations. However, we also believe that the limits to preclude such unhindered rollovers should not preclude all previous-year RINs from being used for current-year compliance. To accomplish this, we must restrict the number of previous-year RINs that can be used for current year compliance. To this end, we proposed a 20 percent cap on the amount of an obligated party's Renewable Volume Obligation (RVO) that can be met using previous-year RINs. After review of the comments we received on the NPRM, we have decided to finalize this provision. Thus each obligated party will be required to use current-year RINs to meet at least 80 percent of its RVO, with a maximum of 20 percent being derived from previous-year RINs. Any previous-year RINs that an obligated party may have that are in excess of the 20 percent cap can be traded to other obligated parties that need them. If the previous-year RINs in excess of the 20 percent cap are not used by any obligated party for compliance, they will expire. The net result will be that, for the market as a whole, no more than 20 percent of a given year's renewable fuel standard can be met with RINs from the previous year.

As described in the NPRM, we believe that the 20 percent cap provides the

appropriate balance between, on the one hand, allowing legitimate RIN carryovers and protecting against potential supply shortfalls that could limit the availability of RINs, and on the other hand ensuring an annual demand for renewable fuels as envisioned by the Act. We believe this approach also provides the certainty all parties desire in implementing the program. The same cap will apply equally to all obligated parties, and the cap will be the same for all years, providing certainty on exactly how obligated parties must comply with their RVO going out into the future. A 20 percent cap will be readily enforceable with minimal additional program complexity, as each obligated party's annual report will simply provide separate listings of previous-year and current-year RINs to establish that the cap has not been exceeded. A 20 percent cap will have no impact on who could own RINs, their valid life, or any other regulatory provision regarding compliance.

Some NPRM commenters did not perceive a problem with the RIN rollover issue and argued for no rollover cap or at least for a more flexible one. They pointed to the need for maximum flexibility in responding to fluctuations in the market, and they were primarily concerned about potential supply problems. For instance, if a drought were to reduce the availability of corn for ethanol production, there may simply not be sufficient RINs available for compliance purposes. A drought situation actually occurred in 1996, and as a result 1996 ethanol production was 21% less than it had been in 1995. In 1997, production had not yet returned to the 1995 levels. Moreover, there is no guarantee that future droughts, should they occur, would result in a reduction in ethanol production of only 21 percent. As a result, in the NPRM we requested comment on whether a higher cap, such as 30 percent, would be more appropriate. A number of refiners and refinery associations commented that 30 percent would indeed provide them with the additional flexibility they would need in the case of a significant market disruption. Some requested a cap of 40 percent or even no cap at all. These parties also expressed concern that, although the Agency has the authority to waive the required renewable fuel volumes in whole or in part in the event of inadequate domestic supply, this can occur only on petition by one or more states and then only after consultation with both the Department of Agriculture and the Department of Energy. Some obligated parties expressed concern that such a waiver would not occur in a timely fashion. The availability of excess previous-year RINs would thus provide compliance certainty in the event that the supply of current-year RINs falls below the RFS program requirements and the Agency does not waive any portion of the program requirements.

In contrast to obligated parties, renewable fuel producers provided comments on the NPRM indicating that 10 percent would be more appropriate. They argued that a 10 percent cap was closer to their preferred approach to RIN life in which the Act's 12-month life of a credit is interpreted as allowing RINs to be used for compliance purposes only in the year in which they are generated.

We continue to believe that a cap set at 20 percent is appropriate, and the comments submitted in response to the NPRM did not provide compelling evidence to the contrary. The level of 20 percent is consistent with past ethanol market fluctuations. As described above, the largest single-year drop in ethanol supply occurred in 1996 and resulted in 21% less ethanol being produced than in 1995. While future supply shortfalls may be larger or smaller, the circumstances of 1996 provide one example of their potential magnitude.

We believe that a cap of 20 percent is a reasonable way to limit RIN rollover and provide some assurances to renewable fuel producers regarding demand for renewable fuel. A cap of 20 percent also ensures that many previous-year RINs can still be used for current year compliance, providing some flexibility in the event of market disruptions.

Given the competing needs expressed by renewable fuel producers and refiners, a rollover cap of 20 percent also balances the risk taken by producers of renewable fuels expecting a guaranteed quantity demanded to cover their production capacity investments and the risk taken by obligated parties who need a guaranteed supply in order to meet their regulatory obligations under this program. We are therefore finalizing a rollover cap of 20 percent.

In the NPRM we also considered an alternative approach whereby we would set the cap annually based on the actual excess renewable fuel production. We did not propose this approach, and commenters did not support it. We have determined that fixing the cap at 20 percent both provides certainty to the RIN market and ensures that some minimum level of flexibility exists for individual obligated parties even in a market without excess RINs.

We also requested comment on whether the Agency should adopt a provision allowing the cap to be raised in the event that supply shortfalls overwhelmed the 20 percent cap. Under this conditional provision, the Agency would monitor standard indicators of agricultural production and renewable fuel supply to determine if sufficient volumes of renewable can be produced to meet the RFS program requirements in a given year. Prior to the end of a compliance period, if the Agency determined that a supply shortfall was imminent, it could raise the cap to permit a greater number of previous-year RINs to be used for current-year compliance. Although this approach would not change the required volumes, it could create some additional temporary flexibility. However, we did not propose this provision, and commenters did not address it. We do not believe it is necessary, and thus we have not finalized it.

Finally, the cap is designed to prevent the rollover of RINs generated two years ago from being used for compliance purposes in the current year. No RINs were generated in 2006 when the default standard of 2.78 percent was in effect on a collective basis, so the first year in which RINs will be generated is 2007. Consequently, the first year in which there could be rollover would be 2009. Therefore, we proposed that the cap would not be effective until compliance year 2009. Two commenters pointed out that this approach could under some scenarios lead to a situation in which more than 20 percent of the RINs used for compliance purposes in 2008 were actually generated in the previous year, 2007. EPA believes that implementing the rollover cap in 2008 would, indeed, prevent the initiation of an excess buildup of past RINs. In addition, it would simplify the regulations, since there would be no need for an exception from the RIN cap for 2008. Consequently we are finalizing the 20 percent cap to apply to all years, including 2008.

d. Deficit Carryovers

The Energy Act also contains a provision allowing an obligated party to carry a deficit forward from one year into the next if it cannot comply with its RVO. However, deficits cannot be carried over two years in a row.

Deficit carryovers are measured in gallons of renewable fuel, just as for RINs and RVOs. If an obligated party does not acquire sufficient RINs to meet its RVO in a given year, the deficit is calculated by subtracting the total number of RINs an obligated party has acquired from its RVO. There are no volume penalties, discounts, or other factors included when calculating a

deficit carryover. As described in Section III.D.1, the deficit is then added to the RVO for the next year. The calculation of the RVO as described in Section III.A.4 shows how a deficit would be carried over into the next year:

$RVO_i = (Std_i \times GV_i) + D_{i-1}$

Where:

RVO_i = The Renewable Volume Obligation for the obligated party for year i, in gallons.

Std_i = The RFS program standard for year i, in percent.

GV_i = The non-renewable gasoline volume produced by an obligated party in year i, in gallons.

D_{i-1} = Renewable fuel deficit carryover from the previous year, in gallons.

If an obligated party does not acquire sufficient RINs to meet its RVO in year i-1, the obligated party must procure sufficient RINs to cover the full RVO for year i including the deficit. There are no provisions allowing for another year of carryover. If the obligated party does not acquire sufficient RINs to meet its RVO for that year plus the deficit carryover from the previous year, it will be in noncompliance.

The Act indicates that deficit carryovers are to occur due to ''inability'' to generate or purchase sufficient credits. We believe that obligated parties will make a determined effort to satisfy their RVO on an annual basis and that a deficit will demonstrate that they were unable to do so. Thus, we did not propose that any particular demonstration of ''inability'' be a prerequisite to the ability of obligated parties to carry deficits forward. However, one commenter requested that we should establish some sort of standard or threshold that obligated parties must meet before they would be allowed to use the deficit carryover provision. Although the commenter provided no suggestions regarding how such a threshold could be established, he indicated that in the absence of such a threshold obligated parties could potentially use the deficit carryover provision to undermine the amount of actual renewable fuel used in a given year.

We agree that the deficit carryover provision could result in less renewable fuel being consumed in a given year than is required by the Act, especially if several obligated parties took advantage of it at the same time. However, in any given year some parties may be making up deficits from a prior year, while other parties might be generating deficits. This fact will tend to reduce the net effect in any given year, and regardless, the deficit in demand in one year will by regulatory requirement be made up in the following year. Finally, any threshold we could set to demonstrate an obligated party's inability to generate or purchase sufficient credits would likely require a comprehensive investigation of their opportunities to acquire RINs. Such investigations would consume Agency resources that would be better spent, in terms of ensuring that the goals of the Act are met, on other compliance enforcement matters. Therefore, we have not set any thresholds in the final rule.

4. Provisions for Exporters of Renewable Fuel

As described in Section III.D.2.a, we believe that U.S. consumption of renewable fuel as motor vehicle fuel can be measured with considerable accuracy through the tracking of renewable fuel production and importing records. This is the basis for our RIN-based system of compliance. However, exports of renewable fuel must be accounted for under this approach. For instance, if a gallon of ethanol is produced in the U.S. but consumed outside of the U.S., the RIN associated with that gallon is not valid for RFS compliance purposes since the RFS program is intended to require a specific volume of renewable fuel to be consumed in the U.S. Exports of renewable fuel currently represent about 5 percent of U.S. production, though the exact value varies each year.

To ensure that renewable fuels exported from the U.S. cannot be used by an obligated party for RFS compliance purposes, the RINs associated with that exported renewable fuel must be removed from circulation. For this final rule we have concluded that it should be the exporter's responsibility to account for exported renewable fuel in our RIN-based program. We are therefore requiring that an RVO be assigned to each exporter that is equal to the annual volume of renewable fuel it exported. Just as for obligated parties, then, the exporter is required to acquire sufficient gallon-RINs to meet its RVO. If the exporter purchases renewable fuel directly from a producer, that renewable fuel will come with associated gallon-RINs which can then be applied to its RVO under our program. In this circumstance, the exporter will not need to acquire RINs from any other source. If, however, the exporter receives renewable fuel without the associated RINs, it will need to acquire RINs from some other source in order to meet its RVO.

In the NPRM we presented an alternative approach which would have increased the obligation placed on refiners and importers of gasoline based on the volume of renewable fuel exported. One commenter supported this alternative approach, explaining that the proposed approach of requiring the exporter to acquire sufficient RINs to offset an RVO equal to the exported volume would place a significant recordkeeping burden on exporters. This commenter also expressed concern that exporters would receive no value in return for compliance with an RVO. We do not believe that these are compelling reasons to place the burden for exported renewable fuel on obligated parties. Not only would this alternative approach have required an estimate of the volume of renewable fuel exported in the next year, but would also mean that every obligated party would share in accumulating RINs to cover the activities of other parties not under their control.

In the NPRM we pointed out that in specific circumstances involving exports of renewable fuels, the need for RINs might not be necessary. For instance, if the exporter was wholly owned by a renewable fuel producer, there would be no need to generate RINs for the exported product. We therefore proposed to allow exported product to be excluded from the exporter's RVO if the exporter was also the producer and no RINs were generated for that product. However, one commenter pointed out that this approach could lead to confusion regarding which gallons should have an assigned RIN and which should not, given the complex nature of tracking volumes of renewable fuel. As a result we have determined that this provision should be eliminated. Our final regulations require producers to assign RINs to all renewable fuel, regardless of whether it is exported. In this case the renewable producer would merely use these RINs to cover its obligation as an exporter.

As described in Section III.D.2, there are cases in which there is not a one-to-one correspondence between gallons in a batch of renewable fuel and the gallon-RINs generated for that batch. If the RVO assigned to the exporter were based strictly on the actual volume of the exported product, it would not necessarily capture all the gallon-RINs which were generated for that exported volume. Thus we are requiring that the RVO assigned to an exporter be based not on the actual volume of renewable fuel exported, but rather on a volume adjusted by the Equivalence Value assigned to each batch. The Equivalence Value is represented by the RR code within the RIN as described in Section III.D.2.a. Thus the exporter must multiply the actual volume of a batch by

that batch's Equivalence Value to obtain the volume used to calculate the RVO.

In cases wherein an exporter obtains a batch of renewable fuel whose RIN has already been separated by an obligated party or blender, the exporter may not know the Equivalence Value. We are requiring that for such cases the exporter use the equivalence value applicable to that type of renewable fuel (e.g., 1.5 for biodiesel). However, in the case of ethanol, the same product could have been produced as corn ethanol or cellulosic ethanol. Thus, in the case of ethanol, if the exporter does not know the equivalence value we are requiring that the exporter use the actual volume of the batch to calculate its RVO. This will introduce some small error into the calculation of the RVO for cases in which the ethanol had in fact been assigned an Equivalence Value of 2.5. However, we believe that the potential impact of this on the overall program will be exceedingly small.

5. How Will the Agency Verify Compliance?

The primary means through which the Agency will verify an obligated party's compliance with its RVO will be the annual compliance demonstration reports. These reports will include a variety of information required for compliance and enforcement, including the demonstration of compliance with the previous calendar year's RVO, a list of all transactions involving RINs, and the tabulation of the total number of RINs owned, used for compliance, transferred, retired and expired. Reporting requirements for obligated and non-obligated parties are covered in detail in Section IV.

In its annual reports, an obligated party will be required to include a list of all RINs held as of the reporting date, divided into a number of categories. For instance, a distinction must be made between current-year RINs and previous-year RINs as follows:

Current-year RINs: RINs that came into existence during the calendar year for which the report is demonstrating compliance.

Previous-year RINs: RINs that came into existence in the calendar year preceding the year for which the report is demonstrating compliance.

The report must also indicate which RINs have been used for compliance with the RVO including any potential deficit, which current-year RINs have not been used for compliance and are therefore valid for compliance the next year, and which previous-year RINs have not been used for compliance and therefore expire. The report must also include a demonstration that the obligated party had not exceeded the 20 percent cap to address RIN rollover, as described in Section III.D.3.c.

In order to verify compliance for each obligated party, the primary Agency activity will involve the validation of RINs. The Agency will perform the following four basic elements of RIN validation:

(1) RINs used by an obligated party to comply with its RVO will be checked to ensure that they are within their two-year valid life. The RIN itself will contain the year of generation, so this check involves only an examination of the listed RINs.

(2) All RINs owned by an obligated party will be cross-checked with reports from renewable fuel producers to verify that each RIN had in fact been generated.

(3) All RINs used by an obligated party for compliance purposes will be cross-checked with annual reports from other obligated parties to ensure that no two parties used the same RIN to comply.

(4) Previous-year RINs used for compliance purposes will be checked to ensure that they do not exceed 20 percent of the obligated party's RVO.

In cases where a RIN is highlighted under suspicion of being invalid, the Agency will then need to take additional steps to resolve the issue. In general this will involve a review of RIN transfer records submitted quarterly to the Agency by all parties in the distribution system that held the RINs. RIN transfers will be recorded through EPA's Central Data Exchange as described in Section IV. These RIN transfer records will permit the Agency to identify all transaction(s) involving the RINs in question. The Agency can then contact liable parties and take appropriate steps to formally invalidate a RIN improperly claimed by a particular party. Additional details of the liabilities and prohibitions attributed to parties in the distribution system are discussed in Section V.

E. How Are RINs Distributed and Traded?

Under our final program structure, a Renewable Identification Number (RIN) must (with certain exceptions) be generated for all renewable fuel produced or imported into the U.S., and RINs must be acquired by obligated parties for use in demonstrating compliance with the RFS requirements. However, as described in the NPRM, there are a variety of ways in which RINs could theoretically be transferred from the point of generation by renewable fuel producers to the obligated parties that need them.

EPA's final program was developed in light of the somewhat unique aspects of the RFS program. As discussed earlier, under this program the refiners and importers of gasoline are the parties obligated to comply with the renewable fuel requirements. At the same time, refiners and importers do not generally produce or blend renewable fuels at their facilities and so are dependent on the actions of others for the means of compliance. Unlike EPA's other fuel programs, the actions needed for compliance largely center on the production, distribution, and use of a product by parties other than refiners and importers. In this context, we believe that the RIN transfer mechanism should focus primarily on facilitating compliance by refiners and importers and doing so in a way that imposes minimum burden on other parties and minimum disruption of current mechanisms for distribution of renewable fuels.

Our final program does this by relying on the current market structure for ethanol distribution and use and avoiding the need for creation of new mechanisms for RIN distribution that are separate and apart from this current structure. Our program basically requires RINs to be transferred with renewable fuel until the point at which the renewable fuel is purchased by an obligated party or is blended into gasoline or diesel fuel by a blender. This approach allows the RIN to be incorporated into the current market structure for sale and distribution of renewable fuel, and avoids requiring refiners to develop and use wholly new market mechanisms. While the development of new market mechanisms to distribute RINs is not precluded under our program, it is also not required.

In the NPRM the Agency also evaluated several options for distributing RINs other than the option incorporated into today's rule. We are not finalizing these alternatives because they tend to require the development of new market mechanisms, as compared to relying on the current market structure for distribution of ethanol, and they are less focused on facilitating compliance for the obligated parties.

1. Distribution of RINs With Volumes of Renewable Fuel

We are requiring that RINs be transferred with volumes of renewable fuel as they move through the distribution system, until ownership of those volumes is assumed by an obligated party, exporter, or a party that converts the renewable fuel into motor vehicle fuel. At such time, RINs can be

separated from the volumes and freely traded. This approach places certain requirements on anyone who takes ownership of renewable fuels, including renewable fuel producers, importers, marketers, distributors, blenders, and terminal operators.

a. Responsibilities of Renewable Fuel Producers and Importers

The initial generation of RINs and their assignment to batches of renewable fuel will be the sole responsibility of renewable fuel producers and renewable fuel importers. As described in Section III.D.1, volumes of renewable fuel can be measured most accurately and be more readily verified at these originating locations.

The final rule defines a batch of renewable fuel as a volume that has been assigned a unique batch-RIN. This simple and flexible definition of a batch allows renewable fuel producers and importers to construct each batch-RIN based on the particular circumstances associated with the batch. In this context, a batch is not confined to the volume that can be held in a tank, but instead can include a significantly larger volume. However, we are placing two limits on the volumes of renewable fuel that are identified as a single batch. First, the RIN contains only enough digits to permit the assignment of 99,999,999 gallon-RINs to a single batch. For corn-ethanol with an Equivalence Value of 1.0, this means that a single batch can be comprised of up to 99,999,999 gallons of ethanol. In contrast, for biodiesel with an Equivalence Value of 1.5, a single batch can contain up to 66,666,666 gallons of biodiesel. Second, in order to provide more clarity in the event that an investigation of a party's volume and RIN generation records is conducted, we are also limiting a batch to the maximum volume that is produced or imported by the renewable fuel producer or importer within a calendar month. Within these two limits, producers and importers can define batches of renewable fuel according to their own discretion and practices, including using individual tankfulls to represent each batch. These parties must designate a unique serial number for each batch (RIN code BBBBB) and specify its Equivalence Value. The batch-RIN will identify all the gallon-RINs assigned to the batch. See Section III.D.2.a for details on the format for RINs.

In the NPRM, we proposed different approaches to the assignment of standard-value RINs and extra-value RINs. Under the proposal, extra-value RINs could be generated by the renewable fuel producer in cases where the renewable fuel in question had an Equivalence Value greater than 1.0. We proposed that all standard-value RINs must be assigned to volumes of renewable fuel, but that producers should have the option of whether to assign extra-value RINs to batches. We took this approach in part out of concern that the assignment of extra-value RINs to volumes would mean that the number of gallon-RINs assigned to a batch could be greater than the number of gallons in that batch. This was of particular concern for ethanol, since a tank could contain both corn-ethanol and cellulosic ethanol. When volume was withdrawn from the tank, it would have been unclear whether the volume should be assigned the extra-value RINs or not. In the process of designing the proposed program structure to accommodate such situations, however, the program became more complicated than it needed to be.

In response to the NPRM, some commenters requested that extra-value RINs be treated just like standard-value RINs. Specifically, some obligated parties, as well as gasoline marketers and distributors, argued that all RINs, be they standard-value or extra-value, should be required to travel with volumes of renewable fuel so that they will all be equally available to the obligated parties that need them for compliance. These commenters expressed concern that some producers may not release extra-value RINs, if given the choice, in an effort to drive up demand for renewable fuel.

After further consideration, we have determined that in most cases there is no need to treat extra-value RINs differently from standard-value RINs in terms of whether each should be assigned to batches of renewable fuel by the producer or importer. Therefore, for most renewable fuels we are finalizing a requirement that all RINs be assigned to batches of renewable fuel by the producer or importer. Since each renewable fuel with a different Equivalence Value is a distinct fuel, producers and importers will still receive the added value of extra-value RINs that are assigned to volumes of renewable fuel if those volumes are priced appropriately in comparison to other renewable fuels with different Equivalence Values. The only exception to this is cellulosic biomass and waste-derived ethanol. Producers of such ethanol may have difficulty marketing their product at prices different than that for corn ethanol given the fungible distribution system for ethanol. The added value of the extra-value RINs may not be reflected in the price and as a result the producer may not receive any economic benefit from them. Therefore, for the case of cellulosic biomass and waste-derived ethanol we are maintaining the ability of the producer, should they so choose, to retain the extra value and not assign these RINs to the renewable fuel that they represent. In such cases, the producer of the cellulosic biomass or waste-derived ethanol would be required to change the K code from 1 to 2 in order to designate these extra RINs as separated RINs.

This approach is also consistent with one of the primary motivations for the approach described in our NPRM, namely that each gallon-RIN be allowed to have a value of 1.0 to facilitate trading. Even though different renewable fuels will have different Equivalence Values and therefore different numbers of gallon-RINs per gallon, each gallon-RIN will still count as one gallon of renewable fuel for RFS compliance purposes.

However, the distinction between standard-value RINs and extra-value RINs is no longer necessary. The total number of gallon-RINs that can be generated for a given batch of renewable fuel will be determined directly by its Equivalence Value as described in Section III.D.2.b, and all such gallon-RINs will be summarized in a single batch-RIN assigned to a batch. In cases where the Equivalence Value is greater than 1.0, there will be more gallon-RINs assigned to a batch of renewable fuel than gallons in that batch. Once again, in the context of the changes we are making to the RIN distribution program structure as described in Section III.E.1.b below, we do not believe that this will in any way complicate the process of distributing RINs with renewable fuel. For the specific case of cellulosic biomass or waste-derived ethanol with an Equivalence Value of 2.5, producers will be required to assign only one gallon-RIN to each gallon of ethanol, each of which has a K code value of 1. The additional 1.5 gallon-RINs that can be generated for each gallon can remain unassigned, and thus be assigned a K code value of 2.

In addition to cases where the Equivalence Value is greater than 1.0, there are several other cases in which the gallon-RINs assigned to a batch will not exactly correspond to the number of gallons in that batch. First, if a renewable fuel has an Equivalence Value less than 1.0, then there will be fewer gallon-RINs than gallons in the batch. Such potential circumstances are described in Section III.D.2.c. RINs may also not correspond exactly to gallons if the density of the batch changes due to changes in temperature. For instance,

under extreme changes in temperature, the volume of a batch of ethanol can change by 5 percent or more. For this reason we are requiring that all batch volumes be corrected to represent a standard condition of 60 °F prior to the assignment of a RIN. For ethanol,[37] we are requiring that the correction be done as follows:[38]

$$V_{s,e} = V_{a,e} \times (-0.0006301 \times T + 1.0378)$$

Where:

$V_{s,e}$ = Standard volume of ethanol at 60 °F, in gallons.
$V_{a,e}$ = Actual volume of ethanol, in gallons.
T = Actual temperature of the batch, in °F.

Since batches of ethanol are generally sold using standard volumes rather than actual volumes, this approach to assigning RINs to batches is consistent with current practices and will maintain the one-to-one correspondence between the volume block in the batch-RIN and the standardized volume of the batch. We are requiring a similar approach for biodiesel, where the volume correction must be calculated using the following equation:[39]

$$V_{s,b} = V_{a,b} \times (-0.0008008 \times T + 1.0480)$$

Where:

$V_{s,b}$ = Standard volume of biodiesel at 60 °F, in gallons.
$V_{a,b}$ = Actual volume of biodiesel, in gallons.
T = Actual temperature of the batch, in °F.

Consistent with the NPRM, we are requiring that RIN generation begin at the same time that the renewable fuel standard becomes applicable to obligated parties. Thus RINs must be generated for all renewable fuel produced or imported on or after September 1, 2007. Since many producers and importers will have renewable fuel in inventory at the start of the program that was produced prior to September 1, 2007, we are also allowing them to generate RINs for any renewable fuel that they own on September 1, 2007. This provision ensures that every gallon that a producer or importer sells starting on September 1, 2007 can have an assigned RIN, and obligated parties that take ownership of renewable fuel directly from a producer or importer will have greater assurance of receiving RINs at the start of the program. Since RINs are not assigned to volumes until those volumes are transferred to another party, this approach also provides producers and importers of renewable fuel the flexibility to determine which of the volumes they own on September 1, 2007 constitute production as of the start of the program.

Although a RIN is generated when renewable fuel is produced or imported, we do not define the point of production. However, the RIN must be assigned to a batch no later than the point in time when ownership of the batch is transferred from the producer or importer to another party. If ownership of the batch is retained by the producer or importer after the batch leaves the originating facility, the RIN need not be transferred along with the batch on product transfer documents identifying transfer of custody.

The means through which RINs are transferred with volumes of renewable fuel will in some respects be left to the discretion of the renewable fuel producer or importer. The primary requirement would be that the RIN transfer be recorded on a product transfer document (PTD). The PTD can be included in any form of standard documentation that is already associated with or used to identify title to the volume or can be a separate document as described below. In many cases an invoice could serve this purpose. As in other fuels programs, we believe the PTD requirement can be met by including the required information generated and transferred in the normal course of business.

RINs are transferable in the context of the RFS program and initially must be transferred along with ownership of a volume of renewable fuel. The approach that a producer or importer takes to the transfer or sale of RINs and volumes would be at their discretion, under the condition that the RIN and volume be transferred or sold on the same day and to the same party. Based on comments received, we are also permitting the transfer of RINs to be done in a separate PTD from the PTD used to transfer ownership of the volume of renewable fuel. This will provide some additional flexibility to parties who take ownership of renewable fuel with assigned RINs, permitting IT systems managing RIN transfers to be more easily incorporated into existing business management systems. Thus a party may use two separate PTDs, one for the volume and another for the RINs. However, transfer of the RINs must occur on the same day that transfer of the volume occurred, and the two PTDs must contain sufficient information to uniquely cross–reference them. In many cases an electronic transfer will suffice if sufficient information about the transfer is recorded. In the case of such parallel PTDs, we are also requiring that the PTD transferring ownership of the volume must indicate whether RINs are being transferred and the number of gallon–RINs being transferred, though it need not list the actual RINs.

As described in Section III.E.1.b below, while assigned RINs must always be transferred to another party with a volume of renewable fuel, we are allowing any party that received assigned RINs with renewable fuel to thereafter transfer anywhere from zero to 2.5 gallon-RINs with each gallon of renewable fuel. This provision provides the flexibility to transfer more assigned RINs with some volumes and less assigned RINs with other volumes depending on the business circumstances of the transaction and the number of RINs that the seller has available. However, for producers and importers of renewable fuel, this level of flexibility could contribute to short-term hoarding that was the primary concern expressed by obligated parties during development of the proposed program. Therefore we are also finalizing a provision that requires producers and importers to transfer assigned gallon-RINs with gallons such that the ratio of assigned gallon-RINs to gallons is equal to the equivalence value for the renewable fuel. Since this is not possible for exempt small volume producers, or when a producer or importer obtains renewable fuel from another party without assigned RINs, exceptions are made in these cases.

We received comment that EPA should require a purchaser of imported gasoline who subsequently blends renewable fuel into the imported gasoline to transfer the RINs associated with the renewable fuel back to the importer of the gasoline. The commenter suggested that this requirement would ensure that the importer of the gasoline obtains all the RINs associated with the renewable fuel blended into that gasoline in cases where the importer has a long-term contractual agreement with the party that purchases the gasoline and adds the renewable fuel. However, we do not believe that such a provision is warranted. The RFS program places the renewable fuels obligation on parties based on ownership of the gasoline at the refiner or importer level. We believe this approach is the most effective way to implement and enforce the renewable fuels requirement. We also believe it is appropriate to allow parties who add the renewable fuel to gasoline, including blenders, to separate RINs from the renewable fuel volume and to have the right to sell those RINs to any party. Individual parties may agree that,

[37] An appropriate temperature correction for other renewable fuels must likewise be used.

[38] Derived from ''Fuel Ethanol Technical Information,'' Archer Daniels Midland Company, v1.2, 2003.

[39] Derived from R.E. Tate et al., ''The densities of three biodiesel fuels at temperatures up to 300 °C,'' Fuel 85 (2006) 1004–1009, Table 1 for soy methyl ester.

in certain situations, it would be appropriate for the RINs to be transferred from the renewable fuels blender to the importer of the gasoline. In such cases, the parties may make contractual arrangements for the transfers. We do not believe it would be appropriate or workable for EPA to require such transfers.

The NPRM did not specify whether RINs should be generated for and assigned to renewable fuel that is already contained in imported gasoline (for example, a blend of 10 percent ethanol and 90 percent gasoline). Since the renewable fuel contained in imported gasoline is part of the total volume of renewable fuel in gasoline sold or introduced into commerce in the U.S., we believe it is appropriate to treat it as any other imported renewable fuel. Thus, we believe it would be appropriate for importers to assign RINs to renewable fuel contained in imported gasoline. However, the volume of renewable fuel contained in imported gasoline is very small in comparison to the volume requirements of the RFS program. If an importer of gasoline containing renewable fuel imports less than 10,000 gallons per year of renewable fuel, then that party is not required to generate RINs. But a small volume importer that chooses to generate and assign RINs to any volume of renewable fuel in imported gasoline is required to fulfill all of the requirements that apply to renewable fuel importers under the RFS rule, in addition to all of the requirements that apply to gasoline importers as obligated parties. An importer that assigns RINs to the renewable fuel in imported gasoline may separate the RINs from the renewable fuel, since the renewable fuel has been blended into gasoline.

Regardless of a small volume importer's decision to generate and assign RINs to renewable fuel contained in imported gasoline, an importer that imports any gasoline containing renewable fuel must include the gasoline portion of the imported product in the volume used to determine the importer's renewable fuel obligation (and exclude the renewable fuel portion of the batch). RINs must be assigned to imported renewable fuels that are not contained in gasoline at the time of importation, unless less than 10,000 gallons of renewable fuel are imported per year.

b. Responsibilities of Parties That Buy, Sell, or Handle Renewable Fuels

Volumes of renewable fuel can be transferred between many different types of parties as they make their way from the production or import facilities where they originated to the places where they are blended into conventional gasoline or diesel. Some of these parties take custody but not ownership of these volumes, storing and transmitting them on behalf of those who retain ownership. Other parties take ownership but not custody, such as a refiner who purchases ethanol and has it delivered directly to a blending facility. Thus prior to blending, each volume of renewable fuel can be owned or held by any number of parties including marketers, distributors, terminal operators, and refiners.

In the NPRM, we proposed that in general all parties that assume ownership of any volume of renewable fuel would be required to transfer all RINs assigned to that volume to another party to whom ownership of the volume is being transferred. The only exceptions to the requirement that RINs be transferred with volumes would be for parties who are obligated to meet the renewable fuel standard and parties who convert the renewable fuel into motor vehicle fuel. Commenters overwhelmingly supported this approach to the distribution of RINs assigned to volumes of renewable fuel, and as a result we are adopting this approach in our final program. In this context, we are also clarifying that parties taking custody of a volume of renewable fuel but not ownership of that volume would have no responsibilities with regard to the transfer of RINs.

However, in response to the NPRM, several stakeholders apprised us of certain aspects of our proposed program that would limit the intended fungibility of RINs assigned to volumes of renewable fuel. While the goal of our proposed program was to permit RINs to be interchangeable with one another and to permit one assigned RIN to be exchanged with another RIN, our proposed regulations did not sufficiently capture this level of fungibility. Instead, the proposed regulations effectively required that a specific RIN assigned to a specific gallon of renewable fuel must remain assigned to that specific gallon as it travels through the distribution system. This approach was taken in order to accommodate the legitimate existence of some volumes of renewable fuel without assigned RINs, and some assigned RINs that have no corresponding volume. These situations can occur in the distribution system for several reasons, such as the following:

- RINs can be separated from renewable fuel by obligated parties or blenders, and the renewable fuel re-introduced into the distribution system.
- Small volume producers are exempt from generating and assigning RINs to their product.
- At the start of the program, some parties may have renewable fuel in their inventories that have not been assigned a RIN.
- Batches of renewable fuels with Equivalence Values less than 1.0 will have fewer gallon-RINs than gallons.
- Batch volumes can swell or shrink due to temperature changes.
- Batch volumes can shrink due to evaporation, spillage, leakage, or accidents.
- Volume metering imprecision.

Indeed, if the program could be designed such that every gallon in the distribution system always had an assigned RIN, the complete fungibility of RINs would be straightforward. However, this is not the case.

In order to make assigned RINs more fungible, we are finalizing a modified version of our proposed approach. Consistent with the NPRM, no party will be permitted to change a RIN assigned to a volume of renewable fuel into an unassigned (separated) RIN except for those parties explicitly given the right to do so (for example, obligated parties and oxygenate blenders). Also consistent with the NPRM, any party not authorized to separate an assigned RIN that takes ownership of a RIN assigned to a volume of renewable fuel cannot transfer ownership of that RIN to another party without simultaneously transferring an appropriate volume of renewable fuel.

However our final regulations allow any party to transfer a volume of renewable fuel without assigned RINs, or with a different number of assigned RINs than were received with the renewable fuel, as long as the number of assigned gallon-RINs held by that party at the end of a quarter is no higher than the number of gallons it owns at the end of the quarter. This will provide parties with the flexibility to decide which RINs are transferred with which volumes, and to transfer some volumes without RINs if the party took ownership of some volumes without assigned RINs. Our final regulations require only that the number of gallon-RINs held by a party at the end of a quarter be no higher than the number of gallons held by that party, adjusted by their Equivalence Value. Aside from spillage, evaporation, or volume metering imprecision, the only way that the number of gallon-RINs that are held by a party could be higher than the number of gallons held (adjusted for their Equivalence Value) is if that party transferred some volume without RINs. In such a case the excess RINs held

would be deemed to have been separated from renewable fuel, in violation of the prohibition against separating RINs.

While this approach creates more flexibility for parties that hold assigned RINs, it requires three additional changes to the proposed regulations. First, we are requiring parties that hold assigned RINs to also report the volumes of renewable fuel held at the end of each quarter. While the NPRM did not propose that volumes held be reported, we believe that the additional burden on parties holding assigned RINs will be minimal. The NPRM proposed that the recordkeeping requirements include information on all renewable fuel volumes transferred, so under the proposal parties holding assigned RINs would in general already have the information available. In addition, we are not requiring that all volumes held at any time during the quarter be reported, nor are we requiring that all volumes transferred be reported. Rather, parties will be required only to report the total volume of renewable fuel and the total number of gallon-RINs held on the last day of a quarter, in addition to other information regarding RINs held and transferred.

Second, our modified approach requires that we distinguish between RINs assigned to renewable fuel and RINs that have already been separated from renewable fuel, since only assigned RINs would be subject to the end-of-quarter comparison of RINs held and volumes held. We have chosen to use the K code in the RIN for this purpose, since it no longer serves the purpose of distinguishing between standard-value and extra-value RINs. The K code has also been moved to the beginning of the RIN to make its value more prominent. RINs assigned to renewable fuel must have a K code of 1. Parties who legally separate a RIN from renewable fuel must change the K code for that RIN to a value of 2. The RIN then formally becomes an unassigned RIN that can be transferred independent of renewable fuel volumes. The end-of-quarter comparisons between RINs held and volumes held apply only to RINs with a K value of 1.

Third, we are requiring quarterly reporting in addition to annual reports for RINs held and transferred. In the NPRM we took comment on requiring quarterly reporting for various reasons. We received both comments supporting and opposing quarterly reporting. As discussed further in Section IV, we are requiring quarterly reporting in this final rule. Under our modified program structure, quarterly reporting will be necessary to ensure that RINs are available for obligated parties' annual compliance. Quarterly reports will provide us with the ability to monitor the activities of marketers and distributors in real time to ensure that they are transferring RINs with renewable fuel, and to address potential violations as soon as they arise.

As discussed in Section III.E.1.a above, we are requiring that producers and importers of renewable fuel assign all RINs to volumes of renewable fuel, consistent with our proposed approach to standard-value RINs. As a result, downstream parties can legitimately hold more gallon-RINs than gallons if some of the renewable fuel has an Equivalence Value greater than 1.0. In the context of our modified approach to RIN distribution, this fact must be taken into account in the end-of-quarter comparison of gallon-RINs held and gallons held. Thus the following equation must be satisfied at the end of each quarter by each party that has taken ownership of any assigned RINs:

$$\Sigma(RIN)_D \leq \Sigma(V_{si} \times EV_i)_D$$

Where:

D = Last day of a quarter (Jan–Mar, Apr–Jun, Jul–Sep, Oct–Dec).

$\Sigma(RIN)_D$ = Sum of all assigned gallon-RINs with a K code of 1 that are owned on the last day of the quarter.

$(V_{si})_D$ = Volume i of renewable fuel owned on the last day of the quarter, standardized to 60 °F, in gallons.

EV_i = Equivalence Value representing volume i.

$\Sigma(V_{si} \times EV_i)_D$ = Sum of all volumes of renewable fuel owned on the last day of the quarter, multiplied by their respective equivalence values.

Under our fungible distribution system, the RINs received with a volume of renewable fuel may not be the RINs originally generated to represent that particular volume. Thus the Equivalence Value for a volume of renewable fuel cannot be based on the RR code of associated RINs, but instead should be determined from the composition of the renewable fuel. If the Equivalence Value for a volume of renewable fuel cannot be determined from its composition, it should be assumed to be 1.0. However, in the specific case of ethanol the owner may not know if a volume can be categorized as cellulosic biomass ethanol or waste-derived ethanol. Thus for volumes of ethanol held at the end of a quarter, the Equivalence Value should be assumed to be 2.5 to ensure that a party can legitimately hold more RINs than gallons.

The above equation ensures that the total number of gallon-RINs that can be held by a party at the end of a quarter is no greater than the number of gallon-RINs he could have received given the volume of renewable fuel that he owns. Parties that do not satisfy the above equation are deemed to be in violation of the prohibition against separating RINs from volumes.

Under our modified approach to RIN distribution, it might be possible for a party who owns volumes of renewable fuel with assigned RINs to hold onto all the RINs until near the end of a quarter while selling volume without RINs. Then, in order to comply with the above equation, the party could transfer all assigned RINs with a single volume of renewable fuel prior to the last day of the quarter. This approach would amount to short-term hoarding. To prevent it, we are also placing a cap on the maximum number of gallon-RINs that can be transferred with any gallon of renewable fuel. The cap is dictated by the maximum number of gallon-RINs that a party could receive with a volume of renewable fuel, which is 2.5 in the case of cellulosic biomass ethanol or waste-derived ethanol. For a party that took ownership of these types of renewable fuel, we must allow them to transfer up to 2.5 gallon-RINs with each gallon.

We are also aware that there are situations in which the volume transferred to another party might be smaller than the volume originally received. This could occur due to fuel evaporation, spillage, leakage, or volume metering imprecision, and would have the effect of raising the ratio of gallon-RINs held to gallons held. For spillage/leakage involving significant volumes, we have developed a mechanism for formally retiring the RINs associated with the lost volume. See Section IV. Smaller volume losses can be accommodated by a RIN transfer cap of 2.5, which would in general allow RINs associated with lost volume to be transferred with remaining volume. In the rare case that a party takes ownership of only cellulosic biomass ethanol or waste-derived ethanol and experiences some small volume loss, he can take ownership of a small volume of some other form of renewable fuel with an Equivalence Value less than 2.5. This will permit him to transfer RINs associated with lost volume to another party while still meeting the RIN transfer cap of 2.5.

Our program is designed to allow RIN transfer and documentation to occur as part of normal business practices in the context of renewable fuel distribution. Thus the incremental costs of transferring RINs with volumes is expected to be minimal. Marketers and distributors must simply add the RIN to product transfer documents such as

invoices, and record the RINs in their records of volume purchases and sales.

Finally, the final rule also provides that a foreign entity may apply to EPA for approval to own RINs. As an approved foreign RIN owner, the foreign entity will be able to obtain, sell, transfer and hold both assigned and separated RINs. An approved foreign RIN owner will be required to comply with all requirements that apply to domestic RIN owners under the RFS rule. In addition, similar to other fuels programs, an approved foreign RIN owner will be required to comply with additional requirements designed to ensure that enforcement of the RFS regulations at the foreign RIN owner's place of business will not be compromised.

c. Batch Splits and Batch Mergers

In the RIN distribution approach proposed in the NPRM, RINs assigned to a given volume of renewable fuel remained assigned to that volume as it moved through the distribution system. In that context, batch splits and batch mergers required special treatment. We discussed the need for protocols to ensure that RINs assigned to parent batches were appropriately distributed among daughter batches, and that RINs assigned to batches that were merged were all re-assigned to the new combined batch. The proposed regulations included some restrictions on how parent batch RINs were to be apportioned to daughter batches during splits, but fell short of prescribing a detailed batch split protocol. Nevertheless, commenters by and large did not address these protocols in their comments.

The need for protocols for batch splits and batch mergers was directly related to the NPRM's approach to the distribution of RINs with volumes of renewable fuel. As described in Section III.E.1.b above, we are modifying our approach to permit assigned RINs to be more fungible. As a result, there is no need for the regulations to specify any batch splitting or batch merging protocols.

Under our final regulations, parties taking ownership of volumes of renewable fuel with assigned RINs will simply retain an inventory of all assigned RINs owned. As volumes of renewable fuel are then transferred to other parties, an appropriate number of gallon-RINs are withdrawn from the party's inventory and transferred along with the renewable fuel. There is no need for the party to determine which RINs were originally assigned to the volume being transferred. For parties handling both ethanol and biodiesel, it would be reasonable to transfer RINs with volumes in a manner consistent with the Equivalence Value of the renewable fuel, but this would not be required under our final regulations in which the number of assigned gallon-RINs transferred with each gallon of renewable fuel can be anywhere between zero and 2.5. In addition, volumes of renewable fuel can be split or merged any number of times while remaining under the ownership of a single party, with no impact on RINs. It is only when ownership of a volume of renewable is transferred to another party that an appropriate number of gallon-RINs need to be withdrawn from the party's inventory and assigned to the transferred volume, subject to the flexibility associated with the quarterly average as discussed above.

2. Separation of RINs From Volumes of Renewable Fuel

Separation of a RIN from a volume of renewable fuel means that the RIN is no longer included on the PTD and can be traded independently from the volume to which it had originally been assigned. In general commenters supported our proposed approach of limiting the parties that can separate a RIN from a batch, and the associated conditions under which separation can occur.

In designing the regulatory program, we structured it around facilitating compliance by obligated parties with their renewable fuel obligation, with the intention of giving obligated parties the power to market the renewable fuel separately from the RIN originally assigned to it. Our final program therefore requires a refiner or importer to separate the RIN from renewable fuel as soon as he assumes ownership of that renewable fuel. In the case of ethanol blended into gasoline at low concentrations (≤ 10 volume percent), stakeholders have informed us that a large volume of the ethanol is purchased by refiners directly from ethanol producers, and is then passed to blenders who carry out the blending with gasoline. Therefore, in many cases RINs assigned to renewable fuel will pass directly from the producers who generated them to the obligated parties who need them.

However, significant volumes of ethanol are also blended into gasoline without first being purchased by a refiner. In some cases, the blender itself purchases the ethanol. In other cases, a downstream customer purchases the ethanol and contracts with the blender to carry out the blending. Regardless, the ethanol may never be held or owned by an obligated party before it is blended into gasoline. Thus we are also requiring a blender to separate the RIN from the renewable fuel if he takes ownership of the renewable fuel and actually blends it into gasoline (or, in the case of biodiesel, into diesel fuel). This would only apply to volumes where the RIN had not already been separated by an obligated party. Since blenders will in general not be obligated parties under our program, blenders who separate RINs from renewable fuel will have no need to hold onto those RINs and thus can transfer them to an obligated party for compliance purposes or to any other party.

There may be occasions in which a retailer downstream of a blender actually owns the volume of renewable fuel when it is blended into gasoline or diesel. In such cases the blender will have custody but not ownership of the renewable fuel. In today's final rule we are requiring the RIN to be separated from the volume of renewable fuel when that volume is blended into gasoline, but the RIN can only be separated by the party that owns that volume of renewable fuel at the time of blending. In the case of a blender and a downstream customer who might both lay claim to the right to separate any assigned RINs (for instance, if transfer of ownership occurred simultaneous with blending), these two parties would need to come to agreement between themselves regarding which party will own the separated RINs.

As described in Section III.B, many different types of renewable fuel can be used to meet the RFS volume obligations placed upon refineries and importers. Currently, ethanol is the most prominent renewable fuel and is most commonly used as a low level blend in gasoline at concentrations of 10 volume percent or less. However, some renewable fuels can be used in neat form (i.e. not blended with conventional gasoline or diesel). The two RIN separation situations described above would capture any renewable fuel for which ownership is assumed by an obligated party or a party that blends the renewable fuel into gasoline or diesel. However, renewable fuels which are used in their neat (unblended) form as motor vehicle fuel would not be captured. This would include such renewable fuels as neat biodiesel (B100) or renewable diesel, methanol for use in a dedicated methanol vehicle or biogas for use in a CNG vehicle.

Under our final program, producers and importers must assign a RIN to all renewable fuels produced or imported, including neat renewable fuels. To avoid the possibility that the RIN assigned to neat renewable fuel would never become available to an obligated

party for RFS compliance purposes, in the NPRM we proposed to more broadly define the right to separate a RIN from renewable fuel. In addition to obligated parties and blenders, we proposed that any producer holding a volume of renewable fuel for which the RIN has not been separated could separate the RIN from that volume if the party designates it for use only as a motor vehicle fuel in its neat form and it is in fact only used as such. This approach would recognize that the neat form of the renewable fuel is valid for compliance purposes under the RFS program, as described in Section III.B. In effect, it would place neat fuel producers in the same category as blenders, in that they are producing motor vehicle fuel. We did not receive any negative comments on this proposal, and thus are finalizing this provision as proposed.

As discussed above, under our final rule, obligated parties must separate RINs from volumes of renewable fuel. This applies to all volumes of renewable fuel that an obligated party owns. The requirement to separate a RIN from the renewable fuel is intended to apply to refiners, blenders and importers for whom the production or importation of gasoline is a significant part of their overall business operations. Parties that are predominately renewable fuel producers or importers, but which must be designated as obligated parties due to the production or importation of a small amount of gasoline, should not be able to separate RINs from all renewable fuels that they own. For example, we believe it would be inappropriate to permit an ethanol producer to separate RINs from all volumes that they own simply because the producer imported, for example, a single truckload of gasoline from Canada or Mexico. As a result, the final rule prohibits obligated parties from separating RINs from volumes of renewable fuel that they produce or import that are in excess of their RVO. However, obligated parties must separate any RINs from volumes of renewable fuel that they own if that volume was produced or imported by another party.

As described in Section III.B.2, RINs can be generated for renewable fuels made from renewable crude which is treated as if it were a petroleum-derived crude oil or derivative, and is used as a feedstock in a traditional refinery processing unit. Whether the renewable crude is coprocessed with petroleum derivatives or is processed in a facility or unit dedicated to the renewable crude, the final product is generally a motor vehicle fuel. In such cases the refinery will have the responsibility of generating RINs for the renewable fuel produced. But since renewable crude is generally processed in a traditional refinery, the refiner will be an obligated party and can therefore immediately separate those RINs from the renewable fuel and transfer them to another party. As described in III.E.1.a above, cellulosic and waste-derived ethanol producers will also be permitted to separate the RINs associated with the extra 1.5 value of their ethanol production.

Once a RIN is separated from a volume of renewable fuel, the PTD associated with that volume can no longer list the RIN. However, in the NPRM we requested comment on whether PTDs should include some notation indicating that the assigned RIN has been removed to avoid concerns about whether RINs assigned to batches have not been appropriately transferred with the batch. One refiner commented that the addition of such a note on a PTD would represent an unnecessary burden, while two commenters representing fuel distribution operations indicated that such a notation would be useful. Based on comments we received, we have determined that such notation on PTDs would not only be useful to parties receiving volumes of renewable fuel, but would also be an important element of our RIN distribution requirements under our modified approach. The requirement will ensure that parties who take ownership of renewable fuel without assigned RINs will know that RINs were originally assigned but subsequently removed. We also believe that such a requirement would be of minimal burden to parties that have separated a RIN from a volume of renewable fuel.

As described in Section III.E.1.b, we have modified the RIN transfer requirements for the final rule to make RINs more fungible and to provide more flexibility to distributors while still requiring RINs to be transferred with volumes of renewable fuel. However, our modified approach requires that we distinguish between RINs assigned to renewable fuel and RINs that have already been separated from renewable fuel. Our final rule thus requires that parties who separate a RIN from renewable fuel must change the K code for that RIN to a value of 2. The RIN then becomes an unassigned RIN that can be transferred independent of renewable fuel volumes.

In the NPRM we also provided a discussion of the unique circumstances regarding biodiesel (mono alkyl esters)[40] and the conditions under which we believed a RIN should be separated from a volume of such biodiesel. As described in the proposal, biodiesel is one type of renewable fuel that can under certain conditions be used in its neat form. However, in the vast majority of cases it is blended with conventional diesel fuel before use, typically in concentrations of 20 volume percent or less. This approach is taken for a variety of reasons, such as to reduce impacts on fuel economy, to mitigate cold temperature operability issues, to address concerns of some engine owners or manufacturers regarding the impacts of biodiesel on engine durability or drivability, or to reduce the cost of the resulting fuel. Biodiesel (mono alkyl esters) is also used in low concentrations as a lubricity additive and as a means for complying with the ultra-low sulfur requirements for highway diesel fuel. Biodiesel (mono alkyl esters) is occasionally used in its neat form. However, this approach is the exception rather than the rule. Consequently, in the NPRM we proposed that the RIN assigned to a volume of biodiesel could only be separated from that volume if and when the biodiesel was blended with conventional diesel. To avoid claims that very high concentrations of biodiesel count as a blended product, we also proposed that biodiesel must be blended into conventional diesel at a concentration of 80 volume percent or less before the RIN could be separated from the volume.

A number of commenters expressed concern that the 80 volume percent limit put biodiesel at odds with the RIN separation criteria applicable to other renewable fuels, including neat fuels. Upon further consideration, we have determined that the 80 volume percent limit remains a valid means for ensuring that the separation of RINs from biodiesel is consistent with its common use at low blend levels just as for ethanol, and that RINs are generally separated at the point in time when the biodiesel can be deemed to be motor vehicle fuel. However, based on comments received, we are changing the treatment of biodiesel for the final rule in two ways.

First, obligated parties are required to separate RINs from volumes of biodiesel at the point when they gain ownership of the biodiesel, not when they blend biodiesel with conventional diesel fuel. This approach is consistent with our treatment of the RIN separation

[40] Throughout this Section III.E.2, ''biodiesel'' means mono alkyl esters, not non-ester renewable diesel.

requirements for obligated parties for other renewable fuels. Parties that actually blend biodiesel into conventional diesel fuel at a concentration of 80 volume percent or less would continue to be required to separate the RIN from the biodiesel, as proposed.

Second, we have determined that a biodiesel producer should be allowed to separate a RIN from a volume of biodiesel that it produces if it designates the volume of biodiesel specifically for use as motor vehicle fuel in its neat form, and the neat biodiesel is in fact used as motor vehicle fuel. In general this demonstration would require that the producer track the volume of biodiesel to the point of its final use. However, this approach to the treatment of neat biodiesel is consistent with how we are treating other renewable fuels used in their neat form.

3. Distribution of Separated RINs

In the NPRM, we proposed that RINs become freely transferable once they are separated from a batch of renewable fuel. Each RIN could be held by any party and transferred between parties any number of times. We argued that the unique features of the RFS program warranted more open trading than in past fuel credit programs. In particular, RINs are generated by parties other than obligated parties, and many nonobligated parties will own RINs (for example, oxygenate blenders who have the right to separate RINs from volumes). While recognizing that limiting trading to and between obligated parties might help obligated parties to maintain control of those RINs being traded, such an approach could have the unintended effect of limiting the number of RINs that non-obligated parties contribute to the RIN market. The RFS program must work efficiently not only for a limited number of obligated parties, but a number of non-obligated parties as well.

There was disagreement among commenters about whether an open RIN market was appropriate. Several parties supported our proposed approach, saying that unlimited trading among all interested parties would increase liquidity and transparency in the RIN market. They also argued that increasing the number of participants would facilitate the acquisition of RINs by obligated parties and promote economic efficiency.

However, some commenters disagreed, arguing instead that an open market does not necessarily make the market any more fluid and free. They pointed to past credit programs in which only refiners and importers have been allowed to transfer credits, and argued that the success of those programs should compel the Agency to use those past credit program structures as the model for the RFS program.

We continue to believe that there is a need to provide for more open trading in the RFS program and that this need warrants a unique approach for this rule. First, unlike other programs where credits generally represent overcompliance with an applicable standard and are thus supplemental to the means of compliance, under the RFS program RINs are the fundamental unit for compliance. There will be many more RINs in the RFS program than credits in other programs, and the trading structure must maximize the fluidity of those RINs. A wider RIN market will make it easier for obligated parties to get access to RINs.

Second, obligated parties are typically not the ones producing the renewable fuels and generating the RINs, nor blending the renewable fuels into gasoline, so there is a need for trades to occur between obligated parties and non-obligated parties. If we prohibited everyone except obligated parties from holding RINs after they have been separated from a batch, non-obligated parties seeking avenues for releasing their RINs would only be able to release them to obligated parties. Having fewer avenues through which they could market their RINs, some non-obligated parties might opt not to transfer their RINs at all rather than participate in the RIN market with the attendant recordkeeping requirements. Furthermore, a potentially large number of oxygenate blenders, many of which will be small businesses, will be looking for ways to market their RINs. Allowing other parties, including brokers, to own and transfer RINs may create a more fluid and free market that would increase the venues for RINs to be acquired by the obligated parties that need them. Limiting RIN trading to and among obligated parties could make it more difficult for RINs to eventually be transferred to the obligated parties that need them.

Some commenters argued that limiting the RIN trading market to and among obligated parties would make the program more enforceable, since there would be fewer parties to track and the sources of RINs would be more reliable. While this may be directionally true, we believe the RFS program will remain sufficiently enforceable under an open RIN market, and as discussed above, the greater need for market fluidity for this program warrants the change. The RIN number, along with the associated electronic reporting mechanism, will provide us the ability to verify the validity of RINs and the source of any invalid RINs. Since all RINs generated, traded, and used for compliance would be recorded electronically in an Agency database, these types of investigations should be straightforward. The number of RIN trades, and the parties between whom the RINs are being traded, will only have the effect of increasing the size of the database.

Some commenters were concerned that an open RIN market could lead to price volatility and potentially higher prices as non-obligated speculators enter the market expressly to profit from the sale of RINs. According to commenters, these speculators would hold an unfair advantage over obligated parties that must purchase credits for compliance since speculators can hold onto RINs indefinitely, driving up their price. However, by expanding the number of parties that can hold RINs, we minimize the potential for any one party to exercise market power, and thus we do not believe that such activity on the part of speculators is likely to substantively affect the availability of RINs or their price. Moreover, we do not believe that a given party will hold a RIN indefinitely simply to increase profit because RINs have a limited life and new RINs will be generated and will enter the market continuously.

Based on our review of the comments received, we did not find compelling evidence that an open market for RINs would create particular difficulties for obligated parties seeking RINs or would limit the enforceability of the program. As a result we are finalizing a RIN trading program that permits any party to hold RINs and for RINs to be traded any number of times.

As with other credit-trading programs, the business details of RIN transactions, such as the conditions of a sale or any other transfer, RIN price, role of mediators, etc. will be at the discretion of the parties involved. The Agency is concerned only with information such as who holds a given RIN at any given moment, when transfers of RINs occur, who the party to the transfers are, and ultimately which obligated party relies on a given RIN for compliance purposes. This type of information will therefore be the subject of various recordkeeping and reporting requirements as described in Section IV, and these requirements will generally apply regardless of whether a RIN has been separated from a batch.

The means through which RIN trades occur will also be at the discretion of the parties involved. For instance, parties with RINs can create open auctions, contract directly with those

obligated parties who seek RINs, use brokers to identify potential transferees and negotiate terms, or just transfer the RINs to any other party. Brokers involved in RIN transfer can either operate in the role of arbitrator without owning the RINs, or alternatively can take custody of the RINs from one party and transfer them to another. If they are the transferee of any RINs, they will also be subject to the registration, recordkeeping, and reporting requirements. The Agency will not be directly involved in RIN transfers, other than in the role of providing a database within which transfers will be recorded for enforcement purposes.

In order to provide public information that could be helpful in managing and trading RINs as well as understanding how the program is operating, we intend to publish a report each year that summarizes information submitted to us through the quarterly and annual reports required as part of our enforcement efforts (see Section IV). Annual summary reports published by EPA may include such information as the number of RINs generated in each month or in each state, the average number of trades that RINs undergo before being used for compliance purposes, or the frequency of deficit carryovers. However, we will not publish information identifying specific parties.

4. Alternative Approaches to RIN Distribution

In the NPRM, we also described several alternative approaches to the proposed trading and compliance program that were offered by stakeholders. Most of these alternatives recognized the value of a RIN-based system of compliance, but they differed in terms of which parties would be allowed to separate a RIN from a batch and the means through which the RINs would be transferred to obligated parties. We invited comment on all of these alternatives in the NPRM, but received very few. Based on those comments we did receive, we do not believe that any of these alternative approaches should be implemented at this time. In general our responses to comments on the alternatives can be found in the Summary and Analysis of Comments document in the docket, but we have addressed one particular subject area below.

In the NPRM, we described an alternative approach to RIN distribution in which obligated parties would only be able to separate a RIN from a batch of renewable fuel at the point in time when blending actually occurs. In contrast, the approach we are finalizing today requires an obligated party to separate a RIN from a batch as soon as it gains ownership of that batch. Our final program design is based on the expectation that all but a negligible quantity of renewable fuels will eventually be consumed as motor vehicle fuel, primarily through blending with gasoline or diesel. See further discussion in Section III.D. As a result, we do not believe that it is necessary to verify that blending has actually occurred in order to provide a program that adequately ensures it occurs. The American Petroleum Institute agreed that tracking renewable fuels to the point of blending would represent an unnecessary burden and added that such a requirement could preclude many obligated parties from taking direct steps to obtain RINs to meet their obligations.

The Renewable Fuels Association, however, argued that allowing obligated parties to separate RINs from batches before blending occurred could give rise to RIN hoarding, fraud, and confusion. Most importantly, they noted, the alternative approach would provide direct verification of blending. For the reasons described in Section III.D, we do not believe that a compliance system requiring verification of blending is necessary, given that, with the exception of exports, essentially all renewable fuel produced in the U.S. is used as motor vehicle fuel in the U.S. This is a foundational principle of the use of a RIN-based program design that enjoyed widespread support among stakeholders and widespread recognition that it accurately describes real world practices.

If verification of blending were required before a RIN could be separated from a batch, both obligated parties and blenders would be subject to additional recordkeeping and paperwork burdens. The Agency would be compelled to enforce activities at the blender level, adding about 1200 parties to the list of those subject to enforcement under our final program. Although we agree that the reformulated gasoline program could act as a model from which to construct such a recordkeeping and enforcement system, we continue to believe that such a system would be both unnecessary and burdensome.

The Renewable Fuels Association also argued that our proposed program would result in confusion in the distribution system, since there would be renewable fuel both with and without RINs. However, there are many other reasons that this situation could arise, and none is expected to negatively impact the distribution of renewable fuels or the business agreements developed by parties transferring renewable fuels. For instance, we are exempting small volume producers from generating RINs, renewable fuels with equivalence values less than 1.0 may have fewer RINs than gallons, and volume swell and metering discrepancies can all contribute to situations in which batches legitimately do not have assigned RINs corresponding to their actual volumes. Parties that sell such batches could choose to price such product differently from product that has assigned RINs with a one-to-one correspondence to product volume. We are also requiring that PTDs associated with transfers of volume include notation indicating whether RINs are being simultaneously transferred to address these types of situations.

Another commenter argued that the alternative approach could limit the potential for one refiner to purchase large volumes of renewable fuel with the intent of separating the RINs and exercising market power in the RIN market. However, the commenter did not provide any information regarding how such market power could be exercised by one refiner in a system where unassigned RINs can be transferred freely between parties any number of times, and access to those RINs is not limited geographically in any way. In addition, RINs that have been separated from their assigned batches by oxygenate blenders represent an additional safety valve in the RIN market, providing additional assurances that no one refiner could exercise market power in the RIN market.

Commenters supporting a requirement that RINs be separated only at the point of blending offered no other arguments that hoarding or fraud could actually occur under our proposed approach. Therefore, we are finalizing an approach that requires obligated parties to separate RINs from batches at the point of ownership.

IV. Registration, Recordkeeping, and Reporting Requirements

A. Introduction

Registration, recordkeeping and reporting are necessary to track compliance with the renewable fuels standard and transactions involving RINs. This summarizes these requirements. Our estimates as to the burden associated with registration, recordkeeping and reporting are contained in this **Federal Register** notice in Section XII.B and explained fully in ''OMB–83 Supporting Statement—Renewable Fuels Standard

(RFS) Program (Final Rule)—EPA ICR No. 2242.02,'' which has been placed in the public docket for this rulemaking.

B. Registration

1. Who Must Register Under the RFS Program?

Obligated parties (including refiners and importers), exporters of renewable fuels, producers and importers of renewable fuels, and any party who owns RINs must register with EPA. Any party may own RINs including, but not limited to, the above-named parties and marketers, blenders, terminal operators, jobbers, and brokers. Owning RINs, and engaging in any activities regarding RINs, is prohibited as of September 1, 2007 unless the party has registered and received EPA company and facility identification numbers.

Most refiners and importers and many biodiesel producers are already registered with us under various regulations in 40 CFR part 80 related to reformulated (RFG) and conventional gasoline or diesel fuel. Parties who are already registered will not have to take any action to register under the RFS program, because their existing registration will be applied to the RFS program as well.

2. How Do I Register?

Registration is a simple process. We will use the same basic forms for RFS program registration that we use under the reformulated gasoline (RFG) and anti-dumping program. You may download our registration forms at *http://www.epa.gov/otaq/regs/fuels/rfgforms.htm.* These forms are well known in the regulated community and are very simple to fill out. Information requested includes company and facility names, addresses, and the identification of a contact person with telephone number and e-mail address. Registrations never expire and do not have to be renewed. However, all registered parties are responsible for notifying us of any change to their company or facility information.

3. How Do I Know I Am Properly Registered With EPA?

Upon receipt of a completed registration form, we will provide you with a unique 4-digit company identification number and a unique 5-digit facility identification number. These numbers will appear in compliance reports and, in the case of renewable fuel producers and importers, they will be incorporated in the unique RINs they generate for each batch of renewable fuel. Timely registration is important because you cannot generate or handle transactions involving RINs until you have registered and received your registration numbers from us. It is advisable to register as soon as possible if you believe you will be engaged in activities that may require registration under the RFS program. Registration can occur any time following signature of this final rule.

If you are already registered under another fuels program, such as RFG and anti-dumping or diesel sulfur, then you do not have to register again. You will use the same company and facility identification number you are currently using for RFS reporting. Parties in this situation may contact the Agency for confirmation or clarification of the appropriate registration numbers to use. As noted above, registrations never expire, but you are responsible for keeping the information we have up to date. If you have previously registered with us but have not had to report until now, then you may wish to contact the person listed on our renewable fuels Web page (*http://www.epa.gov/otaq/renewablefuels/index.htm*) in order to confirm the information in your registration file.

4. How Are Small Volume Domestic Producers of Renewable Fuels Treated for Registration Purposes?

Small volume domestic producers of renewable fuels are those who produce less than 10,000 gallons per year or who import less than 10,000 gallons per year. These parties are not required to register if they do not wish to generate RINs. If a small volume domestic producer of renewable fuels wishes to generate RINs, then that party must register and comply with all recordkeeping and reporting requirements.

C. Reporting

1. Who Must Report Under the RFS Program?

Obligated parties, exporters of renewable fuel, producers and importers of renewable fuel, and any party who owns either assigned or unassigned RINs such as marketers or brokers must submit periodic reports to us covering RIN generation, RIN use, and RIN transactions.

2. What Reports Are Required Under the RFS Program?

There are four basic reports under the RFS program. The first report is an annual compliance demonstration report that is required to be submitted by obligated parties and exporters of renewable fuel. This report provides the RFS compliance demonstration and is required to be submitted on an annual basis. It is focused on calculating the RVO, indicating RINs used for compliance, and determining any deficit carried over.

The second report is a quarterly RIN generation report that is required to be submitted by producers and importers of renewable fuel. This report is focused on providing information on all batches of renewable fuel produced and imported and all RINs generated.

The third report is a RIN transaction report that is required to be submitted by any party that owns RINs, including RIN marketers and brokers, as well as obligated parties, exporters, and renewable fuel producers and importers. This report is focused on providing information on individual RIN purchases, RIN sales, retired RINs, and expired RINs.[41] A separate RIN transaction report is required to be submitted for each RIN purchase and sale, and for each retired or expired RIN, and must be submitted by the end of the quarter in which the activity occurred. The purpose of the RIN transaction report is to document the ownership and transfer of RINs, and to track expired and retired RINs. This report is necessary because compliance with the RVO is primarily demonstrated through self-reporting of RIN trades and therefore we must be able to link transactions involving each unique RIN in order to verify compliance. We will be able to import reports into our compliance database and match RINs to transactions across their entire journey from generation to use. As with our other 40 CFR part 80 compliance-on-average and credit trading programs, many potential violations are expected to be self-reported.

The fourth report is a quarterly gallon-RIN activity report that also is required to be submitted by *any* party that owns RINs. This report is focused on the total number of gallon-RINs owned at the start and end of the quarter, and the total number of gallon-RINs purchased, sold, retired and expired during the quarter. This report also requires

[41] In this final rule, we have clearly distinguished expired RINs, which are no longer valid due to the passage of time, from retired RINs, which are RINs no longer valid due to the reportable spillage of their assigned volumes under § 80.1132, RINs used to satisfy an enforcement action, or RINs used to effect an import volume correction under § 80.1166(k). Rather than leaving retired RINs under ''any additional information that the Administrator may require,'' we have specifically addressed them in this final rule. We believe it is useful to specifically distinguish between retired and expired RINs because it will be easier for us to determine whether a report is complete and to quality assure and check reported information by applying a consistent reporting distinction between expired and retired RINs.

information on end-of-quarter renewable fuel volumes.

3. What Are the Specific Reporting Items for the Various Types of Parties Required To Report?

The following table summarizes the information to be submitted in each type of report by the type of regulated party:

TABLE IV.C.3–1.—INFORMATION CONTAINED IN REPORTS BY REGULATED PARTY *

Type of report	Obligated parties	Exporters of renewable fuel	Producers and importers of renewable fuel	Other parties who own RINS
Annual Compliance Demonstration Report.	• Calculation of RVO ..... • List of RINs used for compliance. • Calculation of deficit carryover.	• Calculation of RVO ..... • List of RINS used for compliance. • Calculation of deficit carryover.	No report	No report.
Quarterly RIN Generation Report.	No report	No report	• Volume of each batch produced or imported. • RINs generated for each batch. • Volume of denaturant and applicable equivalence value of each batch.	No report.
RIN Transaction Report	Separate report for each transaction:. • RIN purchase ..... • RIN sale ..... • Expired RIN ..... • Retired RIN	Separate report for each transaction:. • RIN purchase ..... • RIN sale ..... • Expired RIN ..... • Retired RIN	Separate report for each transaction:. • RIN purchase ..... • RIN sale ..... • Expired RIN ..... • Retired RIN	Separate report for each transaction: • RIN purchase. • RIN sale. • Expired RIN. • Retired RIN.
Quarterly gallon-RIN Activity Report.	• Number of gallon-RINs* owned at start of quarter. • Number of gallon-RINs purchased. • Number of gallon-RINs sold. • Number of gallon-RINs retired. • Number of gallon-RINs expired (4th quarter only). • Number of gallon-RINs at end of quarter. • Volume (gals) of renewable fuel owned at end of quarter.	• Number of gallon-RINs owned at start of quarter. • Number of gallon-RINs purchased. • Number of gallon-RINs sold. • Number of gallon-RINs retired. • Number of gallon-RINS expired (4th quarter only). • Number of gallon-RINs at end of quarter. • Volume (gals) of renewable fuel owned at end of quarter.	• Number of gallon-RINs owned at start of quarter. • Number of gallon-RINs purchased. • Number of gallon-RINs sold. • Number of gallon-RINs retired. • Number of gallon-RINs expired (4th quarter only). • Number of gallon-RINs at end of quarter. • Volume (gals) of renewable fuel owned at end of quarter.	• Number of gallon-RINs owned at start of quarter. • Number of gallon-RINs purchased. • Number of gallon-RINs sold. • Number of gallon-RINs retired. • Number of gallon-RINs expired (4th quarter only). • Number of gallon-RINs at end of quarter. • Volume (gals) of renewable fuel owned at end of quarter.

* A gallon-RIN is a RIN that represents an individual gallon of renewable fuel. See § 80.1101.

4. What Are the Reporting Deadlines?

In the proposed rule, we had requested comment on whether reporting should be annual or quarterly. After consideration of comments received, we have determined that each RIN transaction report must be submitted by the end of the quarter in which the transaction occurred, and the gallon-RIN activity report should be submitted quarterly. Quarterly reporting is better because it provides us with the information necessary to confirm the validity and legitimacy of RINs prior to their use in compliance. Additionally, quarterly reporting enables EPA to enforce the RIN/inventory balance requirements for producers and marketers of renewable fuels.

The annual compliance demonstration for obligated parties must be submitted by February 28th for the prior calendar year. For the RIN transaction and quarterly gallon-RIN activity reports, the following schedule applies to all reporting parties:

TABLE IV.C.4–1.—QUARTERLY REPORTING SCHEDULE FOR RFS PROGRAM

Quarter covered by quarterly report	Due date for quarterly report
January–March	May 31.
April–June	August 31.
July–September	November 30.
October–December	February 28.

In the first year of the RFS program only, obligated parties and exporters are given an extra quarter to submit their list of RINs used to demonstrate compliance. This information must be reported by May 31, 2008 for calendar year 2007. All other reporting follows the schedule indicated above.

5. How May I Submit Reports to EPA?

We will use a simplified and secure method of reporting via the Agency's Central Data Exchange (CDX). CDX permits us to accept reports that are electronically signed and certified by the submitter in a secure and robustly encrypted fashion. Using CDX will eliminate the need for wet ink signatures and will reduce the reporting burden on regulated parties. Guidance for reporting will be issued before implementation and will contain specific instructions and formats consistent with provisions in this final rule. The guidance will be posted on our renewable fuels Web page: *http://*

www.epa.gov/otaq/renewablefuels/index.htm.

We will accept electronic reports generated in virtually all commercially available spreadsheet programs and will even permit parties to submit reports in comma delimited text, which can be generated with a variety of basic software packages.

CDX will confirm delivery of your report. As described below with regard to recordkeeping, you must retain copies of all items submitted to us for five (5) years.

6. What Does EPA Do With the Reports it Receives?

In order to permit maximum flexibility in meeting the RFS program requirements, we must track activities involving the creation and use of RINs, as well as any transactions such as purchase or sale of RINs. Reports will be imported into a compliance database managed by EPA's Office of Transportation and Air Quality and will be reviewed for completeness and for potential violations. It is important to keep your company contact updated (this is an item on the registration form), because we may need to speak to that person about any problems with a report submitted. Potential violations will be referred to EPA enforcement personnel.

7. May I Claim Information in Reports as CBI and How Will EPA Protect it?

You may claim information submitted to us as confidential business information (CBI). Please be sure to follow all reporting guidance and clearly mark the information you claim as proprietary. We will treat information covered by such a claim in accordance with the regulations at 40 CFR part 2 and other Agency procedures for handling proprietary information.

8. How Are Spilled Volumes With Associated Lost RINs To Be Handled in Reports?

Since spills can happen whenever renewable fuel with assigned RINs is held, owners have two options if the spill causes their organization to be out of compliance. The owners of the spilled fuel may either retire RINs lost in reported spills or purchase and sell a volume of renewable fuel equal to the reported volume and not associated with RINs in order to meet compliance. Reportable spills for the purposes of this rule refers to spills of renewable fuel with assigned RINs and a requirement by a federal, state, or local authority to report said spills. The party that owns the spilled renewable fuel must retire a number of gallon-RINs corresponding to the volume of spilled renewable fuel multiplied by its equivalence value. If the equivalence value for the spilled volume may be determined based on its composition, then the appropriate equivalence value shall be used. If the equivalence value for the spilled volume cannot be determined, the equivalence value is 1.0. In the case that the fuel must be reported in pounds rather than gallons, the party that reported the spill should use the best available conversion for converting the volume into gallons. In the event that volume is spilled in transport, the owner of the RINs will need to request a copy of the spill report from the party that reported the spill.

D. Recordkeeping

1. What Types of Records Must Be Kept?

The recordkeeping requirements for obligated parties and exporters of renewable fuels support the enforcement of the use of RINs for compliance purposes. Records kept by parties are central to tracking individual RINs through the fungible distribution system after those RINs are assigned to batches of renewable fuel. Parties use invoices or other types of product transfer documentation, which are customarily generated and issued in the course of business and which are familiar to parties who transfer or receive fuel. Parties are afforded significant freedom with regard to the form these documents take, although they must travel in some manner (on paper or electronically) with the volume of renewable fuel being transferred. On each occasion any person transfers ownership of renewable fuels subject to this regulation, that transferor must provide the transferee with documents identifying the renewable fuel and containing the identifying information that includes: The name and address of the transferor and transferee, the EPA-issued company identification number of the transferor and transferee, the volume of renewable fuel that is being transferred, the date of transfer, and each associated RIN. These types of documents must be used by all parties in the distribution chain down to the point where the renewable fuel is blended into conventional gasoline or diesel.

Except for transfers to truck carriers, retailers or wholesale purchaser-consumers, product codes may be used to convey the information required, as long as the codes are clearly understood by each transferee. However, the RIN must always appear in its entirety before it is separated from a batch, since it is a unique identification number that cannot be summarized by a shorter code.

Parties must keep copies of all records for a period of not less than five (5) years. In addition to documentation related to transfers, parties must keep information related to the sale, purchase, brokering and trading of RINs and copies of any reports they submit to us for compliance reports. For example, if a volume of fuel and its associated RINs are reported to us as lost due to spillage, documentation related to that spill must be retained for the five year period. Upon request, parties are responsible for providing records to the Administrator or the Administrator's authorized representative.

2. What Recordkeeping Requirements Are Specific to Producers of Cellulosic or Waste-Derived Ethanol?

In addition to the records applicable to all ethanol producers, producers of cellulosic biomass or waste-derived ethanol must keep records of fuel use in order to ensure compliance with, and enforcement of, the definitions of these types of renewable fuel. Producers of cellulosic biomass or waste-derived ethanol must keep records of volume and types of all feedstocks purchased to ensure compliance with, and enforcement of, the feedstock aspect of the definitions of cellulosic biomass and waste-derived ethanol. In addition, producers of cellulosic biomass or waste-derived ethanol are required to arrange for an independent third party to review the ethanol producer's records and verify that the facility is, in fact, a cellulosic biomass or waste-derived ethanol production facility and that the ethanol producer is producing cellulosic biomass or waste-derived ethanol. The independent third party must be a licensed Professional Engineer (P.E.) in the chemical engineering field. Domestic ethanol producers are not required obtain prior approval of the independent third party P.E. or submit the engineering verification to EPA, however, the ethanol producer and the P.E. are required to keep records related to the required engineering verification and to produce them upon request of the Administrator or the Administrator's authorized representative.

A foreign ethanol producer may apply to us to have its cellulosic biomass or waste-derived ethanol treated in the same manner as domestic cellulosic biomass or waste-derived ethanol under the RFS program. A foreign ethanol producer with an approved application will be required to comply with all of the requirements that apply to domestic ethanol producers, including registration, recordkeeping, reporting,