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Regulation of Fuels and Fuel Additives: 2013 Biomass-Based Diesel Renewable Fuel Volume; Final Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 80

[EPA–HQ–OAR–2010–0133; FRL–9678–7]

RIN 2060–AR55

Regulation of Fuels and Fuel Additives: 2013 Biomass-Based Diesel Renewable Fuel Volume

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: Under the Clean Air Act Section 211(o), the Environmental Protection Agency is required to determine the applicable volume of biomass-based diesel to be used in setting annual percentage standards under the renewable fuel standard program for years after 2012. We proposed an applicable volume requirement for 2013 of 1.28 billion gallons on July 1, 2011. In order to sufficiently evaluate the many comments on the proposal from stakeholders as well as to gather additional information to enhance our analysis, we did not finalize this volume requirement in the January 9, 2012, rulemaking setting the 2012 percentage standards. In this action we are finalizing an applicable volume of 1.28 billion gallons of biomass-based diesel for calendar year 2013.

DATES: This final rule is effective on November 26, 2012.

ADDRESSES: EPA has established a docket for this action under Docket ID No. EPA–HQ–OAR–2010–0133. All documents in the docket are listed in the www.regulations.gov index. Although listed in the index, some information is not publicly available, e.g., CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, will be publicly available only in hard copy. Publicly available docket materials are available either electronically in *www.regulations.gov* or in hard copy at the Air and Radiation Docket and Information Center, EPA/DC, EPA West, Room 3334, 1301 Constitution Ave. NW., Washington, DC. The Public Reading Room 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 Air Docket is (202) 566–1742.

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SUPPLEMENTARY INFORMATION:

I. General Information

A. Does this action apply to me?

Entities potentially affected by this rule are those involved with the production, distribution, and sale of transportation fuels, including gasoline and diesel fuel or renewable fuels such as ethanol and biodiesel. Potentially regulated categories 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 rather provides a guide for readers regarding entities likely to be regulated by this final action. This table lists the types of entities that EPA is now aware could potentially be regulated by this final action. Other types of entities not listed in the table could also be regulated. To determine whether your activities will be regulated by this final action, you should carefully examine the applicability criteria in 40 CFR part 80. If you have any questions regarding the applicability of this final action to a particular entity, consult the person listed in the preceding section.

Outline of This Preamble

I. Executive Summary

The Renewable Fuel Standard (RFS) program began in 2006 pursuant to the requirements in Clean Air Act (CAA) section 211(o) which were added through the Energy Policy Act of 2005 (EPAct). The statutory requirements for the RFS program were subsequently modified through the Energy Independence and Security Act of 2007 (EISA), resulting in the promulgation of revised regulatory requirements on March 26, 2010.[1] The transition from the RFS1 requirements of EPAct to the RFS2 requirements of EISA generally occurred on July 1, 2010.

A. Purpose of This Action

While CAA section 211(o)(2)(B) specifies the volumes of biomass-based diesel to be used in the RFS program through year 2012, it directs the EPA to establish the applicable volume of biomass-based diesel for years after 2012 no later than 14 months before the first year for which the applicable volume will apply. On July 1, 2011, we proposed that the applicable volume of biomass-based diesel for 2013 would be 1.28 billion gal.[2]

In a final rulemaking published on January 9, 2012, we specified the 2012 standards for cellulosic biofuel, biomass-based diesel, advanced biofuel, and total renewable fuel. Although we had intended to also finalize the applicable volume of biomass-based diesel for 2013 in that rulemaking, we did not do so. In that final rule we explained that we were continuing to evaluate the many comments on the NPRM from stakeholders as well as fulfilling other analytical requirements. We indicated that we intended to gather additional information to enhance our analysis including consideration of costs and benefits. In today's notice we are finalizing the applicable volume of biomass-based diesel for 2013. We believe that the volume we are finalizing today is feasible and consistent with the overall analytic approach to the RFS2 program and also consistent with the overall intent of the Act to expand the use of renewable fuels through the year 2022.

While we did not finalize the 2013 applicable volume of biomass-based diesel within 14 months before the first year for which the applicable volume will apply as required by the statute, we do not believe that this will create a difficulty in the ability of obligated parties to meet the applicable volume that we are finalizing today. We are finalizing the 2013 applicable volume about three months before it will apply. As described in Section III.B, producers of biodiesel, the largest contributor to biomass-based diesel, have significantly greater production capacity than will be required by today's final rule, and in general it only requires a few months to bring an idled biodiesel facility back into production. Moreover, many facilities that are producing volume currently are underutilizing their capacity, and can ramp up production relatively quickly. Finally, the biodiesel industry is already producing at a rate consistent with an annual volume of about 1.3 billion gallons.

B. Summary of Today's Action

In today's action we are finalizing an applicable volume of 1.28 billion gallons for biomass-based diesel for 2013. This is the volume that was projected for 2013 in the March 26, 2010, RFS2 final rulemaking, and we are requiring it in 2013 based on consideration of the factors specified in the statute.

Today's final rule does not specify the percentage standard for biomass-based diesel in 2013, but only the applicable volume. The percentage standards for cellulosic biofuel, biomass-based diesel, advanced biofuel, and total renewable fuel that will be applicable in 2013 are being proposed in a separate Notice of Proposed Rulemaking.

C. Impacts of This Action

The RFS program established by Congress is a long-term program aimed at replacing fossil fuels used in the transportation sector with low-GHG renewable fuels over time. In the March 26, 2010 RFS2 final rule, EPA assessed the costs and benefits of this program as a whole when the program would be fully mature in 2022. While this is an appropriate approach to examining the costs and benefits of a long-term program like the RFS2, for this final rulemaking we have estimated costs and benefits in 2013 where such estimates can reasonably be made.

Quantified estimates of benefits include $41 million in energy security benefits and $19–52 million in air quality disbenefits. Other benefits include GHG emissions reduction benefits and both direct and indirect employment benefits in rural areas due to increased biodiesel production. Impacts on water quality, water use, wetlands, ecosystems and wildlife habitats are expected to be directionally negative but modest due to both the small impact on crop acres planted necessary to supply sufficient soy oil feedstock and due to the relatively small impact on these measures of soybean production compared to other potential crops.

Biodiesel is produced from a variety of feedstocks, including recycled cooking oil, agricultural oils such as soybean and canola oil, and animal fats. Most biodiesel producers can switch from one feedstock to another depending on price and availability. However, for the purpose of analyzing the impacts of this action, we have assumed that all of the 280 million gallon increment above the 2012 standard is met through increased demand for soy oil. Using this assumption, we estimate that soybean prices could increase up to 3 cents per pound in 2013 if all of the 280 million gallon increment above the 2012 standard is met through increased demand for soy oil. Using these assumptions, we estimate the cost of producing this increment in biomass-based diesel would range from $253 to $381 million in 2013.[3] Adding the estimate of 2013 costs to the total 2013 fuel pool would suggest a diesel fuel cost increase of less than 1 cent per gallon.

II. Statutory Requirements

Section 211(o)(2)(B)(i) of the Clean Air Act specifies the applicable volumes of renewable fuel on which the annual percentage standards must be based, unless the applicable volumes are waived or adjusted by EPA in accordance with specific authority and directives specified in the statute.[4] Applicable volumes are provided in the statute for years through 2022 for cellulosic biofuel, advanced biofuel, and total renewable fuel. For biomass-based diesel, applicable volumes are provided

[1] 75 FR 14670.

[2] 76 FR 38844.

[3] Cost estimates do not account for projections in recent trends in crop yields and grain prices resulting from drought conditions that are occurring in many areas of the country.

[4] For example, EPA may waive a given standard in whole or in part following the provisions at section 211(o)(7).

through 2012. For years after those specified in the statute (i.e., 2013+ for biomass-based diesel and 2023+ for all others), EPA is required under section 211(o)(2)(B)(ii) to determine the applicable volume, in coordination with the Secretary of Energy and the Secretary of Agriculture, based on a review of the implementation of the program during calendar years for which the statute specifies the applicable volumes and an analysis of the following:

- The impact of the production and use of renewable fuels on the environment, including on air quality, climate change, conversion of wetlands, ecosystems, wildlife habitat, water quality, and water supply;
- The impact of renewable fuels on the energy security of the United States;
- The expected annual rate of future commercial production of renewable fuels, including advanced biofuels in each category (cellulosic biofuel and biomass-based diesel);
- The impact of renewable fuels on the infrastructure of the United States, including deliverability of materials, goods, and products other than renewable fuel, and the sufficiency of infrastructure to deliver and use renewable fuel;
- The impact of the use of renewable fuels on the cost to consumers of transportation fuel and on the cost to transport goods; and
- The impact of the use of renewable fuels on other factors, including job creation, the price and supply of agricultural commodities, rural economic development, and food prices.

While EPA is given the authority to determine the appropriate volume of renewable fuel for those years that are not specified in the statute based on a review of program implementation and analysis of the factors listed above, the statute also specifies that the applicable volume of biomass-based diesel cannot be less than the applicable volume for calendar year 2012, which is 1.0 billion gallons (see CAA 211(o)(2)(B)(v)).

It is useful to note that the statutory provisions described above are silent in two important areas. For instance, the statute does not provide numerical criteria or thresholds that must be attained when EPA determines the applicable volume of biomass-based diesel for years after 2012 (other than specifying a minimum volume of 1.0 billion gal), nor does it describe any overarching goals for EPA to achieve in setting the applicable volumes for biofuels in years after those specifically set forth in the statute. Instead, the statute provides a list of factors we must consider. Due to this ambiguity in the statute, commenters differed in their perspectives on the intent of Congress in allowing EPA to determine the appropriate applicable volume for biomass-based diesel for years after 2012.

Some expressed the belief that Congress intended the required volumes of biomass-based diesel to increase every year, with EPA's role being that of determining an achievable size of that increase. Others expressed their belief that Congress intended for the statutory minimum volume of 1.0 billion gallons to be used to set the applicable volume for all years after 2012, with higher volumes being required only if EPA could demonstrate that those higher volumes were already being produced. Given that all biomass-based diesel counts towards the advanced biofuel requirement, and that the statute requires annual increases in advanced biofuel through 2022, we believe that it is appropriate that biomass-based diesel play an increasing role in supplying advanced biofuels to the market between 2012 and 2022. However, the determination of whether to increase the volume requirement for biomass-based diesel in any given year is subject to a consideration of a number of factors in the statute as described above.

We also note that the statute does not provide authority to raise the applicable volumes of advanced biofuel or total renewable fuel above those specified in the statute for years up to and including 2022. Thus, any increase in the biomass-based diesel volume requirement above that specified for 2012 would not have any impact on the advanced biofuel or total renewable fuel volume requirements. While increasing the biomass-based diesel volume requirement above the 1.0 billion gallons minimum value specified in the statute could result in a change in the makeup of biofuels used to meet the advanced biofuel and the total renewable fuel standards, doing so would not change the total required volumes of those fuels (in terms of ethanol-equivalent gallons).

We received one comment in response to the NPRM requesting that we prohibit increases in biomass-based diesel above 1.0 billion gallons in years after 2012. We disagree. As described in this preamble, we believe it is appropriate to require 1.28 billion gal of biomass-based diesel in 2013, and that we should consider further increases in the future by evaluating the factors specified in the statute.

The statute also specifies the timeframe within which these volumes must be promulgated: the rules establishing the applicable volumes must be finalized no later than 14 months before the first year for which such applicable volume will apply. For the biomass-based diesel volume requirement applicable in 2013, the deadline for promulgation was November 1, 2011. As described in the January 9, 2012, final rule that set the applicable percentage standards for 2012, we delayed issuing this final rule to allow additional time to evaluate the many comments on the NPRM from stakeholders as well as to fulfill other analytical requirements. To this end, we did in fact gather additional information to enhance our analysis of the factors required in the statute, and we considered costs and benefits. Our assessment is provided in Sections III and IV. We do not believe that the delay in issuing this final rule will materially affect the regulated community, however, since we are setting the final volume requirement several months prior to the date when it will be applicable.

The statute requires that in evaluating and establishing renewable fuel volumes in years beyond those for which volumes are specified in the statute, that EPA must coordinate with the Departments of Agriculture and Energy. EPA has coordinated with these agencies in developing this final rule through a series of telephone exchanges and meetings. Consistent with the statute, EPA will coordinate with these agencies in future rules in setting fuel volumes.

III. Factors Affecting Supply and Consumption

As described in Section II, we are required to review the implementation of the RFS program for years prior to 2013 and to use information from this review in determining the applicable volume of biomass-based diesel for 2013. In the NPRM we indicated our belief that this review is of limited value due to the short history of the RFS program. Not only did the RFS1 program have no volume requirement specific to biomass-based diesel, but even in 2010 under the RFS2 program several unique factors hindered biodiesel production volumes from increasing substantially above historical levels. For instance, RFS1 RINs from both 2008 and 2009 could be carried over to 2010 and used to meet a combined 2009/2010 volume requirement for biomass-based diesel.

Since release of the NPRM, however, some information has become available on the implementation of the RFS program in 2011. The available data provide some indication as to how the biomass-based diesel standard for 2011 is affecting the market for biodiesel. Based on information provided through the EPA-Moderated Transaction System (EMTS), reported biodiesel production increased significantly to about 1.07 billion gal in 2011. This is a significant increase over the 2010 production volume of about 400 mill gal and exceeds the applicable volume requirement of 800 mill gal for 2011. 2011 biomass-based diesel RINs were available to meet the higher advanced biofuel volume requirement. Based on these results, we believe that the RFS program is driving production of biomass-based diesel, and that higher applicable volume requirements in future years would likewise drive increases in production volumes.

In the NPRM we indicated that, based on the limited information available on the current and historical operation of the RFS program, it would be prudent for 2013 to consider only moderate increases in biomass-based diesel above the statutory minimum of 1.0 billion gallons. We cited the annual increments in biomass-based diesel volumes specified in the statute for years 2009 through 2012 and conveyed our belief that our proposed applicable volume of 1.28 billion gallons for 2013 was not a dramatic change from the trend in increments in the statute. In addition, since this biomass-based diesel volume had already been partially evaluated in the RFS2 rule, we decided to evaluate the appropriateness of setting an applicable volume of 1.28 billion gallons for 2013 by considering whether 1.28 billion gal of biomass-based diesel was reasonable given likely market demand, availability of feedstocks, production capacity, storage, distribution, and blending capacity, the capability of the existing diesel fleet to consume this volume of biodiesel, and the impacts of biomass-based diesel in a variety of areas as required under the statute.

In responding to the NPRM, some commenters took issue with our characterization of the proposed volume of 1.28 billion gallons as a ''moderate'' increase consistent with the annual increments in biomass-based diesel volumes specified in the statute for years 2009 through 2012. These comments also suggested that any comparison to volume requirements in the statute is not appropriate. However, we did not base our proposed volume of 1.28 billion gallons on this comparison but referred to past statutory increments to put our proposal in context. Regardless of the size of these past statutory increments, however, we find the final 280 mill gal increment to be moderate and achievable, as described below, especially in light of the substantial increases in production volume that occurred in 2011 which were approximately twice the amount of the 280 mill gal increase we are adopting for 2013. Other commenters agreed with the comparison and agreed that the 0.28 billion gallons increment can appropriately be characterized as moderate.

In some cases commenters opposed the proposed volume requirement of 1.28 billion gallons, citing concerns that the 2012 applicable volume of 1.0 billion gallons is not achievable. As noted above, our evaluation indicates that biodiesel production exceeded 1.0 billion gallons in 2011, confirming our projection that the 1.0 billion gallon applicable volume for 2012 is achievable. Therefore, concerns about the industry's ability to meet the applicable volume in 2012 are not a reasonable basis for concerns about achieving 1.28 billion gallons in 2013. Other commenters agreed with our assessment of 2012 and agreed that an increase of 0.28 billion gallons over the statutory minimum for 2013 is moderate given the capabilities of the industry.

Several commenters suggested that 1.28 billion gallons is an infeasible target for 2013 and requested that we set the biomass-based diesel standard at the statutory minimum of 1.0 billion gallons. Commenters taking this view generally did not offer any data or information to support their belief that 1.28 billion gal is not achievable in 2013 beyond references to historical biodiesel production rates. As described in the NPRM, we believe that the use of biodiesel production data from 2010 and earlier is of limited value, and production capacity as well as more recent data on actual production volumes does in fact demonstrate that the industry is capable of significant increases in production when demand for it exists. As described more fully in the sections below, we continue to believe that 1.28 billion gallons is achievable based on production capacity, availability of feedstock, recent trends in production volumes, and efforts to update infrastructure for storage, transport, and blending. We also believe that this volume is likely to encourage continued investment and innovation in the biodiesel industry. Our consideration of other impacts, such as fuel costs and environmental impacts, can be found in Section IV.

A. Demand for Biomass-Based Diesel

The demand for biomass-based diesel in 2013 will be a function of a number of factors, including not only the biomass-based diesel standard, but also the advanced biofuel standard, since the standards under the RFS2 program are nested. For purposes of the analysis and discussion in this rule, we have assumed that the applicable volume of advanced biofuel for 2013 will remain at the 2.75 billion gal level specified in the Act. While EPA is authorized to reduce the applicable volume of advanced biofuel pursuant to CAA section 211(o)(7)(D)(i) in years that it reduces the cellulosic biofuel applicable volume, any decision to do so will be made in the rule establishing the 2013 renewable fuel standards, and EPA is not currently in a position to pre-judge the results of that future rulemaking.

In addition to biomass-based diesel, biofuels that are likely to be available for meeting the advanced biofuel standard would include cellulosic biofuel, imported sugarcane ethanol, and other domestically produced advanced biofuels. As described in the January 9, 2012 rulemaking establishing the 2012 standards,[5] cellulosic biofuels will be a very small fraction of the 2.0 billion gallon advanced biofuel requirement in 2012, and we expect the same to be true in 2013 with respect to the 2.75 billion gal advanced biofuel requirement. Regarding other domestically produced advanced biofuels, volumes reached about 60 mill gal in 2011, and we have projected for the applicable 2013 standards that they could reach 150 mill gal or more in 2013. As a result, most of the 2.75 billion gal advanced biofuel requirement will be met with biodiesel and imported sugarcane ethanol.

Recent market projections suggest that the volume of sugarcane ethanol that can be imported into the U.S. from Brazil in 2013 could be on the order of historical import volumes prior to 2010, with the potential to reach the historical maximum or more. However, there is considerable variability in the projections for 2013. For instance, one source that evaluates trends and issues for U.S. energy markets is the U.S. Energy Information Administration's (EIA) Annual Energy Outlook (AEO).[6] This report projects U.S. net ethanol imports in 2013 to be 306 million gallons. Another source for U.S. and world commodity projections is the Food and Agricultural Policy Research Institute's (FAPRI) U.S. and World Agricultural Outlook. The most current version of the FAPRI 2011 Agricultural Outlook projects for the year 2013 that the U.S. will have net ethanol imports

[5] 77 FR 1320.

[6] U.S. Energy Information Administration (EIA). ''AEO2011, Table 11'' April 2011. *http://www.eia.doe.gov/forecasts/aeo/index.cfm.*

of 768 million gallons.[7] Based on historical trends, virtually all imported ethanol is expected to be sugarcane ethanol. As a result, while there is good reason to believe that there will be increased volumes of imported sugarcane ethanol in 2013 to help meet the advanced biofuel standard, there may also be a demand for volumes of biodiesel in excess of 1.0 billion gallons.

If we do not set the biomass-based diesel standard above 1.0 billion gallons, biodiesel producers will be less certain of the demand for their product given the opportunities that are also created by the advanced biofuel standard for imported sugarcane ethanol. Despite the fact that monthly production rates in the middle of 2012 are consistent with an annual production volume of about 1.28 billion gal, the selection of facilities producing biodiesel at any given time is highly variable. Without a regulatory requirement for 1.28 billion gal, the biodiesel industry is less likely to maintain online production capabilities for this volume. Instead, many producers will wait until late in 2013 to determine if imported sugarcane ethanol volumes will fall short of what is needed to meet the advanced biofuel volume requirement of 2.75 billion gal in 2013. While much of the idled capacity in the biodiesel industry can be brought back online relatively quickly, waiting until the end of 2013 to do so may reduce the time available and could result in the biodiesel industry being unable to make up the difference between the advanced biofuel requirement and shortfalls in imported sugarcane ethanol.

Thus in setting the biomass-based diesel volume requirement at 1.28 billion gallons rather than at the statutory minimum of 1.0 billion gallons, we are creating greater certainty for both producers of biomass-based diesel and obligated parties and increasing certainty that the intended GHG emissions reductions and energy security benefits associated with the use of advanced biofuels will be realized. It is possible that there may be some additional cost for compliance with the advanced biofuel requirement of 2.75 billion gallons under a biomass-based diesel requirement of 1.28 billion gallons, as compared to setting the biomass-based diesel requirement at the statutory minimum of 1.0 billion gallons and allowing the market to determine the relative volumes of each type of advanced biofuel that will be produced in 2013 to meet the advanced biofuel standard of 2.75 billion gallons. However, setting the biomass-based diesel applicable volume requirement at 1.28 billion gallons will provide greater certainty that the 2.75 billion gal advanced biofuel applicable volume requirement can be achieved. We believe that the potential for somewhat increased costs is appropriate in light of the additional certainty of GHG reductions and enhanced energy security provided by the advanced biofuel volume requirement of 2.75 billion gallons.

Among the parties that submitted comments in response to the NPRM, none contested our assessment of the volumes of sugarcane ethanol that might be expected to be imported into the U.S. from Brazil in 2013. Nevertheless, parties that were opposed to setting the biomass-based diesel applicable volume at 1.28 billion gallons in 2013 raised doubts about the projected demand for biomass-based diesel in 2013. In some cases commenters ignored the fact that much of the advanced biofuel standard can be met with biomass-based diesel or implicitly assumed that EPA would waive some portion of the advanced biofuel requirement. The American Trucking Association (ATA) explicitly requested that we lower the 2013 advanced biofuel standard in order to ensure that demand for biomass-based diesel would not exceed 1.0 billion gallons in 2013. As described in a separate Notice of Proposed Rulemaking,[8] we are proposing to not reduce the 2013 advanced biofuel requirement of 2.75 billion gal.

The American Petroleum Institute cited projections from AEO 2011 in support of their argument that biodiesel volumes will not reach 1.28 billion gallons in 2013. For instance, Table 11 of AEO 2011 projects a total biodiesel consumption of 1.04 billion gal in 2013. However, we do not believe that the projections provided in AEO 2011 can be used in this way, since EIA assumes that the required volume of advanced biofuel in any given year will be reduced concurrently with reductions in the required volume of cellulosic biofuel.[9] As a result, the total projected volume of biodiesel and imported ethanol in the 2013 EIA projections falls far short of what would be necessary to meet the applicable volume of 2.75 billion gal of advanced biofuel set forth in the statute.

Some parties that were opposed to setting the biomass-based diesel applicable volume at 1.28 billion gallons in 2013 did recognize that the advanced biofuel requirement of 2.75 billion gal could place pressure on the industry to produce volumes of biodiesel in excess of 1.0 billion gal but questioned the need to set the biomass-based diesel standard above the statutory minimum of 1.0 billion gallons. They argued that the market should be allowed to determine the relative volumes of biomass-based diesel, imported sugarcane ethanol, and other advanced biofuels needed to meet the advanced biofuel standard of 2.75 billion gallons. This approach, they argued, could potentially minimize the overall cost of compliance with the advanced biofuel standard in 2013. However, as noted above, the statute does not provide any overarching goals for EPA to achieve in setting the applicable volumes for biofuels in years after those specifically set forth in the statute. Instead, the statute provides a list of factors we must consider. While one of those factors is cost, other factors must also be considered as described in Section II. Additionally, setting the biomass-based diesel standard at 1.28 billion gallons instead of at the statutory minimum of 1.0 billion gallons will provide more certainty that the applicable volume of advanced biofuel set forth in the statute will not need to be reduced, since it guarantees that an additional 420 million ethanol-equivalent gallons of advanced biofuel will be available. This, in turn, means that there will be more certainty of reduced GHG emissions through the use of more advanced biofuels and increased certainty of energy security benefits in terms of reduced reliance on fossil fuels. In addition, increasing the biomass-based diesel volume requirement to 1.28 billion gal in 2013 provides an incentive for continued investment and innovation in the biodiesel industry and serves the long term goal of the statute to increase volumes of renewable fuels over time such that in the longer term they are more likely to be available to offset the need for crude oil.

B. Availability of Feedstocks To Produce 1.28 Billion Gallons of Biodiesel

In the NPRM, we provided our assessment of the types and amounts of feedstock that could be used to produce 1.28 billion gallons of biomass-based diesel in 2013. This assessment included references both to the work that had been done in the RFS2 final

[7] Table ''Ethanol Trade'', Commodity Outlook/Biofuels, FAPRI–ISU 2011 World Agricultural Outlook. *http://www.fapri.iastate.edu/outlook/2011/.*

[8] This NPRM will propose the applicable 2013 percentage standards for cellulosic biofuel, biomass-based diesel, advanced biofuel, and total renewable fuel.

[9] Communication between D. Korotney of EPA and W. Brown of EIA, 8/25/2011.

rule as well as a recent report released by IHS Global Insight.[10] The feedstock estimates from these two sources are shown in Table III.B–1.

TABLE III.B–1—FEEDSTOCK SOURCES (IN MILL GALLONS) THAT MAY CONTRIBUTE TO 2013 VOLUME OF 1.28 BILLION GAL

Source	RFS2 final rule	IHS global insight
Grease and rendered fats	380	272
Corn oil	300	185
Soybean oil	600	624
Canola oil	0	68
Palm oil	0	7
Other	0	185
Total	1,280	1,340

As some comments pointed out, these two sources used fundamentally different approaches. In the case of the RFS2 final rule, projections of feedstock volumes were determined first, and then summed to conclude that 1.28 billion gal is a reasonable volume of biomass-based diesel that could be achieved in 2013. In contrast, the IHS Global Insight report began with the aim of reaching 1.3 billion gallons in 2013, and then conducted modeling to determine the likely mix of feedstock sources that would support that volume. Nevertheless, we believe that these sources suggest two similar ways that the market could meet the demand for feedstock under a required volume of 1.28 billion gallons of biomass-based diesel. The actual mix of feedstock sources used to produce 1.28 billion gallons of biomass-based diesel could also differ substantially from the values shown in Table III.B–1 as the market adjusts to the new mandate.

One commenter stated that we relied too heavily on these sources without additional analysis. We did in fact conduct a more up-to-date analysis of these feedstock sources and, as described below, the updated analysis confirms our belief that the projections in Table III.B–1 are reasonable projections for the mix of feedstock sources that could be used to reach 1.28 billion gallons of biomass-based diesel. We will continue to coordinate with USDA in the future on RFS related rulemakings. Other comments agreed with our assessment of available feedstock and our conclusions that there would be sufficient volumes to meet a biomass-based diesel volume requirement of 1.28 billion gallons. A summary of our updated assessment of feedstock sources is included below.

It should be noted that the projections in Table III. B–1 do not account for recent trends in crop yields and grain prices resulting from drought conditions that are occurring in many areas of the country. Given the wide range of feedstocks from which biodiesel can be produced, the ultimate impact of these drought conditions on the mix of biodiesel feedstocks in 2013 is difficult to predict at this time.[11]

1. Grease and Rendered Fats

According to the U.S. Census Bureau, the total volume of yellow grease and other greases (most likely trap grease) produced in 2010 was about 340 mill gallons [12]. In the first half of 2011, production of greases was about 10% higher than for the same period in 2010, suggesting that total 2011 production could reach 370 mill gallons or more, similar to the production rates in 2008 and 2009.

With regard to inedible tallow, the volume produced in 2010 was about 440 mill gallons, and indications from the first half of 2011 are that a similar volume will be generated in 2011 as well.

Taken together, the total volume of grease and rendered fats produced annually is over 800 mill gallons. This is significantly more than was estimated in the RFS final rule and the report from IHS Global Insight for use in the production of biomass-based diesel in 2013. Moreover, we have not included in our estimate other potential sources, such as edible tallow, lard, and poultry fats. While these other potential feedstocks currently have existing markets, it may become economical for them to be used in the production of biomass-based diesel.

In their comments on the NPRM, the America Cleaning Institute raised concerns about the diversion of animal fats from the oleochemical industry for the production of biofuels. We do not have the authority to prevent feedstocks that meet the statutory definition of renewable biomass from being used in the production of renewable fuel. The choice of which feedstocks will be used to produce biomass-based diesel will be determined by the market. We also note that in responding to comments to the rule establishing the RFS2 program, we acknowledged that animal fat can be used in other markets such as the soap industry, but that the diversion of some portion of this feedstock to the biofuels industry was both not prohibited and would not significantly impact the GHG assessment of biofuel made from this feedstock.[13] However, based on our assessment, it is possible that the 1.28 billion gall requirement could be met without the use of animal fats. As noted above, the total volume of grease and rendered fats is estimated at 800 mill gallons, far above the volumes listed in Table III.B–1. It is therefore possible that the industry may produce biodiesel predominately from waste grease instead of animal fats. Moreover, the volumes of other feedstock sources, such as corn oil and vegetable oils as described more fully below, may exceed the volumes needed to produce 1.28 billion gal biodiesel, further reducing the need to rely on animal fats for biodiesel production. Finally, EPA has received inquiries from industry regarding the use of additional sources

[10] Table 2, ''Biodiesel Production Prospects for the Next Decade,'' IHS Global Insight, March 11, 2011.

[11] EPA has received requests for a waiver of RFS volumes under CAA section 211(o)(7) based on the impact of the drought, and has invited comment on the requests.

[12] Current Industrial Reports, U.S. Census Bureau, M311K—Fats and Oils: Production, Consumption, and Stocks, Table 2b. Assumes 7.5 lb/gal. *http://www.census.gov/manufacturing/cir/historical_data/m311k/index.html.* The U.S. Census Bureau terminated collection of data for this report as of July 2011 so updated data is not available.

[13] ''Renewable Fuel Standard Program (RFS2) Summary and Analysis of Comments,'' February 2010, EPA–420–R–003, pages 6–15 and 7–304. Docket number EPA–HQ–OAR–2005–0161.

of waste oils often from the food processing industry as biodiesel feedstock, indicating the sources of feedstock are likely to continue expanding, improving the availability of alternatives to animal fat as a biofuel feedstock.

Since the market will determine the specific amount of animal fats used in the production of biofuels, we cannot project how their availability for the production of oleochemicals might be affected. We agree with the American Cleaning Institute that increases in the use of animal fats to produce biofuel could increase the price of those animal fats and/or reduce their availability for the production of oleochemicals. Such circumstances could in turn compel the oleochemical industry to use a greater fraction of alternative feedstock sources such as cottonseed oil. However, as discussed in Section IV.A.8, there could be sufficient sources of other feedstocks to produce 1.28 billion gallons of biomass-based diesel without using any animal fats. Moreover, the cost of animal fat is dependent on the general demand for this material which is only in part impacted by its potential use as a biofuel feedstock. As a result, and as discussed more fully in Section IV.A.8, we do not believe oleochemical production facility location will be significantly impacted by the potential use of rendered fats as a biofuel feedstock if some portion of the 280 million gallon increase in the biomass-based diesel standard is produced from rendered fats.

2. Corn Oil

The RFS2 final rule projected that by 2013, 34% of all dry mill ethanol facilities in the U.S. would extract inedible corn oil from the by-products of ethanol production using advanced extraction technologies. This estimated extraction rate led us to conclude that the volume of corn oil could reach 300 mill gallons in 2013. While currently available technologies have not been able to reach the oil extraction rates that we assumed in the RFS2 final rule, these lower extraction rates have been offset by a higher number of ethanol plants utilizing some form of extraction technology. For instance, according to a recent article in Ethanol Producer Magazine, up to 55 percent of plants may be extracting corn oil by the end of 2012.[14] Similarly, in an article in Biodiesel Magazine, Dave Elsenbast, vice president of supply chain management for REG stated that as of July 2011 about 35% of U.S. corn ethanol plants had implemented corn oil extraction and that he expected that number to double within the next couple of years.[15] In the NPRM we stated our expectation that the percentage of dry mill ethanol facilities using some form of corn oil extraction technology will increase to 60% by 2013. Given the information from Ethanol Producer Magazine and Biodiesel Magazine, this estimate appears reasonable.

If 60% of all dry mill corn ethanol facilities in the U.S. were extracting inedible corn oil at rates capable with current technology, the amount of corn oil available for biodiesel production would be approximately 270 million gallons. However, as described in the RFS2 final rule, we expect that by 2013 technology improvements will increase corn oil production levels to 300 million gallons. Additional corn oil could come from ethanol production facilities using corn fractionation or wet milling technology. This corn oil was not considered as a biodiesel feedstock in the RFS2 rule, but market conditions may result in its availability to the biodiesel industry. The higher adoption rate of corn oil extraction in comparison to our projections from the RFS final rule, and the promise of ever-increasing oil extraction yields, indicate that the 300 million gallons of corn oil extraction projected in the RFS2 rule in 2013 remains a reasonable projection. Comments from the Renewable Energy Group support this view.

3. Soybean Oil

While a number of parties commented on the use of soybean oil for the production of biomass-based diesel, none provided data or information suggesting that there would be insufficient supplies to meet the need for 1.28 billion gallons of biomass-based diesel as well as other traditional markets for soybeans. Instead, comments on the use of soybean oil were focused on costs. We have addressed these comments separately in Section III.B.3. The rest of this section summarizes our assessment of soybean oil availability, updated since the NPRM.

Since the RFS2, other oilseeds (e.g., canola oil) have emerged as potential sources of biodiesel feedstock. However, the U.S. market for soybean oil biodiesel is significantly more mature than for biodiesel made from other oilseeds. Because of this, we anticipate that soybeans will remain the primary source of U.S. biodiesel from oilseeds in 2013. It is possible that biodiesel production from other oilseeds such as canola could achieve a significant level of production by 2013. If other oilseeds with approved pathways are able to contribute to the biodiesel volumes, achieving the biomass based diesel mandate would be facilitated. For the purposes of this analysis, EPA is making the conservative assumption that there will be no biodiesel production from other oilseeds in 2013.

We examined historical and projected soybean oil supplies and use to verify that the volumes shown in Table III.B–1 are achievable in 2013. Our analysis concludes that there will be sufficient supplies of soybean oil to meet the needs of both biodiesel production and other domestic uses in 2013. Producing 600 million gallons of soybean-based biodiesel will require 4,530 million pounds of soybean oil.

Table III.B.3–1 below lists U.S. Department of Agriculture (USDA) historical data and current projections for U.S. supply and use of soybean oil from the 2006/2007 crop year to the 2013/2014 year. Since 2006/2007, domestic use of soybean oil for non-biodiesel purposes has ranged from 14,134 million pounds to 15,813 million pounds. USDA projects non-biodiesel use will stay above 14,000 million lbs through the 2013/2014 year.

TABLE III.B.3–1—HISTORICAL SUPPLIES AND USE OF SOYBEAN OIL IN THE U.S.

[In million lbs]

Year starts October 1	Total supplies	Domestic use for non-biodiesel purposes	Supplies available for biofuel feedstock use or export	Historical exports	Historical biofuel feedstock use
2006/07	23,536	15,813	7,723	1,877	2,762

[14] Joseph Riley, ''Customized Coproducts Needed as Industry Matures,'' June 6, 2011. Ethanol Producer Magazine.

[15] Dave Elsenbast quoted in Ron Kotrba, ''Biodiesel from corn oil: a growing force,'' July 6, 2011. Biodiesel Magazine.

TABLE III.B.3–1—HISTORICAL SUPPLIES AND USE OF SOYBEAN OIL IN THE U.S.—Continued

[In million lbs]

Year starts October 1	Total supplies	Domestic use for non-biodiesel purposes	Supplies available for biofuel feedstock use or export	Historical exports	Historical biofuel feedstock use
2007/08	23,730	15,089	8,641	2,911	3,245
2008/09	21,319	14,196	7,123	2,193	2,069
2009/10	22,578	14,134	8,444	3,359	1,680
2010/11	22,452	14,244	8,208	3,233	2,550
2011/12 [a]	21,215	14,100	7,115		
2012/13 [a]	21,075	14,200	6,875		
2013/14 [a]	21,290	14,400	6,890		

[a] Projected.
Sources: USDA, Agricultural Marketing Service, *Oil Crops Outlook,* February 10th, 2012. USDA, Economic Research Service, *Agricultural Long-Term Projections,* February 2012.

Historical values for exports and biofuel feedstocks in the above table are provided for context only. The remaining values are related as follows:

Total Supplies = Domestic Use for Non-Biodiesel Purposes + Supplies Available for Biofuel Feedstock Use or Export

USDA projects that 6,875 million pounds of soybean oil will be available for biofuel feedstock use or export in the 2012/2013 crop year and that 6,890 million pounds will be available in the 2013/2014 year (see Table III.B.3–1). This is considerably more than the approximately 4,530 million pounds needed to meet the soybean-based biodiesel portion of the 1.28 billion gallon mandate.[16]

4. Effects on Food Prices

In order to determine the likelihood of a substantial increase in food prices, EPA projected the effects of a 1.28 billion gallon mandate using the CARD stochastic modeling framework discussed in Section IV.B.1. of this final rule. Assuming that the 280 million gallon increment is met entirely with soybean oil biodiesel in 2013, we project that the price of soybean oil will be $0.45 per pound under this mandate, compared to $0.42 under a 1.0 billion gal volume requirement. This represents a price increase of 3 cents per pound (about 7 percent). The increase in demand for soybean oil is also expected to have a small impact on the price of soybeans. We project that the price of soybeans will be $10.39 per bushel under this mandate, compared to $10.21 per bushel under a 1.0 billion gal volume requirement. This represents a price increase of 18 cents per bushel (about 1.8 percent). Both of these projections are within the recent historical range of prices (see Table III.B.4–1).

TABLE III.B.4–1—HISTORICAL AND PROJECTED PRICES OF SOYBEANS AND SOYBEAN OIL

[2010 dollars per lb]

	Soybean oil	Soybeans
2006–2011 Low Annual Average Price	$0.33 per lb	$9.70 per bushel.
2006–2011 High Annual Average Price	$0.54 per lb	$12.36 per bushel.
2013 Projected Price	$0.45 per lb	$10.39 per bushel.

Sources: USDA, Agricultural Marketing Service, *Oil Crops Outlook,* February 10th, 2012. USDA, Economic Research Service, *Agricultural Long-Term Projections,* February 2012.

The timeframe of this rulemaking did not permit large-scale modeling of the impacts of this mandate on the agricultural sector. We therefore cannot predict the exact impact that these increases in soybean and soybean oil prices will have on food prices in general.

As noted above, these results assume that 600 mill gal of this mandate is soybean-based. To the extent that this increment is met with other feedstocks, the overall effect of this mandate on the price of soybeans and soybean oil would be smaller.

5. Other Bio-Oils

Although the modeling we conducted for the RFS2 final rule assumed that the only form of bio-oil used to make biomass-based diesel would be from soybeans, in fact other seed oils may contribute meaningful volumes to the pool. For instance, on September 28, 2010, we approved a RIN-generating pathway for biodiesel made from canola oil.[17] The volume of biodiesel made from canola oil was 96 mill gallons in 2008.[18] In addition, we are evaluating other pathways for the production of biodiesel from oilseeds which could potentially be approved for RIN generation by 2013. On January 5, 2012 we proposed to include oil from camelina as an approved feedstock for producing biodiesel (77 FR 462). Algal oil could also provide additional feedstocks if promising technologies for production are commercialized.

Nevertheless, even if none of these other sources of bio-oil were available, we believe that the total volume of grease, fats, corn oil, and soybean oil would be sufficient to produce 1.28

[16] This calculation assumes a vegetable oil to biodiesel conversion rate of approximately 7.6 pounds of oil per gallon of biodiesel. Actual conversion rates vary depending on the technology used and the purity of the virgin oil. As a result, the actual amount of soybean oil required to produce 600 million gallons of biodiesel could be slightly higher or lower than the amount we have estimated in this rulemaking.

[17] 75 FR 59622.

[18] EPA memorandum, ''Summary of Modeling Input Assumptions for Canola Oil Biodiesel for the Notice of Supplemental Determination for Renewable Fuels Produced Under the Final RFS2 Program,'' Document # EPA–HQ–OAR–2010–0133–0049.

billion gallons of biomass-based diesel in 2013.

C. Production Capacity

Total production capacity of the biodiesel industry has exceeded 1.28 billion gallons for a number of years. As of February 2012, total production capacity was more than 2.5 billion gallons for 191 companies.[19] According to the EPA registration database, 216 facilities have registered with the EPA under the RFS2 program as of March 15, 2012. Plants that are currently not registered under RFS2 are either producing extremely low volumes that fall under the regulatory threshold for RIN generation, are producing products other than biodiesel such as soaps or cosmetics, or have shut down until such time as the demand for biodiesel rises.

While comments generally did not disagree that sufficient production capacity exists to reach 1.28 billion gallons in 2013, some questioned how quickly idled plants can be brought back online. We note that most of the production capacity exists at plants that are already producing some volume, and that many operating biodiesel plants are currently producing at less than their full capacity. As a result, these facilities typically do not need to go through the additional steps that are associated with starting up an idled plant, such as securing new financing, establishing contracts with feedstock suppliers and customers, hiring and retraining employees, and testing and proving the equipment. Nevertheless, since many new plants can be built and started within a year or so[20], we also believe that pre-existing but idled plants can be restarted in considerably less than a year. Given the time between release of this action and when the 1.28 billion gal requirement will become effective, there is no reason to believe that idled plants cannot be restarted in time to contribute meaningfully to total volumes in 2013.

D. Consumption Capacity

Biodiesel is registered with the EPA under 40 CFR Part 79 as a legal fuel for use in highway vehicles. Under this registration, it can legally be used at any blend level, from 1% (B1) to 100% (B100) in highway diesel fuel. As there are no equivalent registration requirements for non-highway fuels, biodiesel can legally be used at any blend level in nonroad diesel and heating oil. However, other factors typically limit the concentration of biodiesel in conventional diesel fuel. To the extent that the consumption of biodiesel occurs only at lower blend levels, the geographic area where biodiesel must be marketed would correspondingly be greater, impacting both how much biodiesel can be consumed in the U.S. as a whole as well as how the infrastructure may need to change to accommodate 1.28 billion gallons in 2013. As described below, we believe that there are no impediments to consuming an additional 280 mill gal of biodiesel.

Most engine manufacturers have explicit statements in their engine warranties regarding acceptable biodiesel blend levels. Although a few permit B100 to be used in their engines without any adverse impact on their warranties, most limit biodiesel blends to B20 or less, and of those, about half allow no more than B5.[21] For specific applications where a party knows which engines will be using biodiesel blends, higher concentrations of biodiesel may be possible. However, for general distribution such as at retail facilities, these warranty conditions create a disincentive to blend or sell biodiesel at higher concentrations and would tend to drive most blends towards low concentrations of biodiesel such as B5. Those parties that commented on this issue agreed with this assessment.

Cold weather operability represents another reason for preferential use of B5 and even B2. The most common measure of cold weather operability is the fuel cloud point. The cloud point is the temperature at which gelling begins (as indicated by solid crystals beginning to form in the fuel), and thus is an indicator of when potential engine filter plugging issues could arise. The higher the cloud point temperature of the fuel, the more likely such problems are to be experienced in cold weather. Biodiesel generally has a higher cloud point than conventional, petroleum-based diesel fuel, with fat-based biodiesel such as tallow having a higher cloud point than virgin oil-based biodiesel such as a fuel made with soybean and canola oil. While cloud point issues with conventional, petroleum-based diesel are generally mitigated during the winter months through blending with lighter grades (i.e., #1 diesel fuel), the cloud point of biodiesel generally requires more dramatic interventions such as heated storage tanks, lines, and blending equipment, as well as heating rail cars and tank trucks. However, some of these biodiesel cloud point mitigation efforts may be reduced through the use of low biodiesel blend levels such as B2 or B5, since cloud point is strongly correlated with biodiesel concentration in the final blend. Insofar as biodiesel is blended into conventional diesel before being transported to its final destination for sale, low biodiesel blend levels may reduce the need for heated equipment at the final destination.

Based on highway and nonroad diesel consumption projections for 2013 from the EIA, a biodiesel volume of 1.28 billion gallons would represent about 2.9% of all diesel fuel.[22] If all biodiesel were to be blended as B5, almost 60% of the diesel fuel consumed nationwide in 2013 would contain biodiesel. However, today some biodiesel is blended at concentrations higher than B5, and we expect that some blending at these higher concentrations would continue in the future. One commenter disagreed that blends higher than B5 will be marketed in any but niche markets. We agree with this comment. However, since biodiesel prices have been higher than conventional diesel prices in the recent past, and yet blends above B5 have in fact been sold, we believe that the existing markets for blends such as B20 are niche markets that will continue into the future. The sale of biodiesel blends higher than B5 will reduce the total amount of diesel fuel that will contain some biodiesel. Directionally, then, this will also reduce the geographical areas to which biodiesel must be distributed. Based on the number of retail stations offering different biodiesel blend levels in 2010, we estimate that about 30% of biodiesel was sold at retail in blends with biodiesel concentrations as high as 20%. Another 17% of biodiesel was sold in blends with biodiesel concentrations between 10% and 20%.[23] If the volumes of biodiesel currently sold as B10 and higher were to continue to be sold in 2013, such blends would account for about one quarter of the 1.28 billion gal mandate, and 45% of the diesel fuel consumed nationwide in 2013 would contain biodiesel.

Heating oil represents another opportunity for large volumes of biodiesel to be consumed. According to EIA's Annual Energy Outlook 2012, residential consumption of distillate fuel oil has been about 4 billion gal. Moreover, some of the practical issues

[19] Plant list from National Biodiesel Board, 2/7/2012.

[20] Based on construction times for new plants listed in Biodiesel Magazine from July 2006 through May 2009.

[21] "Automakers' and Engine Manufacturers' Positions of Support for Biodiesel Blends," *Biodiesel.org.*

[22] Assumes total diesel volume consumed in the transportation sector in 2013 is 44.86 billion gal, per Annual Energy Outlook (AEO) 2012 Early Release, Table A2.

[23] National Biodiesel Board, Retailing Fueling Sites, as of February 17, 2011. *http://biodiesel.org/buyingbiodiesel/retailfuelingsites/default.shtm.*

leading to warranty limits on engines regarding the use of biodiesel are less of a concern when burning biodiesel for home heating purposes. As a result, significant volumes of biodiesel can be consumed as heating oil and count for compliance purposes under the RFS program.

We believe that distributing and consuming 1.28 billion gallons of biodiesel in 2013 are achievable. As shown in Table III.D–1, a number of states already have mandates for the use of biodiesel in 2013,[24] and efforts are underway by the production and distribution industries to meet these mandates.

TABLE III.D–1—STATES WITH BIODIESEL MANDATES

Minnesota	Diesel fuel for use in internal combustion engines must contain at least 5% biodiesel. Beginning May 1, 2012, during the months of April through October, diesel fuel must contain at least 10% biodiesel (B10).
Oregon	Diesel fuel sold in the state must be blended with at least 5% biodiesel.
Washington	At least 2% of all diesel fuel sold in Washington must be biodiesel or renewable diesel. This requirement will increase to 5% after it is determined that in-state feedstock sources and oil-seed crushing capacity can meet a 3% requirement.
Pennsylvania	All diesel fuel sold in Pennsylvania must contain at least 2% biodiesel one year after in-state production of biodiesel reaches 40 million gallons. The mandated biodiesel blend level will increase to 5% biodiesel one year after in-state production of biodiesel reaches 100 million gallons.
New Mexico	After July 1, 2012, all diesel fuel sold to consumers for use in on-road motor vehicles must contain at least 5% biodiesel. This requirement may be suspended for up to six months under certain conditions.
Louisiana	Within six months following the point at which cumulative monthly production of biodiesel produced in the state equals or exceeds 10 million gallons, at least 2% of the total diesel volume must be biodiesel.

Source: U.S. Department of Energy, Alternative Fuels and Advanced Vehicles Data Center.

Collectively, these states currently account for approximately 13 percent of the nationwide consumption of diesel. Other states that have implemented other forms of incentives are listed in Table III.D–2.

TABLE III.D–2—STATES WITH REBATES, REFUNDS, REDUCED TAX RATES, OR CREDITS FOR BIODIESEL PRODUCTION OR BLENDING

Illinois.
Indiana.
Kansas.
Kentucky.
Maine.
Maryland.
Michigan.
Montana.
North Dakota.
Oklahoma.
Rhode Island.
South Carolina.
South Dakota.
Texas.
Virginia.
Washington.

Source: U.S. Department of Energy, Alternative Fuels and Advanced Vehicles Data Center.

* Conditions and exemptions for all incentive programs vary by state.

Collectively, the states listed in Table III.D–2 currently account for approximately 37% of the nationwide consumption of biodiesel. A variety of states also have requirements for the use of biodiesel in state fleets, provisions that allow biodiesel to be used as an alternative to meeting alternative fuel vehicle mandates, and credits/rebates for the installation of biodiesel dispensing and blending equipment. Altogether, therefore, more than half of the states in the U.S. have mandates and/or incentives that will induce them to address biodiesel infrastructure issues.

One commenter pointed out that state-specific economic incentives for the production of biodiesel do not necessarily eliminate cost differences between biodiesel and conventional diesel. We agree with this comment. Nevertheless, efforts to incentivize biodiesel production and use in individual states will directionally help the nation to meet a 1.28 billion gal biomass-based diesel requirement in 2013.

Based on our review of the ability of diesel engines to use diesel blended with biodiesel, and the various state requirements and incentives to use biodiesel, we believe that consumption of 1.28 billion gal of biodiesel will not be problematic.

E. Biomass-Based Diesel Distribution Infrastructure

The National Petroleum Refiners Association (NPRA) stated that an analysis of the feasibility of meeting increased biodiesel use requirements should be based on a maximum biodiesel blend ratio of 5%.[25] We disagree, since there is no reason to expect that existing consumption patterns involving higher concentrations of biodiesel will not continue into the future, as described above. However, we have assessed the additional biodiesel distribution infrastructure that will be needed under a 1.28 billion gal mandate assuming a blend ratio no higher than 5%. NPRA commented that the required increase in the use of biodiesel will necessitate numerous installations of biodiesel storage tanks (possibly heated) as well as the installation of biodiesel receiving and blending capacity at the diesel fuel distribution terminals throughout the U.S. markets. This is also consistent with our analysis. In the proposal, we noted that some terminals may be able to avoid or delay the installation of additional biodiesel storage facilities by storing 50/50 biodiesel/diesel fuel blends that are then further blended with diesel fuel to produce a finished fuel. However, we assumed that all biodiesel blending facilities would install segregated (heated and insulated) biodiesel storage facilities in our infrastructure analysis. We further noted that some terminals may delay the installation of biodiesel in-line blending equipment by splash blending biodiesel.[26] However, we stated that we expect that this approach would be temporary due to the heightened concerns over achieving a correct blend ratio and a fully mixed biodiesel blend that accompanies splash

[24] As one commenter pointed out, some of these mandates have not yet taken effect as in-state production volumes have not yet reached specified thresholds. Nevertheless, the state mandates represent incentives within those states to increase production.

[25] NPRA acknowledged that higher biodiesel blend ratios are sometimes used but that this would not substantially increase the capacity of the market to absorb additional biodiesel volume. NPRA recently changed its name to the American Fuel & Petrochemical Manufacturers (AFPM).

[26] In-line blending refers to the process of blending biodiesel into petroleum-based diesel fuel in the delivery line that feeds into the tank truck from the terminal storage tanks. Splash blending refers to the process of first loading petroleum-based diesel fuel into a tank truck followed by biodiesel so that the final blend meets the desired blend ratio.

blending. We assumed that terminals would install in-line biodiesel blending equipment in our infrastructure analysis.

We proposed finding that there will be sufficient fuel distribution infrastructure available to support the use of 1.28 billion gal of biomass-based diesel in 2013. NPRA stated that the rapid expansion in B5 blending capability in the marketplace necessary to support the use of the envisioned volumes of biodiesel is unrealistic and unachievable. NPRA did not further support this statement. The National Biodiesel Board (NBB) stated that there will be sufficient biodiesel distribution infrastructure available to facilitate the use of the envisioned volumes of biodiesel.[27] NBB further stated that in most markets, terminals can treat 5% biodiesel blends as a fungible commodity like diesel fuel and that they believe that many terminals may be storing B5 blends. To the extent terminals store a finished B5 blend, it would obviate the need for much of the segregated biodiesel storage and blending capability that is assumed in our infrastructure analysis. The Iowa Biodiesel Board stated that claims that industry cannot accommodate the distribution of the target gallons are baseless and cited various examples of recent biodiesel blending initiatives at Iowa terminals.

We acknowledge that the required expansion of the fuel distribution infrastructure necessary to support the use of the 1.28 billion gal of biomass diesel may pose challenges to industry. However, we continue to believe that industry can respond effectively to this challenge to support the use of the envisioned 2013 biodiesel volume. In fact, EIA data suggests that much of the necessary infrastructure is already in place. EIA data indicates that annual biodiesel production in 2011 was nearly 1 billion gallons, and monthly biodiesel production from October to December 2011, and from March to May 2012 averaged nearly 100 million gallons per month.[28] These data indicate that significant progress has already been made in expanding the fuel distribution infrastructure necessary to support the use of the 1.28 billion gal of biomass diesel. We anticipate such efforts will continue to be successful in supporting the required biodiesel volume for 2013.

The American Trucking Association (ATA) stated that EPA should have provided a discussion of the costs of the infrastructure changes contained in the proposed rule. These costs were accounted for in the discussion of the overall impacts on transportation fuel price contained in Section IV.B.1.d. Additional discussion of specific ATA comments is included below.

ATA commented that EPA underestimated the number of tank trucks needed to distribute the additional amount of biodiesel in 2013 relative to volume used in 2012. ATA stated that the assumed 6 trips per tank truck per day that EPA used in estimating the number of tank trucks that would be needed was unrealistically high. ATA stated that one large ATA member that transports biofuels reports that the average length of haul (one way) is 141 miles. Based on this, ATA stated that 2 loads per day would be a more accurate estimate considering loading and unloading times.

ATA assumed a single shift tank truck delivery operation. Our estimated number of tank trucks was based on a two shift operation. We continue to believe that a two shift truck delivery model of operation is appropriate to maximize the utilization of distribution system resources. Given time for loading and unloading and lunch breaks for 2 shifts, our assumed 6 deliveries per day equates to an average one way truck shipping distance of 40 miles. We project that a number of additional biodiesel plants will be brought into production to meet the 2013 biodiesel volume. Biodiesel production plants tend to be geographically dispersed. Hence, the opening of additional plants will tend to reduce the average shipping distance from the biodiesel production plant to the terminal compared to today. We also project that the production volume will increase at a number of existing biodiesel plants. This will facilitate the shipment by rail of biodiesel volumes that previously were shipped by truck long distances. Thus, we believe that biodiesel trucking distances will be substantially reduced in the future.

Nevertheless, we acknowledge that uncertainty exists regarding what biodiesel shipping distances will be in the future. Therefore, we believe that it is useful to evaluate the potential impacts of longer shipping distances on the number of additional tank trucks that will be needed to transport biodiesel. If we were to assume a 141 mile average truck shipping distance per ATA and a two-shift operation, this would translate to 4 loads per day per tank truck. At 4 loads per day, 38 additional number of tank trucks would be needed in 2013 relative to 2012 (as opposed to the 25 that we projected). If we were to assume only 2 deliveries per day as ATA did, an additional 75 trucks would be needed for the 2013 case. Even under this extreme case, the addition of 75 tank trucks would represent less than 0.3% of the total U.S. fleet of petroleum products tank trucks (estimated at 27,000).[29] Consequently, the possibility that biodiesel shipping distances might be longer than we projected would not materially affect our conclusions about the ability to accommodate the additional tank trucks and drivers needed.

In the proposal, we estimated that a total of 5 tank trucks will be needed to transport 80 mill gallons/yr of renewable diesel that we projected would be used annually in 2012 and 2013 to the locations where it is blended with petroleum-based diesel fuel. This is based on each tank truck carrying 7,800 gallons of renewable diesel fuel making 6 deliveries per day. We estimate that the production facility that will account for the renewable diesel produced through 2013 will ship its product 20 miles or less by tank truck to facilities that produce blends with petroleum-based diesel fuel. Shipment of the projected renewable diesel volume such short distances could likely be achieved by making 6 deliveries during one shift without the need for a second shift. We anticipate that the renewable diesel fuel will be blended directly into storage tanks containing petroleum-based diesel fuel. Consequently, we continue to believe that the distribution of renewable diesel fuel could be accomplished without undue difficulty.

IV. Impacts of 1.28 Billion Gallons of Biomass-Based Diesel

In order to evaluate the impacts of a biomass-based diesel volume of 1.28 billion gal in the areas required under the statute (see Section II), we first considered what the appropriate reference would be. Since the statute requires that the biomass-based diesel volume we set for 2013 be no lower than 1.0 billion gal, we believe that this is an appropriate reference point. Therefore, in the discussion that follows, we have focused on either a volume of 1.28 billion gal biomass-based diesel or an increment of 0.28 billion gal biomass-based diesel, depending on the specific

[27] NBB did not provide an analysis regarding the addition of new biodiesel distribution facilities.

[28] *http://www.eia.gov/biofuels/biodiesel/production/table1.pdf.*

[29] Department of Transportation, Hazardous Materials, Safety Requirements for External Product Piping on Cargo Tanks Transporting Flammable Liquids, Notice of Proposed Rulemaking, 76 FR 4847, January 27, 2011. *http://www.gpo.gov/fdsys/pkg/FR-2011-01-27/pdf/2011-1695.pdf.*

sources of information and analyses available.

The statute requires that an applicable biomass-based diesel volume for 2013 and other years be based on an analysis of specified environmental and other impacts. These analyses can be conducted for 1.28 billion gal biomass-based diesel or an increment of 0.28 billion gal. Most of the areas we are required to analyze were covered in the RFS2 final rule in some form, and we believe that we can use this information in satisfying our statutory obligations to analyze specified factors in determining the applicable volume of biomass-based diesel for 2013.

Some of the analyses presented in the RFS2 final rule were for the specific case of 1.28 billion gallons in 2013. These analyses included an investigation of the expected annual rate of commercial production of biomass-based diesel in 2013, impacts on agricultural commodity supply and price, and the cost to consumers of transportation fuel. Some of these were discussed in Section III above. Most of the analyses in the RFS2 final rule, however, were conducted to represent full implementation of the RFS2 program in 2022. In these analyses, the biomass-based diesel volume was estimated to be 1.82 billion gallons, which was compared to a reference case biodiesel volume of 380 mill gallons. These cases are shown in Table IV–1.

TABLE IV–1—PRIMARY 2022 REFERENCE AND CONTROL CASES FROM RFS2 FINAL RULEMAKING (BILLION GALLONS)

	Advanced biofuel						Non-advanced biofuel	Total renewable fuel
	Cellulosic biofuel		Biomass-based diesel		Other advanced biofuel			
	Cellulosic ethanol	Cellulosic diesel	FAME [a] biodiesel	NCRD [b]	Other biodiesel [c]	Imported ethanol	Corn ethanol	
Reference	0.25	0	0.38	0	0	0.64	12.29	13.56
Control	4.92	6.52	0.85	0.15	0.82	2.24	15.00	30.50

[a] Fatty acid methyl ester (FAME) biodiesel.
[b] Non-Co-processed Renewable Diesel (NCRD).
[c] Other Biodiesel is biodiesel produced in addition to the amount needed to meet the biomass-based diesel standard.

The biomass-based diesel volume of 1.82 billion gallons analyzed for 2022 in the RFS2 final rule is higher than the 1.28 billion gallons we are required to evaluate for today's final rule for 2013. More importantly, the change in biodiesel production in 2022 due to the statutory mandates for biomass-based diesel plus other diesel anticipated to meet the advanced biofuel volume (a total increase of 1.44 billion gallons compared to the reference case without the EISA mandates) is much larger than the change we are evaluating for 2013 (0.28 billion gallons). The RFS2 final rule analysis considers impacts from the entirety of the renewable fuel mandates, as opposed to impacts resulting solely from the biodiesel portion of the mandates.

In response to the NPRM, the American Petroleum Institute (API) commented that comparing the analyses conducted in the RFS2 final rule for the fully implemented RFS2 program in 2022 to a biodiesel increment of 0.28 billion gal occurring in 2013 was misleading. They cited the fact that the 2022 analysis between the control and reference cases accounts for agricultural and market conditions that develop over multiple years, while the proposed biomass-based diesel requirement of 1.28 billion gallons in 2013 would require those changes to occur over a single year. They also cited the fact that the single-year growth from 2012 to 2013 that would occur under a requirement for 1.28 billion gallons (0.28 billion gallons in one year) is about twice as high as the annualized growth rate in the RFS final rule (1.44 billion gal increase over ten years, or about 0.14 billion gal per year).

As described in Section III, we believe that the industry can increase production to at least 1.28 billion gallons by 2013, that sufficient feedstock will be available, and that the infrastructure will be able to accommodate these higher volumes. Therefore, we do not believe that API's concern about the different annual production growth rates in the RFS2 final rule compared to our proposal for 2013 is warranted.

With regard to concerns about agricultural and market conditions, we agree that the positive impacts of yield growth and foreign crop production increases that may be reflected in the 2022 analysis from the RFS final rule, and which develop over multiple years, may not be representative of a single-year increase in biomass-based diesel of 0.28 billion gallons in 2013. However, the RFS is a forward-looking program that focuses on long-term changes in the fuels sector. For this reason, it is not appropriate to emphasize specific interim year impacts in cases where these impacts are transient and continually changing. However, in some cases we have been able to analyze a 2013 impact, which should then be compared to the 2022 impact analyzed for the RFS2 final rule. In other cases we have used trends used to derive our 2022 assessments to indicate likely impacts in 2013. Since the NPRM, EPA has conducted a specific analysis of the effects of the 2013 mandate on the biofuels market. This analysis is detailed in Section IV.B of this rulemaking. This analysis was conducted in response to comment about quantifying some of the costs and benefits of this rule. However, it also addresses API's concerns by providing a year-specific analysis.

We recognize that uncertainties remain regarding how markets for soybeans and other crops will react to a mandate of 1.28 billion gallons for biomass-based diesel. For instance, the volume of soybean oil required to meet the mandate will likely be higher in 2013 than it has been in 2011. As a result, there may be upward pressure on soybean oil prices, which we consider in Section III.B of this rulemaking. Nevertheless, we expect that RIN prices will adjust in the market to provide the economic incentive for the mandate to be met. As described in the rulemaking that established the RFS1 program, the RIN system was designed with this end in mind.

A. Consideration of Statutory Factors

1. Climate Change

Since biodiesel has a GHG benefit compared to the petroleum-based diesel it is replacing, an increase in biomass-based diesel of 0.28 billion gal from 2012 to 2013 will lead to a displacement of conventional diesel fuel, with corresponding GHG emissions reductions. This increased use of biomass-based diesel will contribute to lower climate change impacts in comparison to the petroleum-based diesel it is replacing. The GHG lifecycle analysis of soybean biodiesel presented in the final RFS2 rule was based on modeling and analysis that estimated an annualized emissions stream over a 30-year averaging period, starting in 2022 (the year when the RFS2 program will be fully implemented). For the purpose of this annual rulemaking, we have not quantified the GHG emissions benefits for the 280 mill gallon increase in biomass-based diesel in 2013. At this time, we do not have a quantified estimate of the GHG impacts for the single year 2013 standard. We also do not believe it would be appropriate to use the 30-year average RFS2 estimate starting in 2022 as a surrogate for the single year impact of the 2013 BBD standard. While we are not quantifying the GHG emissions impact of this 2013 BBD rule, qualitatively we believe that it will provide a reduction in GHGs.

One commenter suggested that increased biodiesel use would also reduce GHG emissions compared to sugarcane ethanol, an alternative advanced biofuel that would be used to meet the mandate. This statement is based on the specific GHG reductions associated with a gallon of biodiesel produced in 2022 that we estimated in our lifecycle analysis for different biofuels. However, for this rulemaking we are only considering the GHG impacts of the biomass-based diesel standard. Therefore, it is outside the scope of this rule to analyze the potential GHG emission impacts of displacing sugarcane ethanol with biodiesel.

One commenter also suggested that by requiring 0.28 billion gallons of biomass-based diesel above the statutory minimum of 1.0 billion gallons, effectively shifting the biodiesel used for the ''other'' advanced biofuel category to biomass-based diesel, EPA would actually promote increased volumes of renewable fuels (rather than ethanol-equivalent gallons based on the 1.5 equivalence value), allowing for the greater displacement of fossil fuels. However, this is not the case. Although the requirement for a physical volume of biomass-based diesel will be 1.28 billion gallons, the contribution of this volume to compliance with the advanced biofuel requirement is based on energy-equivalence with respect to ethanol, not physical volumes. Thus there will be no additional quantities of other advanced fuels produced.

2. Energy Security

This final standard will assure an increased use of biomass-based diesel in the U.S. and help to improve U.S. energy security. Reducing U.S. petroleum imports and increasing the diversity of U.S. liquid fuel supplies lowers both the financial and strategic risks caused by potential sudden disruptions in the supply of imported petroleum to the U.S. The economic value of reductions in these risks provides a measure of improved U.S. energy security. This section summarizes EPA's estimates of U.S. oil import reductions and energy security benefits from this rule.

In 2010, U.S. petroleum import expenditures represented 14 percent of total U.S. imports of all goods and services.[30] These expenditures rose to 18 percent by April of 2011.[31] In 2010, the United States imported 49 percent of the petroleum it consumed,[32] and the transportation sector accounted for 71 percent of total U.S. petroleum consumption. This compares to approximately 37 percent of total U.S. petroleum supplied by imports and 55 percent of U.S. petroleum consumption in the transportation sector in 1975. Requiring higher volumes of renewable fuels to be used in the U.S. is expected to lower U.S. oil imports.

This rule will require an additional 280 million gallons of biodiesel to be produced, which equals about 255 million gallons of diesel equivalent.[33] Based on analysis of historical and projected future variation in U.S. petroleum consumption and imports, we estimate that approximately 50 percent of the reduction in fuel consumption resulting from adopting renewable fuels is likely to be reflected in reduced U.S. imports of refined fuel, while the remaining 50 percent is expected to be reflected in reduced domestic fuel refining. Of this latter figure, 90 percent is anticipated to reduce U.S. imports of crude petroleum for use as a refinery feedstock, while the remaining 10 percent is expected to reduce U.S. domestic production of crude petroleum. Thus, on balance, each gallon of fuel saved as a consequence of the renewable fuel standards is anticipated to reduce total U.S. imports of petroleum by 0.95 gallons.[34] Therefore, based on these assumptions, this rule is expected to reduce imports of petroleum by about 242 million gallons. Table IV.A.2–1 below compares EPA's estimates of the reduction in imports of U.S. crude oil and petroleum-based products from this program to projected total U.S. imports for the year 2013.

TABLE IV.A.2–1—PROJECTED IMPORT REDUCTIONS FROM THIS RULE AND TOTAL U.S. PETROLEUM-BASED IMPORTS IN 2013

[Millions of barrels]

U.S. petroleum-based import reductions from the rule (million barrels/yr)	U.S. total petroleum-based imports without the rule (million barrels/yr)
5.8	3,391

In order to understand the energy security implications of reducing U.S. petroleum imports, EPA worked with Oak Ridge National Laboratory (ORNL), which has developed approaches for evaluating the economic costs and energy security implications of oil use. The energy security estimates provided below are based upon a methodology developed in a peer-reviewed study entitled, ''*The Energy Security Benefits of Reduced Oil Use, 2006–2015,*'' completed in March 2008. This study is included as part of the docket for this rule.[35] [36] When conducting its analysis, ORNL considered the full economic cost of importing petroleum into the United States.

The economic cost of importing petroleum into the U.S. is defined to include two components in addition to the purchase price of petroleum itself. These are: (1) The higher costs for oil imports resulting from the effect of increasing U.S. import demand on the world oil price and on the market power of the Organization of Petroleum Exporting Countries (i.e., the ''demand'' or ''monopsony'' costs); and (2) the risk of reductions in U.S. economic output and disruption of the U.S. economy caused by sudden disruptions in the supply of imported petroleum to the U.S. (i.e., ''macroeconomic disruption/adjustment costs'').

An often-identified component of the full economic costs of U.S. oil imports

[30] *http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=WTTIMUS2&f=W.*

[31] *http://www.eia.gov/dnav/pet/pet_move_impcus_a2_nus_ep00_im0_mbblpd_a.htm.*

[32] *http://www.eia.gov/dnav/pet/pet_pri_rac2_dcu_nus_m.htm.*

[33] RFS2 Final Rulemaking.

[34] This figure is calculated as 0.50 + 0.50*0.9 = 0.50 + 0.45 = 0.95.

[35] Leiby, Paul N., ''*Estimating the Energy Security Benefits of Reduced U.S. Oil Imports,*'' Oak Ridge National Laboratory, ORNL/TM–2007/028, Final Report, 2008. (Docket EPA–HQ–OAR–2010–0162).

[36] The ORNL study ''*The Energy Security Benefits of Reduced Oil Use, 2006–2015,*'' completed in March 2008, is an updated version of the approach used for estimating the energy security benefits of U.S. oil import reductions developed in an ORNL 1997 Report by Leiby, Paul N., Donald W. Jones, T. Randall Curlee, and Russell Lee, entitled ''*Oil Imports: An Assessment of Benefits and Costs.*'' (Docket EPA–HQ–OAR–2010–0162).

is the cost to U.S. taxpayers of existing U.S. energy security policies. The two primary components of this cost are likely to be (1) the expenses associated with maintaining a U.S. military presence—in part to help secure a stable oil supply—in potentially unstable regions of the world; and (2) costs for maintaining the U.S. Strategic Petroleum Reserve (SPR). The SPR is the largest stockpile of government-owned emergency crude oil in the world.

The EPA recognizes that potential national and energy security risks exist due to the possibility of tension over oil supplies. Much of the world's oil and gas supplies are located in countries facing social, economic, and demographic challenges, thus making them even more vulnerable to potential local instability. Thus, to the degree to which this final rule increases the diversity of sources of liquid fuel for U.S. consumption and/or reduces reliance upon imported energy supplies that can be deployed by either consumers or the nation's defense forces, the United States could expect benefits related to national security and increased energy supply. Although the Agency recognizes the clear benefit to the United States from reducing dependence on foreign oil, the Agency has been unable to calculate the monetary benefit that the United States will receive from the improvements in national security expected to result from this program.

Also, while the costs of building and maintaining the SPR are clearly related to U.S. oil use and imports, these costs have not varied historically in response to U.S. oil import levels. Thus, the costs of maintaining the SPR are excluded from this analysis. In addition, given the redistributive nature of this monopsony effect from a global perspective, it is excluded in the energy security benefits calculations for this rule. In contrast, the other portion of the energy security premium, the U.S. macroeconomic disruption and adjustment cost that arises from U.S. petroleum imports, does not have offsetting impacts outside of the U.S. and, thus, is included in the energy security benefits estimated for this rule. To summarize, EPA has included only the macroeconomic disruption portion of the energy security benefits to estimate the monetary value of the total energy security benefits of this program.

The U.S. is projected to be a net exporter of diesel fuel in 2013.[37] Increased biodiesel production would likely result in less domestic consumption of diesel fuel in the U.S. The reduced consumption may be reflected in increased exports of diesel from the U.S. However, regardless of the incremental effect of this rule on net imports, increasing the diversification of the U.S. and global diesel fuel pools would likely confer some reduction in the severity of a future potential disruption in the world oil market. Our energy security analysis does not evaluate the energy security benefits of individual finished petroleum products; rather, our analysis takes into account the energy security benefits of overall net petroleum product imports. Although we believe such an approach provides a reasonable estimate of energy security impacts, in future year evaluations of the biodiesel volumes, we may consider whether to develop an estimate more specific to the biodiesel market.

The energy security premiums for the year 2013 are presented in Table IV.A.2–2 as well as a breakdown of the components of the energy security premiums for those years. These energy security premiums are recorded on a dollar per barrel of oil imported reduced from this rule. On a gallon of biodiesel fuel basis, these translate into an estimated $0.15/gallon benefit in 2013 for the macroeconomic disruption and adjustment costs component of the energy security premium (in 2010$).

TABLE IV.A.2–2—ENERGY SECURITY PREMIUMS IN 2013 (2010$/BARREL) BASED ON ORNL METHODOLOGY

Monopsony	Macroeconomic disruption/adjustment costs	Total mid-point
$11.40	$7.13	$18.53
($3.83–$19.40)	($3.41–$10.35)	($10.03–$26.74)

Note: Values in parentheses represent a 90% confidence interval around the central value.

Using EPA's fuel consumption analysis in conjunction with ORNL's energy security premium estimates, the agency has developed estimates of the total energy security benefits for the year 2013 in Table IV.A.2–3.

TABLE IV.A.2–3—ESTIMATED ENERGY SECURITY BENEFITS IN 2013 (2010$)

U.S. oil imports reduced (million barrels/yr)	Benefits ($ millions)
5.8	$41.2

One commenter suggested that an increase in biodiesel for the mandate is statistically insignificant. EPA interprets this comment to mean that the increase in biodiesel production due to this rule is not a sufficiently large volume that it will add significantly to the energy security position of the U.S. EPA's analysis of energy security is conducted on a per gallon basis, and per gallon estimates are extrapolated upwards to estimate the total energy security benefits estimate in Table IV.A.2–3. Thus, we assume that each extra gallon of biodiesel has an equal energy security benefit regardless of the overall size of the renewable fuels volume requirement. Thus, total energy security benefits are increasing with this rule.

3. Agricultural Commodities and Food Prices

For the RFS2 final rule, we examined the impacts of increased renewable fuels production on commodity prices, food prices and trade in agricultural products which considered the impacts of all the biofuel feedstock sources anticipated to meet the 2022 biofuel volume requirements, not just biodiesel. For the RFS2, EPA used two primary models for its agricultural economic impacts analysis, the Food and Agriculture Sector Optimization Model (FASOM) and the Food and Agricultural Policy Research Institute-Center for Agriculture and Rural Development (FAPRI–CARD) models. The FASOM model is a long-term economic model of the U.S. forest and agriculture sectors that maximizes the net present value of the sum of producer and consumer surplus across the two sectors over time subject to market, technology, and other constraints. The FAPRI–CARD models are a system of econometric models covering many agricultural commodities in the U.S. and internationally. They are

[37] U.S. Energy Information Administration (EIA). ''Short-Term Energy Outlook'', Table 4a, June 2012. *http://205.254.135.7/forecasts/steo/tables/pdf/4atab.pdf*.

based on historical data analysis, current academic research, and a reliance on accepted economic, agronomic, and biological relationships in agricultural production and markets.[38]

To meet the RFS2 renewable fuel volumes, a number of price effects on the agricultural commodities were estimated in the RFS2 final rule for 2022. For instance, FASOM estimated that an increase in renewable fuel volumes to meet the RFS2 will result in an increase in the U.S. soybean prices of $1.02 per bushel (10.3 percent) above the Reference Case price in 2022. FASOM also projected the price of soybean oil will increase by $183 per ton (37.9 percent) over the 2022 Reference Case price (all prices are in 2007$). Most of the additional soybeans needed for increased biodiesel production are diverted from U.S. exports to the rest of the world. In FASOM, soybean exports decrease by 135 million bushels (−13.6 percent) in 2022 relative to the AEO2007 Reference Case. This change represents a decrease of $453 million (−4.6 percent) in the total value of U.S. soybean exports in 2022. However, these price effects are not attributed to the demand for biodiesel feedstock alone, rather the compounding affect of all changes in feedstock demand estimated to result from the total biofuel mandate in 2022. Since the impact on soybeans due to biodiesel demand was only a portion of this total feedstock impact and since the impact in 2013 will be less than considered in 2022 (since the 2013 biodiesel volumes are less than those considered for 2022), the impact on soybean prices and exports from an increase to 1.28 billion gall in 2013 should also be less. See Sections III.B.3 and IV.B.1.a of this rulemaking for further information on the impact on soybean availability and prices.

A recent report by IHS Global Insight[39] also discusses potential agricultural and economic impacts from increasing vegetable oil demand for biodiesel production. According to this study, existing soybean yield technologies are expected to be applied increasingly across the U.S., resulting in roughly a 10% higher growth rate in soybean yields than USDA's projections from 2010–2016 which were used by EPA in its RFS2 analyses. Similarly, Global Insight predicts these higher yield technologies will be implemented in other large soybean-producing countries, such as Brazil and Argentina. If higher yields than modeled for RFS2 indeed are realized, then it is likely that the price increases for soybean oil will be less than estimated for RFS2. Likewise, other price impacts, such as those on food prices, will still move in the same direction (i.e., an increase in price resulting from an increase in demand) but could be smaller than in the RFS2 analysis.

For the analyses performed for the RFS2 final rule, EPA estimated a $10 per person per year increase in food costs in the U.S. due to the total annual impact of the RFS2 program by 2022 compared to a Reference case that assumed no RFS2 renewable fuel requirements. Again, the biodiesel impacts will represent only a small portion of these overall impacts and will likely be even smaller in 2013 due to the smaller volume of feedstock required. One commenter suggested that EPA should conduct a more thorough analysis of food price impacts of this rule. EPA has conducted an analysis projecting the amount of soybean oil that will be required to meet this mandate and the effect this will have on the prices of soybeans and soybean oil. The results of this analysis are discussed in detail in Sections III.B.3 and IV.B.1.a of this rule.

4. Air Quality

As described in the NPRM, we are relying on the analyses of renewable fuel impacts conducted in support of the RFS2 rule[40] to qualitatively discuss the expected air quality impacts of a biomass-based diesel volume of 1.28 billion gallons. The RFS2 analyses reflect EPA's most current assumptions regarding biodiesel emission impacts.[41]

In the RFS2 rule, we analyzed both changes in pollutant emissions (measured in tons) and changes in ambient air quality associated with the changes in pollutant emissions. The changes in pollutant emissions were calculated by comparing the 2022 RFS2 renewable fuel volumes to volumes if the RFS2 mandate were not in place (the reference scenario).[42] The analysis reflected full implementation of the RFS2 program in 2022 and accounted for impacts from multiple types of renewable fuels, of which biodiesel was only one type. Specifically, the RFS2 emissions inventory analysis assumed 1.82 billion gal of biodiesel in the RFS2 scenario compared to 0.38 billion gal of biodiesel in the reference scenario, reflecting a 1.44 billion gal increase in biodiesel with the rule in place.

Biodiesel emission impacts from the RFS2 rule emissions inventory analysis are presented in Table IV.A.4–1. A complete discussion of the emissions inventory analysis conducted for the RFS2 rule can be found in Chapter 3 of the RFS2 Regulatory Impact Analysis (RIA).[43] These biomass-based diesel emission impacts (which reflect a 1.44 billion gal increase in biodiesel) are all less than 1% of the total U.S. emissions inventory for each pollutant.[44] We expect the impacts of the 1.28 billion gal of biomass-based diesel volume relative to the 1.0 billion gal statutory minimum volume (which reflect a 0.28 billion gal increase) to be smaller.

[38] CARD Staff, *Technical Report: An Analysis of EPA Renewable Fuel Scenarios with the FAPRI–CARD International Models,* December, 2009. Docket #: EPA–HQ–OAR–2005–0161–3177.

[39] ''Biodiesel Production Prospects for the Next Decade,'' IHS Global Insight, March 11, 2011.

[40] 75 FR 14670, March 26, 2010.

[41] U.S. EPA 2010, Renewable Fuel Standard Program (RFS2) Regulatory Impact Analysis. EPA–420–R–10–006. February 2010. Docket EPA–HQ–OAR–2009–0472–11332. Section 3.1.1.2.4.

[42] In the RFS2 Regulatory Impact Analysis, we analyzed the mandated 2022 RFS2 renewable fuel volumes relative to volumes required by two reference scenarios: RFS1 mandate (7.1 billion gallons of renewable fuels) and AEO 2007 (13.6 billion gallons of renewable fuels). Both reference scenarios assumed the same volume of biodiesel, so the emission and air quality impacts described in this section are the same for both reference scenarios.

[43] U.S. EPA 2010, Renewable Fuel Standard Program (RFS2) Regulatory Impact Analysis. EPA–420–R–10–006. February 2010. Docket EPA–HQ–OAR–2009–0472–11332.

[44] While the national-level emissions and air quality impacts may be small, there may still be local and regional impacts that are larger in percentage terms. Our analysis is unable to capture this local and regional variability.

TABLE IV.A.4–1—BIODIESEL EMISSION IMPACTS OF THE RFS2 RENEWABLE FUEL VOLUMES (1.82 BILLION GAL) RELATIVE TO THE REFERENCE CASE (0.38 BILLION GAL)

	Biodiesel impacts of RFS2 rule emissions inventory analysis (Δ 1.44 billion gal biodiesel)			Percent RFS2 total U.S. inventory[c]
	Upstream[a] (tons)	Downstream[b] (tons)	Total (tons)	
VOC	−1,049	−2,422	−3,471	−0.03
CO	913	−4,104	−3,191	−0.01
NO_X	−290	1,346	1,056	0.01
PM_{10}	4,268	−569	3,699	0.10
$PM_{2.5}$	632	−315	317	0.01
SO_2	1,580	0	1,580	0.02
NH_3	4,171	0	4,171	0.10
Benzene	10	−30	−20	−0.01
Ethanol	0	0	0	0.00
1,3-Butadiene	0	−16	−17	−0.10
Acetaldehyde	2	−66	−65	−0.14
Formaldehyde	1	−182	−181	−0.21
Naphthalene	−1	0	−1	−0.01
Acrolein	63	−9	54	0.84

[a] U.S. EPA 2010, Renewable Fuel Standard Program (RFS2) Regulatory Impact Analysis. EPA–420–R–10–006. February 2010. Docket EPA–HQ–OAR–2009–0472–11332. Table 3.2–11. Note: units in Table 3.2–11 were mislabeled as tons/mmBTU. Actual units are tons.

[b] U.S. EPA 2010, Renewable Fuel Standard Program (RFS2) Regulatory Impact Analysis. EPA–420–R–10–006. February 2010. Docket EPA–HQ–OAR–2009–0472–11332. Table 3.2–9.

[c] While the national-level emissions and air quality impacts may be small, there may still be local and regional impacts that are larger in percentage terms. Our analysis is unable to capture this local and regional variability.

The air quality analysis for the RFS2 rule used photochemical modeling to characterize primary pollutants that are emitted directly into the atmosphere and secondary pollutants that are formed as a result of complex chemical reactions within the atmosphere. Included in the air quality modeling scenarios for the RFS2 rule were large volumes of ethanol as well as other renewable fuels, and the nature of these complex chemical interactions makes it difficult to determine the air quality impacts of biodiesel alone. Specifically, the RFS2 air quality analysis reflects a roughly 21 billion gal increase in ethanol, far outweighing the volume increase in biodiesel (0.43 billion gal). A complete discussion of the RFS2 air quality analysis and its limitations can be found in Chapter 3 of the RFS2 Regulatory Impact Analysis (RIA).[45]

The RFS2 air quality analysis was completed earlier than the final emissions inventory analysis because of the length of time needed to conduct photochemical modeling.[46 47] The air quality analysis assumed 0.81 billion gal of biodiesel in the RFS2 scenario compared to 0.38 billion gal of biodiesel in the reference scenario, reflecting a 0.43 billion gal increase in biodiesel use with the rule in place. We use the 0.43 billion gal increase in biodiesel assumed in the RFS2 air quality analysis to qualitatively discuss the potential impacts of a 0.28 billion gal increase in biodiesel from this rule.

Given the small emissions impact of a 0.43 billion gal increase in biodiesel on the total U.S. emissions inventory (the basis for our air quality modeling scenarios), we expect the portion of air quality impacts attributable to a move from 1.0 to 1.28 billion gal (a 0.28 billion gal biodiesel increase) to be small enough that on a nationwide basis the air quality impact will likely not be noticeable.

We note that Clean Air Act section 211(v) requires EPA to analyze and mitigate, to the greatest extent achievable, adverse air quality impacts of the renewable fuels required by the RFS2 rule. We intend to investigate any potential adverse impacts from increased renewable fuel use through that study and will promulgate appropriate mitigation measures separate from today's final rule.

5. Deliverability and Transport Costs of Materials, Goods, and Products Other Than Renewable Fuel

EPA evaluated in the RFS2 final rule the impacts on the U.S. transportation network from the distribution of the total additional volume of biofuels that will be used to meet the RFS2 standards. Oak Ridge National Laboratory (ORNL) conducted an analysis of biofuel transportation activity from production plants to petroleum terminals by rail, barge, and tank truck to identify potential distribution constraints to help support the assessment in the RFS2 final rule.[48] The ORNL analysis concluded that the increase in biofuel shipments due to the RFS2 standards will have a minimal impact on U.S. transportation infrastructure. The majority of biofuel transportation is projected to be accomplished by rail. Nevertheless, it was estimated that the biofuels transport will constitute only 0.4% of the total freight tonnage for all commodities transported by the rail system through 2022.[49] Given the small increase in freight shipments due to the transport of biofuels to meet the RFS2 standards, we believe that the distribution of biofuels

[45] U.S. EPA 2010, Renewable Fuel Standard Program (RFS2) Regulatory Impact Analysis. EPA–420–R–10–006. February 2010. Docket EPA–HQ–OAR–2009–0472–11332.

[46] Emissions serve as inputs to the air quality modeling analysis. However, the final fuel volume assumptions (upon which the emission estimates were based) increased between the time that emissions were estimated to support the air quality modeling analysis and the time emissions were estimated to reflect the final rulemaking.

[47] The RFS2 air quality analysis reflects EPA's most recent air quality analysis applicable to changes in renewable fuel types and volumes.

[48] ''Analysis of Fuel Ethanol Transportation Activity and Potential Distribution Constraints'', Oak Ridge National Laboratory, March 9, 2009. To simplify the ORNL analysis, biomass-based diesel volumes were assumed to originate at the same points of production and to be shipped to the same petroleum terminals as the ethanol projected to be used to meet the RFS2 standards. This may tend to overstate the potential impact on the transportation system from the shipment of biomass-based diesel fuels since biomass-based diesel production plants were projected to be more geographically dispersed than ethanol production facilities. In any event, the simplifying assumption was assessed to have little impact on the results from the analysis given that biomass-based diesel represented only 8% of the total projected biofuel volumes under the RFS2 final rule.

[49] See sections 1.6.4 and 1.6.5 of the RFS2 RIA.

will not adversely impact the deliverability and transport costs of materials, goods, and products other than renewable fuels. There were no comments on the proposed rule to contradict this assessment.

6. Wetlands, Ecosystems, and Wildlife Habitats

As directed by CAA section 211(o)(2)(B)(ii), in setting the 2013 biodiesel volume requirements, EPA is to consider the impacts of biodiesel production and use on wetlands, ecosystems and wildlife habitat. No specific public comments on these impacts were received, so the following updates the largely qualitative analyses provided in the proposal.

The most complete and up-to-date assessment of these impacts is contained in the analysis prepared by EPA in response to the requirements set out in CAA section 204. This report to Congress considers a range of impacts but the focus of the discussion here is on wetlands, ecosystems and wildlife habitats as directed by the CAA amendments. This report does not attempt to quantify the impacts of biofuel production and use as these impacts are dependent on local or regional conditions. Nevertheless the analyses contained in the report provide qualitative assessments and reasonable expectations of trends which can be used to consider the environmental impacts of increases in biodiesel production and use. These trends are only summarized here while the final report provides extensive detail.[50]

The assessment focuses on the use of oil from soybeans as the feedstock for biodiesel production. Other oil seed feedstock sources represent a very small portion of biofuel production in 2013 so will be expected to have much less of an impact than soy oil. Corn oil extracted during the ethanol production process is increasing, adding a small increment of supply for biofuel production by 2013 that will offset demands for soy and other oil seed crops, thus reducing potential agricultural impact of biodiesel production. Corn as a feedstock for biofuel production is driven primarily by the demand for corn ethanol, not the demand for the corn ethanol co-product of extracted, non-food grade corn oil. Therefore the impact of the supply of extracted corn oil is not considered here. Finally, waste fats, oils and greases are expected to have negligible environmental impact as a feedstock since they do not impact agricultural land use and would otherwise be used for some lower value purpose or simply discarded.

Wetlands can be adversely affected by agricultural production through runoff that can result in nutrient loading (particularly from fertilizers) or from sedimentation (from erosion). Soy production tends to use less fertilizer than corn production (the most likely alternative crop) and can reduce the amount of fertilizer required for corn when planted in rotation with corn. However, compared to other crops, erosion can be higher from fields planted in row crops such as corn and soy beans. While the impacts of nutrient loading and erosion tend to be site specific, good farming practices including the optimum fertilizer use and the set aside of sensitive lands via the Conservation Reserve Program (CRP) can significantly help control these adverse affects. Wetlands can also be adversely affected through diversion of surface and ground water for agricultural irrigation. Soybean production less frequently relies on irrigation than corn and some other crops. More discussion on water usage is included below in the section on water use and water quality impacts.

Ecosystems and wildlife habitat can be adversely affected if CRP lands are converted to crop production, if row crops such as soybeans replace grassy crops and in general if new lands with diverse vegetation are converted to crop production. As explained in the RFS2 final rule, we do not expect the RFS program production to result in an increase in total acres of agricultural land under production in the U.S. compared to a reference case without the impact of the RFS2 volumes. The relatively small increase of 0.28 billion gall should not appreciably affect the amount of land devoted to oil seed production. Additionally, the USDA commitment to support the CRP program should minimize the likelihood of any significant change in the amount of CRP land. Therefore, while some very local changes may result due to individual farmer's planting decisions, since no new crop land are expected in the U.S. due to this increase in the biomass-based diesel standard and sensitive lands will be protected via programs such as CRP, no measureable impact in aggregate ecosystems or wildlife habitat due to cropland expansion is expected.

Increased water withdrawals for soy biodiesel production can lead to more frequent low-flow conditions that reduce the availability for aquatic habitat. Additionally, waste water from biodiesel production can adversely affect surface water quality if not properly treated.

7. Water Quality and Quantity

The water quality and quantity impacts of biodiesel are primarily related to the type of feedstock and the production practices used both to produce the feedstock and to convert the feedstock into biodiesel. Soybeans are the principal feedstock used for biodiesel production and are predicted to account for 600 million gallons of the 1.28 billion gallons evaluated for 2013. Non-food grade corn oil extracted during ethanol production, animal fats and recycled fats account for most of the remaining biodiesel feedstock. Since these fats and greases are the byproduct of another use and are not produced specifically for biodiesel manufacture, their production and primary use is not related to the level of biodiesel so their indirect impacts are not considered here. While non-food grade corn oil is extracted for its use as a feedstock for biodiesel production, it is a by-product of corn ethanol production. The corn used for biofuel production is primarily grown for the purpose of producing ethanol, not as a source of extracted non-food grade oil so the water impacts of corn production are primarily a concern for ethanol produced from the corn starch, not the by-product of extracted corn oil. Thus, this analysis will focus on soybeans as a primary source of vegetable oil used in biodiesel production. No specific public comments on these impacts were received so the following discussion updates the analyses provided in the proposal.

From a water quality perspective, the primary pollutants of concern from soybean production are fertilizers (nitrogen and phosphorus) and sediment. Additional pollutants such as from pesticides have the potential to impact water quality to a lesser degree. There are three major pathways for these potential pollutants to reach water from agricultural lands: runoff from the land's surface, subsurface tile drains, or leaching to ground water. Climate, hydrological, and management factors influence the potential for these contaminants to reach water from agricultural lands.

a. Impacts on Water Quality and Water Quantity Associated With Soybean Production

After corn, soybeans are the second largest agricultural crop in terms of acreage in the U.S. In 2010, American farmers planted 77.7 million acres of

[50] U.S. EPA (Environmental Protection Agency). February 2012. ''Biofuels and the Environment: First Triennial Report to Congress.'' Office of Research and Development, Washington, DC. EPA/600/R–10/183F.

soybeans and harvested 3.4 billion bushels. As with the production of any agricultural crop, the impact on water quality depends on a variety of factors including production practices, use of conservation practices and crop rotations by farmers, and acreage and intensity of tile drained lands. Additional factors outside agricultural producers' control include soil characteristics, climate, and proximity to water bodies.

Soybeans are typically grown in the same locations as corn since farmers commonly rotate between the two crops. Nutrients are applied to fewer soybean acres than corn and at much lower rates because soybean is a legume.[51] Legumes have associations in their roots with bacteria that can acquire atmospheric nitrogen and convert it into bio-available forms, reducing the need for external addition of nitrogen fertilizer. However, losses of nitrogen and phosphorus from soybeans can occur at quantities that can degrade water quality.[52] In 2006, USDA's NASS estimated that nitrogen was applied to 18 percent of the 2006 soybean planted acres in the Program States at an average rate of 16 pounds per acre per year. Phosphate was applied to 23 percent of the planted acres, at an average rate of 46 pounds per acre (NASS, 2007).[53] The quantity of nitrogen fertilizer applied to soybean fields ranged from 0 to 20 pounds per acre, while the quantity of phosphate ranged from 0 to 80 pounds per acre. As with corn, the conversion of idled acreage to soybeans is estimated to result in losses of nitrogen and phosphorus from the soil through cultivation.[54]

Agricultural conservation systems can reduce the impact of soybean production on the environment. The systems components include (1) Controlled application of nutrients and pesticides through proper rate, timing, and method of application, (2) controlling erosion in the field (i.e., reduced tillage, terraces, or grassed waterways), and (3) trapping losses of soil and fertilizer runoff at the edge of fields or in fields through practices such as cover crops, riparian buffers, controlled drainage for tile drains, and constructed/restored wetlands.[55]

The effectiveness of conservation practices, however, depends upon their adoption. The USDA's Conservation Effects Assessment Project (CEAP) quantified the effects of conservation practices used on cultivated cropland in the Upper Mississippi River Basin. It found that, while erosion control practices are commonly used, there is considerably less adoption of proper nutrient management to mitigate nitrogen loss to water bodies.[56] However, as noted above, the relatively low amount of fertilizer used for soy bean production tends to lessen the potential for nitrogen loss to water bodies. Additionally, soybean production can reduce the amount of biomass left on the field compared to a corn case where much of the stover is left to protect the soil and enhance biomass content. In such a case, there could be more soil erosion with soybean production compared to corn production and potentially greater nutrient runoff. Proper soil management can reduce this erosion concern.

Water for soybean cultivation predominately comes from rainfall, although about 11 percent of soybean acres in the U.S. are irrigated.[57] Water use for irrigated soybean production in the U.S. varies from 0.2 acre-feet per acre in Pennsylvania to about 1.4 acre-feet per acre in Colorado, with a national average of 0.8 acre-feet of water.[58] Water used for irrigation is at least temporarily not available for other uses and if pumped from deep aquifers, may not return to those aquifers for centuries.

There is some concern that the demand for corn and soybeans as biofuel feedstocks may lead to high prices of these commodities, inducing farmers with land currently enrolled in USDA's CRP to return to intensive agricultural production (e.g., Secchi et al., 2009).[59] The CRP provides farmers with financial incentives to set aside a certain portion of their cropland in order to conserve or improve wildlife habitat, reduce erosion, protect water quality, and support other environmental goals. Biomass produced from CRP lands is considered "renewable biomass" as defined under the RFS regulations and is therefore eligible for use in the production of renewable fuel under the RFS program. The Food, Conservation, and Energy Act of 2008 (known as the Farm Bill) capped CRP acreage at 32 million acres, reducing enrollment by 7.2 million acres from the 2002 Farm Bill with the potential for making more acreage available for the production of row crops. However, even if the aggregate total of CRP protected lands does not change significantly, individual farmers have the opportunity to move specific land in and out of CRP such that the specific lands in the program do not necessarily remain fixed. Historically, land entering and exiting the CRP program has been more vulnerable to erosion than other cultivated land, but also less productive.[60] So while the conversion of a specific piece of land from CRP to intensive feedstock production is possible, such a land use conversion is less likely than land already in crop production given practical economic and agronomic considerations.

b. Impacts on Water Quality and Water Quantity Associated With Biodiesel Production

Biological oxygen demand (BOD), total suspended solids, and glycerin pose the major water quality concerns in wastewater discharged from biodiesel facilities. Actual impacts depend on a range of factors, including the type of feedstock processed, bio-refinery technology, effluent controls, and water re-use/recycling practices, as well as the facility location and source and receiving water. Discharge water quality requirements of local and regional governments can help assure best

[51] U.S. EPA (United States Environmental Protection Agency). Renewable fuel standard program (RFS2) regulatory impact analysis. EPA–420–R–10–006. Available at: *http://www.epa.gov/otaq/renewablefuels/420r10006.pdf.*

[52] Dinnes, DL; Karlen, DL; Jaynes, DB; Kaspar, TC; Hatfield, JL; Colvin, TS; Cambardella, CA. 2002. Nitrogen management strategies to reduce nitrate leaching in tile-drained midwestern soils. Agronomy Journal 94(1): 153–171.

[53] NASS (United States Department of Agriculture, National Agricultural Statistics Service). 2007. Agricultural chemical usage 2006 field crops summary. Ag Ch 1 (07)a. Available at: *http://usda.mannlib.cornell.edu/usda/nass/AgriChemUsFC//2000s/2007/AgriChemUsFC-05-16-2007_revision.pdf.*

[54] Simpson, TW; Sharpley, AN; Howarth, RW; Paerl, HW; Mankin, KR. 2008. The new gold rush: Fueling ethanol production while protecting water quality. Journal of Environmental Quality 37(2): 318–324.

[55] Dinnes, DL; Karlen, DL; Jaynes, DB; Kaspar, TC; Hatfield, JL; Colvin, TS; Cambardella, CA. 220 2002. Nitrogen management strategies to reduce nitrate leaching in tile-drained 221 midwestern soils. Agronomy Journal 94(1): 153–171.

[56] U.S. Department of Agriculture, National Resources Conservation Service. 2010. Assessment of the effects of conservation practices on cultivated cropland in the Upper Mississippi River Basin. Available at: *http://www.nrcs.usda.gov/technical/NRI/ceap/umrb/index.html.*

[57] U.S. Department of Agriculture. 2010. 2007 Census of agriculture, Farm and ranch irrigation survey (2008). *http://www.agcensus.usda.gov/Publications/2007/Online_Highlights/Farm_and_Ranch_Irrigation_Survey/fris08.pdf.*

[58] U.S. Department of Energy. 2006. Energy demands on water resources: Report to Congress on the interdependency of energy and water. Available at: *http://www.sandia.gov/energy-water/docs/121-RptToCongress-EWwEIAcomments-FINAL.pdf.*

[59] Secchi, S; Gassman, PW; Williams, JR; Babcock, BA. 2009. Corn-based ethanol production and environmental quality: A case of Iowa and the conservation reserve program. Environmental Management 44(4): 732–744.

[60] ERS (United States Department of Agriculture, Economic Research Service). 2008. 2008 farm bill side-by-side. Available at: *http://www.ers.usda.gov/FarmBill/2008/Titles/TitleIIConservation.htm#conservation.*

control practices and reduce water quality concerns.

Despite the existing commercial market for glycerin and the likely expanded uses for glycerin as mentioned in the RFS2 final rule, the rapid development of the biodiesel industry has caused a glut of glycerin production, resulting in many facilities disposing of glycerin. Glycerin disposal may be regulated under several EPA programs, depending on the practice. However, there have been instances of glycerin dumping, including an incident in Missouri that resulted in a large fish kill.[61] Some biodiesel facilities discharge their wastewater to municipal wastewater treatment systems for treatment and discharge. There have been several cases of municipal wastewater treatment plant upsets due to high BOD loadings from releases of glycerin.[62] BOD can lead to methane emissions during the water treatment process. To mitigate wastewater issues, some production systems reclaim glycerin from the wastewater. Closed-loop systems in which water and solvents can be recycled and reused can reduce the quantity of water that must be pretreated before discharge. Others employ anaerobic digesters to mitigate the release of methane to the atmosphere.

Biodiesel can also impact water bodies as a result of spills. However, biodiesel degrades approximately four times faster than petroleum diesel including in aquatic environments.[63] Results of aquatic toxicity testing of biodiesel indicate that it is less toxic than regular diesel.[64] Biodiesel does have a high oxygen demand in aquatic environments and can cause fish kills as a result of oxygen depletion. Water quality impacts associated with spills at biodiesel facilities generally result from discharge of glycerin, rather than biodiesel itself.

Biodiesel facilities use much less water than ethanol facilities to produce biofuel. The primary consumptive water use at biodiesel plants is associated with washing and evaporative processes. Water use is variable but is usually less than one gallon of water for each gallon of biodiesel produced; some facilities recycle wash water, which reduces overall water consumption.[65]

8. Job Creation and Rural Economic Development

The Energy Independence and Security Act (EISA) requires analyses of, among other factors, the impact of renewable fuel use on ''* * * job creation [and] rural economic development * * *'' to help inform each annual determination of applicable volumes. In the RFS2 final rule, we anticipated employment to increase and income to expand in rural areas and farming communities as a result of the increased use of renewable fuel. Income expansion in rural areas from renewable fuel production will contribute to rural economic development. As mentioned above, industry activities are currently progressing, ramping up biodiesel production from the approximately 0.38 billion gallons estimated to have been used in the U.S. in 2010 to over 1.0 billion gallons that was produced in 2011. This increase in biodiesel production was in large part due to bringing on line existing capacity idled due to lack of demand, a trend that we expect will continue into the near future.

Employment impacts of federal rules are of particular concern in the current economic climate of sizeable unemployment. The recently issued Executive Order 13563, ''Improving Regulation and Regulatory Review'' (January 18, 2011), states, ''Our regulatory system must protect public health, welfare, safety, and our environment while promoting economic growth, innovation, competitiveness, and job creation''. Executive Order 13563 also states that ''[i]n applying these principles, each agency is directed to use the best available techniques to quantify anticipated present and future benefits and costs as accurately as possible'' and that ''* * * each agency may consider (and discuss qualitatively) values that are difficult or impossible to quantify * * *'' Consistent with the Executive Order, and consistent with recent efforts to characterize the employment effects of economically significant rules, the Agency has provided this analysis to inform the discussion of labor demand and employment impacts in rural areas and farming communities. Estimates of this particular rule's effects on labor markets beyond the biodiesel production sector are ''difficult or impossible to quantify'' to an acceptable degree of accuracy using currently available methodologies, Therefore, the Agency has not quantified the rule's effects on labor in other sectors, including conventional diesel production and sales, nor has the agency attempted to estimate the effects induced by changes in workers' incomes or changes in food and fuel prices.

When the economy is at full employment, an environmental regulation is unlikely to have much impact on net overall U.S. employment; instead, labor would primarily be shifted from one sector to another. These shifts in employment impose an opportunity cost on society, approximated by the wages of the employees, as regulation diverts workers from other activities in the economy. In this situation, any effects on net employment are likely to be transitory as workers change jobs (e.g., some workers may need to be retrained or require time to search for new jobs, while shortages in some sectors or regions could bid up wages to attract workers).

On the other hand, if a regulation comes into effect during a period of high unemployment, a change in labor demand due to regulation may affect net overall U.S. employment because the labor market is not in equilibrium. Schmalansee and Stavins point out that net positive employment effects are possible in the near term when the economy is at less than full employment due to the potential hiring of idle labor resources by the regulated sector to meet new requirements (e.g., to install new equipment) and new economic activity in sectors related to the regulated sector.[66] In the longer run, the net effect on employment is more difficult to predict and will depend on the way in which the related industries respond to the regulatory requirements. For this reason, Schmalensee and Stavins urge caution in reporting and interpreting partial employment effects since it can ''paint an inaccurate picture of net employment impacts if not placed in the broader economic context.''

This rule is expected to primarily affect employment in the United States through the biodiesel plants and distributors, and through several related sectors, specifically, industries that supply inputs in the production of biodiesel. To provide a partial picture of

[61] U.S. EPA. 2010b. Renewable fuel standard program (RFS2) regulatory impact analysis. EPA–420–R–10–006. Available at: *http://www.epa.gov/otaq/renewablefuels/420r10006.pdf.*

[62] U.S. EPA. 2010b. Renewable fuel standard program (RFS2) regulatory impact analysis. EPA–420–R–10–006. Available at: *http://www.epa.gov/otaq/renewablefuels/420r10006.pdf.*

[63] Kimble, J. n.d. Biofuels and emerging issues for emergency responders. U.S. EPA. Available at: *http://www.epa.gov/oem/docs/oil/fss/fss09/kimblebiofuels.pdf.*

[64] Kahn, N; Warith, MA; Luk, G. 2007. A comparison of acute toxicity of biodiesel, biodiesel blends, and diesel on aquatic organisms. Journal of the Air and Waste Management Association 57(3): 286–296.

[65] Renewable Fuels Standard Program (RFS2), Regulatory Impact Analysis (RIA). EPA–420–R–10–006. Available at: *http://www.epa.gov/otaq/renewablefuels/420r10006.pdf.*

[66] Schmalensee, Richard, and Robert N. Stavins. ''A Guide to Economic and Policy Analysis of EPA's Transport Rule.'' White paper commissioned by Excelon Corporation, March 2011 (Docket EPA–HQ–OAR–2010–0799).

the employment consequences of this rule, EPA investigated the expected consequences for rural areas and farming communities. Assuming the current average of 30 to 40 people to operate a biodiesel plant of 30 million gallons (a typical capacity for a standalone transesterification plant), an expansion of 280 million gallons is the equivalent of adding about 4 plants representing the addition of around 350 direct jobs for biodiesel production.[67] Providing soy oil feedstock would require an estimated 120 additional truck trips per day or an addition of 120 delivery drivers per day assuming one trip per delivery truck per day to account for driving and loading/unloading time.[68] Expansions to the fuel distribution infrastructure (i.e., more fuel terminals, rail cars, tank trucks, barges etc.) would also be needed to support the use of an additional 280 million gallon increase in the 2013 volume requirement for biomass-based diesel. Necessary support to a functioning biodiesel plant such as the delivery of methanol to allow processing of vegetable oil into biodiesel as well as additional handling at biodiesel distribution centers will also add directly to the employment impacts.

Most large biodiesel plants in the U.S. are located in rural communities near feedstock (soybean oil or corn oil) sources. Urban biodiesel plants tend to be smaller with more diffuse feedstock suppliers. In 2011, approximately 71 percent of biodiesel producers were located in rural areas, defined as towns of less than 50,000. A 30 million gallon per year (MGY) biodiesel plant will spend nearly $140 million on goods and services with feedstocks accounting for more than 80 percent of expenditures.[69] The size of the economic impact on the local economy of spending by an individual biodiesel plant will depend on location (e.g., state) and how much feedstock is sourced locally. Moreover, our analysis cannot determine the extent to which new capital invested in biodiesel production displaces investments that otherwise would have occurred in rural areas.

In addition to the employment effects from increased biodiesel production, this rule would also result in reductions in conventional diesel fuel use, which could affect employment in the diesel fuel supply chain. The loss of expenditures to diesel fuel suppliers throughout the diesel fuel supply chain, from the petroleum refiners to diesel fuel distributors, is likely to result in some loss in employment in these sectors. The potential impacts on the diesel industry and other sectors of the economy are not quantified in this analysis because available data and methodologies are insufficient to support reasonably accurate estimates of the incremental employment effects of this rule.

To summarize, we anticipate that bringing idle biodiesel plants back online and expanding biodiesel distribution infrastructure in the U.S. will increase employment and investment in the renewable fuels and related industries, consistent with the EISA directive to assess impact on rural economic development. These increases in employment are similar to what we anticipated when we analyzed the volume requirements in RFS2 final rule. These employment impacts may be offset to some degree by decreases in other sectors and/or locations (e.g., from the reduced production and transport of conventional diesel fuel); however sufficiently reliable data and a satisfactory methodology supporting quantitative evaluation of the employment impacts beyond the biodiesel sectors are not currently available.

One commenter raised the issue of the impacts of the potential increased use of animal fats to produce biodiesel under a 1.28 billion gallon requirement on employment within the oleochemical industry. According to the commenter, with renewable fuel production consuming an increasingly significant amount of the total supply of animal fats produced in the U.S., this may limit the availability of animal fats for oleochemical production. According to the commenter, the price of animal fats recently exceeded the price of Malaysian palm oil. If the oleochemical industry switched to palm oil as a feedstock to make its products and located near palm oil supply, there could be a possible loss of U.S. employment in this industry.

As the same commenter acknowledged, we cannot prevent any feedstocks from being used to produce RIN-generating renewable fuel if they meet the regulatory definition of renewable biomass and are otherwise valid. Nevertheless, while Table III.B–1 lists grease and fats as one likely source of feedstocks for the production of biomass-based diesel, we noted in Section III.B that there could be sufficient sources of other feedstocks to produce 1.28 billion gallons of biomass-based diesel without using any animal fats. The comment implies that feedstock used in the oleochemical industry depends significantly on relative costs which can vary over time in part due to changes in demand. The cost of animal fat is dependent on the general demand for this material which is only in part impacted by its potential use as a biofuel feedstock. The general supply of animal fat is not expected to be impacted significantly by its alternative use as a biofuel feedstock or the range of other uses of this material. Thus the choice of feedstock(s) used by the oleochemical industry already depends on market prices of multiple feedstock sources. Since feedstock such as rendered fats or, as suggested by the commenter, palm oil are readily marketed and transportable, we do not expect the industry to relocate production every time feedstock market conditions change. Therefore we do not believe production facility location will be significantly impacted by the potential use of rendered fats as a biofuel feedstock if some portion of the 280 million gallon increase in the biomass-based diesel standard is produced from rendered fats.

B. Consideration of Applicable Statutory Economic Factors

The RFS program established by Congress is primarily a long-term program aimed at replacing substantial volumes of fossil-based transportation fuels with low GHG renewable fuels over time. Congress established a list of factors to be considered in setting the annual biomass-diesel mandate, and these factors include consideration of some aspects of economic costs and some aspects of economic benefits (among other impacts and factors). In the final rulemaking for the RFS2, EPA assessed the costs and benefits of this program as a whole when the program was fully mature, which we continue to believe is the appropriate approach to examining the costs and benefits of a long term program like the RFS2. However, the annual standard-setting process is part of the program. The annual standard-setting process encourages consideration of the program on a piecemeal (i.e., year to year) basis, which may not reflect the long-term economic effects of the program.

EPA received comments requesting that we consider costs and benefits for the 1.28 billion gallon biomass-based diesel mandate in 2013. This mandate is an interim step within the larger RFS program, so any examination of short-term impacts separate from that larger effort must be kept in context. Further, many of the impacts of this rule are difficult to fully quantify, which makes any comprehensive consideration of

[67] Presentation from National Biodiesel Board, ''Biodiesel Forecasts, Infrastructure, and Economic Impacts'', February 14, 2012.

[68] Ibid.

[69] Ibid.

costs and benefits difficult to undertake in the limited timeframe of the RFS annual rule. In spite of these limitations, EPA has analyzed some of the costs and has estimated the monetary value of some of the benefits of the 2013 biomass-based diesel mandate to provide more information on this rulemaking.

1. Monetized Quantifiable Costs

Our analysis of costs focuses on the sector most likely to be impacted by an increase in biomass-based diesel volumes—the agricultural commodity market. To assess some of the impacts of the 1.28 billion gallon biodiesel mandate, EPA used a stochastic economic model developed by the Center for Agricultural and Rural Development (CARD) at Iowa State University to conduct this analysis. The CARD stochastic model approximates U.S. and Brazilian biofuel production, consumption, and trade. Using a relatively small set of input assumptions about petroleum prices, commodity yields, and ethanol production, the CARD model examines what the U.S. and Brazilian biofuels markets may look like under different combinations of parameters (e.g., low petroleum prices, low soybean yields, and high Brazilian ethanol production).

The model shows the probability of different outcomes by running 500 different potential scenarios. This modeling approach provides a range of estimates which helps to bound uncertainty about possible impacts on the biofuels sector. Analysis of this range can indicate which outcomes are more likely than others and also provide a sense of the possible high and low estimates that should be considered for a given variable. The CARD model projects ranges for commodity yields and prices, fuel volumes and prices, and several other variables. For the biomass-based diesel standard, EPA analyzed the cost of mandating an additional 280 million gallons for biodiesel in 2013, going from 1.0 billion gallons of biomass-based biodiesel to 1.28 billion gallons. For purposes of this analysis, EPA assumed that the additional 280 million gallons of biodiesel we are mandating for 2013 will be entirely soybean-based and would not otherwise be produced. As we outline in Section III.B of this rulemaking, most of the additional 280 million gallons is likely to be soybean-based, but other sources are possible. Because soybean oil feedstock is more expensive than corn oil or waste feedstock, the cost impact of the extended volume requirement would decrease if biodiesel production from these other sources expands. We therefore consider the cost projections presented below to be potentially high estimates.

a. Impact on the Cost of Soybean Oil

One commenter suggested that the biodiesel mandate for 2013 will result in an increase of soybean oil prices. In response to this comment and other related comments, EPA modeled the change in soybean oil prices in 2013 using the CARD stochastic model. Assuming that the 280 million gallon increment is met entirely with soybean oil biodiesel in 2013, EPA estimates that the price of soybean oil will be $0.45 per pound (in 2010$) under this mandate, compared to approximately $0.42 under a 1.0 billion gallon mandate (see Section III.B of this rule for further discussion of feedstock availability and prices). The mandate is estimated to increase feedstock costs of soybean-based biodiesel by about $0.22 per gallon of biodiesel. The effect of this increase on the cost of the additional 280 million gallons is incorporated into the estimates in section IV.B.1.b.

b. Cost of Displacing Petroleum-Based Diesel With Soybean-Based Biodiesel

Producing an additional 280 million gallons of biodiesel will displace approximately 255 million gallons of petroleum-based diesel. Since biodiesel costs more to produce in the U.S. than diesel, this displacement has associated costs. In this analysis, we compare the cost of biodiesel and petrodiesel at the wholesale stage, since that is when the two are blended together. Therefore, this analysis does not consider taxes, retail margins, and any other costs and transfers that occur at or after the point of blending.

On this basis, EPA estimated the cost of producing and transporting a gallon of biodiesel to the blender. For soybean-based biodiesel, soybean oil feedstock costs generally represent the majority of the overall cost, usually somewhere between 70 and 90 percent. The soybean oil price estimates discussed in Section IV.B.1.a of this rule therefore had a strong impact on EPA's cost estimates, though estimates of distribution and other production costs were also important. Estimating the cost to produce biodiesel and transport it to the blender presents considerable uncertainties, even in the near term. Unforeseen fluctuations in the prices of oil, for example, could have a very significant effect.

After estimating the cost of biodiesel at the wholesale stage, EPA compared that to what it would cost to consume an equivalent amount of petroleum-based diesel instead. The Department of Energy's Energy Information Administration (EIA) publishes two regular reports that make estimates of wholesale diesel prices in 2013. In 2013, costs are on the low-end of the range if we use the wholesale diesel estimate from DOE's most recent Short-Term Energy Outlook (STEO).[70] The high-end estimate utilizes DOE's AEO12 ER wholesale diesel estimate.[71] Both estimates are relevant for an analysis of fuel prices in 2013. On this basis, we estimate the increase in the cost of fuel for 280 million gallons of biodiesel will be between $0.91 and $1.36 per gallon in 2013. This translates into total cost estimates of $253 million to $381 million from increased fuel cost in 2013.

TABLE IV.B.1.b–1—ESTIMATED INCREASE IN WHOLESALE COST OF BIODIESEL IN COMPARISON TO PETRODIESEL IN 2013

[In 2010 dollars]

Petroleum assumption	STEO March 2012	AEO 2012 early release
Difference in biodiesel production cost (per gallon)	$0.91	$1.36.
Cost of 280 million gallons	253 million	381 million.

[70] U.S. Department of Energy, Energy Information Administration. 2012. Short Term Energy Outlook, March 2012. Available at: *http://www.eia.gov/forecasts/steo/index.cfm.*

[71] U.S. Department of Energy, Energy Information Administration. 2012. Annual Energy Outlook 2012 (Early Release). Available at: *http://www.eia.gov/forecasts/aeo/er/.*

Consistent with our previous work in this area, EPA's quantifiable cost methodology is a ''bottom-up'' engineering cost analysis that estimates the cost to produce a gallon of soybean-based biodiesel and then compares that cost to the production cost of an energy-equivalent gallon of petroleum-based diesel. In certain situations, it may also be useful to use a ''top down'' analyses to estimate the potential cost of a program to society. In the case of the biomass-based diesel standard, one suggestion was to look at the RIN price as a proxy for the societal cost of the program.

RIN prices reflect the incremental private marginal cost of blending BBD into the diesel fuel pool. As noted by Professor Bruce Babcock, of Iowa State University:

> ''The market for RINs is an effective and efficient way to enforce the mandates. Motor fuel producers who find that biofuel is too difficult to access or to blend buy RINs instead. Fuel producers who have ready access to biofuels and find it profitable to blend biofuels sell their excess RINs. By making RINs tradable, the mandates are met at the lowest possible cost.'' [72]

We have received comments suggesting that we use RIN prices to estimate the costs to society of the biomass-based diesel RFS2 requirement. RIN prices may be more representative of marginal costs. However, the use of historical RIN price trends may have limitations since RIN price may reflect other policy changes such as changes in U.S. tax policy, import tariff policies, and other effects in RIN markets.[73] We finally note that other factors, such as the existence of multiple RIN vintages in any given year and the effects of other policies can create incentives for potential speculation in the RIN markets. In their 2011 report on RINs, USDA observed that this speculation results in RIN prices that are somewhat higher than the cost of biodiesel, though the exact amount of this increment is extremely difficult to quantify.[74]

c. Transportation Fuel Costs

In the NPRM, we cited cost estimates that we had developed in the RFS2 final rule. In response to comment, we have revised our methodology for examining the effect of this mandate on the cost of transportation fuel. The estimates described in Section IV.B.1 above represent the quantifiable costs to society as a whole stemming from our increase in the biomass-based diesel volume requirement from 1.0 billion gal to 1.28 billion gal. These estimates do not include certain transfers, such as those between buyers and sellers of diesel fuel. For this reason, the increase in the cost of transportation fuel from a societal perspective is different from the increase from the perspective of individual buyers and sellers of fuel. However, these costs do impact the retail price of diesel and associated economic impacts for fuel consumers.

To estimate the increase in the cost of transportation fuel associated with today's mandate for 1.28 billion gal in 2013, we took our projections for the quantifiable program costs reported in Section IV.B.1.b and compared that to projected fuel consumption. The AEO projects that the U.S. will consume 44.9 billion gal of blended diesel in 2013.[75] Averaged over this diesel pool, the quantifiable costs of the 1.28 billion gal mandate translate into a per gallon cost of between $0.006 and $0.008 in 2013.[76]

Several parties commented that the analysis of the cost impacts of 1.28 billion gallons of biomass-based diesel must take into account the biodiesel tax subsidy, which expired at the end of 2011. Fuel taxes and tax subsidies function to change the manner in which society pays for transportation fuel through redistribution of costs, but they do not change the total cost to society. For this reason we generally do not quantify the impact of taxes or tax subsidies on price, but instead focus on the costs to produce and distribute transportation fuel. Moreover, the impact of the biodiesel tax subsidy on the retail price of biodiesel is a complex relationship that can be difficult to assess. For instance, Figure IV.B.1.c–2 shows the retail price of biodiesel over the period January 2008 through April 2012. While the biodiesel tax credit was not effective during 2010 or 2012, the price of biodiesel was not substantially higher during these years than it was at other times. Moreover, after the tax credit was reinstated for 2011, including retroactive credits for biodiesel produced in 2010, the price of biodiesel in 2011 did not decrease substantially in 2011 compared to 2010. These results illustrate the difficulty in correlating biodiesel price with tax policies, and thus represents an additional reason that we have not made an effort to project biodiesel prices in the future under different tax policy scenarios.

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[72] Babcock, B, *Mandates, Tax Credits, and Tariffs: Does the U.S. Biofuels Industry Need Them All?* Iowa State University, Center for Agricultural and Rural Development, Policy Brief 10–PB–1, March 2010. p. 4–5.

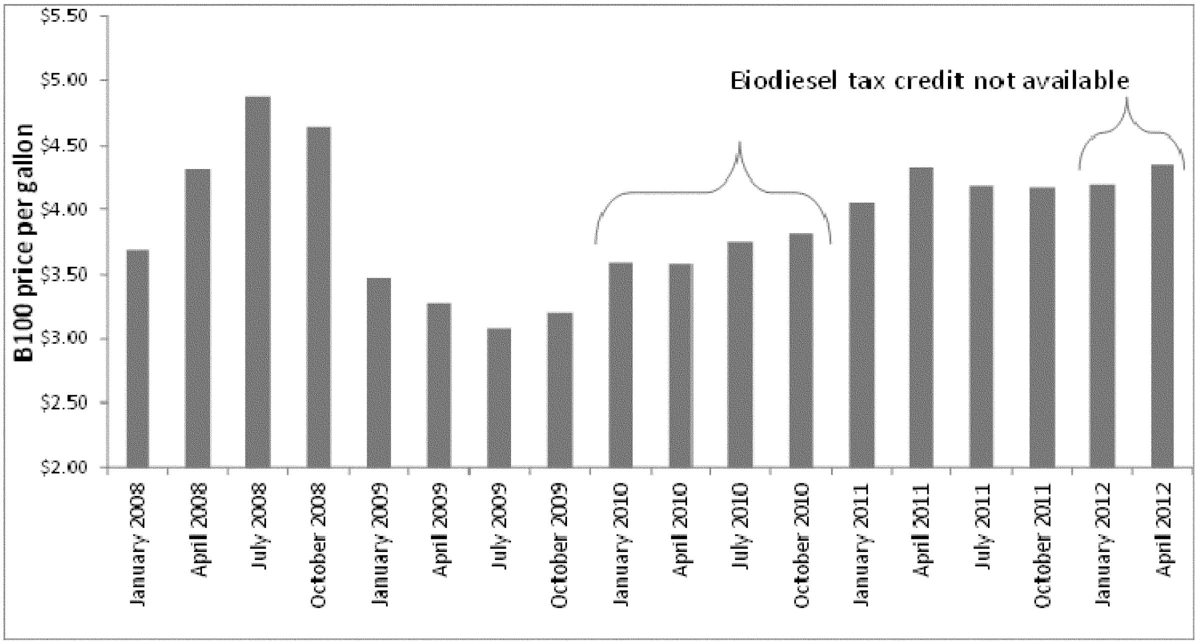
[74] McPhail, L, P Westcott, and H Lutman, *The Renewable Identification Number System and U.S. Biofuel Mandates,* United States Department of Agriculture, November 2011.

[75] U.S. Department of Energy, Energy Information Administration. 2012. Annual Energy Outlook 2012 (Early Release). Available at: *http://www.eia.gov/forecasts/aeo/er/.*

[76] If current RIN prices were used to gauge social cost in lieu of the bottom-up engineering cost approach applied herein, the estimate of transportation fuel costs would be higher.

Figure IV.B.1.c-2

Nationwide Average Biodiesel Prices at Retail



Source: DOE Alternative Fuels & Advanced Vehicles Data Center, Alternative Fuel Price Report.

http://www.afdc.energy.gov/afdc/price_report.html.

In their comments on the 2012 Renewable Fuel Standards, the American Trucking Association (ATA) suggested that production of biomass-based biodiesel from yellow grease and other rendered fats may not be economically practical due to the diffuse nature of the feedstock supply chain. Specifically, ATA argued that the cost of collection of often small quantities of this feedstock dispersed over a wide geographic area and their transport to biofuel producers may be cost-prohibitive.

We agree with the commenter that the transportation costs associated with the collection of yellow grease and other rendered fats may be greater than the cost of collection for biomass-based biodiesel feedstock such as soybean oil. However, the actual delivered cost of feedstock for use in producing biodiesel consists of two components: the cost of production and the cost of transportation. For soybean oil, the cost of production (e.g., planting, fertilizing, harvesting, expelling) is relatively large compared to the cost of transportation to centralized biofuel producers. However, the cost of production for yellow grease and other rendered fats is zero, as they are considered wastes or byproducts. When combining both cost components (i.e., production and transportation) for each respective feedstock from USDA's National Weekly Agricultural Energy Round-Up,[77] the total delivered costs for yellow grease and other rendered fats is consistently less that the total delivered costs for soybean oil. For instance, for the week of March 30, 2012, crude soybean oil was selling for about 53 ¢/lb, while yellow grease was selling for about 41 ¢/lb. As such, we believe that the ATA concerns regarding the feedstock supply chain are not warranted.

2. Monetized Quantifiable Benefits

Many of the benefits and impacts that Congress asked EPA to examine when evaluating whether to increase the volume requirement for biomass-based biodiesel are difficult to fully quantify. In this section, we present a selection of quantifiable benefits from increased biodiesel production, including increased energy security and reduced greenhouse gas emissions.

[77] USDA Livestock & Grain Market News for October 14, 2011. *http://www.ams.usda.gov/mnreports/lswagenergy.pdf.*

a. Energy Security

Quantified energy security benefits are taken from the estimates reported in Section IV.A.2 of this final rule. As noted there, EPA considers only the macroeconomic disruption and adjustment effect in its estimates of energy security benefits. Based on application of the ORNL methodology, we estimate that the energy security benefits of the additional 280 mill gal increment of biodiesel are $0.15 per gallon in 2013. This translates to a total program benefit of about $41 million.

b. Air Quality

We discuss air quality impacts qualitatively in Section IV.A.4 of this final rule and expect an additional 280 mill gal of biodiesel will have a relatively small impact on ambient air quality. That said, we do expect the production and combustion of biodiesel to have a slightly different emissions impact relative to petroleum-based diesel. As presented in Table IV.A.4–1, we estimated that the increased production of biodiesel related to the RFS2 mandate would impact both downstream and upstream emissions, with increases in some pollutants and decreases in others.

Ideally, the monetized impacts of changes in air quality related to the final rule would be estimated based on changes in ambient pollution concentrations and population exposure, as determined by complete air quality and exposure modeling. However, conducting such detailed modeling was not possible within the timeframe for this analysis.

Instead, our analysis of $PM_{2.5}$-related health impacts associated with 280 million additional gallons of biodiesel uses a ''dollar-per-ton'' method to estimate selected $PM_{2.5}$-related health impacts. These $PM_{2.5}$-related dollar-per-ton estimates provide the total monetized human health impacts (the sum of premature mortality and premature morbidity) of reducing one ton of directly emitted $PM_{2.5}$, or one ton of a pollutant that contributes to secondarily-formed $PM_{2.5}$ (such as NOx, and SOx) from a specified source.[78] The dollar-per-ton technique has been used in previous analyses, including the 2012–2016 Light-Duty Greenhouse Gas Rule,[79] the Ozone National Ambient Air Quality Standards (NAAQS) RIA,[80] the Portland Cement National Emissions Standards for Hazardous Air Pollutants (NESHAP) RIA,[81] and the final NO_2 NAAQS.[82]

The analysis of the final 2013 fuel mandate did not estimate the direct emissions impacts to which we could apply the ''dollar-per-ton'' estimates. Instead, we converted ''dollars-per-ton'' to ''dollars-per-gallon'' by transferring the biodiesel tons-to-emissions relationship observed in the RFS2 final rule analysis to the current analysis (dividing emissions in Table IV.A.4–1 by 1.44 billion gallons of biodiesel) and multiplying that by each pollutant-specific dollar-per-ton estimate.

The dollar-per-ton estimates used to monetize the emissions impacts from each gallon of biodiesel are provided in Table IV.B.2.b–1.

TABLE IV.B.2.b–1—$PM_{2.5}$-RELATED DOLLAR-PER-TON VALUES (2010$) [a]

Year	All sources [c]	Upstream (non-EGU) sources [d]		Mobile sources	
	SO_2	NO_X	Direct $PM_{2.5}$	NO_X	Direct $PM_{2.5}$
Dollar-per-ton Derived from American Cancer Society Analysis (Pope et al., 2002) Using a 3 Percent Discount Rate [b]					
2015	$30,000	$4,900	$230,000	$5,100	$280,000
2020	33,000	5,400	250,000	5,600	310,000
Dollar-per-ton Derived from American Cancer Society Analysis (Pope et al., 2002) Estimated Using a 7 Percent Discount Rate [b]					
2015	27,000	4,500	210,000	4,600	250,000
2020	30,000	4,900	230,000	5,100	280,000
Dollar-per-ton Derived from Six Cities Analysis (Laden et al., 2006) Estimated Using a 3 Percent Discount Rate [b]					
2015	73,000	12,000	560,000	12,000	680,000
2020	80,000	13,000	620,000	14,000	750,000
Dollar-per-ton Derived from Six Cities Analysis (Laden et al., 2006) Estimated Using a 7 Percent Discount Rate [b]					
2015	66,000	11,000	510,000	11,000	620,000
2020	72,000	12,000	560,000	12,000	680,000

[a] Total dollar-per-ton estimates include monetized $PM_{2.5}$-related premature mortality and morbidity endpoints. Range of estimates are a function of the estimate of $PM_{2.5}$-related premature mortality derived from either the ACS study (Pope et al., 2002) or the Six-Cities study (Laden et al., 2006).

[b] The dollar-per-ton estimates presented in this table assume either a 3 percent or 7 percent discount rate in the valuation of premature mortality to account for a twenty-year segmented cessation lag.

[c] Note that the dollar-per-ton value for SO_2 is based on the value for Stationary (Non-EGU) sources; no SO_2 value was estimated for mobile sources.

[d] Non-EGU denotes stationary sources of emissions other than electric generating units (EGUs).

For certain $PM_{2.5}$-related pollutants (such as direct $PM_{2.5}$ and NOx), EPA estimates different per-ton values for reducing mobile source emissions than for reductions in emissions of the same pollutant from stationary sources such as fuel refineries and storage facilities. These reflect differences in the typical geographic distributions of emissions of each pollutant by different sources, their contributions to ambient levels of $PM_{2.5}$, and resulting changes in population exposure. We apply these separate values to estimates of changes in emissions from vehicle use and from

[78] Due to analytical limitations, the estimated dollar-per-ton values do not include comparable impacts related to reductions in other ambient concentrations of criteria pollutants (such as ozone, NO2 or SO_2) or toxic air pollutants, nor do they monetize all of the potential health and welfare effects associated with $PM_{2.5}$ or the other criteria pollutants.

[79] U.S. Environmental Protection Agency (U.S. EPA), 2010. Regulatory Impact Analysis, Final Rulemaking to Establish Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards. Office of Transportation and Air Quality. April. Available at *http://www.epa.gov/otaq/climate/regulations/420r10009.pdf.* EPA–420–R–10–009.

[80] U.S. Environmental Protection Agency (U.S. EPA). 2008. Regulatory Impact Analysis, 2008 National Ambient Air Quality Standards for Ground-level Ozone, Chapter 6. Office of Air Quality Planning and Standards, Research Triangle Park, NC. March. Available at *http://www.epa.gov/ttn/ecas/regdata/RIAs/6-ozoneriachapter6.pdf*>. EPA–HQ–OAR–2009–0472–0238.

[81] U.S. Environmental Protection Agency (U.S. EPA). 2010. Regulatory Impact Analysis: National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry. Office of Air Quality Planning and Standards, Research Triangle Park, NC. August. Available on the Internet at <*http://www.epa.gov/ttn/ecas/regdata/RIAs/portlandcementfinalria.pdf*>. EPA–HQ–OAR–2009–0472–0241.

[82] U.S. Environmental Protection Agency (U.S. EPA). 2010. Final NO2 NAAQS Regulatory Impact Analysis (RIA). Office of Air Quality Planning and Standards, Research Triangle Park, NC. April. Available on the Internet at *http://www.epa.gov/ttn/ecas/regdata/RIAs/FinalNO2RIAfulldocument.pdf.* Accessed March 15, 2010. EPA–HQ–OAR–2009–0472–0237.

fuel production and distribution to determine the net change in total economic impacts from emissions of those pollutants. Monetized $PM_{2.5}$-related health impacts associated with the final rule can be found in Table IV.B.2.b–2 and per gallon impacts can be found in Table IV.B.2.b–3.

TABLE VI.B.2.b–2—TOTAL AMBIENT $PM_{2.5}$-RELATED MONETIZED HEALTH IMPACTS (MILLIONS 2010$) [a]

	2013 Monetized impacts (7% discount rate–3% discount rate)
Using Dollar-per-ton Derived from American Cancer Society Analysis (Pope et al., 2002)	
Downstream	$14 to $16.
Upstream	−$34 to −$37.
Net Impacts	−$19 to −$21.
Using Dollar-per-ton Derived from Six Cities Analysis (Laden et al., 2006)	
Downstream	$35 to $39.
Upstream	−$82 to −$91.
Net Impacts	−$47 to −$52.

[a] Note: Negative values indicate disbenefits associated with decrements in ambient air quality.

TABLE VI.B.2.b–3—PER GALLON AMBIENT $PM_{2.5}$-RELATED MONETIZED HEALTH IMPACTS (2010$ PER GALLON) [a]

	2013 Monetized impacts (7% discount rate–3% discount rate)
Using Dollar-per-ton Derived from American Cancer Society Analysis (Pope et al., 2002)	
Downstream	$0.05 to $0.06.
Upstream	−$0.12 to −$0.13.
Net Impacts	−$0.07 to −$0.08.
Using Dollar-per-ton Derived from Six Cities Analysis (Laden et al., 2006)	
Downstream	$0.12 to $0.14.
Upstream	−$0.29 to −$0.33.
Net Impacts	−$0.17 to −$0.19.

[a] Note: Negative values indicate disbenefits associated with decrements in ambient air quality.

The method used in this analysis to estimate the monetized $PM_{2.5}$-related impacts of an increase in biodiesel production is subject to a number of assumptions and uncertainties.

- The method does not reflect local variability in population density, meteorology, exposure, baseline health incidence rates, or other local factors that might lead to an overestimate or underestimate of the actual benefits of controlling fine particulates in specific locations. This is particularly a problem for the monetization of upstream emissions since those have a very specific geographic profile different to that associated with mobile source emissions.
- Transferring the biodiesel tons-to-emissions relationship derived from the RFS2 mandate in 2022 to the current analysis assumes that the incremental production of biodiesel associated with the 2013 mandate (of 280 million gallons) will yield the same relative emissions impacts, which we cannot say with certainty.
- This analysis assumes that all fine particles, regardless of their chemical composition, are equally potent in causing premature mortality. $PM_{2.5}$ produced via transported precursors emitted from stationary sources may differ significantly from direct $PM_{2.5}$ released from engines and other industrial sources. At the present time, however, no clear scientific grounds exist for supporting differential effects estimates by particle type.
- This analysis assumes that the health impact function for fine particles is linear within the range of ambient concentrations under consideration. Thus, the estimates include health benefits from reducing fine particles in areas with varied initial concentrations of $PM_{2.5,}$ including both regions that are in attainment with fine particle standard and those that do not meet the standard, down to the lowest modeled concentrations. This is an appropriate assumption because the scientific literature provides no evidence of a threshold below which health effects associated with exposure to fine particles—including premature death—would not occur.
- There are several health benefits categories that we are unable to quantify due to limitations associated with using dollars-per-ton estimates, several of which could be substantial. Because NO_X and VOC emissions are also precursors to ozone, changes in NO_X and VOC would also impact ozone formation and the health effects associated with ozone exposure. Dollars-per-ton estimates for ozone do not exist due to issues associated with the complexity of the atmospheric air chemistry and nonlinearities associated with ozone formation. The PM-related benefits-per-ton estimates also do not include any human welfare or ecological benefits.

3. Quantifiable Benefits and Costs Compared

As we have observed above, the cost and benefit categories discussed in this section are not comprehensive. EPA has included estimates for those impacts that we are able to quantify at the present time, but this is not meant to suggest that EPA considers these to be the total costs and benefits of the 2013 biomass-based diesel mandate. However, for illustrative purposes, we are providing a range of quantifiable combined cost and benefit estimates for the impact of a 1.28 billion gallon mandate in 2013, based on those impacts that we were able to monetize.

EPA's estimates of quantifiable costs and benefits vary significantly in 2013 due to uncertainty about the price of diesel as well as uncertainty about the value of air quality impacts. Table IV.B.3–1 presents the range of estimates for the combined quantifiable costs and benefits of an additional 280 million gallons of biodiesel produced in 2013, which varies from −$425 million to −$263 million.

TABLE IV.B.3–1—ESTIMATES OF COMBINED COSTS AND BENEFITS OF THE 1.28 BILLION GALLON BIODIESEL MANDATE IN 2013

[In 2010 dollars]

AEO 2012 early release (million)	STEO March 2012 (million)
−$425 to −$391	−$297 to −$263

In this final rulemaking, we have only provided quantified cost and benefit estimates for the year 2013. However, as observed above, these estimates should not be considered in isolation. Rather, they should be treated as a snapshot within the larger trends of quantified costs and benefits laid out in the RFS2 final rule. The statute is forward-looking in that it created a program whose energy and environmental benefits are intended to grow over time. To evaluate the program on the basis of only one early year's impacts, as part of near-term implementation, would be to paint an unbalanced and incomplete picture. For example, as we examine the costs of the program through time, we see that these costs fall steadily. This is due to changes in the cost of key fuel inputs. For instance, the cost of petroleum, the basic raw material of diesel fuel, is expected to rise through time. Meanwhile, the principal cost of soybean-based biodiesel, the soybean oil feedstock, tends to fall though time due to rising crop yields. As a result, the relative cost difference between diesel and biodiesel fuel would be expected to narrow through time as the program reaches maturity. Thus, while quantified costs from the wider use of biomass-based biodiesel can be greater than quantified benefits in the near term, through time we expect that benefits will tend to increase and outweigh costs. The estimates of quantified costs and benefits presented in this rulemaking should be considered within this context.

Further, as noted at the beginning of this section, this analysis is not intended to serve as a comprehensive quantification of the costs and benefits of this mandate. Rather, it illustrates those costs and benefits that are quantifiable in response to comments received on the proposed rule. To develop a comprehensive estimate of costs and benefits, one would need to qualitatively balance these estimates against the impacts discussed earlier in this section.

V. Final 2013 Volume for Biomass-Based Diesel

Through the RFS program, Congress established a schedule of renewable fuel volumes that gradually increases over time. While the schedule in the statute for biomass-based diesel ends in 2012, the schedule of increasing volumes for advanced biofuels continues through 2022. For the years between 2012 and 2022, the statute indicates that biomass-based diesel volumes can increase above the 2012 applicable volume of 1.0 billion gal, but they cannot ever be lower than 1.0 billion gal. Subject to a consideration of a number of factors as described in Section II, we believe that it is appropriate to consider biomass-based diesel as playing an increasing role in supplying advanced biofuels to the market between 2012 and 2022.

As described in Section IV.A.9, increases in the required volume of biomass-based diesel above 1.0 billion gal will help to support rural economic growth and job creation, will increase energy security, and reduce emissions of GHGs. Our estimates of the quantifiable benefits of an increase of 280 mill gal do not exceed the costs in 2013. However, as laid out above, we expect benefits to generally exceed costs over time based on the analysis performed for the RFS2 final rule. Thus by establishing an applicable volume for biomass-based diesel in 2013 that exceeds the minimum of 1.0 billion gal, we are helping to establish the industry as a substantial contributor to the required volumes of advanced biofuel anticipated after full implementation of the RFS program.

Therefore, based on our review of the factors required in the statute, we are finalizing an applicable volume of 1.28 billion gal biomass-based diesel for 2013, consistent with our proposal. We received comments both in support of and opposed to an increase above the statutory minimum of 1.0 billion gallons. We have determined that 1.28 billion gallons is achievable in 2013 and is a reasonable exercise of our authority under CAA 211(o)(2)(B)(ii) to bring about the long-term benefits of the RFS program.

We did not propose biomass-based diesel standards for 2014 and beyond in the NPRM since we believe we will be in a better position in the future to evaluate all of the factors related to establishing an applicable volume for 2014 and later years. In response to the NPRM, two parties commented that EPA should set the required volumes of biomass-based diesel through at least the year 2017. We agree that specifying the required volumes of biomass-based diesel for more than one compliance year would provide greater certainty for both biofuel producers and obligated parties, stability for future investments and contracts, and could potentially reduce the need to waive a portion of the advanced biofuel requirement in future years. However, one of the factors that we are required to consider when determining the appropriate biomass-based diesel volume for years after 2012 is a review of the implementation of the program during prior years. By determining the applicable volume requirement for biomass-based diesel only one year in advance, we are able to use the most up-to-date information on the implementation of the program in making our determination. This is particularly important in the early years of the program.

VI. Public Participation

Many interested parties participated in the rulemaking process that culminates with this final rule. This process provided opportunity for submitting written public comments following the proposal that we published on July 1, 2011 (76 FR 38844), and we considered these comments in developing the final rule. Public comments and EPA responses are discussed throughout this preamble, and all comments received are available in EPA docket number EPA–HQ–OAR–2010–0133.

VII. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

Under Executive Order 12866 (58 FR 51735, October 4, 1993), this action is an ''economically significant regulatory action'' because it has an annual effect on the economy of $100 million or more. Accordingly, EPA submitted this action to the Office of Management and Budget (OMB) for review under Executive Orders 12866 and 13563 (76 FR 3821, January 21, 2011) and any changes made in response to OMB recommendations have been documented in the docket for this action.

The economic impacts of the RFS2 program on regulated parties, including the impacts of the required volumes of renewable fuel, were already addressed in the RFS2 final rule promulgated on March 26, 2010 (75 FR 14670). This action finalizes the applicable volume of biomass-based diesel for 2013. We have been able to quantify some of the economic impacts of this rule in 2013.

We estimate that soybean prices could increase up to 3 cents per pound in 2013 if the 2013 biodiesel standard is met solely as a result of increased demand for soy bean oil. Potential use of other less expansive feedstocks would reduce this impact on soy beans. Again assuming the 280 million gallon increase in required biomass-based diesel is met through increased demand for soy oil, we estimate the cost of producing this biomass-based diesel would range from $253 to $381 million in 2013. Adding these estimates of 2013 costs to the fuel pool would result in a diesel fuel cost increase of less than 1 cent per gallon. These estimates do not account for recent trends in crop yields and grain prices resulting from drought conditions that are occurring in many areas of the country. Given the wide range of feedstocks from which biodiesel can be produced, the ultimate impact of these drought conditions on the mix of biodiesel feedstocks in 2013 is difficult to predict at this time.

Quantified estimates of benefits and disbenefits include energy security benefits of $0.15 per gallon in 2013 and air quality disbenefits of $0.07 per gallon in 2013. Other benefits include GHG emission reduction benefits and both direct and indirect employment benefits in rural areas due to increased biodiesel production. Impacts on water quality, water use, wetlands, ecosystems and wildlife habitats are expected to be modest due to both the small impact on crops planted and due to the relatively small impact of soy bean production.

B. Paperwork Reduction Act

This action does not impose any new information collection burden since it only specifies the required volume of biomass-based diesel under the RFS program for 2013. However, the Office of Management and Budget (OMB) has previously approved the information collection requirements contained in the existing regulations at 40 CFR part 80, subpart M under the provisions of the *Paperwork Reduction Act,* 44 U.S.C. 3501 *et seq.* This would include the following approved information collections (with OMB control numbers and expiration dates listed in parenthesis): ''Renewable Fuels Standard Program: Petition and Registration'' (OMB Control Number 2060–0637, expires March 31, 2013); ''Renewable Fuels Standard (RFS2)'' (OMB Control Number 2060–0640, expires July 31, 2013); ''Regulations of Fuels and Fuel Additives: 2011 Renewable Fuels Standard—Petition for International Aggregate Compliance Approach'' OMB Control Number 2060–0655, expires February 28, 2014). The OMB control numbers for EPA's regulations in 40 CFR are listed in 40 CFR part 9. Detailed and searchable information about these and other approved collections may be viewed on the Office of Management and Budget (OMB) Paperwork Reduction Act Web site, which is accessible at *http://www.reginfo.gov/public/do/PRAMain.*

C. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions.

For purposes of assessing the impacts of today's rule on small entities, small entity is defined as: (1) A small business as defined by the Small Business Administration's (SBA) regulations at 13 CFR 121.201; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

After considering the economic impacts of today's final rule on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. The impacts of the RFS2 program on small entities that are directly regulated under the RFS2 program were already addressed in the RFS2 final rule promulgated on March 26, 2010 (75 FR 14670). This rule simply establishes the applicable volume for biomass-based diesel for 2013 at a level that is consistent with the analyses in the RFS2 final rule. Therefore, this action will not impose any additional requirements on small entities beyond those which have already been evaluated.

We received a comment suggesting that impacts on truckers of the applicable volume of biomass-based diesel for 2013 established in this rule should be evaluated as part of our standard small business impact analysis. In response, we note that such analyses are only required under the Regulatory Flexibility Act for parties directly regulated by a rule and that, in general, truckers are not directly regulated by today's action nor under the regulatory requirements established in the RFS2 final rule.

D. Unfunded Mandates Reform Act

This rule does not contain a Federal mandate that may result in expenditures of $100 million or more for State, local, and tribal governments, in the aggregate, or the private sector in any one year. This rule simply establishes the applicable volume for biomass-based diesel for 2013 at a level that is consistent with the analyses in the RFS2 final rule. Thus, this action is not subject to the requirements of sections 202 or 205 of UMRA.

This action is also not subject to the requirements of section 203 of UMRA because it contains no regulatory requirements that might significantly or uniquely affect small governments.

E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. This action only applies to gasoline, diesel, and renewable fuel producers, importers, distributors and marketers and makes relatively minor corrections and modifications to the RFS2 regulations. A summary of the concerns raised, and EPA's response to those concerns, is provided in this preamble.

F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments

This action does not have tribal implications, as specified in Executive Order 13175 (65 FR 67249, November 9, 2000). This rule will be implemented at the Federal level and impose compliance costs only on transportation fuel refiners, blenders, marketers, distributors, importers, exporters, and renewable fuel producers and importers. Tribal governments would be affected only to the extent they purchase and use regulated fuels. Thus, Executive Order 13175 does not apply to this action.

G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

EPA interprets EO 13045 (62 FR 19885, April 23, 1997) as applying only to those regulatory actions that concern health or safety risks, such that the analysis required under section 5–501 of the EO has the potential to influence the regulation. This action is not subject to EO 13045 because it does not establish an environmental standard intended to mitigate health or safety risks and because it implements specific standards established by Congress in statutes.

H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use

This rule is not a ''significant energy action'' as defined in Executive Order 13211, ''Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use'' (66 FR 28355 (May 22, 2001)) because it is not likely to have a significant adverse effect on the supply, distribution, or use of energy. This action simply finalizes the annual standards for cellulosic biofuels for 2012 and biomass-based diesel for 2013, provisions for new RIN-generating pathways, and clarifying changes and minor technical amendments to the regulations.

I. National Technology Transfer Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (''NTTAA''), Public Law 104–113, 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards.

This action does not involve technical standards. Therefore, EPA did not consider the use of any voluntary consensus standards.

J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

Executive Order (EO) 12898 (59 FR 7629 (Feb. 16, 1994)) establishes federal executive policy on environmental justice. Its main provision directs federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States.

EPA has determined that this final rule will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations because it does not affect the level of protection provided to human health or the environment. This action does not relax the ambient emission control measures on sources impacted by the RFS2 regulations. While we have estimated that some emissions may increase as the result of the incremental volume of 280 mill gal required through this final rule, ambient emission control measures remain unaffected.

K. Congressional Review Act

The Congressional Review Act, 5 U.S.C. 801 *et seq.,* as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. A major rule cannot take effect until 60 days after it is published in the **Federal Register**. This action is a ''major rule'' as defined by 5 U.S.C. 804(2). This rule will be effective 60 days from the date of publication.

VIII. Statutory Authority

Statutory authority for the rule finalized today can be found in section 211 of the Clean Air Act, 42 U.S.C. 7545. Additional support for the procedural and compliance related aspects of today's rule, including the recordkeeping requirements, come from sections 114, 208, and 301(a) of the Clean Air Act, 42 U.S.C. 7414, 7542, and 7601(a).

List of Subjects in 40 CFR Part 80

Environmental protection, Administrative practice and procedure, Air pollution control, Confidential Business Information, Diesel fuel, Fuel additives, Gasoline, Imports, Labeling, Motor vehicle pollution, Penalties, Petroleum, Reporting and recordkeeping requirements.

Dated: September 14, 2012.

Lisa P. Jackson,

Administrator.

[FR Doc. 2012–23344 Filed 9–26–12; 8:45 am]

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