Regulation of Fuels and Fuel Additives: Renewable Fuel Standard Program

Summary and Analysis of Comments

United States
Environmental Protection
Agency

Regulation of Fuels and Fuel Additives: Renewable Fuel Standard Program

Summary and Analysis of Comments

Assessment and Standards Division
Office of Transportation and Air Quality
U.S. Environmental Protection Agency

United States
Environmental Protection
Agency

EPA420-R-07-006
April 2007

Index of RFS Proposal Commenters		
Commenter	**Abbreviation**	**Docket ID Number**
Ad-Hoc Coalition of Small Business Refiners	Small Refiners	OAR-2005-0161-0214
Alliance of Automobile Manufacturers	Alliance	OAR-2005-0161-0176
American Coalition for Ethanol	ACE	OAR-2005-0161-0218
American Farm Bureau Federation[1]	AFBF	OAR-2005-0161-0188
American Petroleum Institute	API	OAR-2005-0161-0185
American Society for Testing Materials	ASTM	OAR-2005-0161-0235 (hearing)
Archer Daniels Midland Company	ADM	OAR-2005-0161-0227
Baker Commodities		OAR-2005-0161-0003 through -0006, -0173
Biodiesel Coalition of Texas	BCOT	OAR-2005-0161-0186
Biodiesel Industries of Greater Dallas Fort Worth	BIGDFW	OAR-2005-0161-0211
Biotechnology Industry Organization (Industrial and Environmental Section)	BIO IES	OAR-2005-0161-0199
BlueFire Ethanol		OAR-2005-0161-0200, -0224
BP Products North America	BP	OAR-2005-0161-0221, -0230
CHS Inc.		OAR-2005-0161-0203
Chevron		OAR-2005-0161-0193
CHOREN Industries		OAR-2005-0161-0195
ConocoPhillips		OAR-2005-0161-0194, -0219
Countrymark Cooperative	Countrymark	OAR-2005-0161-0225
Delta-T Corporation		OAR-2005-0161-0196
DuPage County Board		OAR-2005-0161-0166
DuPont		OAR-2005-0161-0168
Engine Manufacturers Association	EMA	OAR-2005-0161-0177
Environmental Defense		OAR-2005-0161-0172, -0223
Ethanol Boosting Systems	EBS	OAR-2005-0161-0162
Ethanol Feed and Fuel, LLC		OAR-2005-0161-0180
Ethanol Products		OAR-2005-0161
ExxonMobil Refining & Supply Co.		OAR-2005-0161-0197
Flint Hills Resources	FHR	OAR-2005-0161-0222
FutureFuel Chemical Company	FutureFuel	OAR-2005-0161-0198
Galveston Bay Biodiesel	dba- BioSelect	OAR-2005-0161-0206
Gary-Williams Energy Corporation	GWEC	OAR-2005-0161-0207

Giant Industries	Giant	OAR-2005-0161-0164
Griffin Industries, Inc.	Griffin	OAR-2005-0161-0189
Harms Oil Company	Harms	OAR-2005-0161-0220
Imperium Renewables, Inc.	IRI	OAR-2005-0161-0178
Independent Fuel Terminal Operators Association	IFTOA	OAR-2005-0161-0213
KinderMorgan Liquid Terminals	KMLT	OAR-2005-0161-0231
Lyondell Chemical Company	Lyondell	OAR-2005-0161-0165
Magellan Midstream Partners	Magellan	OAR-2005-0161-0208
Marathon Petroleum Company	MPC	OAR-2005-0161-0175
Methanol Institute	MI	OAR-2005-0161-0171
Missouri Department of Natural Resources	MDNR	OAR-2005-0161-0217
National Association of Convenience Stores[2]	NACS	OAR-2005-0161-0234
National Petrochemical and Refiners Association	NPRA	OAR-2005-0161-0170, -0232
National Biodiesel Board	NBB	OAR-2005-0161-0212
National Corn Growers Association [1]	NCGA	OAR-2005-0161-0188
National Council of Farmer Cooperatives [1]	NCFC	OAR-2005-0161-0188
National Renewable Energy Laboratory	NREL	OAR-2005-0161-0179
National Restaurant Association	NRA	OAR-2005-0161-0174
National Wildlife Federation	NWF	OAR-2005-0161-0209
Natural Gas Vehicles for America	NGVA	OAR-2005-0161-0201
Natural Resources Defense Council	NRDC	OAR-2005-0161-0229
New York State Department of Environmental Conservation	NYDEC	OAR-2005-0161-0169
Neste Oil Holding Inc.	Neste	OAR-2005-0161-0191
Northeast States for Coordinated Air Use Management	NESCAUM	OAR-2005-0161-0187
Organic Fuels		OAR-2005-0161-0190, -0233 (hearing)
Private Citizen		OAR-2005-0161-0156
Private Citizen		OAR-2005-0161-0158, -0159
Private Citizen		OAR-2005-0161-0160
Private Citizen		OAR-2005-0161-0236
Private Citizen		OAR-2005-0161-0182—0184
Private Citizen		OAR-2005-0161-0163
Renewable Energy Action Project	REAP	OAR-2005-0161-0204
Renewable Fuels Association	RFA	OAR-2005-0161-0192, -0228 (hearing)
Shell Oil Company/Motiva Enterprises		OAR-2005-0161-0215

SilvaGas, Inc.		OAR-2005-0161-0161
Society of Independent Gasoline Marketers of America[2]	SIGMA	OAR-2005-0161-0234
Sutherland Asbill & Brennan		OAR-2005-0161-0210
Trenton Fuel Works		OAR-2005-0161-0181
Tyson Foods, Inc.	Tyson	OAR-2005-0161-0216
Union of Concerned Scientists	UCS	OAR-2005-0161-0226
Valero Energy Corporation		OAR-2005-0161-0167
West Park Associates		OAR-2005-0161-0202

1- commented together
2- commented together

Acronyms and Abbreviations

ABT	Averaging, Banking, and Trading
AFV	Alternative Fueled Vehicle
ASTM	American Society for Testing Materials
BOB	Blendstock for Oxygenate Blending
BOL	Bill of Lading
BTL	Biomass to Liquid
Btu	British Thermal Unit
bpcd	Barrels per Calendar Day
CAA	Clean Air Act
CARB	California Air Resources Board
CBOB	California Blendstock for Oxygenate Blending
CAFE	Corporate Average Fuel Economy
CAIR	Clean Air Interstate Rule
CAMx	Comprehensive Air Quality Model with Extensions
CARB	California Air Resources Board
CASAC	Clean Air Science Advisory Committee
CBE	Cellulosic Biomass Ethanol
CDX	Central Data Exchange
CFR	Code of Federal Regulations
CG	Conventional Gasoline
CMAQ	Community Multi-scale Air Quality Model
CNG	Compressed Natural Gas
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CRC	Coordinating Research Council
CRP	Conservation Reserve Program
DDG	Dried Distiller Grain
DoE, DOE	U.S. Department of Energy
DRIA	Draft Regulatory Impact Analysis
EBAMM	ERG Biofuel Analysis Meta-Model
EIA	Energy Information Administration
EO	Executive Order
EPA	Environmental Protection Agency
EPAct	Energy Policy Act
ERG	Energy and Resources Group (of the University of California Berkeley)
ETBE	Ethyl Tertiary Butyl Ether
EU	European Union
EV	Equivalence Value
FCC	Fluidized Catalytic Cracking
FFC	Full Fuel Cycle
FFV	Flex-Fuel Vehicle
FID	Flame Ionization Detector
FR	Federal Register

FT	Fischer-Tropsch
FTP	Federal Test Procedure
GGE	Gasoline Gallon Equivalent
GHG	Greenhouse Gas
GTAB	Gasoline Treated as Blendstock
HAP	Hazardous Air Pollutant
HC	Hydrocarbon
HCHO	Formaldehyde
IRS	Internal Revenue Service
LEM	Lifecycle Emissions Model
LEV	Low Emission Vehicle
LHV	Lower Heating Value
LIFO	Last In, First Out
LNG	Liquefied Natural Gas
LP	Linear Programming
MSAT2	EPA's 2nd Mobile Source Air Toxics Rule
MSW	Municipal Solid Waste
MTBE	Methyl Tertiary Butyl Ether
NAAQS	National Ambient Air Quality Standard
NESCAUM	Northeast States for Coordinated Air Usage Management
NLEV	National Low Emission Vehicle
NMHC	Non-methane Hydrocarbon
NMIM	National Mobile Inventory Model
NMOG	Non-methane Organic Gas
NOx	Oxides of Nitrogen
NPRM	Notice of Proposed Rulemaking
OEM	Original Equipment Manufacturer
OMB	Office of Management and Budget
OTAQ	Office of Transportation and Air Quality
PADD	Petroleum Administration District for Defense
PM	Particulate Matter
psi	Pound-force per Square Inch
PSD	Prevention of Significant Deterioration
PTD	Product Transfer Document
RBOB	Reformulated Blendstock for Oxygenate Blending
RD	Renewable Diesel
RFG	Reformulated Gasoline
RFS	Renewable Fuels Standard
RIA	Regulatory Impact Analysis
RIN	Renewable Identification Number
RSM	Response Surface Model
RSPO	Roundtable for Sustainable Palm Oil
RVO	Renewable Volume Obligation
RVP	Reid Vapor Pressure
SBA	Small Business Administration

SBREFA	Small Business Regulatory Enforcement Fairness Act
SIP	State Implementation Plan
STEO	Short-term Energy Outlook
TCEQ	Texas Commission of Environmental Quality
THC	Total Hydrocarbon
ULSD	Ultra-low Sulfur Diesel
USC	United States Code
USDA	United States Department of Agriculture
VOC	Volatile Organic Compound

Table of Contents

1 GENERAL

What We Proposed:

The following comments relate in general to the Notice of Proposed Rulemaking (NPRM). The comments in this chapter are not on any specific aspect of the proposed rule; rather, they are directed to the general substance of the proposal. More detailed comments on specific provisions of the proposal can be found in later chapters of this Summary and Analysis of Comments.

For more information on the proposed rule, see the Federal Register at 71 FR 55552, published on September 22, 2006 [link to: http://a257.g.akamaitech.net/7/257/2422/01jan20061800/edocket.access.gpo.gov/2006/pdf/06-7887.pdf].

1.1 Supports Rule

What Commenters Said:

We received many comments supporting the proposed rule. Commenters generally stated that they support further development of the U.S. biofuels market to ensure less dependence on foreign oil. Some commenters stated that they believe that EPA worked cooperatively and effectively with all stakeholders. Some commenters also commended EPA for the development of a workable proposed RFS program concept, stating that they believe that EPA has followed the intention of the legislative provisions set out by the Energy Policy Act and has proposed a reasonable framework for the Renewable Fuels Standard program.

However, many of these commenters stated that, although they support the proposed rule, they believe that further work and/or additional study is needed before the rule is finalized. Each commenter offered various suggestions on how they believed that the rule could be improved, these comments are summarized in the following chapters of this Summary and Analysis document. These comments include suggested edits on the general structure of the RFS program, the Renewable Identification Number (RIN) program, compliance requirements, and impacts of the program.

Letters:
American Coalition for Ethanol (ACE) OAR-2005-0161-0218
American Petroleum Institute (API) OAR-2005-0161-0185
American Society for Testing Materials (ASTM) OAR-2005-0161-0235 (hearing)
Baker Commodities Inc. OAR-2005-0161-0003 through -0006, -0173
Biodiesel Coalition of Texas (BCOT) OAR-2005-0161-0186

Biodiesel Industries of Greater Dallas Fort Worth (BIGDFW) OAR-2005-0161-0211
Biotechnology Industry Organization (Industrial and Environmental Section) (BIO IES) OAR-2005-0161-0199
BlueFire Ethanol OAR-2005-0161-0200, -0224
BP Products North America OAR-2005-0161-0221, -0230
Chevron OAR-2005-0161-0193
ConocoPhillips OAR-2005-0161-0194, -0219
DuPage County Board OAR-2005-0161-0166
DuPont OAR-2005-0161-0168
Environmental Defense OAR-2005-0161-0172, -0223
ExxonMobil Refining & Supply Co. OAR-2005-0161-0197
Flint Hills Resources (FHR) OAR-2005-0161-0222
Griffin Industries, Inc.OAR-2005-0161-0189
Harms Oil Company OAR-2005-0161-0220
Independent Fuel Terminal Operators Association (IFTOA)OAR-2005-0161-0213
Imperium Renewables, Inc. (IRI) OAR-2005-0161-0178
Kinder Morgan Liquid Terminals (KMLT) OAR-2005-0161-0231
Magellan Midstream Partners OAR-2005-0161-0208
Marathon Petroleum Company (MPC) OAR-2005-0161-0175
Methanol Institute (MI) OAR-2005-0161-0171
Missouri Department of Natural Resources (MDNR) OAR-2005-0161-0217
National Restaurant Association (NRA) OAR-2005-0161-0174
National Wildlife Federation (NWF) OAR-2005-0161-0209
Natural Gas Vehicles for America OAR-2005-0161-0201
National Biodiesel Board (NBB) OAR-2005-0161-0212
National Corn Growers Association (NCGA), American Farm Bureau Federation (AFBF), and National Council of Farmer Cooperatives (NCFC) OAR-2005-0161-0188
National Petrochemical and Refiners' Association (NPRA) OAR-2005-0161-0170, -0232
Natural Resources Defense Council (NRDC)OAR-2005-0161-0229
National Renewable Energy Laboratory (NREL) OAR-2005-0161-0179
Neste Oil Holding Inc. OAR-2005-0161-0191
Organic Fuels OAR-2005-0161-0190, -0233 (hearing)
Private Citizens (*various*)
Renewable Energy Action Project (REAP) OAR-2005-0161-0204
Renewable Fuels Association (RFA) OAR-2005-0161-0192, -0228 (hearing)
Shell Oil Company/Motiva Enterprises OAR-2005-0161-0215
SilvaGas, Inc. OAR-2005-0161-0161
Sutherland Asbill Brennan OAR-2005-0161-0210
Tyson Foods, Inc. OAR-2005-0161-0216
Union of Concerned Scientists (UCS) OAR-2005-0161-0226

Our Response:

These comments are generally supportive of the RFS program design and its goal of increasing the volume of renewable fuels that are required to be used in vehicles in the U.S. as required in Section 211(o) of the Clean Air Act (CAA) as amended by the Energy Policy Act.

1.2 Opposes Rule

What Commenters Said:

We also received some comments which stated that they did not support the proposed rule. One commenter stated that it believed that the NPRM spent too much time discussing the legislation and future prospects for biofuels, but lacked significant information on operational costs.

CHS commented that its concerns are centered on the likelihood of an ethanol glut in the Mid-continent exacerbated by the proposed rule that may have negative consequences. The commenter stated that it believes that the simplified RFS program could have the unintended consequences of actually contributing to the creation of this glut; and that the proposed rule does not go far enough to promote the national program that Congress intended.

The National Association of Convenience Stores and the Society of Independent Gasoline Marketers of America (NACS/SIGMA) commented that they did not support the adoption of the RFS in the Energy Policy Act. The commenters stated that, philosophically, motor fuel marketers are opposed to government mandates on fuel composition, whether the mandate is for renewable fuels or for oxygenates in gasoline; the commenters expressed their doubt that the government's judgment is superior to the markets'.

Ethanol Products commented that it believes that the mechanics of the proposal posed some unintended complications for its company, and similar companies. The commenter also stated that it has concerns about the proposed RIN trading by refiners, as it believes that this could undermine the program if refiners do not meet the minimum requirements of the law each year. The commenter urged EPA to rethink the rule so that refiners can not use the rule to reduce ethanol demand.

Letters:
CHS Inc. OAR-2005-0161-0203
Ethanol Products OAR-2005-0161
National Association of Convenience Stores and Society of Independent Gasoline Marketers of America (NACS/SIGMA) OAR-2005-0161-0234

Our Response:

In general, EPA has little flexibility with respect to addressing comments expressing opposition to the program as mandated by Congress. Regarding the design of the RFS program, our final rule reflects an intensive collaborative effort with stakeholders to ensure that the provisions in the Energy Policy Act are implemented while also ensuring that the program is simple, flexible, and enforceable. Comments on specific elements of the RFS program, such as RINs, are addressed in subsequent chapters of this Summary and Analysis Document.

1.3 Goals of the RFS Program

1.3.1 Environmental Assessment

What Commenters Said:

The Missouri Department of Natural Resources encouraged EPA to complete a full environmental assessment.

Letters:
Missouri Department of Natural Resources (MDNR) OAR-2005-0161-0217

Our Response:

We did in fact conduct an analysis of the environmental impacts of the increased use of renewable fuels. Our preliminary results were presented in the NPRM, and our final analysis is provided in Chapters 3 through 6 of the Regulatory Impact Analysis (RIA). Additional and more comprehensive investigations will continue in the context of several other studies that the Energy Act requires EPA to conduct over the next several years.

1.3.2 Bias Towards Existing Technologies

What Commenters Said:

Ethanol Feed and Fuel commented that it believes that the proposed rule contains a bias towards existing technology which could stifle or limit technological advances in the reduction of fossil fuel use and the RIN program will place a few obligated parties in control of a significant portion of the RINs produced. The commenter stated that it believes this indicates a bias in favor of existing technologies, large scale production facilities and obligated parties. The commenter further stated that it believes that changes need to be made to the rule such that it does not dampen small business initiatives by favoring the larger entrenched operations (producers or obligated parties).

Letters:
Ethanol Feed and Fuel OAR-2005-0161-0180

Our Response:

The RFS program has been designed collaboratively with the industry to ensure that it is flexible and allows all valid renewable fuels to be used for compliance purposes. Any producer or importer of renewable fuels can generate RINs, and the process for determining the number of gallon-RINs that can be generated for each gallon is consistent across all renewable fuels. New companies, regardless of their size, can participate in the RIN trading program.

Moreover, there are about 140 refiners in addition to importers who will be obligated parties, and the largest is responsible for only a few percent of nationwide gasoline volumes. Thus no one obligated party can control the RIN market, and parties in need of RINs, in addition to parties that wish to participate in the RIN market, will have many avenues through which they can acquire RINs.

1.3.3 Other Program Issues

What Commenters Said:

The National Wildlife Federation commented that it strongly supports efforts to transition the nation towards a greater reliance on renewable fuels, and it welcomes the proposal and recognizes the value of insuring this reliance on renewable fuels. The commenter stated, however, that to achieve real public benefit the rule should be structured to: 1) effectively displace reliance on fossil fuels; 2) be complementary to efforts to monitor, track and trade, and reduce GHG emissions; 3) be sustainable and preserve air, soil, and water quality, public health, wildlife, and overall biodiversity; and 4) encourage development of a domestic industry that can efficiently meet these criteria.

The National Corn Growers Association (NCGA), the American Farm Bureau Federation (AFBF), and the National Council of Farmer Cooperatives (NCFC) commented that they believe that EPA must keep the intent of the program in mind (Congress' primary intent was to promote the use of renewable fuels through mandatory, minimum volumes used annually). The commenters further stated that they believe that the RFS program should include provisions to ensure that EPA has sufficient information to track compliance with the standard.

Letters:
National Wildlife Federation (NWF) OAR-2005-0161-0209
National Corn Growers Association (NCGA), the American Farm Bureau Federation (AFBF), and the National Council of Farmer Cooperatives (NCFC)OAR-2005-0161-0188
Renewable Fuels Association (RFA) OAR-2005-0161-0192, -0228 (hearing)

Our Response:

According to the Energy Policy Act, the primary goal of the RFS program is to ensure that a minimum amount of renewable fuel is used in the U.S. These volumes are specified for the years 2006 through 2012; for 2013 and beyond, the nationwide fraction of renewable fuel in gasoline can be no smaller than it was in 2012. However, there are also provisions in the Energy Policy Act that allow the actual volumes of renewable fuel consumed in a given year to differ in some small ways from the volumes specified in the Act. As described more fully in our response to comments in Section 5.6, these provisions include credit trading, deficit carryover, the 2.5 credit value for cellulosic biomass and waste-derived ethanol, and the use of gasoline consumption estimates to set the annual standard. Within this context, we believe that our final RFS program ensures that the requirements of the Energy Policy Act will be met, and that it will help insure reliance on renewable fuels.

Through our collaborative process with stakeholders, the final RFS program design provides the certainty that at least a minimum amount of renewable fuel will be used in the U.S. The final program also ensures that the compliance and trading program provides certainty to the marketplace and minimizes cost to the consumers; the program preserves existing business practices for the production, distribution, and use of both conventional and renewable fuels; the program is designed to accommodate all qualifying renewable fuels; all renewable volumes produced are made available to obligated parties for compliance; and finally, the Agency has the ability to easily verify compliance to ensure that the volume obligations are in fact met. A full description of the RFS program, including the reasons for specific elements, can be found in Sections III through V of the preamble to the final rule.

We also conducted a variety of analyses to determine the impacts of increased use of renewable fuels on cost, emissions of regulated pollutants, greenhouse gas emissions, petroleum imports, and fossil fuel consumption. These analyses and evaluations are presented in the RIA.

2 RENEWABLE FUEL STANDARD

The comments in this section correspond to Section III of the preamble to the proposed rule and pertain to the Renewable Fuel Standard in general. The comments we received and our response to those comments are summarized below.

2.1 Applicability of the Standard in 2007

2.1.1 Prospective Approach vs. Collective Compliance

What Commenters Said:

EPA received a number of comments on the proposed approaches for start-up of the RFS program. Marathon Petroleum Company (MPC), CHS, FutureFuel, BP, ExxonMobil, National Petrochemical and Refiners Association (NPRA), and the American Petroleum Institute (API) commented that they approve of EPA's proposed prospective approach of applying the renewable fuel standard only to those volumes of gasoline produced after the effective date of the final rule. BP commented that the application of the collective compliance approach in 2007 would penalize early movers by not giving credit for proactive use of renewable fuels and would allow obligated parties who do not wish to blend renewable fuels to further delay ethanol and/or biodiesel use. The commenter emphasized that the 2006 default rule provision included in the 2005 Energy Policy Act was not stipulated by Congress to extend into 2007, and thus enactment beginning 60 days after publication in the Federal Register would be more consistent with the original intent of Congress. Shell/Motiva agreed that a default, industry-wide program for 2007 would be contrary to the plain language and intent of the Energy Policy Act of 2005. Furthermore, Shell/Motiva commented that they believe that a default program would negate the individual compliance obligations and the credit trading program that Congress envisioned.

The Missouri Department of Natural Resources (MDNR) raised other questions regarding the collective compliance approach for 2007. Specifically, the commenter questioned how any renewable fuel deficit created on an industry-wide basis in 2007 would be handled on an individual basis in 2008. The commenter also questioned the extent to which the ethanol industry would be held accountable for any shortfall in renewable fuels in 2007 or in any future years. Additionally, MDNR commented that in the absence of a credit-trading program, it may be difficult for parties in regions that lack easy access to renewable fuel supplies, such as in the Northeast, to meet its renewable volume obligation (RVO) through physical throughput without any provisional assistance of the credit-trade.

On the other hand, MDNR, the American Coalition for Ethanol (ACE), and the Renewable Fuels Association (RFA) commented that a prospective approach would not

ensure that the total volume of renewable fuel required to be used in 2007 would in fact be used. ACE and RFA further commented that the Energy Policy Act of 2005 did not specify a particular implementation date for the RFS credit program and noted that the collective compliance approach would not render the credit program null for 2007. ACE and RFA also commented that the collective compliance approach would not need to include carryover of excess volumes generated, noting that where the goal of the program is to ensure an increasing minimum volume of renewable fuel is used each year, the "banking" of credits to reduce compliance costs in later years would undermine the purpose of the Energy Policy Act of 2005. For these reasons, ACE and RFA believed EPA should apply the collective compliance approach for 2007.

Finally, ExxonMobil recommended that if the final rule is delayed and/or lead time requirements of the stakeholders dictate that the effective date be later than July 2007, EPA should revert to the collective compliance approach for 2007, reasoning that a compliance "year" of less than six months imposes too great an accounting and recordkeeping burden for any potential added assurance of meeting the RFS that it provides.

Letters:
American Coalition for Ethanol (ACE) OAR-2005-0161-0218
American Petroleum Institute (API) OAR-2005-0161-0185
BP Products North America OAR-2005-0161-0221, -0230
CHS Inc. OAR-2005-0161-0203
FutureFuel OAR-2005-0161-0198
ExxonMobil Refining & Supply Co. OAR-2005-0161-0197
Marathon Petroleum Company (MPC) OAR-2005-0161-0175
Missouri Department of Natural Resources (MDNR) OAR-2005-0161-0217
National Petrochemical and Refiners Association (NPRA) OAR-2005-0161-0170, -0232
Renewable Fuels Association (RFA) OAR-2005-0161-0192, -0228 (hearing)
Shell Oil Company/Motiva Enterprises OAR-2005-0161-0215

Our Response:

We believe that a collective compliance approach is not appropriate for 2007. The Energy Act requires us to promulgate regulations that provide for the generation of credits by any person who over-complies with their obligation. It also stipulates that a person who generates credits must be permitted to use them for compliance purposes or to transfer them to another party. These credit provisions have meaning only in the context of an individual obligation to meet the applicable standard. Delaying a credit program until 2008 would mean the credit provisions have no meaning at all for 2007, since under a collective compliance approach no person (individual facility or company) would be liable for meeting the applicable standard. Including a "collective" credit or deficit carry-forward as part of a collective compliance program would also not fully implement the credit provisions of the Energy Act.

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

The comments did not adequately support the contention that a prospective approach to program startup would cause confusion or an undue burden for regulated parties. As described in our response to comments in Section 2.1.2, we believe that the September 1, 2007, start date is feasible and supported by stakeholders. Our final rule therefore implements a prospective approach to program startup in which the renewable fuel standard would apply to those volumes of gasoline produced after September 1, 2007, and Renewable Identification Number (RIN) generation would also begin for renewable fuel volumes produced or imported on or after this date. The prospective compliance approach not only provides obligated parties with the opportunity to generate credits in 2007, but also provides the industry with the certainty they need to comply and is relatively straightforward to implement.

2.1.2 Program Start Date

What Commenters Said:

Several commenters remarked on the start date for the RFS program. RFA, National Corn Growers Association (NCGA), National Council of Farmer Cooperatives (NCFC), and American Farm Bureau Federation (AFBF) commented that, given the complexity of the proposed RFS program, they believe the program start date should be deferred until January 1, 2008, to give renewable fuel producers and obligated parties sufficient time to make the transition from the 2006 collective compliance system, and to cope with the program's new regulatory burdens. RFA further commented that since the RIN trading program is supposed to include credits for small refineries that waive their exemption and such credits are not available until January 1 of the year after notification of waiver is provided, implementing the trading program in 2008 rather than in the middle of 2007 would allow a more complete trading program.

BP and API emphasized that enactment of the final rule should not be delayed to 2008, as some parties suggested at the public hearing on the RFS proposal. NPRA commented that EPA should revise §80.1106(b)(1) and clarify that the RFS program will not be effective for the entire calendar year of 2007. Several commenters, including MPC, NPRA, and BP, agreed with the proposed timing of the renewable fuel standard to begin 60 days after publication of the final rule in the Federal Register. MPC further

recommended that EPA establish a specific start date for the program, such as July 1, 2007.

Flint Hills Resources (FHR) agreed that setting a fixed date for implementation would facilitate planning given the uncertainty of the publication date of the final RFS rule. However, FHR also commented that the proposed 60-day delay between final rule publication and effective date of the program would not provide adequate time for all involved parties to prepare to manage the requirements of the rule. ExxonMobil and API also commented that the final rule should become effective no sooner than 60-120 days after publication to provide sufficient lead time to participants in the new program.

Letters:
American Farm Bureau Federation (AFBF), National Corn Growers Association (NCGA), National Council of Farmer Cooperatives (NCFC) OAR-2005-0161-0188
American Petroleum Institute (API) OAR-2005-0161-0185
BP Products North America OAR-2005-0161-0221, -0230
ExxonMobil Refining & Supply Co. OAR-2005-0161-0197
Flint Hills Resources (FHR) OAR-2005-0161-0222
Marathon Petroleum Company (MPC) OAR-2005-0161-0175
National Petrochemical and Refiners Association (NPRA) OAR-2005-0161-0170, -0232
Renewable Fuels Association (RFA) OAR-2005-0161-0192, -0228 (hearing)

Our Response:

We do not believe that the effective date of the rule should be delayed until 2008. Although we recognize that regulated parties need time to put into place the RIN tracking systems that will be required, comments provided did not support the need to delay program startup until 2008 to complete this preparation. Our close collaboration with stakeholders in development of the program ensures that regulated parties will have enough understanding about the basic requirements of the compliance and enforcement program to permit them to prepare for implementation even before publication of the final rule.

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

2.1.3 RIN Generation Start Date

What Commenters Said:

EPA received a comment from NPRA on specifying the date when the first RINs may be issued. NPRA questioned whether a renewable fuel producer or importer could begin to generate RINs once they are registered with the Agency and the rule has been promulgated, but before the program compliance start date.

Letters:
National Petrochemical and Refiners Association (NPRA) OAR-2005-0161-0170, -0232

Our Response:

Our final rule sets a program start date of September 1, 2007. On this date, accrual of both gasoline volumes subject to the standard and renewable fuel volumes for which RINs must be generated will begin. We are not providing for, nor are we allowing, RINs to be generated prior to September 1, 2007. However, we are allowing renewable fuel producers and importers to generate RINs for product in inventory on September 1, 2007.

2.2 Calculation of the Standard

2.2.1 State/Territory Opt-in

What Commenters Said:

EPA received a comment from MDNR on the proposal for a noncontiguous state or territory to submit a petition to opt in to the RFS program for a given year. The commenter suggested that EPA consider implementing a provision that would allow a state/territory to declare its intentions to file such a petition at least 120 days prior to the deadline date of October 31, claiming that if a petition is received on October 30, it may be difficult for EPA to make appropriate adjustments in the RVO to be published by November 30 for the subsequent year.

The commenter also stated that refineries and importers in Alaska and Hawaii may or may not be subject to the RFS depending on their annual production volume, even if their respective state opts into the program. The commenter therefore posed a question about how EPA will assure that any issues that arise from the RFS program's opt-in provisions for small refineries and state waiver provisions will be reconciled in a uniform and equitable fashion.

Letters:
Missouri Department of Natural Resources (MDNR) OAR-2005-0161-0217

Our Response:

Regarding the first comment, EPA can only act on (i.e., approve) opt-in petitions that are actually submitted by a state or territory. It would be imprudent to act on "intent," as that may change or not be followed through on. Opt-in petitions may be submitted at any time before the October 31 deadline for the state or territory's inclusion in the RFS program beginning with the next compliance period. Changing the calculated value of the RVO in time for a November 30 publication date is straightforward, and would not be hindered by receipt of an opt-in petition on October 31.

Regarding the second comment, EPA must publish the applicable annual standard by November 30 of the previous year. The deadline for opt-in petitions allows EPA sufficient time to incorporate the opt-in into the calculation of the standard. To do this, EPA only needs information on the total volume of gasoline consumed in the state or territory that has opted in. This information is available from the EIA, the same source that will be used for gasoline consumption in the 48 contiguous states. Volumes of gasoline produced or imported by individual parties located in the opt-in state or territory are not relevant to the calculation of the standard. However, because we have subtracted the volumes of gasoline produced by exempt small refiners and small refineries from the total gasoline produced in the contiguous 48-states in the calculation of the standard, we would do the same for small refineries and small refiners in an opt-in state. However, the impact on the final value of the standard would be small, as the volumes of gasoline in the potential opt-in areas are small, and the volume produced by small refiners and refineries in those areas is even smaller.

2.2.2 Inclusion of Diesel

What Commenters Said:

EPA received a comment from the Union of Concerned Scientists (UCS) on the exclusion of diesel volumes from RFS and renewable volume obligation (RVO) calculations. UCS noted that the RFS program proposal gives renewable credits for biodiesel, but conventional and unconventional diesel consumption numbers are not included in the calculations for yearly renewable fuel standard and yearly RVOs. The commenter expressed concern that if more conventional diesel fuel is used, the renewable fuel volume required by the RFS after 2012 could actually go down or at least grow at a slower rate than highway fuel demand, and UCS recommended that EPA advise Congress on the impacts of their decision to exclude diesel usage in the calculations for the RFS and RVO.

Letters:
Union of Concerned Scientists (UCS) OAR-2005-0161-0226

Our Response:

The Energy Policy Act requires EPA to establish a program (the RFS program) that ensures that the pool of *gasoline* used in the contiguous 48 states contains specific volumes of renewable fuel**.**

2.2.3 Cellulosic Ethanol Standard

What Commenters Said:

EPA received comments pertaining to the cellulosic ethanol standard included in the RFS program. Shell/Motiva commented that it supports EPA's proposed approach to establish a separate obligation for ethanol derived from cellulosic biomass effective in 2013. The National Wildlife Federation (NWF) commented that it supports EPA's intention to repeat the RFS rulemaking as the renewable fuel industry evolves, and suggested that EPA perform an interim assessment to review whether that rulemaking, and a potential increase in renewables goals, should occur before 2013. BlueFire Ethanol believed that the Renewable Fuel Standard formula and EPA's RFC for cellulosic ethanol (RFCell) should require a minimum 2012 standard of 500 million gallons/yr, or suggested that EPA could revise its 2012 minimum 250 million gallon/yr standard for cellulosic ethanol upwards once the industry demonstrates its ability to exceed the 250 million gallon/yr 2012 minimum standard.

Letters:
BlueFire Ethanol OAR-2005-0161-0200, -0224
National Wildlife Federation (NWF) OAR-2005-0161-0209
Shell Oil/Motiva OAR-2005-0161-0215

Our Response:

The Energy Policy Act of 2005, in addition to setting the standards to be adopted through 2012, directed EPA to develop the next set of renewable fuel standards for the years 2013 and beyond, in coordination with the Departments of Agriculture and Energy, based upon the results of a review of the program from 2006-2012. In establishing these minimum levels, EPA is to consider the impact of renewable fuel on the environment, air quality, energy security, job creation, and rural economic development, as well as the expected annual rate of renewable fuel production during those years. Any rulemaking regarding the 2013 RFS standard will have to be undertaken several years prior to 2013, in order to allow time for proposal and comment, and to provide sufficient time for construction in the event that capital improvements by the affected industries are necessary for compliance. That rule will consider the current and projected future state of the renewable fuel industry, the mix of motor vehicle fuels and technologies, and other factors in setting the RFS requirements for 2013 and beyond.

In addition, the President, in his State of the Union address in January 2007, set specific goals for reducing the amount of petroleum fuel used by the transportation sector, specifically recommending the adoption of requirements to use 35 billion gallons of alternative fuel including renewable fuel by 2017. This volume of fuel would likely include significantly higher volumes of renewable fuel compared to the minimum levels required under the Energy Act for the RFS program. Much additional analysis would be required as part of a rulemaking adopting such requirements.

2.2.4 Data Used

What Commenters Said:

We received comments on our use of EIA data for calculating each obligated party's annual RVO. MDNR commented that it believes that EPA should present the data points and data periods to be used in calculating the annual RVO. The commenter stressed that EPA should explain how we intend to mitigate the effect of the lag time and other factors that affect values and figures derived by EIA. NPRA, on the other hand, supported EPA's intent to use the October issue of EIA's monthly Short Term Energy Outlook projection for gasoline demand in 2007 and beyond in order to project next calendar year's gasoline demand in the 48 contiguous states and any EPA-approved RFS opt-in areas.

Letters:

Missouri Department of Natural Resources (MDNR)	OAR-2005-0161-0217
National Petrochemical and Refiners Association (NPRA)	OAR-2005-0161-0170, -0232

Our Response:

In the proposal, we stated that we will use gasoline and renewable projections from the EIA Short Term Energy Outlook (STEO) for October of the year prior to the year for which the standard is being determined, and we continue to believe, absent any other technical input since the proposal, that it provides the best estimate for the coming year. We do not expect that any differences between the October STEO values and any near-term corrected or adjusted future values of gasoline or renewable fuel projections will be significant. Thus no adjustment or mitigation of any effects of lag time or other factors will be needed.

2.2.5 Other Issues Related To the Standard

What Commenters Said:

EPA received general comments on the establishment of the renewable fuel standard. MDNR noted that in order to achieve the desired goals of energy independence and greater diversity in the Lower 48 states' transportation fuel supply through 2012,

larger quantities of ethanol and other renewable fuels may be necessary than what is called for in the RFS program. SilvaGas emphasized that the RFS target production of ethanol gallons per year should be seen as a floor and not as a ceiling on ethanol production, and that the general spirit of EPA's final rule should be to encourage ethanol production, not penalize the industry if it can exceed legislative targets.

Letters:
Missouri Department of Natural Resources (MDNR) OAR-2005-0161-0217
SilvaGas. OAR-2005-0161-0161

Our Response:

The annual volumes of renewable fuel required to be used under the RFS program are specified in the Energy Act. The Energy Act does not give EPA authority to change these required volumes for years 2006 - 2012. The RFS standard is a required minimum; obligated parties are in no way prohibited from exceeding the required levels, and it would certainly be consistent with the purpose and objective of the Act if parties do so. Beginning in the 2013 compliance year, EPA must determine the required annual volumes in a coordinated effort with the Departments of Agriculture and Energy based on a number of criteria specified in the Energy Act and a review of the program during calendar years 2006 through 2012. The Energy Act specifies that this review consider the impact of the use of renewable fuels on the environment, air quality, energy security, job creation, and rural economic development, and the expected annual rate of future production of renewable fuels, including cellulosic ethanol. We intend to conduct another rulemaking as we approach the 2013 timeframe that would include our review of these factors. That rulemaking will present our conclusions regarding the appropriate applicable volume of renewable fuel for use in calculating the renewable fuel standard for 2013 and beyond. The program finalized by today's rule will continue to apply after 2012, though some elements may be modified in the rulemaking setting the standards for 2013 and beyond.

The President's January 2007 State of the Union address recommended the adoption of requirements to use 35 billion gallons of alternative fuel including renewable fuel by 2017. This goal could also affect the level of applicable standards in a future rulemaking.

2.3 Renewable Volume Obligations

2.3.1 Refiner vs. Refinery

What Commenters Said:

EPA received comments related to the applicability of the RFS to refiners versus refineries. Gary-Williams Energy Corporation (GWEC) suggested that to encourage more even distribution and use of ethanol across the country, EPA should establish ethanol use volume percentages on a refinery basis, rather than the company-wide basis

that was proposed. The Ad-Hoc Coalition of Small Business Refiners (Small Refiners) commented that while small refiners generally endorsed EPA's proposed RIN system, they opposed the company-wide, versus individual facility, compliance basis.

Letters:
Ad-Hoc Coalition of Small Business Refiners (Small Refiners)
OAR-2005-0161-0214
Gary-Williams Energy Corporation (GWEC) OAR-2005-0161-0207

Our Response:

We have specified that the RFS provisions must be met by refiners and importers, and not by refinery or point of importation. Thus, the RVO must be met by the refiner over the total gasoline production of all of its refineries, and by the importer for its total volume of gasoline imports regardless of point of entry into the U.S. Furthermore, obligated parties are not required to blend renewable fuel into gasoline they produce or import, but may satisfy their RVO by acquiring RINs associated with blending renewable fuel into the gasoline produced or imported by other obligated parties. Given this "credit trading" component of the RFS program, which is required under the Act, establishing volume percentages on a refinery basis would not necessarily encourage more even distribution and use of ethanol across the country, as the commenter suggests. We note that any company with multiple facilities can choose, of its own accord, to assign responsibility for RIN acquisition to its individual facilities in proportion to their gasoline production or importation.

2.3.2 Products Included in the RVO Calculation

What Commenters Said:

In addition to the comment responded to in Section 2.2.2 of this document, EPA received a few comments on EPA's calculation of obligated parties' annual RVOs. Shell/Motiva agreed with EPA's proposal that the RVO should be based on the amount of gasoline and blendstocks for oxygenate blending (BOBs) that a refiner or importer produces, but noted that in the final rule, EPA should clarify that the terms RBOB and CBOB include CARBOB (California BOB), AZRBOB (Arizona BOB), and LVBOB (Las Vegas BOB). Sutherland Asbill & Brennan commented that EPA should clarify when obligated parties must include gasoline treated as blendstock as part of their RVO, and recommended the approach suggested in the proposal of the importer counting gasoline treated as blendstock (GTAB) when it is blended to produce gasoline. API commented that the requirement to evaluate the term RBx in §80.1107(b) seemed to require tracking all renewables and their volumes to the blend point, and that the RBx term simply should be dropped because §80.1107(d) prevents counting renewables volume as gasoline volume.

ExxonMobil also commented on EPA's definition of the specific gasoline volumes that would serve as the basis for the renewable volume obligation, and the commenter concurred that renewable fuel volumes should not be counted as gasoline for the purpose of calculating the RVO.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185
Exxon/Mobil OAR-2005-0161-0197
Shell Oil/Motiva OAR-2005-0161-0215
Sutherland Asbill & Brennan OAR-2005-0161-0210

Our Response:

We agree that clarifying that the "BOB" blendstocks are included in the RVO calculation would be helpful, and thus have modified the regulations accordingly.

For purposes of compliance demonstrations, the RFS rule treats GTAB in a manner that is consistent with the reformulated gasoline (RFG) and conventional gasoline (CG) regulations. The importer includes the GTAB in the volume of gasoline used to determine the renewable fuel obligation of the importer in its capacity as a refiner of the GTAB, and excludes the GTAB in the volume of gasoline used to determine the renewable fuel obligation of the importer in its capacity as an importer. The regulations have been clarified with regard to how GTAB is used to determine the GTAB importer's renewable fuels obligation.

The inclusion of the RBx term is used solely to calculate the non-renewable gasoline volume of an obligated party, and it does not refer to, nor is it intended to account for, renewable fuel used downstream of the refinery. Thus there is no obligated party burden for tracking renewable fuel blended with the obligated party's gasoline outside the "refinery gate." Therefore this term is being retained for the final rule.

2.4 Exporters of Renewable Fuel

2.4.1 RINs on Renewable Fuel for Export

What Commenters Said:

EPA received comments from three organizations on the assignment and retirement of RINs for exported renewable fuel. RFA and Archer Daniels Midland Company (ADM) commented that they believe all gallons of renewable fuel should be assigned RINs, including renewable fuel exports, in order to maintain a fungible system and eliminate confusion about which gallons should be assigned RINs and which should not. ExxonMobil commented that RINs associated with renewable fuel produced in the contiguous 48 states and exported to another country or delivered to Alaska or Hawaii

should be retired. The commenter stated that the one exception to this requirement would be if Alaska or Hawaii decides to opt-in to the program.

Letters:
Archer Daniels Midland Company (ADM) OAR-2005-0161-0227
ExxonMobil OAR-2005-0161-0197
Renewable Fuels Association (RFA) OAR-2005-0161-0192, -0228 (hearing)

Our Response:

Regarding the comments from RFA and ADM, our final regulations will require that producers assign RINs to all renewable fuel, regardless of whether it is for export. We also believe that RINs associated with exported volumes of renewable fuel must be retired. In the final rule, exports are defined in §80.1101 to mean any product that is transferred outside the 48 contiguous states, including to locations in Alaska, Hawaii, or a U.S. territory, unless one of these areas has opted into the RFS program.

2.4.2 Renewable Volume Obligation for Exporters

What Commenters Said:

API and Imperium Renewables Inc. (IRI) commented on our proposal to incorporate exporters of renewable fuels into the RFS program. API commented that requirements for exporters of renewable fuels (§80.1130) should apply to the physical product exported from the 48 contiguous States since an exporter could be anywhere in the world.

IRI commented on the proposed requirement that exporters be assigned an RVO equal to the volume of renewable fuel they export adjusted by the equivalence value of that fuel. IRI was concerned that if an exporter acquires a batch of renewable fuel with an equivalence value greater than 1.0 but without extra-value RINs attached, the exporter would be required to purchase RINs on the open market in order to meet their RVO. The commenter argued that this requirement would place an undue burden on exporters. IRI proposed eliminating the need for exporters to retire the extra-value RINs associated with the fuel if such extra-value RINs were not assigned to the fuel when it was received by the exporter, and cited the fact that EPA proposed to allow similar treatment if all RINs had already been separated from the batch when it was received by the exporter and the equivalence value could not be determined. IRI also commented that another alternative would be to increase the obligation placed on refiners, importers, and blenders of gasoline to cover the renewable fuel exported. In this way, the RINs which would have been retired by the exporters would be available for purchase from producers by obligated parties.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185

Imperium Renewables, Inc. (IRI) OAR-2005-0161-0178

Our Response:

Our final program maintains the requirement that exporters adopt an RVO just as obligated parties do. In the case of exporters, the RVO will be calculated based on the volume of renewable fuel exported, adjusted for the Equivalence Value of that volume. Exporters will therefore need to acquire sufficient RINs to offset their RVO. The final regulations also will require that parties that export renewable fuel from the 48 contiguous States will be subject to an RVO representing the exported product, regardless of the physical location of the exporter.

We do not believe that IRI has provided compelling reasons to place the burden for exported renewable fuel on obligated parties. Not only would this approach have required an estimate of the volume of renewable fuel exported in the next year, but would also mean that every obligated party would share in accumulating RINs to cover the activities of other parties not under their control.

Exported renewable fuel must be accounted for in the RFS program to the degree possible. If the exporter knows the equivalence value associated with the exported renewable fuel, or can determine it through other means, it must use this information in determining its RVO. It would not be a reasonable approach to ensuring that the statutorily required volumes are used in the U.S. to permit exporters to avoid the burden of an RVO in cases where the exported product was not received with RINs.

2.5 Obligated Parties

EPA received several comments regarding the definition of obligated parties under the RFS Program. The Society of Independent Gasoline Marketers of America and the National Association of Convenience Stores (SIGMA/NACS), ExxonMobil, Baker Commodities, Griffin Industries, Methanol Institute (MI), and API agreed with EPA that blenders of products to produce gasoline or diesel fuel are obligated parties under the RFS, while oxygenate blenders or parties that only add ethanol to gasoline or biodiesel to diesel fuel in small quantities are not obligated parties. SIGMA/NACS commented that in the final rule, EPA should clearly distinguish between the terms “blender” and “oxygenate blender” to avoid confusion or misinterpretation when the RFS program is implemented. The commenter also urged EPA to clarify that a party that blends biodiesel into diesel fuel is not considered a "blender," and thus would not be an obligated party under the RFS.

BlueFire Ethanol commented extensively on the principle that blenders should be accorded full flexibility to blend any sub-octane, sub-spec gasoline and approved section 211(f) blending components with ethanol based gasoline at any point in the distribution system. The commenter also supported EPA’s proposal not to require CBOB and GTAB ethanol blenders to register as obligated parties.

Shell/Motiva and API commented that they believe that EPA should clarify that transmix processors are only required to count as their gasoline production the volumes of blendstocks added to finished or unfinished gasoline. API also commented that transmix blending operations (as opposed to transmix processors) should be exempt from RIN obligations when blending at levels not requiring blendstock reporting.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185
Baker Commodities OAR-2005-0161-0003 through -0006, -0173
BlueFire Ethanol OAR-2005-0161-0200, -0224
ExxonMobil OAR-2005-0161-0197
Griffin Industries, Inc.OAR-2005-0161-0189
Methanol Institute (MI) OAR-2005-0161-0171
Shell Oil/Motiva OAR-2005-0161-0215
Society of Independent Gasoline Marketers of America and National Association of Convenience Stores (SIGMA/NACS) OAR-2005-0161-0234

Our Response:

The regulations at §80.1106 specify that obligated parties are refiners and importers that produce gasoline or import gasoline, including blenders who blend blendstocks into finished gasoline. The regulations do not include as obligated parties those persons who produce, import, or blend diesel fuel, or those parties that only add renewable fuel to gasoline (including RBOB or CBOB).

Under the fuels regulations, any party may blend sub-spec gasoline or other blendstock(s) with ethanol to produce a finished blend of gasoline, however, such party is considered to be a refiner under the fuels regulations. As a refiner, the party is an obligated party under the RFS program, and, as such, is responsible for complying with the renewable fuel obligation with regard to the finished blend of gasoline. Under the RFS program, renewable fuels that are contained in gasoline are not included in the volume used to calculate a refiner's renewable fuel obligation. Therefore, a party that blends only ethanol into finished gasoline is not an obligated party under the RFS program. This is because the finished gasoline portion of the blend would have been included in the volume used to calculate the renewable fuel obligation of the refiner of the finished gasoline, and the ethanol is not subject to the RFS obligation. However, a party that blends sub-spec gasoline or any other blendstock(s) with ethanol to produce a finished blend of gasoline is an obligated party and is responsible for complying with the renewable fuel obligation for the non-ethanol portion of the blend. This is because the sub-spec gasoline or other blendstock(s) in the finished blend would not have been included in the volume used to calculate the renewable fuel obligation of the refiner of the sub-spec gasoline or blendstock(s). Under the RFS program, obligated parties are required to separate the RINs assigned to any ethanol that they purchase, and blenders of renewable fuels are required to separate the RINs assigned to any ethanol that they purchase and blend into gasoline.

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

3 TYPES OF RENEWABLE FUELS

What We Proposed:

The comments in this section correspond to Section III.B of the preamble to the proposed rule and address the various types of renewable fuels and qualifications for treatment as a renewable fuel. A summary of the comments received and our response to those comments are located below.

3.1 What Qualifies as a Valid Renewable Fuel

3.1.1 How Renewable Fuels Are Made

What Commenters Said:

We received several comments on our definition of renewable fuel with respect to feedstocks. Environmental Defense, FutureFuel, and Shell/Motiva supported EPA's proposed definition of renewable fuel because it allows for new renewable fuels derived through technological innovation to count toward the standard in the future. Griffin, Methanol Institute (MI), and Biodiesel Industries of Greater Dallas Fort Worth (BIGDFW) agreed with EPA that it is the intent of Congress and good public policy for the definition of renewable fuel to include fuels made from a number of different renewable feedstocks. BP supported the addition of algae-derived feedstocks to the definition of renewable fuel, and Natural Gas Vehicles for America (NGVAmerica) supported the inclusion of natural gas fuels in the proposed regulation, noting that liquefied natural gas (LNG) is another motor vehicle fuel produced from natural gas that should qualify as a renewable fuel if it is produced from appropriate sources. Choren commented that it would like to see the introduction of biomass-to-liquid (BTL) diesel and jet fuel as a new and separate category into the renewable fuels definition considered by the RFS regulation.

Letters:
Biodiesel Industries of Greater Dallas Fort Worth (BIGDFW) OAR-2005-0161-0211
BP Products North America OAR-2005-0161-0221, -0230
Choren OAR-2005-0161-0195
Environmental Defense OAR-2005-0161-0172, -0223
FutureFuel OAR-2005-0161-0198
Griffin Industries OAR-2005-0161-0189
Methanol Institute (MI) OAR-2005-0161-0171
Natural Gas Vehicles for America (NGVAmerica) OAR-2005-0161-0201
Shell Oil Company/Motiva Enterprises OAR-2005-0161-0215

Our Response:

EPA's definition of renewable fuel does not exclude any potential sources of fuel such as algae or seaweed. In addition, both the statutory definition and EPA's definition focus on the feedstocks that are used to make renewable fuel and neither specify nor prohibit any particular process for making such fuel. The definition of renewable fuel in 40 CFR 1101(d)(1)(x) includes "Other biomass" which opens up the possibility to any number of sources. We therefore do not believe we need to specify the inclusion of algae and seaweed in the actual regulations. We have, however, mentioned it in the preamble as an example of biomass. The definition is open to any number of processes used to make renewable fuel, including but not limited to biomass-to-liquid (BTL) processes employed to make diesel fuel. Any such fuel would also need to meet the general criteria in the definition of renewable fuel: specifically it would need to be a motor vehicle fuel.

3.1.2 Neat Fuel vs. Blended Fuel

What Commenters Said:

Several commenters remarked on EPA's proposal to allow renewable fuels in both their neat and blended forms to count toward RFS compliance. Baker Commodities, Griffin Industries, MI, DuPont, and a private citizen agreed with the range of uses of renewable fuels EPA proposed as counting toward the RFS, including neat and blended uses in on- and off-road motor fuel applications. NGVAmerica supported EPA's proposal to allow credits for renewable fuels that are not blended with gasoline, agreeing that inclusion of such fuels will encourage additional production of renewable fuels. The commenter also stated that it believes that fuels such as natural gas, whether used in neat form or mixed with other fuels, such as diesel, should be permitted to qualify for renewable fuel credits.

The Engine Manufacturers Association (EMA) commented that it believes that counting renewable fuels used in their neat form in on-road and nonroad applications was overly broad, and suggested that the final rule clarify that biodiesel should be blended with petroleum-based diesel and used only in a manner consistent with applicable industry standards and engine manufacturer guidelines. API supported the proposed definition and treatment of renewables, but believed that biodiesel blends up to 99.99% should be allowed, rather than the proposed limitation of blending biodiesel into conventional diesel at a concentration of 80% or less. A private citizen noted that EPA's definition of renewable fuel seemed to specifically exclude nonroad use, and he inquired about the location of a provision in the regulations that includes fuels for nonroad applications.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185
Baker Commodities OAR-2005-0161-0003 through -0006, -0173
DuPont OAR-2005-0161-0168
Engine Manufacturers Association (EMA) OAR-2005-0161-0177
Griffin Industries OAR-2005-0161-0189
Methanol Institute (MI) OAR-2005-0161-0171
Natural Gas Vehicles for America (NGVAmerica) OAR-2005-0161-0201

Private Citizen OAR-2005-0161-0182—0184

Our Response:

We believe that biodiesel blended with diesel fuel at any concentration, including biodiesel in its neat form, should be available for compliance purposes under the RFS program. However, the design of the RFS program must be focused on facilitating compliance for obligated parties. To avoid claims by non-obligated parties that very high concentrations of biodiesel count as a blended product, and that therefore any party could separate RINs from volumes of renewable fuel, we proposed that biodiesel must be blended into conventional diesel at a concentration of 80 volume percent or less before the RIN can be separated from the volume. Further discussion of this issue can be found in Section 5.5.5 of this document. With respect to EMA's comments on fuel specifications for biodiesel, such specifications are outside the scope of this rule, in which we are focusing on implementing a statutory renewable fuel program and not on exercising any other authority to control the content of fuel.

With respect to renewable fuel being excluded for nonroad use, the definition of renewable fuel includes a provision (§80.1101(d)(5)) which states: "A fuel produced by a renewable fuel producer that is used in boilers or heaters is not a motor vehicle fuel and therefore is not a renewable fuel." (This is discussed in further detail in Section 3.1.4.) Under the Clean Air Act, the term "motor vehicle" refers to highway vehicles, not nonroad equipment. If biodiesel is used in its neat form, additional provisions for tracking the neat fuel to use in vehicles are included. There is no specific provision in the regulations that addresses the use of renewable fuels in nonroad sources. However, our general approach is discussed in the preamble. We have assumed that all but a trivial quantity of renewable fuels will ultimately be used as motor vehicle fuel. Gasoline or diesel fuels available for and used in nonroad applications are generally limited to nonroad "engines" such as lawnmowers and similar equipment, and this gasoline or diesel fuel is also the same as fuel typically available for and used in motor vehicles. The gasoline or diesel fuel used for such applications is typically dispensed at the same retail stations used for motor vehicles. We therefore treat the fuel as part of the pool of motor vehicle fuel, a portion of which happens to be used in nonroad applications. This is consistent with other EPA fuels programs, where in many cases standards for motor vehicle fuel still must be met even if the actual end use of the motor vehicle fuel is for a nonroad application. The Act requires that renewable fuels for this program be motor vehicle fuels and that they reduce or replace the fossil fuel used in fuel mixtures that operate a motor vehicle engine. Given the physical similarity and the typical fungible nature of this fuel, we treat all of it as motor vehicle fuel and treat it as replacing the fossil fuel in the types of fuels used to operate motor vehicles. In part this is for administrative ease, to avoid the need for tracking actual fuel usage to the ultimate consumer, and we believe that the inclusion of these fuels, even if used in nonroad applications, is consistent with the intent of the Act.

3.1.3 Use of Unprocessed Oils and Greases as Motor Vehicle Fuel

What Commenters Said:

EPA received a comment from the Alliance of Automobile Manufacturers (Alliance) on unprocessed oils and greases used as motor vehicle fuel. The Alliance emphasized that unprocessed oils and greases are not acceptable motor vehicle fuels and can cause significant damage to vehicles. The commenter urged EPA to explicitly prohibit the use of unprocessed oils and greases in any diesel vehicle in the RFS rule, and to investigate and prosecute the selling of liquids not approved for use in motor vehicles.

Letters:
Alliance of Automobile Manufacturers (Alliance) OAR-2005-0161-0176

Our Response:

EPA has discussed the requirements for use of unprocessed oils and greases as motor vehicle fuel in a document contained on EPA's website at www.epa.gov/otaq/cert/dearmfr/cisd0602.pdf . In particular, Question 41 in the referenced document addresses this issue. The document states that "EPA has received inquires about converting gasoline fueled vehicles to ethanol (E-85) and converting diesel fueled vehicles to vegetable oil. Vehicles converted to operate on E-85 or diesel fuel must pass the appropriate standards for the fuel type used by the OEM when the vehicle was originally certified. EPA will determine which tests must be conducted and which procedures followed for certifying with a specific alternative fuel." Thus, while it is possible for such fuels to meet the definition of renewable fuel, to be used in motor vehicles, the vehicles would first have to be certified for their use and the fuels generally would also need to be registered with EPA under the fuel registration provisions of 40 CFR Part 79.

3.1.4 Potential for Use vs. Actual Use

What Commenters Said:

We received a number of comments on the proposed distinction between a renewable fuel's potential use and actual use. Baker Commodities, Griffin Industries, MI, and Imperium Renewables, Inc. (IRI) commented that they support EPA's definition of fuel and the fact that it takes into consideration a fuel's "potential for use" in highway vehicles, not its *actual* use in a highway or nonroad vehicle. However, IRI expressed concern that EPA's proposal did not thoroughly maintain "potential for use" as the standard for determining whether a fuel is a renewable fuel, citing the following language from the Notice of Proposed Rulemaking (NPRM): "A fuel produced by a renewable fuel producer *that is used* in boilers or heaters is not a motor vehicle fuel, and therefore, is not a renewable fuel." (See proposed 40 CFR 80.1101(f)(4) in 71 FR 55637). According to the commenter, this statement appears to create an after-the-fact

standard of actual use, rather than potential use, and IRI encouraged EPA to codify its interpretation that a fuel's potential for use in motor vehicles is what matters. Furthermore, according to the commenter, no one should have legal liability for improper generation, transfer or reporting of RINs if fuel suitable for use in motor vehicles is used for other applications; IRI asked that EPA clarify the liability provisions to provide a safe harbor for producers and importers of renewable fuel from RIN generation and transfer violations when the fuel was not ultimately used as motor vehicle fuel. The commenter recommended that the definition of renewable fuel be amended to read "…any fuel that can be used as motor vehicle fuel that is used to replace or reduce the quantity of fossil fuel present in a fuel mixture used to operate a motor vehicle."

In a similar vein, the New York State Department of Environmental Conservation (NYDEC) asked EPA to clarify what impact, if any, the RFS has on the legality of blending biodiesel into heating oil, and what accounting is required under the RFS of a blender who blends biodiesel into heating oil, given that biodiesel used in a stationary burner need not be in any way different from that blended into motor vehicle diesel fuel, and it is unlikely to be designated by the biodiesel producer for stationary burner use. West Park Associates also raised the point that biodiesel, mono-alkyl ester-petroleum diesel blends, and neat non-ester renewable diesel have numerous nonroad uses, such as for heating, electric power generation, and the production of solvents. The commenter asked EPA to consider whether it has the authority to consider the use of these fuels for uses other than highway or nonroad use as meeting the definition of a renewable fuel for RFS compliance. The commenter asked that, if EPA concludes that it does have this authority, EPA add for RFS compliance purposes the use of neat non-ester renewable diesel as a fuel for the generation of electric power.

Letters:
Baker Commodities OAR-2005-0161-0003 through -0006, -0173
Griffin Industries OAR-2005-0161-0189
Imperium Renewables, Inc. (IRI) OAR-2005-0161-0178
Methanol Institute (MI) OAR-2005-0161-0171
New York State Department of Environmental Conservation (NYDEC) OAR-2005-0161-0169
West Park Associates OAR-2005-0161-0202

Our Response:

Based on the comments received, we have clarified our position regarding the use of renewable fuels in motor vehicles versus its use in heaters and boilers. The term "renewable fuel" means "motor vehicle fuel that . . . is used to replace or reduce the quantity of fossil fuel present in a fuel mixture used to operate a motor vehicle." We continue to believe that under our proposed definition all but a trivial quantity of such fuels will ultimately be used as motor vehicle fuel. Renewable fuels will therefore be assumed to be used in motor vehicle applications. EPA disagrees, however, with the suggestion that a logical extension of this reasoning would provide that renewable fuel known to have been used in a boiler or heater would be covered by the RFS program; such use in fact clearly is not a motor vehicle fuel used to replace or reduce the quantity of fossil fuel present in a fuel mixture used to operate a motor

vehicle. As such, fuel used in boilers or heaters or where they are clearly not used in motor vehicles or nonroad engines is not considered renewable fuel in the final RFS program.

If a producer or importer transfers renewable fuel to another party with the intent or expectation that it will be used in a boiler or heater, the producer or importer cannot generate RINs for that volume. If, instead, a producer or importer transfers renewable fuel to another party with the intent or expectation that it will be used as a motor vehicle fuel, but in fact the renewable fuel is used in a heater or boiler, then the RINs legitimately generated to represent that volume of renewable fuel should not be used for compliance purposes. Thus if the party that used the renewable fuel in a heater or boiler received assigned RINs with that renewable fuel, the party cannot transfer those RINs to any other party. However, if RINs were separated from the renewable fuel prior to its ownership by the party using the renewable fuel in a heater or boiler, the RINs can no longer be uniquely associated with the renewable fuel and thus remain valid for compliance purposes.

In a related comment, a commenter suggested that EPA consider that biodiesel used in applications other than highway or nonroad (such as in electric power plants) be allowed to satisfy the RFS requirement. CAA section 211(o) does not provide EPA the authority to count biodiesel or any other renewable fuel used in such applications to satisfy the requirements of the RFS.

3.1.5 Industry and Regulatory Standards to Ensure Renewable Fuel Quality

What Commenters Said:

Several commenters remarked on the need for renewable fuels to be of high quality and suggested referencing existing industry and regulatory standards in the final RFS rulemaking to ensure that all renewable fuels meet minimum quality standards. The Alliance commented extensively on topics such as the potential impact of poor quality E85 and biodiesel on vehicle systems, the need for renewable fuels to match or exceed the quality of the conventional fuels, and the need to restrict inappropriate fuel blends from the marketplace. The National Biodiesel Board (NBB) believed it was important that all fuels eligible for participation in the RFS program meet the registration requirements as a fuel or fuel additive under 40 CFR Part 79 and have an established ASTM standard. The Missouri Department of Natural Resources (MDNR) recommended that EPA include a definition for each type of renewable fuel based on its corresponding American Society for Testing Materials (ASTM) standard (e.g., ethanol as defined by ASTM D-4806; biodiesel as defined by ASTM D-6751, etc.). More specifically, the Alliance commented that the final rulemaking should define E85, at a minimum, as a blend of ethanol meeting ASTM D-4806 and gasoline complying with ASTM D-4814, with the final E85 blend meeting the requirements found in Table 1 of ASTM D-5798, or should impose a minimum octane requirement of 87.

API agreed that ASTM specifications should be included in the RFS final rule to help promote product quality and eliminate ambiguity in what constitutes a specific renewable, but recommended referencing them in a generic way, without tying definitions of renewable fuels to

any particular version of an ASTM standard. API noted, for example, that the version of ASTM Method 6751 referenced in the RFS proposal was not the most current version. API also supported EPA's proposal that non-ester biodiesel blends should meet D-975, provided the reference to the standard is to "the most current version" of the standard and is not tied to a specific version. Shell/Motiva did not support requiring non-ester renewable diesel to comply with D-975, but rather believed that ASTM should determine whether D-975, or another specification, should apply to such fuel. The commenter expressed concern that specifying a specific version of D-975 would exclude future changes to the specification, which could in turn exclude some non-ester renewable diesel fuels from the definition of renewable fuel under EPA's regulations.

The American Society for Testing Materials (ASTM) commented that it has developed a method to test the renewable content of gasoline (ASTM-D6866), which can be used to detect whether the ethanol added to gasoline is from a renewable source or is synthetic (e.g., a coal derivative). The commenter noted that this method could be an effective tool to ensure compliance with the RFS regulations by both domestic and foreign ethanol producers. A private citizen recommended that ASTM Method D-6866 "or equivalent" be referred to in the RFS regulations as a means of enforcing or verifying the renewable content of automotive fuels when such analyses are warranted. The commenter emphasized that while D-6866 is the only method currently available to verify the renewable content of ethanol/gasoline blends, alternative methods may be developed in the future, and thus the phrase "or equivalent" should be included.

Letters:
Alliance of Automobile Manufacturers (Alliance) OAR-2005-0161-0176
American Petroleum Institute (API) OAR-2005-0161-0185
American Society for Testing Materials (ASTM) OAR-2005-0161-0235 (hearing)
Missouri Department of Natural Resources (MDNR) OAR-2005-0161-0217
National Biodiesel Board (NBB) OAR-2005-0161-0212
Private Citizen OAR-2005-0161-0160
Shell Oil Company/Motiva Enterprises OAR-2005-0161-0215

Our Response:

While EPA references standards that are recognized by industry from specific organizations such as ASTM, referencing them in a general way would give future changes to such standards by the non-government body the force of an EPA regulation, without any rulemaking by EPA. EPA therefore chooses to reference specific standards and to implement new rulemakings when different standards are appropriate. We have made the correction to the reference to D-6751, as suggested by API, so the regulation now refers to the most recent version, D-6751-06a.

The purpose of this rule is to implement the statutory mandate for a renewable fuel program, and not to exercise or decide whether to exercise any other discretionary authority under the CAA to control the contents of fuel. Nothing in this rule limits or changes the obligations of parties to comply with all of the applicable fuel or fuel additive registration regulations in 40 CFR Part 79. With respect to ASTM Method D-6866, EPA will investigate it.

If it proves to provide a reliable and effective means to differentiate between renewable and synthetic ethanol, we may use it in our enforcement of the standard. The issue of whether ethanol is made synthetically or from renewable fuels is currently covered by procedures that require producers to keep records of feedstocks used to produce ethanol, and to provide evidence that their ethanol facilities are indeed the source of such fuel.

3.2 Biodiesel and Renewable Diesel

[Note: Comments on Equivalence Values for biodiesel and renewable diesel are addressed in Section 3.5. Comments on the emission impacts of biodiesel are addressed in Section 10.2.]

3.2.1 Definition of Biodiesel and Renewable Diesel

3.2.1.1 Distinguishing Mono-alkyl Ester Biodiesel from Non-Ester Renewable Diesel

What Commenters Said:

EPA received several comments that generally agreed with our proposed definitions for the terms "biodiesel" and "renewable diesel." The Biodiesel Coalition of Texas (BCOT) supported EPA's definition of biodiesel, and Neste agreed with the distinction between non-ester renewable diesel and biodiesel (mono-alkyl ester). However, Neste stated that it believes it is important that the rule and regulations confirm that both types of fuel are "biodiesel," consistent with the definition in CAA Section 211(o). Neste offered specific language to this effect, commenting that some States have adopted a narrow definition of biodiesel which limits the term to mono-alkyl esters meeting ASTM D-6751, thereby essentially blocking "renewable diesel" from participating in their markets.

The Alliance agreed with EPA's proposal to require that mono-alkyl ester biodiesel meet ASTM D-6751. The Engine Manufacturers Association (EMA) also recommended that the final regulations define biodiesel as any mono-alkyl ester derived from non-petroleum renewable sources (including grain oils and animal wastes) which are processed to conform to ASTM D-6751. NBB strongly supported the proposed definition for biodiesel (mono-alkyl ester), and further expressed support for requiring that fuel be properly registered with EPA as a fuel or fuel additive and meet a specific ASTM standard for biodiesel.

Sutherland Asbill & Brennan commented that EPA's proposed definitions of "biodiesel" and "non-ester renewable diesel" could unnecessarily exclude fuels that would otherwise qualify under the statutory definition of biodiesel. The commenter also found the definition of biodiesel confusing, claiming it required compliance with an outdated ASTM standard. Trenton Fuel Works expressed serious concern that there are important biomass-derived diesel products that would not fit under either definition, such as diesel products made from cellulose that are also mono-alkyl esters.

Letters:
Alliance of Automobile Manufacturers (Alliance) OAR-2005-0161-0176
Biodiesel Coalition of Texas (BCOT) OAR-2005-0161-0186
Engine Manufacturers Association (EMA) OAR-2005-0161-0177
National Biodiesel Board (NBB) OAR-2005-0161-0212
Neste Oil OAR-2005-0161-0191
Sutherland Asbill & Brennan OAR-2005-0161-0210
Trenton Fuel Works OAR-2005-0161-0181

Our Response:

According to the CAA Section 211(o), renewable fuels that are valid for compliance purposes under the RFS program include "biodiesel," as defined in section 312(f) of the Energy Policy Act of 1992 and modified by Section 1515 of the Energy Policy Act of 2005:

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

The common meaning of the term "biodiesel," however, is more limited and generally means only mono-alkyl esters made from vegetable oils or animal fats. To implement the Act's definition of biodiesel in the context of the RFS rulemaking while still recognizing the unique history and role of mono-alkyl esters, we have divided the Act's definition of biodiesel into two separate parts: biodiesel (mono-alkyl esters) and non-ester renewable diesel. The sum of these two categories of renewable fuel fulfills the Act's definition of biodiesel, and commenters generally supported this approach. However, we do not believe that this fact need be represented in the regulations explicitly. The inclusion of regulatory definitions for both biodiesel (mono-alkyl esters) and non-ester renewable diesel is sufficient to clarify what types of renewable fuel are valid under the RFS program.

Biodiesel (mono-alkyl esters) has a significant history of development in terms of a precise definition, which culminated in the formal release of ASTM D-6751. We proposed that this ASTM specification be included in the regulatory definition of biodiesel (mono-alkyl esters), and are finalizing this provision. Commenters generally supported this approach. Since ASTM D-6751 applies to neat biodiesel that can be used as a blending component, it ensures that biodiesel must meet specific minimum quality standards.

Commenters correctly pointed out that the regulatory definitions of biodiesel (mono-alkyl esters) and non-ester renewable diesel do not explicitly reference an alkyl ester that is produced from a feedstock other than vegetable oils and animal fats. We are not aware of any renewable fuels currently being produced that would fall into this category. Nevertheless, such renewable fuels could still meet the regulatory definition of a "renewable fuel," and therefore could be valid

for use in complying with the renewable fuel standard. The definition of non-ester renewable diesel could include such fuels, as the definition of "non-petroleum renewable resources" includes but is not limited to vegetable oils and animal fats. 40 CFR 1101(i)(4), (m). A party that produced such a fuel would need to apply for an appropriate Equivalence Value by submitting information describing the renewable fuel, its feedstock and production process, and the calculation of its Equivalence Value according to the methodology provided in the regulations.

3.2.1.2 Referencing ASTM Method D-975 in Definition of Renewable Diesel

What Commenters Said:

EPA solicited comment on whether our definition for "non-ester renewable diesel" should explicitly reference ASTM D-975. The Alliance recommended that final blends with non-ester renewable diesel comply with ASTM D-975. West Park Associates urged that neat non-ester renewable diesel meet the requirements of ASTM D-975. Neste Oil supported making the reference, but believed that the final RFS rule should allow either the renewable diesel itself or the final blended diesel product to satisfy the ASTM D-975.

On the other hand, Trenton Fuel Works commented that ASTM D-975 is not a suitable standard for renewable diesel because the ASTM standard refers to diesel fuel as a final product and renewable diesel is likely to be used as a blending component with petroleum diesel. EMA also commented that ASTM D-975 is not a suitable standard for non-ester renewable diesel because it was intended for petroleum-based diesel fuels, and certain parameters inherent in petroleum-based products are simply not specified in ASTM D-975. EMA further commented that EPA's proposed definition of non-ester renewable diesel includes raw vegetable oils, animal fats, and recycled greases that have not been processed into biodiesel, and that the chemical composition of unprocessed oils and fats have been shown to cause various engine problems. EMA therefore urged EPA not to include non-ester renewable diesel under the definition of biodiesel, and suggested that if EPA believes that other renewable fuel sources may be defined as non-esters (e.g., Fischer-Tropsch fuels), these fuels should be characterized as something other than biodiesel.

Letters:
Alliance of Automobile Manufacturers (Alliance) OAR-2005-0161-0176
Engine Manufacturers Association (EMA) OAR-2005-0161-0177
Neste Oil OAR-2005-0161-0191
Trenton Fuel Works OAR-2005-0161-0181
West Park Associates OAR-2005-0161-0202

Our response:

Our request for comment on whether the definition of non-ester renewable diesel should include a specific reference to ASTM D-975 was intended to capture the expected properties of this type of renewable fuel. Information we have received to date indicates that renewable

diesels will in general be indistinguishable from petroleum-based diesel at the molecular level. However, we recognize that a variety of products could qualify as non-ester renewable diesel under the RFS rule, and some of these renewable diesels could have properties or components that differ in some respects from petroleum-based diesel. If a particular renewable diesel fuel has been registered with EPA and is thus valid for use in motor vehicles, and if it meets the other criteria for being a valid fuel under the RFS program, it may not be appropriate to require it to meet the specifications in ASTM D-975. We also agree that ASTM D-975 is intended to describe fuels used in motor vehicles rather than blending components. In addition, the statutory definition of biodiesel, which references the Energy Policy Act of 1992 definition of biodiesel, does not include such a limitation.

The CAA includes a prohibition on selling fuels or fuels additives that are not substantially similar, without an EPA waiver of this prohibition. Therefore, we have chosen not to include the ASTM D-975 specification in the definition of non-ester renewable diesel fuel in this final rule.

3.2.1.3 Definition of Renewable Diesel in Section 1346 of the Energy Act

What Commenters Said:

We received comments referring to the definition of renewable diesel in Section 1346 of the Energy Policy Act of 2005. Delta-T Corporation encouraged EPA to broadly interpret Section 1346 language in order to promote the development of state of the art technology to produce renewable diesel. Trenton Fuel Works meanwhile believed that the Section 1346 definition of renewable diesel will create confusion as to what renewable diesel is, since EPA's definition specifically excludes mono alkyl esters while the Section 1346 (IRS tax code) definition requires only that the processing method employ a thermal de-polymerization process.

Letters:
Delta-T Corporation OAR-2005-0161-0196
Trenton Fuel Works OAR-2005-0161-0181

Our Response:

Section 1346 of the Energy Act defines "renewable diesel" as diesel fuel derived from biomass using a thermal de-polymerization process. However, this section also specifies that this definition applies only within the Title 13 provisions of the Energy Act. Since this definition is more restrictive than necessary in the context of the RFS program, and we are not required to use it for the Title 15 provisions under which the RFS program falls, we have chosen not to use it. Instead, we are defining non-ester renewable diesel more broadly to mean any motor vehicle fuel which is not a mono-alkyl ester, is registered with the EPA, and is intended for use in engines that are designed to run on conventional diesel fuel.

3.2.2 Other Issues Related to Biodiesel and Renewable Diesel

3.2.2.1 Biodiesel Fuel Quality Specifications

What Commenters Said:

We received comments on the need for uniform quality standards for producing, distributing, and handling biodiesel. EMA commented that it believes that neat (100%) biodiesel used as a blendstock for petroleum-based diesel must meet certain minimum quality standards. Citing recent examples of biodiesel blends that did not meet specifications, the Alliance insisted that EPA has a responsibility to ensure that the biodiesel industry meets its obligation to supply the public with in-specification biodiesel and biodiesel blends, and urged EPA in the short term to require biodiesel providers to subscribe to programs like the BQ9000 program, administered by the National Biodiesel Board. In the medium term, the Alliance suggested that EPA encourage biodiesel providers, users and other stakeholders to participate in developing a federally enforceable management standard and in improving that standard over time as more knowledge, experience and information become available.

Letters:
Alliance of Automobile Manufacturers (Alliance) OAR-2005-0161-0176
Engine Manufacturers Association (EMA) OAR-2005-0161-0177

Our Response:

The imposition of a quality assurance program such as BQ-9000 is outside the scope of this rulemaking. In today's final rule, we are only implementing the requirements for a renewable fuel program as mandated by CAA Section 211(o). EPA does have the authority to require fuels and fuel additives to meet certain specifications in terms of their properties and/or composition. For instance, in-use fuels and additives must be consistent with the terms of their registrations both in terms of their composition and concentration. However, we are not exercising our discretion in this rulemaking to control fuel content under CAA 211(c).

At the time that biodiesel received its registration, ASTM D-6751 did not yet exist. However, it is current Agency policy that in-use biodiesel used in highway vehicles must meet the specifications in ASTM D-6751 in order to be covered by the biodiesel registration, since the biodiesel used in meeting the Tier 1 and Tier 2 testing as part of the registration requirements did meet the ultimate ASTM D-6751 biodiesel specification. To the degree that a batch of biodiesel does not meet the ASTM D-6751 specifications, it would not be covered by the fuel registration, would not be valid for use in highway vehicles, and would not be considered biodiesel for RFS compliance purposes.

3.2.2.2 Limiting the Portion of Biodiesel in Blends

What Commenters Said:

We received comments on the need to limit the portion of biodiesel in any blend made with conventional diesel fuel. The Alliance emphasized that blends over B5 (5% biodiesel) are not compatible with all diesel engines and vehicles on the road today, and most vehicles are not warranted for use with higher-level blends. The commenter recommended that blends above B5, such as B11 or B20, should not be made available to public retail stations at this time and should be not considered "legal diesel fuel," and that B20 fuel should be limited to fleets and private operators for use in vehicles that are designed to handle this fuel and where fuel use patterns can be controlled. The Alliance urged EPA to review and amend as necessary the legal status of many of these blends, and suggested issuing a "substantially similar" rule. EMA agreed that biodiesel use must be regulated to allow only a limited percentage of biodiesel blendstock in finished fuel.

Letters:
Alliance of Automobile Manufacturers (Alliance) OAR-2005-0161-0176
Engine Manufacturers Association (EMA) OAR-2005-0161-0177

Our Response:

Under EPA registration requirements, a fuel additive is covered by its registration for use in highway motor vehicles if the in-use concentration of that additive in gasoline or diesel is at or below the concentration that has been registered with the EPA. In the specific case of biodiesel, the neat (100%) form was registered. As a result, it is registered for use in highway motor vehicles in its neat form or at any other concentration in diesel fuel. Registration is not required for nonroad use of fuels or additives.

The registration process has no direct impact on vehicle/engine warranties, and thus manufacturers are free to specify the biodiesel blend levels that they have determined are compatible with their products. However, the inclusion of ASTM D-6751 in the definition of biodiesel as it is used in the RFS program will help to ensure a certain level of consistency in terms of fuel properties.

See also our response to comments regarding a diesel substantially similar definition in Section 13.3 of this Summary and Analysis document. In today's final rule, we are only implementing the requirements for a renewable fuel program as mandated by CAA Section 211(o). We are not exercising our discretion in this rulemaking to control fuel content under CAA 211(c).

3.2.2.3 Renewable Diesel Used as Neat Fuel and as Blending Component

What Commenters Said:

EPA received a comment from West Park Associates noting that non-ester renewable diesels could be used not just in their neat (100%) form, but also as blending components, and the commenter urged EPA to delineate the different requirements for these two separate applications.

Letters:
West Park Associates OAR-2005-0161-0202

Our Response:

We believe that a qualifying non-ester renewable diesel could be used as a blending component as well as in neat (100%) form. In specific cases where the blending component, rather than the neat form, has been registered with EPA, it must be used as a blending component at a concentration no higher than the registered level in order to qualify under the RFS program. Our final definition of non-ester renewable diesel accounts for this possibility by defining it as "a motor vehicle fuel or fuel additive."

3.2.2.4 EPA Coordination to Enable Growth of Biodiesel Use

What Commenters Said:

EPA received a comment from BioSelect encouraging EPA to recognize that efforts will be coordinated at all levels of EPA (including regions) to maximize the expansion of biodiesel into the transportation fuel market.

Letters:
Galveston Bay Biodiesel (dba - BioSelect) OAR-2005-0161-0206

Our Response:

The RFS program allows all valid renewable fuels to be used to meet the required annual volumes. Aside from the 2.5 credit value assigned by the Energy Act to cellulosic and waste-derived ethanol through 2012, all renewable fuels are treated equally in the RFS program in terms of their ethanol equivalence. Biodiesel can participate in the RFS program to the degree that the market supports its participation. There are other EPA grant programs and incentives that may assist the expansion of biodiesel, but these programs and incentives fall outside the scope of the RFS program.

3.3 Biocrude-based Renewable Fuels

What Commenters Said:

EPA received a comment from Neste Oil who suggested modifying the final RFS rule to read: "Biocrude means plant oils or animal fats that are used as feedstock to any production unit in a refinery that normally processes crude oil to make gasoline or diesel fuels, unless the production unit is a separate processing train."

Letters:
Neste Oil OAR-2005-0161-0191

Our Response:

The final regulations will replace the term "biocrude" with "renewable crude." We interpret the statutory definition of renewable fuels to include all gasoline or diesel that is made from feedstocks which are biologically derived feedstocks including, but not limited to, poultry fats, poultry wastes, vegetable oil, greases and animal fats, and rendered products. These are defined as renewable crude-based fuels, which meet the definition of renewable fuel in CAA section 211(o). Since plant oils and animal fats fall into the category of "biologically derived feedstocks," the definition of renewable crude in the final rule satisfies the commenter's concern. Under some circumstances, plant oils and animal fats can be preprocessed into a liquid that is similar to petroleum-based feedstock used in traditional refineries. We are classifying such feedstocks as "renewable crudes," and any motor vehicle fuel that is made from such feedstocks is defined broadly as "renewable crude-based renewable fuel" provided that they are processed in a production unit at a refinery that normally processes crude oil to make gasoline or diesel fuels, or at a separate processing train that similarly processes crude oil to make gasoline or diesel fuels.

3.4 Ethanol

3.4.1 Counting Blended Ethanol for Compliance Purposes

What Commenters Said:

Shell/Motiva requested that the Agency clarify in the final RFS regulations that ethanol used in E85 counts towards a party's obligation and is treated the same as E10 in that the fuel's RINs may only be separated by an obligated party or a party that owns the ethanol at the time it is blended with gasoline.

Letters:
Shell/Motiva OAR-2005-0161-0215

Our Response:

The final regulations make clear that E85 use counts towards the total obligation specified in the RFS program. RINs are generated at the point of production or importation, not when blending or use of the renewable fuel occurs. RINs can be separated from a volume of renewable fuel by an obligated party at the time of ownership, or by any other party at the time of blending to make motor vehicle fuel. See Section III.E of the preamble.

3.4.2 Distribution and Use of Ethanol

What Commenters Said:

Gary-Williams Energy Corporation (GWEC) commented that it believes that EPA should restrict ethanol-gasoline blends to clearly marked E10 and E85 and not allow a wide range of intermediate blending percentages in order to encourage even distribution and use of ethanol across the country. The commenter believes this restriction will be important for vehicle maintenance and for reducing the probability that the Petroleum Administration District for Defense (PADD) 2 market will be flooded with gasoline.

Letters:
Gary-Williams Energy Corporation (GWEC) OAR-2005-0161-0207

Our Response:

In crafting the RFS regulations, EPA has been careful only to provide a structure by which ethanol can be claimed by obligated parties for compliance purposes, and not to stipulate how that ethanol is to be marketed or consumed. The final rule requires the generation of RINs upon the production or importation of the ethanol, and does not distinguish between the concentration or form in which it is ultimately used. The final rule, however, does not modify existing laws and regulations concerning the legitimate use of ethanol. For example, only ethanol blends up to E10 are considered to be substantially similar to gasoline fuel used to certify new vehicles, and thus are permitted for use in conventional gasoline vehicles. Blends that are over E10 and up to E85 are permitted for use only in flexible fueled vehicles which have been certified for use on such blends.

3.4.3 Commingling of Ethanol Blends with Conventional Gasoline

What Commenters Said:

We received comments related to the commingling of ethanol blends with conventional gasoline. The Alliance urged EPA to consider the potential adverse impacts of commingling gasoline with E85 on emissions and drivability, and to investigate controlling the concentration and types of detergents allowed in, or otherwise managing the use of, detergents to help prevent excessive deposits and enable E85 fuels to meet the same deposit performance as gasoline.

BlueFire Ethanol, on the other hand, commented that downstream commingling of ethanol and non-ethanol based gasoline is imperative if ethanol based fuels are to be encouraged on a national basis, as commingling creates fungibility and helps maximize use of existing infrastructure. According to the commenter, commingled fuels may potentially increase RVP very slightly, thus EPA may need to slightly relax its RVP standards with regard to commingled ethanol and non-ethanol based fuels. Alternatively, BlueFire Ethanol suggested, EPA could provide temporary interim volatility regulations until commingling and fungibility achieved a minimum threshold to account for commingling volatility impacts. The commenter proposed that modifications to RFS regulations be adopted to remove any and all barriers to commingling finished gasoline, to remove all obstacles to fungibility while preserving intent of volatility regulations.

Letters:
Alliance of Automobile Manufacturers (Alliance) OAR-2005-0161-0176
BlueFire Ethanol OAR-2005-0161-0200, -0224

Our Response:

The issues raised by these commenters are outside the scope of this RFS rulemaking which is focused on putting in place the RFS standard and associated compliance and trading systems. EPA will take under advisement issues associated with detergency of E85 blends and commingled mixtures for any future regulatory actions related to detergency. EPA already has existing regulations with respect to gasoline volatility and commingling of ethanol and non-ethanol blends in order to provide important air quality benefits during the summer. Reconsideration of these regulations would be a matter for a separate future rulemaking. However, it is worth pointing out that CAA section 2(s) provides, and EPA implemented in a separate rulemaking, that gasoline retailers could commingle ethanol and non-ethanol blends of reformulated gasoline during two 10-day periods during the VOC season. For conventional gasoline, there is no restriction, but the volatility standards must be met at the pump during the volatility control period, although there is a 1 psi allowance for 10% ethanol blends (80.27(d)).

3.4.4 Application of "Substantially Similar" Rule to Ethanol

BlueFire Ethanol commented that it believes that refining, distribution, and blending of ethanol-based fuels should be treated as "substantially similar" under section 211(f) of the Clean Air Act (CAA) in order to ensure that optimal market forces drive ethanol consumption.

Letters:
BlueFire Ethanol OAR-2005-0161-0200, -0224

Our Response:

Section 211(f) of the Clean Air Act (Act) prohibits sale or introduction into commerce of fuels and additives that are not "substantially similar" to those used in new motor vehicle

emissions certification. The objective is to protect emission controls, such as catalytic converters and oxygen sensors, from potential damage by such fuels and additives. Such damage could cause a vehicle to fail emission standards. A waiver of the prohibition can be granted if it can be demonstrated that use of a prohibited fuel or additive would not cause or contribute to failure of vehicles to meet emission standards. A waiver is also granted by operation of the Act if the EPA Administrator fails to act on a waiver request from a fuel or additive manufacturer within 180 days. A waiver for the use of 10% ethanol in unleaded gasoline was granted by operation of the Act in 1978. A waiver for the use of 7% methyl tertiary butyl ether (MTBE) in unleaded gasoline was granted via a decision by the Administrator in 1979. In 1981 the term "substantially similar" was defined for unleaded gasoline via an interpretive rule. With respect to oxygenates, it allowed aliphatic alcohols and ethers, such as ethanol and MTBE at oxygen levels of 2.0 percent by weight. In 1991, the limit was revised to 2.7 percent oxygen by weight. This corresponds to about 7.7% ethanol by volume and 15% MTBE by volume.

This comment discusses the premise that the use of 10% ethanol in gasoline has been hampered by being covered only by a waiver of the substantially similar prohibition rather than being included as part of the "substantially similar" rule itself, while MTBE enjoyed widespread use because it was covered by the rule. It is theorized that if 10% ethanol were covered by the substantially similar rule, it would "empower natural market forces to voluntarily manufacture, use, employ, blend, and distribute ethanol based fuels." The Agency disagrees with this premise. The waiver allowed a higher concentration of ethanol to be used in gasoline than allowed by the "substantially similar" rule. Technical and market forces resulted in a wider use of MTBE until technical complications resulted in the refining industry voluntarily dropping MTBE and switching to ethanol.

3.4.5 Cellulosic Biomass Ethanol

3.4.5.1 Ethanol Made Only from Cellulosic Feedstocks

What Commenters Said:

One commenter expressed opposition to EPA's proposed definition of cellulosic biomass ethanol (CBE). Biotechnology Industry Organization-Industrial and Environmental Section (BIO IES) commented that only ethanol made from cellulosic feedstocks should be deemed cellulosic ethanol, and that the intent of CAA Section 211(o) was that only ethanol derived from cellulosic agricultural or forest feedstocks would qualify towards the cellulosic minimum standard. BIO IES urged EPA to exclude from the definition ethanol produced using waste heat captured from combustion at off-site facilities. The commenter believes that the intent of the statutory language was to facilitate the construction of ethanol plants that can use manure to produce biogas to fuel boilers at conventional ethanol or CBE plants, or the use of crop residues and other cellulosic wastes to fire a boiler.

Letters:
Biotechnology Industry Organization- Industrial and Environmental Section (BIO IES)
OAR-2005-0161-0199

Our Response:

The statutory definition of cellulosic biomass ethanol includes ethanol produced in facilities in which 90% of fossil fuel is displaced by waste-derived fuels, regardless of what feedstock is used to make the ethanol at such plants. The statutory definition clearly states that "The term also includes any ethanol produced in facilities where animal wastes or other waste materials are digested or otherwise used to displace 90 percent or more of the fossil fuel normally used in the production of ethanol." The term "other waste materials" in the statutory definition is ambiguous, and it is reasonably interpreted as including waste heat generated off-site. (See 3.4.5.2. for further discussion.) We continue to believe that it is appropriate to include waste heat under this definition when it is off-site, and have done so in the final rule.

3.4.5.2 Ethanol Made at Facilities Using Waste Heat from Off-Site Fossil Fuel Combustion

What Commenters Said:

EPA received a number of comments on the proposed provision of crediting ethanol made at facilities that use waste heat from off-site fossil fuel combustion. BIO IES, SilvaGas, and DuPont opposed counting waste heat generated by fossil fuels as "other waste material" in the computation of the 90% displacement of fossil fuel in the definition of cellulosic ethanol, claiming CAA Section 211(o) did not authorize waste heat generated by fossil fuels to be used in this way. DuPont expressed concern that the high Equivalence Value (EV) afforded to cellulosic ethanol could provide incentives for use of off-site waste heat sources that are fired with fossil fuel. The commenter also stated that EPA's proposal to limit credit to only off-site waste heat sources would disincentivize on-site co-generation applications, and that to be consistent with the intent to expand the use of renewable resources in the production of biofuels, credit should be provided to on-site and off-site waste heat derived solely from renewable fuels, with the exception of direct combustion of renewable fuels (specifically, wood waste). DuPont also encouraged giving credit for both heat *and* power produced from renewable sources.

ExxonMobil and NPRA advocated including electricity from off-site in the calculation of the 90% fossil fuel displacement, claiming that including electricity would provide an incentive for co-generation to be used at ethanol plants and for plants to be located where efficient electricity is available. ExxonMobil stated that efficiency factors could be used to calculate the BTUs that would be displaced.

Letters:
Biotechnology Industry Organization- Industrial and Environmental Section (BIO IES) OAR-2005-0161-0199
DuPont OAR-2005-0161-0168
ExxonMobil OAR-2005-0161-0197
National Petroleum and Refiners Association (NPRA) OAR-2005-0161-0170, -0232
SilvaGas OAR-2005-0161-0161

Our Response:

The Agency recognizes that fossil fuel is ultimately the source of most waste heat, but it is also the case that waste heat that is uncaptured represents a loss of energy that could otherwise displace fossil fuel use elsewhere. Specifically, waste heat used at an ethanol plant would result in displacement of fossil fuel use at the plant. In writing the proposed rule, we were aware of the concern raised by the commenter and therefore proposed to restrict waste heat to off-site sources only. We believe that this approach addresses the problem. We do not believe that such restriction disincentives the use of on-site co-generation. The decision to install co-generation equipment is based on factors such as sale of electricity to the grid. Given that the 2.5 Equivalence Value (EV) for the ethanol that meets the definition of cellulosic carries only through the year 2012, we do not believe it influences the business decision to invest in co-generation equipment.

We also do not agree that inclusion of waste heat will cause an incentive to build oversized co-generation units at off-site facilities to generate waste heat. It is highly unlikely that businesses would accept the additional expense of building an oversized combustion unit for the sale of waste heat. Again, because the 2.5 gallon Equivalence Value given for one gallon of cellulosic ethanol as provided by the Act extends only through 2012, any additional market value for waste heat used to qualify ethanol as cellulosic would therefore be of relatively short duration and not likely to warrant investment in oversized combustion units. In a similar vein, the decision to build on-site co-generation units is a business decision related to savings resulting from purchase of electricity from the utility, or from the sale of the electricity generated to the grid. It is unlikely that limiting use of waste heat from off-site sources would serve as a disincentive for installing on-site co-generation equipment at ethanol facilities.

Our findings regarding the use of electricity at ethanol plants remain the same. As such, electricity is not "normally used in the production of ethanol" and we are therefore not considering electricity generated off-site as part of the 90% displacement calculation. The commenters claimed that such inclusion would encourage more on-site co-generation at ethanol plants. We believe that owners of ethanol plants will base their decisions to include co-generation units on-site based on the sale of electricity to the grid, rather than its use at the plant itself.

3.4.5.3 Municipal Solid Waste and Other Feedstocks Containing Cellulosic Material

What Commenters Said:

EPA received a comment from BlueFire Ethanol requesting that the definition of cellulosic biomass ethanol expressly provide that the term "municipal solid wastes" (MSW) include "any cellulosic containing disposal or landfill material;" and that the term "other waste materials" include "any food, feed, beverage, distillation, brewer waste material or cellulosic material derived therefrom."

Letters:
BlueFire Ethanol OAR-2005-0161-0200, -0224

Our Response:

The statutory definition of cellulosic biomass ethanol allows that the cellulosic portion of MSW be counted in calculating the volume of cellulosic ethanol made from it. Ethanol that is made from the non-cellulosic MSW portion is defined as waste-derived ethanol as discussed in the preamble to the final rule. (See 71 FR 55569). The statute does provide for "other waste materials," which could include wood waste. Use of wood "product" – as opposed to waste – is *not* allowed, as discussed in the preamble.

3.4.5.4 Limiting Fossil Fuel Displacement

What Commenters Said:

EPA received a comment from Ethanol Feed and Fuel on our proposed provision for crediting ethanol made at facilities which replace 90% of the fossil fuel used in production with waste heat generated off-site. The commenter stated that it believes that an artificial limitation to fossil fuel replacement would stifle efficiency advancements, whereas a 90% reduction in the use of fossil fuels by itself would leave the field open to more advancement opportunities. According to the commenter, the final RFS program should not assume that the only method to achieve 90% reduction in the use of fossil fuels is through fossil fuel replacement or through a narrow definition of captured waste heat.

Letters:
Ethanol Feed and Fuel OAR-2005-0161-0180

Our Response:

The statutory definition of cellulosic biomass ethanol allows for ethanol to be so defined if it is made at a facility in which 90% of the fossil fuel normally used in the production of ethanol is displaced by fuel derived from animal or other wastes. We are thus limited by the statutory definition, but have interpreted "other wastes" to include vegetative and wood wastes (such as tree trimmings, and wood chips that are waste materials from lumber operations), as well as waste heat from offsite combustion sources. For these reasons, we do not agree with the commenter that we have limited the definition by narrowly defining captured waste heat.

3.4.5.5 Registration Requirements and Fossil Fuel Displacement Provision

What Commenters Said:

We received a comment from the Renewable Fuels Association (RFA) supporting our interpretation that "fossil fuel normally used in the production of ethanol" is limited to "fossil

fuel that is combusted at the facility itself to produce thermal energy." However, the commenter expressed concern that registration requirements for facilities located abroad are limited and may not provide sufficient information to ensure that these facilities meet the statutory definition. RFA urged EPA to establish stringent requirements for foreign facilities that claim to use fossil fuel only for thermal energy production and those that claim to use waste-derived heat energy. The commenter also believed that EPA should create disincentives to ensure that fossil fuel displacement occurs regularly, and that EPA should provide an opportunity for public review and comment on any requirements included in the final RFS rule.

Letters:
Renewable Fuels Association (RFA) OAR-2005-0161-0192, -0228 (hearing)

Our Response:

In addition to the requirements applicable to all ethanol producers, including registration, recordkeeping, reporting, and attest engagements conducted by an independent auditor, the final RFS rule requires producers of cellulosic biomass ethanol and waste-derived ethanol, both domestic and foreign, to keep records of fuel use and other information to ensure compliance with, and enforcement of, the definitions of these types of renewable fuels. In addition, producers of cellulosic biomass ethanol or waste-derived ethanol are required to arrange for an independent third party to verify that the facility is, in fact, a cellulosic or waste-derived ethanol production facility and that the ethanol producer is producing cellulosic biomass or waste-derived ethanol. An ethanol producer must apply to EPA to have its ethanol treated as cellulosic biomass ethanol or waste-derived ethanol and gain the benefits for such ethanol under the RFS program. In addition to complying with all of the requirements that apply to domestic producers of cellulosic biomass ethanol and waste-derived ethanol, foreign ethanol producers are required to comply with additional requirements designed to ensure that enforcement of the regulations at the foreign ethanol facility will not be compromised. Cellulosic biomass ethanol or waste-derived ethanol produced by a foreign ethanol producer must be identified as such on product transfer documents that accompany the ethanol to the importer, and the foreign ethanol producer must arrange for an independent inspector, approved by EPA, to monitor ship loading and offloading records to ensure that volumes of ethanol do not change from port of shipping to port of entry. We believe these additional requirements for foreign cellulosic biomass or waste-derived ethanol producers will provide adequate assurance that these facilities meet the requirements for producers of cellulosic biomass or waste-derived ethanol.

3.4.5.6 Fungible Distribution Systems and Commercial Scale Production

What Commenters Said:

BlueFire Ethanol commented that it believes that the proposal neither seemed to recognize the need for a fungible fuel blending and distribution system and the market forces that can contribute to it, nor appreciated the cellulosic industry's immediate ability to deploy commercial scale operating facilities.

Letters:
BlueFire Ethanol OAR-2005-0161-0200, -0224

Our Response:

At the present time, there is only one cellulosic ethanol plant in North America (Iogen, a privately held company, based in Ottawa, Ontario, Canada). On February 28, 2007, however, the Department of Energy (DOE) announced that it will provide grants of up to $385 billion for six commercial scale biorefinery projects over the next four years. These facilities are expected to produce more than 130 million gallons of cellulosic ethanol per year. As additional information on these future facilities are made available, EPA will have more data on process design from which we will better be able to project production costs for cellulosic ethanol.

3.5 Equivalence Values

3.5.1 Authority to Set Equivalence Values

What Commenters Said:

Several commenters agreed with EPA's proposal to assign Equivalence Values to all renewable fuels, while a few commenters took issue with this interpretation of CAA Section 211(o). Shell/Motiva, Baker, Griffin, MI, and Neste Oil agreed that it was the intent of Congress that Equivalence Values should be assigned to all renewable fuels. The National Petrochemical and Refiners Association (NPRA) expressed support for the concept of Equivalence Values as the basis for determining the number of gallon-RINs associated with a batch of renewable fuel. RFA and the American Coalition for Ethanol (ACE) strongly disagreed with EPA's interpretation of CAA Section 211(o) and claimed that EPA did not have authority to assign all renewable fuels equivalency values based on BTU content.

Letters:
American Coalition for Ethanol (ACE) OAR-2005-0161-0218
Baker Commodities OAR-2005-0161-0003 through -0006, -0173
Griffin Industries OAR-2005-0161-0189
Methanol Institute (MI) OAR-2005-0161-0171
National Petrochemical and Refiners Association (NPRA) OAR-2005-0161-0170, -0232
Neste Oil OAR-2005-0161-0191
Renewable Fuels Association (RFA) OAR-2005-0161-0192, -0228 (hearing)
Shell Oil Company/Motiva Enterprises OAR-2005-0161-0215

Our Response:

We believe that the use of Equivalence Values is consistent with the statute and the intent of Congress to treat different renewable fuels differently in different circumstances, and to provide incentives for use of renewable fuels in certain circumstances, as evidenced by those specific circumstances addressed by Congress. The Energy Act has several provisions that provide for mechanisms other than straight volume measurement to determine the value of a

renewable fuel in terms of RFS compliance. For example, 1 gallon of cellulosic biomass or waste derived ethanol is to be treated as 2.5 gallons of renewable fuel. EPA is also required to establish an "appropriate amount of credits" for biodiesel, and to provide for "an appropriate amount of credit" for using more renewable fuels than are required to meet the obligation. EPA is also to determine the "renewable fuel portion" of a blending component derived from a renewable fuel. All of these statutory provisions provide evidence that Congress did not limit this program solely to a straight volume measurement of gallons in the context of the RFS program.

We strongly disagree with commenters who said that the explicit inclusion of a 2.5 credit value for cellulosic ethanol and the omission of any credit values for other renewables fuels should be taken as evidence that Congress intended all other renewable fuels to have Equivalence Values of 1.0. CAA Section 211(o) specifically gave EPA the authority to determine an "appropriate" credit for biodiesel. As ethanol and biodiesel were likely the two primary renewable fuels envisioned in the near-term under CAA Section 211(o), it would seem normal for Congress to have focused on these. However, Congress also clearly allowed for other renewable fuels to participate in the RFS program, and a consistent treatment for all renewable fuels is appropriate. Furthermore, CAA Section 211(o) did not specify that one gallon of biodiesel should count as one gallon for compliance purposes. On the contrary, it gives EPA the authority to determine what is appropriate. CAA Section 211(o) also directs EPA to determine the "appropriate" amount of credit for renewable fuel use in excess of the required volumes, and to determine the "renewable fuel portion" of a blending component derived from a renewable fuel. These statutory provisions lend further support to our belief that Congress did not limit the RFS program solely to a straight volume measurement of gallons.

3.5.2 Impacts of Using Equivalence Values

What Commenters Said:

EPA received comments from RFA and ACE in which they expressed concern that by creating and assigning Equivalence Values greater than 1.0, the proposed program would undercut the total national volume goals for renewable fuels usage. RFA further cited EPA's assertion that the amount of renewable fuel that would qualify for an Equivalence Value of greater than 1.0 will not "interfere in any way with meeting the total national volume goals for usage of renewable fuel," and claimed that EPA provided no information in the proposed rule to support this statement.

Letters:
American Coalition for Ethanol (ACE) OAR-2005-0161-0218
Renewable Fuels Association (RFA) OAR-2005-0161-0192, -0228 (hearing)

Our Response:

Although it is true that CAA Section 211(o) specifies the aggregate annual volumes of renewable fuel that the program must require and directs EPA to promulgate regulations

ensuring that gasoline sold each year "contains the applicable volume of renewable fuel," the Act also contains language that makes the achievement of those volumes imprecise. For instance, the deficit carryover provision allows any obligated party to fail to meet its RVO in one year if it meets the deficit and its RVO in the next year. If many obligated parties took advantage of this provision, it could result in the nationwide total volume obligation for a particular calendar year not being met. In addition, the calculation of the renewable fuel standard is based on projected nationwide gasoline volumes provided by the Energy Information Administration (EIA). The projected gasoline volume is expected to vary to some extent from the actual gasoline volume in a given year, and depending on the degree it varies, the standard may not create the demand for the full renewable fuel volume required by the Act for that year or may create greater demand. The Act contains no provision for correcting underestimated or overestimated gasoline volumes, and as a result the volumes required by the Act may not be consumed in use using the mechanism mandated by Congress to implement the program.

We continue to believe that the provision for Equivalence Values will not interfere with meeting the total national volume goals for usage of renewable fuel. While in the long term we agree that renewable fuels with an Equivalence Value greater than 1.0 may grow to become a larger portion of the renewable fuel pool, we do not believe that this is likely to be the case before 2012, the time period when the statute specifies the overall national volumes. For instance, EIA projects that biodiesel volumes will reach 300 million gallons by 2012. With the Equivalence Value of 1.5 that we are finalizing today, this means that the 7.5 billion gallons required by CAA Section 211(o) for 2012 could be met with 7.35 billion gallons of renewable fuel. However, this result is well within the variability in actual volumes resulting from the other statutory provisions described above. Congress explicitly recognized and required the use of credits for biodiesel, as it did for cellulosic ethanol. By requiring or authorizing EPA to assign credit values for such products, Congress recognized that the national volumes specified in the Act had to be interpreted in light of the other provisions specified for use of credits. For the very limited number of other renewable fuels not covered by these express statutory provisions, assigning an Equivalence Value is consistent with this overall approach. Moreover, EIA is projecting that the total volume of renewable fuel will exceed the Act's requirements by a substantial margin due primarily to the favorable economics of ethanol in comparison to gasoline. Under such projections, the existence of renewable fuels with Equivalence Values higher than 1.0 is not expected to have an impact on the demand for renewable fuel or interfere with the ability of the program to meet the volume goals specified by Congress. As such the regulations are a reasonable and balanced way to implement the various provisions contained in CAA Section 211(o).

3.5.3 Calculation Methodology

3.5.3.1 Energy Content Approach

What Commenters Said:

EPA received numerous comments that generally agreed with our proposal to calculate Equivalence Values for different types of renewable fuels based on their energy content relative

to corn-based ethanol. FutureFuel, ExxonMobil, BP, Shell/Motiva, BIGDFW, NYDEC, Organic Fuels, the Alliance, ConocoPhillips, DuPont, and Tyson all generally agreed that at least for the time being, until better means of analysis are available, the proposed approach was the correct approach for calculating Equivalence Values.

API commented that it supports EPA's proposed approach, but believes that Equivalence Values should be uniformly applied to all renewables, regardless of production means or use location. Neste also agreed with the proposed approach, but believes that using an energy lifecycle analysis would offer a fair compromise that would provide certainty and reproducibility, which are key to enforcement and future renewable fuel developments.

SilvaGas, on the other hand, did not agree with our proposal to attribute variable RINs to qualified fuels based on the BTU content of the fuel, even though the comment supported EPA's proposed treatment of excess RINs attributed to cellulosic ethanol.

Letters:
Alliance of Automobile Manufacturers (Alliance) OAR-2005-0161-0176
American Petroleum Institute OAR-2005-0161-0185
Biodiesel Industries of Greater Dallas Fort Worth (BIGDFW) OAR-2005-0161-0211
BP Products North America OAR-2005-0161-0221, -0230
ConocoPhillips OAR-2005-0161-0194, -0219
DuPont OAR-2005-0161-0168
ExxonMobil Refining & Supply Co. OAR-2005-0161-0197
FutureFuel OAR-2005-0161-0198
Neste Oil OAR-2005-0161-0191
New York State Department of Environmental Conservation (NYDEC) OAR-2005-0161-0169
Organic Fuels OAR-2005-0161-0190, -0233 (hearing)
Shell Oil Company/Motiva Enterprises OAR-2005-0161-0215
SilvaGas OAR-2005-0161-0161
Tyson Foods, Inc. OAR-2005-0161-0216

Our Response:

These comments are generally supportive of our proposed approach, and we agree with them. We are therefore finalizing an approach to Equivalence Values that is based on the energy content in comparison to ethanol, along with a measure of the renewability of the fuel. Further discussion of lifecycle analyses as the basis for equivalence values is provided below.

3.5.3.2 Lifecycle Approach vs. Energy Content Approach

What Commenters Said:

We received numerous comments related to our proposal to calculate a fuel's Equivalence Value based on its energy content and not a lifecycle approach. The National

Biodiesel Board (NBB) commented that it supports the proposed approach. ExxonMobil, API, and Shell/Motiva commented that while they believe a well-to-wheels, or lifecycle, approach would be preferable to the energy content approach, lifecycle calculations are currently too variable to be reliable, and they found energy content to be a reasonable surrogate. FutureFuel also commented that due to its complexity and variability, EPA should not adopt the lifecycle approach. DuPont agreed that lifecycle analysis tools need to be further refined and are thus not ready to be used in the context of this rulemaking. The commenter also stated that it believes that the lifecycle approach, once applied, should not be limited to biofuels, but should apply to all transportation fuels. The Alliance commented that it believes that a lifecycle or greenhouse gas basis for determining Equivalence Values was inconsistent with the RFS program's purpose to achieve energy security by replacing petroleum use in the transportation sector. The commenter also stated that the variability inherent in the lifecycle approach would lead to protracted discussions on the subject that would do little to further the goals of petroleum replacement, therefore an approach that considers the volume or energy displaced by the renewable fuel would be the most reasonable at this time.

In contrast to these comments supporting the use of an energy content approach, EPA received a number of comments expressing support for the use of a lifecycle approach and proposing specific metrics to be used with such an approach. Organic Fuels and BIGDFW commented that they believe that total energy lifecycle use would be the proper metric to use because it would provide a more accurate determination of the energy benefit and total petroleum replacement value of the renewable options defined in the RFS rule. IRI commented that assessing the amount of fossil fuel used and emissions generated at all stages of a renewable fuel's lifecycle would more fully meet the goals of the RFS program, and the commenter offered suggestions on how to adopt this approach, such as using fossil fuel use as the metric. The Union of Concerned Scientists (UCS) proposed basing a fuel's Equivalence Value on greenhouse gas (GHG) emission reductions relative to a baseline fuel, and possibly incorporating oil dependence and other lifecycle impacts into the calculation. Baker Commodities and Griffin suggested EPA assign Equivalence Values based on the degree to which a renewable fuel replaces the petroleum content of fuel used in a motor vehicle, while also considering overall benefits such as the utilization of recyclable waste products.

The National Wildlife Federation (NWF) and the Natural Resources Defense Council (NRDC) both commented that an energy content-based standard would not accurately reflect a fuel's true displacement of fossil fuels, and NWF suggested that either lifecycle energy use or lifecycle greenhouse gas reduction would provide a more accurate measure of a fuel's displacement of petroleum and would be a more effective driver of energy independence. The commenter preferred the latter approach and cited cellulosic and waste-derived fuel production as an area where the lifecycle GHG approach would capture the variability in the GHG intensity associated with the fuels' different feedstocks and production processes. NWF also suggested that to gain public acceptance of lifecycle modeling, EPA could implement the RFS program with temporary Equivalence Values and then phase in final values and methodologies following a process of public engagement.

NRDC urged EPA to adopt Equivalence Values based on lifecycle greenhouse gas emissions, and urged EPA to do so expeditiously and not be hampered by the need to come to

consensus with stakeholders. The commenter did suggest that, given the complexity of a shift from a Btu approach to a lifecycle GHG approach, EPA should begin simply by applying the same lifecycle analysis used to assess the impacts of the RFS rule to set GHG-based Equivalence Values. NRDC also suggested that EPA implement fossil fuel and energy use information collection requirements across all technologies, not just for cellulosic biomass ethanol as proposed.

Finally, Environmental Defense urged EPA to employ lifecycle GHG analysis as well, but suggested that rather than pre-determining Equivalence Values by rule, EPA establish a procedural basis by which a fuel supplier can specify, and have the Agency accept subject to verification requirements, a specific Equivalence Value for any given RIN-identified batch of renewable fuel. Environmental Defense further recommended that EPA focus on GHG displacement rather than carbon dioxide (CO_2) displacement because the former incorporates important differences between fuels and fuel production methods in emissions of nitrous oxide and methane. In addition, the commenter suggested that EPA distinguish between fuels produced using natural gas versus those produced using coal for process heat in order to reflect critical differences in renewable fuels production.

Letters:
Alliance of Automobile Manufacturers (Alliance) OAR-2005-0161-0176
American Petroleum Institute (API) OAR-2005-0161-0185
Baker Commodities OAR-2005-0161-0003 through -0006, -0173
Biodiesel Industries of Greater Dallas Fort Worth (BIGDFW) OAR-2005-0161-0211
DuPont OAR-2005-0161-0168
Environmental Defense OAR-2005-0161-0172, -0223
ExxonMobil Refining & Supply Co. OAR-2005-0161-0197
FutureFuel OAR-2005-0161-0198
Griffin Industries OAR-2005-0161-0189
Imperium Renewables Inc. (IRI) OAR-2005-0161-0178
National Biodiesel Board (NBB) OAR-2005-0161-0212
National Wildlife Federation (NWF) OAR-2005-0161-0209
Natural Resources Defense Council (NRDC) OAR-2005-0161-0229
Organic Fuels OAR-2005-0161-0190, -0233 (hearing)
Shell Oil Company/Motiva Enterprises OAR-2005-0161-0215
Union of Concerned Scientists (UCS) OAR-2005-0161-0226

Our Response:

We agree that lifecycle analyses would provide the most appropriate means of reflecting the relative benefits of one renewable fuel in comparison to another. Doing so could create an incentive for obligated parties to choose renewable fuels having a greater ability to reduce fossil fuel use or resulting emissions, since such renewable fuels would have higher Equivalence Values and thus greater value in terms of compliance with the RFS requirements. The preferential demand for renewable fuels having higher Equivalence Values could in turn spur additional growth in production of these renewable fuels. Using lifecycle analyses as the basis

for Equivalence Values could also orient the RFS program more explicitly towards reducing fossil fuel use or emissions.

However, we are not ready to establish Equivalence Values on a lifecycle basis for this final rule. Rather, we intend to continue evaluating and updating the tools and assumptions associated with lifecycle analyses in a collaborative effort with stakeholders, and will consider the use of lifecycle analyses as a means for valuing renewable fuels in future actions.

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

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

There currently exists no organized, comprehensive dialogue among stakeholders about the appropriate tools and assumptions behind any lifecycle analyses. One of our goals is for such a dialogue to occur. Conclusions reached from such a dialogue could lead to the use of lifecycle analyses in future actions to establish new Equivalence Values or other means for valuing different types of renewable fuels. We will be initiating more comprehensive discussions about lifecycle analyses with stakeholders in the near future.

3.5.3.3 Incorporating End-Use Efficiency

What Commenters Said:

EPA received a comment from Ethanol Boosting Systems (EBS) noting that the proposed Equivalence Value methodology does not take into account the efficiency with which fuels are actually used. The commenter emphasized that it has developed technology that would increase a fuel's end-use efficiency over that obtained by ordinary blending, and suggested a new methodology that would peg the Equivalence Value of ethanol in a given year to the ratio between the number of vehicles produced with EBS technology in that year and the total number of vehicles produced in the same year.

Letters:
Ethanol Boosting Systems (EBS) OAR-2005-0161-0162

Our Response:

According to CAA Section 211(o), the RFS program is designed to require a specified volume of renewable fuel to be used in motor vehicles each year. However, the Act also requires that these volume targets are to be met by placing obligations on parties that produce gasoline, such as refiners, importers, and blenders of gasoline, as appropriate. The compliance program does not envision the inclusion of factors unique to downstream consumption of renewable fuels, such as vehicle efficiency. In any case, EPA is not in a position in this rulemaking to address the many complicated technical issues that would need to be addressed if we were to include factors unique to downstream consumption of the fuel by vehicles.

3.5.3.4 Corn-Based Ethanol as the Reference Point for Equivalence Values

What Commenters Said:

EPA received a comment from NWF on the use of corn-based ethanol as a point of reference for calculating Equivalence Values of other renewable fuels. The commenter stated that it believes that RINs that are proportional to the energy content (or lifecycle GHG emissions) of a gallon of gasoline would more accurately reflect the petroleum displacement, as the corn-based ethanol benchmark inaccurately suggests a one-to-one displacement of a gallon of gasoline.

Letters:
National Wildlife Federation (NWF) OAR-2005-0161-0209

Our Response:

Ethanol is a reasonable point of reference as it is currently the most prominent renewable fuel in the transportation sector. It is likely that Congress saw ethanol as the primary means through which the required volumes would be met in at least the first years of the RFS program. By comparing every renewable fuel to ethanol on an equivalent energy content basis, each renewable fuel is assigned an Equivalence Value that precisely accounts for the amount of petroleum in motor vehicle fuel that is reduced or replaced by that renewable fuel in comparison to ethanol. To the degree that corn-based ethanol continues to dominate the pool of renewable fuel, this approach allows actual volumes of renewable fuel to be consistent with the volumes required by the Act while still allowing some renewable fuels to be attributed a different value in terms of RFS program compliance to the extent that they have a different energy content than ethanol.

The use of gasoline as the point of reference instead of ethanol would mean that each gallon of ethanol would only count as 0.66 gallons of renewable fuel in terms of compliance with the standard. As a result, the 7.5 billion gallons of renewable fuel required by the CAA Section

211(o) would require about 11.3 billion gallons of ethanol. The Act specified the volumes of renewable fuel that the program must ensure are used in gasoline each year. Although the Act contains a number of provisions that make the achievement of these volume targets imprecise, including the use of deficit carryovers and credits as well as the use of predicted gasoline consumption in the calculation of the standard, it does not give EPA the authority to substantially increase the total annual volumes of renewable fuel required by the program prior to 2013. As a result it would not be appropriate to use gasoline as the point of reference in setting the Equivalence Values for renewable fuels.

3.5.3.5 ASTM D-4809 for Non-Ester Renewable Diesel Equivalence Value Calculation

What Commenters Said:

EPA received a comment from West Park Associates in which they indicated that they do not yet have sufficient experience with different non-ester renewable diesels to judge whether or not a good estimate of the lower heat of combustion can be made using ASTM Specification D-4868. The commenter therefore suggested that EPA require the determination of the heat of combustion of a representative fuel sample in a bomb calorimeter per ASTM Specification D-4809 every six months or after a major change in the production process.

Letters:
West Park Associates OAR-2005-0161-0202

Our Response:

The final rule specifies the Equivalence Value for the renewable fuels that we expect will dominate the pool for the foreseeable future. For other renewable fuels, we have provided a process whereby producers can apply for an Equivalence Value using information specific to the production of that renewable fuel. We have not specified a particular method for the determination of lower heating value for any renewable fuel, but instead will evaluate the appropriateness of any method on a case-by-case basis depending on the type of renewable fuel being assessed.

3.5.3.6 Standards for Renewability of Feedstock

What Commenters Said:

EPA received a comment from NRDC on developing standards for the renewability of renewable fuel feedstock and the amount of fossil fuels used to process the feedstock into a finished motor vehicle fuel. According to the commenter, EPA should adopt a standard that limits RFS eligibility to renewable fuels that return more than 1.3 Btus of finished motor vehicle fuel for every 1 Btu of fossil fuel invested in production. Furthermore, the commenter stated, over time, EPA should add more detailed standards for feedstock to ensure that they meet minimum standards for responsible management and harvesting.

Letters:
Natural Resources Defense Council (NRDC) OAR-2005-0161-0229

Our Response:

Congress specified the definition of renewable fuel and it does not include such an energy standard. While EPA does have some discretion in setting Equivalence Values for fuels that meet the definition of renewable fuel, as discussed above we are not ready to establish Equivalence Values on a lifecycle basis at this time. Rather, we intend to continue evaluating and updating the tools and assumptions associated with lifecycle analyses in a collaborative effort with stakeholders, and will consider the use of lifecycle analyses as a means for valuing or incentivising renewable fuels in future actions. This issue will be addressed more fully in a future rulemaking addressing the RFS program standard for 2013 and beyond.

3.5.3.7 EV for Cellulosic Portion of Municipal Solid Waste

What Commenters Said:

EPA received a comment from DuPont urging the Agency to rethink its intent to provide the same incentive for ethanol derived from municipal waste, which comprises only some renewable materials, as for biofuels derived from fully renewable plant cellulose. The commenter stated that it believes that any such provision should be limited to technologies that convert only cellulosic elements of municipal solid waste.

Letters:
DuPont OAR-2005-0161-0168

Our Response:

CAA Section 211(o) specifies that the Equivalence Value for both cellulosic biomass ethanol and waste-derived ethanol must be 2.5 through 2012. Therefore, the calculation methodology we have developed for the determination of Equivalence Values for other types of renewable fuels does not apply to these two types of ethanol. In the context of future actions to set the renewable fuel standard for 2013 and beyond, the Equivalence Values for cellulosic biomass ethanol and waste-derived ethanol may be reconsidered based on a variety of factors.

3.5.3.8 Technical Justification for Equivalence Values

What Commenters Said:

EPA received a comment from NPRA on the proposal that renewable fuels producers must prepare a technical justification of the calculation of a fuel's Equivalence Value for EPA approval. The commenter stated that it believes that this requirement should apply to domestic

producers of cellulosic ethanol and non-ester renewable diesel, as well as producers of different renewable fuels.

Letters:
National Petrochemical and Refiners Association (NPRA) OAR-2005-0161-0170, -0232

Our Response:

For the final rule we have clarified that the technical justification is not required from all producers of renewable fuel. Based on information we have received concerning the energy content and renewable content of the renewable fuels most likely to be used in the near future, we have calculated the appropriate Equivalence Values for these renewable fuels and specified them in Section 80.1115 of the regulations. Producers or importers need not provide a technical justification for these renewable fuels.

However, since there are a wide variety of possible renewable fuels that could qualify under the RFS program, there may be cases in which a party produces a renewable fuel for which an Equivalence Value has not been specified. A party may also produce a renewable fuel whose Equivalence Value has been specified, but the party believes that a different Equivalence Value is warranted. For such cases we have created a mechanism in the regulations through which the producer may submit a petition to the Agency describing the renewable fuel, its feedstock and production process, and the calculation of its Equivalence Value. The Agency will review the petition and approve an appropriate Equivalence Value based on the information provided.

In addition to the records applicable to all ethanol producers, producers of cellulosic biomass or waste-derived ethanol must keep records of fuel use in order to ensure compliance with, and enforcement of, the definitions of these types of renewable fuel. Producers of cellulosic biomass or waste-derived ethanol must keep records of volume and types of all feedstocks purchased. In addition, producers of cellulosic biomass or waste-derived ethanol are required to arrange for an independent third party to review plot plans and product flow schematics of the facility and to verify by physical inspection that the facility is, in fact, a cellulosic biomass or waste-derived ethanol production facility.

3.5.3.9 Equivalence Value for ETBE

What Commenters Said:

EPA received three comments on the proposed Equivalence Value for ethyl tertiary butyl ether (ETBE) made from corn ethanol. Shell/Motiva and NPRA suggested that EPA increase the proposed value from 0.4 to 0.5 to be consistent with the European Union (EU) Biofuel Directive program's biofuel volume equivalents for bio-ethers. Lyondell commented that it believes a 0.47 Equivalence Value would likely be a better estimate for ETBE, or 0.5 if EPA prefers to keep it to two significant figures. Alternatively, Lyondell suggested that EPA allow the ETBE producer to reassign (or pass through) the RINs associated with the commercial ethanol to the contained

ETBE product, thus maintaining aggregated RIN balances, independent of the amount of unreacted ethanol allowed in the commercial grade ETBE product.

Letters:
Lyondell OAR-2005-0161-0165
National Petrochemical and Refiners Association (NPRA) OAR-2005-0161-0170, -0232
Shell Oil Company/Motiva Enterprises OAR-2005-0161-0215

Our Response:

ETBE is made from combining ethanol with isobutylene. The ethanol is generally from corn, and the isobutylene is generally from petroleum. The ETBE producer may purchase ethanol from another source, and that ethanol may already have RINs assigned to it. In such cases it would not be appropriate for the ETBE producer to generate additional RINs for the ETBE made from that ethanol. Therefore, we are finalizing a provision prohibiting a party from generating RINs for a partially renewable fuel or blending component that it produces if the renewable feedstock used to make the renewable fuel or blending component was acquired from another party. Any RINs acquired with the renewable feedstock (e.g., ethanol) must be assigned to the product made from that feedstock (e.g., ETBE). If the ethanol does not have RINs associated with it, i.e. the RINs have been properly separated prior to receipt of the ethanol by the ETBE producer, then the ETBE producer would not only not generate RINs for the ETBE it producers, but would also not assign any RINs to the ETBE produced.

Moreover, for the specific case of ETBE, we have chosen for this final rule to eliminate a uniquely determined Equivalence Value. An ETBE producer would need only assign the RINs received with the ethanol to the ETBE made from that ethanol. In this case, there will be no need to generate new RINs, and therefore no need for an Equivalence Value.

3.5.3.10 Equivalence Value for Denatured Ethanol

What Commenters Said:

UCS and NRDC submitted remarks to EPA that corn-based ethanol should be assigned an Equivalence Value of 0.95, not 1.0, due to the presence of 5% non-renewable denaturant in the ethanol.

Letters:
Natural Resources Defense Council (NRDC) OAR-2005-0161-0229
Union of Concerned Scientists (UCS) OAR-2005-0161-0226

Our Response:

We continue to believe that the Equivalence Value for ethanol should be specified as 1.0 despite the presence of a denaturant. First, ethanol is expected to dominate the renewable fuel pool for at least the next several years, and it is likely that Congress recognized this fact. Given

this, having each physical gallon of denatured ethanol be counted as one gallon for RFS compliance purposes, and thus setting the Equivalence Value for denatured corn ethanol at 1.0, will help ensure that the volume requirements specified in the Act for total renewable fuel use are met. Second, the accounting of ethanol has historically ignored the presence of the denaturant. For instance, under Internal Revenue Service (IRS) regulations the denaturant can be counted as ethanol by parties filing claims to the IRS for the federal excise tax credit. Also, EIA reporting requirements for ethanol producers allow them to include the denaturant in their reported volumes. The commenters provided no additional information to counter these arguments.

3.5.4 Equivalence Value for Biodiesel

3.5.4.1 Equivalence Value for Mono-alkyl Ester Biodiesel

What Commenters Said:

EPA received comments, including one from the National Biodiesel Board, that supported the proposed Equivalence Value of 1.5 for mono-alkyl ester biodiesel. Baker, Griffin, and MI supported EPA's calculation assumptions with respect to ethanol and methanol, specifically noting that because the volume of the denaturant in ethanol and volume of the nonrenewable methanol used to produce biodiesel are both considered, this creates a level playing field for all alcohols that would be used in the biodiesel production process.

Letters:
Baker Commodities OAR-2005-0161-0003 through -0006, -0173
Griffin Industries OAR-2005-0161-0189
Methanol Institute (MI) OAR-2005-0161-0171
National Biodiesel Board (NBB) OAR-2005-0161-0212

Our Response:

These comments are generally supportive of our proposed approach to determining Equivalence Values and its application to biodiesel, and we agree with them. The calculation methodology is being finalized as proposed, with some small modifications related to rounding protocols. The final Equivalence Value for biodiesel (mono alkyl esters) is 1.5.

3.5.4.2 Equivalence Value for Waste-Derived Biodiesel

What Commenters Said:

EPA requested comment on whether it would be appropriate to assign an Equivalence Value of 2.5 to biodiesel produced from animal waste or municipal solid waste. A number of commenters supported this proposal, including FutureFuel who stated that it believes that assigning an Equivalence Value of 2.5 to biodiesel made from waste products and recycled

biomass would incentivize their use as feedstocks and decrease the demand pressures on soybean oil and palm oil, currently the primary sources of biodiesel. NPRA noted that if biodiesel made from recycled cooking oil (RCO) is recognized as a higher credit than previously documented, it would establish a more valuable product to refiners and energize the demand of such type of biodiesel.

Baker Commodities and Griffin also endorsed this approach and noted that it would help incentivize the use of waste products and recycled biomass to make biodiesel. The commenters further argued that since ethanol derived from waste products will be assigned an Equivalence Value of 2.5, it is appropriate to create a parallel provision for biodiesel made from waste oils and fats. Neste and NGVA both supported this approach, and while Neste requested that all forms of waste-derived biodiesel, including renewable diesel, be assigned an Equivalence Value of 2.5, NGVA went a step further and requested that other fuels produced from these sources, including natural gas fuels, earn the same level of credit.

A private citizen supported assigning an Equivalence Value of 2.5 for waste-derived biodiesel because of the additional benefit of avoiding sending material to landfills. However, the commenter believed that to limit the "parallel provision" to only biodiesel made from wastes is too restrictive. Finally, the Alliance disagreed with this approach, arguing that a higher Equivalence Value for waste-derived ethanol was applied because it is the product of an emerging technology that currently is more costly than obtaining ethanol from sources such as corn, whereas producing biodiesel from waste is not a new technology that needs help in getting developed and established. The commenter recommended retaining the proposed 1.5 equivalence factor or using an equivalence factor of 1 if a volume replacement system is adopted.

Letters:
Alliance of Automobile Manufacturers (Alliance) OAR-2005-0161-0176
Baker Commodities OAR-2005-0161-0003 through -0006, -0173
FutureFuel OAR-2005-0161-0198
Griffin Industries OAR-2005-0161-0189
National Petrochemical and Refiners Association (NPRA) OAR-2005-0161-0170, -0232
Natural Gas Vehicles for America (NGVA) OAR-2005-0161-0201
Neste Oil OAR-2005-0161-0191
Private Citizen OAR-2005-0161-0182—0184

Our Response:

Supporters of the 2.5 Equivalence Value argued that it would place the treatment of waste-derived biodiesel (mono alkyl-esters) on the same level as waste-derived ethanol, and that it would be good Agency policy to encourage and reward parties that turn materials that would otherwise be wasted into usable motor vehicle fuel. While we generally agree with these arguments, we nevertheless believe that they are insufficient to deviate from the general methodology applicable to renewable fuels at this time. While the use of relative energy content to set Equivalence Values in this rule can be justified based on the statutory language, it is not clear whether the use of other factors such as the promotion of a particular industry, process,

feedstock, or type of renewable fuel can be justified. While incentives to use more waste products as feedstocks may be a reasonable policy goal, they nevertheless cannot be justified in the context of this regulation. Therefore, we have not finalized a 2.5 Equivalence Value for waste-derived biodiesel, but instead have used energy content relative to ethanol to set an Equivalence Value of 1.5 for all biodiesel (mono alkyl-esters).

3.5.4.3 Setting Equivalence Values for Biodiesel Based on Energy Lifecycle Analysis

What Commenters Said:

Griffin and Organic Fuels remarked that biodiesel should be assigned an Equivalence Value of 2.5 -- not 1.5 as noted in the proposed rule -- based on total energy lifecycle analysis.

Letters:
Griffin Industries OAR-2005-0161-0189
Organic Fuels OAR-2005-0161-0190, -0233 (hearing)

Our Response:

Based on our own lifecycle analyses as described in Section IX of the preamble, we agree that biodiesel may produce greater reductions in greenhouse gases and fossil fuel use than corn-based ethanol. However, as discussed earlier, we do not believe that lifecycle analyses can be used as the basis of Equivalence Values at this time. We will continue to evaluate the appropriateness of lifecycle analyses in future actions.

3.5.5 Equivalence Values for Other Types of Renewable Fuel

3.5.5.1 Equivalence Value for Renewable Diesel Produced at Refineries

What Commenters Said:

EPA received a few comments on assigning Equivalence Values to non-ester renewable diesel produced at refineries. ConocoPhillips claimed that renewable diesel would be the result of biocrude co-processing done in a distillate hydrotreater, and that jet fuel would not be produced from biocrude because it would not meet jet fuel specifications per ASTM D-1655. The commenter also argued that renewable diesel produced in this way should warrant a 1.7 Equivalence Value, equivalent to the proposed value for non-ester renewable diesel produced through neat processing of biocrude, as the energy content of the product would be equivalent to renewable diesel produced neat through a hydrotreating process and the volume yields would range from 98% to 106% (product to feed).

API agreed that renewable diesel produced through co-processing in a hydrotreater should have an Equivalence Value greater than 1.0 assigned to the biocrude, given that biodiesel and non-ester renewable diesels are 1 to 1.5 and 1.7. The commenter argued that the

Equivalence Value of biocrude-based renewable fuel generated at refineries should be based on the energy content of the bio-produced materials, and that an unequal approach to assigning these Equivalence Values would handicap refinery operations and the effective utilization of biocrude.

Finally, Tyson commented that it believes that the RFS program should support the use of all renewable fuels produced in the United States from feedstocks such as vegetable oils and animal fats and should encourage the use of developing production methodologies. The commenter cited the difference in proposed Equivalence Values for biodiesel (mono alkyl-esters), non-ester renewable diesel produced using a "Neste" process, and non-ester renewable diesel produced at a refinery, despite the fact that the non-ester renewable diesel produced in the "Neste" process and at a refinery are essentially equivalent. To ensure that the highest possible Equivalence Value is given to renewable fuels made from animal fats, Tyson suggested that a higher Equivalence Value be considered for non-ester renewable diesel produced at a conventional refinery.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185
ConocoPhillips OAR-2005-0161-0194, -0219
Tyson Foods, Inc. OAR-2005-0161-0216

Our Response:

Equivalence Values are assigned to renewable fuels on the basis of information on their energy content and their renewable content. The number of gallon-RINs that can be generated for a given volume of renewable fuel is then based on the Equivalence Value multiplied by the volume. In the case of renewable crude-based fuels, information on the energy content, renewable content, or actual product volume may be difficult to obtain. For this reason, we are finalizing a generalized approach for renewable crude-based fuels in which the Equivalence Value is designated as 1.0 and the applicable volumes are measured according to the volume of renewable crude rather than the volume of the final product.

However, in cases where information on the energy content and renewable content is more precise, a higher Equivalence Value may be warranted. Likewise, if product volumes can be measured accurately, they can be used directly instead of the volume of renewable crude. For instance, for non-ester renewable diesel produced by processing fats and oils through a refinery hydrotreating process, we have determined that the default Equivalence Value should be 1.7. This approach recognizes that hydrotreating produces a product that meets the definition of non-ester renewable diesel. Producers of other types of renewable fuel which use renewable crude as a feedstock may also petition EPA for a higher Equivalence Value and/or the use of product volumes instead of renewable crude volumes.

3.5.5.2 Equivalence Value for BTL

What Commenters Said:

EPA received lengthy comments from Choren on the Equivalence Value of BTL. The commenter argued that BTL will have cleaner combustion characteristics, and therefore merits a higher Equivalence Value, than FAME or hydrotreated non-ester renewable first generation diesel products. Choren urged EPA to rank BTL fuels from renewable sources or from waste in a similar fashion to waste-derived ethanols in order to stimulate development of this second generation diesel fuel. Choren proposed an initial Equivalence Value of 2.5 * 1.7 = 4.25 for BTL to reflect three things: the advantage of diesel/jet fuel platforms over ethanols, the advantage of second generation fuels over first generation fuels, and the benefits achievable with fully synthetic renewable fuels.

Letters:
Choren OAR-2005-0161-0195

Our Response:

The calculation methodology for the determination of Equivalence Values is not intended to encourage the development of any particular industry, process, or renewable fuel. By focusing on the relative energy content in comparison to ethanol, Equivalence Values are designed only to ensure that renewable fuels are all treated on an ethanol-equivalent basis. Although the 2.5 value prescribed by CAA Section 211(o) may have been intended to encourage the development of cellulosic biomass ethanol production technologies, we do not believe it is appropriate to extend the same basis to other renewable fuels in the context of this final rule. However, we will be reevaluating the role of and calculation methodology for Equivalence Values in later actions.

3.5.5.3 Equivalence Value for Biogenic Methanol

What Commenters Said:

EPA received a comment from MI to assign neat biogenic methanol an Equivalence Value of 0.8 based on its lower heating value.

Letters:
Methanol Institute (MI) OAR-2005-0161-0171

Our Response:

The final rule for the RFS program specifies the Equivalence Value for a number of renewable fuels that are either being produced currently or are in the planning stages for near-term production, and for which we have sufficient information regarding the energy content and renewable content. We do not believe that this is true for biogenic methanol, and so we have not

specified its Equivalence Value. However, we have created a mechanism in the regulations through which the producer may submit a petition to the Agency describing the renewable fuel, its feedstock and production process, and the calculation of its Equivalence Value. The Agency will review the petition and approve an appropriate Equivalence Value based on the information provided.

3.5.5.4 Equivalence Value for Cellulosic Content of Waste

What Commenters Said:

EPA received a comment from DuPont who commented that it did not believe that biofuels derived from municipal solid waste (MSW) should be assigned the same Equivalence Value as those derived from "truly renewable resources." The commenter argued that MSW is comprised of a range of materials, only some of which are truly cellulosic and renewable, and differing technologies extract energy from different elements of MSW, and that assuming an entirely cellulosic basis for biofuels derived from MSW is inappropriate. The commenter advised that if EPA intends to treat biofuels from MSW as cellulosic, we should limit such designations to technologies that only convert cellulosic elements of the MSW.

Letters:
DuPont OAR-2005-0161-0168

Our Response:

"Waste derived ethanol" is defined in CAA Section 211(o) as ethanol derived from "animal wastes, including poultry fats and poultry wastes, and other waste materials; … or municipal solid waste." Both animal wastes and municipal solid waste are also listed as allowable feedstocks for the production of "cellulosic biomass ethanol." The determination of the appropriate category of ethanol is based on whether the feedstocks in question contain cellulose or hemicellulose that is used to make the ethanol. Thus if the ethanol is made from the non-cellulosic portions of animal, other waste, or municipal waste, it is labeled "waste derived ethanol." As such, a portion of the ethanol made from animal or other wastes and municipal solid wastes that contain cellulose or hemicellulose, would be considered cellulosic biomass ethanol.

Nevertheless, both waste-derived ethanol and cellulosic biomass ethanol are considered equivalent to 2.5 gallons of renewable fuel when determining compliance with the renewable volume obligation. As noted above, we expect to address the issue of the appropriate Equivalence Value for cellulosic and waste derived ethanol for 2013 and later in a later action. We therefore do not believe it is necessary at this time for owners of facilities that make ethanol from animal, other, or municipal solid wastes to calculate the portions of ethanol that are cellulosic and waste-derived.

3.5.5.5 Equivalence Value for Biobutanol and Future Fuels

What Commenters Said:

DuPont suggested that an Equivalence Value of 2.5 apply to all cellulose-derived biofuels, including biobutanol. The commenter also suggested that EPA assign an additional Equivalence Value for cellulosic biobutanol of 1.3 x 2.5 or 3.25 and include provisions to assign Equivalence Values to future biofuels as they enter the market.

Letters:
DuPont OAR-2005-0161-0168

Our Response:

CAA Section 211(o) specifies that waste-derived ethanol and cellulosic biomass ethanol are considered equivalent to 2.5 gallons of renewable fuel when determining compliance with the renewable volume obligation. The Act provides no flexibility to extend this provision to other renewable fuels, even if they are likewise produced from cellulosic or waste feedstocks. However, we have created a mechanism in the regulations through which a producer may submit a petition to the Agency describing the renewable fuel it produces, its feedstock and production process, and the calculation of its Equivalence Value. The Agency will review the petition and approve an appropriate Equivalence Value based on the information provided.

3.5.5.6 Setting the Equivalence Value of Renewable Diesel Based on Lifecycle Analysis

What Commenters Said:

EPA received a comment from Neste Oil stating that while it supported EPA's proposed energy content approach for assigning Equivalence Values, a lifecycle approach would probably assign a larger Equivalence Value to non-ester renewable diesel fuel than 1.7. Neste claimed that there is a rationale for applying a higher Equivalence Value to non-ester renewable diesel than to mono-alkyl ester biodiesel, butanol, and "typical" ethanol.

Letters:
Neste Oil OAR-2005-0161-0191

Our Response:

We considered lifecycle analyses as the basis for calculating Equivalence Values, but determined that they cannot be used at this time for a variety of reasons. The calculation methodology we are finalizing is limited to a consideration of the renewable content of a renewable fuel and its energy content in comparison to ethanol. However, we will be reevaluating the role of and calculation methodology for Equivalence Values in later actions.

3.5.6 Equivalence Values for Foreign-Produced Renewable Fuel

What Commenters Said:

EPA received a few comments related to Equivalence Values assigned to renewable fuel produced in other countries. One private citizen stated that assigning cellulosic ethanol an Equivalence Value of 2.5 creates a loophole that encourages foreign producers to export cellulosic ethanol and discourages U.S. production of such fuel. NPRA commented that before 2013, imported cellulosic or waste-derived ethanol should not have an Equivalence Value of 2.5**.** RFA commented that the registration requirements for ethanol facilities using waste-derived fuel to displace 90% of fossil fuel are limited and that they did not provide sufficient information to ensure that the facilities meet the definition under the statute. RFA therefore recommended that recordkeeping requirements extend to foreign producers. ExxonMobil believed that the 90% displacement qualification should not be extended to foreign producers at all.

Letters:
ExxonMobil Refining & Supply Co. OAR-2005-0161-0197
National Petrochemical and Refiners Association (NPRA) OAR-2005-0161-0170, -0232
Private Citizen OAR-2005-0161-0236
Renewable Fuels Association (RFA) OAR-2005-0161-0192, -0228 (hearing)

Our Response:

EPA is requiring foreign producers of ethanol who want to have it classified as cellulosic biomass ethanol or waste-derived ethanol to comply with a set of enforcement-related safeguards designed to assure the legitimacy of claims to the 2.5 Equivalence Value. Our final regulations require foreign producers to register with EPA if they wish to export ethanol classified as cellulosic biomass or waste-derived ethanol into the U.S. Compliance with the definition of cellulosic biomass or waste-derived ethanol is the burden of the producers. Both domestic and foreign producers of cellulosic biomass and waste-derived ethanol must comply with recordkeeping requirements, as well as provide copies of plot plans and product flow schematics of the ethanol facility to inspectors.

3.5.7 Other Issues Regarding Equivalence Values

3.5.7.1 Extra Credit for Cellulosic Ethanol in 2013

What Commenters Said:

EPA received a comment from BIO IES who noted that in 2013, if the total amount of ethanol produced from cellulosic feedstocks exceeds the 250 million gallon requirement, there is a potential source of additional credits that should be accounted for and utilized in the credit trading program. The commenter claimed that this extra credit potential would incentivize the production of cellulosic ethanol and encourage maximal production under the RFS. BlueFire Ethanol commented that it believes that maintaining the 2.5 Equivalence Value for cellulosic

ethanol well beyond 2013 is critical for continued and sustained deployment of cellulosic ethanol, and that it is fully warranted because cellulosic processes are appreciably more environmentally friendly in terms of reducing GHG than tradition corn based processes.

Letters:
Biotechnology Industry Organization- Industrial and Environmental Section (BIO IES)
OAR-2005-0161-0199
BlueFire Ethanol OAR-2005-0161-0200, -0224

Our Response:

In general, the Equivalence Values set by this final rule, or any others approved through the petition process, will be applicable for all years. However, in the final rule we are only specifying the 2.5 ratio for cellulosic biomass and waste-derived ethanol prior to 2013.

According to CAA Section 211(o), the 2.5 to 1 ratio no longer applies for cellulosic biomass ethanol beginning in 2013, but the Act is unclear about whether the 2.5 to 1 ratio for waste-derived ethanol will apply after 2012. It would be reasonable to treat both cellulosic biomass ethanol and waste-derived ethanol consistently in terms of the applicability of the 2.5 to 1 ratio after 2012, but in this rulemaking we do not need to make a final decision on this issue. Consequently, we are only setting the 2.5 Equivalence Value for cellulosic biomass and waste derived ethanol through 2012, and beginning in 2013, the 2.5 to 1 ratio will no longer apply for either cellulosic biomass ethanol or waste-derived ethanol. In subsequent actions, we will address the issue of the post-2012 Equivalence Value for cellulosic and waste derived ethanol explicitly, including a reevaluation of the role of and calculation methodology for Equivalence Values.

3.5.7.2 Limiting Equivalence Values to Bins

What Commenters Said:

EPA received a comment from NYDEC who disagreed with EPA's proposal to limit Equivalence Values to bins of 1.0, 1.3, 1.5, and 1.7, and believed that, instead, Equivalence Values should be calculated using the proposed formula at 71 FR 55571, rounded to the nearest tenth.

Letters:
New York State Department of Environmental Conservation (NYDEC)
OAR-2005-0161-0169

Our Response:

We agree with this comment. We have determined for the final rule to further simplify the application of Equivalence Values by only requiring the calculated values be rounded to the first decimal place. There will no longer be bins for Equivalence Values.

3.5.7.3 Including Equivalence Values for Biodiesel and MTBE from Biogas

What Commenters Said:

EPA received a remark from MI to update Table 1 of §80.1115: Equivalence Values to include the Equivalence Values already calculated and included in the technical support document, "Memorandum from David Korotney to EPA Air Docket OAR-2005-0161, dated August 23, 2006," for "Biodiesel using biogas" and "MTBE from biogas."

Letters:
Methanol Institute (MI) OAR-2005-0161-0171

Our Response:

The technical memorandum was provided primarily to lay out the details of the calculation methodology and its derivation, and to provide examples of some calculations for specific renewable fuels. The regulations, however, include Equivalence Values only for those renewable fuels that are either being produced currently or are in the planning stages for near-term production, and for which we have sufficient information regarding the energy content and renewable content. We have no information to indicate that biogas is currently being used, or is in the planning stages, for use as a feedstock in the production of renewable fuels. We have created a mechanism in the regulations through which a producer may submit a petition to the Agency describing the renewable fuel it produces, its feedstock and production process, and the calculation of its Equivalence Value. The Agency will review the petition and approve an appropriate Equivalence Value based on the information provided.

3.5.7.4 Use of the Term "Denatured Ethanol"

What Commenters Said:

API commented to EPA that Table 1 of §80.1115: "Ethanol from corn, starches, or sugar" should be "Denatured ethanol from…," in accordance with p.51 of the pre-publication version preamble.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185

Our Response:

We agree with this comment. The regulations specifying Equivalence Values have been revised to clarify that qualifying ethanol must be denatured.

3.5.7.5 Equivalence Value Equation

What Commenters Said:

EPA received a comment from MI who pointed out a technical error in the formula for calculating Equivalence Value (EV) at §80.115(a). The commenter noted that if R is expressed as a percent, as stated, then the denominator must be 93.1 instead of 0.931, and the formula should read: EV = (R / 93.1) * (EC / 77,550).

Letters:
Methanol Institute (MI) OAR-2005-0161-0171

Our Response:

In mathematics, a percentage is considered to be equivalent to its fraction (i.e., 93.1% = 0.931). Thus the regulations are correct as written. However, the technical memorandum provides example calculations that clarify the form and use of the renewable content factors that should be used. Parties who submit an application to the EPA for an Equivalence Value not already specified in the regulations can look to the technical memorandum for example calculations.

3.5.7.6 Equivalence Values and Fuel RINs

What Commenters Said:

MDNR noted that it believes the approach proposed by EPA appears to provide a systematic and uniform application of Equivalence Values for various renewable fuels under the RFS program. The commenter believes EPA should consider using a similar approach in determining potential equivalence valuation for the credit-trading program.

Letters:
Missouri Department of Natural Resources (MDNR) OAR-2005-0161-0217

Our Response:

Equivalence Values are used to determine the number of RINs that can be generated for a given renewable fuel, and these RINs form the basis for compliance with the standard. RINs fulfill the purpose of credits as they are defined in CAA Section 211(o), and Equivalence Values thus determine the valuation of renewable fuels in the credit-trading program.

3.5.7.7 Equivalence Value of E85

What Commenters Said:

EPA received a comment from the Alliance suggesting that to promote true fuel diversification, EPA should assign an equivalence ratio of 2.5 to ethanol used to blend E85, regardless of the ethanol feedstock source. The commenter stated that it believes that a credit enhancement for E85 would help promote the necessary infrastructure and collaboration required by refiners, blenders, terminal facilities and retail distribution outlets to establish an alternative fuel choice for consumers and enhance overall energy security goals.

Letters:
Alliance of Automobile Manufacturers (Alliance) OAR-2005-0161-0176

Our Response:

The calculation methodology for the determination of Equivalence Values is not intended to encourage the development of any particular industry, process, or renewable fuel. By focusing on the relative energy content in comparison to ethanol, Equivalence Values are designed only to ensure that renewable fuels are all treated on an ethanol-equivalent basis. We do not believe it would be appropriate to extend the 2.5 value to other renewable fuels in the context of this final rule. However, we will be reevaluating the role of and calculation methodology for Equivalence Values in later actions.

4 EXEMPTIONS FOR OBLIGATED PARTIES

What We Proposed:

The comments in this section correspond to Sections III.C.3 of the preamble to the proposed rule, and are therefore targeted at exemptions to the Renewable Fuels Standard for obligated parties. A summary of the comments received, as well as our response to those comments, are located below.

4.1 Small Refineries and Small Refiners

4.1.1 Exemption Should be Automatic without the Need for Prior Application

What Commenters Said:

Marathon, the American Petroleum Institute (API), the National Petrochemical and Refiner's Association (NPRA), and the Society of Independent Gasoline Marketers of America and the National Association of Convenience Stores (SIGMA/NACS) commented that EPA should change the small refinery provisions to automatically exempt small refineries in 2007, and that the gasoline produced by these exempted parties should be excluded from the overall calculation of national gasoline production. Commenters stated that requiring that refiners submit applications for the small refinery exemption is inconsistent with the small refinery provisions in the Energy Policy Act of 2005 (amended CAA section 211(o)(9)(C) and (D)). API further commented that it believes that this will avoid uncertainty regarding the RFS obligation status of small refineries for 2007 while preserving the principle that small refineries must qualify for the exemption; and that the required RFS percentage for 2007 should take into account only those small refineries that have been fully confirmed as exempt.

NPRA further commented that the proposed value of the required RFS percentage for 2007 ($RFStd_{2007}$) would be smaller if the Agency would automatically assume that all small refiners and small refineries will decide to waive the exemption. The commenter also noted that the assumption that small refiners and small refineries are either all in or all out in 2007 makes a difference between estimating $RFStd_{2007}$ as 3.45% or 4.02%. The commenter also stated that if the Agency assumes that all small refiners and small refineries are not in the RFS program in 2007 (as the proposed rule implied) and promulgates $RFStd_{2007}$ at or near 4.02%, then regulatory over-compliance in 2007 is possible. The commenter stated that it believes that it would not be fair for EPA to promulgate a larger-than-necessary value for $RFStd_{2007}$ and provide no accommodation for this oversight; the commenter suggested that EPA consider a rebate or a refund if the promulgated $RFStd_{2007}$ is too high. Lastly, the commenter stated that there will not be an opportunity for RFS regulatory over-compliance in 2007 if EPA clearly explains that small refineries will not be obligated parties in 2007.

Additionally, regarding the regulations, API commented that in §80.1143 there should be a provision for small refineries and non-contiguous states and territories to opt-in effective with the first compliance period (2007). The commenter noted that the language currently would not allow such opt-ins to become effective until the 2008 compliance period.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185
Marathon Petroleum Company (MPC) OAR-2005-0161-0175
Society of Independent Gasoline Marketers of America (SIGMA)/National Association of Convenience Stores (NACS) OAR-2005-0161-0234
National Refiners and Petrochemical Association (NPRA) OAR-2005-0161-0170, -0232

Our Response:

In the proposal we stated that applications for a small refinery exemption must be received by EPA by September 1, 2007 for the exemption to be effective in 2007 and subsequent calendar years, and that the small refinery exemption would be effective 60 days after receipt of the application by EPA (unless EPA notifies the applicant that the application was not approved or that additional documentation is required). The Energy Policy Act clearly intended to provide the small refinery exemption. Given the short timeframe between the effective date of this final rule and its implementation, there is not enough time for the typical application and approval process. Consequently, we are finalizing the rule without the need for applications. In order to ensure that this provision is not being misused, we believe that it is necessary for refiners to verify that their refineries meet the small refinery definition. We are thus finalizing that the small refinery exemption will become active immediately upon the effective date of this rule. Refiners will only be required to send a letter to EPA, by August 31, 2007, verifying their refineries' status as small.

As discussed below in section 4.1.2.1, we are extending, to qualified small refiners, the same exemption provided for small refineries; thus, we are finalizing that qualified small refiners receiving the small refiner exemption will also receive the exemption immediately upon the effective date of the rule. Small refiners will also be required to submit verification letters showing that they meet the small refiner criteria. This letter will be similar to the small refiner applications required under other EPA fuel programs, except the letter will not be due prior to the program.

Please see section III.C.3.a of the preamble to the final rule for more information on the small refinery and small refiner verification letter requirements. Also note that a submission of the verification letter does not automatically mean that the refiner is entitled to the relief. They have to in fact meet the criteria for a small refinery or a small refiner. A submission of verification entitles a party to the exemption only in those cases where a party meets the criteria.

With regard to the comment that we did not allow for small refineries and non-contiguous states and territories to opt-in in 2007, we do not anticipate that these parties will choose to waive the exemption given the design of the renewable identification number (RIN) program. They can receive and market RINs in their capacity as oxygenate blenders without subjecting themselves to the standard as an obligated party. Section III.A of the preamble to the final rule discusses how the applicable standards were calculated.

4.1.2 Provisions for Small Refiners

4.1.2.1 Extension of the Small Refinery Exemption to Small Refiners

What Commenters Said:

Marathon, ExxonMobil, Shell/Motiva, and API commented that they do not support the extension of the small refinery exemption to small refiners. Some commenters stated that they believed that EPA exceeded its discretionary authority by extending the exemption to small refiners. Other commenters stated that the Energy Policy Act specifically states that the exemption is for small refineries, and that it is clear that Congress did not intend for the exemption to be broadened to also include small refiners. The commenters all stated that they believed that §80.1142 should be deleted from the regulations in the final rule. Further, some commenters stated that after EPA includes small refiners back in the general RFS program, the applicable percentage for 2007 should be recalculated to include the volumes of fuel expected to be produced by the small refiners. ExxonMobil also commented that it believes that small refiners should not be granted the exemption because verification of processing capability and/or employment records would be far more difficult, and in some cases impossible, for EPA to accomplish. API further commented that it also does not agree with the regulations at §80.1142(d), which it believes could allow two small refiners who merge to become a large company and still be exempted.

The New York Department of Environmental Conservation commented that it believes that in programs where large capital equipment investments are involved, relief for small refiners makes sense, as it agrees that per barrel costs are generally greater for smaller units. However, the commenter stated that because this rule requires no significant capital investment for any refinery (large or small), compliance can be achieved by acquiring credits for renewable fuel. The commenter stated that it does not believe that small refiners are at a disadvantage and that EPA should not provide any exemptions for small refiners beyond what is required by the Energy Policy Act. (Additionally, the commenter's comments implied that it did not agree with exemptions for small refiners or those for small refineries.)

SIGMA/NACS, Countrymark, and the Ad Hoc Coalition of Small Business Refiners (Small Refiners) commented that they supported the expansion of the small refinery exemption to small refiners. SIGMA/NACS specifically stated that it believes

that the inclusion of small refiners in this exemption is a reasonable exercise of regulatory interpretation by EPA, and urged EPA to finalize this provision. The Small Refiners further commented that they did not insist on a SBREFA Panel predicated on the small refinery exemption being extended to small refiners. In its comments, NPRA did not explicitly state that it supports this extension of the provision, however its references to "small refineries and small refiners" implies that NPRA supports this provision as well.

Letters:
Ad Hoc Coalition of Small Business Refiners (Small Refiners) OAR-2005-0161-0214
American Petroleum Institute (API) OAR-2005-0161-0185
ExxonMobil Refining & Supply Co. OAR-2005-0161-0197
New York State Department of Environmental Conservation (NYDEC) OAR-2005-0161-0169
Marathon Petroleum Company (MPC) OAR-2005-0161-0175
Society of Independent Gasoline Marketers of America (SIGMA)/National Association of Convenience Stores (NACS) OAR-2005-0161-0234
Shell Oil Company/Motiva Enterprises OAR-2005-0161-0215

Our Response:

As stated in the proposal, we believe that we have discretion in determining an appropriate lead-time for the start-up of this program, as well as discretion to determine the regulated refiners, blenders and importers, "as appropriate." We continue to believe that some refiners, due to their size, generally face greater challenges compared to larger refiners. The Small Business Regulatory Enforcement Fairness Act (SBREFA) also recognizes this and requires agencies, during promulgation of new standards, to assess the potential impacts on small businesses (as defined by the Small Business Administration (SBA) at 13 CFR 121.201).

In recent EPA fuel programs under the Clean Air Act, "small refiners" have historically been recognized in our fuel regulations as those refiners who produce fuel by processing crude oil, employ no more than 1,500 employees, and have an average crude oil capacity of 155,000 bpcd. These refiners generally have greater difficulty in raising and securing capital for investing in capital improvements and in competing for engineering resources and projects. Though the RFS program does not require that refiners make capital improvements, there are still costs associated with meeting the standard. While we were not required to assess the impacts on small businesses under the Energy Policy Act, we are required to do so under SBREFA. Based on our analysis, our assessment is that this rule will not impose a significant adverse economic impact. However, as small refiners informed us, there will still be economic impacts on these entities. Further, we believe that the number of small refiners that do not meet the Act's definition of a small refinery is limited. Based on our current assessment of the refining industry, there are only three refiners that do not meet the Act's definition of a small refinery but will qualify as small refiners for this rule. Therefore, we are finalizing the

proposed provision that the same exemption will be provided to qualified small refiners as to small refineries.

We do not agree with the statements that the verification of small refiner processing capability and employment records will be difficult or impossible. For all of our previous fuel programs that have included small refiner provisions, small refiners have been required to submit extensive information with their small refiner applications showing that they do in fact meet the small refiner qualification criteria. The information that small refiners will be required to submit for the RFS program is the exact same, except it will be due after the program has begun rather than before (as our other fuel programs have required). Further, for any refiner who falsifies information regarding the qualification criteria, their small refiner status will be considered void as of the applicable date of the standard. This will also place the refiner in violation of the RFS rule requirements, and the refiner would be subject to Clean Air Act penalties of up to $32,500 per day per violation, as stated at section 80.1163 of the regulations.

4.1.2.2 Participation in the RIN ABT Program

What Commenters Said:

Countrymark and the Small Refiners commented that they believe that small refiners should be able to generate RFS credits if they elected to blend renewables before 2011 without formally opting in to the program, but they should not be held to specific RFS volumes under the program compliance requirements prior to 2011. The commenters stated that they believe that this will allow flexibility to small refiners and will be beneficial to the renewable fuels program in general as some small refiners will elect to blend and earn credits who would otherwise not enter into a blending program and those credits will keep the credit program function properly. The Small Refiners also urged EPA to clarify whether or not a small refiner blending ethanol at a terminal or any location without formally opting into the program before 2011 can separate RINs and sell, transfer, or bank them.

CHS commented that it believes that a small refinery that is an oxygenate blender should be able to generate credits as if its RVO is zero (and thus whatever renewables they blend will be reflected as RIN credits available in the market). The commenter noted that it would like confirmation from EPA that such an entity can start its RVO and RIN credit building from a base of zero.

Countrymark commented that it believes that many of the exempted small refineries will be owned by major oil companies or companies who do not meet the small refiner criteria that have been used in EPA's past fuel programs. The commenter stated that small refiners are concerned that the small refinery exemption may create problems in credit trading and suggests that EPA monitor closely the activities of these refineries' effect on the credit trading program. The Small Refiners commented that they believe that the cost and availability of credits are important issues to small refiners. The

commenters thus requested that the rule include a specific provision, similar to that in the proposed MSAT2 rule, to review the credit program and its impact on small refiners on a periodic basis.

Letters:
Ad Hoc Coalition of Small Business Refiners (Small Refiners) OAR-2005-0161-0214
CHS Inc. OAR-2005-0161-0203
Countrymark Cooperative OAR-2005-0161-0225

Our Response:

As previously stated, we have decided to finalize the provision to allow small refineries and small refiners to waive their exemption. Gasoline produced at a refinery which waives its small refinery or small refiner exemption will be included in the RFS program and will be included in the gasoline used to determine the refiner's renewable fuel obligation. If a refiner waives the exemption, the refiner will be able to separate and transfer RINs like any other obligated party. Exempt small refineries and small refiners cannot separate a RIN simply by owning a batch. However, a RIN can be separated by these parties once the volume of renewable fuel is blended with gasoline or diesel to produce a motor vehicle fuel. In this respect they would be considered a blender as stated in the regulations at §80.1129. Thus if a small refinery or small refiner does not waive the exemption, the refiner could still separate and transfer RINs, but only for the renewable fuel that the refiner itself blends into gasoline. Exempt small refineries and small refiners who blend ethanol can separate RINs from batches without opting in to the program, so long as they own the renewable fuel at the time of blending. The commenters suggest that small refiners or refineries should be able to generate credits by blending renewable fuels into gasoline. However in the RFS program that we are adopting, refiners do not generate credits by blending renewable fuels. The RINs perform the function of credits, and they are generated by the renewable fuel producer, not the blender. However, as noted above, exempt refiners or refineries that blend renewable fuels into gasoline may separate RINs from the renewable fuel, as may other blenders.

With regard to the comments concerning a review of the credit program, we are not finalizing a review of the credit program. We note that all of the information that parties are required to report annually will provide EPA with all of the information that we believe will be needed to assess the credit market in the event of any shortage or problem.

4.1.2.3 Company vs. Facility Impacts

What Commenters Said:

The Small Refiners noted that companies with several facilities will be able to comply but still benefit from exemptions for their small refineries. The commenters noted that they generally endorse the RIN structure, but oppose its companywide (versus individual facility) compliance basis. The commenter stated that it estimates that over half of the 42 refineries that are expected to qualify as small refineries are refineries owned by large companies—the commenters stated that they are concerned about the disproportionate advantage which will be enjoyed by large companies which can spread RINs among several refining facilities. The commenters also commented that these larger companies may build or acquire their own ethanol production facilities, but that small refiners with only one plant operating in the same market area will be disadvantaged.

Letters:
Ad Hoc Coalition of Small Business Refiners (Small Refiners) OAR-2005-0161-0214

Our Response:

As discussed in Section 2.3.1 of this document, we are finalizing the RIN program structure as proposed, and therefore will be retaining the company-wide compliance aspect. Further, the mandates of the Energy Policy Act call for a nationwide trading program, thus EPA does not have the discretion to restrict this aspect of the program. We note that EPA believes such a nationwide trading program is appropriate under the circumstances of this program, and would adopt such a program in any case. Thus, even if we were to impose a facility-based trading program, the ability to trade nationwide would still default to company-wide trading for larger companies.

The goal of the RIN program is to allow ethanol to be blended and marketed normally, and simply allow refiners to transfer RINs. The program allows for ample flexibility to obtain and trade RINs nationwide from refiners and oxygenate blenders. Given the number and variety of producers of renewable fuels (which are separate from the refiners that the commenters are concerned about) and the expected production volumes of renewable fuels, EPA believes that a smoothly functioning and competitive market for renewable fuels and the associated ability to separate RINs, and a market for RINs themselves, is likely to occur and this should address the concerns raised by the commenters. Further, the RIN program is for all refiners.

For a more detailed discussion of the RIN program structure, please see sections III.D and E of the preamble to the final rule.

4.1.2.4 Additional Small Refiner Concerns

What Commenters Said:

Countrymark and the Small Refiners commented that the proposed rule did not address seasonality issues that they believe small refiners who market gasoline in non-attainment areas, or in areas with varying state RVP standards without one pound summer RVP waivers, may face. The commenters requested that EPA and the Energy Information Administration (EIA) study as early as possible the impact that varying state RVP standards have on the blending of renewable fuels. The Small Refiners also specifically requested that the RFS regulations allow subsequent revisions to the small refiner provisions to recognize the hardship which seasonality issues impose on small refiners if demonstrated by the EIA study.

The Small Refiners also expressed the concern that in markets where corn-based ethanol production is expected to be significant, large refining companies could decide to meet their blending obligation at plants situated close to ethanol production sources—thus saving transportation costs incurred when ethanol is shipped to other markets. The commenters believe that this could result in an imbalance in the distribution of ethanol, with a concentration in the corn-belt area and lower coastal volumes, leading to lower gasoline prices which will disadvantage (and "in fact may be disastrous to") small refiners or small refineries dependent upon gasoline sales.

Letters:
Ad Hoc Coalition of Small Business Refiners (Small Refiners) OAR-2005-0161-0214
Countrymark Cooperative OAR-2005-0161-0225

Our Response:

The comments regarding seasonality issues are beyond the scope of this rulemaking. We believe that the Boutique Fuel studies required by Congress will help to alleviate the commenters' concerns with regard to varying state RVP standards.

With regard to the comment that some companies may choose to meet their blending obligation at plants close to ethanol production sources, we note that this is not an impact of our rule. Rather, this is an impact of the economic marketing of renewable fuels—a practice that our RIN system is designed to allow to continue unhindered. Renewable fuels can continue to be blended where it is most economical to do so, and RINs may be traded to refiners serving areas where renewable use would be less economical.

4.1.3 Foreign Small Refiners/Refineries

What Commenters Said:

ExxonMobil commented that nothing in the Energy Policy Act requires EPA to grant relief to foreign small refineries. The commenter further stated that it believes that it is inappropriate to extend "this unlawful exemption" to foreign small refiners; and that

verification of processing capability and/or employment records would be far more difficult and in some cases impossible for EPA to accomplish.

Letters:
ExxonMobil Refining & Supply Co. OAR-2005-0161-0197

Our Response:

As discussed in the proposal, in several recent fuel programs EPA has provided relief to foreign refiners when the fuel program provides relief to a subset of domestic refiners. In these circumstances we have decided to provide the same relief to foreign refiners who meet the same criteria for relief as the domestic refiners, with additional provisions for the foreign refiner related to ensuring that the program is fully enforceable against foreign refiners. EPA believes that this is an appropriate way to exercise our statutory authority, and is fully consistent with our obligations under the Global Agreement on Tariffs and Trade (GATT). As a result, we proposed the provision to extend the small refinery and small refiner exemptions to foreign small refineries and small refiners. The proposal contained the related enforcement provisions adopted in prior fuels regulations. This is consistent with prior fuel programs (e.g., anti-dumping, MSAT, and the fuel sulfur rules), which allowed foreign refiners to receive such exemptions. We are finalizing this provision. Under this provision, gasoline produced by foreign small refiners and foreign small refineries who apply for and demonstrate that they meet all of the regulatory requirements to receive these exemptions (including the additional provisions related to enforceability), will be exempt from the RFS standard such that obligated parties (importers or blenders) would not count these volumes towards their renewable volume obligations.

4.1.4 Other

What Commenters Said:

In its comments, the Missouri Department of Natural Resources noted that it used the EIA/NPRA United States Refining and Storage Capacity Report, 2006 to determine that there are 137 refineries in the U.S., and that 57 of those refineries would qualify as small refineries for the RFS program. The commenter stated that this implies that 46 percent of all U.S. refineries (and about 14 percent of crude throughput) will be exempt from the RFS program until 2011. The commenter stated that with the small refinery/refiner exemption, it is concerned that there are a number of states that have refinery operations but will be exempt under the provisions of the RFS due to the size of these refineries (including Georgia, Montana, Nevada, North Dakota, Oregon, Utah, Virginia, Washington, and Wyoming).

Letters:
Missouri Department of Natural Resources (MDNR) OAR-2005-0161-0217

Our Response:

To the extent the commenter is concerned that many states may have refineries that will qualify for the small refinery and small refiner exemptions, and that this could hurt the overall goal of the RFS program, we would note that the purpose of the nationwide RIN-based trading program is to ensure that obligated parties are able to comply with the standard while providing the flexibility for those parties to use renewable fuel in the most economical ways possible. In this regard, we expect the distribution and sale of renewable fuels to be marginally impacted at most by the requirements of this program, and with or without the small refinery and small refiner exemptions, we expect renewable fuels to continue to be used where it is most economical to do so.

4.2 Other Exemptions

What Commenters Said:

Sutherland Asbill Brennan commented that although the mandated amounts of renewable fuels currently are projected to be exceeded by the actual amounts produced and consumed, such a status quo is not guaranteed. The commenter stated that a potential problem, such as a natural disaster in the U.S. agriculture sector, could make it difficult to meet Congress' renewable fuels mandates and thereby drive the price of RINs high enough to disrupt the gasoline market. The commenter stated that it believes that the final rule needs to be flexible enough to address any such occurrences. The commenter further stated that a "change of rules", if it is determined that the program is not sufficiently flexible to meet changing times and circumstances, would be inappropriate.

The Missouri Department of Natural Resources commented that it believes that EPA may have incorrectly presumed that an obligated party would not be impaired in its ability to obtain sufficient RINs to comply with the applicable RFS standard in the event of a natural disaster. The commenter further stated that a reduction in gasoline production and the corresponding reduction in the demand for authorized RINs may fall short of the pre-determined compliance level, therefore rendering obligated parties out of compliance and subject to penalties. The commenter urged EPA to consider providing a temporary exemption in the event of a regional or national disaster.

The Small Refiners commented that they believe it is impossible to predict at this early stage just how this program will impact small refiners, especially the RIN market. The commenter strongly requested that EPA include hardship provisions in the final rule, as they believe there are competitive disadvantages that may result for small refiners if the small refinery exemption is not expanded to small refiners and if the company-wide compliance structure of the RIN program is not changed.

Letters:

Ad Hoc Coalition of Small Business Refiners (Small Refiners) OAR-2005-0161-0214
Missouri Department of Natural Resources (MDNR) OAR-2005-0161-0217
Sutherland Asbill Brennan OAR-2005-0161-0210

Our Response:

Under other EPA fuels programs, compliance is based on a demonstration that the fuel meets certain component or emissions standards. Unforeseen circumstances, such as a natural disaster, may affect an individual refiner's or importer's ability to produce or import fuel that complies with the standards. As a result, we have included in other fuels programs provisions for a temporary hardship exemption from the standards in the event of an unforeseen natural disaster which affects a party's ability to produce gasoline that complies with the standards. Unlike most other fuels programs, compliance under the RFS program is based on a demonstration that a party has fulfilled its individual renewable fuels obligation on an annual basis, and compliance is demonstrated by showing the purchase of RINs associated with the production of a renewable fuel (generally a non-gasoline fuel) as compared to meeting specific gasoline content requirements on a per-gallon or annual average basis. The use of RINs to meet the renewable fuels obligation functions as a credit program, and there is a deficit carry-forward provision allowing compliance to be shown over more than one year. In the event of a natural disaster, the volume of gasoline produced by an obligated party is also likely to drop, which would result in a reduction in the party's renewable fuel obligation. As a result, we believe that an individual party would still be able to meet its renewable fuel obligation in the event of a natural disaster that affects the party's refinery or blending facility. Therefore, unlike other fuels programs, we do not believe there is a need to include a temporary hardship exemption in the RFS rule to address an individual party's inability to comply with its renewable fuels obligation due to unforeseen circumstances.

Most of the concerns raised by the commenters relate to problems that would have a more regional or national effect, as compared to affecting one or a few individuals. In the event that unforeseen circumstances do occur which result in a shortage of renewable fuel and available RINs, we believe that Congress provided an adequate mechanism for addressing such situations in the Energy Policy Act (at section 1541(a) [42 U.S.C. 7545(c)(4)(C)(ii)-(v)]). The Energy Policy Act provides that on petition by one or more States, EPA, in consultation with the Departments of Agriculture and Energy, may waive the required aggregate renewable fuels volume obligation in whole or in part upon a sufficient showing of economic or environmental harm, or inadequate supply. As a result, we believe that a renewable fuel supply problem that affects all (or a large number of) parties can be addressed using this statutory provision. We have carefully considered the comments; however, we do not believe that the comments provide a compelling rationale for providing a temporary hardship exemption from the RFS obligation based on unusual circumstances that goes beyond the provisions that Congress included in the Renewable Fuel Program. As a result, the final rule does

not contain provisions for a temporary hardship exemption based on unforeseen circumstances.

In regards to the Small Refiners' concerns, we note that we are extending the same exemption that small refineries are receiving to small refiners (as discussed above).

5 COMPLIANCE PROGRAM AND RENEWABLE IDENTIFICATION NUMBERS (RINS)

What We Proposed:

The comments in this section correspond mainly to Sections III.D through III.E of the preamble to the proposed rule, and are therefore targeted at Renewable Identification Numbers (RINs). A summary of the comments received, as well as our response to those comments, are located below.

5.1 Compliance Program Structure

5.1.1 The Use of RINs as Credits and as the Means for Tracking Renewable Fuel

What Commenters Said:

Several commenters expressed their support for credit trading in the RFS program. The National Restaurant Association expressed support for the Notice of Proposed Rulemaking (NPRM) language establishing the credit trading program. Environmental Defense pointed to the ability of credit programs to deliver environmental benefits in cost-efficient ways with maximum flexibility. The Missouri Department of Natural Resources (MDNR) commented that it believes that credit trading provides uniformity and continuity from region to region, but also indicated that the trading provisions must be clear and precise and allow for fair and equitable economic treatment among regulated parties that keeps costs to a minimum.

Other commenters expressed support more specifically for the proposed program structure in which RINs operate as credits. Environmental Defense commented that the introduction of the RIN will allow easy trading and tracking of biofuels produced and used. The National Biodiesel Board pointed to RINs as an effective and flexible means for determining compliance with the standard. API expressed support for the assignment of RINs by renewable fuel producers, the use of RINs as the basic mechanism for compliance demonstration by obligated parties, and the use of RINs as the mechanism for fulfilling the credit trading provision in the EPAct.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185
Environmental Defense OAR-2005-0161-0172, -0223
Missouri Department of Natural Resources (MDNR) OAR-2005-0161-0217
National Restaurant Association (NRA) OAR-2005-0161-0174
National Biodiesel Board (NBB) OAR-2005-0161-0212

Our Response:

Commenters generally supported the overall structure of our proposed program, in which unique RINs are generated for each batch of renewable fuel produced or imported, and RINs are then acquired by obligated parties for use in demonstrating compliance with the standard. We chose this approach to the design of the RFS program as the best way to fulfill the requirement of Section 211(o) of the Clean Air Act for a credit trading program, and to preserve the natural market forces and blending practices that keep renewable fuel costs to a minimum. With some small modifications as described in the preamble for the final rule, we are finalizing the program structure as proposed.

5.1.2 Renewable Fuel Production Is a Reasonable Surrogate for Consumption

What Commenters Said:

Commenters generally supported the assignment of RINs at the producer/importer level. ExxonMobil commented that the assignment of RINs by renewable fuel producers is essential, while the Methanol Institute went further to state that RINs should not be assigned at the point of renewable fuel blending into motor vehicle fuel.

However, SIGMA and NACS questioned the appropriateness of the proposed approach. They urged EPA to study the federal motor fuels excise tax program for an example of how well "rack-level" enforcement can work. Rather than create an entirely new mechanism for tracking RINs, they suggested that it be laid on top of the existing IRS excise tax credit system. According to SIGMA and NACS, this approach would be more efficient.

Letters:
ExxonMobil Refining & Supply Co. OAR-2005-0161-0197
Methanol Institute (MI) OAR-2005-0161-0171
Society of Independent Gasoline Marketers of America and National Association of Convenience Stores (SIGMA/NACS) OAR-2005-0161-0234

Our Response:

Once renewable fuels are produced or imported, there is very high confidence they will in fact be blended into gasoline or otherwise used as motor vehicle fuels, except for exports. The use of RINs allows the Agency to measure and track renewable fuel volumes starting at the point of their production rather than at the point when they are blended into conventional fuels. As a result, compliance and enforcement is greatly simplified.

We did investigate the possibility for using the IRS program based on excise tax credits. However, we concluded that the IRS program was inadequate to meet the needs of the RFS program. It applies only to ethanol and biodiesel, and ignores neat fuels, and does not permit a distinction between cellulosic and corn-based ethanol. A focus on

blending as the point in time when evidence of compliance is generated or when credits are generated might also compel some refiners to significantly change their business or production practices to take greater control of ethanol blending and, therefore, the mechanism for compliance with the RFS program. Thus an IRS-based program would run counter to the normal business practices that keep fuel costs to a minimum, and would thus have a tendency to increase fuel costs. Finally, tracking renewable fuel volumes to identify the date, place, and volume of blending into gasoline would maximize the number of regulated parties involved, overly complicating the compliance system. There are more than 1200 blenders in the U.S. who blend ethanol into gasoline, in addition to those that blend biodiesel into conventional diesel fuel. Many of these parties are small businesses that have not been regulated in an EPA fuel program before. Compliance efforts would necessarily be placed on them, imposing upon them the primary burden of accurately documenting the volumes of renewable fuel that are blended into gasoline even though under the RFS program we are not making them obligated to meet the standard. In contrast, under our program blenders would only need to keep records of RINs acquired with batches, a much simpler requirement. It is our expectation that in most cases obligated parties will separate the RINs from batches before those batches are transferred to blenders. Therefore, blenders will only have to keep records of RINs for a fraction of the renewable fuel produced and many blenders will be able to avoid any compliance burden entirely.

5.1.3 Participation in the RIN Trading Market

What Commenters Said:

Sutherland Asbill Brennan expressed concern that the design of the RFS program relies on the assumption of an abundance of RINs available to buyers. This commenter pointed to the possibility that, if supply of renewable fuel is very close to the demand generated by the renewable fuel standard, trading of RINs could be constrained either intentionally or unintentionally, making it difficult or more costly for obligated parties who need RINs to obtain them from parties who have excess. By disallowing distributors of renewable fuels from separating RINs from volumes of renewable fuel, this commenter expressed concern that control over most RINs would be left to a small number of obligated parties and/or blenders.

In addition, the commenter suggested that the program was flawed because oxygenate blenders may not have a sufficient incentive to participate in the trading program. It is possible that the cost of their participation might be seen as outweighing the benefits, and that the prospect of having to defend a potential enforcement proceeding may deter small blenders from entering into the RIN trading program.

Letters:
Sutherland Asbill Brennan OAR-2005-0161-0210

Our Response:

The design of the RFS program was not predicated on a surplus of renewable fuel in the market[1]. Based on discussions with stakeholders, the final program design takes into account the many and varied ways that renewable fuels may be produced in the future, and the total volumes relative to the required volumes. As described below, the program will operate effectively regardless of whether supply of renewable fuel significantly exceeds the annual volume requirements or not.

The RFS program creates an open market in which any party, including blenders, refiners, distributors, and brokers, can own and trade RINs. This approach not only ensures that RINs have many avenues through which they can make their way to the obligated parties that need them for compliance, but it also maximizes competition within the market and thus minimizes cost. However, as described n Section III.E of the preamble, we also believe that the RIN transfer mechanism should focus first on facilitating compliance by refiners and importers, and doing so in a way that imposes minimum burden on other parties and minimum disruption of current mechanisms for distribution of renewable fuels. As a result, we have limited the circumstances under which RINs can be separated from volumes of renewable fuel to focus on obligated parties at the time of ownership of renewable fuel, and blenders at the time of blending.

The final RFS program does not force any party, including blenders, to sell RINs they own. However, the final rule now requires, rather than simply permits, oxygenate blenders to separate RINs from any batches of renewable fuel that they own and blend. They will thus be subject to all the recordkeeping and reporting requirements that apply to any other owner of RINs, and any additional regulatory burdens associated with the sale of RINs to other parties would be minimal.

We recognize that an oxygenate blender, as well as any other non-obligated party, can decide not to sell RINs that it owns for a variety of reasons. However, we do not believe that it would be appropriate to require oxygenate blenders or other parties holding excess RINs to sell all the RINs that they separate from renewable fuel, since the regulations governing such sales would need to cover a wide variety of business practices that the Agency has never regulated in the past and are best left to the market. For instance, if the oxygenate blender used an auction to sell RINs, it could still essentially withhold RINs from the market by setting the selling price too high. Thus the sale of RINs would require a regulatory prohibition against setting a minimum price for the RINs or a minimum number of bidders. Other aspects of the RIN transfer would also need to be regulated, such as requiring written confirmation of the RIN transfer, minimum RIN block sizes, frequency of auctions and the means through which they are made public, and conditions for rolling unsold RINs to subsequent auction cycles. All of these regulatory controls could unduly influence the operation of the market.

Any party that owns separated RINs will have an incentive to sell them if their sale price warrants the effort. If they do not sell their RINs, in general this is because

[1] We do acknowledge that the cost of the program is essentially zero so long as the predicted surplus continues.

there are excess RINs available in the market and the sale price of the RINs is low. Thus we do not believe that obligated parties will have a difficult time acquiring RINs.

5.1.4 Renewable Fuel Costs in the Absence of Credit Trading

What Commenters Said:

MDNR expressed concern that the absence of a credit trading program in 2007 could force refineries in some states to ship renewable fuel long distances in order to blend them into gasoline and thus meet the renewable fuel standard. MDNR pointed out that this may add to transportation fuel costs given the general lack of access to renewable fuel resources in the absence of the credit-trading program to certain obligated parties.

Letters:
Missouri Department of Natural Resources (MDNR) OAR-2005-0161-0217

Our Response:

The full compliance and trading program will be operational starting on September 1, 2007. Starting on this date, obligated parties that do not have access to renewable fuels will be able to purchase RINs from other parties that have excess RINs. There will be no need for obligated parties to transport volumes of renewable fuel long distances in order for them to acquire RINs for compliance. Contrary to MDNR's comment, compliance with the standard is not based on a requirement that refiners show that they blend renewable fuels. It is based instead on a requirement that refiners obtain RINs, which are evidence that such renewable fuel has been blended into gasoline by some party. There is no need for a refiner to show that they performed such blending.

5.1.5 RFS Program Cannot Constrain Distribution and Blending of Renewable Fuels

What Commenters Said:

Some commenters emphasized that the RFS program must not place new constraints on the distribution of renewable fuels or the locations or conditions of blending. The American Coalition for Ethanol wanted to ensure that the RFS rule does not consolidate all ethanol blending at the terminal level, but instead continued to allow splash blending outside the pipeline or refinery terminal. Similarly, BioSelect encouraged EPA to ensure that the biodiesel industry will be able to take advantage of existing distribution, blending, refueling, and retailing practices as it matures.

Letters:
American Coalition for Ethanol (ACE) OAR-2005-0161-0218

Galveston Bay Biodiesel (BioSelect) OAR-2005-0161-0206

Our Response:

As we worked with stakeholders during the development of the RFS program, one of our guiding principles was to ensure to the degree possible that the market mechanisms that keep production and distribution costs of renewable fuel to a minimum are preserved. To this end, the RFS program does not compel ethanol or any other renewable fuel to be blended at any particular point in the distribution system. Renewable fuels can continue to be blended into gasoline or diesel to make motor vehicle fuel by any party at any location, and RINs can be separated from volumes of renewable fuel by any party that owns the renewable fuel at the time of blending. Other aspects of the fuels distribution system should likewise be able to adjust to changes in the amount and types of renewable fuel without undue influence from the RFS program.

5.2 Structure of RINs and RIN Generation

5.2.1 RIN Components

5.2.1.1 Batch Volume Codes and Batch Definition

What Commenters Said:

A number of commenters requested that the RIN volume codes SSSSSS and EEEEEE be expanded to accommodate larger batch volumes. FutureFuel pointed out that the RIN volume codes need to take into account such circumstances as continuous processing in which distinct tankfulls are not generated, and barge and ship movements of renewable fuel that can easily have volumes greater than the proposed limit of 1 million gallons per batch. Ethanol Products pointed out that larger batch volumes would decrease the number of unique batch codes in the RIN. Archer Daniels Midland Company (ADM) pointed to the fact that different types of storage or shipping containers will have different volumes, and thus the volumes codes in the RIN should be expanded to cover them all.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185
Archer Daniels Midland Company (ADM) OAR-2005-0161-0227
Ethanol Products OAR-2005-0161
Flint Hills Resources (FHR) OAR-2005-0161-0222
FutureFuel OAR-2005-0161-0198
Marathon Petroleum Company (MPC) OAR-2005-0161-0175
Neste Oil OAR-2005-0161-0191
Shell Oil Company/Motiva Enterprises OAR-2005-0161-0215

Our Response:

In the final rule, the RIN codes SSSSSSSS and EEEEEEEE together identify the "RIN block" which delineates the number of gallons of renewable fuel that the batch represents in the context of compliance. In the NPRM we assigned six digits to the RIN block codes to allow batches up to a million gallons in size. Based on comments received, we have decided to expand the number of digits to eight to accommodate batches up to 99,999,999 gallons in size. Although it is highly unlikely that a single tank would hold this volume, we are adding a definition of "batch" to our final regulations that would allow this high volume to be counted as a single batch for the purposes of generating RINs.

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

5.2.1.2 RIN Codes Representing Location

What Commenters Said:

Some commenters suggested that the RIN be expanded to include more information about where the associated renewable fuel was produced, blended, and used. CHS said that this type of information, though not necessary for RFS compliance, could enhance the future use of RINs in other contexts. They also argued that it could be used to ensure that the RFS program is working.

Gary Williams Energy Corporation went further, saying that EPA should incorporate into the RINs multi-digit ID numbers of two or more digits to identify the PADD or state where the ethanol was produced and where it was actually blended. They argued that this information could be used as the basis for subsequent analysis of the renewable fuels program by the Department of Energy.

Letters:
CHS Inc. OAR-2005-0161-0203

Gary-Williams Energy Corporation (GWEC) OAR-2005-0161-0207

Our Response:

Information on the state and PADD where a batch of renewable fuel was produced is available through the registration number of the production facility which is a required part of the RIN. However, we have not required any information to be incorporated into the RIN to indicate where the renewable fuel is blended. Not only will RINs often be separated from renewable fuel prior to blending by obligated parties, but our final program allows RINs to be completely interchangeable with one another so that the RIN traveling with a gallon of renewable fuel at the point of blending may not be the same RIN that was generated to represent that particular gallon. There will also be cases in which there is not a 1:1 ratio of gallon-RINs to gallons for a volume of renewable fuel, and this ratio may also be different at the point of blending than it was at the point of production. Thus within the context of our final RFS program design, information about the blending of renewable fuels cannot be added to RINs in any unambiguous way.

5.2.1.3 RIN Code Representing Date

What Commenters Said:

The Renewable Fuels Association suggested that year code YYYY should be expanded to include the specific day that the renewable fuel in question was produced. They indicated that such information would assist in tracking and compliance.

Letters:
Renewable Fuels Association (RFA) OAR-2005-0161-0192, -0228 (hearing

Our Response:

We believe that it is unnecessary to include the specific day of production in the RIN, and would unduly lengthen the RIN. Compliance with the standard is determined on a calendar year basis, and the year of RIN generation is necessary in order to ensure that RINs are used for compliance purposes only in the calendar year generated or the following year. The full RIN generation date, while a potentially useful piece of information in the context of potential enforcement activities, is not necessary as a component of the RIN since recordkeeping requirements contain this same information and can be consulted for enforcement.

5.2.1.4 RIN Is Too Long

What Commenters Said:

Some commenters said that the proposed 34-character RIN was longer than it needed to be. IFTOA expressed concern that the length of the RIN could cause problems with recordkeeping and PTDs due to current computer fields that may not have sufficient space for a 34-character code. The commenter indicated that it would be costly and time-consuming to modify software systems to accommodate a 34-character RIN.

Although the Renewable Fuels Association did not express concerns about the RIN being too long, the commenter did state that it could be shorter. The commenter suggested that the RIN could be shortened by the use of special codes to represent certain components of the RIN. Specifically, the commenter suggested that the facility identification number could be reduced to 2 or 3 digits, rather than 4, if "alpha" codes were used.

Letters:
Independent Fuel Terminal Operators Association (IFTOA) OAR-2005-0161-0213
Renewable Fuels Association (RFA) OAR-2005-0161-0192, -0228 (hearing)

Our Response:

The RIN is a unique identification number generated to represent renewable fuel, and the information contained in the RIN must be unambiguous. We continue to believe that all the codes contained within a RIN are critical to the enforceability of the RFS program, and none of these codes were specifically challenged by commenters. Indeed, we have decided to lengthen the RIN to allow for larger batch volumes on the basis of requests from a number of commenters. As a result, the final RIN is now 38 characters long, compared to the 34 characters in the proposal. We have not received any comments from renewable fuel producers, refiners, or other parties indicating that the length of the RIN would be problematic from the standpoint of recordkeeping or PTDs. IFTOA did not provide any information indicating why its member's systems would be unable to accommodate long RINs, and did not suggest specific ways in which the information incorporated into the RIN could be retained with fewer characters. Therefore, we are finalizing the 38 character RIN as described in Section III.D of the preamble.

Although the RIN must always appear in its entirety, special product codes may be used to convey other information as long as the codes are clearly understood by each transferee. In addition, we are finalizing a more flexible approach to product transfer documents (PTD) that allows RINs to be transferred through a PTD that is separate from the PTD used to transfer the volume of renewable fuel.

Regarding RFA's suggested use of alpha codes, the use of 4 and 5 digit registration codes in the RIN for facilities and companies, respectively, is consistent with the approach taken in past fuel programs. The use of the same number of digits in the RFS program allows previous registrations to be used in the RFS program as well. Although the use of special codes to represent company or facility registration numbers might reduce the length of the RIN, the reduction would be very minor (1 - 2 digits out of

the 38 being finalized) and would introduce other complications. For instance, there would need to be a universal key that linked the alpha codes with the actual registration numbers, and the existence of two sets of codes identifying companies and facilities could generate confusion unnecessarily. We do not believe that the Information Technology systems being used by parties regulated under the RFS program will gain any advantage from the use of alpha codes.

5.2.2 Generating RINs

5.2.2.1 Cases Where Different Types Of Renewable Fuel Are Mixed

What Commenters Said:

DuPont raised the question of how RINs would be generated and assigned for cases in which a party produces renewable fuel through multiple processes or from multiple feedstocks, each of which might warrant a different Equivalence Value. The commenter suggested that it might be appropriate to provide RINs for such a mixed batch based on the percentage of the batch that would be assigned a given Equivalence Value. The commenter's specific example was for a producer which made biofuels from cellulosic and non-cellulosic sources.

Letters:
DuPont OAR-2005-0161-0168

Our Response:

Although cellulosic biomass ethanol can be produced from a cellulosic feedstock, Section 211(o) of the Clean Air Act also allows ethanol to be designated as cellulosic biomass ethanol if 90% of the fossil fuel energy normally used to produce the ethanol is replaced by waste sources. This determination must necessarily be based on an evaluation of a whole facility, not portions of a facility. As a result, a designation of "cellulosic biomass ethanol" can only be made if all of the ethanol produced at a given facility meets the 90% criterion or a cellulosic feedstock is used. A producer cannot designate a portion of its ethanol as cellulosic biomass ethanol based on the energy displacement criterion if less than 90% the fossil fuel energy normally used to produce the ethanol is replaced by waste sources.

However, if a producer makes ethanol from two different feedstocks at the same facility, such as cellulose and corn, the final product may indeed be a mixture of two different categories of ethanol, each of which should be assigned a separate Equivalence Value. There are two possible ways to address this situation. If RINs can be generated separately for each type of renewable fuel with a unique Equivalence Value, then multiple RINs can be assigned to a single batch comprised of a mixture of renewable fuels with different Equivalence Values. Alternatively, we have created a regulatory

mechanism through which the producer may submit a petition to the Agency describing the renewable fuel, its feedstock and production process, and the calculation of its Equivalence Value. See 40 CFR 80.1115. The Agency will review the petition and approve an appropriate Equivalence Value for the mixed batch based on the information provided.

5.2.2.2 Volumes in Inventory at Program Startup

What Commenters Said:

Some commenters recommended that we take steps to ensure that every gallon of renewable fuel in the distribution system has an assigned RIN, particularly at the start of the program. The Renewable Fuel Association recommended that RIN generation and assignment by the renewable fuel producers should begin at least 30 to 60 days prior to the renewable fuel obligation so that all gallons at every point in the distribution system will have assigned RINs when refiners and other obligated parties demand them. Ethanol Products went further to suggest that RIN generation begin 90 days prior to the date on which the renewable fuel standard becomes applicable to obligated parties. Ethanol Products also suggested that we could permit the generation of temporary RINs by all parties in the distribution system for renewable fuel in inventory at program startup.

ADM asked for clarification on whether RINs will be assigned to renewable fuel residing in the distribution system at program startup.

Letters:
Archer Daniels Midland Company (ADM) OAR-2005-0161-0227
Renewable Fuels Association (RFA) OAR-2005-0161-0192, -0228 (hearing)
Ethanol Products OAR-2005-0161

Our Response:

Aside from program startup, there are a variety of reasons that there may be volumes in the distribution system that do not have assigned RINs. These include the following:

- RINs can be separated from renewable fuel by obligated parties or blenders, and the renewable fuel continue on in the distribution system
- Small volume renewable fuel producers are exempt from generating and assigning RINs to their product
- Batch volumes can swell due to temperature changes
- Volume metering imprecision

We are also permitting renewable fuel distributors the flexibility to determine how many gallon-RINs to transfer with each gallon, up to a maximum of 2.5. As a result, program startup represents only one of several circumstances in which there may be

volumes in the distribution system without corresponding RINs, and our final program design is intended to accommodate them all.

We believe it would be inordinately cumbersome to provide every owner of renewable fuels the ability to generate RINs for product in inventory at the start of the program. Doing so would extend the RIN-generating functions far beyond renewable fuel producers and importers who are the only parties otherwise allowed to generate RINs. In addition, we do not believe it is necessary to ensure that every gallon of renewable fuel in inventory at program startup is assigned a RIN. Obligated parties have until May 31, 2008 to acquire 2007 RINs for their 2007 compliance demonstrations, so that any delays they may experience in acquiring RINs at program startup will not affect their ability to comply.

We have modified our regulations to allow renewable fuel producers and importers to generate RINs for renewable fuel in their inventory as of September 1, 2007, essentially treating this as new production at the start of the program. It is a natural extension of the RIN-generating requirements that they already have, and is also consistent with the ongoing RIN provisions which allow producers and importers flexibility in when they deem a batch of renewable fuel to have been produced (i.e., upon physical generation of a batch, or upon transfer of that batch to another party). The provision will cover a significant portion of the renewable fuel in inventory at program startup, and thus will help to ensure a smooth transition at the start of the program.

5.2.2.3 Small Volume Producers

What Commenters Said:

Some commenters opposed our proposal to exempt renewable fuel producers that produce less than 10,000 gallons/year from the requirement that they register with the Agency and assign RINs to renewable fuel that they produce. Shell/Motiva argued that the provision would result in fewer RINs being available to obligated parties unless the first purchaser of the renewable fuel was given the responsibility of generating and assigning RINs to product received from a small producer. The National Petrochemical and Refiners Association (NPRA) argued that the presence of renewable fuel without RINs in the distribution system would result in confusion, complexity, and enforcement problems. If the exemption for small volume producers remained, NPRA suggested that it be required to notify EPA of their identity, specific location of operations, and its intent to distribute renewable fuels without RINs, and that this information should then be publicly released by EPA to inform blenders and obligated parties.

Letters:
National Petrochemical and Refiners Association (NPRA) OAR-2005-0161-0170, -0232
Shell Oil Company/Motiva Enterprises OAR-2005-0161-0215

Our Response:

As described above in the response to comments in Section 5.2.2.2, our final program design is intended to accommodate all cases in which some volumes of renewable fuel in the distribution system may not have assigned RINs. In fact, the regulatory provisions governing distribution of renewable fuel have been simplified in comparison to the proposal, and in this context the treatment of renewable fuel from exempt small volume producers will be considerably more straightforward than it would have been under the proposed program. See further discussion in Section III.E.1.b of the preamble.

Furthermore, small volume producers are not expected to contribute meaningfully to the nationwide pool of renewable fuel, and we do not believe that the very small business operations involved should be subject to the burden of recordkeeping and reporting. The commenters did not provide compelling evidence that the exemption would create a problem in the distribution system or provide an unfair advantage to small producers, and as described above our final regulations have been modified to simply accommodate all cases in which volumes in the distribution system may not have assigned RINs. As a result we are finalizing the exemption for small volume producers as proposed. Note that if a small producer chooses to register as a renewable fuel producer under the RFS program, they will be subject to all the regulatory provisions that apply to all producers, including the requirement to assign RINs to batches. Thus if there is a market demand for more RINs, there is a straightforward mechanism for these small producers to opt into the renewable fuel program and increase the supply of RINs.

5.2.3 Other Comments Related to RINs

5.2.3.1 Treatment of RINs for Invalid Renewable Fuel

What Commenters Said:

MDNR commented that the proposal was unclear about the fate of RINs in cases where an associated volume of renewable fuel is found not to meet the regulatory definition of renewable fuel. The commenter specifically pointed to the possibility that a volume of renewable fuel may not meet certain performance standards or ASTM specifications.

Letters:
Missouri Department of Natural Resources (MDNR) OAR-2005-0161-0217

Our Response:

RINs generated must represent renewable fuels that are valid for compliance purposes under the RFS program. If a volume of fuel for which RINs have been generated is found to not be a valid renewable fuel under the RFS program, then the associated RINs are likewise deemed invalid. See 40 CFR 80.1131.

5.2.3.2 Disallowing RIN Generation in Certain Cases

What Commenters Said:

The National Wildlife Federation requested that the right to generate RINs be predicated on certain other factors not considered in the NPRM. For instance, the commenter requested that the generation of RINs be disallowed if the feedstocks were grown on land not previously used for agriculture, or if the renewable fuel production facility violated existing air and water regulations.

Letters:
National Wildlife Federation (NWF) OAR-2005-0161-0209

Our Response:

Section 211(o) of the Clean Air Act provides a definition of "renewable fuels," and fuels meeting this definition count towards meeting the annual volume requirements. This definition is based primarily on the type of feedstock used to make renewable fuel. The definition of renewable fuel in the final rule is consistent with the provisions in the Act.

5.3 Assigning RINs to Batches

5.3.1 Extra-Value RINs

What Commenters Said:

With regard to extra-value RINs (those RINs with EVs exceeding 1.0), a number of commenters stated that they believe that these RINs should flow with and remain attached to the renewable fuel until separated by an obligated party or a blender, similar to how standard-value RINs are treated. Many of these commenters expressed concern with the proposed provision allowing extra-value RINs to remain with renewable fuel producers (at §80.1128 in the NPRM), stating that renewable fuel producers could manipulate the RIN market by withholding extra-value RINs from the marketplace and increase renewable fuel demand (and thus increase the ultimate costs to the consumer). Some commenters also noted that they believe that extra-value RINs are more likely to serve as production incentives if obligated parties receive the full RIN value (standard plus extra-value).

API also commented that it believes that if extra-value RINs are allowed to be separated by any party, the complexity and administrative burden of the RFS program would be greatly increased. IFTOA further commented that it believes that requiring extra-value RINs to remain attached to the renewable fuel would make RINs available to a broader group of entities—creating greater liquidity and easier compliance.

Shell and Motiva also recommended that partial-value RINs and extra-value RINs be reflected in the RIN code. Neste Oil further commented that it believes that requiring extra-value RINs to remain attached to the renewable fuel would create maximum market efficiencies, as it would allow the extra-value digit to be used as a volume digit and could help allow obligated parties to more efficiently manage their RIN accounts.

However, some commenters stated that they agree with the proposed provision that extra-value RINs need not be assigned to a batch of renewable fuel or placed on PTDs. DuPont commented that it supports allowing extra-value RINs to remain with the renewable fuel producer. The commenter stated that it believes it is important to allow the market to most efficiently allocate appropriate incentives to both biofuels producers and consumers to facilitate expansion of the biofuels market. The commenter also stated that it believes that producers of high performance biofuels and market mechanisms could most effectively determine the economically efficient way of distributing the value of excess RINs to provide those incentives, as EPA proposed.

FutureFuel also commented that it agrees with the proposed provision. However, the commenter questioned why an excess RIN need not be attached to the batch to which the underlying RIN is attached (or at least be identified with the batch number). The commenter stated that it believes that an excess RIN should be assigned to the same batch as the underlying RIN.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185
BP Products North America OAR-2005-0161-0221, -0230
DuPont OAR-2005-0161-0168
ExxonMobil OAR-2005-0161-0197
Flint Hills Resources (FHR) OAR-2005-0161-0222
FutureFuel OAR-2005-0161-0198
Independent Fuel Terminal Operators Association (IFTOA) OAR-2005-0161-0213
Marathon Petroleum Company (MPC) OAR-2005-0161-0175
National Petrochemical and Refiners Association (NPRA) OAR-2005-0161-0170, -0232
Neste Oil OAR-2005-0161-0191
Shell Oil Company/Motiva Enterprises OAR-2005-0161-0215
Society of Independent Gasoline Marketers of America and National Association of Convenience Stores (SIGMA/NACS) OAR-2005-0161-0234

Our Response:

Our proposed approach to extra-value RINs was based primarily on our desire to ensure that every gallon of renewable fuel had one assigned gallon-RIN as that gallon moved through the distribution system. We were concerned that the assignment of extra-value RINs to volumes would mean that the number of gallon-RINs assigned to a batch could be greater than the number of gallons in that batch, and that this could complicate the distribution system. This was of particular concern for ethanol, since a tank could contain both corn-ethanol and cellulosic ethanol, making the reassignment of RINs to

batches withdrawn from the tank ambiguous. We also indicated our belief that producers and importers of renewable fuel could maximize the value of the extra-value RINs if they were given the flexibility to either assign them to batches or to trade them independently. The primary concern on the part of commenters was that some producers may not release extra-value RINs, if given the choice, in an effort to drive up demand for renewable fuel.

As described in Section III.E.1 of the preamble, we are modifying our program design in several ways to make RINs more fungible. In this context, we have determined that in most cases there is no need to treat extra-value RINs differently from standard-value RINs in terms of whether each should be assigned to batches of renewable fuel by the renewable fuel producer or importer when they transfer ownership of the batch. Therefore, for most renewable fuels we are finalizing a requirement that all RINs be assigned to batches of renewable fuel by the producer or importer. Since each renewable fuel with a different Equivalence Value is a distinct fuel (with the exception of cellulosic biomass ethanol as described below), producers and importers will still receive the added value of extra-value RINs that are assigned to volumes of renewable fuel if those volumes are priced appropriately in comparison to other renewable fuels with different Equivalence Values. Since extra-value RINs and standard-value RINs are treated identically under our final program, the distinction between the two is no longer necessary. The total number of gallon-RINs that can be generated for a given batch of renewable fuel will be determined directly by its Equivalence Value, and all such gallon-RINs will be summarized in a single batch-RIN assigned to a batch. In cases where the Equivalence Value is greater than 1.0, there will be more gallon-RINs assigned to a batch of renewable fuel than gallons in that batch. The only exception to this is cellulosic ethanol. Producers of cellulosic ethanol may have difficulty marketing their product at prices different than that for corn ethanol given the fungible distribution system for ethanol. Therefore, for the case of cellulosic ethanol we are maintaining the ability of the producer to retain the extra value and not assign these RINs to the renewable fuel that they represent. As a result, a producer of cellulosic ethanol can separate 1.5 gallon-RINs from every 2.5 gallon-RINs generated for a gallon of ethanol, and market that 1.5 gallon-RINs separately.

5.3.2 Use of Fractional RINs

What Commenters Said:

MPC commented that it believes that the proposal to have only a portion of a batch carry RINs when the renewable equivalence number is less than 1.0 is unworkable—the commenter believes that each gallon should carry a partial RIN. API also commented that it believes that this approach will cause accounting confusion. The commenter stated that for accuracy, understanding, and accountability, it believes that an appropriate fractional value should be assigned to every gallon of a renewable with an equivalence value less than 1.0.

Letters:

American Petroleum Institute (API) OAR-2005-0161-0185
Marathon Petroleum Company (MPC) OAR-2005-0161-0175

Our Response:

The use of fractional RINs as suggested by these commenters is meant to ensure that there is a one-to-one correspondence between gallon-RINs and gallons in every batch of renewable fuel, regardless of the Equivalence Value for that fuel. In the context of our proposed program, this suggestion may have helped to simplify the assignment of RINs to batches during batch splits and mergers. However, for the final rule we have modified our approach to the distribution of RINs assigned to volumes of renewable fuel to permit RINs to be more fungible. As a result, the batch-splitting and batch-merging protocols have become largely irrelevant, and thus the transfer of renewable fuels having an Equivalence Value less than 1.0 has become greatly simplified. We are therefore finalizing our proposed approach in which renewable fuels having an Equivalence Value less than 1.0 result in fewer assigned gallon-RINs than gallons in a batch. This approach ensures that every gallon-RIN represents one gallon of renewable fuel for purposes of a compliance demonstration irrespective of the Equivalence Value for the renewable fuel that lead to generation of the RIN.

5.3.3 Assigning RINs to Undenatured Ethanol

What Commenters Said:

Shell and Motiva commented that it is their understanding that EPA's intent was to require importers of renewable fuels, such as ethanol, to register with the Agency and to assign the RINs to the renewable fuels. The commenters asked that EPA clarify at what point the RIN is assigned. The commenters recommended that EPA clarify that importers of undenatured ethanol are required to assign RINs after a batch of ethanol is denatured, and that the volume of ethanol for purposes of the RIN is the volume of the ethanol and the denaturant combined. The commenters stated that they believe this approach is consistent with the approach that EPA has taken for domestic ethanol producers.

Letters:
Shell Oil Company/Motiva Enterprises OAR-2005-0161-0215

Our Response:

In response to this comment, we note that a RIN is assigned to a volume of renewable fuel when ownership of the RIN is transferred along with the transfer of ownership of the volume of renewable fuel, pursuant to §80.1128(a). Our final program requires that ethanol must be denatured before it is assigned a RIN, and that all denatured ethanol must be assigned a RIN (with an exception for small volume producers). The number of gallon-RINs assigned to a batch of denatured ethanol is based on its Equivalence Value and the volume of the ethanol including the denaturant.

5.3.4 Assignment of RINs by Importers

What Commenters Said:

IFTOA commented that it believes that EPA should require an obligated party/purchaser of imported gasoline, which subsequently acquires renewable fuels and blends those fuels into an equivalent volume of gasoline, to transfer the associated RINs to its supplier/importer of record. The commenter noted that this requirement would only apply if the importer of record has a long-term contractual agreement to import gasoline for that obligated party/purchaser. The commenter stated that it believes that this would provide a more equitable allocation of RINs, would be readily verifiable by EPA, and would be consistent with the objective of preserving existing business practices for the production and distribution of conventional and renewable fuels.

Letters:
Independent Fuel Terminal Operators Association (IFTOA) OAR-2005-0161-0213

Our Response:

The RFS program places the renewable volume obligation on parties based on ownership of the gasoline at the refiner or importer level. The commenter identifies the "obligated party/purchaser" of the imported gasoline as the obligated party. However, the purchaser of the gasoline is not the obligated party. Rather, the importer of the gasoline (the owner of the gasoline at the time of importation) is the obligated party. We believe this approach is the most effective way to implement and enforce the renewable fuels requirement, and is consistent with our other fuels programs as far as placing the obligation on the importer of the fuel. We also believe it is appropriate to allow parties who add the renewable fuel to gasoline, including blenders (in this case, the "obligated party/purchaser" referred to by the commenter) to separate RINs from the renewable fuel volume and to have the right to sell those RINs to any party. Individual parties may agree that, in certain situations, it would be appropriate for the RINs to be transferred from the renewable fuels blender to the importer of the gasoline. In such cases, the parties may make contractual arrangements for the transfers. We do not believe it would be appropriate or workable for EPA to require such transfers.

5.4 RIN Distribution and Trading

5.4.1 Transfers of Volumes of Renewable Fuel

5.4.1.1 Custody Transfers

What Commenters Said:

Some commenters expressed confusion over the distinction between custody and ownership in the context of the requirement to transfer RINs with volumes of renewable fuels. FutureFuel commented that it interpreted the proposed regulations to mean that RINs are not transferred to a bulk storage operator who merely stores or throughputs renewable fuels through its facility and does not take ownership of the product. The commenter stated that if that is the case, it agrees with that approach, but requested that this be explicitly stated in the final rule, to avoid any confusion on the part of the terminal operator.

Similarly, Ethanol Products commented that it believes the mechanics of the proposed rule posed some unintended complications for entities such as theirs, which take ownership of renewable fuel between the producer and the blender, especially in scenarios where the renewable fuel is passing through a bulk storage location.

Letters:
Ethanol Products OAR-2005-0161
FutureFuel OAR-2005-0161-0198

Our Response:

Our final program is based on the ownership of renewable fuels, not custody. The transfer of custody of a volume of renewable fuel has no implications in terms of compliance, recordkeeping, or reporting for RINs. In Section III.E.1.b of the preamble to the final rule we clarify that parties taking custody of a volume of renewable fuel but not ownership of that volume would have no responsibilities with regard to the transfer of RINs. Likewise the regulations specify that the requirements for transfers of assigned RINs are tied to transfers of ownership of volumes of renewable fuel. See 40 CFR 80.1128.

We are also finalizing some additional flexibilities in the final rule that should simplify the transfer of ownership of volumes of renewable fuel. For instance, the product transfer document (PTD) which is used to transfer ownership of assigned RINs can be separate from the PTD used to transfer ownership of the volume. We are also finalizing a modified approach to RIN transfers ensuring that RINs are fungible, interchangeable, and can be transferred with renewable fuel in ratios of up to 2.5 gallon-RINs per gallon.

5.4.1.2 Transfer of Renewable Fuel Without RINs

What Commenters Said:

Ethanol Products commented that it wants to ensure that there are no penalties for transferring gallons without RINs attached to them, in the case of inventory gains or the program startup period.

Letters:
Ethanol Products OAR-2005-0161

Our Response:

There are a variety of legitimate reasons that a party may acquire or own more gallons of renewable fuel than gallon-RINs acquired or owned. See our response to comments under Section 5.2.2 above. Our final program provides the flexibility for any party to transfer gallons without RINs so long as the number of gallon-RINs owned at the end of a quarter does not exceed the number of gallons owned at the end of that quarter (adjusted for the Equivalence Value).

5.4.2 Batch Splits and Batch Mergers

What Commenters Said:

FutureFuel commented that, in the case of batch mergers, it supports a first in/first out (FIFO) approach and, given the two-year life of RINs, believe that this should be mandatory so as not to lose RINs in the market place.

CHS commented that it believes that there are issues about tracking RINs after ethanol storage if different batches were placed in a holding tank, as the RINs may have different EVs going in but might be mixed coming out. The commenter urged EPA not to require segregating ethanol by EVs.

API commented that in proposed §80.1128(b)(4) it does not believe that there is a clear rationale for limiting the splitting of renewable batches into only two pieces; the commenter noted that §80.1128(a)(3) implies a batch can be split into more than two pieces. The commenter suggested that "two" be replaced with "any number of" in §80.1128(b)(4).

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185
CHS Inc. OAR-2005-0161-0203
FutureFuel OAR-2005-0161-0198

Our Response:

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

Under our final regulations, parties taking ownership of volumes of renewable fuel with assigned RINs will simply retain an inventory of all assigned RINs owned. As volumes of renewable fuel are then transferred to other parties, an appropriate number of assigned gallon-RINs are generally withdrawn from the party's inventory and transferred along with the renewable fuel. Assigned RINs cannot be transferred without also transferring renewable fuel, and at the end of a quarter a party has to show that the number of assigned gallon-RINs owned does not exceed the number of gallons owned (adjusted for the Equivalence Value) at the end of that quarter. There is no need for the party to determine which RINs were originally assigned to the volume being transferred. For parties handling both ethanol and biodiesel, it would be reasonable to transfer RINs with volumes in a manner consistent with the Equivalence Value of the renewable fuel, but this would not be required for parties downstream of producers and importers of renewable fuel.

The referenced provision in §80.1128 governing the splitting of unassigned batch-RINs has been modified to permit a single parent batch-RIN to be split into any number of daughter batch-RINs. This provision is specific to RINs not assigned to renewable fuel.

5.4.3 Market for Separated RINs

5.4.3.1 Restrictions on Owning and Trading RINs

What Commenters Said:

Support for Open Trading

IFTOA, Magellan, FutureFuel, and Sutherland Asbill Brennan all commented that they support the provision to allow for an open trading system that would not limit either the number of trades or restrict trades between certain parties. The commenters stated that they believe that an open trading system would increase liquidity and allow for greater market flexibility. Sutherland Asbill Brennan also pointed to the sulfur credit trading programs as examples of flexible and successful programs that EPA should look to in designing the final RFS trading program.

Shell and Motiva also commented that they support the proposal to allow any party that registers with the Agency to participate in the RIN trading market. The commenters stated that they believe that increasing the number of participants in the RIN market will likely increase transparency and liquidity in the RIN market.

NPRA also commented that it agrees that there should not be a limit on the number of times that a RIN could be traded.

Opposes Open Trading

NACS and SIGMA commented that they do not support EPA's proposal to permit any party to trade RINs. The commenters requested that RIN trading be restricted to obligated parties and parties that gain ownership of RINs through blending physical gallons of renewable fuels into gasoline and diesel fuel. The commenters stated that they believe that renewable fuel producers should be restricted from owning RINs because they have an economic interest in increasing demand for their products and could withhold RINs from the market. The commenters further stated that they believe that permitting any party to trade RINs will lead undoubtedly to speculation in RINs by parties outside of the motor fuel production and distribution system, potentially increasing RIN costs and, as a result, motor fuel costs to consumers. The commenters also expressed concern that the proposal would not protect consumers and the marketplace in a future scenario in which demand for RINs exceeded supply.

ExxonMobil, FHR, NPRA, and Valero commented that, to avoid the potential for distortion of the RIN market by speculators, only obligated parties and oxygenate blenders should be allowed to hold RINs, and that all trading of RINs should be with obligated parties only. FHR and NPRA added their concern that allowing non-obligated parties to transact RINs would create a new industry of buyers and re-sellers that are not needed to maintain efficient distribution of RINs in the marketplace. Some of these commenters also stated that they believe brokers should be allowed to set up sales on a negotiated fee basis (serving as an arbitrator), but should not be allowed to be a RIN owner. According to Valero, allowing outside parties or speculators to purchase fuel credits is not necessary and could lead to price volatility and potentially higher prices as speculators have an unfair advantage over regulated parties that must purchase credits in order to demonstrate compliance.

Letters:
ExxonMobil OAR-2005-0161-0197
Flint Hills Resources (FHR) OAR-2005-0161-0222
FutureFuel OAR-2005-0161-0198
Independent Fuel Terminal Operators Association (IFTOA) OAR-2005-0161-0213
Magellan Midstream Partners OAR-2005-0161-0208
National Petrochemical and Refiners Association (NPRA) OAR-2005-0161-0170, -0232
Shell Oil Company/Motiva Enterprises OAR-2005-0161-0215
Society of Independent Gasoline Marketers of America and National Association of Convenience Stores (SIGMA/NACS) OAR-2005-0161-0234
Sutherland Asbill Brennan OAR-2005-0161-0210
Valero Energy Corporation OAR-2005-0161-0167

Our Response:

We continue to believe that there is a need to provide for more open trading in the RFS program, including an allowance for non-obligated parties to own separated RINs. Unlike other programs where credits are generally supplemental to the means of compliance, under the RFS program RINs are the fundamental unit for compliance. As a result, the trading structure must maximize the fluidity of those RINs. A wider RIN

market will make it easier for obligated parties to get access to RINs, and thus a unique approach to the RIN market is warranted for this rule.

Additionally, obligated parties are typically not the ones producing the renewable fuels and generating the RINs, nor blending the renewable fuels into gasoline, so there is a need for trades to occur between obligated parties and non-obligated parties. If we prohibited anyone except obligated parties from holding RINs after they have been separated from a batch, non-obligated parties seeking avenues for releasing their RINs would have fewer opportunities to do so. For instance, a potentially large number of oxygenate blenders, many of which will be small businesses, will be looking for ways to market their RINs. Instead of participating in the RIN market with the attendant recordkeeping requirements, these oxygenate blenders might opt not to transfer their RINs at all. Allowing other non-obligated parties such as brokers to own and transfer RINs may create a more fluid and free market that would increase the venues for RINs to be acquired by the obligated parties that need them. In contrast, limiting RIN trading to and among obligated parties could make it more difficult for RINs to eventually be transferred to the obligated parties that need them.

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

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

5.4.3.2 Promoting Wider Geographic Distribution of Ethanol

What Commenters Said:

Two commenters suggested ways that the RFS program could be modified to promote the movement of renewable fuels into geographic locations where they are currently not used, to produce a more even distribution of renewable fuels around the U.S. CHS suggested that RINs be tradable only within defined geographic areas—for

example by PADD. The commenter stated that it believes that this would result in more actual renewable fuel being shipped to the coastal states, thus relieving the severity of any glut. The commenter added that while it believes potential market forces can become the conduit to help move renewable fuel products out of the Mid-continent, those forces would be energized if EPA established restrictions on where RINs could be traded.

Similarly, Gary Williams Energy Corporation (GWEC) commented that, to encourage more even distribution and use of ethanol across the country, it believes that EPA should establish ethanol use volume percentages on a refinery basis, rather than the company-wide basis that was proposed; and this approach should be reflected in the RIN program.

Letters:
CHS Inc. OAR-2005-0161-0203
Gary-Williams Energy Corporation (GWEC) OAR-2005-0161-0207

Our Response:

Section 211(o) of the Clean Air Act specifically prohibits us from restricting the geographic areas in which renewable fuel may be used, and the required credit trading program is specifically designed to ensure that obligated parties who do not have access to renewable fuels can still comply. As a result we do not believe that the RFS program should have any geographic components other than the requirement that the required volumes be consumed within the continental 48 states, or Alaska, Hawaii, or a U.S. territory that opts in. The sulfur credit program, in contrast, was founded on the requirement that vehicles in every area of the country need access to ultra low sulfur fuel. This is not the case for renewable fuels, thus we do not believe it would be appropriate to limit trading of RINs within PADDs to compel a minimum amount of renewable fuel to be used in each PADD.

One of our guiding principles in designing the RFS program was to preserve the market mechanisms that keep renewable fuel costs to a minimum. Mandating geographic usage of renewable fuels would interfere with this goal, forcing renewable fuels to be distributed to locations where they would not otherwise go. We do not believe that the "glut" of renewable fuels will occur, since an excess of renewable fuel in one area will simply result in the movement of the excess to other areas.

Regarding the suggestion that the application of the standard to individual refineries instead of refiners would encourage more even distribution and use of ethanol across the country, we do not believe that this would be the case. Since compliance under the RFS program is based on RINs which are freely transferable between refineries and refiners, a given refiner need not acquire and blend physical gallons of renewable fuel. As described in Section III.D of the preamble, the acquisition of RINs is deemed to be evidence that the renewable fuel represented by those RINs was indeed used as motor vehicle fuel somewhere, but that use need not be ion the same region as the refiner who acquires the RIN.

5.5 Separation of RINs from Batches

Note: Comments related to extra-value RINs are addressed in Section 5.3.1

5.5.1 Parties Who Separate RINs from Batches

What Commenters Said:

A number of commenters stated that they support the proposed provision that RINs must accompany the renewable fuel and may only be separated by a blender or obligated party. Additionally, ExxonMobil suggested that distributors of neat renewable fuels for use as motor vehicle fuel be treated in a manner similar to oxygenate blenders.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185
BP Products North America OAR-2005-0161-0221, -0230
ExxonMobil Refining & Supply Co. OAR-2005-0161-0197
Flint Hills Resources (FHR) OAR-2005-0161-0222
National Petrochemical and Refiners Association (NPRA) OAR-2005-0161-0170, -0232
Shell Oil Company/Motiva Enterprises OAR-2005-0161-0215

Our Response:

These comments are generally supportive of our proposed approach of allowing only obligated parties and parties that blend renewable fuel into gasoline or diesel to separate RINs from volumes of renewable fuel. We took this approach to facilitate compliance by obligated parties with their renewable fuel obligation, with the intention of giving obligated parties the power to market the renewable fuel separately from the RIN originally assigned to it. We are finalizing this approach, along with the special treatment of renewable fuels used in their neat form and biodiesel as described in Sections 5.5.4 and 5.5.5 below.

5.5.2 Alternative Blender-Based Approach

What Commenters Said:

Some commenters stated that they had concerns with the proposed provision to allow refiners and importers to separate RINs from batches as soon as they take ownership of the batch (i.e., prior to the blending of the renewable fuel into gasoline or diesel fuel). The commenters expressed concern that this could give rise to RIN hoarding, fraud, and confusion as renewable fuels with and without RINs circulate through the motor fuel distribution system. The commenters suggested that RINs only be separable from batches when the renewable fuel is actually blended into gasoline or

diesel. They also suggested that EPA look to the RFG program as the best example of how refiners could handle this requirement.

RFA went further, stating its belief that under the proposed approach, an obligated party may separate RINs upon purchase of renewable fuel with no assurances that such fuel is actually blended for consumer use. There is nothing under the proposed approach that would require actual blending by an obligated party, leaving the system open to manipulation by any one refiner. The commenter also stated that it believes that RINs should only be removed by blenders of the finished consumer fuel, not, for example, parties that only add ethanol to gasoline or biodiesel to diesel fuel in small quantities.

Letters:
ExxonMobil Refining & Supply Co. OAR-2005-0161-0197
Renewable Fuels Association (RFA) OAR-2005-0161-0192, -0228 (hearing)
Society of Independent Gasoline Marketers of America and National Association of Convenience Stores (SIGMA/NACS) OAR-2005-0161-0234

Our Response:

Our final program design is based on the expectation that essentially all renewable fuels will eventually be consumed as fuel, primarily through blending with gasoline or diesel. As described in Section III.D of the preamble, we do not believe that a compliance system requiring verification of blending is necessary, given that, with the exception of exports, virtually every gallon of renewable fuel produced in or imported into the U.S. is used as fuel in the U.S. This is a foundational principle of the use of a RIN-based program design that enjoyed widespread support among stakeholders and widespread recognition that it accurately describes real world practices. Commenters appear to either agree with this factual predicate, or object but do not provide information that would undercut the validity of this assumption. Their main concern seems to be a lack of an enforceable mechanism to ensure the ultimate blending. However such an enforceable mechanism is not needed given the very high likelihood that the blending will occur without such a mechanism, and the very large increase in burden on various parties that would be occur by requiring an enforceable demonstration of such blending. As a result, we do not believe that it is necessary to verify that blending has actually occurred in order to provide a program that adequately ensures it occurs.

There are many reasons that renewable fuels with and without RINs will circulate through the motor fuel distribution system. For instance, at the start of the program, not all the renewable fuel in inventory will have RINs assigned. In addition, we are exempting small volume producers from generating RINs, renewable fuels with equivalence values less than 1.0 may have fewer RINs than gallons, and volume swell and metering discrepancies can all contribute to situations in which batches legitimately do not have assigned RINs. As described in Section III.E of the preamble, we have modified our compliance program to more flexibly account for such circumstances. The fact that obligated parties can separate a RIN from a batch prior to blending therefore introduces no additional complications to the distribution system.

We do not believe that market power could be exercised by any one refiner who separates RINs from batches of renewable fuel prior to blending, given that RINs can be transferred freely between any parties any number of times, and access to those RINs is not limited geographically in any way. There are about 140 gasoline-producing refineries in the U.S., and the largest refinery accounts for only a few percent of nationwide gasoline production. In addition, RINs that have been separated from their assigned batches by oxygenate blenders represent an additional safety valve in the RIN market, providing additional assurances that no one refiner could exercise market power in the RIN market.

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

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

5.5.3 Ownership of RINs Separated Upon Blending

What Commenters Said:

MDNR commented that independent or unbranded wholesalers and resellers often purchase gasoline on the spot market and do not accept ownership of such product until it is blended at the bulk terminal rack. The commenter stated that, under the proposal, it is unclear as to how obligated parties (particularly branded refineries or refiners) are credited for the distribution of RIN-assigned renewables if such product is acquired by an independent party at or below the blending rack.

CHS commented that it believes that various reasons have contributed to the phenomenon of renewable fuel producers selling directly to retail motor fuel outlets/retail stations (71 FR 55590). The commenter stated that it believes that it is important for EPA to appreciate the consequences of such actions on its RFS program and to introduce procedures to reduce them. The commenter stated that it appears that a situation could result where RINs are not available to obligated parties because renewable fuel producers are selling directly to retail outlets, and RINs could be hoarded. The commenter noted that it believes that if renewable fuel producers sell renewable fuel directly to retail outlets, those outlets should be required to register, record PTDs, and report to EPA as

would an obligated party; otherwise, the commenter believes that EPA will not be able to validate any blending by them.

Letters:
CHS Inc. OAR-2005-0161-0203
Missouri Department of Natural Resources (MDNR) OAR-2005-0161-0217

Our Response:

The final rule allows the RIN to be separated from a volume of renewable fuel when that volume is blended into gasoline or diesel, but the RIN can only be separated by the party that owns that volume of renewable fuel at the time of blending. There may be occasions in which a downstream customer is the owner of the volume of renewable fuel when it is blended into gasoline or diesel, and thus he will own the separated RINs and be subject to all the registration, recordkeeping, and reporting requirements. In the case of a blender and a downstream customer who might both lay claim to the right to separate any assigned RINs (for instance, if transfer of ownership occurred simultaneous with blending), these two parties would need to come to agreement between themselves regarding which party will own the separated RINs.

Our final program also allows a producer to separate the RIN from a volume of renewable fuel if the producer designates it for use only as a motor vehicle fuel in its neat form and it is in fact only used as such. This approach would recognize that the neat form of the renewable fuel is valid for compliance purposes under the RFS program, as described in Section III.B of the preamble. In effect, it places neat fuel producers in the same category as blenders, in that they are producing motor vehicle fuel.

5.5.4 Neat Renewable Fuels

What Commenters Said:

In its comments, API suggested that distributors of neat renewable fuels for use as motor vehicle fuel be treated in a manner similar to oxygenate blenders.

IRI commented that it agrees with the proposal of allowing producers of non-ester renewable diesel, methanol for use in a dedicated methanol vehicle, and biogas for use in a CNG vehicle to separate the standard-value RIN when the fuel is sold in neat form. The commenter stated that it believes that such sales directly promote the use of renewable fuels even though those fuels will probably never be sold to an obligated party. The commenter further stated that providing producers of such fuels with the opportunity to sell the standard-value RINs encourages the production of these fuels and can lower the cost of use to end-users.

The West Park Associates commented that it supports the proposal allowing any party to separate a RIN from a batch if that party designates it for use only as a motor

vehicle fuel in its neat form and it is only used as such (71 FR 55590). The commenter stated that it believes that this would result in an expansion of possible outlets for sale of a neat (100%) non-ester renewable diesel to be used as a neat motor vehicle fuel (e.g., dedicated sale of non-ester renewable diesel at a dedicated pump/tank at truck stops). The commenter requested that EPA explicitly designate the non-ester renewable diesel producer as one of the parties that could separate the RINs from a batch of non-ester renewable diesel.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185
Imperium Renewables, Inc. (IRI) OAR-2005-0161-0178
West Park Associates OAR-2005-0161-0202

Our Response:

These comments are supportive of our proposed approach to permitting a producer to separate the RIN from a volume of renewable fuel if the producer designates it for use only as a motor vehicle fuel in its neat form and it is in fact only used as such. Our proposed approach was designed to recognize that the neat form of the renewable fuel is valid for compliance purposes under the RFS program, as described in Section III.B of the preamble. Our approach reduces the possibility that the assigned RIN would never become available to an obligated party for RFS compliance purposes. In effect, it would place neat fuel producers in the same category as blenders, in that they are producing motor vehicle fuel. We are therefore finalizing this provision as proposed.

5.5.5 Biodiesel

What Commenters Said:

With regard to biodiesel, we received comments which expressed concerns with the proposed provision that only blends of 80 percent biodiesel (B80) and below could be considered biodiesel blends under the RFS program. Several commenters stated that they believe that blends above 80%, like B99 or biodiesel in its "neat" form should be allowed as well. Some commenters stated that they believe that if biodiesel is being used in quantities greater than B80 (including in its neat form), then it is satisfying the purpose of the statute and the RIN should therefore be separated when the blending occurs or when the neat form is used as motor fuel. Other commenters stated that they believe that the biodiesel producer should be allowed to separate RINs, as this is allowed for producers of other renewable fuels.

Some commenters described the circumstances under which high percentage biodiesel blends are produced. For instance, FutureFuel noted that it sells B99 because some of its customers do not want to file the paperwork to collect the $1 tax credit and/or wait on their money. IRI indicated that approximately 20% of its biodiesel is used in

concentrations of 80 volume percent biodiesel or more, with the potential for this number to increase.

IRI further commented that it believes that EPA's treatment of blends of biodiesel B80 and above will result in the inability to use associated RINs for compliance purposes when a producer sells the biodiesel to anyone but an obligated party. The commenter indicated that providing producers of neat fuels with the opportunity to sell the standard-value RINs encourages the production of these fuels and can lower the cost of use to end-users. The commenter further stated that it believes that EPA's justification for the treatment of biodiesel is incorrect and not consistent with the Congressional purpose; and that, even if the amount of its biodiesel used in its blends above B80 were atypical, it believes that does not justify making a distinction that is unsupported by the Energy Policy Act. The commenter stated that it believes that the Act clearly includes biodiesel as a renewable fuel without any qualifications as to concentration.

Sutherland Asbill Brennan also commented that it believes EPA inexplicably excluded B100 producers—if future market conditions change and B100 becomes economically preferable, a significant source of RINs would be lost. The commenter also suggested that if EPA elects to retain the 80% blend requirement for biodiesel, the application should be clarified. The commenter noted that currently, only parties authorized to separate RINs under the proposed regulations are specifically subject to the 80% blend requirement in §80.1129(a)(2)(v).

API further commented that it believes that the proposed regulatory provisions, which would require tracking of RINs all the way to fuel blending, should make the same valid assumption for biodiesel as for ethanol (i.e., that once produced, biodiesel will be used for motor fuel).

MPC also commented that it believes that RIN removal by the owner should be allowed.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185
FutureFuel OAR-2005-0161-0198
Imperium Renewables, Inc. (IRI) OAR-2005-0161-0178
Marathon Petroleum Company (MPC) OAR-2005-0161-0175
National Biodiesel Board (NBB) OAR-2005-0161-0212
Sutherland Asbill Brennan OAR-2005-0161-0210

Our Response:

We believe that biodiesel blended with diesel fuel at any concentration, including biodiesel in its neat form, should be available for compliance purposes under the RFS program. However, the design of the RFS program must be focused on facilitating compliance for obligated parties. To avoid claims by non-obligated parties that very high concentrations of biodiesel count as a blended product, and that therefore any party could

separate RINs from volumes of renewable fuel, we proposed that biodiesel must be blended into conventional diesel at a concentration of 80 volume percent or less before the RIN can be separated from the volume.

In the nonroad diesel final rulemaking (71 FR 25709, May 1, 2006), we specified that diesel fuel composed of at least 80 percent non-petroleum diesel such as biodiesel can be designated as non-petroleum diesel. This provision allowed us to accommodate high concentration biodiesel blends that do not satisfy the specifications for #1D or #2D diesel fuel in the context of that rule. Consistent with the nonroad rule, we have determined that the 80 volume percent limit remains a valid means for ensuring that the separation of RINs from biodiesel is consistent with its common use at low blend levels, and that RINs are generally separated at the point in time when the biodiesel can be deemed to be motor vehicle fuel. This treats biodiesel in a consistent manner with ethanol. However, based on comments received, we also believe that the treatment of biodiesel should be changed for the final rule in two ways.

First, obligated parties should have the right to separate RINs from volumes of biodiesel at the point when they gain ownership of the biodiesel, not when they blend biodiesel with conventional diesel fuel. This approach is more consistent with our treatment of the RIN separation rights for obligated parties for other renewable fuels. Any non-obligated parties that blend biodiesel into conventional diesel fuel at a concentration of 80 volume percent or less would continue to have the right to separate the RIN from the biodiesel, as proposed.

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

5.5.6 Other RIN Separation Issues

5.5.6.1 Market Share by Obligated Parties

What Commenters Said:

Ethanol Feed and Fuel commented that it believes that, as defined, the RIN process will put a few obligated parties in control of a significant portion of the RINs produced. The commenter stated that, with the proposal allowing compliance to be met through the mechanism of acquiring RINs, it believes that the producer of the RINs should be allowed to reap the economic benefit. The commenter stated that it believes that forcing RINs to follow through part of the distribution network, but not all of the network, pushes the economical value to network locations that do not produce that

value, resulting in an artificial influence on the entire industry. The commenter believes that this indicates a bias of the proposed regulation in favor of existing technologies, large scale production facilities and obligated parties. The commenter stated that it believes that further advancements should be expected, but the regulation should not dampen small business initiatives by favoring the larger entrenched operations (producers or obligated parties).

Letters:
Ethanol Feed and Fuel OAR-2005-0161-0180

Our Response:

We continue to believe that the RFS program should be focused primarily on facilitating compliance for obligated parties. As a result, the RIN assignment and distribution provisions are designed to ensure that obligated parties have control over a significant number of the RINs produced. Nevertheless, we also believe that producers and importers will receive the added value of RINs assigned to batches of renewable fuel if those volumes are priced appropriately. Furthermore, we believe that the large number of renewable producers, obligated parties, and oxygenate blenders will ensure a competitive market for RINs. The commenter provided no information to indicate that the design of the RFS program would create an economic bias against small producers of renewable fuel.

5.5.6.2 Fuels Intended for Use in Boilers and Heaters

What Commenters Said:

IRI commented that it believes that the statement, "A fuel produced by a renewable fuel producer *that is used* in boilers or heaters is not a motor vehicle fuel, and therefore, is not a renewable fuel," appears to create an after-the-fact standard of actual use, rather than potential use. The commenter stated that it believes that such a standard is unworkable and would be onerous and expensive for any producer or obligated party. The commenter noted that extra-value RINs are generated at a time when the fuel qualifies as "renewable fuel," and often these extra-value RINs may be sold even before the biodiesel was transferred from the producer's facility. The commenter stated that these extra-value RINs, under a possible interpretation of this rule, could disappear if the fuel from which they derived is ultimately burned for heat instead of transportation, even though the buyer of such RINs might have no means of knowing that this has occurred. The commenter stated that it believes that purchasers of extra-value RINs should be able to rely on them for compliance purposes without concern that they may be rendered invalid by the ultimate use of the fuel.

ExxonMobil requested that EPA clarify that any RINs attached to, or associated with, renewable fuel blending into distillate fuel intended for use in space heaters or as furnace fuel must also be retired.

Letters:
ExxonMobil Refining & Supply Co. OAR-2005-0161-0197
Imperium Renewables, Inc. (IRI) OAR-2005-0161-0178

Our Response:

As described above in Section 5.3, for most renewable fuels we are finalizing a requirement that all RINs be assigned to batches of renewable fuel by the producer or importer. The producer or importer will no longer be able to retain any extra-value RINs generated. The only exception to this is cellulosic ethanol due to the difficulty that marketers might have in pricing cellulosic ethanol differently than corn ethanol for otherwise identical product.

The fact that all RINs are required to be transferred along with volumes of biodiesel until acquired by an obligated party or blended into diesel fuel[2] means it is unlikely that a volume of biodiesel will be used as heating oil while the RINs generated for that volume are used for compliance purposes by an obligated party. In the event that it does occur - for instance, if an obligated party re-enters a volume of biodiesel into the distribution system after separating the RINs from it - the RINs themselves would still be valid for compliance purposes. We believe it would be overly burdensome to require the tracking of renewable fuels after RINs have been separated, and thus there are no regulatory mechanisms to determine if a volume of renewable fuel is used for purposes other than motor vehicle fuel after RINs have been separated. However, we believe that such cases will be extremely rare and thus will not interfere with the program's ability to meet the statutorily required annual volumes.

5.5.6.3 Separation of RINs by Obligated Parties that Import or Produce Renewable Fuels

What Commenters Said:

Sutherland Asbill Brennan commented that it supports the proposed provision to allow obligated parties to separate RINs from batches they own. However, the commenter stated that there appears to be a disconnect between the rights of an obligated party and renewable fuel importers' duty to assign RINs to a batch. The commenter noted that under proposed §80.1126(d), a renewable fuel importer would assign RINs when placed on a PTD (when the importer transfer ownership of the batch to another party), but the commenter believes that the language in §80.1126(d)(3) seems to conflict with an obligated party's ability to use RINs generated from its importation of renewable fuels. The commenter stated that it believes that if an obligated party chooses to import renewable fuels, EPA should allow the entity to benefit from that importation and detach

[2] As described in the response to comments at Section 5.5.5, a biodiesel producer is also given the right to separate a RIN from a volume of biodiesel that it produces if it designates the volume of biodiesel specifically for use as motor vehicle fuel, and the biodiesel is in fact used as motor vehicle fuel.

RINs from renewable fuel batches they import. They also requested that EPA clarify the process for obligated parties to assign and subsequently detach RINs from imported renewable fuel batches.

Letters:
Sutherland Asbill Brennan OAR-2005-0161-0210

Our Response:

The proposed regulatory language at §80.1126(d) was not clear in regards to obligated parties who are also importers or producers of renewable fuel. We have modified the language for the final rule to explicitly permit an obligated party who is also a producer or importer of renewable fuels to separate RINs generated for renewable fuel that it produces or imports.

5.5.6.4 Inventory Losses

What Commenters Said:

Ethanol Products commented that it would like to ensure there are no repercussions from trading RINs that have been separated from the renewable fuel by an owner, but not a blender, in the case of experiencing inventory losses where the gallons are not available to sell any longer, but the RINs appropriately exist.

ADM asked for clarification on the process for retiring RINs in the case of accidents during fuel distribution, and the implications for EPA's efforts to enforce the program. The commenter also asked for clarification of the appropriate steps to take in the inevitable cases where volumes of renewable change by small amounts in the distribution system.

Letters:
Archer Daniels Midland Company (ADM) OAR-2005-0161-0227
Ethanol Products OAR-2005-0161

Our Response:

For cases in which a spill, leak, or other accident occurs in which a significant volume of renewable fuel is lost, we have created a provision for a party to retire the RINs associated with the lost volume. EPA can then ensure that these retired RINs are not used by any obligated party for compliance purposes. Any gaps in sequential RINs generated due to the retiring of RINs due to accidents will not affect EPA enforcement efforts.

For other circumstances where volume is lost (e.g. evaporation, minor spills, volume metering imprecision), the RINs associated with the lost volume will continue to

be treated as valid for RFS compliance purposes. Since our final rule allows parties to transfer up to 2.5 gallon-RINs with every gallon of renewable fuel, these small volume losses can, if desired, be accommodated by simply transferring more gallon-RINs with a given volume of renewable fuel.

5.5.6.5 Volume Threshold for Qualification as an Obligated Party

What Commenters Said:

Sutherland Asbill Brennan commented that the proposed rule did not specify a de minimis amount of gasoline production (or importation) that is needed to qualify an entity as an obligated party. The commenter stated that this is a concern because it creates the opportunity for a dominant renewable fuels producer to qualify to separate RINs with little effort and to then amass a large inventory of RINs to manipulate the credit market. The commenter asked that the right to separate RINs be qualified.

Letters:
Sutherland Asbill Brennan OAR-2005-0161-0210

Our Response:

This is a valid concern that was not addressed in the NPRM. We have added a provision to §80.1129 in our final rule that limits the number of gallon-RINs that an obligated party can separate to account for cases in which a renewable fuel producer produces or imports a small amount of gasoline. Specifically, for RINs that an obligated party generates, the obligated party can only separate such RINs from volumes of renewable fuel if the number of gallon-RINs separated is less than or equal to its annual RVO. Obligated parties can continue to separate as many RINs from volumes of renewable fuel as they wish if they did not generate those RINs.

5.6 RIN Valid Life

5.6.1 Two-Year Limit on RIN Life

What Commenters Said:

API, ExxonMobil, Shell/Motiva, FutureFuel, NPRA, and MPC commented that they support the definition of RIN life to include the current year and the year following.

ACE commented that it believes that EPA has loosely interpreted the Act's credit life language and developed a complex RIN-based system that stretches the life of a credit well beyond the 12 months envisioned by Congress. ACE commented that it is concerned that allowing paper credits to be stockpiled for use in this fashion will result in less renewable fuel used than what is required by the statute; which could place farmer and ethanol producer investments at serious risk. ACE commented that it does not

believe that the proposed rollover cap is an adequate remedy. ACE recommended that EPA adopt a "retrospective" approach to credits to avoid the need for a rollover cap. The commenter stated that it prefers this approach to the approach proposed by EPA, as it believes that EPA's approach will lead to an unduly long credit lifespan and development of a complex RIN-based system. ACE urged EPA to comply with what it believes is the Act's clear language calling for a 12-month credit lifespan by applying a retrospective system to ensure that minimum volumes of renewable fuel are used on an annual basis.

In contrast, BIO IES commented that it believes that unused credits should be valid for 36 months to allow for greater flexibility in the market place.

IFTOA commented that it believes that EPA should include in the final rule the proposed limited life (12 months) for RINs to obligated parties, so that the maximum volume of RINs is readily available, throughout the life of the program.

Letters:
American Coalition for Ethanol (ACE) OAR-2005-0161-0218
American Petroleum Institute (API) OAR-2005-0161-0185
Biotechnology Industry Organization Industrial and Environmental Section (BIO IES) OAR-2005-0161-0199
ExxonMobil Refining & Supply Co. OAR-2005-0161-0197
FutureFuel OAR-2005-0161-0198
Independent Fuel Terminal Operators Association (IFTOA) OAR-2005-0161-0213
Marathon Petroleum Company (MPC) OAR-2005-0161-0175
National Petrochemical and Refiners Association (NPRA) OAR-2005-0161-0170, -0232
Shell Oil Company/Motiva Enterprises OAR-2005-0161-0215

Our Response:

We continue to believe that Section 211(o) of the Clean Air Act is ambiguous on this point and should be interpreted to allow RINs to be valid for compliances purposes for the year generated or the following year. According to the Act, credits represent renewable fuel volumes in excess of what an obligated party needs to meet their annual compliance obligation. Thus credits would come into existence after a party demonstrates compliance for a given compliance year, and they must be valid for compliance purposes for the year after the year in which the renewable fuel that they represent was produced. In the context of the RFS program, RINs not used in the year generated become excess RINs, equivalent to credits as defined in Section 211(o). Thus excess RINs must be available for compliance purposes in the year following the year in which they came into existence. This approach to the valid life of RINs is thus consistent with the letter and intent of the Act, and commenters provided no compelling evidence to the contrary.

Commenters who supported the retrospective approach to the Act's 12-month credit life provision argued that Section 211(o) could have been written to explicitly allow a valid life of multiple years if that had been Congress' intent. However, the Act explicitly indicates that obligated parties may either use the credits they have generated or transfer them. For a

party to be able to use credits generated, such credit use must necessarily occur in a compliance year other than the one in which the credit was generated. Thus we do not believe that a retrospective approach to the Act's 12-month credit life provision is consistent with the explicit credit provisions of the Act. In addition, we believe that an interpretation leading to a valid life of one year after the year in which the RIN was generated is most consistent with the program as a whole. In comparison to a single-year valid life for RINs, our approach provides some additional compliance flexibility to obligated parties as they make efforts to acquire sufficient RINs to meet their RVOs each year. This flexibility will have the effect of keeping fuel costs lower than they would otherwise be.

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

5.6.2 Definition of "Current Year"

What Commenters Said:

SilvaGas commented that it believes that EPA needs to clarify the definition of "current year" in order to allow equal treatment for transactions in all months. The commenter stated that the provision allowing RINs to be used in the year in which they were generated plus one additional calendar year will mean that any activities or transactions that take place in December of one calendar year will have half the useful life of any activities or transactions that take place in January of the next calendar year. The commenter stated that the proposed approach could result in transactions will be pushed from December to January. The commenter suggested that EPA use a rolling

twelve-month year for each month, and noted that it believes that the proposed tracking code allows for this.

Letters:
SilvaGas, Inc. OAR-2005-0161-0161

Our Response:

We do not believe that renewable fuel producers will defer production of renewable fuel from December to January to maximize the valid life of RINs generated. RINs must be generated by the time a volume of renewable fuel is transferred to another party. A producer is very unlikely to slow or stop production in December, or to build up significant inventories in December, simply to gain the right to use the next year on the RINs generated, since the value of lost product sales in December will be much greater than any value he could receive from starting the RIN life in the next year.

RINs are always valid for compliance purposes for two full compliance years, even if they are generated in December. At the beginning of each year, obligated parties will have an opportunity to acquire RINs generated the previous December and apply those RINs to their RVO. Thus there is little incentive for a renewable fuel producer to delay production simply to change the two-year time period in which the RIN is valid for compliance.

5.6.3 Impact of RIN Valid Life on Market Power

What Commenters Said:

One commenter stated his concern that allowing refiners to use RINs for an additional year after the year in which the RIN was generated could give the established petroleum industry the ability to control the fuels market and cause volatility in the ethanol market. The commenter highlighted the need for a stable domestic fuels market that protects investments by farmers and ethanol producers.

Letters:
Private CitizenOAR-2005-0161-0236

Our Response:

Although we have set the valid life of RINs at two years, including the year in which the RIN was generated, we do not believe that this provision will give obligated parties excessive control over the fuels market. As described in Section III.D.3.c, the number of previous-year RINs that can be used for current-year compliance is capped at 20 percent. Thus a minimum of 80 percent of a given year's standard must be met with RINs generated, and thus renewable fuel produced, in that year. We believe that the 20 percent cap provides the appropriate balance between, on the one hand, allowing

legitimate RIN carryovers and protecting against potential supply shortfalls that could limit the availability of RINs, and on the other hand ensuring an annual demand for renewable fuels as envisioned by the Act.

Moreover, the use of a valid life of two years is consistent with other provisions of the Act that may lead to less renewable fuel use in a given year than the statutorily-prescribed volumes. This includes deficit carryovers and imprecision in the standard based on projected gasoline volumes.

5.7 RIN Rollover Cap

5.7.1 Level of the Cap

What Commenters Said:

No Cap Needed/20% Is Too Low

A number of commenters stated that they did not believe that a cap on rollover RINs is necessary. The commenters generally stated that they believe the intent of the program can be met without a cap; that the cap removes legitimate renewable fuel from the RFS obligation. ExxonMobil commented that if a cap is finalized, it should be as large as possible to provide flexibility for response to potential ethanol shortages arising from drought conditions. MPC, BP, API, NPRA, and Shell/Motiva urged EPA to raise the cap to 30% if a cap is finalized. Some commenters further stated that this increase would give obligated parties an additional buffer zone in the case of a more severe drought (than previously on record) or the event that renewable fuel production is constrained in any way, and would reduce the probability of the RIN market going short and thus reduce the chance of RIN price spikes that could adversely impact U.S. consumers by pushing up fuel prices. NPRA also commented that, if EPA believes that a rollover cap is justified and necessary to facilitate compliance planning by obligated parties, it recommends that the cap should be fixed for all years and not reset annually. API also stated that it believes that a cap that is too generous would have few negative consequences besides a large RIN bank; however, the commenter stated, a cap that is too small to compensate for unforeseen circumstances could result in severe economic consequences because the RIN market will be unable to match supply and demand.

Sutherland Asbill Brennan commented that it agrees with EPA's rationale for imposing a cap, beginning in 2009, on the number of RINs from the preceding year that an obligated party may use to comply with its RVO. However, the commenter stated that it disagrees with the decision to cap obligated parties' use of rolled-over RINs at 20%. The commenter recommended that the cap be increased to at least 30% of an obligated party's current-year RVO. The commenter stated that it believes that a larger cap will promote regulatory certainty by reducing the probability that EPA will have to address the cap on an ad hoc basis in the future.

20% is Too High

Some commenters stated that they believe that the proposed 20% cap is too high. CHS further commented that it believes that the proposed 20% cap is unnecessary. The commenter stated that it believes that EPA's justification for this value is a 21% ethanol shortage in 1995—the commenter considers this amount to be a mathematical outlier. ACE recommended that the cap be reduced from 20 percent to 10 percent, at a minimum, to more adequately address rollover concerns. The commenter stated that it believes that the Act provided for the use of physical gallons of renewable fuel to satisfy annual obligations. In light of this requirement, the commenter believes that a reduced cap of 10 percent is more defensible and would more consistently ensure that the purpose of the law is achieved.

RFA commented that it believes that EPA did not provide any evidence to indicate that there is even a risk of inadequate supply or even any scenarios that would result in a 20 percent loss of production under current conditions. The commenter noted that for 2008 to 2012, the NPRM's estimated "excess" production is below the 20 percent cap. The commenter thus stated that it believes that the 20 percent cap would allow additional credits to carry forward that would not otherwise have been allowed by increasing the excess credits available. The commenter stated that it believes that a cap of 10 percent would limit this "rollover" of 2007 credits into later years, should be more than sufficient, while also limiting the potential reduction of actual volumes sold each year.

Other

IFTOA commented that it believes that the proposed 20% allowance to use prior-year RINs to meet an RVO should be changed to 25%. The commenter stated that it believes that such a limitation makes sense, but the use of "20%" has caused a significant amount of confusion in the industry with the Diesel Sulfur rules. The commenter stated that it recognizes that this rule deals with gasoline, not diesel, but believes that another rule with an "80/20" allowance could cause problems within the regulated community; and thus EPA should avoid the used of another "80/20" provision.

Letters:
American Coalition for Ethanol (ACE) OAR-2005-0161-0218
American Petroleum Institute (API) OAR-2005-0161-0185
BP Products North America OAR-2005-0161-0221, -0230
CHS Inc. OAR-2005-0161-0203
ExxonMobil Refining & Supply Co. OAR-2005-0161-0197
Independent Fuel Terminal Operators Association (IFTOA) OAR-2005-0161-0213
Marathon Petroleum Company (MPC) OAR-2005-0161-0175
National Petrochemical and Refiners Association (NPRA) OAR-2005-0161-0170, -0232
Renewable Fuels Association (RFA) OAR-2005-0161-0192, -0228 (hearing)
Shell Oil Company/Motiva Enterprises OAR-2005-0161-0215
Sutherland Asbill Brennan OAR-2005-0161-0210

Our Response:

To be consistent with the Act's requirement that RINs have a limited life, we believe that the rollover issue must be addressed in our regulations. In the NPRM we proposed a 20 percent cap on the amount of an obligated party's Renewable Volume Obligation (RVO) that can be met using previous-year RINs. We received many comments in support of both higher and lower limits (as summarized above). After review of the comments we received on the NPRM, we have decided to finalize this provision as proposed.

We believe that the 20 percent cap provides the appropriate balance between, on the one hand, allowing legitimate RIN carryovers to fulfill the function of credit generation and use under 211(o) and protecting against potential renewable fuel supply shortfalls that could limit the availability of RINs, and on the other hand ensuring a consistent annual demand for renewable fuels as envisioned by the Act. Given the competing needs expressed by renewable fuel producers and refiners, a rollover cap of 20 percent reasonably balances the risk taken by producers of renewable fuels expecting a guaranteed demand to cover their expanded production capacity investments and the risk taken by obligated parties who need a guaranteed supply in order to meet their regulatory obligations under this program. We believe this approach also provides the certainty that all parties desire in implementing the program.

Comments submitted in response to the NPRM did not provide compelling evidence that 20 percent is not an appropriate value for the cap. The level of 20 percent is consistent with past ethanol market fluctuations. As described in Section III.D.3.c of the preamble, the largest single-year drop in ethanol supply occurred in 1996 and resulted in 21% less ethanol being produced than in 1995. While future supply shortfalls may be larger or smaller, the circumstances of 1996 provide one example of their potential magnitude. In any event, EPA has authority to waive the required renewable fuel volumes in whole or in part in the event of inadequate domestic supply.

IFTOA highlights the fact that using 20% as the cap in the RFS program has the potential to create some confusion with the use of 20% in other regulations. However, we do not believe that this warrants changing this program. They are distinct programs with different purposes, and any confusion should be minimal.

5.7.2 Tracking of RINs Under The Rollover Cap

What Commenters Said:

CHS commented that it believes that carryovers are cumbersome. The commenter questioned how obligated parties would be able to keep track of which RINs are within the 20% limit or not. The commenter stated that it does not believe that the bookkeeping and potential for abuse or honest mistakes are worth the risk. The commenter suggested that EPA drop the 20% approach and that every RIN be given a shelf life of 15 months.

Letters:
CHS Inc. OAR-2005-0161-0203

Our Response:

The 20% cap is not applicable to the total number of available RINs in the nation, but rather to an individual obligated party's RVO. Moreover, to meet the 20% cap, obligated parties will not need to keep track of which specific RINs acquired are within the limit. Instead, an obligated party need only show that the total number of RINs used for compliance is equal to or greater than its RVO, and that no more than 20% of the RINs being used for compliance were generated in the previous year. Since the year of generation is included in each RIN, compliance with the 20% cap will be straightforward.

Since the renewable fuel standard applies on an annual basis, RINs cannot be valid for only part of a year. Limiting the valid life of a RIN to 15 months would overly complicate the program and is unnecessary.

5.7.3 Start Date/Applicability

What Commenters Said:

Some commenters stated that they believe that the RIN rollover cap should be applied in the first year that a carryover of RINs is possible. Thus, these commenters believe that EPA should apply the rollover cap in 2008. RFA also stated its belief that, to the extent that the renewable fuel obligation is prorated based on the effective date of the rule for 2007, the cap should also be adjusted.

However, NPRA commented that it believes that a rollover cap should not be effective before 2009 (if EPA believes that a rollover cap is justified at all). The commenter stated that it believes that this rollover cap should not be effective in 2008 since the RFS program will not be in place for the entire 2007 calendar year.

Letters:
American Coalition for Ethanol (ACE) OAR-2005-0161-0218
National Petrochemical and Refiners Association (NPRA) OAR-2005-0161-0170, -0232
Renewable Fuels Association (RFA) OAR-2005-0161-0192, -0228 (hearing)

Our Response:

The rollover cap is designed to prevent the rollover of RINs generated two years ago from being used for compliance purposes in the current year. No RINs were generated in 2006 when the default standard of 2.78 percent was in effect, so the first year in which RINs will be generated is 2007. Consequently, the first year in which there could be the rollover of

RINs generated two years previously would be 2009. Therefore, we proposed that the cap would not be effective until compliance year 2009.

Commenters pointed out that starting the cap in 2009 could under some scenarios lead to a situation in which more than 20 percent of the RINs used for compliance purposes in 2008 were actually generated in the previous year, 2007. They requested that we impose the cap starting in 2008 to prevent such an occurrence. We do not believe that starting the cap in 2008 will have any meaningful effect in-use. Given the projected demand for renewable fuels, and the startup of the program in mid-2007 instead of January, applying the limit to 2008 is unlikely to be constraining. Consequently, in order to simplify the regulations that would otherwise have an exception for 2008, we are finalizing the 20 percent cap to apply to all years, including 2008.

5.7.4 Alternatives to Rollover Cap

What Commenters Said:

RFA commented that it believes that the most practical way to avoid rollover issues is to read the Act to allow the 12-month life to apply only to the compliance year in which the credit was generated. The commenter stated that, under this reading, there should be no carryover into the next year, and thus no rollover into subsequent years.

Letters:
Renewable Fuels Association (RFA) OAR-2005-0161-0192, -0228 (hearing)

Our Response:

Limiting the valid life of a RIN to the year in which it was generated would indeed eliminate the need to address the rollover issue. However, as described in Section 5.6, we believe that the Act's limit of a 12-month life for credits should be interpreted to mean that RINs should be available for compliance purposes in the year generated or the next. The RIN rollover issue is a consequence of allowing credits generated in one year to be used in the next, but we believe that a cap of 20% adequately addresses the issue.

5.7.5 Flexibility in Cap Limit

What Commenters Said:

FutureFuel commented that it believes that the Agency should adopt a provision allowing the cap to be raised in the event that supply shortfalls overwhelm the 20% cap. The commenter stated that it believes that this additional temporary flexibility could help deal with extraordinary events such as droughts.

Letters:

FutureFuel OAR-2005-0161-0198

Our Response:

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

Commenters did not provide compelling evidence that such a provision was necessary. In addition, the Agency already has the authority to waive the required renewable fuel volumes in whole or in part in the event of inadequate domestic supply, after consultation with both the Department of Agriculture and the Department of Energy. We also have the authority to revise our regulations if needed, which could occur under expedited circumstances if appropriate. Thus there would be adequate mechanisms to address these circumstances in the future if they were to arise, and we do not need to finalize a provision now allowing the 20% cap to be raised.

5.7.6 LIFO Approach

What Commenters Said:

NPRA commented that it does not support a "last-in, first-out" (LIFO) approach for addressing the RIN rollover issue (71 FR 55584). While the commenter agreed that the LIFO concept is a demonstrated, justified, and accepted procedure for product inventory accounting purposes, the commenter does not believe that it is applicable in the context of the RIN rollover issue. The commenter further stated its belief that a LIFO approach would be confusing and complicated to implement as part of the RIN rollover model. The commenter stated that it believes that a cap on the use of the last year's RINs would maintain RFS credit simplicity with the flexibility to bank some RINs.

Letters:
National Petrochemical and Refiners Association (NPRA) OAR-2005-0161-0170, -0232

Our Response:

Although we described this alternative approach to addressing the RIN rollover issue, we did not propose it. No commenters supported it, and we do not believe it is needed, therefore we have not finalized it.

5.7.7 Expiration of Rollover RINs

What Commenters Said:

SilvaGas commented that it believes the proposal to cap the use of excess RINs is a "cap and expire" program that troubles them. The commenter stated its belief that a "cap and expire" program applied to the RIN rollover issue amounts to an attempt to address a problem that does not exist with a solution that they felt is sure to create serious problems. The commenter stated its belief that if the ethanol industry is consistently overproducing on a year-to-year basis, the best solution is to raise the RFS requirement rather than try to choke off excess production by devaluing excess RINs.

Letters:
SilvaGas, Inc. OAR-2005-0161-0161

Our Response:

The RIN rollover issue is a critical issue that must be addressed. The use of previous year RINs to meet current year compliance obligations creates an opportunity for effectively circumventing the valid life limit for RINs. This can occur in situations wherein the total number of RINs generated each year for a number of years in a row exceeds the number of RINs required under the RFS program for those years. The excess RINs generated in one year could be used to show compliance in the next year, leading to the generation of new excess RINs in the next year, causing the total number of excess RINs in the market to accumulate over multiple years despite the limit on RIN life. The rollover issue would in such circumstances essentially make the applicable valid life for RINs virtually meaningless in practice, and would undermine the ability of a limit on credit life to guarantee a market for renewable fuels.

Prior to 2013, EPA does not have the authority to raise the required annual volumes of renewable fuel above the levels specified in the Act. We have determined that a 20% cap on the use of previous year RINs for current year compliance is a straightforward approach to addressing the rollover issue. We do not believe that the cap on rollover of excess RINs will choke off excess production. The excess production is driven by market demand, and the rollover cap should have no effect one way or the other on the market forces that lead to excess production of renewable fuels compared to what is required under Section 211(o).

5.8 Deficit Carryovers

What Commenters Said:

ACE commented that it believes the rule should provide a tighter framework to address the deficit carryover provisions. The commenter noted that the Act specifically states that there must be an "inability" to generate or purchase sufficient credits for obligated parties to use this provision. The commenter stated that it believes that EPA should establish standards that obligated parties must meet before they are allowed to use this provision.

ExxonMobil and API both supported the deficit carryforward provision as proposed so long as the obligation carried forward and the following year obligation are both fully met the following year. However, ExxonMobil added its concern that any deficit carried forward must eventually be satisfied with credits, no matter what the cost and subject to the vagaries of what is presently an unknown and untested credit market. The commenter stated its belief that the deficit carryover provision assumes that the trading program will operate as intended.

Letters:
American Coalition for Ethanol (ACE) OAR-2005-0161-0218
American Petroleum Institute (API) OAR-2005-0161-0185
ExxonMobil Refining & Supply Co. OAR-2005-0161-0197

Our Response:

The deficit carryover provision we are finalizing in today's rule implements Section 211(o) of the Clean Air Act's provision, which allows an obligated party to carry a deficit forward from one year into the next if it cannot generate or purchase sufficient credits to meet its RVO. However, the Act specifies that the deficit must be met in the next year. Thus deficits cannot be carried over two years in a row. EPA does not have authority to expand the flexibility given with regard to deficit carryovers. Nevertheless, the two-year valid life of RINs should permit obligated parties who have carried over a deficit to acquire sufficient RINs to meet both their obligation and their deficit.

The Act indicates that deficit carryovers are to occur due to "inability" to generate or purchase sufficient credits. We believe that obligated parties will make a determined effort to satisfy their RVO on an annual basis, and that the existence of a deficit will reasonably be enough of a demonstration that there was an inability to generate or purchase sufficient credits. Thus, we did not propose requiring that any particular demonstration of "inability" be a prerequisite to the ability of obligated parties to carry deficits forward. Commenters provided no suggestions regarding how a demonstration of inability could be established.

The deficit carryover provision could result in less renewable fuel being consumed in a given year than is required by the Act, especially if many obligated parties took advantage of it at the same time. However, in any given year some parties may be making up deficits from a prior year, while other parties might be generating deficits. This fact will tend to reduce the net effect in any given year, and regardless, the deficit in demand in one year will by regulatory requirement be made up in the following year. Finally, any threshold we could set to demonstrate an obligated party's inability to

generate or purchase sufficient credits would likely require a comprehensive investigation of their opportunities to acquire RINs. We do not believe that such investigations are warranted. Therefore, we have not set any thresholds in the final rule.

6 COSTS

What We Proposed:

The comments in this section correspond to Section VII of the preamble to the proposed rule, and are targeted at the projected costs of the program. A summary of the comments received, as well as our response to those comments, are located below.

6.1 Feedstock Costs

What Commenters Said:

The American Petroleum Institute (API) commented that EPA assumes only a 3.6% increase in corn prices between the 7.2 billion gallon use case and the 9.6 billion gallon use cases. Given the implied increase in demand for corn between these cases, API believes that it is likely that the corn price increase will be significantly above 3.6%. Also, corn futures for December 2006 delivery are $3.44 per bushel. API suggested that EPA recheck the production cost estimates and perform some sensitivity analysis using various corn price assumptions.

The commenter stated that it believes the corn ethanol, cellulosic ethanol, and soy-derived biodiesel production cost estimates (71 FR 55608) are of little value because of the volatility in prices on the feedstocks. The commenter stated that it believes that the underlying prices on the feedstocks, the assumed amount of feedstock needed to produce a gallon of ethanol or biodiesel, and the net operational costs are what should have been reported—this would allow for a clearer assessment of the total production costs under alternative prices on feedstock.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185

Our Response:

Our cost estimates are generally point estimates using the best available information. We then do sensitivities around these estimates. In the case of corn ethanol production, we have updated the RIA to include changes in cost over a range of corn, dried distiller grain (DDGS), and natural gas prices.

The model we used to project agricultural commodity prices (FASOM; see Chapter 8 of the RIA for details) is a long run equilibrium model, so it does not reflect the futures market (typically six months or less). We believe these long run projections are more indicative of sustained prices ethanol producers will pay as the system matures. Like petroleum refiners, ethanol producers generally lock in feedstock contracts for long term production needs, then use spot or near term markets for unforeseen marginal needs.

Three issues remain at the center of estimating cellulosic costs. First, feedstock costs are the most obvious, since no one knows yet which feedstock will be the cheapest; most likely, a variety of feedstocks will be used in different parts of the country. Secondly, no one knows for sure how much ethanol can really be produced by any of the feedstocks in an operation any larger than a laboratory bench. There are a couple of pilot or demonstration-size units, but there are no reliable data. Thirdly, no one has constructed a full-sized, fully-operational cellulosic ethanol plant, so no one knows for sure what the capital or operating costs are going to be; besides which, the capital and operating costs for each different feedstock and/or process will quite likely be different.

6.2 Corn-ethanol Production and Costs

What Commenters Said:

API noted that for corn ethanol, EPA estimated the per gallon cost of ethanol to range from $1.20 per gallon in 2012 (2004 dollars) in the case of 7.2 billion gallons per year case and $1.26 per gallon in the case of the 9.6 billion gallon case. The commenter stated that, in regard to the statement made on page 134 (3rd paragraph) of the Draft Regulatory Impact Analysis (DRIA)[1], the corn ethanol production costs ($1.20 - $1.26 per gallon) seem low, typical estimates seem to be roughly $1.35 to $1.50 per gallon with corn at $2.25 per bushel (this is roughly the corn price used in EPA's analysis), even accounting for DDG sale credits. The commenter noted that EPA assumed only a 3.6% increase in corn prices between the 7.2 billion gallon use case and the 9.6 billion gallon use cases. Given the implied increase in demand for corn between these 2 cases, the commenter stated that it believes that it is likely that the corn price increase will be significantly above 3.6%. Also, corn futures for December 2006 delivery are $3.44 per bushel. The commenter suggested that EPA recheck the production cost estimates and perform some sensitivity analysis using various corn price assumptions. The commenter also noted that EPA assumed that ethanol prices remain constant despite substantial increases in production and consumption (DRIA, p.262). The commenter stated that it believes that a regression model of ethanol prices against gasoline prices (and perhaps other variables), would give a reliable price elasticity coefficient. The commenter further stated that use of this standard economic analysis would allow EPA to develop a yearly forecast of ethanol prices.

Gary-Williams Energy Corporation (GWEC) commented that, according to the ethanol industry, corn production and plants to make ethanol are expected to increase significantly in the Corn Belt over the next decade. The commenter noted that around 97% of the country's current corn-based ethanol plant capacity is in Petroleum Administration District for Defense (PADD) 2 (where the commenter's refinery is located and markets most of its gasoline). The commenter also noted that about 88% of ethanol plants now under construction and 85% of probable new plants will be in PADD 2. The commenter stated that it has been suggested that large refining companies may decide to meet their RFS blending obligations at plants near ethanol production

[1] Page 134, 3rd paragraph: "We have estimated an average corn ethanol production cost of $1.20 per gallon in 2012 (2004 dollars) in the case of 7.5 billion gallons per year and $1.26 per gallon in the case of 9.9 billion gallons per year. For cellulosic ethanol, we estimate it will cost approximately $1.65 in 2012 (2004 dollars) to produce a gallon of ethanol using corn stover as a cellulosic feedstock."

sources – which the commenter believes will decrease the transportation costs and result in an imbalance in the distribution of ethanol, with a concentration in the corn-belt area and lower volumes on the coasts. The commenter stated that in PADD 2, gasoline volume will soon grow by at least 10% if regional refineries elect to blend as much ethanol as possible. As more flex vehicles come into use and retail distribution systems are put in place, the commenter stated that it believes that gasoline volume will increase further – demand is not expected to keep pace and prices will drop below national averages. As a result, the commenter believes that the Corn Belt will enjoy lower gasoline prices than the rest of the country; and further, the benefits provided by ethanol will be concentrated in that area.

A private citizen commented that it believes that the proposal's lack of data on operational costs is a major omission. The commenter suggested that EPA delineate the net operational costs, and also publish the item-by-item net operational costs. The commenter further stated that the proposal has assembled a large amount of information on the subject and will be valuable background for further discussions and evaluations.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185
Gary-Williams Energy Corporation (GWEC) OAR-2005-0161-0207
Private CitizenOAR-2005-0161-0158, -0159

Our Response:

Please see responses to comments in the previous section on general feedstock costs.

First, we intentionally did not assess the costs of the RFS program based on ethanol prices because the price of ethanol likely does not represent its production cost, particularly because ethanol use is subsidized at 51 cents per each gallon of ethanol and it is priced based on volume relative to gasoline, not energy content. Since our intent is to estimate the real cost to society of the RFS, using ethanol's production cost is more appropriate than its price. For the proposed rule we did estimate different ethanol production costs based on different ethanol demand volumes under the RFS and EIA cases. We estimated ethanol production costs for the proposed rule to be $1.20 per gallon for the RFS case, and $1.26 per gallon for the EIA case. For the final rule cost analysis, we are estimating the ethanol production cost to be $1.26 per gallon for the RFS case and $1.32 for the EIA case. The increases in ethanol production costs assume higher corn and differing DDG prices.

We believe there are multiple factors that will influence where ethanol is most heavily used, and in turn, its impact on gasoline demand and price. It is reasonable that a large volume of ethanol will be blended into gasoline in PADD 2, since distribution costs will be very low and there are mandates or tax incentives in a number of these states. This may result in lower gasoline demand in PADD 2, though this effect should not be surprising, since the purpose of the Renewable Fuels Standard is to decrease our use of and dependence on petroleum (most of which is from imported oil). We believe there will also be economic motivation to use large quantities of ethanol wherever gasoline is relatively expensive or where ethanol has value as a high octane, low-toxicity blendstock. For example, our refinery cost model shows a higher

preference for using ethanol in California and Federal Reformulated Gasoline (RFG) areas over blending all of the gasoline in the Midwest with 10 percent ethanol. However, it is important to point out that the increase in ethanol blended into gasoline will be phased in over time, so the increased ethanol will offset the increased demand for gasoline as opposed to reducing output from refineries.

In the table below are more details from the U.S Department of Agriculture (USDA) corn ethanol production cost model.

Cost details for 81 MMgal/yr corn ethanol plant based on USDA model.

	Natural Gas cents/gal	Coal cents/gal
MATERIAL INPUTS		
Corn Feedstock	87.19	87.19
Caustic	0.46	0.46
Alpha-Amylase	1.19	1.19
Gluco-Amylase	1.73	1.73
Gasoline	10.67	10.67
Sulfuric Acid	0.17	0.17
Lime	0.08	0.08
Makeup Water	0.06	0.06
Urea	0.33	0.33
Yeast	0.37	0.37
Corn Feed Hauling	7.67	7.67
Water	0.69	0.69
Electricity	3.50	4.02
Natural Gas	19.38	0.00
Coal	0.00	6.91
Subtotal	**133.47**	**121.53**
CO-PRODUCTS		
DDGS	-26.67	-26.67
Carbon Dioxide	0.00	0.00
Subtotal	**-26.67**	**-26.67**
TOTAL VARIABLE COSTS	***106.80***	***94.86***
LABOR		
Plant Operators' Salaries	1.31	1.56
Maintenance Salaries	1.18	1.72
Supervision & Administration	1.00	1.31
Employee Benefits	1.04	1.37
Subtotal	**4.53**	**5.96**
OTHER COSTS		
Operating Supplies	0.89	1.29
Maintenance Supplies	1.18	1.72
Insurance & Local Taxes	0.94	1.37
Captial Depreciation	11.81	17.16
Subtotal	**14.82**	**21.53**
TOTAL FIXED COSTS	***19.35***	***27.49***
TOTAL PRODUCTION COST	***126.14***	***122.35***

6.3 Cellulosic Ethanol Production

What Commenters Said:

API commented that personnel at the U.S. Department of Energy (DOE) indicate $2.26 per gallon as an estimate of cellulosic ethanol production costs, in contrast to EPA's cost estimate of $1.65 per gallon.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185

Our Response:

In that we do not have a reference, other than "DOE personnel," for the $2.26 cost to which API referred [p.15], it is not possible for us to compare the DOE estimate with ours. Several different processes, some of which use different feedstocks, have been proposed for producing cellulosic ethanol. While several of these processes show promise, as of the date of this rule, none has been shown to be 'the best' overall. The choice of feedstock, process, and plant location has been shown to have large impacts on the estimated cost of cellulosic ethanol. Regardless, currently an estimate for producing cellulosic ethanol would necessarily be based on assumptions, for the most part. Since there are no publicly available, "real-world" capital and production costs (including those for gathering, transporting, storing, and feeding the various feedstocks), we decided to use a study prepared by the National Renewable Energy Laboratory, an organization working under contract with DOE, using corn stover as a feedstock. Given the time constraints for finishing this rule, we believe this would provide a reasonable estimate, especially in view of the dearth of real-world data.

6.4 Biodiesel Production

What Commenters Said:

API noted that the proposal estimated production costs of soy-derived biodiesel of $2.06 per gallon in 2004 and $1.89 per gallon in 2012. The commenter noted that current soy costs are roughly $2.00 per gallon, and thus questioned how soy-derived biodiesel production costs could be $2.06. The commenter stated that it believes that a better estimate would be $2.50 per gallon for soy-derived biodiesel. The commenter also stated that, for biodiesel, the cost range is between $1.89 and $2.11 if produced using soybean oil and less if using yellow grease or other relatively low cost or no-cost feedstock.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185

Our Response:

We based our biodiesel production costs based on oil feedstock prices as forecasted by USDA in 2012 under the RFS mandate and with EIA biodiesel fuel projections. As such, the feedstock prices used are those that are projected to occur in 2012. Additionally, from our biodiesel cost presentation, it is possible for the reader to calculate biodiesel production cost with higher feedstock costs, than those used in our analysis. This can be accomplished, as we provide separate estimates of the effects that feedstock prices and operating cost have on the total production cost of biodiesel. This provides a mechanism to estimate biodiesel production costs with a wide variety of biodiesel feedstock oil prices, in addition to those reflecting current market conditions.

6.5 Distribution Costs

6.5.1 Ethanol Distribution Costs

6.5.1.1 Estimated Ethanol Transportation Costs

What Commenters Said:

API commented that it believes that the estimated ethanol transportation cost of 9.2 cents per gallon is low and should be adjusted. The commenter suggested that EPA check current ethanol shipping rates. The commenter also stated that, according to Jim Jordan and Associates, current regular railcar movements are roughly 17 to 22 cents per gallon from Chicago to Philadelphia, and 15 to 20 cents per gallon if shipped via unit train.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185

Our Response:

As suggested by the commenter, we compared current ethanol rail shipping cost to the estimated shipping costs in the proposal. The tank cars used to ship ethanol (or biodiesel) by rail are typically not provided by the rail carrier. Some ethanol shippers own their rail cars, but most are leased from a third party. Thus, there are two components to the cost of shipping ethanol by rail: 1) the ethanol freight tariff and associated fuel surcharge assessed by the rail carrier, and 2) cost of leasing the necessary rail tank cars.

We obtained information about current rail car lease rates from various industry sources on the condition that the sources are not identified. Based on this information, we are estimating a current $650 per month lease fee for a 30,000 gallon ethanol rail car, with a single shipment being completed each month by regular rail car movement (i.e., at single car rates), and 1.5 shipments being completed if shipment is made via unit train. We obtained current single car and unit train ethanol freight tariff rates and associated fuel surcharge information from CSX and BNSF rail companies at www.csx.com and www.bnsf.com. We derived current unit train and single car rail ethanol shipping costs by totaling the relevant rail car lease fees, rail tariffs, and fuel surcharges.

Our estimate of the current cost of shipping ethanol from Chicago to Philadelphia is 10 cents per gallon via unit train and 12 cents per gallon at single car rates.[2] The proposal estimated the hub terminal ethanol shipping cost to be 8.4 cents per gallon and the satellite terminal shipping cost to be 10.4 cents per gallon. Thus, current ethanol freight rates from Chicago to Philadelphia rail are approximately 1.6 cents greater than those estimated for Pennsylvania as a whole in the proposal.[3] The Jim Jordan and Associates report referenced by API is a proprietary report to which we do not have access. API did not respond to our solicitation for additional discussion regarding why the cost estimates they reported from shipping ethanol from Chicago to Philadelphia by rail are so much higher (5 to 10 cents per gallon) than the current rail shipping cost that we derived.

Evaluation of the current rail freight cost estimates shows that these are reasonably consistent with the ethanol shipping costs in the proposal. For example, current rail shipping costs from Chicago to Albany New York are 11 cents per gallon if conducted on a single car basis, and 13 cents per gallon if shipped via unit train. The proposal estimated an ethanol shipping cost to New York of 11.4 cents per gallon for hub terminals and 13.4 cents per gallon for satellite terminals. Current rail shipping costs from Southwest Iowa to central California are 20 cents per gallon if conducted on a single car basis, and 16 cents per gallon if shipped via unit train. The proposal estimated an ethanol shipping cost to California of 16.5 cents per gallon for hub terminals and 18.5 cents per gallon for satellite terminals.

We do not believe that the modest differences between current rail ethanol freight rates and the ethanol freight rates estimated in the proposal in themselves necessarily indicate that the estimated ethanol shipping costs in the proposed rule are too low. The ethanol distribution system is currently evolving and we believe there is considerable room for increased efficiencies and concomitant lower shipping costs than those today. The recent precipitous discontinuation of the use of methyl tertiary butyl ether (MTBE) and its replacement by ethanol necessitated the rapid development of an expanded ethanol distribution infrastructure. This rapid expansion may have resulted in temporary spikes in ethanol shipping costs that may explain the higher ethanol freight cost in the report referenced by API.

In conducting our review, however, we identified several areas where it was appropriate to make adjustments to our estimated ethanol freight costs.[4] Incorporating these adjustments, we arrived at an estimated national average ethanol freight cost of 11.3 cents per gallon under the Renewable Fuel Standard (RFS) case (6.67 billion gallons of ethanol per year in 2012) and 11.9 cents per gallon under the Energy Information Administration (EIA) case (9.6 billion gallons of ethanol per year in 2012). This compares to the 9.2 cent per gallon ethanol freight cost estimate for both the RFS and EIA cases in the proposal. We assumed that these freight costs do not include the cost of capital recovery for the distribution facility improvements necessary to handle the increased volume of ethanol under the RFS and EIA cases. Adding in the annualized capital

[2] There currently is no unit train ethanol service from Chicago to Philadelphia. We estimated the Chicago to Philadelphia unit train freight rate by comparing the difference between unit train and single car freight rates in locations where both services are currently available.

[3] In areas where rail is the predominate means of transportation, hub terminal rates are comparable to unit train rates and satellite terminal rates are comparable to single car rates.

[4] See Chapter 7.3 of the RIA for additional discussion of our estimation of ethanol freight costs.

costs, results in a total annual ethanol distribution cost of 12.7 cents per gallon under the RFS case and 13.1 cents per gallon under the EIA case. This compares to the 10.3 cent per gallon ethanol distribution cost estimate for both the RFS and EIA cases in the proposal.

6.5.1.2 Blending and Distribution

What Commenters Said:

Harms Oil commented that it is common in South Dakota for there to be a limitation in the number of entities offering ethanol at a terminal. The commenter noted that there are generally 25 different sellers of gasoline and only 5-10 suppliers of ethanol. The commenter further noted that, as a result of this practice, some blenders have made investments in off-site bulk blending facilities. The commenter stated that it believes that the market has thus shown a need for blending at places other than the pipeline terminal, even when there is renewable product available at the terminal. The commenter stated that it believes that off-site, bulk plant blending of ethanol is less efficient and more costly than pipeline terminal blending. Further, the commenter noted that the only way the renewable product will be sold in a competitive environment, is if the renewable product is offered at a lower price than the product in the terminal. The commenter stated that it believes that retention of the opportunity to offer blended product in the marketplace will foster more competition, and in our opinion, lower the price of the blended product to the consumer.

Letters:
Harms Oil OAR-2005-0161-0220

Our Response:

We designed the final rule to not interfere with current practices of distributing and blending ethanol. Parties who blended ethanol with gasoline downstream of the terminal will continue to be able to do so. Compared to a 3.9 billion gallon per year ethanol use reference case, we estimated 243 additional terminals would install ethanol blending systems to meet the requirement under the RFS for 6.7 billion gallons per year of ethanol use by 2012. Under the 9.6 billion gallon per year ethanol use case projected by the Energy Information Administration (EIA) for 2012, we estimated that 515 additional terminals would install ethanol blending systems. Thus, we expect that the number of terminals that offer ethanol (and ethanol blended gasoline) will increase significantly as the volume of ethanol used increases over time.

6.5.2 Biodiesel Distribution Costs

What Commenters Said:

API commented that it believes that EPA's assertion that the estimated freight costs for ethanol of 9.2 cents per gallon adequately reflects the freight costs for biodiesel is speculation

with no basis in fact. However, the commenter did not provide any specific suggestions regarding how the estimates of biodiesel distribution costs should be amended.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185

Our Response:

We sought additional information regarding the freight costs for biodiesel. This information indicates that freight costs for biodiesel are typically 30 percent higher than those for ethanol which translates into an estimate of 15.5 cents per gallon for biodiesel freight costs. This estimate is based on our review of publicly available biodiesel and ethanol freight rates from CSX and BNSF rail at www.csx.com and www.bnsf.com, on information regarding the lease rates for biodiesel versus ethanol freight cars considering the smaller size of biodiesel tank cars[5], and on discussions with biodiesel distributors. Including the cost of capital recovery for the necessary distribution facility changes, we estimate the cost of distributing biodiesel to be 21.5 cents per gallon.

6.6 Blending Costs and Impacts on Gasoline Costs

What Commenters Said:

The New York State Department of Environmental Conservation commented that it believes that better use of standard economic analytical techniques could significantly improve the economic analysis of this and future rulemakings. The commenter stated that it believes that EPA's treatment of labor costs as part of fixed plant costs (DRIA p.236) is an unorthodox methodology. The commenter noted that labor costs normally vary with production volume, thus it believes that they should be classified as variable costs in future economic analyses. The commenter also noted that API stated that a regression model of gasoline price against crude oil prices (and other appropriate variables) could provide more reliable estimates of the sensitivity of gasoline prices to crude oil price changes than the price ratios used by EPA in the sensitivity analysis conducted to compare $70 per barrel crude oil to $47 per barrel crude oil.

The Missouri Department of Natural Resources commented that, if RINs prove to be higher in cost/price as they are traded from one entity to another and the RIN value is higher than the equivalent value of the ethanol it replaces, the higher cost would obviously be borne by downstream consumers. The commenter stated that it was unclear if the modeling performed for EPA's cost estimates included an evaluation of the potential cost of RINs subject to the credit program. The commenter also noted that EPA did not account for any tax subsidy for renewable fuels and that these costs represent production costs of the fuel and not the market price (retail). The commenter stated that it believes that it is appropriate for EPA to consider using an inflationary index from base-line year 2004 to 2012 to include a "worse" and "best" case scenario to allow for a range in potential costs through the transition period. The commenter

[5] Ethanol freight cars have a capacity of 30,000 gallons, whereas biodiesel freight cars typically have a capacity of 25,500 gallons.

further stated that it believes that this would be very meaningful in determining the cost-to-retail price relationship and the potential economic impact on the transportation sector. The commenter also believes that this would provide insights to potential excise tax receipts for federal and state governments through 2012 as more renewable fuels are introduced into the nation's transportation fuel stream.

The Missouri Department of Natural Resources commented that it also believes that, while it is important to measure the economic impact of renewable fuels at the production or cost level, it is important to convey the retail price impact of a national renewable fuel policy. The commenter noted that U.S. consumers focus on the price of fuel at the pump, not the cost of product at the factory; thus to affect true market transformation, consumers must perceive renewable fuels not as the rule and not the exception. The commenter thus stated that it believes that EPA should make every effort to identify all related direct and indirect costs, including external costs, related to RFS transition and make its best effort to fully analyze and present this data or information in the final rule.

API commented that it believes EPA's estimates (DRIA, p.135, 2nd paragraph) of overall gasoline costs given the fuel changes assumed (both with and without the subsidy) are low given the underestimates of ethanol production costs, the underestimates of biodiesel production costs, and the underestimates of ethanol transportation costs.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185
Missouri Department of Natural Resources (MDNR) OAR-2005-0161-0217
New York State Department of Environmental Conservation (NYDEC) OAR-2005-0161-0169

Our Response:

One commenter stated that labor costs should be treated as a variable cost as opposed to a fixed cost. Labor costs may be treated as fixed or variable costs depending on how the laborers are employed by refiners. Regardless of how refiners treat their labor costs, as new refining units are installed, the labor would be expected to be fully utilized with that new refinery unit and the labor cost would be incurred. Thus, assigning the labor costs as fixed or variable costs is only an accounting issue. Also, labor costs are a very small part of the total costs so that even if they are not incurred because a refinery unit was to be shut down, their impact on the remaining cost is very small. For the final rule cost analysis, we used a linear programming refinery model to estimate the cost of the RFS. The linear programming refinery model treats labor as a variable cost.

The commenter said that for our crude oil price sensitivity analysis we conducted for the proposed rule, a more reliable estimate of gasoline price can be estimated with respect to higher crude oil price than that we estimated for the proposed rule. A more robust estimate of gasoline price with respect to crude price can be made, however, we simply wanted to make the point that higher crude oil prices would improve the economics of blending ethanol into gasoline based on a simple order-of-magnitude cost analysis.

One commenter stated that RINs may be higher in price than the equivalent value of ethanol, resulting in a higher cost to the consumer. We try as much as possible to estimate the impact on society based costs instead of prices because prices may estimate higher or lower impacts than production costs and may include transfer payments which are not real costs. In this case, because ethanol receives a subsidy, ethanol could be priced substantially below its production cost. Thus, even if RINs are valued higher than ethanol's market price, the RINs are likely to be valued lower than ethanol's production cost. To avoid these various distortions to the estimated societal cost of the program, we value ethanol based on its estimated production cost. We did provide the estimated impacts based on ethanol's subsidy applied to its production cost. This additional analysis helps to illustrate ethanol's impact on gasoline prices "at the pump." Overall, given that all scenarios project much larger ethanol use than required by the RFS, we do not foresee RINs adding any significant costs to the use of renewables.

7 COMPLIANCE (REGISTRATION, RECORDKEEPING, REPORTING)

What We Proposed:

The comments in this section correspond to Section IV of the preamble to the proposed rule and are targeted at the registration, recordkeeping, and reporting requirements of the rule. A summary of the comments received and our response to those comments are located below.

7.1 Workshops for Reporting Parties

What Commenters Said:

EPA received a comment from the American Coalition for Ethanol (ACE) expressing interest in co-hosting, with EPA and other interested parties, workshops designed for ethanol producers and others to become familiar with the registration, recordkeeping, and reporting requirements of the RFS program.

Letters:
American Coalition for Ethanol (ACE) OAR-2005-0161-0218

Our Response:

EPA welcomes the participation of all interested parties in workshops to assist in implementation of the RFS rule. We anticipate these workshops will take place shortly after issuance of the final rule. We will announce workshops on our web page and will notify groups like trade associations in order to get information out to interested parties.

7.2 Registration

7.2.1 Registering Parties

7.2.1.1 Renewable Fuel Producers and Importers

What Commenters Said:

EPA received comments from ExxonMobil and the National Petrochemical and Refiners Association (NPRA) who believe that both renewable fuel producers and importers should be required to register with EPA.

Letters:
ExxonMobil OAR-2005-0161-0197
National Petrochemical and Refiners Association (NPRA) OAR-2005-0161-0170, -0232

Our Response:

EPA agrees that registration of renewable fuel producers and importers is essential to the creation of Renewable Identification Numbers (RINs) and that EPA-assigned company and facility ID numbers are key components of the RIN. Many importers may already be registered under the reformulated gasoline (RFG) and anti-dumping program or the diesel sulfur program, and if so, they will not have to register again for the RFS program.

7.2.1.2 Publication of Registration Numbers

What Commenters Said:

EPA received a comment from NPRA suggesting that EPA publish a list of renewable fuel producer and importer company and facility registration numbers prior to the effective date of the RFS program. The commenter noted that EPA had published a list of registration numbers prior to the June 2006 effective date for the highway diesel rule and that this action proved to be beneficial for implementation purposes.

Letters:
National Petrochemical and Refiners Association (NPRA) OAR-2005-0161-0170, -0232

Our Response:

We will post an initial list of producer and importer registration numbers on our website in early August 2007. On or about September 1, 2007, the start date of the program, we will post an updated list, and will continue to update it periodically.

7.2.1.3 Requirements for Parties Other Than Renewable Fuel Producers and Obligated Parties

What Commenters Said:

EPA received a comment from CHS suggesting that if renewable fuel producers sell fuel directly to retail outlets, those outlets should be required to register, record product transfer documents (PTDs), and report to EPA as would an obligated party. The commenter agreed with EPA's proposed provision that parties who intend to own RINs, and who are not obligated parties, exporters of renewable fuels, or renewable fuel producers or importers must also register before ownership of RINs, and that with registration must come reporting and recordkeeping requirements.

Letters:
CHS Inc. OAR-2005-0161-0203

Our Response:

A retail outlet must register with EPA before they may take ownership of any RINs, in the same way that any party involved in RIN transactions must register with EPA prior to any RIN transactions. In addition, all registered parties, including registered retail outlets, must engage in recordkeeping and reporting consistent with the role they perform (e.g., renewable fuel producer, refiner, broker, etc.)

7.2.1.4 RFS Registration Numbers for Parties Already Registered with EPA

What Commenters Said:

EPA received a comment from Sutherland Asbill Brennan requesting clarification on which registration numbers a currently-registered party and/or facility would record and report under the RFS program, considering that some parties are subject to multiple EPA fuels programs and have more than one registration number. On the same subject, NPRA supported EPA's proposal to utilize the same basic reporting forms for registration that were used for the RFG and anti-dumping programs and allowing currently registered refiners and importers to use their EPA-issued 4-digit company and 5-digit facility identification numbers.

Letters:
National Petrochemical and Refiners Association (NPRA) OAR-2005-0161-0170, -0232
Sutherland Asbill Brennan OAR-2005-0161-0210

Our Response:

A party who has registered under another program covered by 40 CFR Part 80, such as the RFG and anti-dumping programs or the diesel sulfur program, does not have to register for the RFS program and may use their existing company and facility ID numbers. However, if a party, such as a renewable fuels producer, is registered only under the fuel and fuel additive registration program (FFARS) of 40 CFR Part 79, then that party must register for the RFS program.

A party is responsible for keeping its registration information current and changes may be submitted via the registration form. If a party is uncertain of its prior registration status, then that party should contact EPA's reporting staff for assistance.

7.2.1.5 Registration Requirements for Importers and Exporters of Renewable Fuels

What Commenters Said:

Archer Daniels Midland Company (ADM) submitted a comment to EPA asking for clarification on what registrations are needed for import and export of renewable fuels, and whether one registration would apply to both imports and exports.

Letters:
Archer Daniels Midland Company (ADM) OAR-2005-0161-0227

Our Response:

If a single registrant fulfills multiple roles - e.g., if one registrant is both an importer and an exporter - then that party will use the same EPA-issued ID numbers for all of its reports. However, a party performing multiple roles must be sure to keep appropriate records and submit appropriate reports related to all the roles it engages in under the RFS program.

7.2.2 Registration Timing

7.2.2.1 Registration Deadline and Program Start Date

What Commenters Said:

EPA received several comments on our proposed start date of the RFS program and the registration deadline for renewable fuel producers and obligated parties. Shell/Motiva, ExxonMobil, the American Petroleum Institute (API), and NPRA commented that the implementation date for obligated parties and the registration date for renewable fuel producers should be aligned by eliminating the 30 day gap in the proposal between the proposed effective date of the rule and the date by which producers are required to register. BlueFire Ethanol commented that EPA should clarify the registration deadline for obligated parties in order to avoid alienating future obligated parties.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185
BlueFire Ethanol OAR-2005-0161-0200, -0224
ExxonMobil OAR-2005-0161-0197
National Petrochemical and Refiners Association (NPRA) OAR-2005-0161-0170, -0232
Shell/Motiva OAR-2005-0161-0215

Our Response:

We understand the commenters' concerns about aligning the implementation date for obligated parties and the registration date for renewable fuel producers. In the final rule, the registration deadline for all parties, including renewable fuel producers and obligated parties, has been eliminated. However, the final rule states that no party can own RINs or engage in any RIN activities until they have registered and received EPA ID numbers. For example, if a renewable fuel producer is not registered by the program start date, the producer is prohibited from generating RINs until they complete the registration process. With the elimination of the registration deadline, the final rule ensures that future obligated parties will not be alienated from participating in the program.

7.2.2.2 Registration Lead Time

What Commenters Said:

The Renewable Fuels Association (RFA) commented that in the credit program under Clean Air Act (CAA) Section 211(m) [*sic*], EPA provides new registrants three months to register "in advance of the first date that such person will produce or import reformulated gasoline or [reformulated blendstock for oxygenate blending] RBOB or conventional gasoline." RFA suggested that a similar time frame could be provided for the RFS program.

Letters:
Renewable Fuels Association (RFA) OAR-2005-0161-0192, -0228 (hearing)

Our Response:

It is true that EPA had a lengthier registration period under the RFG and anti-dumping program than under the RFS program. The RFG and anti-dumping program was the first program under 40 CFR Part 80 to utilize our current registration forms, and we needed extra time to develop the forms and to disseminate them to the regulated community. The RFG and anti-dumping program registration also began before Internet access was widespread and before we had a well-developed web page.

In the case of the RFS program, the registration forms are simple and require only basic information like company name, address, contact person, etc. We estimate that many registrants will be able to fill the forms out and fax them to us in under an hour. In addition, many parties (particularly refiners and importers) are already registered with EPA under 40 CFR Part 80 programs and will not have to register again under RFS. We believe that new registrants will find the forms easy to fill out and submit, and we will have staff available to assist new registrants should they have any questions about their registration status or about the forms themselves.

7.2.2.3 Early Registration

What Commenters Said:

EPA received comments from NPRA and CHS encouraging EPA to urge ethanol producers, importers, and RFS obligated parties to register for the program early.

Letters:
CHS Inc. OAR-2005-0161-0203
National Petrochemical and Refiners Association (NPRA) OAR-2005-0161-0170, -0232

Our Response:

EPA will accept registration forms as soon as the final rule is published in the Federal Register. We will post registration forms on the EPA website shortly before the final rule is published, and we will work with industry trade groups to help disseminate instructions on registering for the program. While there is no specified registration deadline, a party must be registered prior to owning RINs or engaging in RIN transactions, and we must have adequate time to process registration applications and assign company and facility ID numbers.

7.3 RIN Tracking for Reporting Purposes

7.3.1 Renewable Fuels Tracking System

What Commenters Said:

EPA received a comment from the American Farm Bureau Federation (AFBF), the National Corn Growers Association (NCGA), and the National Council of Farmer Cooperatives (NCFC) that the RFS program will require renewable fuel producers to create a costly tracking system which will require time to develop upon finalization of the rule.

Letters:
American Farm Bureau Federation (AFBF), National Corn Growers Association (NCGA), National Council of Farmer Cooperatives (NCFC)
OAR-2005-0161-0188

Our Response:

We have made every attempt to keep the RFS program as simple and straightforward as possible while still ensuring the program accomplishes the requirements of the Energy Policy Act. The burdens associated with the RFS program are no greater for renewable fuels producers than they are for refiners and importers. The RFS regulations are designed to preserve flexibility for individual parties to determine

how to meet regulatory requirements. The program requires renewable fuel producers to keep records, to report on each batch of renewable fuel they produce, and to include RIN and transferee/transferor information on transaction documents. The system chosen to fulfill these requirements is up to each producer.

7.3.2 RIN Tracking Mechanism

What Commenters Said:

EPA received a comment from Sutherland Asbill Brennan requesting guidance on the appropriate accounting mechanism (e.g., first-in-first-out) for tracking the accumulation, sale, purchase, or compliance use of RINs.

Letters:
Sutherland Asbill Brennan OAR-2005-0161-0210

Our Response:

EPA will not require a specific accounting method for tracking RIN compliance. This approach will permit regulated parties maximum flexibility in meeting regulatory requirements. As the comment points out, a common accounting method is first-in/first-out (FIFO), and this method may be used by some companies. We do not believe it is necessary for us to establish a preferred accounting method and will leave it to individual parties to take into account their specific needs and the needs of their trading partners.

7.4 Reporting and Attest Engagements

7.4.1 Reporting Parties and Report Types

7.4.1.1 Requirements for Parties Holding RINs

What Commenters Said:

EPA received comments from ExxonMobil and API supporting the proposed requirement that any party holding RINs be subject to the reporting and recordkeeping requirements of the program.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185
ExxonMobil OAR-2005-0161-0197

Our Response:

We have tied registration, recordkeeping, and reporting requirements to the ownership of RINs. Any party that wishes to own RINs or engage in any transaction involving RINs must register prior to engaging in such activities.

7.4.1.2 Reporting Frequency

What Commenters Said:

EPA received comments from Baker Commodities and Griffin Industries claiming that the recordkeeping requirements of the RFS proposal for renewable fuel producers would make it very difficult for small biodiesel producers to be in compliance, and the commenters requested that EPA consider lessening the frequency of and the number of different reports required under the regulation.

Letters:
Baker Commodities OAR-2005-0161-0003 through -0006, -0173
Griffin Industries OAR-2005-0161-0189

Our Response:

The number of reports submitted is proportional to the number of activities and transactions in which a party is engaged. Frequent production of small batches or active RIN trading may result in a larger number of reports for EPA. We have adopted quarterly reporting because it is necessary to ensure the validity of RINs and to demonstrate compliance with RIN/volume inventory requirements. Reports were designed to provide EPA with the minimum information necessary to administer this program. Small producers and importers (those who produce or import < 10,000 gallons per year or renewable fuels) are exempt from these requirements.

7.4.1.3 Combining Reports

What Commenters Said:

EPA received a comment from FutureFuel urging that the detailed RIN activity report and the summary RIN activity report should be combined into one report.

Letters:
FutureFuel OAR-2005-0161-0198

Our Response:

The activity and summary reports are designed for different purposes and complement each other. The detailed activity report (RIN transaction report) provides detailed transactional information. A separate RIN transaction report is required for each RIN purchase and sale, and for each retired or expired RIN. The summary RIN activity report focuses on the total number of RINs owned at the start and end of the quarter, and the total number of RINs purchased, sold, retired, and expired during the quarter. We will endeavor to design the reporting formats to be as easy to use and to create as little additional burden as possible. For practical purposes, we intend to permit parties to use a highly simplified method of electronic reporting via the EPA Central Data Exchange (CDX). This method will be simpler than using paper reports, will permit data to be submitted in a variety of common formats, and will provide enhanced security.

7.4.2 Reporting on Facility or Corporate Level

What Commenters Said:

EPA received a comment from API noting that for obligated parties who report obligations and submit compliance reports under aggregated approaches, a corporation will need to be recognized as a "facility" to facilitate trades between obligated entities. The commenter believed that EPA's regulation should clarify this approach.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185

Our Response:

Facility IDs are required from renewable producers when reporting renewable batch information. Facility IDs are also required from obligated parties demonstrating annual compliance on a facility-by-facility basis. However, facility IDs are not required from obligated parties who demonstrate compliance on an aggregated basis. No party is required to use facility IDs when reporting RIN transactions (purchase, sale, retirement, or expiration), as they will be done at the corporate level.

7.4.3 Quarterly Reporting vs. Annual Reporting

What Commenters Said:

We received comments on our proposal to require all RFS reports on an annual basis. The Independent Fuel Terminal Operators Association (IFTOA), FutureFuel, Flint Hills Resources (FHR), ExxonMobil, API, and NPRA supported annual reporting. However, RFA believed that quarterly reporting would not add a significant burden and would provide EPA with more accurate information. Lyondell went a step further and

commented that EPA should collect and issue quarterly summaries of changing RIN credit supplies for use by the credit trading market, to prevent unnecessary supply shortfalls and maintain an efficient use of resources and invested capital for these commodities.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185
ExxonMobil OAR-2005-0161-0197
Flint Hills Resources (FHR) OAR-2005-0161-0222
FutureFuel OAR-2005-0161-0198
Independent Fuel Terminal Operators Association (IFTOA) OAR-2005-0161-0213
Lyondell OAR-2005-0161-0165
National Petrochemical and Refiners Association (NPRA) OAR-2005-0161-0170, -0232
Renewable Fuels Association (RFA) OAR-2005-0161-0192, -0228 (hearing)

Our Response:

EPA believes that quarterly reporting is necessary to demonstrate compliance with quarterly RIN/volume inventory requirements. An added benefit of quarterly reporting is that it will allow us to verify that RINs circulating in the market are valid and that RIN transactions are being reported properly. Therefore, all parties involved in the generation of RINs or who participate in RIN transactions will have quarterly reporting requirements. In addition, obligated parties will continue to have an annual requirement to demonstrate compliance with the renewable volume obligation.

7.4.4 Reporting Deadlines

What Commenters Said:

EPA received a comment from NPRA related to the proposed deadline for annual compliance reports. NPRA commented that in order to permit RIN trading in January and February for compliance in the previous year, annual reports submitted by obligated parties should be due by April 30 rather than the proposed due date of February 28. Furthermore, if EPA decides to promulgate April 30 as the due date for annual reports submitted by obligated parties, the commenter suggested that the proposed due date of May 31 for attest engagements (§80.1164(c)) be changed to June 30.

Letters:
National Petrochemical and Refiners Association (NPRA) OAR-2005-0161-0170, -0232

Our Response:

EPA evaluated several options with regards to an annual reporting deadline. We shared these options with NPRA, API, and other stakeholders. In the end, we decided to retain the February 28 due date, the due date for all other fuels reporting programs, which

will allow refiners to submit all annual fuels reports for 40 CFR Part 80 programs at the same time via one Central Data Exchange (CDX) submission. However, in the first year of the RFS program only, obligated parties and exporters will be given an extra quarter to submit their list of RINs used to demonstrate compliance. This information must be reported by May 31, 2008, for the 2007 compliance period.

7.4.5 Reporting Errors

What Commenters Said:

EPA received a few comments on reporting errors and how the RFS program should handle them. API commented that obligated parties using RINs that are later found to be invalid should be given the opportunity to "cure" a shortfall caused by "invalid" RINs without penalty. FHR suggested that EPA outline a program whereby discrepancies are communicated back to reporting parties, giving each party a reasonable period of time to research and correct their reporting. According to the commenter, given the length of the RIN and the tedious process required to capture the number sequence correctly, especially if manual input is involved, EPA should provide reporting parties some mechanism for identifying errors and making corrections when a party in good faith reports RINs they believe to be valid. FHR also commented that rather than each party being responsible for contacting all its counter parties to validate transactions prior to reporting to EPA, EPA could perform and communicate such reconciliation easily.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185
Flint Hills Resources (FHR) OAR-2005-0161-0222

Our Response:

With regard to the comment that an obligated party that uses RINs should be given an opportunity to "cure" the shortfall caused by the invalid RINs without penalty, the application of a penalty to a good faith purchaser under the RFS program would not be automatic. Enforcement personnel take into account the circumstances surrounding a violation when determining who is liable and what penalty to seek. Permitting a party who has acted in good faith to apply RINs to make up for a shortfall is one possible outcome to an enforcement situation. (For more discussion on this topic, see Section 11.5.1 -- Enforcement and Attestation/Audit Provisions -- of this document.)

While EPA will make every effort to notify reporting parties of apparent discrepancies, the burden of accurately maintaining and reporting valid RINs falls on the RIN producer, owner(s), and obligated party. Accurate and valid transactional information is necessary to comply with RFS recordkeeping and PTD requirements. Reported information is expected to accurately reflect actual transactions or summaries of quarterly activity. One check we have implemented is the attest engagement

requirement. Our reporting staff routinely checks reports for possible errors or reported violations and will contact a party if a report appears to contain erroneous information.

7.4.6 Neat Motor Fuel and Reporting

What Commenters Said:

EPA received a comment from West Park Associates suggesting that in the proposed annual transactional report, the renewable fuel producer would identify the parties to whom the renewable fuel had been sold for use as a neat motor fuel, in order to confirm the right of the producer to separate RINs from the batches of renewable fuel used in neat form.

Letters:
West Park Associates OAR-2005-0161-0202

Our Response:

A renewable fuel producer or importer that produces or imports a volume of renewable fuel shall have the right to separate any RINs that have been assigned to that volume if the renewable fuel is designated as motor vehicle fuel (i.e., as a neat motor fuel that is not, for example, blended with gasoline, gasoline blendstocks, diesel fuel or diesel fuel blendstocks) and is used as motor vehicle fuel. The commenter's suggested approach would involve tracking volumes of renewable fuel sold as neat motor fuel and not RINs. However, the reporting and compliance mechanism for RFS is based on RIN ownership transactions and not on renewable volume transactions. EPA will rely on producer batch reporting and recordkeeping requirements to ensure proper transfer and use of renewable fuel used in its neat form. A renewable fuel producer who separates RINs from a volume of renewable fuel must designate this volume as motor vehicle fuel on the production batch report. The renewable fuel producer must also keep records to demonstrate that the renewable fuel was in fact used as neat motor vehicle fuel.

7.4.7 Attest Engagements

What Commenters Said:

We received a comment from NPRA on our proposed attest engagement requirements for obligated parties. The commenter expressed concern that the requirements were overly burdensome, emphasizing that the purpose of an attest engagement is a spot check of a subset of records, not a comprehensive review of every record.

Letters:
National Petrochemical and Refiners Association (NPRA) OAR-2005-0161-0170, -0232

Our Response:

We agree that examination of representative samples of RIN transaction documents would provide sufficient oversight and that the requirement included in the proposed regulations may be unnecessarily burdensome. As a result, the attest engagement provisions have been modified to require the auditor to examine only representative samples of RIN transaction documents.

7.5 Product Transfer Documents (PTDs)

7.5.1 Invoices vs. Bills of Lading

What Commenters Said:

EPA received many comments on the use of PTDs for conveying RIN information. Some comments related to the types of documents that should be viewed as PTDs. Marathon Petroleum Company (MPC), Magellan, and API commented that RIN PTD requirements should apply to invoices (ownership documents) and not bills of lading (custody documents). Shell/Motiva agreed with EPA's proposal to require that any documentation used to transfer custody of or title to a batch from one party to another identify the RINs assigned to that batch. Ethanol Products, on the other hand, supported the allowance of a parallel reporting document that would essentially separate RINs from their respective physical gallons, thereby enabling sellers to transfer RINs in an electronic format to their larger customers.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185
Ethanol Products OAR-2005-0161
Magellan OAR-2005-0161-0208
Marathon Petroleum Company (MPC) OAR-2005-0161-0175
Shell/Motiva OAR-2005-0161-0215

Our Response:

EPA agrees that RIN PTD requirements apply to ownership documents, not custody documents. We intended the term PTD to apply broadly to a variety of RIN ownership documents, including those referred to as invoices or by other names. After lengthy discussions with stakeholders, including Ethanol Products, we determined that a fungible system for both renewable fuel and RINs is of paramount importance for the RFS program to succeed. This system is described in the preamble to the final rule. The final rule requires that assigned RINs be transferred simultaneously with ownership of renewable volume. This may be achieved by directly listing assigned RINs on a PTD or by referencing in the PTD a parallel document (electronic or paper) listing assigned RINs included in the transaction.

7.5.2 Reporting Location of Renewable Fuel

What Commenters Said:

FHR requested that EPA eliminate the requirement that the location of the renewable fuel at the time of transfer be identified, claiming that RIN information will likely be communicated on invoice PTDs and that often title changes during transit and therefore the location at the time of transfer is difficult or impossible to identify.

Letters:
Flint Hills Resources (FHR) OAR-2005-0161-0222

Our Response:

EPA agrees that RINs will likely be a part of invoices or other ownership documents when transferring title of renewable fuels. Since EPA does not intend to track changes in custody of renewable fuel during transit, we have removed location of the renewable fuel at the time of transfer from the recordkeeping and PTD requirements in the final rule.

7.5.3 Reporting RIN Separation

What Commenters Said:

We received a few comments on our proposal regarding PTDs for renewable fuel from which RINs have been separated. We proposed requiring sellers of renewable fuel from which RINs were separated to affirmatively state this fact on PTDs. FHR and Magellan did not support this requirement, but the Society of Independent Gasoline Marketers of America and the National Association of Convenience Stores (SIGMA/NACS) did. Magellan suggested that, if EPA determines that such notification is necessary, the best solution would be to note the separation or removal of the RIN on the invoice that accompanies the fuel.

Letters:
Flint Hills Resources (FHR) OAR-2005-0161-0222
Magellan OAR-2005-0161-0208
Society of Independent Gasoline Marketers of America, National Association of Convenience Stores (SIGMA/NACS) OAR-2005-0161-0234

Our Response:

The final rule requires that the PTD used to transfer ownership of renewable fuel from which RINs have been separated, or for renewable fuel that has no RINs, include

the statement "No RINs transferred." Since a renewable volume may only exist as either a volume with RINs or a volume without RINs, EPA felt that it was reasonable to require specific language for each case. This requirement also eliminates any possibility for confusion during renewable ownership transactions, given that PTDs for volumes with RINs attached are permitted to report actual RINs separately, but in parallel, with the main PTD document (e.g. an invoice).

7.6 Recordkeeping

7.6.1 Obligations of Non-Owners

What Commenters Said:

We received two comments related to the reporting and recordkeeping obligations of parties who gain custody of renewable fuel for the purpose of blending or transferring the fuel but do not gain ownership. FutureFuel commented that the final RFS rule should clarify that a terminal operator who does not own renewable fuel, but merely stores or transfers it, should have no obligation to provide information about any RINs associated with the fuel. In the same vein, KinderMorgan referenced terminals "for hire" and suggested that EPA clarify that recordkeeping, reporting and PTD requirements remain with the title owner of the fuel and not with the third party terminal that only has custody of the fuel.

Letters:
FutureFuel OAR-2005-0161-0198
KinderMorgan OAR-2005-0161-0231

Our Response:

The RFS program does not include a designate and track accounting requirement like the one that exists for the diesel sulfur program at 40 CFR Part 80, subpart I. For the RFS program, RIN transactions are based solely on the transfer of RIN ownership. Therefore, in the case of the terminal operator who does not take ownership of the renewable fuel, but only possession of it, they would not be responsible for reporting the RINs associated with it. However, a terminal that takes ownership of renewable fuel with RINs attached has all of the recordkeeping and reporting responsibilities of a RIN owner.

7.6.2 Fuel Used at Cellulosic Ethanol Plants

What Commenters Said:

EPA received a comment from NPRA that renewable fuel producers, not obligated parties and exporters, should be required to maintain records on the amount and type of fossil fuel used at plants producing cellulosic ethanol.

Letters:
National Petrochemical and Refiners Association (NPRA) OAR-2005-0161-0170, -0232

Our Response:

EPA agrees that only producers of cellulosic ethanol or waste-derived ethanol are required to keep records of fuel feedstock.

8 IMPACTS ON FOSSIL FUEL CONSUMPTION AND GREENHOUSE GASES

What We Proposed:

The comments in this section correspond to Section IX of the preamble to the proposed rule and are targeted at the effects of renewable fuel use on fossil fuel consumption and greenhouse gases and other related implications. A summary of the comments received and our response to those comments are located below.

8.1 Lifecycle Modeling

[***Note**: Comments related to the use of lifecycle analyses in setting Equivalence Values are addressed in Section 3.5*]

What Commenters Said:

Several commenters raised the issue of building consensus on renewable fuels lifecycle modeling assumptions and inputs, and they indicated support for EPA to initiate a public dialogue on lifecycle modeling. The American Petroleum Institute (API) and Marathon Petroleum Company (MPC) believed that such a dialogue should include a discussion of the "boundaries" of lifecycle models, i.e., how the overall problem is defined. The Union of Concerned Scientists (UCS) commented that EPA, in cooperation with other appropriate agencies, should put a flexible process in place within this rule to establish reporting standards and develop a scientific consensus on lifecycle values.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185
Marathon Petroleum Company (MPC) OAR-2005-0161-0175
Union of Concerned Scientists (UCS) OAR-2005-0161-0226

Our Response:

This rulemaking is an initial step in the public dialog process for reviewing lifecycle modeling inputs and assumptions used to represent benefits of increased renewable fuel use. There currently exists no organized, comprehensive dialogue among stakeholders about the appropriate tools and assumptions behind any renewable fuel lifecycle analyses, but this is one of our goals. Conclusions reached from such a dialogue could lead to the use of lifecycle analyses in future actions to establish incentives for renewable fuels. We will be initiating more comprehensive discussions about lifecycle analyses with stakeholders in the near future.

8.2 Impacts of Increased Renewable Fuel Use

8.2.1 Model Used and Reduction Benefits Calculated

What Commenters Said:

EPA received comments from three organizations concerned with greenhouse gas (GHG) reductions from renewable fuels displacing conventional fuels. The Renewable Fuels Association (RFA) emphasized the inherent benefits of renewable fuels with respect to GHG reductions, and Environmental Defense strongly supported recognizing and rewarding any and all methods, including waste-derived power generation, that reduce the greenhouse gas profile of biofuels.

API commented at length on EPA's use of Argonne National Laboratory's GREET model for conducting renewable fuels lifecycle analysis. The commenter noted that different studies reveal that different models yield different results with respect to estimating greenhouse gas reductions from corn-based ethanol and biodiesel versus conventional fuel, and that these differences may stem from model assumptions related to the energy output/input ratios of ethanol and fossil fuels. API also commented that the extent to which the GREET model accounted for emissions from land use changes associated with biofuels production was unclear.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185
Environmental Defense OAR-2005-0161-0172, -0223
Renewable Fuels Association (RFA) OAR-2005-0161-0192, -0228 (hearing)

Our Response:

EPA acknowledges that several other models, other than the GREET model, have been developed for conducting renewable fuels lifecycle analysis. For example, researchers at the Energy and Resources Group (ERG) of the University of California Berkeley have developed the ERG Biofuel Analysis Meta-Model (EBAMM) and Mark Delucchi at the Institute of Transportation Studies of the University of California Davis has developed the Lifecycle Emissions Model (LEM). There are also other non-fuel specific lifecycle modeling tools that can be used to perform renewable fuel lifecycle analyses.

Several studies have been released recently making use of these other models and showing slightly different results than we find in the analysis done for this rule. For example, whereas GREET estimates a net GHG reduction of about 22% for corn ethanol compared to gasoline, the previously cited works by Farrell et al. utilizing the EBAMM show around a 13% reduction. While there may be small differences in the models in terms of emissions and energy uses associated with ancillaries (e.g., emissions to produce fertilizer, electricity, etc.) the main difference in results is not due to the model used but assumptions on scope and input data used.

For example, most studies focus on average or current ethanol production, which uses a current mix of wet and dry mill ethanol production, and coal and natural gas as process energy. In contrast, we consider new or marginal ethanol production which implies a higher portion of more efficient dry mill production and mix of process fuels. Other studies also typically base ethanol and farm energy use on historic data while we are assuming a state of the art dry milling plant and more current farming energy use data. Assumptions concerning agriculture-related GHG emissions could also have an impact on overall results. Other studies also differ in the environmental flows considered. For example, Delucchi uses different types of greenhouse gases and global warming potentials compared to those used in this final rulemaking to determine GHG emissions.

The differences found by different studies and models used emphasize the importance of the input data and methodology when using lifecycle analysis. It also shows how dependent this type of analysis is on the assumptions made throughout the model. Based on differences in scope and input data considered between these other studies and what we defined in this analysis, we believe the differences in results that are seen are reasonable and the values we are obtaining from our use of the GREET model are acceptable for this analysis.

The issue of CO_2 emissions from land use change associated with converting forest or CRP land into crop production for use in producing renewable fuels is an important factor to consider when determining the overall sustainability of renewable fuel use. While the analysis done for this final rulemaking is indicating that there will not be a significant change in land use, this is an area we will continue to research for any future analysis.

8.2.2 Use of FUEL-CO2 Model

What Commenters Said:

In the proposed rule, EPA discussed the "FUEL-CO2" model for estimating lifecycle greenhouse gas emissions and fossil energy usage. API and MPC commented that no information was provided on the "FUEL-CO2" model either in the draft RIA or on the EPA website, and that EPA should provide appropriate notice and opportunity for public comment on the model if it is to be used for regulatory purposes.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185
Marathon Petroleum Company (MPC) OAR-2005-0161-0175

Our Response:

EPA's final rulemaking does not make use of the FUEL-CO2 model. We will continue to evaluate the FUEL-CO2 model as a potential tool for future regulatory actions, and will provide the opportunity for public input and comment if we decide in the future to use the model for regulatory purposes.

8.2.3 Relative Fuel and Energy Savings of Renewable Fuels

What Commenters Said:

A private citizen commented that he has concerns that EPA has not looked at the issue of using alternate fuels to decrease the dependency on crude oil. The commenter noted that he previously studied a number of alternate sources of fuel for a specific company and found that many were not energy savers. He also noted that, at that time, ethanol took more energy to produce than a gallon of ethanol provided as a fuel source. The commenter also stated that, in some cases, it might be electrical energy that makes up the difference. He noted, however, that this could require the construction of more powerhouses as the country is close to overloading the current electrical generating capacity.

Letters:
Private CitizenOAR-2005-0161-0156

Our Response:

Our lifecycle analyses do examine the impacts of renewable fuels on consumption of fossil fuels and dependence on foreign sources of petroleum. See Section IX of the preamble to the final rule. However, these analyses we were meant only to provide an indication of the potential impacts of the rule. They were not used in the development of the RFS program.

The Energy Act provided no authority to include the impacts of changes in the electrical power industry in the development of the RFS program, nor did it provide authority to account for renewable fuels used for the production of electricity in the RFS program. However, to the degree that electricity was a factor in the GREET model used for our lifecycle analyses, our lifecycle estimates did account for it.

9 RENEWABLE FUEL PRODUCTION AND USE

What We Proposed:

The comments in this section correspond to Section VI of the preamble to the proposed rule and are targeted at the projected renewable fuel production and use. A summary of the comments received, as well as our response to those comments, are located below.

9.1 Ethanol Industry - Future Production/Consumption

What Commenters Said:

The American Petroleum Institute (API) took issue with several statements EPA made in the draft Regulatory Impact Analysis (DRIA) associated with this rule. The commenter believed that the statement "*Over the last 25 years, domestic fuel ethanol production has steadily increased due to technological advances, environmental regulation, and the rising cost of crude oil,*" (p.117) was misleading, as the cost of crude oil has both increased and decreased over the last 25 years. The commenter also believed that the following statement was speculative and should be removed: "*record-high crude oil prices are expected to continue to drive up demand for ethanol*" (p.119). API believed that the following statement was also speculative: "*However ethanol production is not expected to stop here … If all these plants come to fruition, the combined domestic ethanol production could exceed 20 billion gallons…*" (p.121).

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185

Our Response:

We have considered API's comments on crude oil's impact on ethanol use and made some slight modifications to our final rule making text. We have made reference to "market demand" where appropriate. We have also elected to maintain some references to the impact of crude oil price on ethanol demand. While ethanol market demand is a function of many factors (environmental regulation, state MTBE bans, ethanol mandates, production subsidies, and retail incentives, to name a few), it is directly affected by the price of crude oil. In the Annual Energy Outlook (AEO) 2006, the Energy Information Administration (EIA) forecasted 9.6 billion gallons of ethanol use by 2012 based on forecasted crude oil pricing of $48/bbl. In the early release of AEO 2007, EIA is forecasting increased ethanol use (11.2 billion gallons by 2012) based on an increased crude oil forecast ($52/bbl). While EIA's linear programming (LP) model used to determine future ethanol consumption is dependent on many factors (e.g., feedstock availability and how fast plants could feasibly come online), crude oil price is certainly

one of them. The higher the crude oil price, the more attractive ethanol blending becomes.

9.2 Biodiesel Industry- Future Production/Consumption

9.2.1 Biodiesel Demand in 2012

What Commenters Said:

EPA received two comments related to our estimates of biodiesel demand in 2012. Both commenters stated that EPA's estimate, 300 million gallons, was low. FutureFuel believed that biodiesel sales were supply limited, not demand limited. The commenter cited National Biodiesel Board data that suggested that the biodiesel industry itself believes demand currently is substantially greater than 300 million gallons, and stated that it believes EPA should take this into consideration. A private citizen noted that if the Biodiesel Blender's Tax Credit is not extended beyond 2008, biodiesel production would likely be attenuated unless energy prices are much higher than our analysis assumed. Nonetheless, the commenter believed it would be appropriate to use a scenario that assumed continued incentives for biodiesel production at both the federal and state levels.

Letters:
FutureFuel OAR-2005-0161-0198
Private Citizen OAR-2005-0161-0158, -0159

Our Response:

We realize that the 2012 biodiesel demand forecast of 300 million gallons generated by EIA seems conservative, but this may be reasonable considering the expiration of key tax incentives. We agree that the fraction of the growing methyl ester production capacity that will be sold as biodiesel will be largely dependent on extension of tax incentives and implementation of state mandates (similar to the history of ethanol blending). However, lacking any more certain estimate for the analysis of inputs for the final rule, we have continued to utilize the EIA forecast estimate of 300 million gallons.

9.2.2 Biodiesel Production Capacity vs. Projected Use

What Commenters Said:

One private citizen commented on the discrepancy between the 2005 domestic capacity for biodiesel production, 290 million gallons, and actual production of 91 million gallons.

Letters:
Private Citizen OAR-2005-0161-0158, -0159

Our Response:

Biodiesel production plants can sell methyl esters into various chemical markets and have been doing so for years. They are a valuable feedstock in the manufacture of lubricants, polymers, detergents, soaps, and other common products. Therefore, we believe it is useful to keep in mind that biodiesel competes with other uses for the methyl esters from these facilities based on price and demand. This helps to explain the discrepancy in biodiesel production capacity and its projected use as fuel.

10 ENVIRONMENTAL IMPACTS

What We Proposed:

The comments in this section largely correspond to Section VIII of the preamble to the proposed rule, but are targeted at the environmental and emissions impacts of the use of renewable fuels. A summary of the comments received, as well as our response to those comments, are located below.

10.1 Effect of Renewable Fuel Use on Emissions from Gasoline-Fueled Motor Vehicles and Equipment

10.1.1 Restrictions on Gasoline Handling During Distribution

What Commenters Said:

We received a couple of comments regarding the way that gasoline handling practices are currently regulated. We also received a comment on the flexibility granted States to implement fuel control measures which result in the need to segregate their gasoline from that being distributed in neighboring areas.

BlueFire Ethanol suggested that EPA slightly relax its restrictions on mixing ethanol and non-ethanol gasoline blends in order to enhance distributors' ability to use ethanol in the gasoline pool. They provide a number of reasons to justify this relaxation: 1) the relaxation of such mixing for reformulated gasoline per Section 1513 of the Energy Act, 2) the fact that increased Reid vapor pressure (RVP) levels do not appreciably increase reactive volatile organic compound (VOC) emissions, 3) the 2% VOC performance adjustment granted Midwest reformulated gasoline (RFG) blended with ethanol. BlueFire Ethanol also stated that the impacts of increased commingling will be inconsequential as ethanol blends become the dominant fuel in an area. They suggested that EPA could, alternatively, temporarily require a slightly lower overall RVP (or volatility constraint) to account for this impact, so ethanol can be blended downstream with no concern.

The New York State Department of Environmental Conservation (NYDEC) suggested that EPA: 1) explore the benefits to the distribution system (and the possibility of enabling improved criteria pollutant and toxic air pollutant control) of restricting octane, by eliminating mid-grade gasoline or capping the octane of premium; 2) evaluate the impact on the distribution system of State Implementation Plan (SIP) related fuel controls compared to other business and regulatory practices that increase the number of gasoline formulations distributed; and 3) determine whether other simplifications to gasoline marketing could preserve or enhance environmental benefits at reduced cost.

Letters:

BlueFire Ethanol OAR-2005-0161-0200, -0224
New York State Department of Environmental Conservation (NYDEC) OAR-2005-0161-0169

Our Response:

The comment by BlueFire Ethanol to relax the commingling restrictions on ethanol containing fuels is outside the scope of the RFS rule. However, since several of the emission impacts estimated in the RFS rule analyses bear upon BlueFire Ethanol's recommendation, we will address these aspects of their comments here.

First, per Section 1513 of EPAct, Congress directed EPA to allow the limited mixing of ethanol containing RFG with other RFG twice during the VOC-control period (i.e., summer) for a limited amount of time to facilitate the use of ethanol and non-ethanol containing RFG. EPA recently conducted a rulemaking implementing this and several other provisions of EPAct which addressed the use of oxygenates in gasoline (71 FR 8973, February 22, 2006). Section 1513 explicitly refers to reformulated gasoline. Congress did not extend this allowance to conventional gasoline. Section 1513 explicitly refers to the continued application of the volatility controls for conventional gasoline described in Section 211(h) of the Clean Air Act (CAA). Section 211(h) allows ethanol-gasoline blends to have an RVP of 1.0 psi higher than applicable to non-ethanol gasoline if the ethanol content is 10 vol%. No RVP allowance is granted ethanol blends containing less ethanol. As commingling of ethanol and non-ethanol blends would generally dilute the ethanol content of the 10 vol% ethanol blend to less than 10 vol%, the 1.0 psi RVP allowance would not apply to the commingled mixture. Thus, the provisions of Section 211(h) continue to prohibit commingling of ethanol and non-ethanol conventional gasoline blends. BlueFire Ethanol's reference to Section 1513 of the Energy Act does not support its recommendation.

Second, BlueFire Ethanol stated that increased RVP does not increase emissions of reactive VOCs. They offer no support for this statement. As indicated in Table 3.1-20 of Chapter 3 of the Final Regulatory Impact Analysis (RIA), RVP continues to affect non-exhaust VOC emissions from onroad vehicles well out in to the future (a 1.0 psi increase in RVP increases emissions 12%). This impact of RVP is also supported by the most recent test programs conducted by EPA which support the MOBILE6.2 estimates of evaporative emissions.[1] Mixing ethanol and non-ethanol containing gasoline during distribution will increase the RVP of the non-ethanol fuel by 1.0 psi and affects every user of that fuel. In contrast, the commingling that occurs in vehicle fuel tanks is a function of fuel purchasing patterns and generally is projected in Chapter 3 of the Final RIA to not exceed 0.3 psi RVP, even for a worse-case local fuel supply of 50% ethanol containing gasoline and 50% non-ethanol containing gasoline.

Third, EPA did grant RFG sold in the Chicago and Milwaukee RFG areas an adjustment to the applicable VOC performance standard which is equivalent to an RVP increase of 0.2 psi.

[1] For example, "Evaluating Resting Loss and Diurnal Evaporative Emissions Using RTD Tests," U.S. EPA, M6.EVP.001, EPA420-R-01-018, April 2001. Other similar studies can be found at the EPA website for the MOBILE6.2 onroad emission inventory model, http://epa.gov/otaq/models/mobile6/m6tech.htm.

This adjustment was due, however, to further reductions in carbon monoxide (CO) emissions which occur with the use of a 10 vol% ethanol RFG compared to the CO emission reduction achieved by an 11 vol% methyl tertiary butyl ether (MTBE) RFG and not a reduction in or elimination of VOC reactivity, as suggested by BlueFire Ethanol. BlueFire states that reductions in VOC emissions from newer vehicles will justify even greater adjustments in the future. However, CO emissions, and the reduction in CO emissions due to ethanol use, are also decreasing. Thus, it is not clear whether the magnitude of such an adjustment to RFG VOC performance will increase or decrease in the future. BlueFire Ethanol does not provide any specific information pertaining to this analysis, which again is outside the scope of the RFS rule.

Fourth, as discussed in Chapter 2 of the Final RIA, we expect that the use of ethanol blends will be very geographically focused, with ethanol blend use dominating some areas and being quite low in others. This approach tends to reduce the cost of distributing the finished gasoline in both types of areas. In areas where ethanol use is essentially 100% or zero, commingling of ethanol-containing and non-ethanol containing fuels is moot. It is only in the so-called border areas that the issue is relevant. To date, we are not aware of the prohibition on commingling causing any practical or economic difficulty with respect to ethanol blending. In fact, as described in Chapter 2 of the Final RIA, ethanol use in gasoline is increasing dramatically in the presence of such prohibitions. Except in a few local areas, ethanol blending in conventional gasoline is allowed to have an RVP level 1.0 psi higher than the standard applicable to non-ethanol gasoline. This differs from summertime RFG, where both ethanol and non-ethanol blends must meet the same RVP level. Thus, there is not a large difference in the incentive to blend ethanol in summer or winter conventional gasoline. Because of this, we do not observe large shifts in ethanol use by season occurring with all fuel suppliers at the same time. The need to manage any shifts between ethanol and non-ethanol blends in the distribution system likely has more to do with preventing water contamination as with RVP control.

BlueFire Ethanol provided no information which indicates that a change to the commingling prohibition would increase ethanol blending. Thus, it is not clear that any benefits would accrue from such a change. Emissions would clearly increase. Thus, even if such an action were within the scope of this rule, there appears to be no justification for taking this action at this time.

BlueFire Ethanol also suggested that, if increased commingling would increase RVP, EPA could compensate for it by reducing the applicable RVP standards. Again, such an action is outside the scope of this rule. However, reducing the RVP standards would increase the cost of gasoline and reduce its supply.[2] Again, no information is provided demonstrating that allowing increased commingling during fuel distribution would reduce costs or increase fuel supply to compensate. Thus, we do not believe that this course of action would be appropriate at this time.

The actions recommended by NYDEC are outside the scope of the RFS rule. In addition, it is not clear what benefits would accrue from restricting octane, as suggested in their first point listed above. The impact of SIP-related fuel controls on gasoline distribution was recently addressed in a Report to Congress required by Section 1541 of the Energy Act. EPA, along with

[2] EPA White Paper, "Study of Unique Gasoline Fuel Blends ("Boutique Fuels"), Effects on Fuel Supply and Distribution and Potential Improvements," EPA420-P-01-004, October 2001.

the Department of Energy (DOE), will also be conducting a more extensive analysis of such impacts in another Report to Congress required by Section 1509 of the Energy Act and due in 2008. The same is true regarding the impact of simplifications to gasoline marketing.

10.1.2 Effect of Ethanol Blending on Gasoline Fuel Quality

10.1.2.1 General

What Commenters Said:

NYDEC suggested that EPA improve its estimate of the impact of ethanol blending on gasoline quality by conducting a detailed analysis of the gasoline quality data. E.g.:

1) Conduct refinery analysis on a refinery by refinery basis, or by grouping refineries by a combination of region and similar product output (per batch reports). Consider imports and blending-only refineries;
2) Extend analysis beyond summer regular grade gasoline;
3) Analysis of EPA's batch report database (inc. gasoline properties) should play a key role in evaluating the potential for, and technical and economic impacts of, more environmentally protective gasoline formulation;
4) Evaluate the compositional changes resulting from the addition of ethanol to gasoline or gasoline blendstocks at loading facilities; and
5) Evaluation of changes in gasoline composition associated with increased use in ethanol should be comprehensive (e.g., do not assume gasoline aromatics will be reduced because increased use of ethanol will provide sufficient octane). The catalytic reformer, a major source of high octane aromatics, also plays a role in producing petrochemical feedstocks and in producing hydrogen needed to produce low sulfur gasoline, and ultra low sulfur diesel fuel.

Letters:
New York State Department of Environmental Conservation (NYDEC) OAR-2005-0161-0169

Our Response:

EPA has analyzed the fuel quality data collected from refiners and importers and used it to calibrate the refinery modeling which is described in Chapter 7 of the Final RIA. We also updated our estimates of the impact of ethanol blending on gasoline quality using this refinery modeling, as described in Chapter 2 of the Final RIA.

It is difficult to use the refiner and importer data directly to estimate the impact of ethanol blending on gasoline quality. First, while it is possible to compare the quality of gasoline produced by different refiners or importer, the differences in the fuel quality of those refiners blending ethanol and those which do not cannot be automatically attributed to the effect of ethanol blending. Second, even in those cases where a specific refiner changed their ethanol blending habits, the change in fuel quality cannot be automatically attributed to the change in

ethanol blending. The relative production volumes of various types of gasoline (e.g., RFG, low RVP gasoline, etc.) might have also changed. It may be possible to find specific situations where these other changes did not occur and therefore, attribute all of the change in fuel quality to the change in ethanol blending. However, this would involve a considerable amount of time and resources, which were not available within the timeframe of this rule. We believe that our refinery modeling performed for the final rule (and discussed in Chapter 7 of the Final RIA) appropriately characterizes the changes in gasoline quality with ethanol use.

10.1.2.2 Effect of Commingling Ethanol and Non-Ethanol Blends on In-Use RVP Levels

What Commenters Said:

Emission estimates for a particular area often use the average fuel properties of all the gasoline or diesel fuel sold in that area. In most cases, this is sufficiently precise to capture the effect of fuel quality on emissions. However, when ethanol is blended into gasoline, or when ethanol and non-ethanol gasoline blends are mixed, the RVP of the fuel mixture is not the simple volumetric average of the two original fuels. As discussed in the Appendix to Chapter 2 of the Final RIA, just a small amount of ethanol tends to increase RVP by roughly 1.0 RVP, while 10 vol% increases RVP to the same degree. While mixing ethanol and non-ethanol blends during distribution is generally prohibited, such mixing occurs in vehicle fuel tanks when drivers refuel with different fuels. The result in an increase in RVP over and above the volumetric average of the RVP of the fuels sold in that area. This RVP increase is commonly referred to as the commingling impact. Several commenters addressed EPA's estimate that the use of ethanol in less than 100% of the gasoline in an area would increase the RVP in vehicle fuel tanks by 0.1 psi over the simple volumetrically weighted average RVP based on the market share of ethanol blends and pure gasoline in that area. Concern was also expressed about how the areas where this 0.1 RVP commingling impact applied were determined.

The Renewable Fuels Association (RFA) and the Renewable Energy Action Project (REAP) commented that it is unclear how EPA decided to apply the 0.1 psi RVP bump to account for commingling, and how the 0.1 psi figure was reached. REAP noted that the California Air Resources Board (CARB) has argued that the commingling effect is less than 0.1 psi RVP. RFA noted that the draft Regulatory Impact Analysis (DRIA) picked several states where commingling is expected, but it believes that this exercise is almost impossible. RFA recommended a more substantial analysis of the commingling issue and the reasons for settling on 0.1 psi RVP adjustment to remedy uncertainty, and recommended that EPA's analysis consider the trends in the market in its analysis on commingling.

Letters:
Renewable Energy Action Project (REAP) OAR-2005-0161-0204
Renewable Fuels Association (RFA) OAR-2005-0161-0192, -0228 (hearing)

Our Response:

EPA reviewed the description of the methodology used to estimate the commingling impact in the Notice of Proposed Rulemaking (NPRM). We have expanded this description in order to aid the reader in understanding the methodology (see the Appendix to Chapter 2 of the Final RIA). Our methodology considers all the available studies of fuel mixing in vehicle fuel tanks, including a recent survey conducted by CARB. We found more commingling than that estimated by CARB due to what we believe is an improved understanding of the brand loyalty of fuel purchasers. Understanding brand loyalty is a critical factor in estimating commingling, as fuel sold from refueling outlets carrying the same brand of gasoline tend to sell the same fuel (i.e., ethanol or non-ethanol containing). Our methodology differs from that used by CARB in that we distinguish between fuel sold at so-called "branded" stations and "un-branded" stations. The CARB survey data indicated much lower brand loyalty for the vehicle operators refueling at the latter group of stations. The proportion of unbranded (versus branded) fuel stations surveyed by CARB was lower than the proportion of unbranded stations existing nationwide. Thus, considering separate estimates for brand loyalty at branded and unbranded stations decreased the average level of brand loyalty and increased the frequency of commingling.

Our updated commingling model indicates that as little as a 10% market share for ethanol blends increases the average RVP across all vehicles' fuel tanks by 0.1 psi RVP over the average RVP of all the fuel sold in the area. The same is true if the market share of non-ethanol gasoline is as little as 10% (the remainder being ethanol blends). A 30/70 mix of the two types of fuels increases commingling to 0.23-0.24 psi RVP. The highest level of commingling occurs at a 50/50 split, where commingling reaches 0.27 psi RVP. As described in Chapter 2 of the RIA, it is impossible to predict exactly where ethanol and non-ethanol blended fuel will be sold. Since the RFS applies on a national average basis, there is no regulatory incentive for ethanol blending to change dramatically at a county or state line. We have generally made the assumption that ethanol blending will be either zero or 100% in a given state (with a further urban/rural distinction in some states). This clearly underestimates the impact of commingling, as commingling is zero for either of these two situations. Any deviation from either 0% or 100% will result in an increase in RVP.

For the NPRM, we determined two types of situations where commingling was likely to be significant. One was a state or subsection of a state (e.g., an RFG area in a state) where the ethanol market share was positive, but not 100%. The other was a state on the "border" between zero ethanol use and 100% ethanol blend market penetration. While we assumed that ethanol use went from 100% to zero at the state line, practically speaking, a "border" area will always exist between areas where ethanol use predominates and those where it is minimal. There is unlikely to be a "bright line" between these two areas. This is evidenced by current ethanol use patterns. Despite sufficient ethanol use to convert the fuel supply of entire Midwestern states to 10 vol% ethanol blends, we do not see this happening. Instead, we find numerous states with significant, but not 100% use of ethanol blends. The fraction of gasoline represented by low level ethanol blends for Midwestern states is shown below in Table 10-1, as estimated in Chapter 2 of the RIA.

Table 10-1. Level of Ethanol Blend Use in 2004	
State	(Fraction of total gasoline sales)
ILLINOIS	0.54
INDIANA	0.40
MICHIGAN	0.16
OHIO	0.37
WISCONSIN	0.25
IOWA	0.71
KANSAS	0.29
MINNESOTA	1.00
MISSOURI	0.18
NEBRASKA	0.45
NORTH DAKOTA	0.30
SOUTH DAKOTA	0.55

As can be seen, only Minnesota shows 100% use of ethanol blends, which is due to their mandate. Otherwise, ethanol use tends to spread into adjacent states (e.g., Missouri, Michigan) before reaching 100% market penetration in high producing states (e.g., Iowa, Illinois). Thus, our estimate that the market penetration of ethanol use will not change from 100% to zero between States is reasonable.

Still, there was the need for judgment to estimate where the use of ethanol blends would be substantial but less than 100%. For the FRM, we have adjusted our approach to estimating commingling. As described in Chapter 2 of the Final RIA, we are now relying on refinery modeling to predict the level of ethanol use in RFG and conventional gasoline at the Petroleum Administration District for Defense (PADD) level. This has resulted in more areas with significant, but less than 100% ethanol blend use. Thus, we have simply based our estimate of the RVP commingling impact on the local mix of fuels being sold in each area. The specific commingling impact is based on our updated commingling model, which is described in the Appendix to Chapter 2 of the Final RIA. The net result of this change is the application of a commingling impact to fewer areas. However, in many cases, the commingling impact is larger than 0.1 psi. This approach is still likely to underestimate the impact of commingling in the "border" areas of ethanol use. However, it avoids the possibility that commingling is being over-estimated.

10.1.2.3 RVP and Distillation Temperatures

What Commenters Said:

RFA commented that it has concerns regarding some of the assumptions used by EPA in its analysis, such as (a) the distillation temperature drops used in DRIA Table 2.2-4 (based on four cities) and the RVP increase used, which may overstate the effects of T50 and RVP in Table 2.2-5.

Letters:
Renewable Fuels Association (RFA) OAR-2005-0161-0192, -0228 (hearing)

Our Response:

Regarding the impact of ethanol blending on T50 and RVP, EPA did not assume these effects. The impact of ethanol blending on T50 levels was based on an analysis of fuel survey data collected by the Alliance of Automobile Manufacturers (Alliance). While there are several limitations involved in the methodology used to derive these impacts (which were fully described in the Draft RIA), RFA did not present any data with which to modify this effect.

Since the time of the NPRM, EPA has conducted refinery modeling which provides an alternative estimate of the effect of ethanol blending on T50, as well as other properties of gasoline. This refinery modeling indicates a smaller effect of ethanol on T50. Due to the limitations involved in the analysis of the Alliance survey data, we believe that the refinery modeling likely provides a better indication of the impact of ethanol on gasoline properties. Thus, the T50 impacts shown in Table 2.2-4 of the Draft RIA have been replaced with revised estimates in Table 2.3-11 of the Final RIA.

Regarding the impact of ethanol blending on RVP, this impact was also not assumed, but based on an analysis of the Alliance survey data. In this case, we took extra steps to ensure that the impact (1.0 psi RVP) was not over-estimated due to the different numbers of fuel samples taken in different cities and an unequal number of gasoline and ethanol-gasoline blend samples. Given that current federal law allows ethanol blends to have an RVP of 1.0 psi higher than the RVP standard applicable to non-ethanol blends, our estimate that ethanol blending increases RVP by 1.0 psi appears quite reasonable and justifiable. Thus, this 1.0 psi impact was maintained for the final rulemaking analysis.

10.1.3 Onroad Motor Vehicles Emissions from Low Level Ethanol Blends

10.1.3.1 Exhaust Emissions

What Commenters Said:

Several commenters addressed EPA's approach to estimating the impact of ethanol use on exhaust emissions from motor vehicles. Some supported our approach and the resultant findings, while others disagreed.

ExxonMobil commented that the conclusions on increased oxides of nitrogen (NO_x) emissions are consistent with testing conducted by ExxonMobil and others, and the conclusion on VOCs is consistent with concerns that have long been expressed by ExxonMobil, Toyota, and others regarding the potential for increased permeation of VOCs with ethanol blends. The commenter also stated that offsetting the increases in NO_x and VOC emissions are some

reductions in toxics due to the dilution benefit of ethanol blending (with the notable exception of a very significant increase in acetaldehyde emissions).

RFA and REAP questioned that national NO_x emission inventories will increase. The commenters also noted that the Coordinated Research Council (CRC) E-67 report (2006), which was cited in the DRIA, looked at the existing NO_x/ethanol data and concluded that "[t]he results in the literature show some tendency for NO_x emissions to increase with greater ethanol levels, but this trend is not consistent or statistically significant over a wide range of studies."

RFA also noted that many NO_x emissions data sets are available on the CARB website, and that these data sets confirm the directional uncertainties of the tailpipe NO_x response to ethanol. The commenter encouraged EPA to better discuss the uncertainties of the ethanol/NO_x issue, stating that it is hesitant to call the emissions responses projected by the EPA Predictive Model definitive. The commenter stated that, while it may be the right vehicle to improve upon many of the assumptions made in 2001 (the last time the EPA Complex Model was updated), it believes there is substantial uncertainty about the NO_x response to ethanol. The commenter does not believe that this uncertainty is corrected by the EPA Predictive Model, and stated that it should be better reflected in the RIA.

REAP also commented that the wide (and often directional) range of vehicular NO_x responses to ethanol content is a problem and nothing in the CRC analysis or any other recent analyses changes this reality. REAP suggested that the projected NO_x inventory impacts should be more clearly noted as highly uncertain, and that a better approach might be to establish (percentage based) ranges in the modeling analysis and the inventory analysis, so that the uncertainties and ranges in the actual data are reflected in the analysis. The commenter stated that the DRIA leaves the unmistakable impression that the use of ethanol comes with NO_x liability, which it believes is a questionable conclusion that could jeopardize fuels diversification efforts at the state level.

NYDEC commented that it believes that the tools and data available to EPA to measure the emissions effects of renewable fuels, such as ethanol in gasoline, are outdated, incomplete, and inadequate. The commenter stated that it strongly supports EPA in its desire to provide newer and more relevant data, and stated that it desires to work with EPA and other stakeholders to achieve these goals. The commenter also noted that EPA's analysis suggested that there will be increases in overall emissions of several key pollutants, particularly VOCs and NO_x. The commenter stated that it is concerned by these increases, especially given the uncertainty in the available tools discussed above, and the fact that EPA has neglected any increases that may have happened in regions where ethanol has already become a significant gasoline constituent. The commenter urged EPA to explore ways to mitigate these emissions increases.

NYDEC suggested the following for EPA test programs:

1) Properties of test fuels be within the normal range of the property, including near the midpoint, rather than outliers;
2) Do not limit test cycles of light duty vehicles to the Federal Test Procedure (FTP). Very low speeds (New York City Cycle), aggressive acceleration (US06), and sustained high speeds (80 mph cruise) should all be equal parts of the test suite;

3) Greater research emphasis is necessary on vehicle emissions at lower temperatures – particulate matter (PM) formation does not require high temperatures. Toxic chemicals tend to accumulate in cold air because the chemical reactions that remove them from the atmosphere slow down and meteorological conditions that prevent dispersion of toxic chemicals are more common in winter;
4) Evaluate tailpipe and evaporative benzene emissions versus the benzene content of gasoline and the content of known benzene precursors in gasoline including cyclohexane, and aromatics such as toluene;
5) Compare emissions performance of 7.0 psi RVP conventional gasoline (CG) to current RFG requirements;
6) Consider alternative measures of volatility to RVP. In particular, Distillation Index (DI) and some measure of front end distillation may (either singly or in combination with RVP) improve the predictability of volatility effects on emissions;
7) Partial combustion products of oxygenated compounds such as alcohols cannot be measured by the standard hydrocarbon testing instrument - the Flame Ionization Detector (FID). All partial combustion products must be measured, including aldehydes, ketones and alcohols;
8) Testing of toxic emissions is necessary to facilitate an increase in toxics control. This may be accomplished by some combination of: weighting toxics by potency rather than molecular weight, expanding the list of compounds controlled, and promulgating emissions caps for individual toxics such as benzene;
9) Testing should be conducted to evaluate fine PM emissions from gasoline light duty vehicles and nonroad equipment; and
10) Further evaluation of the combustion chamber deposit forming potential of ethanol blended gasoline should be conducted, and the emissions impact of this effect evaluated.

Marathon and API commented that EPA should better characterize the uncertainty associated with its estimates of the impacts of the RFS program on emissions and air quality. The commenters stated that they do not disagree with EPA's assessment, but noted that the conclusions are supported by models and assumptions that contain numerous elements of uncertainty that merit more testing and research. The commenters noted that areas of uncertainty include the use of old/limited data for estimating effects of fuel property changes, especially for vehicles in advanced emission controls. The commenters agree with the EPA's observation that that existing models (such as the Complex Model, the Predictive Model and MOBILE6.2) for evaluating fuel factor effects are based on technology that is more representative of the 1990s than of the present or oncoming decade. They believe that there is a need to update these models with information from fuel factor effect test programs on newer technology vehicles such as those contained in recent reports of the CRC relating to the effects of ethanol and gasoline volatility on exhaust emissions and the effects of ethanol on permeation emissions.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185
ExxonMobil Refining & Supply Co. OAR-2005-0161-0197
Marathon Petroleum Company (MPC) OAR-2005-0161-0175
New York State Department of Environmental Conservation (NYDEC) OAR-2005-0161-0169

Renewable Energy Action Project (REAP) OAR-2005-0161-0204
Renewable Fuels Association (RFA) OAR-2005-0161-0192, -0228 (hearing)

Our Response:

The first observation to make about the above comments is their overall inconsistency. Some comments indicate that the emission impacts made in the NPRM are consistent with the existing studies of the impact of ethanol on vehicle emissions, while others say that the existing studies are inconclusive or even directionally inconsistent. None of the commenters pointed to any specific study or analysis to support their position. Therefore, it is not a simple task to compare the basis of one commenter's position to that of another.

A couple of commenters point to: 1) analyses conducted by CARB in the past, 2) studies presented at CARB's website and 3) the fact that CARB is updating their fuel-emission models. First, CARB's current fuel-emission model (the Version 3 of the CARB Predictive Model) projects that oxygen content significantly increases NO_x emissions. This effect is small between 0 and 2 wt% oxygen (roughly a 2% increase in NO_x emissions), but accelerates as oxygen increases above 2 wt%. At 3.5 wt% oxygen, that of E10, NO_x emissions are predicted to increase by another 4% over a 2 wt% oxygen fuel, for a total NO_x emission increase of 6% relative to a non-oxygenated fuel.[3] Thus, the current CARB model for determining compliance with their Clean Burning Gasoline requirements clearly directionally supports our emission projections in the NPRM. In fact, the CARB Predictive Model more strongly supports our sensitivity analysis which projects a larger increase in NO_x emissions than the primary analysis, which projects a smaller increase in NO_x emissions.

Second, regarding studies posted on CARB's website, several of these studies now include a comparison of non-oxygenated and oxygenated fuels. Some show an increase in NO_x emissions for ethanol blends, one shows a decrease, while still others are inconclusive. A number of these studies show that MTBE blending reduces NO_x emissions and ethanol appears to increase NO_x emissions relative to MTBE. We describe and present the results of these studies in detail in Chapter 3 of the Final RIA. We reevaluate the assumptions which form the basis for our primary and sensitivity analyses on the basis of these studies, as well.

Third, until CARB completes any planned revisions to their gasoline regulations, the outcome of any revision is unclear. Thus, there is no way to take this potential action into account in the analysis of the RFS rule.

Thus, as presented in Chapter 3 of the Final RIA, we feel that the directional trends presented in our analysis are the best possible conclusions that could be drawn given the available data. In the future, our MOVES emissions model will be better equipped to deal with the impact of uncertainty in emissions estimates.

[3] Other fuel properties used in this example calculation: 10 ppm sulfur, 7 RVP, 25 vol% aromatics, 5 vol% olefins, T50 or 190 F, and T90 of 330 F), all set to be flat limits, summer fuel. Oxygen's increase in NOx emissions is essentially independent of any assumption of how T50 changes with the addition of oxygenate (e.g., ethanol) to the fuel.

Several commenters cite a recent CRC E-67 report that states that: "[t]he results in the literature show some tendency for NOx emissions to increase with greater ethanol levels, but this trend is not consistent or statistically significant over a wide range of studies." We reviewed this report and found that this statement was based on a review of a number of emission studies, some of which tested Tier 0 vehicles, other tested Tier 1 vehicles and still others tested low-emission vehicles (LEVs), etc. In some cases, oxygen type or content was the only change in fuel quality, while in other cases, other fuel parameters changed as well. Thus, it is not surprising that an inconsistency in the results would occur. At least two studies involving LEV and cleaner vehicles have been published since the time of the CRC study. In Chapter 3 of the Final RIA, we evaluate five studies which measured the effect of a change in oxygenate type and content on the exhaust emissions from late model year vehicles. We evaluate the results of each study individually. We also combine the results in a non-quantitative fashion by presenting the results of each study side-by-side in terms of whether it showed a particular change in oxygenate type or content to increase or decrease the emissions of a particular pollutant to a statistically significant degree.

In addition to the analyses described in Chapter 3 of the Final RIA, we made several attempts to model the combined data from the five studies of LEV and cleaner vehicles. Table 10-2 summarizes the breadth of each study in terms of the number and type of fuels and the number of LEV and cleaner vehicles tested.

Table 10-2. Description of Fuel Effects Studies of LEV and Cleaner Vehicles

	Vehicles Tested	Fuels Tested				
		No Oxygen	Ethanol Blends		MTBE Blends	
			~6 vol%	~10 vol%	~5 vol%	~11 vol%
AAM-AIAM	10	1	---	1	---	1
ExxonMobil	5	1	1	1	---	1
Toyota	9	--	---	1	---	1
Mexican Petroleum Institute	7	1	1	---	1	1
CRC E-67	12	3	1	2		---

In the majority of cases, the differences in the fuels tested were restricted to oxygen and paraffin content. Other properties, such as aromatics, olefins, sulfur and distillation temperatures, were held constant. In most cases, RVP was also held constant. However, in some cases, the RVP of the ethanol blends were roughly 0.5 psi higher. In general, the fuels were more typical of California RFG than conventional gasoline, having relatively low levels of aromatics and olefins. Two of the above studies, those performed by the Mexican Petroleum Institute and CRC, tested many more fuels than those listed. We only included those fuel pairs where oxygenate type and content was the primary or only difference. Also, the study by the Mexican Petroleum Institute included many vehicles not indicative of LEV and later vehicles. We only included data from those vehicles with emissions like those required by the LEV standards. The reader is referred to Section 3.1.1.1 of the Final RIA for the details of both the vehicle and fuel selection.

Combining the data from the five studies produced a database with 310 distinct tests. We applied two mixed models to the logarithm of the emission data in order to estimate the effect of oxygenate type and content on emissions. Both models assigned each vehicle a random vehicle term. One model applied included separate fuel terms for MTBE content and ethanol content (i.e., volume percent). Both linear and squared fuel terms were allowed. A stepwise process was applied which removed the squared terms if they were not statistically significant at a 90% confidence level. The linear term was retained if the squared term was significant. The other model did not distinguish between oxygenate type, but only included oxygen content terms (again linear and squared). In both models, the fuel term was treated as a covariate. The modeling was performed using the Univariate function in SPSS, version 10.1.3.

Assigning the vehicle codes was straightforward for all but the CRC study, as the fuels in the other four studies could all be related to each other in terms of a change in only oxygenate type or content. However, the data in the CRC study required further segregation, since the data selected from this study included three distinct pairs of matched fuels (A/B, D/E, and F/G) The "base", non-oxygenated fuels for the three pairs differed in terms of distillation properties (i.e., T50 and T90). We did not want this difference to affect the predicted impact of oxygenate on emissions, since the models did not include the effect of distillation temperatures. Thus, each vehicle was assigned a different code depending on which of the three pairs of fuels was used in that test. This essentially created three separate studies where the "base" emission level of each vehicle could change freely.

We modeled the effect of oxygenate on emissions of four pollutants. All five studies measured CO and NO_x emissions. However, four of the five studies measured total hydrocarbon (THC) emissions and four out of five measured non-methane hydrocarbon (NMHC) emissions. (Three studies measured emissions of both types of hydrocarbons.) Thus, we modeled both THC and NMHC emissions. As will be seen below, the statistical models for both pollutants were very similar. Thus, including or excluding either of the two studies which did not measure the other pollutant appears to have little effect on the results.

The final MTBE/ethanol models are summarized in Table 10-3.

Table 10-3. Combined LEV+ Emissions Vs. MTBE and Ethanol Content

Terms	THC		NMHC		CO	NO_x
	Non-Linear	Linear	Non-Linear	Linear	Linear	Linear
MTBE (vol%)	0.03476	-0.006858	0.04096	-0.007684	-0.01604	-0.00932
MTBE * MTBE	-0.003861	----	-0.000445	----	N.S.	N.S
EtOH (vol%)	-0.003993	-0.004064	-0.00434	-0.004445	-0.02198	0.003883
EtOH * EtOH	N.S.	----	N.S.	----	N.S.	N.S.

The statistical analyses of THC and NMHC emissions found the effect of MTBE to be non-linear. All except one of the MTBE blends contained roughly 11 vol% MTBE. The exception was a 5.5 vol% MTBE blend tested by the Mexican Petroleum Institute. Given this, we also generated a second set of THC and NMHC models which only included linear fuel

terms. These are also shown in the second column under "THC" and "NMHC" headings in Table 10-3. The effect of a typical 11 vol% MTBE blend on THC and NMHC emissions using the two sets of models will be compared below.

The final oxygen content models are summarized in Table 10-4.

Table 10-4. Combined LEV+ Emissions Vs. Oxygen Content

Terms	THC	NMHC	CO	NO_x
Oxygen (wt%)	-0.01046	-0.01134	-0.05963	-0.05542
Oxygen * Oxygen	N.S.	N.S.	N.S.	0.01812

As shown in Table 10-4, the oxygen squared term was only statistically significant with respect to NO_x emissions. Unlike the case with MTBE contents, the oxygen content of the fuels tested were much more evenly distributed between 1.0 and 3.5 wt%.

Table 10-5 presents the predicted emission impacts for three fuels relative to a non-oxygenated gasoline: an 11 vol% MTBE blend containing 2.0 wt% oxygen, a 5.7 vol% ethanol blend containing 2.0 wt% oxygen and a 10 vol% ethanol blend containing 3.5 wt% oxygen.

Table 10-5. Predicted Emission Impacts of Typical MTBE and Ethanol Blends

	THC	NMHC	CO	NO_x
11 vol% MTBE blend				
MTBE-Ethanol Model	-8.5%	-8.8%	-17.6%	-10.6%
MTBE-Ethanol Model (linear)	-7.5%	-8.4%	-----	-----
Oxygen Content Model	-2.1%	-2.3%	-11.9%	-3.8%
5.7 vol% Ethanol Blend				
MTBE-Ethanol Model	-2.3%	-2.5%	-12.5%	2.2%
MTBE-Ethanol Model (linear)	-2.3%	-2.5%	-----	-----
Oxygen Content Model	-2.1%	-2.3%	-11.9%	-3.8%
10 vol% Ethanol Blend				
MTBE-Ethanol Model	-4.0%	-4.3%	-22.0%	3.9%
MTBE-Ethanol Model (linear)	-4.1%	-4.5%	-----	-----
Oxygen Content Model	-3.7%	-4.0%	-20.9%	2.8%

The first observation from Table 10-5 is that the linear and non-linear models for MTBE blends predict very similar THC and NMHC emission impacts for an 11 vol% MTBE blend. This is not surprising, since all but one of the MTBE blends in the five studies was close to this level. Thus, it is not material which model is used as long as the primary focus is on fuel with a MTBE content of 11 vol%.

Second, the MTBE-ethanol and Oxygen models predict very different emission impacts for the 11 vol% MTBE blend, but similar impacts for the two ethanol blends, with the exception of the NO_x emission impact for the 5.7 vol% ethanol blend. The reason for the dissimilar impacts for the MTBE blend is the fact that the MTBE-ethanol model predicts very different

emission impacts for MTBE and ethanol at common levels of oxygen content. When treated as a separate factor, MTBE reduces the emissions of all four pollutants more than ethanol. When combined with ethanol in terms of oxygen content, the effect of MTBE on THC, NMHC and CO emissions are brought in line with those of a 5.7 vol% ethanol blend when ethanol is treated as a separate factor. For NO_x emissions, the effect of 2.0 wt% oxygen is intermediate between that predicted for an 11 vol% MTBE blend and a 5.7 vol% ethanol blend by the MTBE-ethanol model.

We are not aware of an obvious explanation for the differences between the two models, particularly for MTBE blends. Based on this limited dataset, MTBE appears to have properties which affect emissions beyond its oxygen content. This is particularly true for NO_x emissions, where MTBE blending reduces NO_x emissions and ethanol addition at either 5.7 or 10 vol% increases NOx emissions. This issue deserves further study.

As noted above, the fuels tested in the five test programs were more similar to California or Federal RFG than to typical conventional gasoline. Thus, these preliminary findings apply more to the removal of MTBE and use of ethanol in RFG areas than in conventional gasoline areas. In particular, when ethanol is added to conventional gasoline, other parameters tend to change significantly (e.g., aromatics and T50 decrease, RVP increases, etc.). These ancillary changes are not reflected in the test fuels of the five LEV and later vehicle studies. Thus, the predictions of the two models developed above should not be simplistically applied to represent the effect of blending ethanol into conventional gasoline.

Regarding NYDEC's comments concerning uncertainty in the effect of oxygenate and other fuel parameters on emissions, the comments basically support the statements made in the proposal that additional testing is needed. EPA has been working diligently to develop a comprehensive set of emission test programs to address the gaps in our understanding of fuel-emission interactions. We have already engaged several organizations, such as CRC, to collaborate on such testing. We hope to begin the first of several test programs this year to begin to address this problem. We will consider NYDEC's detailed suggestions regarding the specifics of these test programs as we finalize our testing plans.

A couple of commenters asked EPA to better characterize the uncertainty in our emission and air quality estimates. EPA generally agrees that a more robust and statistical estimate of the potential uncertainty in the emission and air quality implications of increased use of ethanol is desirable. However, due to limited data and the aggressive timeline for the RFS rule promulgation, we are not able to conduct such an analysis in the context of this rule. Also, the RFS rule itself does not depend on our current estimates of the emission and air quality impacts. It may be possible to develop such an estimate of the uncertainty in the fuel-emission effects in the Report to Congress on the emission and air quality impacts of all the fuel-related provisions of the Energy Act. A draft of this report is required by section 1506 of the Act to be published in 2009.

10.1.3.2 Non-Exhaust Emissions

What Commenters Said:

RFA commented that it has concerns regarding EPA's assumption that tank temperatures follow ambient without considering lower temperatures for vehicles parked in the shade or garages. RFA also stated that it is concerned that EPA is over-estimating permeation emissions from E10. The commenter noted that CRC has released a second "interim" report on permeation emissions from E10 which confirms that permeation emissions do not increase (on a mass emissions basis) when increasing ethanol content from 6 to 10 percent, and the reactivity of the "permeate" is lower for ethanol blends in comparison to non-ethanol blends. The commenter also noted that, at the same time, there are greater benefits related to reducing exhaust emissions, such as CO emissions, with the 10 percent blend. RFA encouraged EPA to clarify which emissions estimates are being used in the final report. The commenter noted that several analyses conducted in the last few years, including AIR, Inc. analyses, assumed that permeation emissions increase when going from the 2005 CRC test case (E6) to E10, when in fact this assumption is incorrect. The commenter believes this will be particularly important to state-level interpretations of the available data with regard to permeation.

Letters:
Renewable Fuels Association (RFA) OAR-2005-0161-0192, -0228 (hearing)

Our Response:

In estimating permeation emissions, EPA assumed that fuel in parked vehicles was at ambient temperature in order to estimate the increase in permeation emissions from ethanol blends. An increase in fuel temperature due to driving was added to the ambient temperature, as fuel heats up due to fuel recirculating from the engine compartment, hot cooling air flowing underneath the vehicle and heat transfer from the hot exhaust system.

Focusing on the fuel temperature of parked cars, absent radiant heat, fuel temperatures tend to lag ambient temperature by a few degrees due to the heat capacity of the fuel. The peak fuel temperature will be a few degrees below the peak ambient temperature and the minimum fuel temperature will be a few degrees above the minimum ambient temperature. The average fuel temperature will be very close to the average ambient temperature. Permeation emissions increase exponentially with temperature, however. Thus, increasing the difference between the minimum and maximum temperatures, while holding the average temperature constant, will increase the average permeation emission rate.

We evaluated the potential of this assumption to over-estimate the increase in permeation emissions associated with ethanol blends. For a typical summer day with minimum and maximum temperatures of 72 °F and 96 °F, respectively, we estimated permeation emissions with no lag between fuel and ambient temperature and for the situation where the and maximum fuel temperatures differed from the ambient by 3 °F. The ratio of permeation emissions in the latter case to those in the former case was 0.984. This indicates that ignoring the lag in time of fuel tank temperature relative to ambient temperatures is likely over-estimating emissions on the order of 1.6%. Thus, the potential error associated with this simplifying assumption appears to be quite small.

In addition, there are at least two factors which counter the lag of fuel temperature relative to ambient temperature. First, there is the radiant heat that RFA mentions in their comments. Some vehicles are parked in the sun and this can heat up the fuel up to and above the ambient temperature. This effect can be even larger for vehicles which have been parked in a spot which had previously been baking in sunlight, as the underlying pavement can be well above the ambient temperature.

Second, initially after being driven, fuel temperatures are well above ambient. The fuel temperature then cools to the ambient temperature. Both the heating of the fuel during driving and the cooling down to ambient is accounted for separately by the fuel temperature adjustment due to driving described in the RIA. However, at the point in time when the fuel reaches the ambient temperature, the lag between fuel and ambient temperature is zero, not a few degrees as assumed above.

Thus, any over-estimation of fuel temperature due to our assumption that the fuel temperature tracks the ambient temperature is less than 1.6%, or very small. We therefore continue to utilize this assumption in the FRM analysis.

Regarding the effect of increasing ethanol content on permeation emissions, our estimate of the impact of a 10 vol% ethanol blend on permeation was assumed to be the same as that for a 6 vol% ethanol blend. Therefore, our estimate of permeation emissions is consistent with the CRC E-65 Phase 3 study cited in the comment.

10.1.4 Onroad Motor Vehicles Emissions from High Level Ethanol Blends (E85)

What Commenters Said:

A number of commenters noted that the amount of data available on the emissions from flexible-fueled vehicles (FFVs) using E85 was very limited. They suggested that EPA quantify the uncertainty in its emission projections for E85 use.

Marathon does not disagree with EPA's assessment of the emission impacts of E85 use, but indicated that there are numerous elements of uncertainty in the estimates that merit more testing and research

API believes there is a need for more test data to evaluate the emissions effects of E85 in FFVs, as current projections of E85 show its usage to be very small compared to E10. The commenter noted that while this indicates that the overall emissions impacts of FFVs fueled with E85 will be small, this expectation is based on extremely limited published information available on the emissions characteristics of modern technology FFVs. The commenter stated that available data relate to tests performed on FFVs produced in the early and mid-1990s and standard EPA emissions certification tests and suggest that E85 will increase non-methane organic gas (NMOG) and acetaldehyde emissions while having mixed effects on other criteria pollutants and air toxics. The commenter stated that, to the extent that FFV penetration and

usage increases in the future, whether by market incentives or other means, it will be important to for EPA to collect more data to better characterize the emissions implications associated with fueling these vehicles on E85 blends.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185
Marathon Petroleum Company (MPC) OAR-2005-0161-0175

Our Response:

Available test data on FFVs is limited and additional testing is needed. This will become more and more important as the market share of FFVs increases over the next decade, especially if the use of E85 fuel becomes more common. EPA is currently working to address this issue by including FFVs in the planning of future test programs. Some limited testing of FFVs is currently in process to support a Mobile Source Air Toxics (MSAT) rulemaking. This testing however is targeted at primarily air toxic emissions at colder temperature operation (20° F) while using winter grade E70. For a better emission assessment, future FFV test programs will require expanded testing including additional "off-cycle" areas of operation and even different ethanol content blends possible in the field.

The limited amount of test data available for FFVs operating on E85 and ethanol blends between E0 and E85 prevents a straightforward statistical estimate of the uncertainty in the emission impact of FFV emissions when operating on E85 compared to E0. The additional test data which we plan to obtain in the near future should help address this problem. EPA also plans to explicitly include estimates of uncertainty in its MOVES emission inventory model. Since the RFS rule does not depend directly on the emission impacts projected here, it is reasonable to focus current efforts on obtaining more data and delay further quantification of uncertainty to the MOVES model and to later emission studies of fuel effects, such as that required by section 1506 of the Energy Act.

10.1.5 Nonroad Equipment Emissions from Low Level Ethanol Blends

What Commenters Said:

API and Marathon commented that EPA failed to conduct a sensitivity analysis for emissions from non-road vehicles. API commented that EPA projections of emissions inventories for mobile sources provided in the nonroad diesel rulemaking suggest that the non-road sector will account for an increasingly larger proportion of the total in the future. API recommended that EPA perform a nonroad sensitivity analysis to obtain a preliminary measure of the uncertainty associated with the contribution of the non-road sector to future mobile source emissions inventories.

The RFA also commented that it has concerns regarding some of the assumptions used by EPA in its analysis, such as the use of a 0.1 psi RVP increase to assess commingling for non-

road emissions where non-road equipment is normally fueled from cans that are empty or almost empty.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185
Marathon Petroleum Company (MPC) OAR-2005-0161-0175
Renewable Fuels Association (RFA) OAR-2005-0161-0192, -0228 (hearing)

Our Response:

A nonroad sensitivity analysis would better characterize the potential implications of the RFS program on nonroad emissions. However, due to limited data and the aggressive timeline for the RFS rule promulgation, we were not able to conduct such an analysis. It is not possible to estimate the uncertainty in the fuel-emission effects of late model nonroad equipment if no such testing has yet been performed. To estimate a range for the fuel-emission effects of late model equipment on the fuel-emission effects of older models implies a relationship between the two effects that can only be determined through testing. Furthermore, no data were submitted to EPA that would permit more refined nonroad inventory estimations. Despite the lack of better data, the efforts to quantify the impacts on emissions and air quality are merely intended to be illustrative, and were not developed to determine appropriate costs and benefits of particular environmental standards. EPA intends to obtain more updated data on nonroad emissions for the Report to Congress required by Section 1506 of the Energy Act, a draft of which is due to be published in 2009. EPA also plans to explicitly include estimates of uncertainty in its MOVES emission inventory model in areas where the data are sufficient to permit this.

RFA's assumption or intuition that portable fuel tanks are normally empty or near empty when refilled is reasonable for most portable fuel tanks in residential use. However, this is not as obvious for tanks in commercial service, where they might be refilled at the beginning of the day regardless of their current fill level. The same is true for fuel tanks located on the nonroad equipment in either residential or commercial service. It seems reasonable to assume that operators fill their tank at the beginning of use. It is unlikely that the tank just reached empty at the end of the previous use. Thus, significant commingling is likely to occur in the equipment fuel tank. This commingling could be greater or less than that estimated for onroad vehicles. Absent studies which specifically measured commingling in nonroad equipment fuel tanks, it is more reasonable to assume that this commingling is the same as that occurring with onroad vehicles than to assume it is zero. Therefore, we have not changed this aspect of the NPRM analysis for the FRM.

10.2 Diesel Vehicle Emissions from Biodiesel

What Commenters Said:

Most commenters reiterated statements contained in the preamble to the rule by stating that much of the data used in estimating biodiesel emission effects was limited or old and may no longer be reliable in characterizing emission impacts in the 2012 fleet.

Many of the commenters, including the National Biodiesel Board (NBB), National Renewable Energy Laboratory (NREL), Biodiesel Industries of Greater Dallas and Fort Worth (BIGDFW) and REAP, claimed that based on the most recent biodiesel emissions test data, B20 has no impact on NO_x emissions. Some of them cited the report on this subject issued by the National Renewable Energy Laboratory in October 2006. The Biodiesel Coalition of Texas argued the EPA should "make it clear to states that biodiesel does not significantly – if at all – increase NO_x emissions". Galveston Bay Biodiesel urged the EPA to "update the final RFS rule to include the most recent biodiesel emissions test data that best represents emissions from real world driving scenarios."

The NBB, NREL, BIGDFW, Baker Commodities, Galveston Bay Biodiesel, Griffin Industries and REAP, commended the EPA for and/or urged the EPA to continue working with other stakeholders in order to ensure that the most up-to-date and reliable information is included in the final rule.

In addition, NREL claimed in their comments that EPA's assessment of newer test data was not based on all the available sources, that one of the data sources used by the EPA was of inadequate quality and that a single engine model dominated EPA's 2002 assessment of the biodiesel effect on exhaust emissions of diesel engines. They also reiterated another statement contained in the preamble to the RFS rule by saying that "additional data on a set of engines and vehicles that are more representative of the in-use, on-highway fleet are required to come to a definitive conclusion."

NREL commended EPA's Office of Transportation and Air Quality for addressing the important issue of biodiesel impacts on emissions in the rule.

Letters:
Baker Commodities OAR-2005-0161-0003 through -0006, -0173
Biodiesel Coalition of Texas (BCOT) OAR-2005-0161-0186
Biodiesel Industries of Greater Dallas and Fort Worth (BIGDFW) OAR-2005-0161-0211
Engine Manufacturers Association (EMA) OAR-2005-0161-0177
Galveston Bay Biodiesel (BioSelect) OAR-2005-0161-0206
Griffin Industries OAR-2005-0161-0189
National Biodiesel Board (NBB) OAR-2005-0161-0212
National Renewable Energy Laboratory (NREL) OAR-2005-0161-0179
Renewable Energy Action Project (REAP) OAR-2005-0161-0204

Our Response:

As mentioned in the preamble to the proposal, the estimates of emission impacts used in this rule were based on the best available test data, but the test engines and vehicles were not representative of the in-use fleet. Consequently, these estimates must be viewed as preliminary.

In order to resolve the biodiesel NO_x issue, the EPA has launched a program to comprehensively analyze all available test data relevant to this issue. This includes data which

was analyzed in the 2002 draft EPA study, subsequent data which was analyzed for the draft RFS rule and a number of new sources of data which have become available since the time of the RFS proposal. We have sought and will continue to seek input on this issue from various stakeholders, including NREL. In addition to updating the database, this effort will include detailed data quality checks, investigation of specific engine effects and weighting of test data based on the contribution of the various vehicle and engine categories to the NO_x inventory.

This expanded analysis is in progress but was not ready in time for the final rule. In addition, in order to expand the database to better characterize any emission impacts for the in-use fleet going forward - as already stated in VIII of the preamble - we are planning significant new testing with broad stakeholder participation and support. According to our current estimates, such a study will require about two years to complete. It will be conducted according to best industry practices using statistical design of experiment methodologies and include state-of-the-art and advanced diesel engine technologies. We hope to incorporate the data from such additional testing into the analyses for other studies required by the Energy Act in 2008 and 2009, and into a subsequent rule to set the RFS program standard for 2013 and later.

10.3 Engine Manufacturer's Responsibility Related to Biodiesel Use

What Commenters Said:

The Engine Manufacturers Association (EMA) requested an assurance from EPA that "the use of biodiesel will not increase the engine manufacturer's responsibility or liability for emissions compliance, warranty coverage, or recall liability resulting from the use of such fuel".

Letters:
Engine Manufacturers Association (EMA) OAR-2005-0161-0177

Our Response:

Section 211(f)(1) of the Clean Air Act prohibits the introduction of motor fuels or additives that are not substantially similar to the fuels that were used to certify these vehicles. EPA has promulgated an interpretive rule which defines the term "substantially similar" for gasoline (56 FR 5352, February 11, 1991). Although it is the case that no analogous interpretive rule has been promulgated for diesel fuel, EPA retains the authority under the Clean Air Act to prohibit fuel components that the Agency believes are clearly not substantially similar to certification fuels. In fact, in the past EPA has refused to register for use materials that were clearly not substantially similar to diesel fuel or fuel additives. In the past, EPA has relied on compositional and physical property similarities and, especially, on similarity in emissions, when compared to certification fuel, to determine whether a material is or is not substantially similar to a certification fuel or additive. Unfortunately, in a number of situations related to diesel fuel, insufficient data exist to determine whether some fuels or additives combined at various levels are or are not substantially similar to certification fuels. Biodiesel blends are a good example. As mentioned above, the EPA is coordinating with other parties, both governmental and non-governmental to launch a program to answer questions about the emissions effects of biodiesel at

various blend levels. With respect to the "substantially similar" definition for diesel fuel, the Agency is carefully studying the issue and will decide when sufficient data exist to begin such a rulemaking. In short, we agree with the concerns of EMA and plan to address these concerns in the future as reliable data becomes available.

10.4 Emissions from Ethanol Production Facilities

What Commenters Said:

The Northeast States for Coordinated Air Use Management (NESCAUM) commented on the stationary source emissions implications from establishing increased ethanol production capacity. They expressed concern that a substantial portion of these emissions may be subject to less stringent controls in light of EPA's recent increase of the thresholds for triggering prevention of significant deterioration (PSD) requirements for ethanol production facilities. Prior to the rule change, corn milling facilities that produced fuel and emitted 100 tons or more pollutants per year were subject to PSD permitting program requirements. By comparison, corn milling facilities that produced food grade products did not trigger PSD until they emitted 250 tons or more pollutants per year. The new rule established the same emissions limits under the PSD program – 250 tons per year – regardless of whether the ethanol end product is to be used for fuel production or food grade ethanol. NESCAUM urged EPA to consider the entire emissions picture (stationary and mobile) when promulgating regulations.

Letters:
Northeast States for Coordinated Air Use Management (NESCAUM) OAR-2005-0161-0187

Our Response:

In the NPRM, we based our estimates of the emissions from ethanol production facilities on DOE's GREET model, version 1.6. Since the time of the NPRM, DOE has published version 1.7 of GREET. We updated our estimate of ethanol plant emissions for the FRM with those from GREET1.7. In addition, we have obtained from the States estimates of emissions for a number of current ethanol plants. We present these State estimates as an alternative estimate of emissions from ethanol production from both current and future ethanol plants. These estimates are is described in Chapter 3 of the Final RIA. The inclusion of the State emission data for existing plants in our estimate of emissions from future ethanol plants should enhance the consistency of the projected emission impacts of increased ethanol use with EPA's proposed emission standards applicable to future ethanol plants (71 FR 12240, March 9, 2006, Prevention of Significant Deterioration, Nonattainment New Source Review, and Title V: Treatment of Corn Milling Facilities Under the ''Major Emitting Facility'' Definition). In addition to estimating the emissions from ethanol and other renewable fuel production plants, we desired to estimate the impact of such facilities on ambient pollutant levels, such as ozone. Unfortunately, the time and resources available to conduct this rule did not allow the application of sophisticated air quality dispersion models, such as Community Multiscale Air Quality Model (CMAQ). The Ozone Response Surface Model (RSM), which is used to estimate the ozone impacts of changes in

mobile source emissions is not designed to estimate the impact of individual point sources, particularly in rural areas of the kind where most ethanol plants are located.

Further regulation of the emissions from these and other fuel production facilities is outside of the boundaries of the RFS rule. Emissions from renewable fuel production are not specifically addressed in the Energy Act. EPA will continue to regulate these emissions under its authority provided by the Clean Air Act and other relevant statutes.

10.5 Emission Inventory Modeling Procedures

What Commenters Said:

The Missouri Department of Natural Resources (MDNR) commented that EPA based inventory results on model runs for June and July, and therefore did not take into account summer-to-winter fuel changes. The commenter also noted that the model used for the local and regional VOC and NO_x impacts in July assumed MTBE-containing reformulated gasoline (RFG). The commenter indicated that EPA admits that most refiners have stopped using MTBE this year due to liability issues, and that EPA should explore the impact this difference would have on modeling results.

The commenter stated that it is not clear what areas EPA focused on in performing the evaluation for local and regional VOC and NO_x Emission Impacts in July; and added that vehicles travel between the attainment and nonattainment areas so it stands to reason that EPA should investigate this issue.

Letters:
Missouri Department of Natural Resources (MDNR) OAR-2005-0161-0217

Our Response:

EPA based modeling on fuel properties for January and July, not June and July as indicated in the comments from the MDNR. EPA's methodology using one summer and one winter month is described in Section 4.1.2 of the Draft RIA and Section 4.1.2 of the Final RIA. As described in both places, we ran the National Mobile Inventory Model (NMIM) for January and July, then multiplied the results from each month by six to obtain annual emissions estimates.

Regarding MTBE in RFG, EPA did not include MTBE in its projections of future fuel quality, as we assumed complete phase-out of MTBE by 2012. Only the base case included MTBE. Fuel quality in the base case represented fuel properties that existed in 2004, at which time MTBE was present in some counties. In order to eliminate the impact of factors extraneous to the RFS rule, such as changes in the vehicle fleet and Tier 2 sulfur controls, we compared emissions under two RFS fuel cases to the base case fuel properties as if the fuel properties that existed in 2004 continued into the future unchanged.

When estimating the impact of increased ethanol use on local and regional emissions, we focused on areas where ethanol use changed significantly. Since the increase in ethanol use varies geographically, and in fact doesn't change in many areas of the country, presenting impacts which are averaged across the entire nation is not indicative of the impact in the vast majority of local areas. This is described in Section 4.1.3.3 of the Final RIA.

It is not feasible to model the travel of vehicles between attainment and non-attainment areas in a national analysis. This level of precision can only be achieved in a local air quality analysis (e.g., a SIP) or regional analysis where such impacts are expected to be critical. An example of the latter was the comparison of the air quality benefits of the National Low Emission Vehicle rule versus the adoption of California Low Emission Vehicle standards by the NESCAUM states. In this case, travel to the NESCAUM states by vehicles purchased outside of NESCAUM was a key factor in the emission comparison. In the case of the RFS rule and an increase in the use of ethanol, such inter-state travel is not a critical issue.

10.6 Ambient Air Quality Impacts

What Commenters Said:

Several commenters mentioned that EPA could expand its analysis of the air quality impacts of renewable fuel use beyond that described in the NPRM. Some wanted additional scenarios evaluated. Others wanted to see the impacts of several pollutants combined into a single, more comprehensive estimate of the impact of renewable fuel use.

MDNR pointed out that EPA used predictive models that were developed in 2000 using Tier 0 vehicle emissions data, and that EPA assumes that adding ethanol to gasoline does not effect exhaust emissions from Tier 1 and later vehicles. The commenter stated that although EPA did a sensitivity study to account for the findings of Tier 1 and later vehicles having higher emissions rates than expected, it would have been more informative if EPA had run the model under both cases and determined which version was the more conservative estimate overall.

REAP commented that it believes that the DRIA could benefit from a further analysis (perhaps an additional sub-section) of the cumulative air quality impacts of ethanol and biodiesel. REAP is concerned that the attributes of ethanol and biodiesel get somewhat lost amidst uncertain claims about segregated pollutant increases. The commenter noted that ozone attainment is a major regulatory issue; however, it believes that PM emissions are probably a greater threat to public health, and fuels diversification may be the single-most important thing that can be done to curb pollution (including greenhouse gases (GHGs)) from the transportation sector in the long term. The commenter stated that the DRIA, like most air quality analyses, gravitated toward the pollutants that could increase (NO_x, VOC) even if the net impact on attainment and public health is negligible. The commenter noted that this issue is not just one of aesthetics, as the inventory projections in the DRIA are already being considered by states drafting their SIPs (notwithstanding the uncertainty of those figures).

RFA encouraged EPA to better emphasize the cumulative "air quality" and public health benefits of blending ethanol, including carbon dioxide, VOC emissions and particulate matter (PM). As currently drafted, the commenter believes that the potential health benefits of reducing PM emissions and petroleum dependence are obscured by very small estimated NO_x and VOC inventory increases that result in little impact on NAAQS attainment.

Letters:
Missouri Department of Natural Resources (MDNR) OAR-2005-0161-0217
Renewable Energy Action Project (REAP) OAR-2005-0161-0204
Renewable Fuels Association (RFA) OAR-2005-0161-0192, -0228 (hearing)

Our Response:

As MNDR points out, EPA developed two sets of emission impacts based on how Tier 1 and later vehicles respond to changes in fuel quality. However, as described in Chapters 4 and 5 of the Draft RIA, EPA did estimate the nationwide emissions impact and ozone impact of both sets of emission changes. As shown in Table 5.1-2 of both the Draft RIA and Final RIA, the sensitivity analysis, which assumed that Tier 1 and later vehicles responded to fuel changes like Tier 0 vehicles, produced the higher ozone impacts. In addition, in Chapter 3 of the Final RIA, we evaluate a number of studies which evaluate the impact of fuel quality on LEV and cleaner vehicles. These studies are not yet sufficient to confidently predict the emission impacts of fuel quality for these vehicles. However, they do confirm the appropriateness of the range of emission impacts provided by the primary and sensitivity analyses.

REAP suggests that EPA provide an overall impact of renewable fuels across the variety of emissions and ambient pollutants affected. EPA did attempt this for pollutants affecting ozone, as the Ozone RSM addresses changes in both VOC and NO_x emissions. This avoids a focus on just one pollutant, for example NO_x, as mentioned by REAP. The Ozone RSM is not able to account for changes in CO emissions and VOC reactivity, as described in Section 10.6.1 below. However, more sophisticated ozone models could not be applied to this rule analysis due to the limited amount of time available to establish the rule.

Comparing the impacts of changes in the ambient concentration of different pollutants is a complex task. The most appropriate way to do so is by quantifying the changes in human health endpoints or even better, monetizing these effects and comparing the net benefits of each change. The deadline for promulgating the RFS rule did not allow the development and application of benefit models to this rule. Even if we could have applied such models to this rule, the uncertainties in many of the emission effects would have made any conclusions which could have been drawn highly suspect. This is particularly true for PM. We agree that controlling ambient PM levels (both due to primary emissions and secondary, atmospheric formation) is very important to public health and is, therefore, a high agency priority. However, as discussed in the proposal, very little testing of PM emissions from gasoline vehicles has been performed, particularly testing aimed at evaluating the impact of fuel quality. As described in the proposal, we are currently planning additional test programs to address these data needs over the next 2 to 3 years. We hope to be able to more confidently quantify the impact of increased

ethanol use on PM emissions and secondary PM for the Report to Congress required by section 1506 of the Energy Act.

Regarding biodiesel, the impact of biodiesel on emissions is very small. As indicated in Table 4.2-1 of the Draft RIA, at that time biodiesel was estimated to only affect the nationwide emissions of VOC, NO_x, CO and PM by a few hundred tons per year. As described in Section 4.2 of the Final RIA, we believe that the available data on the impact of biodiesel on emissions from later model diesel engines is insufficient for us to quantify the impact at this time. We and other interested parties are embarking on a test program to address this lack.

10.6.1 Ozone

10.6.1.1 Factors Not Considered in EPA's Ozone Analysis

What Commenters Said:

Several commenters desired to see a more extensive analysis of the impact of renewable fuel use on ambient ozone levels. This included measuring the change in ambient ozone levels associated with past changes in fuel quality to including changes in CO emissions and VOC reactivity in our ozone modeling.

REAP commented that the final analysis should consider using air quality monitoring data in estimating the air quality impact of increased ethanol use. The commenter noted that it completed a brief analysis in March 2006 of air quality monitoring data in the several states that switched from MTBE to ethanol blends in January 2004 (report entitled "Clearing the Air with Ethanol"). The commenter stated that, in general, ozone exceedance days trend downward (at a greater rate than with MTBE) after the introduction of E10 into states such as New York, Connecticut, and California. The commenter stated that while this trend should not be traced definitively to ethanol blending, it believes that this "real world" data is relevant and useful for the purpose of creating an air quality profile for biofuels based on the full weight of evidence. The commenter stated that this also further underscores the uncertainties inherent with trying to predict (i.e., model) emissions responses to relatively small changes in fuel composition. The commenter stated that air quality monitoring data draws into question some of the tonnage estimations (especially with regard to NO_x and VOC) made by various regulatory models. The commenter suggested that these monitoring results be disclosed and discussed in the ethanol analysis.

REAP and RFA commented that analyzing the use of ethanol with "predictive models" isolates pollutants, and creates results that vary depending on the assumptions made and the scenarios tested. The commenters noted that air quality liabilities have not been seen in several states that have switched from MTBE to ethanol blends over the past three years—in all cases, a flattening ozone exceedance curve started re-trending downward after ethanol use. The commenters stated that they believe the uncertainties of trying to model pollutant responses to changes in fuel content are not well reflected in the exact figures contained in the DRIA tables,

nor the textual analysis of the approach. The commenters encouraged EPA to "fill out" the air quality profile of ethanol by discussing air quality monitoring and by better emphasizing the inherent uncertainties of "predictive" modeling.

RFA recommended that EPA add a section to the DRIA that analyzes the results of the "predictive" modeling and the Ozone RSM analysis cumulatively, in the context of establishing the "ozone forming potential" of ethanol blends. The commenter stated that ozone-forming potential analysis is common, and could better incorporate: (1) the uncertainties involved with modeling, especially with regard to NO_x; (2) the "real world" air quality monitoring results observed in MTBE ban areas; (3) the undercounting of CO emissions by MOBILE 6.2 and the omission of CO emissions in the Ozone RMA, and its possible effects; (4) VOC reactivity (including lower permeate reactivity for ethanol); and (5) uncertainties about commingling and regional ethanol use. REAP suggested that the discussion incorporate some of the issues identified (but not addressed) in the report, such as NO_x uncertainty, CO impacts, and the different reactivities of non-exhaust emissions.

RFA believes that the DRIA's analysis of CO is insufficient. While the DRIA models and inventories the potential impacts of increased ethanol use on CO emissions, the document does not sufficiently discuss the interconnectedness of CO emissions with other pollutants and ground level ozone concentrations. The commenter offered the following examples: (1) the DRIA does not discuss (except in side reference) the increasing role of CO as an ozone precursor, with the potential to offset increases in VOC emissions, (2) many of the inventory increases projected in the DRIA are the result of the one-pound RVP allowance. The commenter also stated that the DRIA does not caveat the emissions increases traced to the RVP allowance, even though the RVP allowance is directly related to CO. The commenter believes that the failure of the DRIA to conduct an in-depth analysis of the interconnectedness of CO, VOC and ozone compounds this problem; there should be a more robust discussion of the RVP allowance, and any emissions impacts stemming from it must be considered within the context of CO emissions reductions.

API and Marathon commented that uncertainty in the level of future ethanol usage will influence ozone impacts. These commenters said the EPA noted that the ozone analysis did not include consideration of the impacts of CO reduction from ethanol usage nor did it include consideration of the impact of ethanol on changes in the types of compounds comprising VOC emissions – factors which might ameliorate the projected ozone increases resulting from the proposed program.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185
Marathon Petroleum Company (MPC) OAR-2005-0161-0175
Renewable Energy Action Project (REAP) OAR-2005-0161-0204
Renewable Fuels Association (RFA) OAR-2005-0161-0192, -0228 (hearing)

Our Response:

As discussed in Chapter 3 of the Final RIA, ethanol use tends to reduce CO emissions. It also reduces exhaust VOC emissions from older vehicles and may from newer vehicles. If not

mitigated by removing light hydrocarbons from the blend's gasoline blendstock, ethanol blending also increases gasoline RVP and, thus, evaporative VOC emissions. The increase in non-exhaust VOC emissions tends to be greater than the reduction in exhaust VOC emissions. However, this is a function of the vintage of the vehicle fleet and other factors such as ambient temperature, the presence of an inspection and maintenance program, etc. These exhaust and non-exhaust emission impacts affect ozone in opposite directions. The net impact of reduced CO emissions and generally increased VOC emissions will depend on the relative sizes of the changes in emissions and their relative ozone reactivity. The emission impacts will depend on the characteristics of the local motor vehicle and nonroad equipment fleets. The latter will depend on local meteorological conditions and the relative amounts of ambient pollutants present. Therefore, the relative impact of ethanol use on ozone formation will tend to vary over time and from place to place.

In June 2001, EPA estimated the impact of ethanol's impact on CO emissions on ozone in the Lake Michigan area for the 2007 timeframe[4]. EPA was petitioned to relax the VOC emission performance standard applicable to RFG sold in this area due to the additional CO emission reduction achieved by RFG containing 10 vol% ethanol compared to RFG containing 11 vol% MTBE. EPA found that the ozone reduction due to reduced CO emissions due to the additional 1.5 wt% oxygen of the ethanol blend was equivalent to the ozone impact of an increase in RVP of about 0.3 psi. This is significant.

There are a number of reasons why this analysis, however, cannot be simply applied in this RFS rule analysis. First, except for the effect of ethanol on CO emissions, the emission modeling was performed using MOBILE5.b, the precursor to MOBILE6.2[5]. The VOC, CO and NO_x emission projections of MOBILE5.b differ significantly from those of MOBILE6.2. Second, the effect of ethanol on permeation emissions was not included, as this issue was just emerging at that time. Third, the analysis ignored the impact of additional oxygen on NOx emissions, as RFG sold in the Lake Michigan area already contained 10 vol% ethanol. Thus, the baseline for the analysis was not a complete comparison of all the effects of ethanol blending on ozone forming emissions and ozone itself, but only the effect of additional oxygen on CO emissions and its VOC emission equivalency. Fifth, the base RVP from which the increase in RVP was evaluated was that typical for RFG, 6.8-6.9 psi. While appropriate for RFG, this is not appropriate for the effect of an RVP increase for conventional gasoline. Evaporative VOC emissions vary non-linearly with RVP, with the increase in VOC emissions per psi RVP increasing at higher levels of RVP.[6] Thus, using a higher base RVP level would reduce the increase in RVP which would produce the same change in non-exhaust VOC emissions as a 0.3 psi increase from 6.8-6.9 RVP. Finally, the equivalency of reduced CO emissions and increased VOC emissions was based on ozone modeling of the Lake Michigan area with its specific mix of ambient pollutants, temperature, wind patterns, etc. Thus, the results of this analysis cannot be extrapolated to other geographic areas.

[4] 66 FR 37158, July 17, 2001

[5] VOC Adjustment Rule: Response to Comments, U.S. EPA, EPA420-R-01-017, June 2001.

[6] RFA also comments that the National Research Council (NRC) believes that MOBILE6.2 underestimates CO emissions. However, NRC's comments about the under-estimation of CO emissions pertains to an earlier version of MOBILE, MOBILE5b, not MOBILE6.2. EPA considered the NRC comments when developing MOBILE6.2.

The analysis performed for the RFS rule updates the 2001 analysis in several ways. It utilizes MOBILE6.2 instead of MOBILE5b to estimate baseline emissions, as well as the EPA Predictive Models to estimate the impact of fuel quality on emissions. It includes the effect of ethanol on permeation emissions. It advances the timeframe of analysis from 2007 to 2012 and beyond. The emissions analysis considers the effect of ethanol on all emissions, including NOx. However, as described in the Chapter 3 of the RIA, significant uncertainty exists regarding the impact of ethanol on emissions from both newer vehicles and nonroad engines. This adds to our inability to quantify this relationship in the RIA to this rule. It is not possible to quantify the impact of changes in the ozone reactivity of VOC emissions and CO emissions on ozone without a sophisticated atmospheric model. The time available to implement the RFS rule did not allow for the use of such models, nor did the RFS rule depend on a more precise estimate of the impact of increased ethanol use on ambient ozone levels. Thus, we cannot estimate the "cumulative" effect of ethanol use on ozone including these changes at this time. States considering changes to their SIPs will have access to these models and will use them as they consider the impact of increased ethanol use on ambient ozone levels in the future. The changes in mass emissions of VOC, CO and NO_x described in the RIA to this rule will be an important, but not complete, input to such modeling.

In order to better reflect the uncertainty in the effect of oxygenates on all emissions from Tier 1 and later vehicles, we included an alternative estimate of the impact of oxygenate on CO emissions in our sensitivity analysis (see Section 3.1.1.1.9.1 of the Final RIA). In the NPRM, we did not include a second estimate of the impact of ethanol on CO emissions from Tier 1 and later vehicles for two reasons. One, no Predictive Model is available which addresses CO emissions. Two, MOBILE6.2 includes an effect of ethanol on CO emission from these vehicles, at least for high emitters. However, since the sensitivity analysis assumes that ethanol affects the exhaust VOC and NO_x emissions from all Tier 1 and later vehicles, not just high emitters, we have extended the MOBILE6.2 CO emission effect for normal emitting Tier 0 vehicles to normal emitting Tier 1 and later vehicles. This effect is an 13.8% reduction for a 10 vol% ethanol blend. The projection that ethanol use reduces CO emissions from Tier 1 and later vehicles is also supported by the results of five test programs involving LEV and later vehicles. The results of these test programs are discussed in Section 3.1.1.1 of the Final RIA.

Both commenters also refer to the use of air quality monitoring results observed in MTBE ban areas as a way to estimate the impact of the many factors related to increased ethanol use on ambient ozone levels, in particular a recent study by REAP.[7] It is rarely possible to directly observe a change in ambient ozone concentration and attribute it to a single factor. This is due to the fact that ozone is a strong function of ambient conditions, such as temperature and wind speed and direction, and of the mixing of emissions from an extremely wide set of emission sources. All of these factors change daily, seasonally and annually. This is evidenced by the large variability in ozone exceedances cited in the REAP study, which is summarized in Table 10-6 below.

[7] Better Environmental Solutions and Renewable Energy Action Project, "Clearing the Air with Ethanol, a review of the real world impact from fuels blended with ethanol," March 2006.

Table 10-6. Number of Violations of the 8-Hour Ozone NAAQS City in REAP Study

	Eastern Wisconsin	South Coast Air Basin*	New York	Connecticut
1989	756	231		
1990	676	161		
1991	638	160		
1992	592	172		
1993	579	160		
1994	544	148		
1995	589	122		
1996	604	119		
1997	617	120		
1998	580	92	14	25
1999	600	92	20	33
2000	575	93	7	15
2001	506	92	17	26
2002	506	94	28	36
2003		110	15	14
2004		89	1	6
2005		80	10	20

* *Approximate (read off of graph in REAP report)*

Whether one finds an increase or a decrease in ambient ozone levels after a certain year often depends on which years are included in the comparison. For example, REAP finds that the number of ozone NAAQS violations decreased from 1994-2002 compared to 1989 to 1993. However, from the figures shown in Table 1, this finding is strongly influenced by the inclusion of the year 1989 in the "pre-ethanol" period and years 2000-2002 in the "post-ethanol" period. Likewise, for the South Coast, REAP compares ozone violations in 2004-2005 (post-ethanol) to those in 2003 (pre-ethanol), ignoring the earlier lower numbers of violations from 1998-2002.

An even greater problem is that ozone levels are generally decreasing over time due to emission controls being implemented by EPA and the States. Thus, any comparison of "earlier" ozone levels to "later" ozone levels will generally show a decrease. However, this decrease cannot be simply attributed to any one cause, such as ethanol use.

As mentioned above, ambient ozone data such as that cited by REAP can be used to discern the effect of a sudden and dramatic change in fuel quality, as such a change usually effects the emissions from all the vehicles in the fleet. However, at minimum, such a study must account for hourly or daily changes in meteorological factors (e.g., wind speed and direction, temperature, etc.) and the possibility of a gradual trend in ozone occurring over time from other emission controls. Once these other effects are properly accounted for, the effect of including or excluding certain calendar years usually becomes small and the effect of ethanol may be more confidently estimated. Since the REAP study does not account for any of these factors and chooses its years for comparison in a highly subjective fashion, its results cannot be used with any confidence here.

We believe that it is still too early to utilize changes in ambient ozone over time to estimate the effect of the change from MTBE to ethanol on ozone in those areas where MTBE was removed in the 2004 timeframe. Only two years of ambient ozone data are available following the change (complete 2006 data are not yet available). More data are necessary to overcome the variability in ambient ozone levels and provide the statistical confidence needed to separate the fuel effect from other factors.

One particular problem affecting the estimation of the ozone effect of a change from MTBE to ethanol is that the change occurred in the 2004-2006 timeframe. The implementation of the Federal Tier 2 sulfur standards applicable to all gasoline occurred at the same time. RFG prior to 2004 tended to have lower sulfur levels compared to conventional gasoline, particularly in the summer. However, the sulfur content of summer RFG still declined from roughly 100-150 ppm prior to 2004 to 30 ppm by 2006. The effect of the two nearly simultaneous fuel changes makes it very difficult to separate using only ambient air quality data. This problem obviously affects the above REAP analyses in New York and Connecticut.

Given the problems with the REAP analysis described above, we disagree with REAP that the available air quality data calls into question the emission modeling results presented in the NPRM.

10.6.1.2 Ozone Transport and Ozone Impact in Western U.S.

What Commenters Said:

MDNR commented that, in performing the evaluation, EPA used a metamodel to estimate the changes in ozone from the use of 7.2 billion gallons of ethanol. The commenter noted that the model EPA used only covered the eastern 37 states, thus the commenter does not believe that these results are representative for a nationwide program that will impact all 48 contiguous states. The commenter further stated that it believes the ozone metamodeling done by EPA for the ozone impact analysis is too narrow in its scope, and assumptions were made that are not likely to reflect the actual affects of this increase in ethanol use. The commenter pointed out that EPA claims that 7.2 billion gallons of ethanol would only increase ozone values by 0.250 parts per billion and that two different runs were used with "different VOC and NO_x reductions". The commenter stated that earlier results for VOC and NO_x impacts showed potential increases in NOx and possibly VOCs as well, and that EPA then picked from these two runs whichever one they felt "best matched VOC and NO_x reductions for that county." The commenter stated that the model does not account for ozone transport by using this method of choosing between two different model simulations for the emissions of each county individually. The commenter noted that most areas of the country with ozone problems face significant impact from ozone transport, therefore, failing to take ozone transport into account may underestimate the effects of the RFS. The commenter stated that, from EPA county by county results, EPA claims that most of the ozone increase will occur in attainment areas.

MDNR also said it would have been more informative if EPA had estimated the effects of attainment areas using more ethanol on areas that are nonattainment or maintenance that may not see an increase in ethanol usage. The commenter also stated that it had concerns about EPA's model assumptions and the validity of estimates of ozone increase, particularly in nonattainment and maintenance areas. MDNR commented that EPA assumed that there is no ozone impact on areas that do not experience a significant change in ethanol use (50% market share ethanol change). MDNR recommended that EPA provide rationale for their assumption that areas with a less than 50% market change will not see any changes in ozone values, especially if areas surrounding them dramatically increase their ethanol usage.

Letters:
Missouri Department of Natural Resources (MDNR) OAR-2005-0161-0217

Our Response:

The commenter is correct that our ozone impact projections only address the easternmost 37 states of the U.S. This is a limitation of the Ozone RSM. As discussed above, the time available in which to conduct this rule did not allow the application of more sophisticated dispersion models which can be applied the western states. We will consider doing so in support of the Report to Congress required by Section 1506 of the Energy Act, a draft of which is due to be published in 2009. This notwithstanding, the ozone impacts due to increased ethanol use predicted for the eastern states average 0.06-0.14 ppb across the entire area and 0.15-0.32 ppb in those areas where ethanol use changed significantly. We do not expect that the impacts in western states will differ dramatically from these impacts. Analyses being conducted by western States in support of State Implementation Plans will be able to utilize sophisticated dispersion models which will more accurately predict the impact of ethanol use on ozone and other pollutants.

The limitations of the Ozone RSM prevent us from estimating the impact of emission and ozone transport between different areas as precisely as possible with sophisticated atmospheric dispersion models. However, our specific application of the Ozone RSM does incorporate at least some of the effect of emission and ozone transport for most counties at roughly the same degree of accuracy that the model estimates the impact of local emissions. For example, each run of the Ozone RSM included an estimate of the change in VOC and NO_x emissions for both attainment and non-attainment areas. The predicted ozone impact in each specific county is the sum of the ozone impact due to:

1) the change in VOC emissions in all attainment areas, plus
2) the change in NO_x emissions in all attainment areas, plus
3) change in VOC emissions in all non-attainment areas, plus
4) change in NO_x emissions in all non-attainment areas.

Each county's predicted ozone impact includes the effect of changes in VOC and NO_x emissions in that county plus the impact of emissions and ozone formed in upwind counties. The issue is how well the model is able to represent the ozone impact of both sets of emissions. The greatest limitation of the Ozone RSM is that only one percentage change can be modeled at a time for each of the above four pollutant-location combinations. (Distinct emission changes can

be input for onroad and nonroad emission sources in each run of the Ozone RSM.) Thus, if VOC emissions from onroad vehicles increase by 0-7% across the range of attainment counties, only one increase in VOC emissions can be run in the model. In our particular situation, numerous counties experienced no change in emissions, since ethanol and MTBE use was not predicted to change. Thus, there was a distinct bi-modal distribution in the projected emission changes across the two types of counties. Each distribution consisted of a large number of counties with no change in emissions and a number with changes falling within a relatively tight range. The choice was: 1) to model the average of the emissions change in those counties experiencing the change in emissions, and assume that ozone did not change in counties where emissions did not change, or 2) to model the average change in emissions across all counties. In the latter case, the emission impacts modeled would not have matched the changes in emissions in either those counties where ethanol use changed or did not change (i.e., they would be inaccurate for all counties). In the former case, the emission impacts modeled at least matched those occurring in the counties where ethanol use changed, which is the focus of the RFS rule (i.e., increasing the use of renewable fuels). Also, for these counties, at least the change in local emissions was modeled relatively accurately. Transport would not be accurately modeled in either case. That is the main reason why we eliminated the predicted ozone impact for counties where no change in ethanol use is expected to occur. Still, some estimate of ozone transport is included in the predictions.

In reality, this approach to the modeling still likely provided a reasonable estimate of ozone transport for many counties. There are two reasons for this. One, ethanol use is expected to vary regionally, not locally. (An exception could be across boundaries between RFG and other areas.) In this case, the counties adjacent to those counties whose ozone impacts were assumed to be zero would also be expected to experience little change in ethanol use and thus, emissions. Thus, not only would the impact of local emission changes be small, but the impact of transport would also be small.

Two, the estimates of the ozone impact for roughly 80-90% of the country were derived from the Ozone RSM runs which assumed that non-attainment areas utilized RFG and attainment areas utilized conventional gasoline subject to the 9 RVP standard. Given the regional orientation of ethanol use, both local emission impacts and ozone transport should be reasonably estimated for these counties. The only exception are attainment areas downwind of counties with low RVP fuel, since our projections would have assumed that the upwind areas had RFG and not low RVP fuel. This is the primary limitation of the approach used to model ozone for this rule and could not be avoided.

In those cases where a specific county did not experience a significant change in ethanol content and an upwind county did, our approach will not reflect either the emissions or ozone transport from the upwind area on the downwind county. This is because the Ozone RSM requires that the same percentage change in emissions be applied to all attainment areas and a second percentage change in emissions to all non-attainment areas. Since some attainment and non-attainment areas had no change in emissions since ethanol use did not change, the impact of local emission changes due to the application of the change in emissions occurring elsewhere in the country was clearly inappropriate. There is no simple way to separate the impact of the local

emission change from the impact of transport. This is simply one of the limitations of the Ozone RSM.

Since ethanol use may increase in attainment areas upwind of ozone non-attainment areas, the impact of this situation on ozone in the downwind, non-attainment areas is of interest. This type of impact is best addressed through the use of more local ozone models and not national models, like the Ozone RSM. However, we estimate the impact of ozone transport from attainment areas to non-attainment areas through some additional runs of the Ozone RSM in Section 5.1.1 of the Final RIA.

10.6.1.3 Impact of the 9.6 Billion Gallon Ethanol Use Case on Ozone

What Commenters Said:

API and Marathon stated that the EPA only focused on a 7.5 billion gallon renewable fuels scenario in a 37-state eastern area of the US. They commented that the projected ozone impacts will likely be larger and more widespread if the EPA includes the 9.9 billion gallon scenario (which was covered in the emissions inventory assessment) as well as those western regions of the US which are likely to see expanded ethanol usage.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185
Marathon Petroleum Company (MPC) OAR-2005-0161-0175

Our Response:

We estimate the ozone impact of both the 7.2 billion gallon per year ethanol case (or its updated equivalent) and the 9.6 billion gallon per ethanol case in Section 5.1.1 of the Final RIA.

10.6.1.4 Use of the Ozone RSM to Predict Ozone Impacts

What Commenters Said:

Environmental Defense commented that it believes EPA's air quality impact analysis is seriously deficient for purposes of informing the public about the impacts of increased renewable fuel use. The commenter stated that EPA's analysis of nationwide emissions implications of increased renewable fuel use indicates the potential for substantial increases in emissions of nitrogen oxides and volatile organic compounds under some scenarios. The commenter urged EPA to provide a careful and thorough analysis of the air quality impacts of these potential changes. The commenter noted that the Clean Air Scientific Advisory Committee (CASAC) recently recommended to the Agency that to protect human health, the national ambient air quality standard for ozone should be lowered to somewhere between 60 and 70 ppb on an eight-hour average basis, from the current 84 ppb limit. Regardless of EPA's response to this recommendation, CASAC's action clearly indicates a consensus among health scientists that

ozone concentrations are harmful at levels significantly below the current standard. The commenter believes that this means that attention needs to be paid to ozone levels across much of the country, not only in existing nonattainment areas.

Environmental Defense stated that the air quality impacts analysis presented in the proposal utilizes an inadequate "screening" model, the Ozone RSM, which entirely omits the western United States. The commenter further stated that this is unacceptable, as the renewable fuels standard is a national program, not a regional one. The commenter noted that the RSM does not reflect changes to the composition of volatile organic compound emissions, which is a significant issue when ethanol blends displace conventional gasoline. The RSM also neglects the impact of reductions in carbon monoxide which may offset the disbenefit of increased VOC emissions. The commenter stated that it believes EPA's two-step approach to applying the RSM is incapable of accurately assessing the combined impacts of long-range transport and local emissions changes; and that some of these limitations may lead to "conservative" overestimation of ozone increases from renewable fuels use, but the net effect is not clear, particularly if local impacts rather than national averages are considered.

Environmental Defense urged EPA to use the tools it has at its disposal for examining the nationwide air quality impacts of trends in renewable fuels use. The commenter specifically noted that EPA should consider using the CMAQ for a continental-scale analysis; significant insight could also be provided by using the nested grid capabilities available with CMAQ to apply higher resolution for areas expected to see significant use of ethanol-conventional gasoline blends.

Letters:
Environmental Defense OAR-2005-0161-0172, -0223

Our Response:

The RIA describes the uncertainty which currently exists regarding the impact of ethanol use on emissions from motor vehicles and nonroad engines, particularly for newer models. These uncertainties necessarily affect any estimate of the impact of renewable fuel use on ambient ozone levels. We believe that the Ozone RSM provides a general indication of the types of ozone impacts that we can expect to occur in areas where ethanol use increases substantially. These impacts are not large. Also, increased ethanol use is expected to decrease the ozone reactivity of VOC emissions on a per mass basis and CO emissions. Both of these changes directionally reduce the projected ozone impacts in areas which are VOC limited and the Ozone RSM cannot account for these changes.

EPA plans to conduct additional testing of late model year vehicles and engines to improve our estimate of the impact of fuel quality on emissions over the next few years. We also hope to be able to apply more sophisticated air quality models to estimate the net impact of all these emission changes on ambient ozone and PM for the comprehensive study of all the fuel-related provisions of the Energy Act, a draft of which is due to be published in 2009. The specific requirements of the RFS are not affected by the ozone impact of increased ethanol use.

Therefore, there is no reason to delay the RFS rulemaking until more sophisticated ozone modeling results are available.

10.6.1.5 Basis for Ozone Impact of Increased Use of Renewable Fuels

What Commenters Said:

MDNR pointed out that EPA assumed ethanol usage would continue to increase regardless of the rule, leading to the conclusion that the RFS rule would not impact renewable fuel use directly. They also pointed out that EPA recognized significant uncertainty as to the effect of ethanol on emissions from both motor vehicles and nonroad equipment, particularly from the latest models equipped with the most advanced emissions controls, but still made the claim that ozone levels will increase minimally.

Letters:
Missouri Department of Natural Resources (MDNR) OAR-2005-0161-0217

Our Response:

Modeling efforts were somewhat limited given the unique conditions under which the rule is promulgated. Because the volumes of fuel required under the RFS program were mandated by Congress, and because we expect market forces alone to drive renewable fuel consumption beyond mandated volumes, the standards finalized in this rule are not influenced by the analysis of the environmental impacts.

Normally EPA considers various regulatory options based on considerations like air quality impacts, health impacts, and monetary costs and benefits. Here, however, EPA's primary responsibility is to provide the guidance for a renewable fuel credit trading program. The efforts to quantify the impacts on emissions and air quality are merely intended to be illustrative, and were not developed to determine appropriate costs and benefits of particular environmental standards. We acknowledge the uncertainty in our modeling efforts, but point out that this is our best estimate of the magnitude and directionality of RFS program impacts given the data available.

The difference between environmental impacts of not promulgating a rule and promulgating the RFS mandate are zero, since the ethanol use is expected to increase regardless of regulations. In our attempt to estimate future emissions regardless of regulations, EPA recognizes the need for better data on the impacts of renewable fuels on vehicle emissions and recognizes the need for more refined modeling to better characterize the effects of increased use of renewable fuels. More testing and research are clearly needed, but EPA analyses were limited due to time and resource constraints associated with the rulemaking.

10.6.1.6 Ozone Reactivity of Permeation Emissions

What Commenters Said:

REAP and RFA commented on how the impact of ethanol use on permeation emissions was handled in the NPRM. REAP noted that permeation emissions do not increase when going from E6 to E10. Both commenters pointed out that the impacts of permeation should be "corrected" for the lower reactivity of permeation emissions for ethanol-blends, as most of the VOC inventory increase attributed to ethanol in the NPRM stems from permeation. RFA also noted that permeation emissions from on-road vehicles decrease substantially over time, due to superior evaporative emissions controls in newer vehicles. The commenter stated that recent analysis suggests that the relative impact of on-road permeation on VOC inventories in the 2012 to 2015 time frame is quite small.

Letters:
Renewable Energy Action Project (REAP) OAR-2005-0161-0204
Renewable Fuels Association (RFA) OAR-2005-0161-0192, -0228 (hearing)

Our Response:

The results of the CRC E-65 Phase 1 study show the ozone reactivity of the permeation emissions to be lower with than without ethanol on a per mass basis. This occurs because ethanol itself has a lower than average ozone reactivity under the ambient conditions assumed in the CRC report. The ozone reactivity of exhaust and evaporative emissions on a per mass basis from vehicles using ethanol blends can also often be lower than emissions from vehicles fueled with non-ethanol gasoline. EPA points this out in Section 5.1.1 of both the Draft RIA and the Final RIA.

Sophisticated atmospheric models, like CMAQ, account for the relative reactivity of the various components of VOC emissions and adjust their prediction of ambient ozone levels accordingly. If the local area in question is "VOC-limited", a reduction in the mass-specific ozone reactivity is likely to reduce ambient ozone levels to some degree. However, the exact effect of the change in ozone reactivity on ambient ozone can vary dramatically depending on atmospheric conditions (e.g., the other VOCs present, the concentration of NO_x, the temperature, the level of ultraviolet radiation, etc.). Ozone reactivity scales, such as the maximum reactivity and maximum ozone scales developed by CARB can be a useful regulatory tool to encourage actions which might reduce the ozone reactivity of VOC emissions in an effort to reduce ozone. However, they provide an indication of the relative reactivity of various VOCs only for the conditions specified. These conditions may or may not be relevant to ozone formation in a specific local area. For example, the relative reactivity of CO and VOCs typically emitted from gasoline vehicles varies even between the two sets of conditions evaluated by CARB (maximum reactivity and maximum ozone). Also, if the area is "NO_x-limited", then a reduction in the mass-specific ozone reactivity is unlikely to affect ambient ozone levels at all. Neither will a change in the mass of VOC emitted.

Due to the time constraints placed on this rulemaking by the need to quickly implement RFS, EPA was not able to utilize a model like CMAQ to estimate the impact of increased ethanol use on ambient ozone levels. The uncertainties in the effect of ethanol on emissions from a

number of classes of vehicles and engines also limit the increased value of ozone projections made using such sophisticated atmospheric models. The simpler Ozone RSM utilized here does not account for changes in ozone reactivity, as described in Section 5.1.1 of the Final RIA. Lower ozone reactivity of VOC emissions from utilizing ethanol blends would tend to lower ambient ozone in VOC limited areas, as would a reduction in CO emissions. These changes could either reduce some of the ozone increases presented in Section 5.1.1. of the Final RIA, or possibly convert an increase to a decrease. In the case of permeation emissions, the impact of ethanol use on the mass of permeation emissions is much larger than the impact on ozone reactivity, even for the conditions considered by the CARB reactivity scales. Ethanol use appears to increase permeation emissions by roughly a factor of 3-4, while reducing the ozone reactivity per mass of VOC emitted by only 25%. Thus, the analysis presented in the FRM is accounting for the larger of the two impacts. Also, REAP's statement that most of the VOC inventory increase attributed to ethanol in the DRIA stems from permeation is not correct. Between 12% and 39% of the net VOC emission increase estimated to occur with increased ethanol use under the four ethanol use scenarios is due to an increase in permeation emissions. In terms of non-exhaust VOC emissions, these percentages would be even smaller.

As the RFS does not depend on the predicted ozone impact of increased ethanol use, it is not essential to this rule that a more accurate estimate of the ozone impact be made. The projected ozone increases are relatively small even without considering lower ozone reactivity or CO emissions. States considering the impact of increased ethanol use on future ozone levels will utilize more sophisticated models which account for a change in ozone reactivity of VOC emissions and CO emissions.

Until we can employ these more sophisticated models, it is possible to combine the impacts of ethanol use on the total mass of VOC and NOx emissions into a single estimate of ozone impact. However, we cannot estimate the impacts of changes in the ozone reactivity of VOC emissions, nor in CO emissions.

10.6.1.7 Ozone Reactivity of CO Emissions

What Commenters Said:

REAP commented that the impacts of carbon monoxide (CO) emissions are not adequately discussed or analyzed in the DRIA. The commenter noted that the DRIA identified CO as an ozone precursor, but did not attempt to quantify this impact, either with regard to predicted ozone impacts, or as an offset to VOC. The commenter stated that recent studies demonstrate that CO can be the equivalent of up to half the mobile-related contribution of VOC in some areas, and new data shows substantial CO reductions from ethanol in new cars. Yet, the commenter noted, CO was not analyzed as a VOC offset in the DRIA, and was not taken into account in the Ozone RSM analysis. The commenter believes, therefore, that the ozone profiles are not as accurate as they could be, given the precedence for taking CO into account as an ozone precursor. The commenter encouraged EPA to conduct a comprehensive analysis of CO for the final analysis, in order to properly project the potential ozone impacts of E10.

Letters:
Renewable Energy Action Project (REAP) OAR-2005-0161-0204

Our Response:

The discussion of the ozone reactivity of permeation emissions in the previous section is also relevant here. CO has clearly been determined to be an ozone precursor in the atmosphere. A reduction in CO emissions will tend to reduce ambient ozone levels. However, the effect will not be the same in all areas of the country, nor on all days of the year. Some areas, those which are NO_x-limited, will not experience any effect. CARB's reactivity scales only apply under very specific conditions, which may or may not match those of areas outside of California. Thus, they are not applicable for use in a national analysis such as this one. CO emissions from motor vehicles have also been decreasing steadily over time through the use of more advanced emission controls. Thus, estimates of the impact of CO emission reductions made in the past may not be accurate for the future.

As the RFS does not depend on the predicted ozone impact of increased ethanol use, it is not essential to this rule that a more accurate estimate of the ozone impact be made. The projected ozone increases are relatively small even without considering lower ozone reactivity or CO emissions. States considering the impact of increased ethanol use on future ozone levels will utilize more sophisticated models which account for a change in ozone reactivity of VOC emissions and CO emissions.

Until we can employ these more sophisticated models, it is possible to combine the impacts of ethanol use on the total mass of VOC and NOx emissions into a single estimate of ozone impact. However, we cannot estimate the impacts of changes in the ozone reactivity of VOC emissions, nor in CO emissions.

10.6.1.8 Issues Related to State Implementation Plans

What Commenters Said:

The Biodiesel Industries of Greater Dallas Fort Worth (BIGDFW) noted that in Texas, the use of biodiesel will be illegal after December 31, 2006, because the Texas Commission of Environmental Quality (TCEQ) has focused on a potential 2% NO_x increase for B20, cited in: 1) EPA's 2002 Draft Technical Report: A Comprehensive Analysis of Biodiesel Impacts on Exhaust Emissions, October 2002 and 2) EPA Notice of proposed rulemaking: Regulation of Fuels and Fuel Additives: Renewable Fuels Standard Program, September 7, 2006. BIGDFW and Griffin Industries stated that Texas, as well as many other states, will make decisions to restrict renewables based on emissions estimates contained in the final RFS regulation. The commenters requested that EPA clarify its position on the effect biodiesel use will have relative to current and future ozone control plans for the 8 hour ozone standard, since many states are making ozone control plan choices that could severely damage the RFS program. The commenters believe that it would harm the RFS program nationwide if renewable fuels were banned based on an incomplete analysis of EPA data and conclusions, especially when EPA is

currently evaluating newer data that are more representative of the real emission effects of renewable fuels. BIGDFW also stated in it its comments that if TCEQ continues on its proposed course of action and bans biodiesel due to potential NO_x emissions cited in EPA's reports, it will be the first time that a renewable fuel required under the Energy Policy Act has been banned in any state.

BioSelect commented that it believes EPA should affirmatively take the position that using renewable fuels will not impact the SIP process. The commenter noted that an EPA draft report released in 2002 suggested that biodiesel may increase NO_x emissions; the commenter believes that this report is causing some concerns that biodiesel use could jeopardize SIPs. BioSelect believes that SIPs should not be affected by emissions profiles published in RFS because subsequent technical reports have concluded that NO_x emissions from biodiesel blends are insignificant. The commenter further stated that emissions from biodiesel are insignificant given the small market penetration of biodiesel into the transportation fuel market. The commenter also noted that California has a specialized California Air Resources Board (CARB) diesel program and has been awarded full SIP credits – such clarification would provide states assurance that there would be no consequences to their SIPs.

NBB commented that it is concerned that the inclusion of biodiesel NOx emission impacts in a final rule could result in negative consequences for industry in certain regions of the country. The commenter's concern is that states may utilize the information to restrict the sales and use of renewables. The commenter noted that industry encourages EPA to continue working with NREL to further evaluate biodiesel's NO_x emission profile in order to ensure the most up-to-date and reliable information is included in the final rule; as well as provide guidance in the preamble to the final rule outlining the liberty states have in utilizing emissions data when making decisions regarding their ozone control plans.

The New York Department of Environmental Conservation commented that the magnitude of the projected increases in VOC and NO_x emissions as a result of increase ethanol use depends on the actual amount of ethanol blended into gasoline and where the blending occurs. The commenter stated that EPA should hold harmless state SIPs from this increase. The commenter suggested the following potential mitigation measures:

- EPA should require certification test fuel to contain 10% ethanol.
- Evaporative emissions test fuel needs to contain 10% ethanol with an RVP of 10 psi.
- Evaporative emissions in many ozone nonattainment areas could be reduced by lowering the maximum RVP for conventional gasoline to 7.8 in all nonattainment areas not subject to RFG.
- More widespread use of Stage I and II controls to reduce evaporative emissions; toxic exposure to gasoline delivery truck drivers and motorists refueling their vehicles would also be reduced by this measure.
- EPA needs to conduct further testing of the short and long term emissions performance of E85 capable vehicles, and define and promulgate standardized certification procedures for vehicles using E85 (since states are acting to increase the commercial availability of E85).
- Analysis should be conducted on the technical feasibility of further gasoline benzene reduction, and further reduction of benzene precursors.

- Increasing the stringency of ozone precursor control of RFG should be evaluated.
- The emissions impact of stringent olefin control, including per gallon caps, should be evaluated.
- The emissions impacts of stringent aromatics control, including per gallon caps, should be evaluated.

Letters:
Biodiesel Industries of Greater Dallas Fort Worth (BIGDFW) OAR-2005-0161-0211
Galveston Bay Biodiesel (BioSelect) OAR-2005-0161-0206
Griffin Industries OAR-2005-0161-0189
National Biodiesel Board (NBB) OAR-2005-0161-0212
New York State Department of Environmental Conservation (NYDEC) OAR-2005-0161-0169

Our Response:

The purpose of the RFS rule is to establish standards for renewable fuel use nationwide and a framework for ensuring this use occurs. EPA is also to estimate as best as possible, given applicable resource and time constraints, the environmental and economic impacts of increased renewable fuel use. The environmental impacts may include an increase of one type of emission or another. Section 1501 of the Energy Act does not direct EPA to eliminate any negative impacts related to renewable fuel use, nor to adjust the provisions of other relevant statutes and regulations so that such impacts would become moot. In addition to the analyses contained in the RFS rule, section 1506 of the Energy Act directs EPA to perform a comprehensive analysis of the impacts of all fuels and fuel additives used as a result of the Energy Act. Thus, Congress was clearly looking for a thorough analysis of all of the relevant environmental impacts related to renewable fuel use.

States have numerous responsibilities under the Clean Air Act and other federal statutes. In fulfilling their duties under these statutes they must consider the environmental impacts of renewable fuel use. In some cases, they may need to take action to counter a negative impact. One example would be the removal of the 1 psi RVP waiver generally applicable to gasoline containing 10 vol% ethanol in order to avoid increasing non-exhaust VOC emissions and authorized by section 1501 of the Energy Act.

At the same time, as discussed extensively in Chapter 3 of the Final RIA, there currently exists significant uncertainty in the impact of several renewable fuels on emissions from motor vehicles and nonroad equipment, particularly those of more recent vintage. In the Final RIA, we have enhanced the discussion of uncertainty, particularly with respect to biodiesel. We no longer make any quantitative inventory predictions of the impact of biodiesel on the diesel emission inventory. Instead, we, along with several other stakeholders, have embarked on a test program in order to fill the gaps existing in the available data. We believe that this approach provides an appropriate balance between our responsibilities to address the environmental impact of renewable fuels and doing so only to the degree that current scientific knowledge allows.

NYDEC suggests a number of actions which directionally would reduce the impact of renewable fuels on emissions (e.g., requiring vehicle certification on ethanol containing fuel). These actions are outside of the scope of the RFS rule. EPA will consider such actions as it fulfills its Congressional mandates under the Clean Air Act in future rulemakings.

10.6.2 Particulate Matter (PM)

What Commenters Said:

MDNR commented that in the proposal, EPA stated that was not able to project the effect that increased ethanol use will have on levels of directly emitted PM. The commenter further noted that the preamble stated that there are no estimates available for secondary PM either, because the formation of secondary PM is highly complex and the science is still evolving. The commenter stated that EPA has no way of determining the effect increased ethanol usage will have on PM emissions; and this "unknown" presents planning challenges to states dealing with PM nonattainment issues.

Letters:
Missouri Department of Natural Resources (MDNR) OAR-2005-0161-0217

Our Response:

We are unable at this time to predict the impact of ethanol use on either directly emitted or secondary PM. As described in Section 5.2 of the Final RIA, EPA is planning to conduct significant testing of late model year vehicles and equipment to improve our estimate of the impact of fuel quality on emissions. This testing will include PM emissions. As also described in the FRM, EPA has been conducting smog chamber experiments to identify and quantify the production of secondary PM in the atmosphere from gaseous VOC emissions, especially those emitted from gasoline fueled vehicles. The results of these experiments are being incorporated into EPA's CAMx modeling system so that the impact of gasoline vehicle emissions on ambient PM levels can be better predicted.

10.7 Water Quality Impacts

What Commenters Said:

Marathon commented that it believes that EPA's assessment of environmental impacts does not consider all environmental impacts and is therefore incomplete, especially with respect to water quality impacts.

Letters:
Marathon Petroleum Company (MPC) OAR-2005-0161-0175

Our Response:

Section X of the preamble to the final rule describes our approach to estimating the water quality impacts of increased use of renewable fuels.

Regulation of Fuels and Fuel Additives: Renewable Fuel Standard Program

Summary and Analysis of Comments

Chapter 11
Other

Assessment and Standards Division
Office of Transportation and Air Quality
U.S. Environmental Protection Agency

EPA United States Environmental Protection Agency

EPA420-R-07-006
April 2007

11 OTHER

11 OTHER

The items raised in the following comments were not all specifically proposed in the NPRM, therefore many of these comments do not have a corresponding NPRM section. For those that do, we have provided (in our response) information on where the item can be located in the proposal.

11.1 Voluntary Labeling Program

What Commenters Said:

Supports Voluntary Labeling Program

Several commenters expressed general support for the proposed voluntary labeling program. The commenters believe that this will support the goal of sustainable renewable fuels. The commenters all had suggested ways of improving and implementing such a program, as detailed below.

Environmental Defense commented that a voluntary labeling system will provide important mile-markers to judge what the biofuels industry is capable of – which will be important in informing future policy decisions about biofuels policy. The commenter suggested that the Agency not implement a voluntary labeling program based on a "binary" (black/white) indicator of certain renewable fuels as "green" ("G"). The commenter suggested that EPA consider a more flexible and robust approach, that specifies a procedure by which a fuel supplier can determine Equivalence Values (EVs) on the basis of a specific fuel's RIN-linked lifecycle (full fuel cycle, or FFC) greenhouse gas (GHG) intensity. The commenter stated that under this approach, EVs would be used for fuel labeling. The commenter also noted that this voluntary labeling program could then use 'grades' based on a fuel's FFC GHG intensity reduction relative to conventional gasoline or diesel fuel (e.g., standard (undifferentiated) ethanol, with an EV of 1.0, could be assigned the label "G15", representing a 15% reduction in FFC GHG intensity (its labeling would be optional)). The commenter stated that fuels that document a greater degree of GHG intensity reduction could have proportionally higher EVs and be labeled accordingly. The commenter stated that it believes that a dynamic, procedural approach driven by data submitted by fuel suppliers rather than a static, regulatory one, can help EPA to: establish a market mechanism for encouraging innovation in renewable fuel supply; avoid politically loaded "green" vs. (by implication) "not green" debates with the fuels industries; illustrate what is truly meant by a performance-based paradigm; and, discourage policy implementation that relies on assumption-driven models, such as GREET, which are not subject to empirical checks.

Environmental Defense also commented that it strongly supports a voluntary labeling program to distinguish environmentally superior fuels. The commenter suggested that the best, most concise way to achieve the goals of this important program is to have a CO_2/BTU metric used to decide which renewable fuels are indeed "green." First, the carbon value of a fuel is

going to be intricately linked to the entire lifecycle process of the renewable fuel in a way that no other standard would be; to get a "green" carbon score, a fuel must reduce its energy footprint, and therefore, its pollution footprint, at every stage of development (from planting to production). Second, achieving a reduced carbon rating by definition will mean that a fuel is improving benefits to the air and water quality since these factors will all be included in attaining a low carbon score. The commenter suggested that EPA create a carbon rating for all fuels, not just ethanol, to allow for comparisons. The commenter also suggested that the following criteria be used in developing a voluntary "green fuel" labeling program: a reasonable starting point for labeling (i.e., 13-20% GHG reduction below traditional gasoline); provide a way to determine and reward the best carbon-scoring fuels and allow for continual improvement from the industry (e.g., "G20" would be a rating for a fuel that is 20% below traditional GHG emissions of gasoline, "G85" for 85% reduction, etc.).

The American Petroleum Institute (API) and Shell/Motiva also commented that they believe that EPA should build the voluntary labeling concept into the renewable identification number (RIN) for the final rule, and work out the details of the voluntary program later. Shell/Motiva further commented that a voluntary labeling program could help to address issues such as increasing public concern related to water use, land use, farming practices, and competition with the food chain associated with the use of renewable fuels. The commenters also stated that they believe EPA should develop such a program along the lines of the Energy Star program. They further recommended that EPA engage with groups that are already working on certification programs for renewable fuels and recognize the certifications provided by such groups. The commenters noted that there are already groups established that are developing certification programs for palm oil-based biodiesel, soy-based biodiesel, and sugar-based ethanol. The commenters encouraged EPA to engage with the Roundtable for Sustainable Palm Oil (RSPO) and other similar groups; and to encourage the corn-based ethanol industry to establish a similar group, with broad stakeholder involvement, to establish a certification program for corn-based ethanol.

The Union of Concerned Scientists (UCS) specifically suggested that the voluntary labeling program be made more comprehensive. The commenter stated that it does not believe that the proposed "G" appendix to the RIN would be sufficient to accomplish a meaningful labeling program. The commenter stated that a labeling program should provide quantified environmental data, under pre-set categories of parameters based on lifecycle assessment, in a transparent manner so that it can be verified by a qualified third party and thus provide accountability, transparency and flexibility for all fuel producers, blenders, and the public. The commenter believes that if EPA uses the energy-based EVs, and does not include the lifecycle greenhouse gas emissions into this factor, space should also be included in the RIN for the value of the lifecycle GHG emissions associated with the fuel. The commenter stated that it believes that GHG emissions should be one of the key criteria in the voluntary labeling program. The commenter also noted that other nations are quickly moving towards sustainability standards for renewable fuel production. The commenter believes that a more comprehensive fuel labeling program could help the U.S. to be more competitive in a global biofuels marketplace while providing information to ensure renewable fuels are truly better for the economy and the environment.

The Natural Resources Defense Council (NRDC) specifically commented that it believes that a single bit of information ("G" or no "G") is insufficient to encourage product differentiation. The commenter suggested that EPA allow at least two alpha-numeric characters to provide room for the voluntary program to grow and evolve. The commenter also encouraged EPA to consider the Energy Star system as a model. The commenter also stated that if EPA does not adopt a lifecycle GHG based EV, it believes that GHG emissions should be included, but it should also be broader including feedstock management and harvesting practices.

The National Wildlife Federation (NWF) also commented that it believes the addition of an identifier to the RIN denoting superior land, air, and water protection (or other best) practices in production can be highly effective in providing a means for the RIN market to drive reductions in overall pollution impacts. The commenter recommended that a two-digit code be used to allow greater product differentiation and encourage and reward producer best practice innovation. The commenter also suggested a phase-in of the labeling system, along with an appropriate certification process. The commenter stated that two basic categories should be used initially; one indicating best soil and water conservation practices in the growing of feedstock, and one indicating best air and water pollution reduction practices by ethanol plants. The commenter suggested that EPA should discourage practices such as manufacturing/refining biofuels in a manner which violates existing air and water regulations, or that uses water in an unsustainable fashion, and breaking out of land not previously farmed (i.e., "sod busting") for the growth of fuel crops under the RFS program. The commenter stated that sod busting and forest destruction release carbon sequestered in soils, increasing GHG emissions. The commenter also stated that most croplands are less valuable for wildlife habitat than native ecosystems, and cultivating conservation lands or buffer zones can aggravate soil depletion and water pollution.

DuPont commented that it agrees that providing consumers a reasonable way to differentiate amongst biofuels can provide incentives for "greener" biofuels. The commenter stated that a reasonable set of best practices can be a manageable method to assign such a "G" label. The commenter noted however that EPA must take into account both the factors related to the production of the biofuels and their inherent properties and downstream benefits, such as lower emissions and higher fuel mileage in such determinations.

Opposes Voluntary Labeling Program

The American Coalition for Ethanol (ACE) and the Renewable Fuels Association (RFA) commented that they do not support the voluntary labeling program, and they believe that the proposed approach is not workable. ACE specifically commented that it supports efforts to encourage the most energy-efficient production of ethanol, however it is concerned that the proposed voluntary labeling approach will be virtually unworkable. The commenter stated that feedstock production, transportation, and conversion to ethanol occur along a broad spectrum of energy efficiencies, and measuring the energy efficiency with which each of these processes is carried out and determining how to accredit ethanol produced from these processes with a green label will be extremely challenging and probably cannot be achieved with consistency and accuracy. The commenter instead suggested the establishment of new incentives by Congress for ethanol producers to retrofit existing plants with the most energy-efficient production technologies and to encourage the use of innovative and energy-efficient technologies in new

plants, while providing financial incentives to farmers to employ energy-efficient crop production practices.

RFA further commented that it does not believe that EPA has the expertise to implement a voluntary labeling program, and that such a program would be impractical to implement. The commenter further commented that EPA is not charged with, and does not have, the expertise in addressing farming practices. The commenter stated that it believes that a voluntary program would give EPA policy-making decisions Congress declined to make as to what renewable fuel is preferred over others.

Letters:
Alliance of Automobile Manufacturers (Alliance) OAR-2005-0161-0176
American Coalition for Ethanol (ACE) OAR-2005-0161-0218
American Petroleum Institute (API) OAR-2005-0161-0185
DuPont OAR-2005-0161-0168
Environmental Defense OAR-2005-0161-0172, -0223
National Wildlife Federation (NWF) OAR-2005-0161-0209
Natural Resources Defense Council (NRDC)OAR-2005-0161-0229
Renewable Fuels Association (RFA) OAR-2005-0161-0192, -0228 (hearing)
Shell Oil Company/Motiva Enterprises OAR-2005-0161-0215
Union of Concerned Scientists (UCS) OAR-2005-0161-0226

Our Response:

As discussed in Section II.C of the preamble to the final rule, EPA has decided not to adopt Voluntary Green Labeling. Although some commenters noted that voluntary labeling would provide an important role in helping to identify and promote the most environmentally beneficial renewable fuels, others pointed to the potential complexity. We continue to believe that a voluntary labeling program would provide a valuable means for producers to distinguish their fuels, and would help blenders and ultimately consumers to express preferences for "green" products through their RIN purchases. However, given the wide range of comments received on the topic, we believe it is important to continue the dialogue with the various stakeholders prior to putting such a program in place. For instance, there are several additional aspects that could be considered should the Voluntary Green Labeling Program be implemented in the future, such as the suggestions from commenters that we model this program after EPA's Energy Star program, or include some type of lifecycle analyses. EPA will continue to review this voluntary program to determine if implementation is warranted.

11.2 State Provisions

11.2.1 State Opt-in

What Commenters Said:

API and Chevron correctly observed that the regulations do not allow noncontiguous states and territories to opt-in to the RFS program until the 2008 compliance year. They believe

EPA should amend the regulations to provide a means for these states and territories to opt-in to the first compliance period starting July 2007 to preserve the flexibility intended by the Energy Act. NPRA commented that it supports EPA's consistent use of the Energy Information Administration's (EIA) Short-term Energy Outlook published each October to determine the applicable standard for the 48 states and any opt-in areas for the following compliance year. The commenter also noted that noncontiguous states and territories could not opt-in until 2008 and raised no objection to this practice.

The Missouri Department of Natural Resources (MDNR) suggested that EPA require a petition to opt-in be received at least 120 days prior to the current October 31 deadline. The commenter believes more lead time would ensure there is no difficulty in processing the request and publishing the adjusted standard by the November 30 statutory requirement for the subsequent compliance year.

ExxonMobil stated its belief that a noncontiguous state or territory which opts-in should be required to remain in the program for at least five years.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185
Chevron OAR-2005-0161-0193
ExxonMobil Refining & Supply Co. OAR-2005-0161-0197
Missouri Department of Natural Resources (MDNR) OAR-2005-0161-0217
National Petrochemical and Refiners Association (NPRA) OAR-2005-0161-0170, -0232

Our Response:

With respect to when noncontiguous states and territories can first opt-in to the RFS program, we are finalizing the proposal to allow noncontiguous states and territories to opt-in beginning with the 2008 compliance year. The statute clearly states that the program may apply to noncontiguous states and territories (that have petitioned EPA) at any time after these regulations have been promulgated. Given the short period of time between publication of the final rule and the effective date of the program, the need for a state and regulated parties to discuss opting-in with knowledge of the final version of the rule, and the requirement for EPA to notify obligated parties with sufficient lead time to any change in the standard, EPA believes 2008 is the earliest practical date for an opt-in to be effective. In addition, EPA notes that none of the noncontiguous states or territories indicated a strong interest in opting-in for the remainder of the 2007 compliance period. [The State of Hawaii contacted EPA by phone to inquire when the ability to opt-in would become available, but did not express a desire to be able to opt-in for the 2007 compliance period.]

We are changing the current October 31 deadline for submitting a petition to opt-in to the program to November 1 for consistency with other program deadlines. EPA will use the EIA Short-term Energy Outlook, which is typically published in October, and therefore an earlier deadline for petitions will not necessarily ease calculation of the standard. We believe that the November 1 deadline provides sufficient lead time to factor in any states or territories which have opted-in, correctly calculate the standard, and publish the result by November 30 as

required by statute.

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

11.2.2 State Waivers

What Commenters Said:

Environmental Defense and the Renewable Fuels Association (RFA) both commented that they believe regulations pertaining to State waivers should be promulgated, although for different reasons. Environmental Defense believes that EPA is required to promulgate waiver regulations and that there is nothing in EPAct to prohibit EPA from directing the reduced renewable fuel requirement to the state requesting the waiver, despite EPA's contention otherwise in the proposed rule. RFA believes waiver regulations should be promulgated to provide the public a meaningful opportunity to participate in the process. RFA believes these regulations should be composed of specific criteria EPA will consider in the waiver evaluation process.

MDNR observed that there is no provision in the Act that would permit EPA to reduce or eliminate any obligations of the RFS program specifically for parties located within the state that petitioned for the waiver. However, MDNR raised the point that there may be unforeseen extreme situations, such as a natural disaster, that call for the flexibility to provide relief to individual parties. MDNR believes EPA should consult with the U.S. Department of Agriculture (USDA) and the Department of Energy (DOE) to examine this issue.

CHS is concerned that waivers may detract from the Congressional intentions to make the RFS program a national program and urges caution in waiving any requirements. CHS also believes that inadequate domestic supply should not be confused with an inadequate state or regional supply and that a glut of renewable fuel, especially in the mid-continent, was more likely than not. Both CHS and RFA stated their belief that EPA should publish the waiver request in the Federal Register before making a final decision on the need for a waiver.

Letters:
CHS Inc. OAR-2005-0161-0203
Environmental Defense OAR-2005-0161-0172, -0223
Missouri Department of Natural Resources (MDNR) OAR-2005-0161-0217

Renewable Fuels Association (RFA) OAR-2005-0161-0192, -0228 (hearing)

Our Response:

With respect to the need for waiver regulations, EPA is taking no action to promulgate such regulations in the final rule. Contrary to the Environmental Defense's assertion, the statute states that "[t]he Administrator … may waive the requirements … by reducing the national quantity of renewable fuel required".[1] Congress's clear intent was to limit EPA's authority to provide relief under the state waiver provision of section 211(o)(7). Relief under that provision is limited to reducing the total national volume required under the RFS program. Thus, the renewable volume obligation for regulated parties would be reduced, but the reduced obligation would still apply to all obligated refiners, blenders and importers, including those in the state that requested the waiver. This may provide relief to one part of the country, but EPA is not authorized to grant other relief such as reducing the percentage for some refiners and not others or refusing to count towards compliance renewable fuel that is produced or used in certain parts of the country.[2] Further, while EPA acknowledges RFA's desire that waiver regulations contain specific criteria, each situation in which a waiver may be requested will be unique, and promulgating a list of more specific criteria in the abstract may be counter-productive. Communication between the petitioning state(s), EPA, DOE, USDA, and public and industry stakeholders should begin early in the process, well before a waiver request is submitted, and public involvement will be welcomed.

MDNR is correct in its observation that EPA cannot waive obligations for specific entities or locations. However, the waiver provision authorizes EPA to waive the obligations of the program, in whole or in part, depending on the severity of the situation.

EPA is aware of the concerns expressed by CHS and RFA regarding publication of waiver requests and the issuing of waivers. EPA recognizes that the RFS is a national program and will carefully assess the domestic supply of renewable fuel when evaluating a potential waiver situation. Petitions will be published in the Federal Register, as required by statute, to provide public notice and opportunity for comment.

11.2.3 State Renewable Fuel Mandates

What Commenters Said:

Marathon Petroleum Company (MPC), NPRA, the American Petroleum Institute (API), the National Association of Convenience Stores (NACS), and the Society of Independent Gasoline Marketers of America (SIGMA) all commented that they are concerned about the impact of state renewable fuel mandates on the efficiency and flexibility of the fuel distribution

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

[2] CAA Section 211(o)(2)(iii) provides that "the regulations promulgated … shall not … restrict geographic areas in which renewable fuels may be used." Refusing to count towards compliance renewable fuel that is produced or used in certain parts of the country would not be consistent with this provision even if it would not technically be a restriction on use of the fuel in those parts of the country.

system. MPC and NPRA support the EPA preemption review process and the expansion of the scope of this analysis in section 1541 of EPAct. They believe that Clean Air Act section 211(c)(4)(C) was amended by EPAct section 1541 to require EPA and DOE to jointly review motor fuel control choices by state and consider the regional supply implications of such choices. NPRA commented that they believe state renewable fuel mandates should be subject to the same analysis as is required for other changes in local gasoline and diesel standards and states must be granted a waiver from EPA for any new state biofuel regulation to be implemented. NACS and SIGMA specifically commented that they believe that Congress' intent of RFS as a national program to promote the use of renewable fuels and EPA's intent for a nationwide RFS is being undermined by state governments that are adopting state renewable fuel mandates. NACS and SIGMA urged EPA to defend the national RFS program by seeking federal restrictions on state boutique renewable fuel mandates. NACS and SIGMA both stated that they believe that without such restrictions, there is no assurance that the flexibility that Congress built into the RFS and the flexibility that EPA is attempting to build into the regulations implementing the RFS, will not be destroyed by a patchwork of additional state boutique fuel mandates. Both MPC and NPRA stated that they would support legislation to explicitly preempt these programs to remedy this problem.

In its comments, the National Wildlife Federation (NWF) stressed the important and complementary role that it believes state renewable fuels standards and incentives can play in building a robust, diverse and widespread renewable fuels industry. The commenter stated that States are able to target local standards to local crops and industrial capabilities and jump start the innovation that will be necessary to maximize the speed and minimize the cost of a transition to clean, domestically produced, renewable fuels.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185
Marathon Petroleum Company (MPC) OAR-2005-0161-0175
National Petrochemical and Refiners Association (NPRA) OAR-2005-0161-0170, -0232
National Wildlife Federation (NWF) OAR-2005-0161-0209
Society of Independent Gasoline Marketers of America/National Association of Convenience Stores (SIGMA/NACS) OAR-2005-0161-0234

Our Response:

Implementing the Renewable Fuels Standards will result in a significant increase of the use of renewable fuels, and specifically the amount of gasoline blended with ethanol. Coordination amongst many organizations is required in order to optimize fuel and ethanol distribution while considering economics, logistics, and potential air quality impacts.

In general, section 211(c)(4)(A) prohibits States from prescribing or attempting to enforce, “for the purposes of motor vehicle emissions control”, non-identical controls respecting motor vehicle fuel or fuel additive characteristics or components if EPA has prescribed “a control or prohibition applicable to such characteristic or component of the fuel or fuel additive,” under section 211(c)(1). We have promulgated the renewable fuels standards under section 211(o), not under section 211(c)(1). In addition, it appears that state renewable fuel mandates

are generally not adopted for purposes of motor vehicle emissions control. Therefore, the federal renewable fuel program adopted in this rulemaking does not lead to preemption of state renewable mandates under the express preemption provisions of CAA section 211(c)(4)(A).

Further, the EPAct 2005 amends our authority to grant waivers of preemption for non-identical fuel controls, under section 211(c)(4)(C) by placing three additional restrictions on our authority. For example, EPA may only approve a state fuel program into a SIP under section 211(c)(4)(C) if 1) it would not increase the number of fuels specified by EPA on the Boutique Fuels List (71 FR 78192), 2) the fuel is included in a SIP in the PADD, and 3) in certain cases, EPA evaluates the impact of the new program on fuel supply. State renewable fuel mandates would not be subject to these EPAct 2005 restrictions unless EPA was acting to approve the state fuel program into the SIP, and was doing so under section 211(c)(4)(C) based on the express preemption provision of section 211(c)(4)(A). States have not in the past sought approval of their renewable fuel mandates into state SIPs, hence the issues of approval into a SIP under section 211(c)(4)(C) and the related EPAct 2005 boutique fuel restrictions are not likely to arise. The only way the EPAct 2005 provisions would apply is if a state sought to approve its renewable fuels mandate into the SIP and EPA's approval into the SIP was based on section 211(c)(4)(C). In that case the various restrictions on boutique fuels would apply to state renewable fuel mandates.

EPA notes, however, that a court may consider whether either state renewable fuel mandates or standards are implicitly preempted under the supremacy clause of the U.S. constitution. Courts have determined that a state law is preempted by federal law where the state requirement actually conflicts with federal law by preventing compliance with the federal requirement, or by standing as an obstacle to accomplishment of congressional objectives.

With respect to the comments from NWF, EPA acknowledges that state renewable fuel standards can have beneficial impacts on local communities. However, these benefits are not the only considerations we take into account when determining the legality of these programs.

11.3 Impacts on the Agricultural Sector

What Commenters Said:

Choren commented that it believes that the long-term potential of biomass to liquid (BTL) fuel is in the use of non-food feedstock that include agricultural, municipal, and forestry wastes as well as fast-growing, cellulose-rich energy crops. The commenter stated that the use of the entire plant results in less land used per unit of energy produced. This is true second generation, rather than utilizing only the sugar or oil parts of a plant via esterifcation, hydrotreating, or fermentation.

The American Farm Bureau Federation, the National Corn Growers Association, and the National Council of Farmer Cooperatives commented that they believe that ethanol is extremely significant for U.S. agriculture. The commenters noted that ethanol has been widely recognized for stimulating and expanding the rural economy of the country, further, nearly 50 percent of

ethanol plants in the U.S. are farmer-owned cooperatives. The commenters stated that the spending associated with ethanol production circulates throughout the local economy creating new jobs, tax revenue, demand, and additional household income. The commenters further stated that they believe that the use of ethanol protects surface waters, groundwater, and soil from contamination, because ethanol is rapidly biodegraded, unlike other gasoline additives. Lastly, the commenters stated that they believe that ethanol can dramatically reduce greenhouse gas emissions (such as CO_2, a contributor to global warming).

Letters:
American Farm Bureau Federation (AFBF) OAR-2005-0161-0188
CHOREN Industries OAR-2005-0161-0195
National Corn Growers Association (NCGA) OAR-2005-0161-0188
National Council of Farmer Cooperatives (NCFC) OAR-2005-0161-0188

Our Response:

EPA concurs that cellulose-based ethanol production represents an opportunity for future expansion of ethanol production, with potential volumes not as limited as corn-based ethanol production. Cellulose ethanol also appears to have the potential for ethanol production with lesser amounts of fertilizer or pesticides and using other techniques with lesser risk of water pollution and soil erosion compared to corn-based ethanol. However, cellulosic ethanol is still an emerging technology so assessment of many of the factors going into its productions, both on the farm as well as at the plant, requires broader assumptions than the more mature corn ethanol production. Consequently, additional investigation and careful monitoring of developments in farm production practices and production facility technologies will be necessary to improve the full lifecycle assessment of this renewable fuel pathway.

EPA also recognizes that expanded ethanol and biodiesel production is likely to have economic benefits for farmers and rural areas in general. As part of this rulemaking, we have estimated the general increase in farm income resulting from expanded renewable fuel production in the U.S. This initial assessment however can likely be improved upon and warrants additional investigation and assessment, perhaps as part of a future rulemaking relating to renewable fuels.

11.4 Comments Outside Scope of the Proposal

11.4.1 Fuel Quality

What Commenters Said:

The Alliance recommended that EPA begin a substantially similar rulemaking for diesel fuel to ensure that new types fuels intended for use in diesel engines can be adequately judged for suitability as a fuel for on-highway vehicles. The commenter stated that it believes that EPA needs to fully define what an acceptable fuel is for diesel engines in the same way it has done with gasoline, which it believes will also help the Agency to review the acceptability of new diesel fuel additives. The commenter noted that section 211(f)(1) of the Clean Air Act (CAA)

already authorizes EPA to adopt such a requirement – this provision prohibits fuel or fuel additive manufacturers from introducing into commerce any fuel or fuel additive for use in light-duty motor vehicles which is not substantially similar to that used to certify vehicles or engines under section 206 of the CAA. The commenter stated that it believes it is time for EPA to apply "substantially similar" to diesel because of the rapid introduction of biodiesel and other unconventional diesel fuel blends as well as an expected increase in the numbers of light-duty diesel vehicles with highly sophisticated emission control systems and engine technologies. The Alliance further commented that, while EPA has registered biodiesel as an additive, it has not set any restrictions on the amount of biodiesel that can be added to diesel or any specifications for the final blend. The Alliance commented that it believes that a substantially similar rulemaking would allow EPA to consider and investigate just what level of biodiesel should be considered the same as diesel fuel. The commenter believes that this will help promote confidence and certainty in the marketplace. The commenter noted that biodiesel and possibly other alternative diesel fuels have the potential to degrade during storage, which can result in a fuel that is substantially different from the fuel that leaves the production facility. Further, degraded biodiesel can cause vehicle corrosion and plugging, which materially affects fuel system function and emissions; some fuels also may experience phase separation during storage or commingling. The Alliance noted that EPA did not have to address such issues when it adopted the gasoline "substantially similar" rule, but recommends that EPA do so for diesel. Lastly, the Alliance commented that it believes that EPA should consider fuel storage life, in-use practice and other production and handling issues when establishing the criteria for a substantially similar diesel fuel.

The New York State Department of Environmental Conservation (NYDEC) commented that it believes that EPA should conduct further testing of the short and long term emissions performance of E85 capable vehicles, and define and promulgate standardized certification procedures for vehicles using E85.

FutureFuel commented that it believes that it is imperative for the biodiesel industry that biodiesel quality be regulated—the proposal did not address this issue. The commenter noted that for B20 blends to be successful, engine manufacturers must be satisfied as to the performance of such biodiesel for things such as engine warranties. Further, if biodiesel being marketed does not meet certain quality standards, it could have a negative impact on overall biodiesel acceptance. The commenter requested that the Agency consider whether there should be regulatory oversight to the industry to audit/regulate fuel quality in the marketplace (including at the producer level). The commenter also suggested that EPA review the National Biodiesel Accreditation Program, a voluntary program for the accreditation of producers and marketers of biodiesel called BQ-9000. The commenter noted that the program includes storage, sampling, testing, blending, shipping, distribution, and fuel management practices. The commenter stated that it believes that EPA should allow for labeling BQ-9000 qualification as a quality indicator.

The Alliance also commented that it believes that EPA should support and participate in continued biofuels research to further understand their impacts on air quality and vehicle performance. The commenter noted that there has been some concern that blending heavily hydrotreated ultra-low sulfur diesel fuel (ULSD) with biodiesel may result in a final blend with different properties than the current low sulfur diesel fuel (LSD) blended with biodiesel. The

commenter thus stated that it urges EPA to validate the stability of different biodiesel blends to ensure that consumers are adequately protected.

Letters:
Alliance of Automobile Manufacturers (Alliance) OAR-2005-0161-0176
FutureFuel OAR-2005-0161-0198
New York State Department of Environmental Conservation (NYDEC) OAR-2005-0161-0169

Our Response:

Regarding the Alliance's comment that there is a need to codify a rule defining a "substantially similar" definition for diesel fuel, section 211(f)(1) of the Clean Air Act prohibits the introduction of motor fuels or additives that are not substantially similar to the fuels that were used to certify these vehicles. EPA has promulgated an interpretive rule which defines the term "substantially similar" for gasoline (56 FR 5352, February 11, 1991). EPA is attempting to collaborate with other parties, both governmental and non-governmental to design a program to answer questions about the emissions effects of biodiesel at various blend levels. As to the suggestion that an analogous interpretive rule to define "substantially similar to certification fuels" for diesel, the Agency is carefully studying the issue and will decide when sufficient data exist to begin such a rulemaking. In short, we plan to address these concerns in the future as reliable data becomes available.

Current EPA in-use testing regulations do not require that the manufacturer measure emissions on E85 flex fueled vehicles. Current regulations allow the manufacturer to apply correction factors, based on ratios of certification emission measurements using both gasoline and E85, to the in-use gasoline results and obtain estimates of the E85 non-methane organic gas (NMOG) and formaldehyde (HCHO) emissions. However, EPA is considering what regulation changes are necessary and what timely implementation strategies are available to fully describe in-use testing when using an E85 fuel.

With regard to the comments from FutureFuel and the Alliance on biodiesel quality and research, we note that biodiesel is registered with EPA as a motor vehicle diesel fuel and motor vehicle diesel fuel additive. It is registered for use at any blend level from B0 to B100 in both highway and nonroad diesel vehicles. Manufacturers of motor vehicle fuels and fuel additives must register with EPA as authorized by section 211 of the Clean Air Act and Part 79 of the Code of Federal Regulations (40 CFR 79). Biodiesel producers are manufacturers of motor vehicle fuel. As part of EPA's registration process for fuel manufacturers, biodiesel producers must complete and submit EPA registration form 3520-12 (Fuel Manufacturer Notification for Motor Vehicle Fuel, available at http://www.epa.gov/otaq/regs/fuels/ffarsfrms.htm), and also provide the following information:

1) The feedstocks used to produce biodiesel.
2) A description of the manufacturing process used to produce biodiesel.
3) Emissions and health effects testing on the manufacturer's biodiesel, or alternatively proof of registration with the National Biodiesel Board (NBB) showing access to the Tier 1 and Tier 2 emissions and health effects testing data.

4) Test results from a representative sample of the manufacturer's biodiesel demonstrating compliance with the parameters specified in ASTM D 6751.

Since emissions and health effects testing for biodiesel is very expensive, biodiesel producers normally arrange for access to "group data" on the testing of biodiesel which is representative of all products in that group. The NBB has provided EPA with the required group data on biodiesel that met the nationally accepted biodiesel standard at the time of testing. This standard has since been adopted as ASTM D 6751. Thus, a biodiesel producer may meet EPA's emissions and health effects testing requirement for biodiesel by registering with the NBB, and have the NBB provide direct verification to EPA that the biodiesel producer has access to the required test data. Any biodiesel producer who does not have access to NBB's data must provide EPA with emissions and health effects test data as part of the registration process.

Since NBB's group data was generated using biodiesel that met ASTM D 6751 specifications, EPA also requires that all biodiesel production from biodiesel producers who register with EPA using NBB's group data must also meet ASTM D 6751. During registration, such biodiesel producers must provide test results from a representative sample of their biodiesel which demonstrate compliance with ASTM D 6751 specifications. Any registration of biodiesel based on the NBB group data has been conditioned on compliance with ASTM D 6751 (i.e., the registration only covers biodiesel that meets this ASTM specification. Since all biodiesel producers currently registered with EPA are using NBB's group data to meet EPA's testing requirements, all biodiesel production should meet ASTM D 6751.

In addition to registering with EPA under 40 CFR 79, biodiesel producers are also required to register under 40 CFR 80. Under 40 CFR 80, diesel fuel producers must complete and submit EPA registration forms 3520-20A (Fuels Programs Company/Entity Registration) and 3520-20B1 (Diesel Programs Facility Registration). Both of these forms are available at http://www.epa.gov/otaq/regs/fuels/rfgforms.htm.

Biodiesel producers must also comply with all of EPA's regulatory requirements for diesel fuel producers in 40 CFR 80, Subpart I. The primary standard for diesel fuel producers in Subpart I is the 15 ppm sulfur standard, which will be phasing in for all motor diesel fuel from now through 2014. Although biodiesel typically contains less than 15 ppm sulfur, biodiesel producers are still required to test each of their biodiesel batches for sulfur, and appropriately designate their product as required by subpart I. Subpart I also contains diesel fuel standards for minimum cetane index (40), or a maximum aromatics content (35 volume percent), which biodiesel typically meets.

EPA is a member of ASTM, and is participating in several ongoing ASTM activities regarding biodiesel quality and standards. ASTM recently added a stability specification to ASTM D 6751, and expanded the applicability of D 6751 to all diesel fuels (D 6751 was previously applicable to just highway diesel fuel). EPA's renewable fuels standard regulations, recently finalized in 40 CFR 80, Subpart K, require biodiesel producers to meet all specifications in this most recent standard (ASTM D 6751-07) for all biodiesel that is treated as a renewable fuel for purposes of compliance calculations under Subpart K. ASTM is also considering whether to expand their standard for "conventional" diesel fuel (ASTM D 975) to include diesel

blends that contain up to 5 volume percent biodiesel, and is developing a standard for B20.

EPA also plans to increase enforcement efforts to ensure that biodiesel producers are complying with EPA's standards, in particular ensuring that all biodiesel meets ASTM D 6751. Section 211(a) of the Clean Air Act gives the Administrator of the EPA regulatory authority to "…designate any fuel or fuel additive…and…no manufacturer or processor of any such fuel or fuel additive may sell, offer for sale, or introduce into commerce such fuel or additive unless the Administrator has registered such fuel or additive…." This is codified in EPA's regulations at 40 CFR 79.4(a)(1), which states that "no manufacturer of fuel designated under this part shall … sell, offer for sale, or introduce into commerce such fuel unless the Administrator has registered such fuel". Since only biodiesel that meets ASTM D 6751 has been registered with EPA, biodiesel that does not meet ASTM D 6751 will be considered an unregistered fuel subject to the penalty provisions in 40 CFR 79.8 (civil penalties of up to $25,000 per day per violation).

11.4.2 Fuel Testing and Certification Fuels

What Commenters Said:

Neste Oil (Neste) commented that, especially for second-generation renewable diesel fuels, there are several regulatory hurdles that are significant. In particular, the commenter noted that pre-registration testing requirements under 40 CFR 79 can be extensive and encouraged the Agency to examine whether such fuels which produce regulated emissions significantly lower than conventional (i.e., baseline) diesel fuels, should be treated the same as baseline fuels as a class in connection with the testing required for registration. The commenter further suggested that changing a small section of the language in 40 CFR 79 could, in fact, accomplish this (the commenter suggested deleted §79.56(e)(3)(ii)(A)(5)).

API commented that it believes that EPA should require that new vehicles be certified on E10 to address permeation emissions. API recommended that EPA begin to make the necessary vehicle emission regulatory revisions to correct the impact of increased fuel permeation on new vehicles due to increased ethanol blending. The commenter suggested that EPA could insure that new vehicles continue to meet current emission standards by changing the certification fuel to E10. Lastly, API commented that E10 is now the predominant fuel in urban areas most challenged for ozone attainment and new vehicles should be designed to comprehend this and the growing use of ethanol as a gasoline blend stock.

NYDEC commented that EPA should require certification test fuel to contain 10 percent ethanol; the commenter also stated that it believes that test fuel for evaporative emissions should contain 10% ethanol with an RVP of 10 psi.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185
Neste Oil OAR-2005-0161-0191
New York State Department of Environmental Conservation (NYDEC) OAR-2005-0161-0169

Our Response:

The testing requirements Neste Oil referred to are so-called Tier 1 and Tier 2 testing requirements at 40 CFR part 79, as part of the fuel and fuel additive registration program. Tier 1 requirements essentially include a literature search on the health effects of new fuels or additives as well as emissions speciation of such fuels. Tier 2 requirements include exposure of laboratory animals to emissions of new fuels or additives and testing for certain toxic endpoints to assure that no unexpected toxics effects result from the emissions of these fuels. Furthermore, the regulations allow for the grouping of certain similar fuels and additives allowing for groups to perform testing instead of testing each individual fuel or additive within the group. EPA recognizes that, for purposes of this testing, bio-derived fuels are in a different grouping than conventional petroleum-derived fuels. It is EPA's interpretation that, in the case of bio-derived fuels that are very similar to conventional petroleum fuels, the regulations would allow a manufacturer of such a fuel to argue that Tier 2 testing is not needed. However, the regulations make no such allowance for Tier 1 requirements. EPA will continue to study this comment. However, the Agency believes that, in the context of the RFS rulemaking, no such proposal was put forward and the RFS final rule would not be the appropriate place to address this issue.

With regard to the comments that certification test fuel should contain E10, we note that current regulations require manufacturers to use E10 in their durability process for meeting evaporative emission standards. All vehicles meeting current exhaust emission standards are also designed to be able to use real-world fuels containing up to 10 percent ethanol by volume and still function the same as if they were using gasoline without ethanol. As EPA determines what detailed regulatory changes are needed to ensure compliance (including emissions compliance) on E85, we will also consider the appropriateness of changing the gasoline certification test fuel to include ethanol.

11.4.3 Stage I and II Controls

What Commenters Said:

The Alliance commented that it believes that EPA must control the materials and construction of the fuel-dispensing infrastructure along with controlling fuel quality. The commenter noted that the same compatibility issues that affect vehicles also affect dispensing pumps; and further, affected pump materials can cause contamination of the fuel in the pump. The Alliance further noted that automakers care most about the quality of the fuel as dispensed, not just the quality of the fuel produced. Lastly, the commenter stated that service station storage tanks and fuel dispensing equipment are significant potential sources of contamination and should be regulated. Similarly, NYDEC commented that it believes that there should be more widespread use of Stage I and II controls to reduce evaporative emissions in areas not currently covered by these controls.

Letters:
Alliance of Automobile Manufacturers (The Alliance) OAR-2005-0161-0176

New York State Department of Environmental Conservation (NYDEC) OAR-2005-0161-0169

Our Response:

Stage I controls are pipes and hoses installed to collect and transfer vapors (which are generated during the loading of gasoline into an underground tank, or exist in the tank and are displaced out a vent to the air) back into the tank truck tank. Then, the vapors travel back to where the truck is loaded and the vapors are recovered or destroyed. Stage II controls—which are controls on fuel pumps—allow the gasoline vapor displaced from a vehicle tank to be captured and returned to the gasoline storage tank, instead of being lost to the atmosphere. These vapors are then recovered through Stage I controls when a gasoline tank truck makes a delivery at a station, thereby closing the loop.

Stage I vapor balance systems are used in ozone non-attainment areas to reduce volatile organic compound emissions; Stage II vapor recovery systems are required to be used at gasoline dispensing facilities located in serious, severe, and extreme non-attainment areas for ozone (under section 182(b)(3) of the CAA). While these controls are required to be used in non-attainment areas, we do not require that all states/areas use these controls, nor does EPA have the authority to do so. Thus, we cannot mandate the use of Stage I and II controls on areas that are not required to do so.

11.4.4 CAFÉ Standards

What Commenters Said:

MDNR commented that it believes that the RFS program combined with a meaningful increase in the Corporate Average Fuel Economy (CAFE) standard and the promotion of other transportation alternatives (i.e., mass transit, car/van pooling, telecommuting) may result in a more significant reduction in petroleum use with a corresponding reduction in the Nation's dependency on non-domestic fuel sources.

Letters:
Missouri Department of Natural Resources (MDNR) OAR-2005-0161-0217

Our Response:

There are a variety of potential mechanisms for reducing U.S. consumption of petroleum, including those listed by the commenter. While the Energy Act does not provide EPA the authority to address these in the context of the RFS program, a variety of other EPA efforts are aimed at promoting transportation alternatives. Please see: www.epa.gov/ebtpages/polltransportationalternatives.html

11.4.5 Pump Labeling

What Commenters Said:

The Alliance of Automobile Manufacturers (Alliance) commented that consumers also need some protection from the influx of new and different fuels, as manufacturers have limits on the fuels blends covered by vehicle warranty, which makes it critical for consumers to know what fuels they are putting into their vehicles. The commenter suggested that EPA adopt regulations to require labeling for all ethanol blends greater than 10% (volume) and all biodiesel blends regardless of concentration to help vehicle owners comply with their warranties and generally learn about these fuels. The commenter noted that the Federal Trade Commission has adopted rules to require customer labeling for E85 and some other non-petroleum fuels (but not biodiesel), and that many states have already adopted incentive programs for different levels of biodiesel but not necessarily requiring the pumps to be labeled. The commenter stated that labeling must include a reminder for consumers to consult their owner guides and the manufacturers of their vehicles, if necessary, to confirm warranty coverage for their vehicle. The commenter recommended that EPA pursue the development of a mechanism to help consumers clearly identify the type of fuel dispensed by each pump (such as color-coding of fuel nozzle "boots" for the different fuels that are available, including diesel), given the potential proliferation of alternative fuels in the marketplace. The commenter believes that this would help bring some order to the marketplace and reduce the likelihood of misfueling. The commenter also suggested that EPA develop a comprehensive communication strategy to make sure the public is appropriately informed about the use of these new fuels.

Letters:
Alliance of Automobile Manufacturers (Alliance) OAR-2005-0161-0176

Our Response:

EPA will work with industry to encourage appropriate labeling and will study the possibility and statutory authority to require labeling if a voluntary approach proves not to work as intended. We agree with the Alliance that consumers should consult their owner's guides and take all steps to determine that the fuel used is consistent with the instructions in the owner's manual.

11.5 Other Comments

11.5.1 Enforcement and Attestation/Audit Provisions

What Commenters Said:

FutureFuel and Flint Hills Resources (FHR) commented that they strongly support the Agency's decision not to make presumptive liability a part of the RFS program.

FHR also commented that it agrees that invalid RINs should not be used to satisfy a

party's obligations under the rule; however it believes that EPA should clarify that the mere discovery that a party has used an invalid RIN should not lead to that party being in violation. The commenter further stated that it believes that if the party did not know that the RIN was invalid when it tried to use it, and can cover its obligations for that period by purchasing other RINs or carrying over a deficit into the next year, then that party should not be guilty of a violation of the rule. The commenter stated that it agrees that a company that knowingly tries to use invalid RINs is arguably already guilty of a criminal violation under Section 113 of the Clean Air Act (42 U.S.C. §7413(c)(2)(A), also 18 U.S.C. §1001). FHR commented that it believes that a company that acquires and uses the RINs in good faith, only to later find out that they are invalid, should not be penalized for making this mistake. The commenter further noted that the rule provides options for a company to cover itself in such a situation, and it should be allowed to do so without penalty. The commenter stated that it believes that the suggestion in the preamble at 71 FR 55580 that a penalty against a party using invalid RINs might include a punitive component is completely inappropriate where the party acted in good faith. The commenter also stated that it believes that if a company acts in good faith and transfers a (invalid) RIN which it believes to be valid, such a company may be subject to contractual liability via a civil lawsuit from the company that received the invalid RIN, but that company should not be subject to EPA enforcement (as stated at §80.1160(b)(2)).

FHR also commented that it believes that §80.1161(c), which provides that a parent corporation is liable for any violation committed by a subsidiary, is inappropriate.

API commented that it believes that independent audit or attestation provisions should not be required of obligated parties. The commenter further stated that it believes that EPA can easily check producer versus obligated party use of RINs. API also commented that the data is not such that an attest is needed, as there is no verification of raw data as with other programs (such as lab results for reformulated gasoline (RFG), batch volumes to pipeline tickets, overall volume balances, etc.). The commenter noted that reports allow EPA to crosscheck data with other reporting entities; and that renewable producers need an attest to verify reported production and RIN volumes. The commenter stated that it believes that if there are attest requirements for obligated parties, then the requirement needs to change significantly. The commenter noted that the proposed language requires the auditors to check documentation for every RIN transaction ("there will be thousands", the commenter noted); however it instead believes that, at most, a limited sample should be required.

Letters:
American Petroleum Institute (API) OAR-2005-0161-0185
Flint Hills Resources (FHR) OAR-2005-0161-0222
FutureFuel OAR-2005-0161-0198

Our Response:

Regarding the comment on the use of invalid RINs, the regulations prohibit any party from creating, transferring or using invalid RINs. These invalid RIN provisions apply regardless of the good faith belief of a party that the RINs are valid. We believe that these enforcement provisions are necessary to ensure that the goals of the RFS program are not compromised by

illegal conduct in the creation and transfer of RINs. For this reason, obligated parties, and RIN brokers, should use good business judgment when deciding whether to purchase RINs from any particular seller, and should consider including prudent business safeguards in RIN transactions, such as requiring RIN sellers to sign contracts with indemnity provisions to protect the RIN purchases in the event penalties are assessed because the RINs are determined to be invalid. Similarly, parties that sell RINs should take steps to ensure any RINs that are sold were properly created, to avoid penalties that result from the transfer of invalid RINs. Where a party determined to be a good faith purchaser uses invalid RINs, EPA will hold the party responsible for the existence of the invalid RINs liable for the violation, and require that party to purchase RINs to make up for the invalid RINs used by the good faith purchaser and pay an appropriate penalty. If the responsible party cannot be identified or is out of business, or EPA is otherwise unable to obtain relief from the party, then the obligated party that used the invalid RINs would be required to purchase RINs to make up for the invalid RINs. However, a penalty for a good faith purchaser, if any, would likely be very small, particularly where EPA is able to obtain relief from the party that was responsible for the invalid RIN.

With regard to the comments on the provisions for parent corporation liability, we disagree that it is inappropriate to hold a parent corporation liable for violations committed by its subsidiaries. We believe that the ability to hold a parent corporation liable for violations caused by a subsidiary company is necessary in order to ensure that the goals of the RFS program are met in the event that relief cannot be obtained by the subsidiary company. This approach is consistent with the gasoline sulfur program, the Highway and Nonroad Diesel sulfur programs, and other fuels programs.

Regarding the comment on the requirement for attest engagements for obligated parties, we continue to believe that the attest engagements are an appropriate means of verifying the accuracy of the information reported to EPA. In addition to documentation of RIN transactions and use, the reports submitted by obligated parties include information on production and import volumes and calculation of the party's RFS obligation. We believe that attest engagements are necessary in order to verify that the underlying data regarding production and import volumes and RFS obligation, as well as the underlying data regarding RIN transactions and use, support the information included in the reports. We agree, however, that examination of representative samples of RIN transaction documents would provide sufficient oversight and that the requirement included in the proposed regulations would be unnecessarily burdensome. As a result, the attest engagement provisions have been modified to require the auditor to examine only representative samples of RIN transaction documents.

In addition to obligated parties and renewable fuel producers and importers, we believe that an attest engagement requirement is necessary for any party who takes ownership of a RIN. As discussed above, attest engagements provide an appropriate and useful tool for verifying the accuracy of the information reported to EPA. Like obligated parties and renewable fuel producers and importers, the final rule requires RIN owners to submit information regarding RIN transaction activity to EPA. We believe that attest engagement audits are necessary to verify the accuracy of the information included in these reports. As a result, the final rule also includes an attest engagement requirement for RIN owners who are not obligated parties or renewable fuel producers or importers. We believe that inclusion of the requirement in the final rule is a logical

outgrowth of the proposed attest requirements for other parties who are required to submit similar information regarding RIN transaction activity to EPA.

11.5.2 Emission Impacts on State Implementation Plans

What Commenters Said:

In its comments, the National Renewable Energy Laboratory (NREL) requested that EPA provide guidance to states that B20 use is unlikely to have a significant impact on air quality and that B20 use should not be restricted based on air quality concerns given the small percent change, the relatively small volumes of biodiesel use that are projected, and the undisputed positive benefits for PM, energy security, and greenhouse gas emission reduction.

In its comments, Griffin Industries requested that EPA make every possible effort to complete the evaluation of biodiesel on NOx emissions being done in conjunction with NREL and the National Biodiesel Board (NBB) and include relevant results in the final RFS regulation because state emission control planners are anticipated to rely upon EPA's numbers.

Griffin Industries and Baker Commodities commented that States are currently preparing emission control plans for the 8-hour ozone standard, thus states may make decisions to restrict renewables based on emissions estimates contained in the final RFS regulation for both biodiesel and ethanol. The commenters requested that EPA clarify the freedom and also the limitations states have to make decisions on ozone control plans for the 8-hour ozone standard. The commenters noted that restrictions on renewables in nonattainment areas would severely damage the RFS program since these are the areas of the country which utilize the largest volumes of renewables in motor fuels. Further, the commenters stated, it would needlessly harm the RFS program if renewable fuels, such as biodiesel or ethanol were banned or restricted by states based on an incomplete analysis of EPA data and conclusions, especially when EPA is currently evaluating newer data, which is more representative of the real emission effects of renewable fuels.

The New York State Department of Environmental Conservation commented that it believes EPA should mitigate any increased emissions due to ethanol use in gasoline. The commenter noted that EPA estimated increases of the emissions of both VOCs and NO_x as a result of increased ethanol use in gasoline. The commenter stated that it believes that EPA should hold harmless state SIPs from this increase. The commenter further stated that it believes that the maximum Reid vapor pressure (RVP) for conventional gasoline should be reduced to 7.8 in all nonattainment areas not subject to RFG.

BioSelect commented that it encourages EPA to recognize that state air quality implementation plans will not be affected by the RFS.

Letters:
Baker Commodities OAR-2005-0161-0003 through -0006, -0173
Galveston Bay Biodiesel (dba- BioSelect) OAR-2005-0161-0206

Griffin Industries OAR-2005-0161-0189
National Renewable Energy Laboratory (NREL) OAR-2005-0161-0179
New York State Department of Environmental Conservation (NYDEC) OAR-2005-0161-0169

Our Response:

EPA recognizes NREL's concerns about the impact of biodiesel on motor vehicle emissions. We agree with NREL that biodiesel has many benefits, including reduced PM emissions and promoting energy independence and security. However, EPA is also aware that the magnitude of biodiesel's effect on NO_x emissions remains controversial. We believe that significant new testing will be required in order to better estimate the impact of biodiesel on NOx and other exhaust emissions from the in-use fleet of diesel engines. EPA is a participant in the Collaborative Biodiesel Test Program with other industry, public, and governmental stakeholders to carry out such analyses. A report summarizing the results from this program is likely and guidance may also accompany this report, but EPA cannot definitively state what information or conclusions will be expressed in these documents until the testing has been completed.

EPA takes note of Griffin's request that the joint study to evaluate biodiesel NO_x emissions be included in the RFS final rulemaking. We agree with the commenter that further study on this subject is needed. The Collaborative Biodiesel Test Program, to which Griffin appears to refer, is in the early stages of development and timing will not permit inclusion of this study in the final rule. We have documented previous studies that we and others have conducted in this rule, and state emission control planners should rely on these evaluations.

Regarding the comments from Griffin and Baker about restricting renewable fuel use, EPA believes it is important to differentiate between ethanol and biodiesel in this context. As the commenters note, renewable fuel use is prevalent in nonattainment areas. However, the renewable fuel in use in nonattainment areas is predominantly ethanol, which is blended with reformulated gasoline (RFG). Many fuel suppliers voluntarily transitioned to ethanol, as a preferred alternative to MTBE, for blending with RFG and EPA is not aware of any states taking action to restrict the use of ethanol. Biodiesel use, on the other hand, is still relatively limited and centered in the Great Plains and Midwest where nonattainment areas are not highly concentrated; therefore, State Implementation Plan (SIP) development should not be significantly impacted. A notable exception to this trend is Texas where the use of biodiesel is a part of the SIP in the context of the requirements of the Texas Low Emission Diesel (TXLED) Program. EPA is working with stakeholders and participants in the Collaborative Biodiesel Test Program to determine the impacts of biodiesel on NOx emissions as it pertains to Texas and the nation.

With respect to the comments from NYDEC and BioSelect, the Energy Act requires that certain volumes of renewable fuel be used in the U.S. each year. Based on our analysis, there will most likely be some small emission increases in certain areas as a result of increases in the use of renewable fuels. However, renewable fuels such as ethanol have been used long before the RFS program began, and states have always been responsible for meeting the applicable National Ambient Air Quality Standards (NAAQS) regardless of the unique types and

distribution of fuels in a particular area. The Act provides no authority for EPA to lower the statutorily required volumes of renewable fuel to reduce any potential emission increases, nor does it provide any authority to loosen the NAAQS to accommodate the RFS program. Thus, states remain responsible for meeting the NAAQS.

11.5.3 Next Steps/Further Studies

What Commenters Said:

The American Coalition for Ethanol (ACE) commented that it believes that RFS implementation workshops, co-hosted by EPA and other stakeholders, would be beneficial; as these workshops could help producers and others to become familiar with the registration, recordkeeping, and reporting requirements that will be inherent with the RFS program. The commenter stated that all stakeholders should have the appropriate time necessary to prepare for the ABT program to apply in the out-years of the program under the collective compliance approach for 2007.

Gary-Williams Energy Corporation (GWEC) commented that it believes that EPA should commit to a revision of the RFS program and/or to promoting other public policy solutions if DoE or other data show that ethanol-blended gasoline is not evenly distributed across the country. The commenter stated that it believes this should include, for example, subsidies or tax credits to the rail, trucking, and barge industries to assist in the construction of the specialized vessels required to transport ethanol.

Baker Commodities and Griffin Industries commented that they support Congressional appropriations, and additional Congressional funding for EPA, for EPA to complete regulatory requirements and implementation of the RFS program. Organic Fuels also commented that it supports an increase in EPA's budget to enable EPA to have the resources to conduct additional renewable fuels emissions testing, as necessary.

Some commenters stated that they believe EPA should coordinate with other federal agencies to implement renewable fuels programs. Specifically, Delta-T commented that it believes that USDA, DOE and EPA need strong coordination so that new technologies developed will rapidly come to fruition and meet the President's goal of 15 billion gallons of renewable fuels by 2012. Also, the Biodiesel Coalition of Texas commented that it believes that EPA should work with other federal agencies to ensure that all states (including Texas) understand the importance of creating a favorable regulatory environment for renewable fuels.

CHS commented that, according to the Energy Policy Act of 2005 (conference report pages 488-499), DOE and EPA must do multiple studies (and most of these are to be performed annually). The commenter stated that it encourages EPA to publish these studies in the Federal Register, and place links on the EPA website to the DOE studies as they become available.

Letters:
American Coalition for Ethanol (ACE) OAR-2005-0161-0218

Baker Commodities OAR-2005-0161-0003 through -0006, -0173
Biodiesel Coalition of Texas (BCOT) OAR-2005-0161-0186
CHS Inc. OAR-2005-0161-0203
Delta-T Corporation OAR-2005-0161-0196
Gary Williams Energy Corporation (GWEC)OAR-2005-0161-0207
Griffin Industries OAR-2005-0161-0189
Organic Fuels OAR-2005-0161-0190, -0233 (hearing)

Our Response:

Regarding the comments on a potential implementation workshop, we welcome the opportunity to take part in such forums and will work with all stakeholders to inform them of the procedures involved in reporting activities and other aspects of the RFS program.

Regarding revisions to the RFS program, and comments supporting additional funding and coordinated federal programs for alternative fuels work, we note that the President (in his January 2007 State of the Union address) set specific goals reducing the amount of gasoline usage in the United States by 20 percent in the next 10 years. Therefore, given the necessity to address the post-2013 period under the Energy Act and the prospect of continued attention by the Administration and Congress to this issue, EPA will continue to devote attention to the issue of renewable and alternative fuel volumes.

We do intend to utilize the EPA web site to share information related to the RFS program (such as reports, guidance documents, and implementation information), the RFS program web site is: http://www.epa.gov/otaq/renewablefuels/index.htm. We also encourage interested stakeholders to visit DOE's Office of Energy Efficiency and Renewable Energy website at: www.eere.energy.gov.

11.5.4 Other

What Commenters Said:

A private citizen commented that if alternative fuels do not adequately reduce the dependency on crude oil, electrical energy could make up the difference in some cases. The commenter stated that it believes that the country is close to overloading the current electrical generating capacity, so it could take building more powerhouses to accomplish this and thus create the problem of getting permits required to build powerhouses. The commenter noted that nuclear energy is an option, and stated that it believes that nuclear plants should continue to be constructed unless there are significant flaws in the plans. The commenter further discussed the pros and cons of coal, natural gas, wind, and solar power as possible alternative energy sources. The commenter stated that it hopes that EPA looks at the total picture before the final rule. The commenter questioned whether or not ethanol plants would exist if tax credits and government incentives were removed; noting when tax credits were removed in Louisiana, ethanol plants also went away. The commenter urged EPA to consider that tax credits and other government (state and local) incentives are money coming from taxpayers, and expressed the concern that the cost

of fuel goes up with most alternative fuels. The commenter noted that some biodiesel and possibly ethanol made from manure, etc. may be more economical, but recommended that EPA do an energy balance around the whole system for any alternative fuel (i.e., from the plowing of the ground, planting, cultivating, transporting crops to the ethanol plant, making the ethanol, through distributing the ethanol to the end user).

Letters:
Private CitizenOAR-2005-0161-0156

Our Response:

These comments are outside the scope of this rulemaking. However, we note that in developing the final rule, we did take a comprehensive look at various aspects of renewable fuels. We note that the cost to regulated entities as a result of any regulatory program is separate from the price that a consumer later pays; the cost associated with a regulation is one of many factors that influences price. Please see chapter 7 of the final RIA to this rulemaking for a discussion on the costs of the rule for regulated entities.