EPA's 2014 Renewable Fuels Volume
Wyoming Refining Company
September 18, 2014

The renewable fuel standard adversely affects competition in the transportation fuel supply chain. It favors those in the supply chain that blend petroleum fuel for which they have no compliance obligation. The favored group includes large integrated refiners and retail chains blending fuel produced at other parties' refineries. This current RFS2 structure operates to the detriment of small merchant refineries that cannot blend their own production or that must compete against blenders having no compliance obligation. Put simply, small refineries' cost of compliance with the RFS (through purchasing RINs and having to compete against those who do not purchase RINS or, even worse, sell RINs) is significantly higher than the cost of compliance for large integrated refiners that can blend their own and others' fuel. In addition, due to the current RFS2 rule, small refineries' general business costs are significantly higher than the business costs of any other supply chain participant blending fuel produced by another party. See attached at Tab A. This situation is exacerbated by increasing volumes of renewable fuels, which increase the price of RINs, the small refineries' cost of compliance and the competitive distortion between unobligated blenders, obligated blenders and those that are obligated but cannot blend at all. Until EPA fixes the rule, the renewable fuel volumes should not be increased.

In its final 2010 rule, EPA decided to place the RFS compliance obligation on refiners. It then put the means of compliance in the hands of unobligated blenders and integrated refiners. EPA recognized that some refiners (mostly small refineries) lacked blending capabilities and would have to comply by purchasing RINs. EPA also recognized that the cost of compliance through purchasing RINs could be significantly higher than the cost of compliance through blending, particularly as the renewable fuel volumes reached the blendwall. If this occurred, EPA said it would revisit its decision placing the compliance obligation on refiners and would consider moving it to downstream blenders. 75 Fed. Reg. 14,670, 14,722 (March 26, 2010). See attached at Tab B.

In 2013, the volumes reached the blendwall and the price of RINs escalated, significantly increasing the cost of compliance for small refineries. When presented with evidence that this was occurring, EPA chose to ignore it. In a recent GAO report [1], it was noted that EPA rejected evidence that merchant refiners purchasing RINs for compliance face a significantly higher cost of compliance:

> "EPA asserted that refiners experience the same compliance costs regardless of whether they are fully integrated, with blending capabilities, or merchant refiners that purchase credits for compliance. Based on our work, we found the views of several stakeholders differed from EPA's. For example, in a 2011 study, DOE identified the degree to which a small refiner can actively blend production with renewable fuels is a large component that could contribute to economic hardship from compliance with the RFS. In theory, market-based compliance systems—such as the RFS credit system—provide incentives for market participants to

[1] GAO, PETROLEUM REFINING, Industry's Outlook Depends on Market Changes and Key Environmental Regulations, March 2014. Attached at Tab C.

> make decisions that would tend to equalize additional compliance costs over time. However, there can be physical infrastructure or contractual constraints, among various other factors, that could result in different outcomes in the short run.

GAO report at page 51 (emphasis added). EPA's notion is wrong as a matter of fact, and its refusal to acknowledge the huge disparity in compliance costs between large and small refineries is harming small refineries.

EPA also promised to grant hardship relief to small refineries that suffered a disproportionate economic hardship as a result of a higher cost of compliance. In its small refinery exemption study, DOE noted that small refineries could face a significantly higher cost of compliance if the price of RINs increased as a result of the blendwall or dysfunction in the RIN market. See attached at Tab D. This occurred in 2013. The blendwall was reached, the cost of RINs increased by an order of magnitude and, rather than granting hardship relief to small refineries, DOE and EPA revised the scoring metrics through an unpublished "addendum" to the small refinery exemption study making it more difficult for small refineries to secure hardship relief. See attached at Tab E.

Wyoming Refining Company ("WRC") is a small refinery with a nominal rated capacity of 14,000 barrels per day. Like many small refineries, Wyoming is a "merchant" refinery, which means it produces fuel that others market and distribute. Wyoming, therefore, does not have significant blending capabilities, title nor even custody of its obligated fuel at the blending point and complies with the renewable fuel standard by purchasing RINs. Most large refineries have blending capabilities and blend renewable fuels with their transportation fuels to achieve compliance. At supply chain terminals, unobligated blenders including integrated refiners also blend fuel they did not produce. Because ethanol costs less than gasoline, refineries and unobligated blenders that have blending capabilities blend lower priced ethanol thereby separating RINs for compliance and for sale and, also, capturing the margin on the ethanol.

In 2013, the renewable fuel volume reached the blendwall and the cost of RINs went from their traditional 2-5¢ (2008-2012) to a high of $1.50, leveling out at 50¢. See attached at Tab F. As a result, Wyoming's (and other merchant refiners') cost of complying with the RFS increased by an order of magnitude in one compliance year. For most small, merchant refineries, the cost of complying with RFS in 2013 and 2014 will be one of the top 5 operating expenses of the company behind crude oil purchases and labor. Refineries that blend have no operating expense associated with RFS compliance and derive a significant benefit from the ethanol margin. Unobligated blenders derive significant income from blending plus the ethanol margin. Yet, all three parties – those that profit from another's compliance, those whose compliance expense is neutral and those that are legally compelled to pay those who profit – are in competition with each other at the terminal loading rack.

As implemented by EPA the RFS acts to transfer wealth from small refineries to large integrated refineries and unobligated blenders who blend renewable fuels and sell compliance (RINs) to small refineries. Small refiners that must purchase compliance (RINs) from large integrated refineries and unobligated blenders, are being financially disadvantaged and destabilized and are not securing relief from EPA through the hardship provisions.

The current program also opposes accomplishment of RFS2's statutory volume mandates. Downstream blenders have no compliance obligation and, therefore, little incentive to increase the volume of renewable fuel they blend for two reasons. First, downstream blenders benefit from higher RIN prices caused by RIN scarcity - e.g., the blendwall; blending more and selling more RINs decreases that scarcity. In addition, crossing the blendwall to E10+ levels is estimated to require about $100,000 in infrastructure upgrades for every retail location an unobligated blender supplies. Until RIN prices reach a level justifying that investment, unobligated blenders will stick with the E10 for which their retail stations are certified. Because unobligated blenders need not upgrade their retail infrastructure and because automobile warranties create consumer doubt regarding the suitability of E10+ gasoline, the result is likely to be greater, rather than less, market penetration for sub-blendwall fuel. This is exactly opposite the direction Congress intended when it passed EISA.

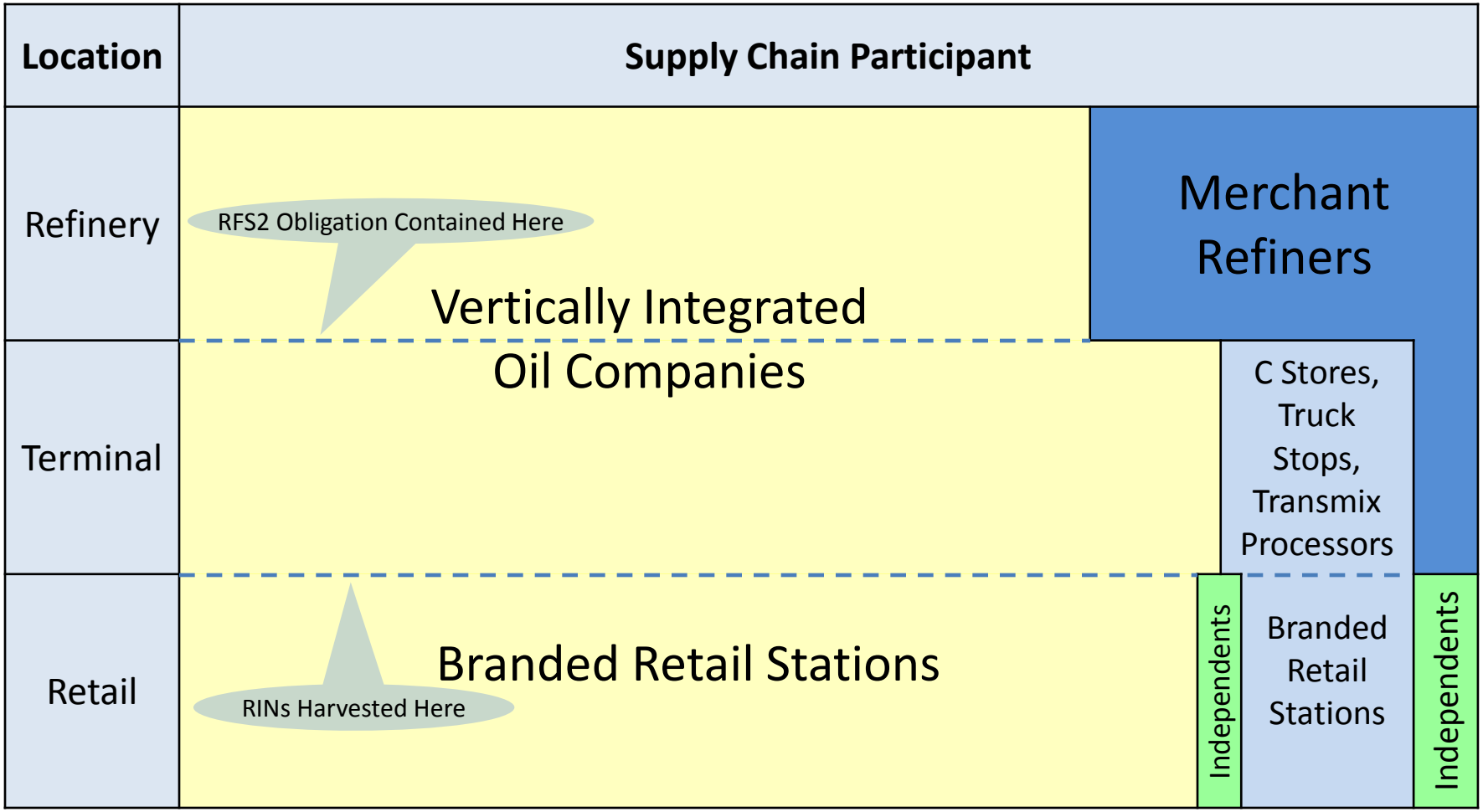
The current program interferes with RFS2's goals because those goals cannot be reached if a significant portion of the nation's blending capacity is exempt from any blending obligation. The long term solution is to stop the wealth transfer and the exemption by moving the point of obligation to the rack. Stopping the wealth transfer will eliminate the current cost advantage for unobligated blenders and should restore competitive balance to the benefit of both RIN buyers and balanced refiners. In the meantime, however, damage can be minimized by minimizing national annual RFS levels and keeping RIN prices as low as possible.

For these reasons, the renewable fuel volumes should not be increased until EPA revises the rule: (1) to fix the inherent competitive disadvantage for small refineries by placing the compliance obligation on blenders; or (2) honors its promise to grant hardship relief to small refineries for whom RFS2 imposes a significantly higher cost of compliance.

TAB A

RFS2 Mismatch: Uneven Regulation

RINs Are Not Separated at Point of Obligation



RFS2 Mismatch: Uneven Regulation

Obligated Parties' Competitive Disadvantage

Ethanol Blending Data	
Item	$/gal
E10	2.81
Ethanol	(2.36)
EtOH Margin	0.45
RIN Price	0.44

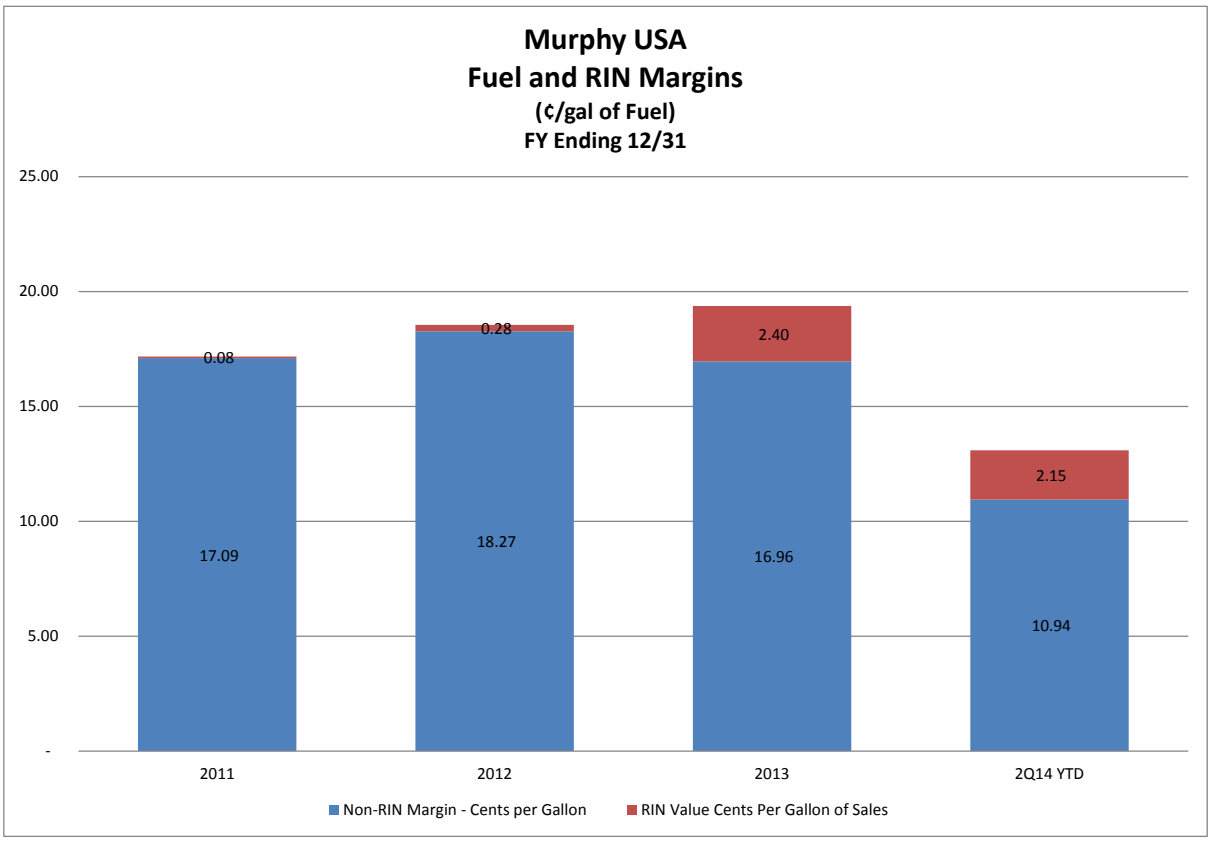
	Parties' Blending Comparison ($/gal E10)		
	Unobligated	Obligated	Purchased RINs
EtOH Margin	0.045	0.045	- - - -
RIN Price	0.044	- - - -	(0.044)
Blending Margin	0.089	0.045	(0.044)
Disadvantage	- - - -	(0.044)	(0.133)

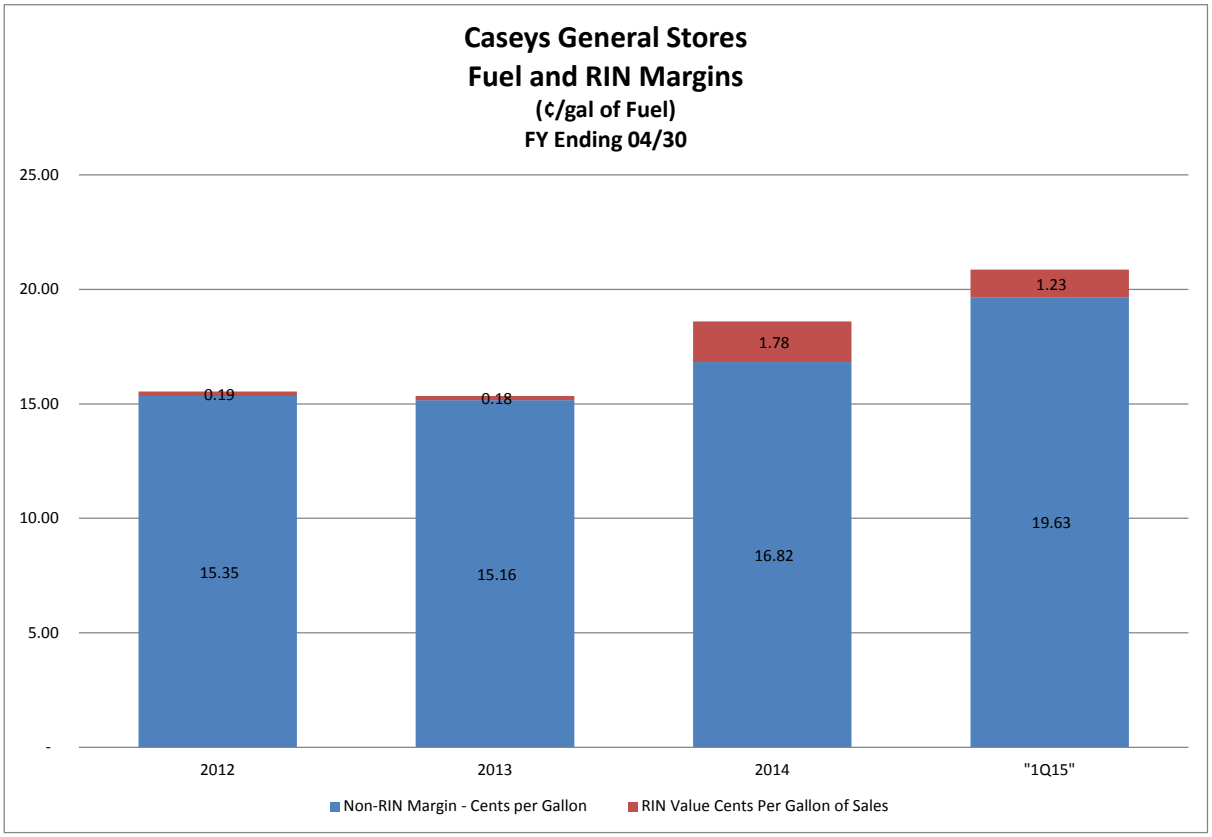
RFS2 Mismatch: Uneven Regulation

Obligated Parties' Competitive Disadvantage

Ethanol Blending Data	
Item	$/gal
E10	2.81
Ethanol	(2.86)
EtOH Margin	(0.05)
RIN Price	0.05

Parties' Blending Comparison ($/gal E10)		
Unobligated	Obligated	Purchased RINs
(0.005)	(0.005)	- - - -
0.005	- - - -	(0.005)
- - - -	(0.005)	(0.005)
- - - -	(0.005)	(0.005)


Murphy USA
Fuel and RIN Margins
(¢/gal of Fuel)
FY Ending 12/31
25.00
20.00
15.00
10.00
5.00
-
0.08
17.09
0.28
18.27
2.40
16.96
2.15
10.94
2011
2012
2013
2Q14 YTD
Non-RIN Margin - Cents per Gallon
RIN Value Cents Per Gallon of Sales


Caseys General Stores
Fuel and RIN Margins
(¢/gal of Fuel)
FY Ending 04/30
25.00
20.00
15.00
10.00
5.00
-
0.19
15.35
0.18
15.16
1.78
16.82
1.23
19.63
2012
2013
2014
"1Q15"
Non-RIN Margin - Cents per Gallon
RIN Value Cents Per Gallon of Sales

Retail Issues

In general, retailers are agnostic about what fuels they sell. They simply want to sell fuels that are legal, available in sufficient quantities and meet the needs of their customers. However, this combination is not always easy to accommodate. Here are two major considerations:

- *Legal Concerns*

All retail fuel equipment must be certified by an independent laboratory as compatible with the fuel that's being stored and dispensed. Until late 2010, there were no dispensers officially listed as compatible with any gasoline containing more than E10. Because Underwriters Laboratories (UL), the dominant firm that certifies fueling equipment, has not retroactively recertified existing equipment, any retailer wishing to sell E15, E85 or mid-level ethanol blends must either replace their dispenser (and possibly the underground storage tank, connected pipes and equipment) with units that are legally compatible with the product or purchase approved retrofit kits. This can be a very expensive endeavor — dispensers can cost $20,000 and underground system retrofits can quickly exceed $100,000. Dispenser retrofit kits — only recently approved — can cost up to $4,000.

There is also concern about fuel and vehicle compatibility. Fuels like E85 and E15 are approved for use with only specific vehicles. However, if a consumer uses one of these fuels in a non-approved vehicle (known as misfueling), the retailer could be held liable for violating the Clean Air Act, voiding the customer's vehicle warranty or damaging components of the vehicle. This is a significant risk that can limit retailer conversion to a new fuel.

- *Consumer Demand*

Because E85 can only be used in FFVs, there is a clearly defined market limitation to consumer demand. According to EIA, FFVs in 2012 represented only 4.6% of the light duty vehicle fleet and are forecast to increase to 11.6% by 2022. This is a very limited market where a retailer can sell E85 and can server as a disincentive for investing in equipment to offer the fuel. Exacerbating this challenge is that FFV drivers do not have to buy E85, as evidenced by EIA data indicating the typical FFV driver purchased only 13.4 gallons of E85 during all of 2012.

For E15, EPA has authorized the use of the fuel in vehicles manufactured in model year 2001 or beyond. While this population represents more than 60% of the vehicles on the road, the automobile industry does not support EPA's approval for these older vehicles and has advised consumers not to use E15 in legacy vehicles. Further, E15 is a new fuel and very little consumer education has been done to develop consumer demand.

To the contrary, AAA has embarked on a national campaign that advises consumers not to use E15 in their vehicles because of possible equipment problems. The combination of these factors has resulted in very little natural consumer demand for E15, leaving retailers to question whether there is sufficient demand to justify making adjustments to their equipment and product mix to offer the fuel.

Opportunities for Growth

Despite the challenges facing the market for renewable fuels, there remains room for growth within this sector. Biofuels do extend the fuel supply and help reduce prices for the consumer, which can help increase overall demand for the products. As the efficiency of the vehicle fleet improves and overall demand for gasoline declines, the market for other fuels will become more competitive. Retailers are increasingly in a position to take advantage of these new opportunities. A couple of recent developments provide some opportunities for renewable fuels to gain additional market share:

- Newer vehicles are being designed to accommodate more ethanol in the base fuel. Although the automobile industry does not necessarily agree with EPA that E15 is safe to use in 2001 vehicles, many models being produced today are warrantied to operate on fuels containing this level of ethanol. In addition, several automakers are evaluating the prospects for designing high performance engines that will operate on what some are calling "renewable super premium"- a high octane fuel that may include 20% - 30% ethanol. If this market materializes, it creates another opportunity for renewable fuels to expand market share.
- Retail equipment is being designed to accommodate higher levels of renewable fuels. Although the first E10+ dispenser was not approved until 2010, most of the equipment being produced today is being certified to handle up to E25. As equipment is replaced, the ability of the retail infrastructure to store and dispense higher levels of ethanol is expanding, which will lower the hurdles to additional market penetration.
- Advanced biofuels are being developed. The market for renewable fuels today is dominated by corn ethanol and soybean biodiesel, while advanced biofuels like cellulosic ethanol remain in the demonstration phase. However, significant investments continue to be made to improve production of these new fuels, including those known as "drop in" fuels which require no special handling at retail

Excerpts from Murphy Oil 4Q13 Earnings announcement: (http://ir.corporate.murphyusa.com/phoenix.zhtml?c=251856&p=irol-newsArticle_Print&ID=1901514&highlight=&erp=earningsDisclosure_Print)

4Q13 discrete:
Total product supply and wholesale margin dollars excluding RINs were $27.9 million in the 2013 period compared to $35.4 million in the same period of 2012. The 2013 amount includes a charge of $13.4 million related to a LIFO decrement on certain products at year-end. These product supply and wholesale margin dollars do not include $5.2 million and $4.4 million of combined operating expense and SG&A costs for the three months ended December 31, 2013 and 2012, respectively. **Also impacting operating income for the three months ended December 31, 2013, was income generated by the sale of RINs of $16.6 million compared to $2.0 million in the 2012 period. During the current period, 53 million RINs were sold at an average selling price of $0.31 per RIN. We use our product supply and wholesale positions to ensure ratable low-cost supply for our retail business and to capture higher total contributions including recognizing a higher level of RINs through blending.**

Full year 2013:

Adjusted EBITDA from continuing operations was $340.1 million for the full year 2013 compared to $285.0 million for 2012.

Total retail fuel volumes sold were 3.80 billion gallons in both 2013 and 2012. Average fuel volumes were 268,458 gallons per store month in 2013 compared to 277,001 gallons per store month in 2012, a decrease of 3.1%. The decrease in volumes is partially due to one fewer month of the $0.10/$0.15 per gallon discount program with Walmart at our Murphy USA sites in 2013 compared to 2012. Retail fuel margins (before credit card expenses) were 13.0 cpg in 2013 compared to 12.9 cpg in 2012, an increase of 0.1 cpg. Volumes were also lower and margins were essentially flat in the current year due to a less favorable wholesale price environment over the prior year and overall weaker consumer demand. Total product supply and wholesale margin dollars excluding RINs were $54.2 million in the year ended December 31, 2013 compared to $65.1 million in 2012. These product supply and wholesale margin dollars do not include $20.0 million and $18.5 million of combined operating expense and SG&A costs for the years ended December 31, 2013 and 2012, respectively. **Also impacting operating income for the year ended December 31, 2013, was income generated by RINs sales of $91.4 million compared to $8.9 million in 2012. During 2013, 171 million RINs were sold at an average selling price of $0.53 per RIN.**

Excerpt from Murphy Oil 2Q13 Earnings Call (http://seekingalpha.com/article/1596812-murphy-oil-management-discusses-q2-2013-results-earnings-call-transcript?part=single)

Steven A. Cossé - Chief Executive Officer, President, Director, Member of Executive Committee and Member of Environmental, Health & Safety Committee

Thanks, Roger. The U.S. downstream business reported total net income of $77.9 million. **RIN sales contributed $18.4 million of income at an average price of $0.78 per RIN credit.** In a period of fluctuating wholesale markets, U.S. retail margins were $0.156 per gallon for the second quarter, increasing from $0.11 per gallon in the first quarter. This is down from $0.197 per gallon in the second quarter last year, where we experienced a sharper fall in wholesale markets.

Leo P. Mariani - RBC Capital Markets, LLC, Research Division

Okay, understood. Makes sense. And I guess in terms of RIN, you talked about $18 million of income benefit this quarter. I guess prices are still strong. I guess we should expect to see continued incremental income from that for the rest of the year. And I guess could you potentially highlight, roughly, what the cash flow impact is of the RINs?

R. Andrew Clyde - Chief Executive Officer and President

Certainly, this is Andrew Clyde. **We've been doing 12 million RINs a month and that's a consistent rate for our proprietary blending. We can buy more bulk barrels and blend more when the economics support it. But we'd look to continue to do around 12 million conservatively for the rest of the year.**

Leo P. Mariani - RBC Capital Markets, LLC, Research Division

Alright. And so, Andrew, that translates into sort of rough cash flow?

R. Andrew Clyde - Chief Executive Officer and President

Not until I could predict RIN prices. So currently they're around $1, and we're selling ratably on a monthly basis. So we're blending and generating, capturing RINs of about 12 million a month and we'll be getting the market price on a ratable basis.

From Casey's General Store Earnings call for 4Q13 Fiscal Quarter ended April 30, 2013 (June 14, 2013)

(http://seekingalpha.com/article/1502782-caseys-general-stores-management-discusses-q4-2013-results-earnings-call-transcript)

We will go over each category to give more detail on what's driving these results. **During the quarter, we experienced a strong fuel margin environment, resulting in an average margin of $0.17 per gallon. The margin benefited from the rise in the value of renewable energy credits, commonly known as RINs throughout the quarter. During this time, we sold approximately**

10.3 million RINs at an average price of $0.46. This represented about $0.013 per gallon improvement to the fuel margin in the quarter. Casey's has been processing RINs since 2007. Over the past 3 years we have sold on average, about 43 million RINs each year, at an average price of $0.065.

Kelly A. Bania - BofA Merrill Lynch, Research Division

If I could just squeeze in one last one on the gas margins. Can you just talk about what you're expecting for the RINs, how that's factoring into your goal of $0.15 for the year because it seems like if the RINs continue at the prices they are, it could add more than $0.01, maybe $0.01 to $0.02 to your gas margins for the year. So maybe you could just help us think about how you're looking at that.

William J. Walljasper - Chief Financial Officer, Principal Accounting Officer and Senior Vice President

Sure and I'll tell you the -- a longer answer than what you're looking for.

Kelly A. Bania - BofA Merrill Lynch, Research Division

That's fine.

William J. Walljasper - Chief Financial Officer, Principal Accounting Officer and Senior Vice President

I think it's important for the investment community to understand that the processing of RINs is not a new endeavor for us. This all started back when the renewable fuel standards went into effect back in 2005. We started processing RINs -- we developed our own internal accounting process that interfaces with the EPA to process the RINs back in 2008, so we've been doing this for quite a long time. The only reason you've never heard us talk about it is it hasn't been material because the value of RINs. **The amount of RINs has been relatively consistent that we have sold over the last 3 years and the range is probably about 42 million in a year to about 43.8 million in a year. So that really hasn't changed tremendously. We do see an uptick however, slightly in Q1 and Q2 as we sell more gasoline during -- in those periods. So we've been processing for a while. Now the value of those RINs has escalated roughly about the start of the calendar year. As indicated in my opening comments, the average cost was about $0.46, $0.47 per RIN currently and each rate -- if you go on the Chicago Mercantile and look at the value, that value is just slightly over double that currently. And so it's something that we believe is here to stay. It's been around for quite a long time. So we anticipate certainly an impact, a positive impact in fiscal 2014. We may not be -- it's hard for us to predict what the value will be for the year but certainly, we are experiencing a strong impact here so far in Q1.** We anticipate the impact to continue for basically the most of the fiscal year. We do cycle over some of the increased value in the fourth quarter. So maybe a little bit less impactful in Q4 but certainly prior to that, we anticipate that. Hopefully I gave you some information there, some guidance there.

From Casey's General Store Earnings call for 1Q14 Fiscal Quarter ended July 31, 2013 (September 10, 2013)

(http://seekingalpha.com/article/1685362-caseys-general-stores-management-discusses-q1-2014-results-earnings-call-transcript?part=single)

We experienced a very favorable fuel margin environment for the quarter, resulting in a record fuel margin of $0.221 per gallon. Our average margin for the past 4 years has been $0.145 per gallon. The margin benefited from a rise in the value of renewable fuel credits, commonly known as RINs, during the quarter.

During this time, we sold approximately 12.6 million RINs at an average price of $1.02. This represented about $0.03 per gallon improvement to the fuel margin. Currently, RINs are trading around $0.70. The Fuel Saver program that we implemented in December of 2012, in partnership with Hy-Vee, continues to do very well.

Damian Witkowski - Gabelli & Company, Inc.

Bill, 2 quick questions. First on -- you sold 12.5 million RINs, I think, in the first quarter. So if you annualize that, that's about 50 million. Do you actually have that much capacity or is this a high quarter?

William J. Walljasper - Chief Financial Officer, Principal Accounting Officer and Senior Vice President

It's a little bit inflated from the prior quarters because of that mid-July sale that we did. Now having said that, I'm going to step back a second and talk about that Fuel Saver program. And that Fuel Saver program, many of those stores -- the majority of those stores are located in the state of Iowa. And so to the extent that we're gaining traction in fuel sales in the state of Iowa, that will also increase the opportunity for RINs, because Iowa is really the only state where we secure the RINs because of the right blend legislation here. **So that's a factor as to why you're seeing part of the acceleration. So over the last 3 fiscal years, we've averaged roughly about 43 million RINs sold. There's a good chance that we can obviously beat that number because of this program.**

From Casey's General Store Earnings call for 2Q14 Fiscal Quarter ended October 31, 2013 (December 10, 2013)

(http://seekingalpha.com/article/1889391-caseys-general-stores-management-discusses-q2-2014-results-earnings-call-transcript)

Casey's trailing full-year gas margin is $0.154 per gallon. **Second quarter margin benefited from an increase in the value of renewable fuel credits, commonly known as RINs compared to a year ago.**

During the quarter, we sold 11.7 million RINs for $7.6 million. This represented about $0.018 per gallon improvement to the fuel margin in the quarter. Currently, RINs are trading for around $0.35.

From Casey's General Store Earnings call for 3Q14 Fiscal Quarter ended January 31, 2014 (March 11, 2014)

(http://seekingalpha.com/article/2082043-caseys-general-stores-ceo-discusses-q3-2014-results-earnings-call-transcript)

Third quarter margin benefited from increasing the renewable fuel credits commonly known as RINs compared to the same period of last year. **During the quarter, we sold 12.2 million RINs or $3.4 million, this represented just below $0.01 impact in the fuel margin. Certainly RINs are trading around $0.50 to $0.55.**

Okay. And lastly, what was Casey's modeling for RIN credit when you set your goal of $0.15, and will RINs be a headwind next year?

Bill Walljasper - CFO, SVP

Well, I wouldn't be able to tell you specifically the RINs that we model into the margin going forward, but I can tell you this Ron, when we made that margin goal for fiscal 2014 that was done back in April before really the RINs market really exploded over the course of the summer. So certainly didn't anticipate that in the margin.

Now, going forward, where RINs will fall out, it's hard to say EPA had still yet to come out with a definitive answer as to where they will take their standards, or do anything with the standards. I think you saw a drop in the RINs value this past fall that was due to a comment that EPA made that they might be looking at easing the standards going forward.

I believe there has been a slight retraction in that comment here recently which is why you probably see the RINs coming up in that $0.50 to $0.55 range whether they stay at that range, or get back to that dollar plus range a year ago truly hard for us to predict. And for us, we don't necessarily manage our business with that but it's really a nice windfall there. So we will be very clear on how RINs will impact us going forward. We will be clear when we put out the margin goals for fiscal 2015, how much RINs benefit will be incorporated into that.

Comments from BP 2Q13 earnings call:

http://www.reuters.com/article/2013/07/30/bp-rins-idUSL1N0G01IT20130730#sthash.45r37OBq.dpuf

From Hess Oil 2Q13 Earnings Call (http://seekingalpha.com/article/1589342-hess-management-discusses-q2-2013-results-earnings-call-transcript)

Robert A. Kessler - Tudor, Pickering, Holt & Co. Securities, Inc., Research Division

I wanted to see if you wouldn't mind quantifying the degree to which you generate RIN in your -- I assume your terminal business or retail as the case may be?

John P. Rielly - Chief Financial Officer, Principal Accounting Officer and Senior Vice President

Sure. I mean, we are in a position that we are benefiting from the current RIN environment. Now just to point out, Hess does remain an obligated party for RINs because we do import transportation fuel to meet marketing's gasoline demand. But our retail and terminal networks do generate more renewable credits than required to meet our supply needs. In the second quarter, our excess RINs generated a $17-million after-tax benefit. So that's what it was in the second quarter. If you're looking at the third quarter, I would tell you, we're generating RINs around $20 million a month of excess RINs. So if you were to take the current pricing that's in place right now and just say you sold all the RINs at that price for the third quarter, you could expect us to record an after-tax benefit in the $35 million to $40 million. Now, again, that's additional, so that would be in the second quarter with the $17 million already been recorded in the first quarter. Now, however, I have to add this -- and it's not quantifiable. But the cost of RINs rising in recent months has led to some RIN sharing, I'll call it, at the wholesale level, which is reducing our retail fuel margins and offsetting some of the direct benefit from selling the excess RINs.

Paul Y. Cheng - Barclays Capital, Research Division

Two final questions. One, John, do you have a number that, in terms of what is the unit operating costs at Bakken in the second quarter and in terms of the cash operating cost and including the transportation cost? **And second one, just want to confirm, you said that you generate about 20 million gallons a month in the excess RIN. I just want to confirm that number.**

John P. Rielly - Chief Financial Officer, Principal Accounting Officer and Senior Vice President

So, yes, Paul. It's 20 million a month of excess RINs that we generate per month.

From Hess Oil 3Q13 Earnings Call (http://seekingalpha.com/article/1787842-hess-management-discusses-q3-2013-results-earnings-call-transcript)

Brandon Mei - Tudor, Pickering, Holt & Co. Securities, Inc., Research Division

Okay. And then one more for me. Can you quantify the RIN contribution this quarter?

John P. Rielly - Chief Financial Officer, Principal Accounting Officer and Senior Vice President

Yes. It was $28 million after-tax that we did recognize the benefit from in the third quarter from RINs. Now where current pricing is, we're expecting an immaterial contribution in the fourth quarter.

Additional Comments

The URLs below shows major C store operators – Casey is number 8 on the list (2nd URL).

http://www.cspnet.com/industry-news-analysis/corporate-news/articles/convenience-retailers-among-forbes-top-50-private

http://retailindustry.about.com/od/topusretailcompanies/a/2013-Largest-Convenience-Store-Chains-In-The-Us-7-11-Bp-Shell-Chevron-Etc.htm

Other major retailers include 7/11, Kwik Trip, Loves, Pilot Flying J. Unfortunately, all of these firms are private so it is not possible to know how much they earned selling RINs.

TAB B

Federal Register

Friday,
March 26, 2010

Book 2 of 2 Books
Pages 14669–15320

Part II

Environmental Protection Agency

40 CFR Part 80
Regulation of Fuels and Fuel Additives: Changes to Renewable Fuel Standard Program; Final Rule

the definition of MVNRLM will be used to calculate the RVOs, and refiners, blenders, or importers of MVNRLM will be treated as obligated parties. As such, diesel fuel that is designated as heating oil, jet fuel, or any designation other than MVNRLM or a subcategory of MVNRLM, will not be subject to the applicable percentage standard and will not be used to calculate the RVOs.[22] We requested comment on the idea that any diesel fuel not meeting these requirements, such as distillate or residual fuel intended solely for use in ocean-going vessels, would not be used to calculate the RVOs.

One commenter expressed support for including heating oil and jet fuel into the RIN program, but not to subject these fuels to the RVO mandate. The commenter stated that fluctuating weather conditions make it hard to predict with any reliability the volumes of heating oil that will be used in a given year. Another commenter stated that it supports the extension of the RFS program to transportation fuels, including diesel and nonroad fuels.

With respect to fuels for use in ocean-going vessels, EISA specifies that "transportation fuels" do not include such fuels. We are interpreting that "fuels for use in ocean-going vessels" means residual or distillate fuels other than MVNRLM intended to be used to power large ocean-going vessels (e.g., those vessels that are powered by Category 3 (C3), and some Category 2 (C2), marine engines and that operate internationally). Thus, fuel for use in ocean-going vessels, or that an obligated party can verify as having been used in an ocean-going vessel, will be excluded from the renewable fuel standards. Also, in the context of the recently finalized fuel standards for C3 marine vessels, this would mean that fuel meeting the 1,000 ppm fuel sulfur standard would not be considered obligated volume, while all MVNRLM diesel fuel would.

3. Other Transportation Fuels

Transportation fuels other than gasoline or MVNRLM diesel fuel (natural gas, propane, and electricity) will not be used to calculate the RVOs of any obligated party. We believe this is a reasonable way to implement the obligations of 211(o)(3) because the volumes are small and the producers cannot readily differentiate the small portion used in the transportation sector from the large portion used in other sectors (in fact, the producer may have no knowledge of its ultimate use). We will reconsider this approach if and when these volumes grow. At the same time, it is clear that these fuels can be used as transportation fuel, and under certain circumstances, producers of such "other transportation fuels" may generate RINs as a producer or importer of a renewable fuel. *See* Section II.D.2.a for further discussion of other RIN-generating fuels.

G. Renewable Volume Obligations (RVOs)

Under RFS1, each obligated party was required to determine its RVO based on the applicable percentage standard and its annual gasoline volume. The RVO represented the volume of renewable fuel that the obligated party was required to ensure was used in the U.S. in a given calendar year. Obligated parties were required to meet their RVO through the accumulation of RINs which represent the amount of renewable fuel used as motor vehicle fuel that was sold or introduced into commerce within the U.S. Each gallon-RIN counted as one gallon of renewable fuel for compliance purposes.

We are maintaining this approach to compliance under the RFS2 program. However, one primary difference between RFS1 and the new RFS2 program in terms of demonstrating compliance is that each obligated party now has four RVOs instead of one (through 2012) or two (starting in 2013) under the RFS1 program. Also, as discussed above, RVOs are now calculated based on production or importation of both gasoline and diesel fuels, rather than gasoline alone.

By acquiring RINs and applying them to their RVOs, obligated parties are deemed to have satisfied their obligation to cause the renewable fuel represented by the RINs to be consumed as transportation fuel in highway or nonroad vehicles or engines. Obligated parties are not required to physically blend the renewable fuel into gasoline or diesel fuel themselves. The accumulation of RINs will continue to be the means through which each obligated party shows compliance with its RVOs and thus with the renewable fuel standards.

If an obligated party acquires more RINs than it needs to meet its RVOs, then in general it can retain the excess RINs for use in complying with its RVOs in the following year (subject to the 20% rollover cap discussed in Section III.D) or transfer the excess RINs to another party. If, alternatively, an obligated party has not acquired sufficient RINs to meet its RVOs, then under certain conditions it can carry a deficit into the next year.

This section describes our approach to the calculation of RVOs under RFS2 and the RINs that are valid for demonstrating compliance with those RVOs. This includes a description of the special treatment that must be applied to RFS1 RINs used for compliance purposes under RFS2, since RINs generated under RFS1 regulations are not exactly the same as those generated in under RFS2.

1. Designation of Obligated Parties

In the NPRM, we proposed to continue to designate obligated parties under the RFS2 program as they were designated under RFS1, with the addition of diesel fuel producers and importers. Regarding gasoline producers and importers, we proposed that obligated parties who are subject to the standard would be those that produce or import finished gasoline (RFG and conventional) or unfinished gasoline that becomes finished gasoline upon the addition of an oxygenate blended downstream from the refinery or importer. Unfinished gasoline would include reformulated gasoline blendstock for oxygenate blending (RBOB), and conventional gasoline blendstock designed for downstream oxygenate blending (CBOB) which is generally sub-octane conventional gasoline. The volume of any other unfinished gasoline or blendstock, such as butane, would not be included in the volume used to determine the RVO, except where the blendstock was combined with other blendstock or finished gasoline to produce finished gasoline, RBOB, or CBOB. Thus, parties downstream of a refinery or importer would only be obligated parties to the degree that they use non-renewable blendstocks to make finished gasoline, RBOB, CBOB, or diesel fuel.

We also took comment on two alternative approaches to the designation of obligated parties:

—Elimination of RBOB and CBOB from the list of fuels that are subject to the standard, such that a party's RVO would be based only on the non-renewable volume of finished gasoline or diesel that he produces or imports, thereby moving a portion of the obligation to downstream blenders of renewable fuels into RBOB and CBOB.

—Moving the obligations for all gasoline and diesel downstream of refineries and importers to parties who supply finished transportation fuels to retail outlets or to wholesale purchaser-consumer facilities.

noted, the discussion of nonroad in reference to transportation fuel includes the entire category covered by EPAct's definition of nonroad.

[22] *See* 40 CFR 80.598(a) for the kinds of fuel types used by refiners or importers in designating their diesel fuel.

These alternative approaches have the potential to more evenly align a party's access to RINs with that party's obligations under the RFS2 program. As described more fully in the NPRM, we considered these alternatives because of market conditions that had changed since the RFS1 program began. For instance, obligated parties who have excess RINs have been observed to retain rather than sell them to ensure they have a sufficient number for the next year's compliance. This was most likely to occur with major integrated refiners who operate gasoline marketing operations and thus have direct access to RINs for ethanol blended into their gasoline. Refiners whose operations are focused primarily on producing refined products with less marketing do not have such direct access to RINs and could potentially find it difficult to acquire a sufficient number for compliance despite the fact that the total nationwide volume of renewable fuel meets or exceeds the standard. The result might be a higher price for RINs (and fuel) in the marketplace than would be expected under a more liquid RIN market. For similar reasons, we also took comment on possible changes to the requirement that RINs be transferred with volume through the distribution system as discussed more fully in Section II.H.4.

In response to the NPRM, stakeholders differed significantly on whether EPA should implement one of these alternative approaches. For instance, while some refiners expressed support for moving the obligations to downstream parties such as blenders, terminals, and/or wholesale purchaser-consumers, other refiners preferred to maintain the current approach. Blenders and other downstream parties generally expressed opposition to a change in the designation of obligated parties, citing the additional burden of demonstrating compliance with the standard especially for small businesses. They also pointed to the need to implement new systems for determining and reporting compliance, the short leadtime for doing so, and the fewer resources that smaller downstream companies have to manage such work in comparison to the much larger refiners. Finally, they pointed to the additional complexity that would be added to the RFS program beyond that which is necessary to carry out the renewable fuels mandate under CAA section 211(o).

When the RFS1 regulations were drafted, the obligations were placed on the relatively small number of refiners and importers rather than on the relatively large number of downstream blenders and terminals in order to minimize the number of regulated parties and keep the program simple. However, with the expanded RFS2 mandates, essentially all downstream blenders and terminals are now regulated parties under RFS2 since essentially all gasoline will be blended with ethanol. Thus the rationale in RFS1 for placing the obligation on just the upstream refiners and importers is no longer valid. Nevertheless, based on the comments we received, we do not believe that the concerns expressed warrant a change in the designation of obligated parties for the RFS2 program at this time. We continue to believe that the market will provide opportunities for parties who are in need of RINs to acquire them from parties who have excess. Refiners who market considerably less gasoline or diesel than they produce can establish contracts with splash blenders to purchase RINs. Such refiners can also purchase ethanol from producers directly, separate the RINs, and then sell the ethanol without RINs to blenders. Since the RFS program is based upon ownership of RINs rather than custody of volume, refiners need never take custody of the ethanol in order to separate RINs from volumes that they own. Moreover, a change in the designation of obligated parties would result in a significant change in the number of obligated parties and the movement of RINs, changes that could disrupt the operation of the RFS program during the transition from RFS1 to RFS2.

We will continue to evaluate the functionality of the RIN market. Should we determine that the RIN market is not operating as intended, driving up prices for obligated parties and fuel prices for consumers, we will consider revisiting this provision in future regulatory efforts.

In the NPRM we also took comment on several other possible ways to help ensure that obligated parties can demonstrate compliance. For instance, one alternative approach would have left our proposed definitions for obligated parties in place, but would have added a regulatory requirement that any party who blends ethanol into RBOB or CBOB must transfer the RINs associated with the ethanol to the original producer of the RBOB or CBOB. Stakeholders generally opposed this change, agreeing with our assessment that it would be extremely difficult to implement given that RBOB and CBOB are often transferred between multiple parties prior to ethanol blending. As a result, a regulatory requirement for RIN transfers back to the original producer would have necessitated an additional tracking requirement for RBOB and CBOB so that the blender would know the identity of the original producer. It would also be difficult to ensure that RINs representing the specific category of renewable fuel blended were transferred to the producer of the RBOB or CBOB, given the fungible nature of RINs assigned to batches of renewable fuel. For these reasons, we have not finalized this alternative approach.

Another alternative approach on which we took comment would have allowed use of RINs that expire without being used for compliance by an obligated party to be used to reduce the nationwide volume of renewable fuel required in the following year. This alternative approach could have helped to prevent the hoarding of RINs from driving up demand for renewable fuel. However, it would also effectively alter the valid life limit for RINs. Comments from stakeholders did not change our position that such an approach is not warranted at this time, and thus we have not finalized it.

2. Determination of RVOs Corresponding to the Four Standards

In order for an obligated party to demonstrate compliance, the percentage standards described in Section II.E.1 which are applicable to all obligated parties must be converted into the volumes of renewable fuel each obligated party is required to satisfy. These volumes of renewable fuel are the volumes for which the obligated party is responsible under the RFS program, and are referred to here as its RVO. Under RFS2, each obligated party will need to acquire sufficient RINs each year to meet each of the four RVOs corresponding to the four renewable fuel standards.

The calculation of the RVOs under RFS2 follows the same format as the formulas in the RFS1 regulations at § 80.1107(a), with one modification. The standards for a particular compliance year must be multiplied by the sum of the gasoline and diesel volume produced or imported by an obligated party in that year rather than only the gasoline volume as under the RFS1 program.[23] To the degree that an obligated party did not demonstrate full compliance with its RVOs for the previous year, the shortfall will be included as a deficit carryover in the calculation. CAA section 211(o)(5) only permits a deficit carryover from one year to the next if the obligated party achieves full compliance with each of its RVOs including the deficit carryover

[23] As discussed above, the diesel fuel that is used to calculate the RVO is any diesel designated as MVNRLM or a subcategory of MVNRLM.

TAB C

United States Government Accountability Office

Report to Congressional Requesters

March 2014

PETROLEUM REFINING

Industry's Outlook Depends on Market Changes and Key Environmental Regulations

GAO-14-249

and Canada, are reshaping the industry and creating new business opportunities. To take advantage of some of these opportunities, refiners and other market participants will need to invest—to upgrade refineries to be able to process different crude oils or to build pipelines or rail connections to move more crude oil from production to refining centers. Uncertainty can affect the market climate within which these investment decisions will be made. In this context, EPA's timeliness in issuing annual percentage standards under the RFS is important to help inform the investment decisions of the refining industry. In issuing annual percentage standards, EPA may waive the statutory volumes in whole or in part according to statutory criteria, which EPA has identified as potentially factoring in the blend wall, market developments, and other issues. However, EPA has missed the annual deadline for issuing annual standards under the RFS in most years. EPA has some systems in place to monitor and evaluate progress in developing regulations, which could provide useful information for understanding delays in RFS. But EPA has not identified the underlying causes of delays, and it has not developed a plan to address delays and, therefore, risks repeating delays. EPA delays in issuing RFS standards are important because delays do not change refiners' compliance periods accordingly and they therefore create uncertainty in the marketplace, potentially harming investment. Uncertainty among refiners, renewable fuel producers, and other market participants about how EPA will address the blend wall, which can be exacerbated by the prospect of litigation, can affect investment decisions and ultimately the availability and prices of the fuels they produce.

Recommendations for Executive Action

To improve EPA's ability to meet the annual statutory deadline for issuing annual RFS standards, we recommend that the Administrator of the EPA take the following two actions:

- Assess past experience to identify the underlying causes of delays in issuing annual RFS standards.
- Develop and implement a plan to address the causes of delays and help ensure RFS annual standards are issued on time.

Agency Comments and Our Evaluation

We provided drafts of this report to DOE, DOT, and EPA for review and comment. The three agencies provided technical comments on early or final drafts, which we incorporated as appropriate.

EPA also provided a letter in which it generally agreed with our findings and recommendations and clarified three topics discussed in the report.

First, regarding the effects of compliance with RFS, EPA asserted that refiners experience the same compliance costs regardless of whether they are fully integrated, with blending capabilities, or merchant refiners that purchase credits for compliance. Based on our work, we found the views of several stakeholders differed from EPA's. For example, in a 2011 study, DOE identified the degree to which a small refiner can actively blend production with renewable fuels is a large component that could contribute to economic hardship from compliance with the RFS.[79] In theory, market-based compliance systems—such as the RFS credit system—provide incentives for market participants to make decisions that would tend to equalize additional compliance costs over time. However, there can be physical infrastructure or contractual constraints, among various other factors, that could result in different outcomes in the short run. We added additional language to explain EPA's views in the report and in Appendix III.

Second, regarding the time-frame for RFS compliance, EPA stated that the RFS compliance deadline—the date by which refiners and other obligated parties must demonstrate compliance to EPA—is established through implementing regulations, not statute. EPA stated that it adjusted the 2013 deadline to provide additional time to demonstrate compliance. We acknowledge that EPA can extend the compliance deadline. However, the compliance period refers to the time during which refiners and other parties incur obligations under RFS and can take steps to incorporate additional renewable fuels to generate credits for compliance. This period is set by statute to be a full calendar year. We clarified language in the report to acknowledge EPA's ability to adjust the compliance deadline, essentially providing additional time for obligated parties to purchase credits, and its inability to adjust the compliance period.

Third, regarding Tier 3 standards, EPA announced the final standards while our draft was with the agency for comment. EPA stated that the final Tier 3 program is very similar to what it proposed, though EPA made

[79]Department of Energy, Office of Policy and International Affairs, *Small Refinery Exemption Study: An Investigation into Disproportionate Economic Hardship*, March, 2011.

some changes based on public input and updated its analyses. EPA provided technical comments to incorporate information from the final rule which we incorporated into the report, as appropriate. However, we were not able to obtain stakeholder and other views on the final Tier 3 rule for this report. See appendix IV for EPA's letter.

As agreed with your offices, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. At that time we will send copies to the appropriate congressional committees and to the Secretaries of Energy and Transportation and the Administrator of the EPA. In addition, the report will be available at no charge on the GAO website at http://www.gao.gov.

If you or your staff members have any questions about this report, please contact me at (202) 512-3841 or ruscof@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix V.

Frank Rusco
Director, Natural Resources and Environment

TAB D

Small Refinery Exemption Study

An Investigation into Disproportionate Economic Hardship

Office of Policy and International Affairs

U.S. Department of Energy

March 2011

For Further Information

This study was prepared by the Office of Policy and International Affairs under the direction of Carmine Difiglio, Deputy Assistant Secretary for Policy Analysis.

Specific questions about information in this study may be directed to Peter Whitman, Senior Policy Analyst (peter.whitman@hq.doe.gov) or Tom White, Senior Policy Analyst (thomas.white@hq.doe.gov).

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I. Study Objectives

The Energy Policy Act of 2005 (EPAct 2005) established the Renewable Fuel Standard (RFS) program under section 211 (o) of the Clean Air Act (CAA) mandating gasoline sold in the United States contain a minimum amount of renewable fuel content determined on an annual production volume basis. The Energy Independence and Security Act of 2007 (EISA 2007) amended the RFS program by increasing the renewable fuels mandate from 7.5 billion gallons to 15.2 billion gallons in 2012, and extending it to 36 billion gallons of renewable fuel to be blended in 2022[5].

EPAct 2005 exempted certain small refineries from compliance with the RFS from 2007 through 2010[6]. EPAct 2005, through its establishment of section 211(o)(9)(A)(ii) of the CAA, required that the U.S. Department of Energy (DOE) conduct a study for the Administrator of the Environmental Protection Agency (EPA) assessing whether RFS2 would impose a "disproportionate economic hardship" on small refineries, defined as those facilities with aggregate crude oil throughput that does not exceed 75,000 barrels per calendar day[7]. Based on the results of the study, EPA may be obligated to extend the RFS1 exemption to small refineries for at least two additional years beyond its current expiration date of 2010.

On February 24, 2009, DOE transmitted its study with recommendations to EPA. The study concluded that the market for credits (Renewable Identification Numbers, or RINs) was currently competitive, and found no reason to believe that a competitive market would disproportionately disadvantage participants who purchase credits rather than generating them through blending renewable fuels into their products. Therefore, the study concluded that the exemption for small refineries should not be extended beyond 2010. It was noted that, should market conditions change or if individual small refineries were experiencing economic hardship, small refineries maintained the right under Section 211(o)(9)(B) of the CAA EPAct 2005 to individually petition EPA for an extension of their exemption.

Subsequent events required that the study be revisited. First, the economic downturn reduced the profitability of the refining industry, which has disproportionately impacted some small refiners. Second, the expiration of the biodiesel production credit reduced production and has caused the price of biomass-based diesel RINs to increase. Even though the credit was retroactively restored for 2010, these RINs remain relatively expensive. Finally, in order capture the unique factors

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[5] The EPAct 2005 RFS program is abbreviated RFS1 and the EISA 2007 revisions to the RFS1 program is abbreviated RFS2 in the rest of this document. A glossary of relevant terms is provided in Appendix A.

[6] EPA chose to exempt small refiners, defined as refiners producing gasoline from crude oil with fewer than 1,500 employees and less than 155,000 barrels per day crude processing capability, as well as small refineries defined in Section 211(o)(1)(K) as those facilities with aggregate crude oil throughput that does not exceed 75,000 barrels per calendar day Subsequently, EPA has concluded that it did not have the authority to extend the duration of the exemption period for all of the small refiners as defined under the original RFS rulemaking , but only those statutorily defined in EPAct 2005.

[7] As defined in Section 211(o)(1)(K).

contributing to disproportionate economic hardship, additional consultation with individual refiners was necessary.

On a parallel track to the changed market conditions, Congress directed DOE to revisit the issue of disproportionate economic hardship for small refineries and report its findings[8]. This study addresses the concerns of Congress in directing DOE to:

- Seek comments from owners of small refineries on the reasons why they may believe that they would experience disproportionate economic hardship if the small refinery exemption were not extended.
- Assess RFS compliance impacts on small refinery utilization rates and profitability.
- Evaluate the financial ability of individual small refineries to meet RFS requirements.
- Estimate small refinery impacts by region.
- Reassess whether small refinery compliance costs through the purchase of RINs is similar to the cost of compliance by purchasing and blending renewable fuels.
- Estimate the economic impact of RFS on small refineries on a regional basis.

Given this Congressional direction, this study needed to consider the unique factors contributing to disproportionate economic hardship for individual small refineries in the study. Consequently, a survey of small refineries was necessary, something not included in the previous DOE study.

In order to evaluate disproportionate economic hardship caused by the impact of compliance with the RFS on small refineries, these compliance strategies had to be characterized and their varying impact on refineries investigated. There is a direct cost associated with participation in the program. The RFS program is based on a national mandate for renewable fuels, enforced through obligated parties who are responsible to EPA for their pro-rata share of the renewable fuel mandate. However, the program incorporates a market solution to the process of fulfilling the mandates, allowing trading between the obligated parties from those who over-comply to those who find it less advantageous to blend renewable fuels into the transportation fuel mix. Transfer of the obligation is formally accomplished through the market for RINs.

The absolute cost of compliance is one of the key factors in determining disproportionate economic hardship from compliance with RFS2. There are two major pathways that may be followed for compliance. One compliance pathway is blending renewable fuels with gasoline, which may require capital expenditures for equipment. The second pathway is purchasing and maintaining a portfolio of RINs. If certain small refineries must purchase RINs that are far more expensive than those that may be generated through blending, this will lead to disproportionate economic hardship for those effected entities. Economic theory suggests that the price of RINs would reflect the marginal cost of compliance with the RFS, that is, the most expensive cost of

[8] The Senate Report (Senate Report 111- 45) accompanying the FY2010 Energy and Water Development Appropriations Bill included language directing DOE to re-open the study and revisit the issue in greater detail completing the revised study by June 30, 2010. The Appropriations Bill directed DOE to collect data on small refineries and quantify the economic impact of RFS compliance. In addition, the Appropriations Conference Report (House Report 111-278) included language supporting the Senate Appropriations Report request.

blending renewable fuels. The average cost of compliance may be much lower than the marginal cost. If the economics of blending ethanol are favorable, that is, ethanol is less expensive than the gasoline components it replaces, the compliance cost may be essentially zero for refiners that fulfill their obligation through blending renewable fuels. Such refiners would have blended even without the mandate. While current RIN prices for ethanol are moderate (adding less than 2 cents per gallon of renewable fuel), there are numerous circumstances when RIN prices could rise, increasing the cost of compliance and perhaps increasing the cost of compliance more for refineries that rely on RINs for compliance compared to those that do not. These circumstances include both increases in the costs of renewable fuels and the inability to blend all of the mandated renewable fuel into conventional transportation fuels (the so-called blend wall).

Small refineries could have particular obstacles that would make compliance more costly than those of large integrated companies. Compliance costs and characteristics of small refineries that make them more vulnerable to financial distress may be unique to each small refinery. Since much of the information is not publicly available, the small refineries were surveyed to make a determination of disproportionate economic hardship. This information was supplemented by publicly available data, which also yielded the baseline from which disproportionate economic impact may be discerned. Given the unique nature of each refinery, it is not possible to make a recommendation on any refinery that did not submit a survey.

Disproportionate economic hardship must encompass two broad components: a high cost of compliance relative to the industry average, and an effect sufficient to cause a significant impairment of the refinery operations. The individual metrics for each refinery were grouped into two general categories: eight metrics representing disproportionate impacts on the refinery and three metrics representing the effect of compliance on the viability of the firm.

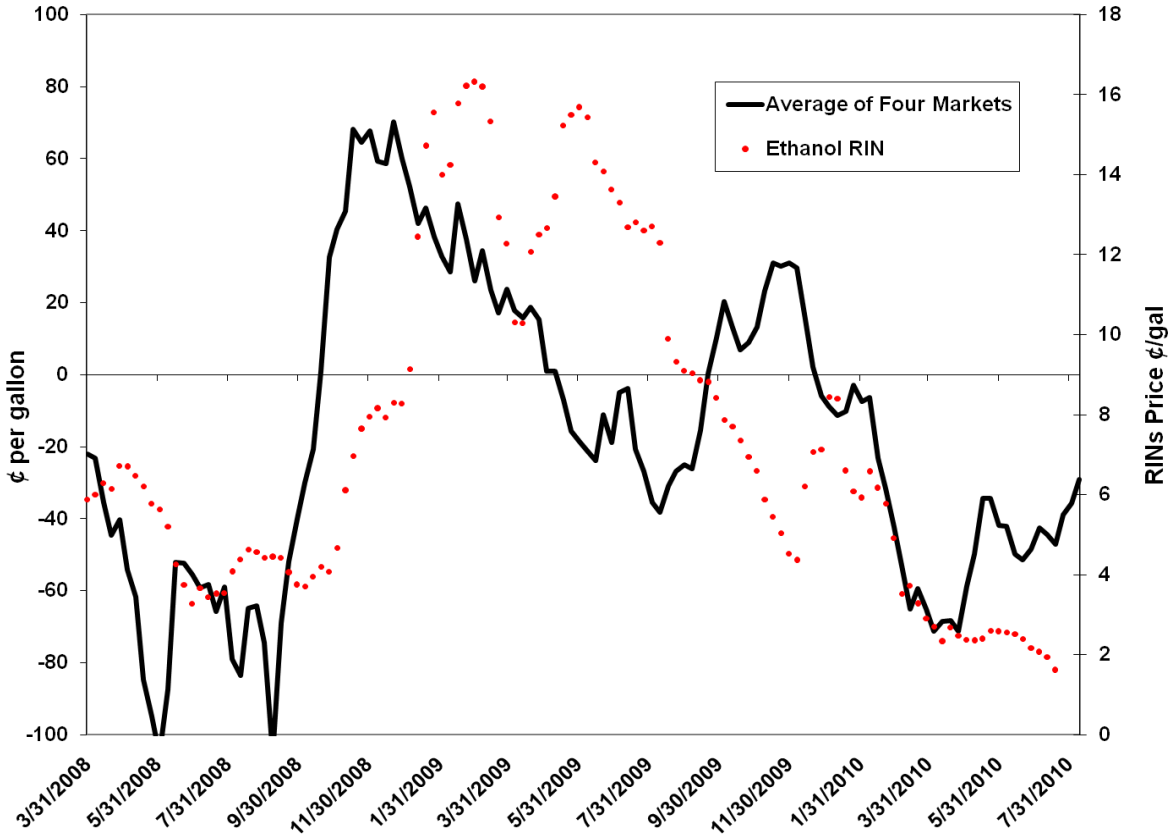
II. RFS Regulations

The first RFS regulation, referenced as RSF1 in this study, was specified in Section 1501 of EPAct 2005. This section added paragraph 211(o) to the CAA, requiring the EPA to promulgate regulations implementing a renewable fuels program. EPAct 2005 specified that the regulations ensure a specified volume of renewable fuel be blended into gasoline sold in the United States each year, with the total volume increasing over time. The goals of the program included reducing the Nation's dependence on foreign sources of petroleum, increasing domestic sources of energy, and assisting in the transition to alternative fuels from petroleum in the transportation sector.

The final RFS1 program rule was published on May 1, 2007, and the program began on September 1, 2007.[9] RFS1 created a specific annual level for minimum renewable fuel use that increases over time – resulting in a requirement that 7.5 billion gallons of renewable fuel be blended into gasoline (for highway use only) by 2012.

[9] During 2006 an RFS was established using the default compliance criteria as specified by EPAct 2005.

Figure 4. RINs Prices Track the Ethanol-RBOB Spread



Source: Derived from OPIS, Refined Spot Prices for 04/02/2008 - 08/09/2010.

As shown in Figure 4, there were occasional end-of-quarter spikes of RINs which were likely caused by the mandated quarterly settlement and reporting process. Firms unable to meet their obligation needed to "pay up," thus causing the apparent lag in RIN prices. The RIN market lag appears to be about two months.

IV. The Blend Wall

There has been considerable discussion among industry and government policy makers about the looming "blend wall" and the impact this blend wall will have on ethanol producers, refiners and blenders, and, in particular, small refiners. There also has been concern about the how the blend wall will impact the industry's ability to comply with RFS2, specifically to meet the renewable fuel volumes mandated by EISA 2007.

A blend wall is the aggregate limit to which a renewable fuel can be blended into its recipient motor fuel. The blend wall reflects both physical limitations and regulatory restrictions on the ability of the vehicle/fuel system to absorb renewable fuels. As a result, a blend wall is specific to a particular renewable fuel and specific to a particular motor fuel. There are two primary

blend walls of concern: one encompasses ethanol blending in motor gasoline and another blend wall exists for biodiesel blends in diesel fuel. Since the latter mandate is so much smaller than the former, the ethanol blend wall is of the most concern.

Implementation of ethanol blending requires changes in infrastructure and regulations. At times, the ethanol production capacity has exceeded the market's ability to profitably execute ethanol blending, causing periods when the blend wall actively constrains the market. Continued infrastructure build-out has expanded the fraction of gasoline containing ethanol. However, EIA data has shown that ethanol blending has expanded to almost the entire gasoline pool. At this point, the blend wall cannot be alleviated through increased low-level blends such as E10 alone.

The blend wall is a function of a multitude of contributing factors occurring together or singly. Each of these factors plays a part in determining the maximum amount of ethanol blended into gasoline, and thus, each contributes to the timing of when the blend wall could be reached.

Contributing Factors to Reaching the Blend Wall

The timing of when the blend wall occurs is a function of many contributing factors, including:

1. Motor fuel demand. Ethanol is one of many components of gasoline. With minor exceptions, gasoline is either "neat" (without ethanol) or blended at a fixed proportion to gasoline. Therefore, the overall consumption of ethanol is proportional to demand for gasoline. Since the demand for gasoline is relatively inelastic relative to price, and ethanol has very little impact on the price of gasoline, overall consumption is directly proportional to the demand. Exogenous factors such as unemployment, fuel economy standards and the price of oil play an important role in the ability of the transportation fuel pool to absorb ethanol.

2. Federal, State and Local regulations/mandates/incentives. Not all gasoline contains ethanol. Numerous incentives exist for the production and consumption of ethanol. At the national level, these include the Volumetric Ethanol Excise Tax Credit (VEETC) and the small ethanol producer's credit. Furthermore, numerous states have incentives and mandates for renewable fuels. California has a requirement for 10 percent ethanol in gasoline. Such incentives have encouraged infrastructure changes accelerating blending in almost all available gasoline pools.

   Federal and State regulations have a significant impact on ethanol blending penetration and economics. Under Title I, the CAA puts the regulatory burden of compliance for criteria pollutants on the States, which develop regulations based on their local conditions. Because any change in the proportion of components of gasoline will have a significant impact on vehicle emissions, States must develop such strategies including ethanol blending limits in conjunction with EPA. The limit on blending has increased as more states have incorporated ethanol in their compliance strategies.

   Biodiesel represents an alternative renewable fuel that does not impact the ethanol blend wall. Currently biodiesel receives a $1 per gallon tax incentive. Both Pennsylvania and

Minnesota have mandates for biodiesel consumption. Even with these incentives, biodiesel production costs are so high and acceptance so low that it is unlikely to be consumed in any greater than the minimum volume mandated by EISA 2007.

3. Mid-level blends. If ethanol concentrations greater than 10 percent are allowed, this will increase the total quantity of ethanol consumed in transportation fuel and will raise the effective blend wall. However, there are numerous regulatory and logistical hurdles that must be overcome before the use of mid-level blends becomes widespread. Implications of mid-level blends are discussed in the section "E15 and the Blend Wall" on page 18.

4. E85 infrastructure. E85 is a mixture of approximately 85 percent ethanol and 15 percent gasoline. E85 use requires specialized (flex-fuel) vehicles. E85 does provide another outlet for ethanol. However, given the small number of flex-fuel vehicles currently in use, about 7.3 million according to EPA estimates, the opportunity to increase the blend wall through increased use of E85 is limited. In addition, the E85 delivery system is not well developed. Industry observers have estimated that there are currently only about 2,000 E85 pumps in the US. For the E85 market to absorb significant additional quantities of ethanol, massive demand growth supported by infrastructure improvements would be necessary[15].

   E85 is a complement rather than a replacement for conventional fuels for flex-fuel vehicles. As such it must compete effectively on a per-mile basis. Therefore, ethanol must be sold at its energy content value, which is roughly 2/3 of that of gasoline.

These factors are summarized in Table 5 below.

Table 5: Blend Wall Contributing Factors

Primary Factor	Specific Factors
Motor fuel demand	• Sets limit for maximum ethanol in low level blends
Federal, State and Local regulations/mandates/incentives	• Incentives for expanding blending infrastructure through mandates and ethanol subsidies • Legal restrictions on blending through CAA;State regulations on blending
Limits on increased of mid-level blends	• Vehicle technology and warranties • Allocation of underground storage tanks • Dispenser certifications
E85 market dynamics	• Certification of blender pumps and dual fuel limitations • E85 delivery system • Limit on fraction of fleet using fuel

[15] EPA-420-R-10-006, "Renewable Fuel Standard Program (RFS2) Regulatory Impact Analysis", February 2010

How Close is the Blend Wall

Some ethanol industry trade organizations have stated that the blend wall has already been reached because ethanol production has at times exceeded 10 percent of gasoline consumption. This percentage is often used as a proxy for the total amount of ethanol that can be blended into gasoline because 10 percent is the federally-mandated maximum ethanol content of gasoline consumed in National Ambient Air Quality non-attainment areas as defined in the CAA.[16]

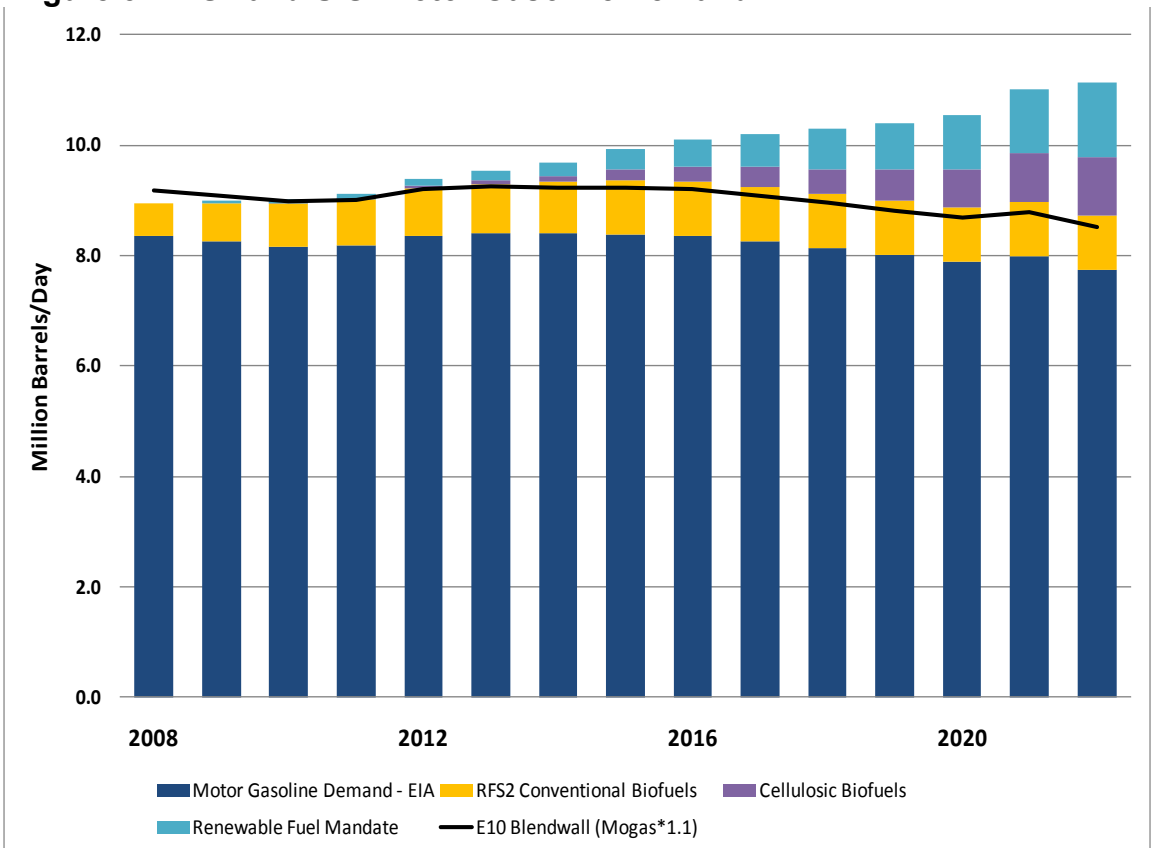
EIA stated in July 2010 that while they were projecting that daily ethanol supply would briefly exceed 10 percent of daily motor gasoline demand in early 2011, they were also projecting that increasing daily demand of gasoline over the balance of the year would absorb the full year ethanol production. EIA's statement makes an important point about the blend wall: the volume associated with the blend wall is more accurately discussed as an annual volume rather than a monthly volume.

Figure 5 shows EIA's projection of the compliance pathway for the RFS2 program through 2022. The line reflects the maximum amount of ethanol that may be blended into gasoline as E10. Any volumes above the line must be a high-level blend such as E85, or a non-ethanol renewable fuel. The difference between the yellow bar and the line represents the level of corn ethanol alone that cannot be absorbed into the transportation fuel pool. The physical limit to ethanol blending could be reached in 2012. However, RFS2 does not explicitly mandate an RVO greater than this physical limit until 2014, when the RVO is over 16 billion gallons of ethanol.

A surplus inventory of RINs could delay the date when the RVO cannot be met if the physical blending limit has been reached. While RINs are generate by blending renewable fuel, surplus RINs from one year may be carried over for use in the compliance in the next. Based on consumption of ethanol over the last few years, it is estimate that approximately 1 – 2 billion RINs may be available. Such carryover RINs may influence the timing of when the blend is reached.

[16] It is important to note, however, that 10 percent of gasoline demand is only a theoretical blend wall value and as a result provides only an estimate of the volume associated with the corn ethanol blend wall. Ten percent is a blend limit only in the absence of ethanol feedstock shortages, changes to federal regulations, imports/exports or a larger market for E15/E85, etc.

Figure 5. RFS2 and U.S. Motor Gasoline Demand



Source: EIA data as of 9/6/10.

Note: These calculations do not reflect the recent EPA decision to grant a partial waiver for E15 use in MY2001-2006 vehicles on January 21, 2011 and MY2007-Current vehicles on October 13, 2010

Consequences of Reaching the Blend Wall

When the blend wall is reached, there could be significant economic consequences for obligated parties such as refiners and ethanol suppliers. There will also likely be downward pressure on ethanol prices given that ethanol production capacity is still increasing while the ability to incorporate ethanol in the transportation fuel system is constrained. This may have a negative impact on ethanol producers.

As the blending opportunities become scarce, more expensive blending opportunities will be pursued. Current options include an increase in biodiesel and an increase in consumption of mid- or high-level ethanol blends. However, biodiesel is limited by limited feedstock supply, high production costs and limited market acceptance. Mid- and high-level ethanol blends, such as E15 and E85, face current physical limits on distribution and vehicles that can use the fuel in additional to other market acceptance factors. These actions provide limited additional blending opportunities in the near term.

RIN prices should rise to reflect the most expensive blending opportunity taken. As the RFS mandate increases, obligated parties will demand more RINs, adding upward price pressure. As

the mandate increases, increasing the supply of RINs becomes difficult or nearly impossible. In anticipation of the blend wall, obligated parties may stockpile RINs through discretionary blending in anticipation of a shortage of blending opportunities. Those parties that are short, i.e. cannot generate enough RINs through their own facilities to meet their RVO, will need to purchase RINs and could suffer significant economic hardship.

Declining ethanol prices would probably be favorable to refiners/blenders that predominately blend ethanol rather than purchase RINs for blending. Many small refiners do not retain control over the blending of their products, and must purchase additional RINs. Obligated parties that rely on purchasing RINs would be adversely affected when the blend wall is reached and their RINs inventory has been depleted.

The next section investigates the impact of the approaching blend wall on RIN prices through an econometric relationship developed between discretionary blending, corn ethanol prices and RIN prices.

E15 and the Blend Wall

On October 13, 2010 EPA granted a waiver for fuels containing up to 15 percent ethanol for vehicles of Model Year 2007 and later. On January 21, 2011 this waiver was extended to Model Years 2001 – 2006 vehicles. This waiver covers approximately 2/3 of the light duty vehicle fleet. While it may appear that these E15 waivers substantially increased the amount of ethanol that could be blended into gasoline before the blend wall is approached, there are several reasons why this may not be the case. In particular, there are numerous obstacles to overcome before E15 blends become viable in the marketplace.

- Current pumps are not certified for blends above 10% ethanol. While it is likely that E15 would not harm conventional pumps, liability concerns would no doubt limit the distribution of the new fuel. Replacing pumps would cost anywhere from $750 per pump if only the hanging hardware needs replacing up to approximately $11,000 per pump if interior components also need to be replaced[17].
- Many refueling stations have only two tanks for gasoline, usually one for premium and one for regular gasoline. Mid-grade gasoline is a blend from each tank. Gasoline stations could be unwilling to switch to a fuel that only a portion of their customer base would be able to purchase.
- While EPA has certified the mid-level blends, automobile manufacturers have not followed suit by explicitly modifying their warranties to include E15. It is unclear whether consumers would purchase a fuel that is not covered by their vehicle manufacturer's warranty.
- Various regulatory requirements would need to be adjusted. For instance, conventional gasoline that is sold as E10 is currently granted a 1-lb waiver on its summer Reid Vapor Pressure (RVP) specification. Either a new rulemaking would be required for E15 or

[17] EPA-420-R-10-006, "Renewable Fuel Standard Program (RFS2) Regulatory Impact Analysis", February 2010, pg 800.

refiners would have to develop a special low RVP blendstock. Similarly, EPA has developed specifications for Reformulated Gasoline (RFG), a clean-burning fuel required to be used by certain areas under the Clean Air Act. The RFG specification would also need to be changed in order to accommodate ethanol blending over ten percent. Changes for both conventional and reformulated gasoline would require a new EPA rulemaking, which would necessarily take anywhere from months to over a year.

For all of the above reasons, it is unlikely that E15 will play a significant role in the transportation fuel market over the next few years. Therefore, this analysis did not analyze the impact of E15 on the gasoline and ethanol markets.

V. Evaluating the RIN and Ethanol Markets

A simultaneous multi-equation model of the ethanol fuels market was developed to evaluate how precipitation, crude oil prices and the RFS requirements affect corn and ethanol prices, RIN prices and the overall market equilibrium for ethanol. Appendix C describes the model structure, data and parameters, and provides a detailed analysis of the scenarios discussed below.

The model was used to identify conditions conducive to generating high corn ethanol RIN prices, such as drought or flooding, or increased discretionary blending of corn ethanol by obligated parties in order to stockpile RINs against potential shortages due to the blend wall. Scenarios were developed for 2011 and 2012, where the model derived ethanol demand and corn, ethanol, and gasoline prices using assumed values for crude oil, rainfall and the mandated level of ethanol consumption. Under optimal rainfall conditions and crude oil prices of $90-$92 per barrel, corn ethanol production will exceed the mandated levels in 2011 and 2012, and the ethanol is expected to be blended into the motor gasoline pool so that the number of RINs generated will likely exceed the RVO. Therefore, in the case where blending is economic, in a competitive market the price of corn ethanol RINs should reflect no more than their transaction cost. However, it is possible that obligated parties may increase blending relative to the mandated RFS level in anticipation of a shortage of blending opportunities due to the approaching blend wall. If market and meteorological conditions worsen, the combination of higher corn ethanol production costs and increased blending would likely lead to a sharp increase in RIN prices. Several such scenarios are explored below.

The four scenarios described in Table 6 were used to project RIN prices (shown in Table 7) in 2011 and 2012 for varying meteorological conditions, crude oil prices, and obligated party blending levels of corn ethanol.[18] Scenario A represents a "Best Case Scenario" where optimal rainfall creates conditions for low ethanol prices due to a high corn yield. Scenario B dampens the expectations of a high corn yield by introducing poor rainfall conditions, which causes corn prices to increase and corn ethanol production to drop below mandated levels. In contrast, scenario C forces blending up to the RVO, which causes corn ethanol RIN prices to reach $0.38 and $0.64 per gallon of corn ethanol blended in 2011 and 2012, respectively. RIN prices

[18] Full description of the model can be found in Appendix C.

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2014 Standards for the Renewable Fuel Standard Program; Proposed Rule

D. Unfunded Mandates Reform Act
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VIII. Statutory Authority

I. Executive Summary

The Renewable Fuel Standard (RFS) program began in 2006 pursuant to the requirements in Clean Air Act (CAA) section 211(o) which was added through the Energy Policy Act of 2005 (EPAct). The statutory requirements for the RFS program were subsequently modified through the Energy Independence and Security Act of 2007 (EISA), resulting in the publication of major revisions to the regulatory requirements on March 26, 2010.[1]

The national volumes of renewable fuel to be used under the RFS program each year (absent an adjustment or waiver by EPA) are specified in CAA section 211(o)(2). The volumes for 2014 are shown in Table I–1. Note that cellulosic biofuel and biomass-based diesel categories are nested within advanced biofuel, which is itself nested within the renewable fuel category.

TABLE I–1—REQUIRED APPLICABLE VOLUMES IN BILLION GALLONS (BILL GAL) IN THE CLEAN AIR ACT FOR 2014

Cellulosic biofuel	1.75 [a]
Biomass-based diesel	≥1.0 [b]
Advanced biofuel	3.75 [a]
Renewable fuel	18.15 [a]

[a] Ethanol-equivalent volume.
[b] Actual volume. The ethanol-equivalent volume would be 1.5 if biodiesel is used to meet this requirement.

Under the RFS program, EPA is required to determine and publish annual percentage standards for each compliance year by November 30 of the previous year. The percentage standards are calculated so as to ensure use in transportation fuel of the national ''applicable volumes'' of four types of biofuel (cellulosic biofuel, biomass-based diesel, advanced biofuel, and total renewable fuel) that are either set forth in the Clean Air Act or established by EPA in accordance with the Act's requirements. The percentage standards are used by obligated parties (generally, producers and importers of transportation fuel) to calculate their individual compliance obligations. The percentage standards are applied to the volume of non-renewable transportation fuel that each obligated party produces or imports during the specified calendar year to determine the volumes of renewable fuel that must be used as transportation fuel, heating oil, or jet fuel.

As required by statute, we are proposing to establish the volume for cellulosic biofuel based on projected availability of such fuel—which is below the statutory target for 2014. In addition, we have evaluated the availability of qualifying renewable fuels and factors that in some cases limit supplying those fuels to the vehicles and equipment that can consume them, including the set of factors referred to as the ethanol blendwall. Based on this evaluation we believe that adjustments to the volumes of advanced biofuel and total renewable fuel required under the statute are warranted for 2014 due to an inadequate domestic supply of these fuels (see Section IV.A for further detail). We are also proposing to maintain the same volume for biomass-based diesel for 2014 and 2015 as was adopted for 2013. The volumes that we are proposing for 2014, as well as the ranges on which we are seeking comment, are shown below. With the exception of the volume requirement for cellulosic biofuel, the proposed volumes correspond to the preferred approach described in today's proposal, but we discuss and are seeking comment on alternative approaches as well.

TABLE I–2—PROPOSED 2014 VOLUME REQUIREMENTS [a]

	Proposed volume	Projected range
Cellulosic biofuel	17 mill gal.	8–30 mill gal.
Biomass-based diesel	1.28 bill gal.	1.28 bill gal. [b]
Advanced biofuel	2.20 bill gal	2.00–2.51 bill gal.
Renewable fuel	15.21 bill gal	15.00–15.52 bill gal.

[a] All volumes are ethanol-equivalent, except for biomass-based diesel which is actual.
[b] EPA is requesting comment on alternative approaches and higher volumes.

Section II contains a detailed discussion of the basis for our proposed volume of cellulosic biofuel for 2014, Section III contains a detailed discussion of the basis for our proposed volume of biomass-based diesel for 2014 and 2015, and Section IV contains a detailed discussion of the basis for our proposed volumes, as well as alternative potential approaches on which we are requesting comment, for advanced biofuel and total renewable fuel for 2014.

In developing this proposal, we have been cognizant that Congress anticipated and intended the RFS program to promote substantial, sustained growth in biofuel production and consumption—beyond the levels that have been achieved to date. Although current gasoline demand and forecasts of future gasoline demand have decreased since EISA's enactment in 2007, EPA continues to support the objective of continued growth in renewable fuel production and consumption, as well as the central policy goals underlying the RFS program: reductions in greenhouse gas emissions, enhanced energy security, economic development, and technological innovation. The approach reflected in today's proposal is consistent with those objectives and is intended to put the RFS program on a manageable trajectory while supporting continued growth in renewable fuels over time. As emphasized throughout the proposal, we are seeking comment and information on a variety of alternative approaches as well as ranges of inputs and methodologies relevant to setting these standards, and look forward to engagement with stakeholders on all aspects of the proposal.

[1] 75 FR 14670.

significant opportunity for greater volumes of biomass-based diesel to be produced and used if the market chooses them. We request comment on this proposed approach to the biomass-based diesel volume requirement for 2014 and 2015.

IV. Proposed National Volume Requirements for Advanced Biofuel and Total Renewable Fuel for 2014

As described in Section I, the national volumes of renewable fuel to be used under the RFS program each year are specified in CAA 211(o)(2). For 2014, the applicable volume of advanced biofuel is 3.75 bill gal and the applicable volume of total renewable fuel is 18.15 bill gal. However, two statutory provisions authorize EPA to reduce these volumes. EPA may reduce these volumes if it reduces the applicable volume for cellulosic biofuel, or if the criteria are met under the general waiver authority.[36] We are proposing to exercise our discretion under these provisions to reduce the applicable volumes of advanced biofuel and total renewable fuel to address several factors that affect achievement of the volume goals that Congress established in the statute. These factors include limitations in production or importation of the necessary volumes, and factors that limit supplying those volumes to the vehicles that can consume them. Based on a detailed analysis of these limitations, we are proposing reductions in the statutory volumes of both advanced biofuel and total renewable fuel as shown below.

TABLE IV–1—PROPOSED VOLUMES FOR 2014

[billion gallons]

	Statutory volume	Proposed volume	
		Range	Mean
Advanced biofuel	3.75	2.00–2.51	2.20
Total renewable fuel	18.15	15.00–15.52	15.21

We are proposing to use a combination of the cellulosic biofuel waiver authority and the general waiver authority to ensure that the proposed volumes are reasonably achievable given limitations in the volume of ethanol that can be practically consumed in motor vehicles considering constraints on the supply of higher ethanol blends to the vehicles that can use them and other limits on ethanol blend levels approved for use in motor vehicles and the volume of non-ethanol renewable fuels that we expect would be reasonably achievable. To accomplish this, we are proposing an approach involving the following three steps:

- First, we would determine the total volume of ethanol that can reasonably be supplied to and consumed in the transportation sector as both E10 and higher ethanol blends such as E85. We would then add to this the volume of all non-ethanol biofuels that we expect could be reasonably available for meeting all four of the applicable volume requirements (cellulosic biofuel, biomass-based diesel, advanced biofuel, and total renewable fuel). This first step would determine the volume of renewable fuel that can adequately be produced and supplied to consumers in light of limitations on the consumption of ethanol (commonly referred to as the ''ethanol blendwall'') and other relevant constraints, and would form the basis for the required volume of total renewable fuel as adjusted pursuant to EPA's waiver authorities.
- Second, we would determine the volumes of all sources of advanced biofuel that could be reasonably achieved to ensure that the required volume of advanced biofuel be set no higher than the volume that is projected to be reasonably available.
- Third, we would determine an appropriate volume of advanced biofuel at or below the projected available volume determined in the second step. This volume would include the required volume of cellulosic biofuels and biomass-based diesel, which are set separately, as well as any additional volumes of non-ethanol advanced biofuels projected to be reasonably achievable. This approach would account for the contribution of ethanol volumes in the advanced biofuel category to the supply concerns related to total renewable fuel, including considerations of both production and consumption. While ensuring that both advanced biofuel and non-advanced renewable fuels play a role in addressing the ethanol blendwall, it would also support Congress's goal in the RFS program of continued growth in the advanced biofuel category as reflected in the volume requirements established in the statute. As discussed in detail in Section IV.C.2, we have examined several alternative approaches to this third step, but we believe this approach best accommodates the objectives of the RFS program, while accounting for the limitations in the ability to produce and consume renewable fuels. We request comment, however, on alternative approaches and on all aspects of the framework discussed in this section.

We anticipate that the framework described in this section would apply not only to 2014, but to subsequent years as well. The specific estimates of volumes for each potential source of renewable fuel would be different in each future year, but the manner in which we aggregate those estimates to determine appropriate volume requirements would follow the overall approach described above. If circumstances differ substantially from those described here, or if further analysis suggests that our proposed approach is inadequate, we may consider the need for additional measures.

A. Statutory Authorities for Reducing Volumes To Address Biofuel Availability and the Ethanol Blendwall

In establishing the annual volume objectives in the statute, Congress intended that volumes of renewable fuel, advanced biofuel, and cellulosic biofuel increase every year through 2022, and that volumes of biomass-based diesel be at least equal to the statutory volume for 2012, while granting EPA discretion to increase the biomass-based diesel volume based on consideration of several specified factors. However, Congress recognized that circumstances could arise that might require a reduction in the volume objectives specified in the statute as evidenced by the different waiver provisions in CAA 211(o)(7). As described in more detail below, we

[36] See CAA section 211(o)(7)(D) and (A).

believe that limitations in production or importation of qualifying renewable fuels, and factors that limit supplying those volumes to the vehicles that can consume them, both constitute circumstances that warrant a waiver under section 211(o)(7) as discussed below. With regard to the ethanol blendwall, a decrease in total gasoline consumption since EISA was enacted in 2007, coupled with limitations in the number and geographic distribution of retail stations that offer higher ethanol blends such as E85 and the number of FFVs that have access to E85, as well as other market factors, combine to place significant restrictions on the volume of ethanol that can be supplied to and consumed in the transportation sector. Based on the types of renewable fuel that we project are likely to be available in 2014 and the volume that is likely to be non-ethanol, we believe that the ethanol blendwall represents a circumstance that warrants a reduction in the mandated volumes for 2014.

The statute provides two separate authorities that permit EPA to reduce volumes of advanced biofuel or total renewable fuel under certain conditions: The cellulosic waiver authority and the general waiver authority. Applying a combination of these two authorities is the most appropriate way to address limitations in production or importation of the necessary volumes, and factors that limit supplying those volumes to the vehicles that can consume them, including the ethanol blendwall. This section discusses both of these statutory authorities and the manner in which we believe they can be used together to set standards for 2014.

1. Cellulosic Waiver Authority

Under CAA section 211(o)(7)(D)(i), if EPA determines that the projected volume of cellulosic biofuel production for the following year is less than the applicable volume provided in the statute, then EPA must reduce the applicable volume of cellulosic biofuel to the projected volume available during that calendar year. Under such circumstances, EPA also has the discretion to reduce the applicable volumes of advanced biofuel and total renewable fuel by an amount not to exceed the reduction in cellulosic biofuel.

Section 211(o)(7)(D)(i) provides that ''[f]or any calendar year in which the Administrator makes such a reduction, the Administrator may also reduce the applicable volume of renewable fuel and advanced biofuels requirement established under paragraph (2)(B) by the same or a lesser volume.'' Thus Congress authorized EPA to reduce the volume of total renewable fuel and advanced biofuel. As EPA has discussed before, this indicates a clear Congressional intention that under this provision EPA may reduce both the total renewable and advanced biofuel volume together, not one or the other.

As described in the May 26, 2009 NPRM for the RFS regulations, we do not believe it would be appropriate to lower the advanced biofuel standard but not the total renewable standard, as doing so would allow conventional biofuels to effectively be used to meet the standards that Congress specifically set for advanced biofuels.[37] EPA interprets this provision as authorizing EPA to reduce both total renewable fuel and advanced biofuel, by the same amounts, if EPA reduces the volume of cellulosic biofuel. Using this authority the reductions in total renewable fuel and advanced biofuel can be up to but no more than the amount of reduction in the cellulosic biofuel volume. Further discussion of this provision can be found in the final rule establishing the 2013 RFS standards.[38]

The statute does not provide any explicit criteria that must be met or factors that must be considered when making a determination as to whether and to what degree to reduce the advanced biofuel and total renewable fuel applicable volumes based on a reduction in cellulosic biofuel volumes under CAA section 211(o)(7)(D)(i). EPA can consider the criteria described in sections 211(o)(2)(B)(ii) and 211(o)(7)(A) in determining appropriate reductions in advanced biofuel and total renewable fuel under the cellulosic waiver authority at section 211(o)(7)(D)(ii), or any other factors that may be relevant. However, EPA must provide a reasoned explanation for any decision to reduce the advanced biofuel and total renewable fuel volume requirements under the cellulosic biofuel waiver authority.

2. General Waiver Authority

CAA 211(o)(7)(A) provides that EPA, in consultation with the Secretary of Agriculture (USDA) and the Secretary of Energy (DOE), may waive the applicable volume requirements of the Act in whole or in part based on a petition by one or more States, by any person subject to the requirements of the Act, or by the EPA Administrator on her own motion. Such a waiver must be based on a determination by the Administrator, after public notice and opportunity for comment, that:

- Implementation of the requirement would severely harm the economy or the environment of a State, a region, or the United States; or
- There is an inadequate domestic supply.

In today's NPRM, we are proposing to use the general waiver authority to waive the applicable volume requirements based on the statute's authorization for the Administrator to act on her own motion. We have initiated discussions with both USDA and DOE on the proposed approach to determining the applicable volume requirements that is described in this section.

Because this provision provides EPA the discretion to waive the volume requirements of the Act ''in whole or in part,'' we interpret this section as granting authority to waive any or all of the four applicable volume requirements in appropriate circumstances. Thus, for example, unlike the cellulosic waiver authority, a reduction in total renewable fuel pursuant to the general waiver authority would not automatically result in the same reduction in advanced biofuel, and would not be limited by the reduction in cellulosic biofuel.

EPA has not previously interpreted or applied the waiver provision in CAA section 211(o)(7)(A)(ii) related to ''inadequate domestic supply.''[39] As explained in greater detail below, we believe that this ambiguous provision is reasonably and best interpreted to encompass the full range of constraints that could result in an inadequate supply of renewable fuel to the ultimate consumers, including fuel infrastructure and other constraints. This would include, for instance, factors affecting the ability to produce or import qualifying renewable fuels as well as factors affecting the ability to distribute, blend, dispense, and consume those renewable fuels.

The waiver provision at CAA 211(o)(7)(A)(ii) is ambiguous in several respects. First, it does not specify what the general term ''supply'' refers to. The common understanding of this term is an amount of a resource or product that is available for use by the person or place at issue.[40] Hence the evaluation of

[37] See 74 FR 24914–15

[38] 78 FR 49794, August 15, 2013.

[39] EPA has applied the waiver provision in section 211(o)(7)(A)(i) related to severe harm to the economy. See 77 FR 70752 (November 27, 2012), 73 FR 47168 (August 13, 2008).

[40] For example, see *http://oxforddictionaries.com/us/definition/american_english/supply* (a stock of a resource from which a person or place can be provided with the necessary amount of that resource: ''*T*here were fears that the drought would limit the exhibition's water

Continued

the supply of renewable fuel, a product, is best understood in terms of the person or place using the product. In the RFS program, various parties interact across several industries to drive the ultimate use of renewable fuel by consumers of transportation fuel. For example, supplying renewable fuel to obligated parties and terminal blenders is one part of this process, while supplying renewable fuel to the ultimate consumer as part of transportation fuel is a different and later aspect of this process. This is clearly the case with respect to the renewable fuels ethanol and biodiesel, which are typically supplied to the obligated parties and terminals as a neat fuel, but in almost all cases are supplied to the consumer as a blend with conventional fuel (ethanol and gasoline or biodiesel and diesel). The waiver provision does not specify what product is at issue (for example, neat renewable fuel or blended renewable fuel with transportation fuel) or the person or place at issue (for example, obligated party or ultimate consumer), in determining whether there is an ''inadequate domestic supply.''

The waiver provision also does not specify what factors are relevant in determining the adequacy of the supply. Adequacy of the supply would logically be seen in terms of the parties who use the supply of renewable fuel. Adequacy of supply could affect various parties, including obligated parties, terminal operators, and consumers. Adequacy of supply with respect to the consumer might well involve consideration of factors different from those involved when considering adequacy of supply to the obligated parties. We believe that interpreting this waiver provision as authorizing EPA to consider the adequacy of supply of renewable fuel to all of the relevant parties, including the adequacy of supply to the ultimate consumer of transportation fuel, is consistent with the common understanding of the terms used in this waiver provision, especially in the context of a fuel program that is aimed at increasing the use of renewable fuel by consumers. In our view, this is the most reasonable and appropriate construction of this ambiguous language in light of the overall policy goals of the RFS program.

EPA has reviewed other fuel related provisions of the Clean Air Act with somewhat similar waiver provisions, and they highlight both the ambiguity of the RFS general waiver provision and the reasonableness of applying it broadly to include adequacy of supply to the ultimate consumer of transportation fuel. For example, CAA section 211(k)(6)(A)(ii) allows EPA to defer application of reformulated gasoline (RFG) requirements in a state that opts in to the RFG program if EPA determines that ''there is insufficient domestic capacity to produce reformulated gasoline.'' A related RFG waiver provision concerning the application of RFG requirements in the Ozone Transport Region, section 211(k)(6)(B)(i) and (iii), provides for a waiver of RFG requirements based on ''insufficient capacity to supply reformulated gasoline.'' For these RFG waiver provisions, Congress more clearly and explicitly indicated that the capacity to supply RFG could include consideration of factors beyond those concerning the capacity to produce RFG. In the language of the RFS general waiver provision, in comparison, Congress used a single, broader and clearly ambiguous phrase—''inadequate domestic supply''—without elaboration or clarification as to whether it refers solely to production capacity or also includes additional factors relevant to the ability to supply the fuel to various persons such as the ultimate consumer. As in the RFG provision, however, the adequacy of supply referred to in the RFS general waiver provision can logically—and we believe should—be read to include factors beyond capacity to produce that impact the ability of consumers to use the fuel as a transportation fuel.

CAA section 211(c)(4)(C)(ii) provides EPA with waiver authority to address ''extreme and unusual fuel or fuel additive supply circumstances . . . which prevent the distribution of an adequate supply of the fuel or fuel additive to consumers.'' The supply circumstances must be the result of a natural disaster, an Act of God, a pipeline or refinery equipment failure or another event that could not reasonably have been foreseen, and granting the waiver must be ''in the public interest.'' In this case, Congress clearly specified that the adequacy of the supply is judged in terms of the availability of the fuel for use by the ultimate consumer, and includes consideration of the ability to distribute the required fuel or fuel additive to the ultimate consumer. Although the RFS waiver provision does not contain any such explicit clarification from Congress, its broad and ambiguous wording provides EPA the discretion to reasonably interpret the scope of the RFS waiver provision. EPA's interpretation of the RFS waiver provision is consistent with the view, expressed more explicitly in the section 211(c) waiver, that the adequacy of the supply of a fuel or fuel additive can reasonably be judged in terms of availability for use by the consumer, and can include consideration of the capacity to distribute the product to the ultimate consumer.

CAA section 211(m)(3)(C) allows EPA to delay the effective date of oxygenated gasoline requirements for certain carbon monoxide nonattainment areas if EPA finds ''an inadequate domestic supply of, or distribution capacity for, oxygenated gasoline . . . or fuel additives'' needed to make oxygenated gasoline. Here, Congress chose to expressly differentiate between ''domestic supply'' and ''distribution capacity,'' indicating that each of these elements was to be considered separately. This would indicate that the term inadequate supply, although ambiguous for the reasons discussed above, could in appropriate circumstances be read as more limited in scope. In contrast to the RFS waiver provision, the section 211(m) waiver provision includes additional text that makes clear that EPA's authority includes consideration of distribution capacity—reducing the ambiguity inherent in using just the general phrase ''inadequate domestic supply.'' Presumably this avoids a situation where ambiguity would result in an overly narrow administrative interpretation. The oxygenated gasoline waiver provision is also instructive in that it clarifies that it applies separately to both finished oxygenated fuel and to oxygenated fuel blending components. That is, there could be an adequate supply of the oxygenate, such as ethanol, but not an adequate supply of the blended fuel which is sold to the consumer. The RFS waiver provision employs the phrase ''inadequate domestic supply'' without further specification or clarification, thus providing EPA the discretion to determine whether the adequacy of the supply of renewable fuel can reasonably be judged in terms of availability for use by the ultimate consumer, including consideration of the capacity to distribute the product to the ultimate consumer. In contrast to the section 211(m) waiver provision, Congress arguably did not mandate that the RFS waiver provision be interpreted as providing authority to address problems affecting the supply of renewable fuel to the ultimate consumer. However, the RFS waiver provision does provide EPA the discretion to adopt such an

supply.''); *http://www.macmillandictionary.com/us/dictionary/american/supply* (''*A limited oil supply has made gas prices rise.'' and ''Aquarium fish need a constant supply of oxygen.''*).

interpretation, resulting in a policy approach consistent with that required by the less ambiguous section 211(m) waiver provision.[41]

As the above review of various waiver provisions in Title II of the Clean Air Act makes clear, Congress has used the terms ''supply'' and ''inadequate supply'' in different waiver provisions. In the RFS general waiver provision, Congress spoke in general terms and did not address the scope of activities or persons or places that are the focus in determining the adequacy of supply. In other cases, Congress provided, to varying degrees, more explicit direction. Overall, the various waiver provisions lend support to the view that it is appropriate, where Congress has used just the ambiguous phrase ''inadequate domestic supply'' in the general waiver provision, to consider supply in terms of distribution and use by the ultimate consumer, and that the term ''inadequate supply'' of a fuel need not be read as referring to just the capacity to produce renewable fuel or the capacity to supply it to the obligated parties.

We are aware that prior to final adoption of the Energy Independence and Security Act of 2007, Congress had before it bills that would have provided for an EPA waiver in situations where there was ''inadequate domestic supply or distribution capacity to meet the requirement.'' [42] EPA is not aware of any conference or committee reports, or other legislative history, explaining why Congress ultimately enacted the language in EISA in lieu of this alternative formulation. There is no discussion, for example, of whether Congress did or did not want EPA to consider distribution capacity, whether Congress believed the phrase ''inadequate domestic supply'' was sufficiently broad that a reference to distribution capacity would be unnecessary or superfluous, or whether Congress considered the alternative language as too limiting, since it might suggest that other types of constraints on delivering renewable fuel to the ultimate consumer should not be considered for purposes of granting a waiver.[43] Given the lack of interpretive value typically given to a failure to adopt a legislative provision, and the lack of explanation in this case, we find the legislative history to be uninformative with regard to Congressional intent on this issue. It does not change the fact that the text adopted by Congress, whether viewed by itself or in the context of other fuel waiver provisions, is clearly ambiguous.

We believe the term ''inadequate domestic supply'' should be interpreted to authorize EPA to consider the full range of constraints, including fuel infrastructure and other constraints, that could result in an inadequate supply of renewable fuels to consumers. Under this interpretation, we would not limit ourselves to consideration of the capacity to produce or import renewable fuels but would also consider practical and other constraints related to the fuel delivery infrastructure and their effect on the volume of qualifying renewable fuel that would be supplied to the ultimate consumer.

This interpretation is consistent with the provisions of section 211(o) and promotes Congress's purposes in establishing the RFS program, which are to ensure that certain volumes of renewable fuel are used by the ultimate consumer as a replacement for the use of fossil based transportation fuel.[44] The RFS program does not achieve the desired benefits unless renewable fuels are actually used to replace fossil based transportation fuels. For example, the greenhouse gas reductions and energy security benefits that Congress sought to promote through this program are realized only through the use by consumers of renewable fuels that reduce or replace fossil fuels present in transportation fuel. Imposing RFS volume requirements on obligated parties without consideration of the ability of the obligated parties and other parties to deliver the renewable fuel to the ultimate consumers, would achieve no such benefits and would fail to account for the complexities of the fuel system that delivers transportation fuel to consumers. We do not believe it would be appropriate to interpret the RFS general waiver provision more narrowly and limit EPA's consideration of factors related to the distribution and use of renewable fuels by the ultimate consumers of these fuels.

We invite comment on all aspects of our proposed interpretation of the waiver provision based on ''inadequate domestic supply.'' Whether or not circumstances projected for 2014 justify a waiver on this basis is discussed in Sections IV.B and IV.C.

3. Combining Authorities for Reductions in Advanced Biofuel and Total Renewable Fuel

The two primary drivers that we have considered in today's NPRM for reductions in the required volumes are limitations in the availability of qualifying renewable fuels and factors that constrain supplying those volumes to the vehicles that can consume them. These two drivers are both relevant forms of inadequate domestic supply, which authorize reductions under the general waiver authority and can also justify reductions under the cellulosic biofuel waiver authority. We believe that reducing both total renewable and advanced biofuel are appropriate responses to these circumstances, and we propose to use a combination of the two waiver authorities discussed above to achieve this result as neither authority independently is sufficient to justify the necessary volume reductions. As discussed in Section II, EPA is proposing to reduce the applicable volume of cellulosic biofuel based on a projection of production for 2014. Given this reduction in the cellulosic biofuel volumes, EPA is also proposing to reduce the applicable volume of advanced biofuel using the cellulosic biofuel waiver authority in Section 211(o)(7)(D)(i). We are proposing a larger reduction in total renewable fuel volume than in the advanced biofuel volume. In effect one part of the reduction in total renewable fuel would be based on both the general waiver authority and the cellulosic biofuel waiver authority, and the remainder of the reduction in total renewable fuel would be based solely on the general waiver authority. Below we discuss the basis for each of the proposed volume reductions.

[41] In CAA section 211(h)(5)(C)(ii), Congress authorized EPA to delay the effective date of certain changes to the federal requirements for Reid vapor pressure in summertime gasoline, if the changes would result in an ''insufficient supply of gasoline'' in the affected area. As with the RFS general waiver provision, Congress did not specify what considerations would warrant a determination of insufficient supply. EPA has not been called upon to apply this provision to date and has not interpreted it.

[42] H.R. 6 and S. 606 as reported by Senate Envt. & Public Works in Senate Report 109–74.

[43] There are, for example, legal constraints on the amount of certain renewable fuels that may be blended into transportation fuels.

[44] See CAA section 211(o)(1)(I) (renewable fuel defined as ''fuel . . . used to replace or reduce the quantity of fossil fuel present in a transportation fuel''), section 211(o)(2)(A)(i) (EPA's regulations must ''ensure that transportation fuel sold or introduced into commerce in the United States . . . contains at least the applicable volume of [renewable fuels]''). Also see CAA section 211(o)(1)(A), definition of ''additional renewable fuel.'' As one example, in the RFS program fuels with multiple end uses such as biogas or electricity are not considered a renewable fuel absent a demonstration that they will be used by the ultimate consumers as transportation fuel. As noted above, ethanol is almost always used as a renewable fuel in the form of E10 or higher, not as neat ethanol. The supply of neat ethanol, or biogas or electricity, does not by itself determine the supply of the fuel ethanol used as a transportation fuel.

TAB E

Addendum

to the

Small Refinery Exemption Study

An Investigation into Disproportionate Economic Hardship

Office of Energy Policy and Systems Analysis

U.S. Department of Energy

May 2014

Assessing Small Refineries' Disproportionate Economic Hardship from the RFS Program

Under Section 7545(o)(9)(A)(ii)(I) of the Clean Air Act, the US DOE conducted a study to determine whether compliance with the RFS requirements would impose a disproportionate economic hardship on small refineries. [1] In the 2011 study, DOE developed a scoring matrix to assess the degree to which compliance with the RFS would impair individual small refineries. The matrix comprised two major indices: (1) a structural and economic weightings index and (2) a viability index. The structural and economic weightings index was composed of eight equally weighted structural and economic metrics. Seven of the eight metrics were scored a 0, 5 or 10, and one metric ("other business lines besides refining and marketing") was scored a 0 or 10. Higher scores reflected greater likelihood of disproportionate economic hardship. Similarly, the viability index comprised three equally weighted metrics. In the 2011 study, each viability metric was scored either a 0 or a 10. Scores for each index were averaged, and then divided by two. A waiver extension due to disproportionate economic hardship was recommended if a refinery scored greater than one for both the structural and economic weightings and the viability indices. All of the individual metrics are described in the 2011 Study.

For the 2011 DOE exemption study, the economic recession and the relative recent implementation of the RFS2 regulations resulted in a number of individual small refineries receiving individual viability metric scores of 10, and scores greater than one for the viability index as a whole. However, circumstances have changed since the 2011 study was completed. Generally, there is an improved business climate for refineries that is associated with the country's economic recovery. In addition, refiners have now had many years since the initiation of the RFS program in 2007 to develop business practices to meet RFS obligations.[2] In assisting EPA in evaluating petitions for small refinery RFS exemptions for 2013, DOE has found that some small refineries should be scored an intermediate level of 5 for metric 3a. This intermediate score acknowledges an impact of RFS compliance costs on efficiency gains, but at a level lower than would justify a score of 10. DOE also has concluded that an intermediate score of 5 may be appropriate for viability metric 3b in certain circumstances. Both of these viability metrics address impacts that may occur across a continuum, and providing for the possibility of an intermediate score allows DOE to more accurately assess an individual refinery's economic situation. This is unlike viability metric 3c which involves essentially a binary determination – whether or not RFS compliance costs would likely lead to a facility shut-down. For viability metric 3c, therefore, DOE continues to believe that it is appropriate to limit scores to either a 0 or 10.

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[1] "Small Refinery Exemption Study: An Investigation into Disproportionate Economic Hardship", March 2011.

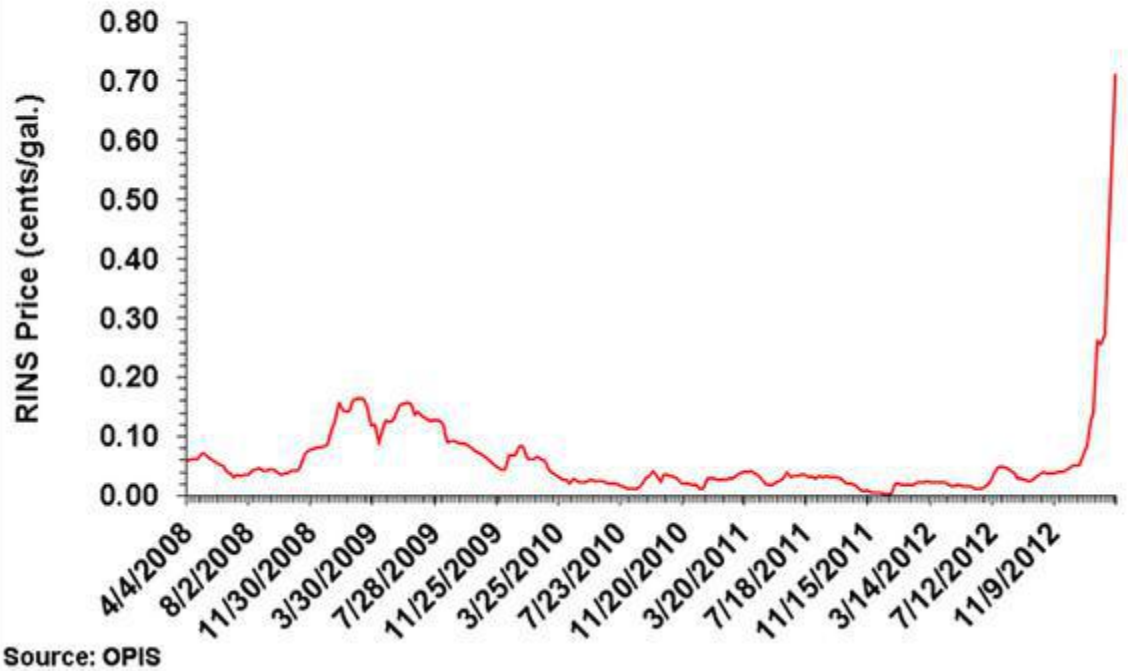
[2] As the market for renewable fuels matures, obligated parties have developed a much wider suite of physical and contractual arrangements to meet their RFS mandates. In general, small refineries with an RFS exemption have a competitive advantage over the others. This advantage can be enhanced in situations where an exempt party separates some attached RINs through blending renewable fuels, and sells those RINs to improve profitability. A firm's competitive advantage during an exemption period, and any profits from RIN sales during an exemption period, could lead to lower scores in subsequent evaluations of disproportionate economic impact.

The result of allowing intermediate scoring for viability metrics 3a and 3b is that a facility with only a moderate score of 5 in a single viability metric will not have a total viability index score indicating disproportionate economic hardship. On the other hand, a moderate score under both metrics 3a and 3b will be sufficient to generate a viability score indicating the existence of disproportionate economic hardship. [3] DOE has determined that it is appropriate that a moderate score in two viability metrics would result in a total viability index score greater than 1. This reflects the real-world situation where different factors may combine to produce disproportionate economic hardship. In this regard, however, DOE notes that these are two distinct metrics: where DOE determines an intermediate score of 5 under metric 3b on the basis of an individual special event, that same event will not necessarily lead to an intermediate or higher score for viability metric 3a ("RFS compliance costs eliminates efficiency gains").

[3] The facility must also score a 1 or higher in the structural and economic weightings index.

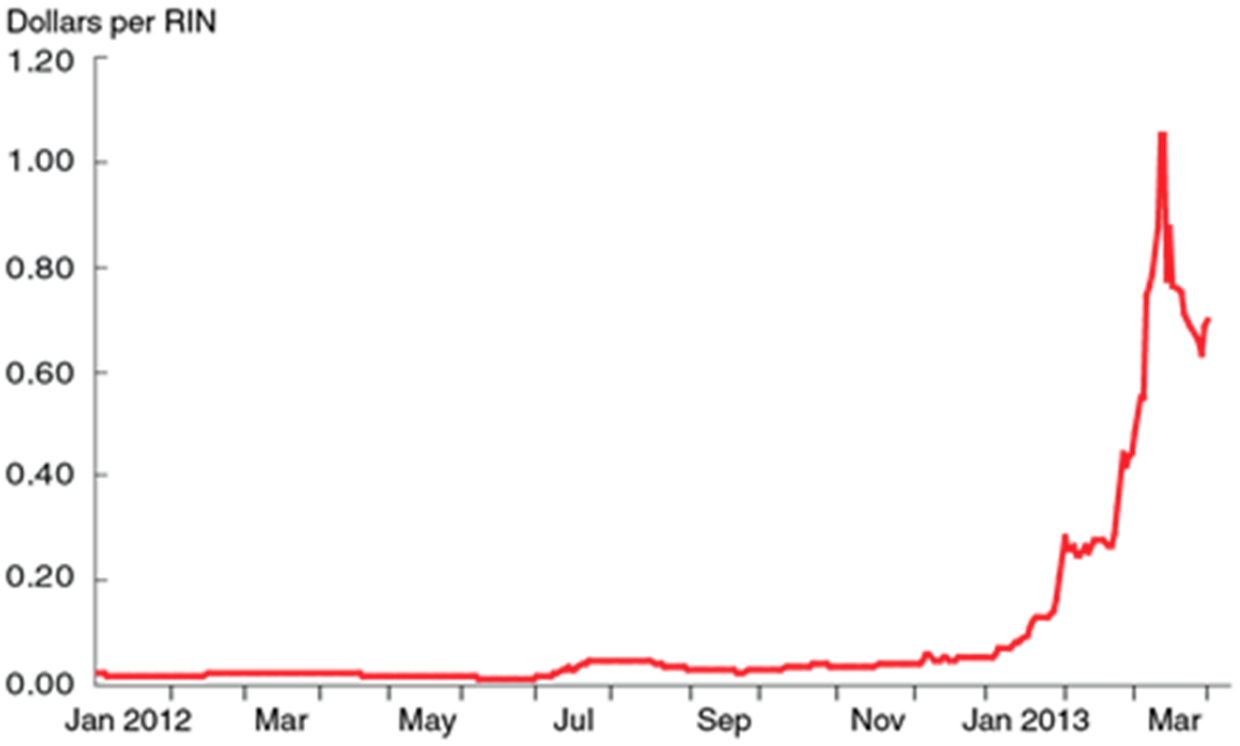
TAB F

Figure 1. Price of RINS in the Secondary Market, 04/04/2008 - 03/07/2013



Source: OPIS

Conventional ethanol Renewable Identification Number (RIN) prices



Note: Daily prices. 2012 prices are for RINs generated in 2012; 2013 prices are for RINs generated in 2013.
Source: USDA, Economic Research Service using data from the Oil Price Information Service.